SCOTTISH HOSPITALS INQUIRY

Bundle of documents for Oral hearings commencing from 19 August 2024 in relation to the Queen Elizabeth University Hospital and the Royal Hospital for Children, Glasgow

Bundle 12 - Estates Communications

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Table of Contents

1.	A42130689	Decca Plastics - Certificate of Conformity dated 25th January 2015	Page 14
2.	A40247734	NHS GGC - Infection Control Senior Management Team Meeting Minutes dated 28th January 2015	Page 15
3.	A32402295	Stage 3 Adult and Children's Hospital Completion Certificate dated 29th January 2015	Page 23
4.	A34316160	Capita NEC 3 Supervisor's Report (No. 46) dated February 2015	Page 27
5.	A32962543	Brookfield Multiplex Client Training & Familiarisation Register for Chilled Water system dated 3rd February 2015	Page 57
6.	A34466588	Email chain Colin Grindlay, Brookfield Multiplex to Mark Harris, Wallace Whittle and others - subject 'NSGH Sump Pumps' dated 4th February 2015	Page 59
7.	A32962540	Brookfield Multiplex Client Training & Familiarisation Register for Ventilation dated 5th February 2015	Page 64
8.	A34319315	Brookfield Multiplex Phase 2 Close-out Programme from handover to start of migration period dated 6th February 2015	Page 66
9.	A34323960	Brookfield Multiplex Phase 2 Close-out Programme from handover to start of migration period dated 20th February 2015	Page 71
10.	A32267839	NHS GGC Infection Control and Prevention Work Plan 2014/2015 - March 2015	Page 75
11.	A34324276	Brookfield Multiplex NSGH Labs Building - Energy Centre LTHW Integration, Methodology Revision dated 12th March 2015	Page 90
12.	A34466262	Email chain from David Wilson, Brookfield Multiplex to Ian Powrie, NHS GGC and others - subject 'Cardiac dept NSGUH' dated 25th to 31st March 2015	Page 101
13.	A42130714	Brookfield Multiplex Phase 2 Close-out Programme from handover to start of migration period dated 3rd April 2015	Page 105
14.	A34466637	Email from Ian Powrie, NHS GGC to David Wilson, Brookfield Multiplex and others - subject 'Water management Risk Assessment' dated 15th April 2015	Page 110
14.1		waterservices	Page 112
14.2		DMA Commissioning Queries 150409	Page 116

15.	A32323750	NHS GGC Infection Control and Prevention Work Plan 2015/2016 - April 2015	Page 120
16.	A34319116	Brookfield and BAM Issues Table dated 29th April 2015 to 6th April 2016	Page 137
17.	A34466639	Email chain from Ciaran Kellegher, Mercury Engineering to Colin Grindlay, Brookfield Multiplex and others - subject 'Labs Flushing - LTHW Connection to Energy Centre' dated 7th to 27th May 2015	Page 139
18.	A43171290	Email chain from Jamie Redfern, NHS GGC to Brenda Gibson, NHS GGC - subject 'Hepa filtration' dated 5th June 2015	Page 144
19.	A34465979	Email chain from Ian Powrie, NHS GGC to Colin Grindlay, Brookfield Multiplex and others - subject 'Building issues impacting migration' dated 7th June 2015	Page 145
20.	A34466411	Email chain from Ian Powrie, NHS GGC to David Wilson, Brookfield Multiplex - subject 'heating issues' dated 11th to 14th June 2015	Page 150
21.	A32994097	Email chain from Shiona Frew, NHS GGC to Grant Wallace, Brookfield Multiplex and others - subject 'EW Tracker' dated 24th June to 1st July 2015	Page 153
21.1		24062015 - EW Tracker	Page 155
22.	A46157900	Email chain from Christine Peters, NHS GGC to Tom Walsh, NHS GGC and others - subject 'VHF/Mers Preparedness' dated 23rd to 24th June 2015	Page 177
23.	A40241992	Email from Karen Cullen, NHS GGC to Christine Peters, NHS GGC and others - subject 'Air Sampling Particle Counts NSGUH Ward 4B Arran' dated 30th June 2015	Page 183
23.1		Particle count NSGUH Wd 4B Arran	Page 184
24.	A44312944	Capita NEC 3 Supervisor's Report (No. 51) dated July 2015	Page 188
25.	A32267843	NHS GGC Infection Control and Prevention Work Plan 2015/2016 - July 2015	Page 208
26.	A32393892	Email from Christine Peters, NHS GGC to Tom Walsh, NHS GGC and others - subject 'New Build' dated 26th June 2015	Page 225
27.	A46157901	Email chain Tom Walsh, NHS GGC to Christine Peters, NHS GGC and others - subject 'New Southern Building' dated 23rd to 26th June 2015	Page 227
28.	A32393893	Email from Christine Peters, NHS GGC to Tom Walsh, NHS GGC and others - subject 'Positive Pressure Lobbied Rooms' dated 29th June 2015	Page 229
28.1		Positive Pressure Lobbied Rooms	Page 230
29.	A37994422	NHS GGC Acute Services organogram dated July 2015	Page 233
30.	A46157904	Email chain from Anne Parker, NHS GGC to Brian Jones, NHS GGC and others - subject 'response to poor environmental quality' dated 5th July 2015	Page 234
31.	A46157906	Email chain from Christine Peters, NHS GGC to Craig Williams, NHS GGC and others - subject 'BMT SGUH' - 7th July 2015	Page 238

32.	A46157905	Email chain from Christine Peters, NHS GGC to Gary Jenkins, NHS GGC and others - subject 'BMT SGUH' - 7th July 2015	Page 240
33.	A40241674	Email chain from Christine Peters, NHS GGC to Teresa Inkster, NHS GGC and others - subject 'BMT SGUH' - 7th July 2015	Page 241
34.	A32393897	Email chain from Mary Ann Kane, NHS GGC to Gary Jenkins, NHS GGC and others - subject ‘ward 4b (HOW) commissioning data' dated 7th July 2015	Page 244
34.1		Copy of Schedule of Isolation Rooms	Page 245
34.2		31 - AHU 63 SUPPLY (4TH FLOOR HAEMATOLOGY) REPORT	Page 246
34.3		31 - AHU 63 EXTRACT (4TH FLOOR HAEMATOLOGY) REPORT	Page 255
35.	A34466585	Email chain from Peter Moir, NHS GGC to David Wilson, Brookfield Multiplex and others - subject 'Urgent/Important - Schiehallion testing' dated 23rd June to 7th July 2015	Page 263
36.	A34465966	Email chain from Alasdair Fernie, Brookfield Multiplex to Robert Calderwood, NHS GGC and others - subject 'Early test results for Haemato-oncology ward' dated 10th July 2015	Page 272
37.	A34466173	Email chain from David Wilson, Brookfield Multiplex to Ian Powrie, NHS GGC and others - subject 'Air permeability tests at the weekend' dated 16th to 18th July 2015	Page 275
38.	A34466365	Email chain from Peter Moir, NHS GGC to David Wilson, Brookfield Multiplex and others - subject 'NSGH A&C Pentamidine Room' dated 21st July 2015	Page 282
39.	A34466251	Email chain from David Wilson, Brookfield Multiplex to Peter Moir, NHS GGC and others - subject 'HAEMATO - ONCOLOGY WARD - PRESSURE GAUGES’ dated 27th July 2015	Page 284
40.	A34466319	Email from Peter Moir, NHS GGC to David Wilson, Brookfield Multiplex - subject 'L4B UPGRADE WORKS' dated 29th July 2015	Page 286
41.	A46157907	Email from Christine Peters, NHS GGC to Teresa Inkster, NHS GGC - subject 'Sampling to date overview' dated 3rd August to 30th November 2015	Page 288
42.	A34466092	Email chain from Julie Miller, Brookfield Multiplex to Shiona Frew, NHS GGC - subject 'RSK Report for Schiehallion' dated 11th August 2015	Page 291
43.	A33794564	Email chain from Peter Hoffman, PHE to John Hood, NHS GGC - subject 'BMTU RHC' dated 13th to 14th August 2015	Page 293
44.	A34465897	Email chain from David Loudon, NHS GGC to Alasdair Fernie, Brookfield Multiplex - subject 'Bmt' dated 19th August 2015	Page 296
44.1		Tbp-patient-placement-isolation-and-cohorting	Page 299

45.	A34465874	Email chain from David Loudon, NHS GGC to David Wilson, Brookfield Multiplex and others - subject 'NSGH A&C - Current Issues' dated 20th August 2015	Page 318
46.	A34467027	Emal chain from David Wilson, Brookfield Multiplex to David Loudon, NHS GGC and others - subject 'Ward 2a, rooms 18 & 19.' dated 27th to 31st August 2015	Page 321
47.	A34347848	Capita NEC 3 Supervisor's Report (No. 53) dated September 2015	Page 325
48.	A34466217	Email chain from Darren Pike, Brookfield Multiplex to Alasdair Fernie, Brookfield Multiplex and others - subject 'BMT Unit' dated 18th August 2015 to 1st September 2015	Page 343
49.	A34466363	Email chain from Alasdair Fernie, Brookfield Multiplex to David Loudon, NHS GGC - subject 'Schiehallion Ward - Royal Hospital for Children' dated 1st September 2015	Page 347
50.	A34465959	Email chain from David Loudon, NHS GGC to Alasdair Fernie, Brookfield Multiplex - subject 'Schiehallion Ward - Royal Hospital For Children' dated 1st September 2015	Page 350
51.	A34316122	Capita Supervisor's Notification of Defect (Cl 42.2) - Instruction No. 139 dated 2nd September 2015	Page 353
52.	A34466226	Email chain from John Bushfield, TUV SUD to Darren Pike, Brookfield Multiplex - subject '8001 BMT unit' dated 18th August 2015 to 2nd September 2015	Page 355
53.	A34466109	Email chain from William Hunter, NHS GGC to John Hood, NHS GGC and others - subject 'Schiehallion Ward' dated 1st to 2nd September 2015	Page 360
54.	A34465872	Email chain from David Loudon, NHS GGC to Alasdair Fernie, Brookfield Multiplex and others - subject 'Schiehallion Air Sampling Results 31/8/15' dated 1st September 2015	Page 363
54.1		Schiehallion August 31 2105	Page 365
55.	A34465789	Email from Jackie Barmanroy, NHS GGC to Christine Peters, NHS GGC and others - subject 'Air Permeability Validation July 2015 (3)' dated 2nd September 2015	Page 367
55.1		AIR Permeability Validation July 2015 (3)	Page 368
56.	A34466215	Email chain from Alasdair Fernie, Brookfield Multiplex to David Loudon, NHS GGC and others - subject: 'Royal Hospital for Children' dated 3rd September 2015	Page 416
57.	A34465776	Email chain from Jackie Barmanroy, NHS GGC to Gillon Armstrong, Brookfield Multiplex - subject 'Air Permeability Validation July 2015 (3)' dated 3rd September 2015	Page 418
58.	A32951073	System Hygienics - Southern General Hospital Glasgow - Post Clean Report dated 7th September 2015	Page 422
59.	A34465787	Email chain from Jamie Redfern, NHS GGC to Gillion Armstrong, Brookfield Multiplex - subject 'Sealing of Suites within Children's Hospital Ward 2A' dated 8th to 9th September 2015	Page 439

60.	A34324316	Brookfield Multiplex - Schedule of Isolation Rooms updated 10th September 2015	Page 442
61.	A34466665	Email chain from David Wilson, Brookfield Multiplex to Ian Powrie, NHS GGC and others - subject 'BMT Closed' dated 17th to 21st September 2015	Page 443
62.	A34324336	H & V Commissioning Services - QEUH - Ward 4B Ventilation Report dated October 2015	Page 448
63.	A34466579	Email chain from Julie Miller, Brookfield Multiplex to Ian Powrie, NHS GGC and others - subject 'dripping chilled beams in Critical Care - Wednesday 7/' dated 9th to 10th October 2015	Page 495
64.	A34465808	Email chain from Peter Moir, NHS GGC to Mary Ann Kane, NHS GGC and others - subject 'ITU isolation rooms' dated 8th to 13th October 2015	Page 498
65.	A34466195	Email chain from David Wilson, Brookfield Multiplex to David Hall, Currie and Brown and others - subject 'dripping chilled beams in Critical Care – Wednesday 7/' dated 9th to 19th October 2015	Page 507
66.	A34466656	Email chain from David Wilson, Brookfield Multiplex to Ian Powrie, NHS GCC and others - Subject 'WARD 4B - HAEMATO ONCOLOGY' dated 20th to 22nd October 2015	Page 512
67.	A34467066	Email chain from Ian Powrie, NHS GGC to David Wilson, Brookfield Multiplex and others - subject 'Critical care rooms' dated 23rd October 2015	Page 515
68.	A34465949	Email chain from David Loudon, NHS GGC to Julie Miller, Brookfield Multiplex and others - subject 'Critical care rooms' dated 23rd October 2015	Page 521
69.	A34324253	Letter from Stuart Borland, RSK Environment to Gillon Armstrong, Brookfield Multiplex - subject 'New South Glasgow Hospital - Isolation Room Testing - Adults Hospital Ward Bed 4B' dated 27th October 2015	Page 526
70.	A34466582	Email chain from David Loudon, NHS GGC to David Wilson, Brookfield Multiplex and others - subject 'ISOLATION ROOMS' dated 28th October 2015	Page 533
71.	A34466512	Email from Peter Moir, NHS GGC to David Loudon, NHS GGC and others - subject 'QEUH WARD 4B HAEMATO ONCOLOGY UPGRADE WORKS' dated 29th October 2015	Page 537
71.1		QEUH Ward 4B Upgrade Works Report Oct 2015	Page 539
72.	A34324255	Brookfield Multiplex - QEUH - Ward 4b Upgrade Works - undated	Page 637
73.	A34347846	Capita NEC 3 Supervisor's Report (No. 54) dated October 2015	Page 639
74.	A34323109	Brookfield Multiplex NSGH - Isolation Rooms - Air Permeability Testing (conducted by RSK) dated from 19th July to 2nd November 2015	Page 656

75.	A34323168	Letter from Stuart Borland, RSK Environment to Gillon Armstrong, Brookfield Multiplex - subject 'New South Glasgow Hospital - Isolation Room Testing' with written markup dated 23rd November 2015	Page 661
76.	A34466704	Email from David Wilson, Brookfield Multiplex to Peter Moir, NHS GGC and others - subject 'QEUH&RHC - Ward 4b and Ward 2a' dated 24th November 2015	Page 670
77.	A38030100	Email chain from Peter Moir, NHS GGC to Teresa Inkster, NHS GCC and others - subject '20151125 (10.05) Peter Moir QEUH WARD 4B - AIR PERMEABILITY TEST RESULTS - attached' dated 19th to 25th November 2015	Page 671
77.1		524395 South Glasgow Hospital Isolation Room Test Results (01) 24.11.20	Page 682
78.	A34466915	Email chain from David Wilson, Brookfield Multiplex to Peter Moir, NHS GGC - subject 'QEUH WARD 4B HAEMATO-ONCOLOGY INFORMATION REQUEST - AIR PERMEABILITY TEST RESULTS' dated 19th to 27th November 2015	Page 691
79.	A38030160	Email chain from David Loudon, NHS GGC to Teresa Inkster, NHS GGC and others - subject '20151130 (12:52) David Loudon RE: BMT' dated 27th to 30th November 2015	Page 704
80.	A34324236	Capita NEC 3 Supervisor's Report (No. 55) dated November 2015	Page 708
81.	A33085218	Capita NEC 3 Supervisor's Report (No. 56) dated December 2015	Page 718
82.	A34466374	Email chain Peter Moir, NHS GGC to David Wilson, Brookfield Multiplex - subject 'PENTAMIDINE ROOM' dated 1st to 2nd December 2015	Page 727
83.	A34466147	Email chain from David Wilson, Brookfield Multiplex to Ian Powrie, NHS GGC - subject 'Ward 2A: Isolation rooms Ventilation control failure' dated 7th to 8th December 2015	Page 730
84.	A34465833	Email chain Gillon Armstrong, Brookfield Multiplex to Peter Moir, NHS GGC - subject 'BMTU Rooms' dated 2nd to 15th December 2015	Page 732
85.	A38030401	Email chain from Teresa Inkster, NHS GCC to Julie Marshall, NHS GGC and others - subject '20151209 (16.33) T Inkster Air sampling results - attached' dated 3rd to 8th December 2015	Page 739
85.1		Air testing 4B Adult BMT	Page 741
86.	A46191399	Email from Christine Peters, NHS GGC to Ian Powrie, NHS GGC - subject '5C - Infectious Diseases Unit' dated 18th December 2015	Page 743
87.	A34466659	Email chain from David Wilson, Brookfield Multiplex to Peter Moir, NHS GGC - subject 'QEUH Ward 4B - Services Drawings' dated 24th December 2015 to 13th January 2016	Page 744

88.	A34466663	Email from David Wilson, Brookfield Multiplex to Peter Moir, NHS GGC - subject 'QEUH - Ward 4b air changes' dated 13th January 2016	Page 747
89.	A34466154	Email chain from David Wilson, Brookfield Multiplex to Peter Moir, NHS GGC - subject 'QEUH - Ward 4b' dated 21st January 2016	Page 748
90.	A34348232	Wallace Whittle Site Observations dated 24th February 2015 to 19th January 2016	Page 751
91.	A34318785	Wallace Whittle Site Observations dated 28th April 2015 to 29th January 2016	Page 765
92.	A33642472	Letter from David Loudon, NHS GGC to Douglas Ross, Currie and Brown - subject 'Royal Hospital for Children - Schiehallion Ward - Isolation Rooms dated 1st March 2016	Page 771
93.	A33642587	Enclosures with letter from David Loudon, NHS GGC to Douglas Ross, Currie and Brown dated 1st March 2016	Page 772
94.	A33642467	Letter from David Loudon, NHS GGC to Alasdair Fernie, Brookfield Multiplex - subject 'Royal Hospital for Children - Schiehallion Ward - Isolation Rooms' dated 1st March 2016	Page 780
95.	A34466190	Email chain from David Wilson, Brookfield Multiplex to Stewart McKechnie, TUV SUD and others - subject 'Letter from David Loudon' dated 1st to 3rd March 2016	Page 781
96.	A34466372	Email chain from Alasdair Fernie, Brookfield Multiplex to Allyson Hirst, NHS GGC and others subject 'Letter from David Loudon' dated 1st to 3rd March 2016	Page 785
97.	A34466942	Email chain from David Wilson, Brookfield Multiplex to David Loudon, NHS GGC - subject 'QEUH & RHC - PMI 471 Ward 4b' dated 14th to 15th March 2016	Page 788
98.	A34466483	Email chain David Loudon, NHS GCC to Shiona Frew, NHS GGC and others - subject 'QEUH & RHC - Ward 4b BMT' dated 17th March 2016	Page 792
99.	A33642652	TUV SUD - QEUH Glasgow - Ward Ventilation Strategy dated 28th May 2016	Page 796
100.	A34465906	Email chain from David Wilson, Brookfield Multiplex, to David Loudon, NHS GGC and others - subject 'QEUH & RHC - Ward 4b PMI 471' dated 24th March 2016	Page 798
101.	A34466519	Email chain from Alasdair Fernie, Brookfield Multiplex to David Loudon, NHS GGC and others - subject 'Adults Hospital - Ward 4B' dated 11th to 12th April 2016	Page 801
102.	A34466338	Email chain from Alasdair Fernie, Brookfield Multiplex to David Loudon, NHS GGC and others - subject 'Energy Centre (EC) incident' dated 13th to 15th April 2016	Page 806
103.	A34319450	Capita - QEUH Isolation Rooms - Meeting Minutes dated 31st May 2016	Page 810
104.	A33642592	Email chain from Alan Seabourne, NHS GGC to David Loudon, NHS GGC and others - subject 'QEUH - SBAR Rooms Airchanges' dated 22nd to 23rd June 2016	Page 813

105.	A33642583	Email chain from David Loudon, NHS GGC to Douglas Ross, Currie and Brown - subject ‘QEUH - SBAR Rooms Airchanges’ dated 21st to 28th June 2016	Page 815
106.	A46157913	Email chain from Christine Peters, NHS GGC to Ian Powrie, NHS GGC and others - subject 'Ward 2a cubicles 8-11’ dated 19th to 22nd July 2016	Page 818
107.	A34466599	Email chain from Steve Russell, NHS GGC to Fergus Shaw, Brookfield Multiplex and others - subject 'QEUH AAU' dated 18th May to 1st August 2016	Page 822
107.1		print.pdf	Page 834
108.	A34465994	Email chain from Michael Haveron, Brookfield Multiplex to William Madden, NHS GGC - subject 'ward 2a NCH' dated 15th August 2016	Page 835
109.	A41602100	Email from Ian Powrie, NHS GGC to David Loudon, NHS GGC and others - subject 'Ward 2A BMT Isolation rooms' dated 22nd September 2016	Page 837
110.	A46157914	Email from Christine Peters, NHS GGC to Ashutosh Deshpande, NHS GGC - subject 'QUEH new building handover' dated 10th October 2016	Page 839
111.	A34466242	Email chain from Hugh McDerment, NHS GGC to Colin Purdon, NHS GGC and others - subject 'Queen Elizabeth University Hospital: Office Block & Ward 61' dated 24th October to 3rd November 2016	Page 841
112.	A34466013	Email from John McEwan, Hulley & Kirkwood to Graham Forsyth, NHS GGC and others - subject 'INS Domestic Water Compliance (Existing Systems)' dated 22nd January 2017	Page 847
113.	A33642540	Capita Supervisor's Final Defects Certificate (Cl 43.3) At Completion of Whole of Works – Stage 3 Adult and Children’s Hospital and Energy Centre dated 26th January 2017	Page 848
114.	A46157919	Email chain from Teresa Inkster, NHS GGC to Ian Powrie, NHS GGC and others - subject 'RHC Ward 2a Draft Tender Document' dated 5th to 11th May 2017	Page 862
115.	A40241355	Email chain from William Hunter, NHS GGC to David Loudon, NHS GGC and others - subject 'Infection Control and the work on 4B for BMT' dated 23rd August to 4th September 2017	Page 878
116.	A32353240	NHS GGC - Infection Control Issues Meeting Minutes dated 4th October 2017	Page 883
117.	A40241973	Email chain from Jennifer Armstrong, NHS GGC to Hazel McIntyre, NHS GGC - subject 'Updates - QEUH/Ward 4B & RHC/Ward 2A' dated 8th November 2017 to 12th May 2022	Page 890
118.	A46157932	Email chain from Kalliopi Valyraki, NHS GGC to Christine Peters, NHS GGC - subject 'HAI Scribe for additional rooms' dated 28th to 30th November 2017	Page 892
119.	A46157934	Email from Christine Peters, NHS GGC to Myra Campbell, NHS GGC and others - subject 'Ward 4B' dated 4th December 2017	Page 896

120.	A38029477	Email chain from Annette Rankin, NHS NSS to NSS HPSHAIIC - subject ‘Ward 4B- Results meeting 02.03.18’ dated 26th February 2018 to 3rd March 2021	Page 899
120.1		Air Particle + Microbiological Monitoring - Ward 4B, QEUH	Page 901
120.2		AGENDA Ward 4B Results meeting 02.03.18	Page 910
121.	A43119494	Email chain from Mary Anne Kane, NHS GGC to Annette Rankin, NHS NSS - subject 'WATER STRAIGHTENERS QEUH - URGENT' dated 12th March 2018	Page 911
122.	A33681021	Email from Julie Marshall, PA to Myra Campbell & Alyson McArdle, NHS GGC to Geraldine O’Brien, NHS NSS and others – subject ‘BMTU Results meeting minutes 09.03.18’ dated 21st March 2018	Page 912
122.1		BMTU results meeting minutes 09 03 18	Page 913
123.	A33642477	Email chain from Douglas Ross, Currie & Brown to Mary Anne Kane, NHS GGC and others - subject 'QEUH / RHC - Actions from Meeting 13/03/18' dated 20th March to 15th May 2018	Page 916
124.	A43119640	Email from Mary Anne Kane, NHS GGC to Alan Gallacher, NHS GGC and others - subject 'WATER RAs and WRITTEN SCHEME’ dated 26th March 2018	Page 918
125.	A43119650	Email chain from Mary Anne Kane, NHS GGC to Teresa Inkster, NHS GGC and others - subject ‘DRAIN CLEANING QEUH & RHC' dated 26th to 27th March 2018	Page 919
126.	A39123938	Infection Prevention and Control Measures - Water Incident, March 2018 - Updated guidance dated 28th March 2018	Page 921
127.	A43119657	Email chain from Mary Anne Kane, NHS GGC to Edward McLaughlan, NHS NSS and others – subject '[BlockedURL][ExternaltoGGC]’ dated 3rd April 2018	Page 922
128.	A41797523	Email from Mary Anne Kane, NHS GGC to Alan Gallacher, NHS GGC and others - subject 'HORNE TAPS' dated 9th April 2018	Page 925
129.	A43119719	Email chain from Mary Anne Kane, NHS GGC to Ian Storrar, NHS NSS and others - subject 'QEUH & RHC - Water System Test Results' dated 23rd to 24th April 2018	Page 926
130.	A43119694	Email chain from Mary Anne Kane, NHS GGC to Teresa Inkster, NHS GGC and others - subject 'update on water report' dated 23rd April 2018	Page 928
131.	A33795343	NHS GGC - Action plan from Susanne Lee Report - Teresa Inkster/Ian Powrie dated May 2018	Page 930
132.	A43158670	Email chain from Tom Walsh, NHS GGC to Annette Rankin, NHS NSS and others - subject 'Commissioning records' dated 29th July 2014 to 20th July 2018	Page 936

133.	A43158827	Email chain from Mary Anne Kane, NHS GGC to Tom Steele, NHS NSS and others - subject ‘IMT water incident RHC, NHSGGC' dated 14th to 16th September 2018	Page 938
134.	A44311577	NHS GG&C - QEUH/RHC Review of Issues Relating to Hospital Water Systems' Risk Assessment dated 26th September 2018	Page 943
135.	A33642645	Email chain from Mary Anne Kane, NHS GGC to Douglas Ross, Currie & Brown and others - subject 'QEUH – Multiplex’ dated 3rd October 2018	Page 949
136.	A33642482	Email chain from Douglas Ross, Currie & Brown to Ian Powrie, NHS GGC and others - subject 'Potential latent defects?' dated 14th to 15th November 2018	Page 950
137.	A42506190	Email from Brenda Gibson, NHS GGC to Jennifer Armstrong, NHS GGC and others - subject 'Cryptococcus death' dated 8th January 2019	Page 957
138.	A41745767	Email chain from Christine Peters, NHS GGC to Emilia Crighton, NHS GGC and others - subject 'Leakage from chilled beams - Ward 6A' dated 3rd June to 30th August 2019	Page 958
139.	A46157943	Email chain from Christine Peters, NHS GGC to John Mallon, NHS GGC - subject 'Leakage from chilled beams - Ward 6A' dated 3rd June to 30th August 2019	Page 964
140.	A46157944	Email from Christine Peters, NHS GGC to Susie Dodd, NHS GGC and others - subject 'Isolation rooms' dated 16th July 2019	Page 969
141.	A37851284	Email chain from Lisa Ritchie, NHS NSS to Julie Mcintosh, NHS NSS - subject 'SBAR Relating to Ward 6A' dated 3rd to 11th September 2019	Page 971
142.	A37851106	Email chain from Lisa Ritchie, NHS NSS to Emilia Crighton, NHS GGC and others - subject 'SBAR Leakage from chilled beams - Ward 6A, QEUH' dated 9th to 17th September 2019	Page 974
143.	A37850784	Email from Annette Rankin, NHS NSS to Emilia Crighton, NHS GGC and others - subject 'Minutes & Action Plan of Ward 6A IMT, 18th September 2019' dated 8th October 2019	Page 977
143.1		IMT Ward 6A Gram Negative Blood Cultures 18 09 19 (2) hps comments	Page 978
143.2		Action Plan Ward 6A 180919 (002) LR AR} (2)	Page 983
143.3		IMT Teleconference Notes Friday LI AR LR comments 081019	Page 985
143.4		NHSGGC 2019-09-13 GGC SBAR Final Draft v1 2	Page 988
143.5		SBAR updated comments from HPS 021019 LR AR comments	Page 993
144.	A46157859	Email chain from Christine Peters, NHS GGC to Jamie Redfern, NHS GGC and others - subject 'Incident leakage 6A' dated 27th September to 1st October 2019	Page 998

145.	A46157865	Email from Christine Peters, NHS AA to Teresa Inkster, NHS GGC and others - subject 'Follow up' dated 10th to 15th January 2020	Page 1000
146.	A34027945	Email chain from John Green, NHS GGC to Kathryn Wilson, HSE and others - subject 'Follow-up from Meeting of January 27th' dated 6th to 14th February 2020	Page 1003
146.1		Let_15Jan20-Ward5C-5D	Page 1006
146.2		Ward 5C Pressure change report	Page 1008
146.3		Ward 5D 7D Pressure change report	Page 1014
146.4		20200121 NHS GGC close letter 2.0	Page 1020
147.	A34027951	Email chain from John Green, NHS GGC to Kathryn Wilson, HSE and others - subject 'Follow-up from Meeting of January 27th' dated 6th to 19th February 2020	Page 1021
147.1		Ward 5D & 7D Pressure change report. 23 Dec 2018 Rev2.1	Page 1025
147.2		Ward 5C Pressure change report. 14 Dec 2017 Rev1	Page 1031
147.3		123 - AHU 04 SUPPLY (4TH TO 7TH FLOOR WARDS) REPORT (1)	Page 1037
147.4		123 - AHU 05 DIRTY EXTRACT (4TH TO 7TH FLOOR WARDS)	Page 1052
147.5		123 - AHU 05 SUPPLY (4TH TO 7TH FLOOR WARDS)	Page 1062
147.6		123 - AHU 03 SUPPLY (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS) REPORT	Page 1074
147.7		123 - AHU 03 CLEAN EXTRACT (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS) REPORT	Page 1104
147.8		123 - AHU 04 SUPPLY (4TH TO 7TH FLOOR WARDS) REPORT	Page 1135
147.9		124 - AHU 04 DIRTY EXTRACT REPORT	Page 1150
147.10		124 - AHU 04 SUPPLY REPORT	Page 1164
147.11		124 - AHU 05 DIRTY EXTRACT REPORT	Page 1179
147.12		124 - AHU 05 SUPPLY REPORT	Page 1193
147.13		124 - AHU 06 SUPPLY REPORT	Page 1208
147.14		124 - AHU 06 CLEAN EXTRACT REPORT	Page 1222
148.	A46157879	Email chain from Teresa Inkster, NHS GGC to Marion Bain, NHS NSS and others - subject 'Thursday meeting' dated 17th to 25th February 2020	Page 1236
149.	A34027932	Email from Kathryn Wilson, HSE to Anne MacPherson, NHS GGC and others - subject 'Ongoing Investigation' dated 18th March 2020	Page 1244
150.	A34027939	Letter from Jane Grant, NHS GGC to Kathryn Wilson, HSE - subject 'Health and Safety at Work ETC. Act 1974 Notification of Contraventions' dated 27th March 2020	Page 1246
151.	A34027935	Letter from Kathryn Wilson, HSE to Jane Grant, NHS GGC dated 30th March 2020	Page 1248
152.	A34027934	Letter from Jane Grant, NHS GGC to Kathryn Wilson, HSE dated 3rd April 2020	Page 1249

153.	A41745773	Emails involving NHS GGC Staff - subjects include ‘Condensation panels – urgent’, ‘water from air conditioning’, ‘Ward 4C Haematology’, ‘AIR CONDITIONING’, ‘Chill beam’, ‘leaking chilled beams’ & ‘Leakage from chilled beams – Ward 6A’ dated 13th March 2017 to 29th July 2020	Page 1250
154.	A34027941	Email chain from Anne MacPherson, NHS GGC to Kathryn Wilson, HSE and others - subject 'Progress on Actions required in the Notificationof Contravention Letter dated Dec 2019' dated 23rd to 24th September 2020	Page 1267
155.	A34027936	Letter from Jane Grant, NHS GGC to Kathryn Wilson, HSE dated 12th October 2020	Page 1269
156.	A34027944	Email from Kirsty Strannigan, NHS GGC to Kathryn Wilson, HSE and others - subject 'Meeting Agenda - 13th November 20' dated 12th November 2020	Page 1271
156.1		VENTILATION ACTION PLAN V7a	Page 1272
156.2		AGENDA HSE Meet – QEUH NOC 13.11.20	Page 1275
157.	A34027938	Email from Kirsty Strannigan, NHS GGC to Kathryn Wilson, HSE and others - subject 'Ventilation Action Plan' dated 13th November 2020	Page 1276
157.1		Ventilation IN Progress ActionPlanv8	Page 1277

CERTIFICATE OF CONFORMITY

DECCA PLASTICS LTD
WATER TANK SPECIALISTS

FORM NO. F57 Rev-A

MERCURY ENGINNERING UK LIMITED
NSGH PROJECT OFFICE
HARDGATE ROAD
GLASGOW
G51 4SX

CERTIFICATE NO. 889 | CUSTOMER ORDER NO 6000007311

Quantity	Details
1	FOR THE FOLLOWING SERVICE WORKS TO THE TANK ON SITE: -TANK IS DRAINED -PANEL REMOVED AND REPLACED -RE-INSTALLATION OF PANELS -ROOF BOLTS REPLACED IN FULL -RE-COMMISSIONED -TEMP STATS MOVED TO NEW POSITION AND BLANKED OFF -TANK IS CLEANED -OVERFLOWS AND BREATHER CLEANED -TANK IS INSPECTED FOR ANY DAMAGE OR PARTS THAT NEED REPLACING (PARTS AT COST) -ALL FIXINGS RE-TIGHTENED -REPLACEMENT OF HALLOW COVER AND INTERNAL LADDERS WITH SOLID VERSION INLINE WITH HSE GUIDELINES -ALL SEALS CHECKED AND INSPECTED - NEW SEALS APPLIED IF REQUIRED -ANY LEAKS INVESTIGATED, RPEORTED AND FIXED- SUBJECT TO SURVEY

The tank(s) with the above description were installed and subject to a static water test by Decca Plastics Engineers as per BS EN-13280:2001 & WRAS Standards.

SIGNED ON BEHALF OF DECCA PLASTICS LIMITED: [redacted] S.Peacock / Managing Director

DATE OF ISSUE: 25/01/2015

Victoria Mill, Lincoln Street, Preston, Lancashire, PR1 6RE
Tel: +44 (0)1772 825757 | Fax: +44 (0)1772 204967 | @: accounts@deccatanks.co.uk | Web: www.deccatanks.co.uk

Wednesday 28 January 2015
at 1.30 pm

Meeting Room LO/A/010, New Lab Block, Southern General

PRESENT

Chair	TW	Infection Control Manager
Tom Walsh		
Professor Craig Williams	CW	Co-ordinating Infection Control Doctor
Sandra McNamee	SMcN	Assistant Director of Nursing (Infection Control)
Ann Kerr	AK	Lead Nurse, Surveillance
Lynn Pritchard	LP	Lead Infection Control Nurse, South East
Susie Dodd	SD	Acting Lead Infection Control Nurse, North West
Joan Higgins	JH	Lead Infection Control Nurse, Clyde
Clare Mitchell	CM	Lead Infection Control Nurse, South West
Kate Hamilton	KH	Lead Infection Control Nurse, North East
Dr Alison Balfour	AB	ICD, Partnerships
Dr Linda Bagrade	LB	ICD, Clyde
Dr Pauline Wright	PW	ICD, South
Dr Teresa Inkster	TI	ICD, North
Dr Christine Peters	CP	ICD, South

In Attendance
Ann Lang (Minutes) PA Infection Control

Apologies Received
Pamela Joannidis Professor Andrew Smith

Item	Action
1. Welcome & Apologies Tom welcomed everyone to today's meeting. Apologies were received from the above mentioned.	
2. Minutes of SMT Meeting held on 24 September 2014 The minutes of the previous SMT meeting held on 24 September 2014 were accepted with the following amendments:- Page 2, South West, 6th bullet point – should read "..... working with [redacted] regarding Mycobacteria acscessus in cystic fibrosis patients", Page 7, Meningitis Prophylaxsis, line 3 – should read " [redacted]".	
Actions Update Craig to forward Ann the new guidance on legionella to send to SMT. He said there has been a change in the guidance on what to do if a patient is positive with legionella. He said he will also circulate the comments from the Water Group.	**CW**

Item	Action
STANDING ITEMS	
3. Matters Arising Ebola Planning [redacted] Joan advised that in Clyde Alistair has offered to provide more training and a video is also available. At the new hospital Sandra reported that the consultants in Brownlee identified a pathway but raised concern at the BICC that the ante room is smaller. Craig said that he was concerned regarding the ventilation as there is no specification for ID units but this has been addressed.	
4. Sector Update **i) Geographical Sector Update (encl)** The IC Sector Updates were distributed with agenda.	
• **Clyde (Joan Higgins)** Joan reported that there was no update to provide that was not on the report.	
• **North East (Kate Hamilton)** • [redacted] At the recent SAB group Craig reported that renal outpatients were discussed and how there could be a practice issue in the community. Craig suggested auditing line care and compliance with the PVC Care Plan. He said that HPS are looking to start a Staph Aureus Screening project and Craig offered to start with our board and to look at the renal patients. Susie said that there is no documentation on how these patients are presenting themselves. • [redacted]	
• **North West (Susie Dodd)** • With regards to Influenza A Teresa reported that they have noticed an increase in cases. She said the ID Physicians/Virologists are screening patients and giving them tamiflu if they have flu like symptoms which is causing problems for Infection Control. Tom reported that he and Craig had met with [redacted] and are due to meet again. He proposed to discuss the treatment and advice given by Virologists. • [redacted]	**TW/CW** **CW**

Item	Action

- **South East (Lynn Pritchard)**
  - [redacted]

South West (Clare Mitchell)

- [redacted]
- [redacted]

5. HAIRT Report – December Update

A copy of the HAIRT report for December was issued with the agenda and noted.

6. Q&P HAI Report – January Update

A copy of the Q&P report for January was distributed with the agenda. Tom stated that this report is a summary report of the HAIRT and the content was noted.

7. IC Implementation Plan Progress

The IC Implementation Plan update for January was distributed with the agenda and Sandra provided an update.

She reported that the Implementation Plan is nearly complete. The new infection control audit is due to be tested in February and a company was commissioned to set up this tool and a meeting has been arranged with [redacted] for next week.

Transmission based precautions have been added to the plan as this was a recommendation from the Vale of Leven Inquiry report. Other work added includes the ebola preparedness, on the move and work on the two new hospitals.

In the plan Sandra reported that the SSI module on ICNET has not progressed as she is waiting on a CNO letter from the Scottish Government arriving clarifying categories for SSI surveillance.

The lead clinicians want to start surveillance in Endopthalmitis and Sandra stated that this is going to the next Clinical Governance meeting to discuss.

In relation to the plan for next year Sandra asked if anybody had any ideas to let her know. She said that she will prepare the draft plan and programme for next year and will send this out for comments. **SMcN**

Tom advised that the Annual Report requires to be updated and this will be issued for individuals to update their sections. **TW**

Item		Action
8.	**Sub-Groups/ Short Life Working Groups Update:**	
i)	**Water Safety Group** Discussion took place regarding the testing of water as an engineer had been authorised to sample the water at Leverndale. Craig advised that there are no high risk areas there and there is no need to sample. Linda also commented that the water is being sampled at the Vale of Leven. Craig said that he will look into this and raise at the Boart Water Quality Group. Craig reported that there had been an issue regarding the governance for the BMT unit which is transferring from the Beatson to a generic water supply. He said that when the report on this is received he will forward this to SMT.	**CW**
ii)	**Theatre Maintenance & Management Group** A copy of the theatre validation data results were distributed with the agenda. Kate reported that Theatre L at GRI has been refurbished and will be reopening again.	
iii)	**Infection Control Policy Group** Pamela reported that the CDI Policy was discussed at the last BICC meeting. She said there was an issue regarding death certification and the CDI Policy will stand as it is for the time being, pending guidance from the Procurator Fiscals office.	
iv)	**Education Group/OLM Workstream** Lynn advised that the IC education group meet monthly and the OLM group are due to meet tomorrow. Sandra advised that the Education Strategy was approved at the last BICC meeting. She said the committee also considered how to capture education training for staff. Kate commented that with regards to the SBAR some of the Learnpro modules are too advanced on some categories for Health Care Workers. Lynn to take forward the outbreak and CDI modules.	
v)	**Decontamination Group** The group last met in October and Kate reported that the next meeting is scheduled for February and Craig is now chair of this group. Kate reported that the group discussed scopes being kept in cabinets. Sandra mentioned that she had not received the SOP for machine failures regarding pseudomonas.	
vi)	Person Centred Care Joan reported that the posters regarding people in isolation are finished. She is going to pull together the information in relation to the staff satisfaction survey and provide a poster on this. If anybody has any other suggestions to let Joan know and Joan to look at where the posters can be displayed.	
vii)	CPE Group Craig advised that he raised with Dr Armstrong the paperwork regarding patient accessibility to screen for CPE. [redacted] Craig is suggesting screening for high risk patients although we do not have a patient information leaflet. He commented that Lothian are screening patients except for patients in renal and paedicatrics. Craig reported that he will discuss with Dr Armstrong starting screening in ITU in the new hospital and if this works well can roll out to other hospitals.	**CW**

Item	Action

9. Project Update:

i) IT Project

Ann updated the group and advised that the environmental audit tool is in progress.

In relation to ICNET Ann reported that there is a proposal to upgrade the system to version 7.3 to have the SSI module. HPS are also wanting us to feed our SSI data from ICNET directly to them. She said that user acceptance testing will be carried out by superusers. Training for the ICDs on ICNET will be carried out by Stephanie and Yianni and Ann asked for some suggestions on what kind of things the ICDs would like to look at.

The IT Group has reconvened and Ann reported that a meeting has been scheduled for Friday at Stobhill with the ICNs and Craig will be the representative for the ICDs. Ann asked for any data requests to be forwarded to the data team.

ii) MRSA Screening / KPIs

Ann advised that the last published data GGC are 81% compliant with a target rate of 90%.

iii) SAB HEAT Target

With regards to SABs Ann reported that we have a SAB rate of 24.1 cases per 100,000 AOBD and pointed out that we have had a 2.6% increase in occupied bed days. She said that CVC related SABS from the renal unit are driving the target. At the recent SAB group Joan commented that in ECMS they have 17% of the community coming through medical wards. Craig proposed to look at the community associated SABs and take out the ones we want to target and give them an improved target for ECMS. Kate suggested carrying out a blanket PVC audit in the spring and Sandra advised that PVCs and CVCs will be in the new audit tool.

iv) SICPs / SPE Audits

Nil to update.

v) Transmission Based Precautions

Local groups have met and Sandra advised that Dr Armstrong has asked for this to be issued for comments. Christine stated that she is working with Dr Hague to do a video in Paediatrics on how to use PPE and they will also work on a scenario.

vi) New Build – Adult Hospital / Children's Hospital

Adult Hospital

Discussions regarding the ventilation for the Bone Marrow Unit have taken place and Craig said that they have a potential solution for this.

Children's Hospital

The work in the children's hospital is ongoing and Craig advised that there are no issues to report.

Item		Action
10.	[redacted]	
11.	**On The Move** With regards to the new office accommodation at South Glasgow Tom advised that this has been over subscribed. In principle he said that we are still moving there but not to the new offices and alternative accommodation is being looked at. A Core Brief was issued to staff to notify them of the new director posts that have been filled.	
12.	**Clinical Governance Related Guidance** Copies of the latest Clinical Governance Related Guidance notes were issued with the agenda.	
	INFECTION CONTROL GOVERNANCE	
13.	[redacted]	
14.	**Patient Experience / Person Centred Care** Nil to update.	
	COMMUNICATIONS/ FEEDBACK	
15.	**Events/ Representation Feedback** • IPS Conference in February • Holyrood holding an infection control conference on 10th March.	
16.	**Core and Divisional Team Brief** Copies of the latest Briefs have been issued.	
	NEW BUSINESS/ AGENDA ITEMS	
17.	**New Business**	
i)	[redacted]	**CW**
ii)	HPS Q3 Reports – SABs and CDI Copies of the above reports were issued with the agenda.	
iii)	Quality Improvement BORSA / MISA Algorithm A copy of the algorithm was issued for information.	

Item	Action

iv) HAI Standards

A copy of the final version of the standards has not been issued yet.

v) VOL Action Plan

Tom reported that the final version of the response regarding the action plan was sent back to Scottish Government. He said that more information was required on certain recommendations and one of these included 24/7 cover.

From the recommendations it was suggested that policies are reviewed every two years and Sandra advised that this will start when each policy is due to be renewed.

ITEMS FOR NOTING

18. Meetings Update:

i) Board Infection Control Committee
The agenda for the BICC in January and the previous minutes for November were distributed with the agenda.

ii) Acute Infection Control Committee
The minutes of the AICC meeting held in November and the agenda for the January meeting were distributed with the papers. Discussion took place regarding patients being in isolation rooms and to assist the Bed Manager if a patient is to be put there. Sandra advised that an algorithm will be created for this.

iii) Partnership Infection Control Support Group
The agenda for the PISCG in January and the previous minutes for November were distributed with the agenda.

Sandra advised that she met with Mari Brannigan and Mari has proposed to keep this group going.

Kate reported that the last Dental Infection Control Committee was cancelled and said that she will email for dates for future meetings. She said that she meets with the Dental Nurse Manager once a month.

19. Review of Actions and Decisions

- Craig to forward Ann L the new guidance on legionella to send this to SMT.
- Tom and Craig to discuss with [redacted] the treatment and advice given by Virologists regarding prescribing tamiflu.
- [redacted]
- Sandra to issue the draft Annual Infection Control Programme for comments.
- Tom to forward the Annual Report for individuals to update their sections.
- Craig to look into water testing at sites.
- Craig to discuss with Dr Armstrong the screening of patients for CPE in ITU at SGH.
- Craig to contact HPS to ask what they want us to do with AMR alerts.

Item	Action

20. Items Agreed

- If a patient has surgery in our board this would be classed as SSI.
- SMT agreed to have a link to the path where papers are stored for this meeting.

21. Any Other Competent Business

- Linda suggested that instead of papers being emailed for this meeting a link could be sent to say where the papers are stored on the shared drive. It was agreed that Ann will forward the link to the documents and if anybody still wishes to receive the papers to let Ann know.
- Kate stated that a ward has excess amounts actichlor granules that are out of date and asked how to dispose of these as Procurement will not take these. It was suggested to use these at training sessions.
- Clare reported that she received an email from a consultant in A&E regarding overcrowding and looking for infection control to agree it is a risk. Sandra advised that we can meet with directorate reps and assist where we can. In GRI Kate stated that they have dedicated domestic staff for A&E and suggested putting this forward as a proposal.
- Discussion took place regarding maybe having joint clinical and SMT meetings to include education. This would mean this meeting could include exception reports which will mean the agenda will be shorter.

22. Date and time of next meeting

The next meeting is scheduled for Wednesday 25 February 2015 at 1.30pm, ADM 2.16B Conference Room, Level 2, New Victoria ACH.

The dates for future meetings have been arranged as undernoted:

Date (2015)		Time	Venue
25	March	1.30pm – 3.30pm	ADM 2.16B Conference Room, New Victoria ACH
29	April	1.30pm – 3.30pm	Room L0/A/010, New Lab Block, Southern General Hospital
27	May	1.30pm – 3.30pm	ADM 2.16B Conference Room, New Victoria ACH
24	June	1.30pm – 3.30pm	ADM 2.16B Conference Room, New Victoria ACH
29	July	1.30pm – 3.30pm	ADM 2.16B Conference Room, New Victoria ACH
26	August	1.30pm – 3.30pm	Conference Room, Management Building, Southern General Hospital
30	September	1.30pm – 3.30pm	ADM 2.16B Conference Room, New Victoria ACH
28	October	1.30pm – 3.30pm	ADM 2.16B Conference Room, New Victoria ACH
25	November	1.30pm – 3.30pm	Room L0/A/010, New Lab Block, Southern General Hospital
16	December	1.30pm – 3.30pm	ADM 2.16B Conference Room, New Victoria ACH

NEW SOUTH GLASGOW HOSPITALS AND LABORATORY PROJECT

STAGE THREE – ADULT & CHILDREN'S HOSPITALS
SECTIONAL COMPLETION CERTIFICATE

NHS Greater Glasgow and Clyde

Project Details:	
Section of the Works	Stage 3
Description	Adult & Children's Hospitals
Contract Award	18th December 2009
Start on Site	28th March 2011

Contractor	**Employer**
Mr Alasdair Fernie Project Director Brookfield Multiplex Construction Ltd 90 Bishopsgate London EC2M 3XD	Mr David Loudon Project Director NHS Greater Glasgow & Clyde Project Office - Top Floor Site Office Southern General Hospital Construction Site Hardgate Road Glasgow G51 4SX

	Date
The Sectional Completion Date is	28th February 2015
Sectional Completion was achieved on	26th January 2015
Date of this Certificate	29th January 2015
The Defects Date is	26th January 2015
The defects listed on the attached schedule are to be corrected within the defects correction period which ends on 26th January 2017.	Exceptions: Refer attached schedule of incomplete works dated 26th January 2015, note dates for completion of works contained in this schedule.
The Employer took possession of the building on	26th January 2015.

Works checked by Supervisor - Notification of Defects at Completion issued by the Supervisor (Cl 43.2)		
[redacted]	John Redmond for Capita Symonds	29th January 2015
Signature	Name	Date
Certified by the Project Manager		
[redacted]	Peter Moir for NHS Greater Glasgow & Clyde	29th January 2015
Signature	Name	Date

Attachments: Supervisor's Notification of Defects at Completion – 26th January 2015.
Project Manager's Schedule of Incomplete Works – 26th January 2015.

Nr(2)

SUPERVISOR'S NOTIFICATION OF DEFECTS AT COMPLETION (Cl 43.2)

CAPITA FRAMEWORKS SCOTLAND

Short Description Adult and Children's Hospital and Energy Centre **Date:** 26th January 2015

Notification Nr: A/C/001

To: *Contractor's Agent* *Please select from dropdown*

Contractor – (Name) BROOKFIELD MULTIPLEX EUROPE

Project Office Address PROJECT OFFICE, HARDGATE
GOVAN, GLASGOW
G51 4SX

1. Dear Sir

SUPERVISOR'S NOTIFICATION OF DEFECTS AT COMPLETION

Following an inspection of the works on (Date) 26th Jan 2015

(a) ☐

(b) ☑ * The following Defects were found but these will not prevent the Employer from using the works

Location of Defect	Description of Defect
VARIOUS LOCATIONS	SEE ATTACHED ARCH OUTSTANDING WORKS & MARKED UP DRAWINGS REF BMCE-GC-048709
VARIOUS LOCATIONS	SEE ATTACHED NSGH-MEP, OUTSTANDING WORKS REF BMCE-GC-048710
VARIOUS LOCATIONS	SEE ATTACHED ENVELOPE OUTSTANDING WORKS & MARKED UP DRAWING BMCE-GC-048711

(c) ☐

The defects period commences on (Date) 26th Jan 2015 for the period of 104 Weeks
until (Date) 26th Jan 2017

Signed: [redacted] ***Supervisor* (NHS) or delegate** **Date:** 26th January 2015

☐
☐
☐

Please select one option only!!

☐
☐

Correction of Defect

Signed: ***Supervisor* (NHS) or delegate** **Date:**

Distribution: Other

The Employer
Project Manager (NHS)

0 (* Delete as appropriate by unclicking box ☐)

PF18.xls

A47069198

NEW SOUTH GLASGOW HOSPITALS - STAGE 3 ADULT & CHILDRENS HOSPITALS
PROJECT MANAGER'S SCHEDULE OF INCOMPLETE WORKS - 26th January 2015

No	Description of Defect	Location	Defects Completion Date
1	VIE Slab and associated works	Maternity Unit	30.06.2015
2	Neuro Link Bridge - connection to T&LC	Adult / INS	17.04.2015
3	Neuro Link Bridge - oxygen connection	Adult / INS	31.03.2015
4	Neuro Link Bridge - connection to INS	Adult / INS	30.06.2015
5	Separation Tank	Adult ED Dept.	13.03.2015
6	Art Strategy installation - complete	All areas	28.02.2015
7	Land Eng: incomplete landscape works	All areas	31.03.2015
8	Cores A&B & Main Entrance - meet and greet panels glass cabinets	Adult Hospital	28.02.2015
9	Lead lined units and associated worktops - ADB codes STF1021, 1024 & 1025.	Adult Hospital / Nuclear Medicine	28.02.2015
10	DCFP Room 024 - ROMPA wall padding by BM	DCFP	31.03.2015
11	Additional divider screens and fabric boards	MIL009, RAG082, DOPD022	28.02.2015
12	Group 5 areas - where Board subs are working	Both	15.04.2015
13	Adult sanctuary - roof access hatch	Adult Hospital	28.02.2015
14	Interventional theatre - PMI works	Adult L2	03.02.2015
15	Adult sanctuary - install Gustav's panels	Adult Hospital	28.02.2015
16	Decontamination Room - complete	ED Department	28.02.2015
17	MRI Rooms - knock out panels	Various	28.02.2015
18	New VIE turning circle	Adult	28.02.2015
19	New VIE - pavement works south of road (bus stop not required).	Adult	11.02.2015
20	Main entrance walls and signage	Campus	15.04.2015
21	Neuro steel bridge works	INS	15.04.2015
22	Street lights to boulevard, complete landscaping to boulevard	Campus	15.04.2015
23	BREEAM Report application	Both	31.03.2015
24	AGV - performance tests and trials	Adult's Hospital	28.02.2015
25	Structal - replacement of panels, complete install and review BMU protection	Adult's Hospital	31.03.2015
26	Sanctuary - sun pipes	Children's Hospital	28.02.2015
27	Sanctuary - stained glass install	Children's Hospital	28.02.2015
28	Schiehallion radio nuclide room doors	Children's Hospital	13.03.2015
29	DCFP anti-ligature works	Children's Hospital	27.03.2015
30	Telecoms 600 pair lines install plus additional 600 lines req. by Board	Both	28.02.2015
31	External LED lighting	Adult Hospital	31.03.2015
32	Patient entertainment - screens	Children's Hospital	30.04.2015
33	External facade - BM drawings	Both	31.03.2015
34	LTHW - PMI works	Laboratory	28.02.2015
35	Isolation Rooms - HEPA filters		
36	Internal signage, wayfinding, door signage	Both	23.02.2015

No	Description of Defect	Location	Defects Completion Date
37	Neo-natal link bridge - internals and ext. Cladding panels	Children's Hospital	31.03.2015
38	Neo-natal link bridge - knock out panel replacement	Children's Hospital	31.07.2015
39	Lifts - works to beneficial lifts	Both	31.03.2015
40	Pneumatic tube gantry - removal	Laboratory	10.04.2015
41	Core G L13 - complete helipad ramp, install bird sounder and clean area	Adult Hospital	28.02.2015
42	Theatres - complete Starkstrom install incl. DVI/SDI sockets and accessories on arms	Both	21.02.2015
43	Hardgate Road - white lining		15.04.2015
44	Energy model - evidence of compliance with energy target	Both	28.02.2017
45	NEC Supervisors Communication No.236		06.02.2015
46	NEC Supervisors Communication No.237		06.02.2015
47	NEC Supervisors Communication No.238		06.02.2015
48	NEC Supervisors Defect No.081		13.02.2015
49	NEC Supervisors Defect No.088		13.02.2015
50	Completion of sweep up programme and inspections with Supervisor	Both	17.04.2015.
51	Medical Gas System - testing & witnessing of med gas system by CSO.	Both	28.02.2015
52	Completion of Children's Park SUDS	Children's Hospital	30.06.2015
53	Completion of Children's Park	Children's Hospital	30.08.2015
54	Completion of Car Park 1		10.04.2015

CAPITA

NEW SOUTH GLASGOW HOSPITAL

ADULT AND CHILDREN'S HOSPITAL AND ENERGY CENTRE

NEC 3 SUPERVISORS REPORT NO. 46

FEBRUARY 2015

CONTENTS

NEW SOUTH GLASGOW HOSPITAL ADULT AND CHILDREN'S HOSPITAL AND ENERGY CENTRE

PAGE	CONTENTS	
1.0	EXECUTIVE SUMMARY: THE NEW ADULT AND CHILDREN'S HOSPITAL	3
2.0	DESIGN COMPLIANCE CHECK	5
3.0	PROCEDURES REVIEW	5
4.0	CONSTRUCTION REVIEW	14
5.0	INFORMATION REQUIRED	25
6.0	SUPERVISOR'S TESTS AND INSPECTIONS	27
7.0	DEFECT NOTIFICATIONS ISSUED	28

1.0 EXECUTIVE SUMMARY: ADULT & CHILDREN'S HOSPITAL

In accordance with our NEC3 Contract, this is the monthly report for February on the activities carried out and responsibilities undertaken by the NEC3 Supervisors. We undertook post completion inspections and inspections of the incomplete work at Stage 3 completion.

We received Brookfield's Ultimate Final Sweep Programme replacing the previous Final Sweep programme with the first joint inspections planned to commence on the 9th March 2015.

We carried out post completion inspections to Cores Electrical Cupboards Plantrooms and Node Rooms not previously offered up for inspection.

Post completion inspections were carried out in the following areas and the defects recorded on the IDMS.

Stair Cores A, B, E, F, G, H, K, and L.
Level 11 Node Rooms, Risers and Electrical Cupboards.
Energy Centre B Side.
Main Streets in the Adult and Children's Hospital.
Mechanical and Electrical inspections in the Node Rooms.
Mechanical and Electrical inspections in Sub-stations.

We continue to monitor Brookfield's list of defects at completion recorded on their IDMS and review their tracker weekly.

Zutec entries continue to be under review.

At the car park some minor snagging remains outstanding and this together with items determined at a final inspection will be addressed towards the end of the project. This snagging will include some ponding issues on the top floor, and trip hazards at stairwell entrances.

Road surfacing work has been ongoing during the period on the dual carriageway leading to Govan Road. Quality to date appears satisfactory. Local ponding on the north side of Govan Road remains outstanding. The two footpath issues which arose previously remain outstanding ie ponding at the extended footpath area on the east side of the maternity unit and potential specification non-compliance on sections of the footpath to the dual carriageway just north of the energy centre.

Pavement blockwork on west, east and south sides together with granite blockwork to the north is almost complete with good quality in all areas.

During February, in the A&C Hospitals, we witnessed the following:

- Smoke dampers on Level 0 Zones 519, 520, 521, 523, 524, 525, 528 & 529.

We are continuing to liaise with Brookfield and the NHS Project Team highlighting any items that have raised concern during our post completion inspections. We have raised the following concerns with the Contractor as follows:-

Supervisor's Communication General Matters / Other Instructions No's, No 241, 242, 243 and 244 were issued during February 2015.

- Seeking confirmation for the finish below the glazed frame to prevent water penetrating adjacent to the door into corridor CC4-054.
- Seeking confirmation that drainage pipes from AHU's will extended to the drainage outlet and step overs will be fitted.
- Seeking confirmation if there should be a door in Core D plantroom adjacent to the FM lift.

Supervisor's Notification of Defect No's, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101 and 102 were issued during February 2015.

- Seeking confirmation that the insufficient power points in rooms END-033 and END-035 will be addressed.
- Seeking confirmation when the air sampling unit within General Theatre One and Theatre 4 are paint free and the unit in the Atrium has been fitted properly.
- Seeking confirmation when the lock will be fitted in the NSGH Theatres Admission on Day of Surgery – Level 2.
- Seeking confirmation if the stained fabric in the main reception area is to be replaced or the stain removed.
- Seeking confirmation when the fire exit door adjacent to the Disposal Hold OBW-082 which is not operational will be complete and functional.
- Seeking confirmation that the lack of fire wall above the door opening will be completed and the cupboard is totally enclosed.
- Seeking confirmation that the incomplete fire stopping in the Electrical Riser CCW-126 and lack of intumescent paint to the steelworks will be addressed.
- Seeking confirmation when the fire door which is sticking will be fully operational.
- Seeking confirmation to the solution in relation to water trapped within the ETFE roof.
- Seeking confirmation when the fire stopping around the fire door on Level 12, Plantroom 121 Door M25-A will be complete.
- Seeking confirmation when the fire stopping will be complete to the fire proofed enclosure at Core C Above Level 12.

2.0 DESIGN COMPLIANCE CHECK

Currently nothing to report.

3.0 PROCEDURES REVIEW

3.1 Contractor's QA Procedures / Compliance Inspections

Brookfield and their subcontractors have continued with their QA and checking and inspection procedures during this period. We are in discussion and liaise with Brookfield's Quality Manager on QA matters and we undertake regular reviews of their QA documentation.

We asked Brookfield to confirm that all vertical blind wands will be fitted throughout the Adult and Children's Hospitals and that all blinds will be fully functional prior to handover. They have confirmed that all wands have been fitted to windows and all blinds will be fully functioning prior to project handover. Consequently Supervisor's Communication General Matters / Other Instructions (Cl 13.1) No 223 is closed out.

Inspections following Brookfield's Ultimate Final Sweep Programme.

We have received Brookfield's Ultimate Final Sweep Programme replacing the previous Final Sweep programme with the first inspections planned to commence on the 9th March 2015.

Zutec Review

We are continuing to review the testing information on Zutec on a regular basis as it is entered.

Acoustic Tests

There remains one partition between rooms' THE-326 and THE-327 which requires a crosstalk attenuator to be fitted.

General Inspections

We noted that the drawing allows for a light above each lift door on Level 2 Core C Bed Patient Lift Lobby. Only two have been fitted on one side and not above the lift doors. We asked Brookfield to confirm if this change has been agreed. They have confirmed that the lights are fitted as per the Nightingale's drawings Consequently Supervisor's Communication General Matters / Other Instructions (CI 13.1) No 238 is closed out.

During inspections of Risers, Electrical Cupboards and IT Hub Rooms on the Level 11 we noted incomplete work. We raised a Communication with Brookfield listing the incomplete works and asked them to confirm when these are completed prior to the 26th January. See Supervisor's Communication General Matters / Other Instructions (CI 13.1) No 239.

During an inspection of the Children's Roof adjacent to Plantroom 41A we noted that there were no bulkhead lights fitted above the doors. There were also no lights fitted

in the room on the roof providing access and egress via the cat ladder in Core L. These were not taken in the approved drawings, however Brookfield intend to fit lighting in these areas.

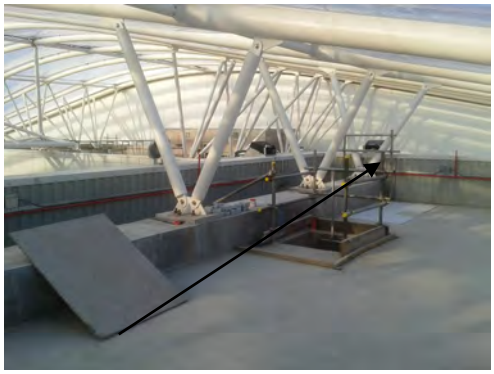
Post Completion Inspections.

We continue to undertake inspections with Brookfield of Cores Electrical Cupboards Plantrooms and Noderooms.

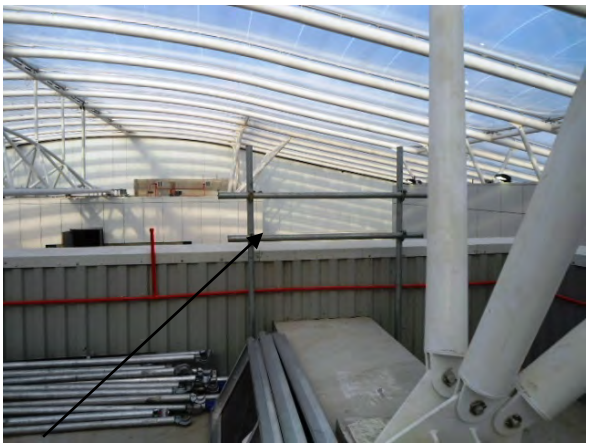
We have asked Brookfield to confirm the finish below the glazed frame to prevent water penetrating adjacent to the door into corridor CC4-054. See Supervisor's Communication General Matters / Other Instructions (CI 13.1) No 240.

The drainage pipes from AHU's do not extended to the drainage outlet. We have asked Brookfield to confirm when the pipes have been extended towards the drain. If left as, is there is a risk that the falls in the floor will direct the water away from the drain. We asked Brookfield to confirm that step over's will be provided. They have confirmed that repair and stepover's will be provided. See Supervisor's Communication General Matters / Other Instructions (CI 13.1) No 241.

There is temporary scaffolding providing perimeter protection at concrete floor beams above the cores accessed from Level 12. We have asked Brookfield to confirm if permanent perimeter protection is to be fitted. See Supervisor's Communication General Matters / Other Instructions (CI 13.1) No 242.



Temporary scaffolding providing perimeter protection.



Temporary scaffolding providing perimeter

protection.

The opening at Core D plantroom adjacent to the FM lift does not have a door and the adjacent fire door shown on drawing NA-XX-12-252-150 has been moved closer to the double doors at the FM lift. We have asked Brookfield if the plantroom shown on the drawing below should have a fire door? There are smoke detectors in this room. See Supervisor's Communication General Matters / Other Instructions (Cl 13.1) No 243.

There is ponding of water at various area locations between the Adult and children's Hospitals. We have asked Brookfield to demonstrate that the levels of paving are within the permissible deviation of ± 6mm in accordance with the specification. General Matters / Other Instructions (Cl 13.1) No 244.

There is a roof leak in the children Atrium and Brookfield are in the process of addressing this problem.

<u>During February we inspected areas not previously offered up for inspection.</u>

There was some incomplete work in Core A & B on Level 12 and snagging works from Level 11 to Level 0. There was also some incomplete work from ground to Basement including the stair Lobbies.

Level 12 Core A incomplete work.

Hatch required to Cat ladder in room CA12-015.

Some snagging work, painterwork and hatches required.

Site alarm system requires to be removed from some floors and skirting fitted.

Cores A & B Level 1 to Level 0 incomplete work and snagging.

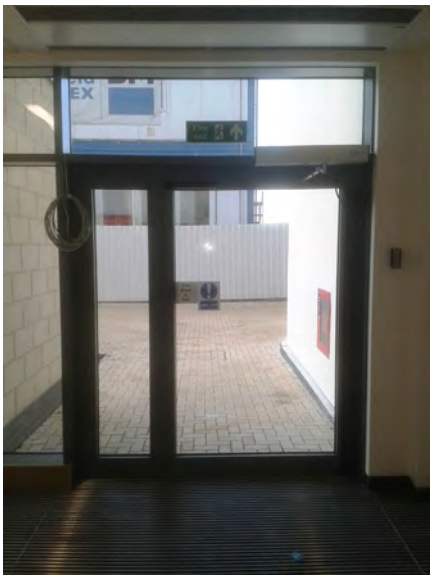
Our inspection of stair Core G was similar to Core A & B with some incomplete work and general touch up of paintwork and cleaning still to be done. Filling and removal of surplus mortar prior to the application of a dust proof coating. A few lights were not working and one was not fitted. There was a couple of levels where ceiling tiles require to be fitted.

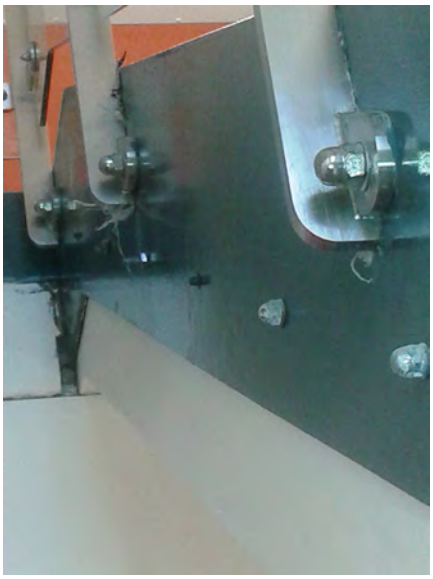
Edge of slab too high.

Incomplete ceilings

Damaged tread. There were other treads requiring repairs to lifting eyes.

There was some incomplete work and snagging works in Core L & K on al levels.


Push button not installed.


Nuts still to be cropped and fitted to steel stringer.

Redundant sockets.

Holes to be filled in metal stringer.

Inspections were carried out to Electrical cupboards, risers and Node Rooms on Level 11. There were a number of general issues common to all rooms such as rooms needing cleaned, incomplete painting and touching required to walls and door frames. Below are a number of issues which were identified during our inspection and recorded as a defect on the IDMS.

Plasterboard damaged in room GEN21-086

Gap in the fire bat in room GEN21-054

The concrete top of the lift enclosure in Core D is visible.

Pigeon droppings on cladding of Core B

exposed concrete visible from Level 11 corridor.

We carried out an inspection of the Energy Centre and there was only a few minor defects which were recorded on the IDMS for action.

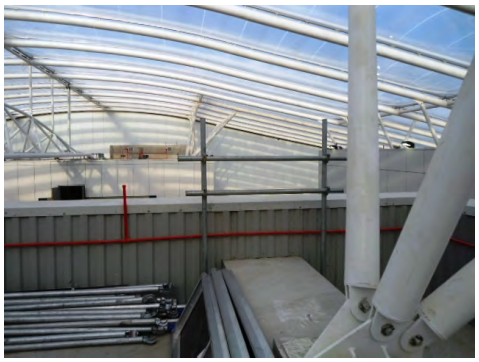
The Main Streets on a levels 0 to 3 were inspected and defects were recorded and placed on the IDMS.

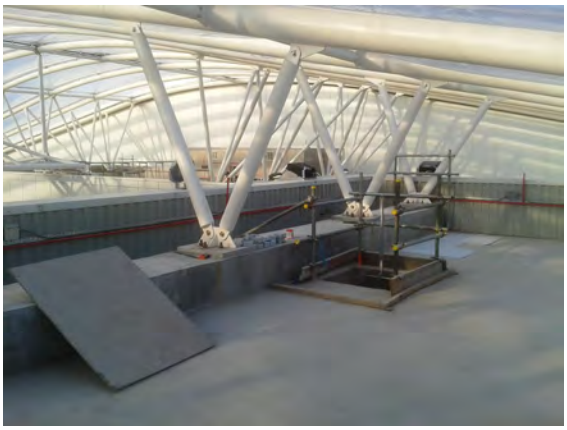
Below

Remote LED to be completed

Damaged corner bead

There is temporary scaffolding providing perimeter protection at concrete floor beams above the cores accessed from Level 12. We have asked Brookfield to confirm if permanent perimeter protection is to be fitted. See Supervisor's Communication General Matters / Other Instructions (CI 13.1) No 242.





Project Manager's Schedule of Incomplete Works at Completion

Brookfield has a tracker in place which will be reviewed weekly. We have noted the issues which are not on programme to completion.

- No 5 Separation Tank: Awaiting delivery of tank.
- No 8 Cores A&B & Main Entrance - meet and greet panels glass cabinets: Waiting on approval from NHS
- No 9 Lead lined Units and Associated Works-Awaiting NHS decision on lock suiting.
- No 11 Additional Divider screens and Fabric Boards-Awiting delivery.
- No 16 Decontamination Room: Work dependant on tank.

-
- No 18 New VIE Turning Circle: Brookfield has reported that this is one week behind due to board approval.
- No 27 Sanctuary-stained glass installed: Brookfield reported that they are awaiting drawings.
- No 28 Schiehallion door: Ahead by two weeks.
- No 36

Defects at completion

Brookfield has a tracker in place which is reviewed weekly. We carried out a percentage audit of their agreed closed out defects for TDSL and Mercury. Six defects were inspected and all but one was satisfactory. On closer inspection Brookfield has reopened the defect for the damaged door to ENT-025. We also carried out an audit of defects claimed by Mercury and Brookfield as being closed out. Of the 72 inspected 11 were unsatisfactory. This information was conveyed to Brookfield.

Incident Report Summary Schedule

This will be monitored with Brookfield weekly. Currently there has been 26 incidents reported 23 of which have been defects. 12 have been closed out and 11 are currently ongoing.

3.2 Witness Testing and Commissioning

We witnessed a number of tests during February 2015 which were satisfactory and these were as follows:

- Smoke dampers on level 0 zones 519, 520, 521, 523, 524, 525, 528 & 529.

We witnessed tests during February 2015 which were unsatisfactory:

No test carried out.

Previously witnessed tests which failed and have been re-tested successfully:

None

Previously witnessed tests which require to be retaken:

- (378) Fire shut down tests of AHU's in PR21 AHU 19, 21 & 29. During fire activation simulation. (PR21 AHU 19 did not shut down.)
- (381) Operation of Aseptic suite and kitchen server roller shutter doors during fire condition: 1. Aseptic roller shutter, part required. 2 Servery roller shutter, external warning panel not working and key switch operation reversed.

3.3 Board Equipment Installation,

Currently nothing to report.

3.4 Non Conformance Reports

We reviewed Brookfield's NCR Tracker and noted the issues raised by the Package Managers. Brookfield confirmed that the tinting to the blockwork is complete to the pointing on the south and east elevations.

4.0 CONSTRUCTION REVIEW

4.1 Visits to the Works

The following members of our team undertook site inspections, reviewed documentation, attended meetings and met with relevant Contractors representatives on-site personnel:- John Redmond (Lead NEC3 Supervisor) 2nd to 6th, 9th to 13th, and 16th to 20th and 23rd to 27th. Douglas Wilson (M&E NEC3 Supervisor) 2nd to 6th, 9th to 13th, and 16th to 20th and 23rd to 27th. Willie Roxburgh (Civils/Structural NEC3 Supervisor) part days on the 3rd, 17th and 26th February. Capita's NEC3 Supervisor's team visited site a combined 43 person days.

4.2 Elements of the Works available for inspection

Main building – structural areas very limited.
Neuro bridge (partly limited due to access).
Dual carriageway to Renfrew Road, turning area in front of the main entrance and carriageway from Hardgate Road.
All sides external works.
Perimeter hard and soft landscaping

4.3 Current Observations

The visual inspections of the work carried out to date indicate that the works are generally being carried out to a satisfactory standard. We continue to be assisted by the site teams and the NHS Project Team in resolving various construction, mechanical, electrical, and quality issues. We continue to close out our Supervisor's Notification and Defects when we have received satisfactory responses.

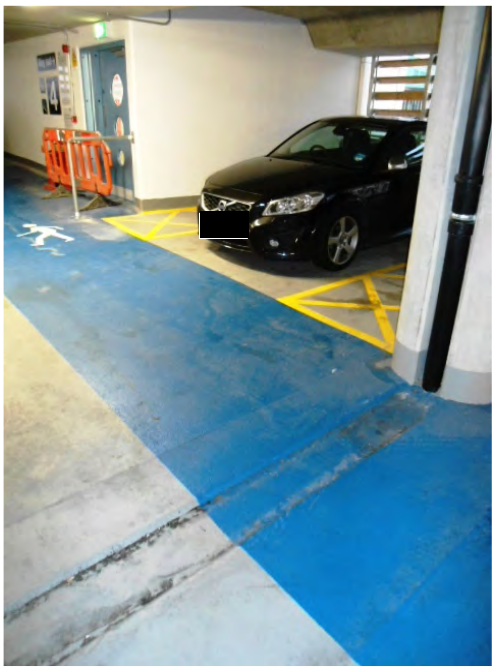
4.3.1 Structural and Civil Works

Car Park 1.

The car park is now in use as the main project site car park. Some minor snagging remains outstanding and this together with items determined at a final inspection will be addressed towards the end of the project. This snagging will include some ponding issues on the top floor, and trip hazards at stairwell entrances.

The car park floors on levels 1, 2, 3, 4, and 5 adjacent to the stair on the east elevation have recessed channels which cross the pedestrian walkway similar to the potential trip hazards identified in Communication No 209. Brookfield has confirmed that IFT is to infill the channels with coloured screed on the walkways. They have intimated that these locations do not interfere with the water flow as they are the opposite end to the outlet gulley. (See Supervisor's Communication General Matters / Other Instructions (CI 13.1) No 224).

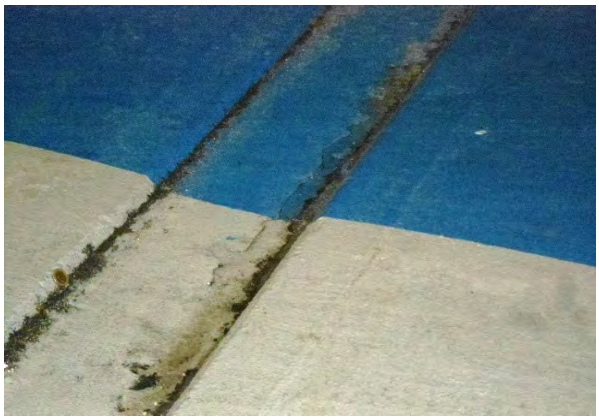
Level 5

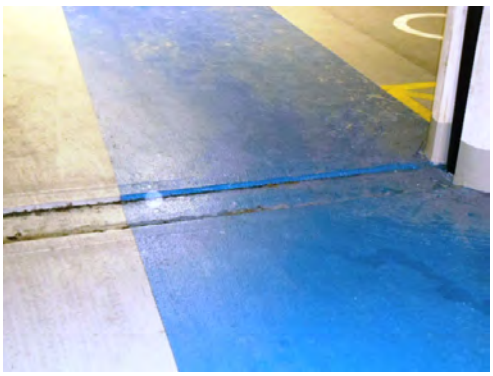


Level 4

Level 3

Level 3: Channel exceeds 30mm deep.





4.3.2 Children's Area

Clearing up in plant rooms has revealed some steel column base plate issues in the Children's area 4th floor – Brookfield are aware of this and are pursuing the matter.

We have asked Brookfield to confirm that the existing base detail as shown on the attached photographs in the Children's 4th floor plant room area is capable of safely resisting the loads which may be applied to it and that it conforms to the design intent. Brookfield confirmed that the steelwork installed by JD Pierce is adequate and capable of safely resisting the loads that have been applied to it and JD Pierce have issued a letter of conformity for all works. consequently. Supervisor's Communication General Matters / Other Instructions (CI 13.1) No 235 is closed out.

4.3.3 External Works

Building Surround

Pavement blockwork on west, east and south sides together with granite blockwork to the north is almost complete with good quality in all areas.

Govan Road/Renfrew Road & ACH Entrance Road

Road surfacing work has been ongoing during the period on the dual carriageway leading to Govan Road, and that leading to Hardgate Road as well as in areas north and south of the ACH. Quality to date appears satisfactory. Local ponding on the north side of Govan Road remains outstanding. The two footpath issues which arose during the last period remain outstanding ie ponding at the extended footpath area on the east side of the maternity unit. Secondly potential specification non-compliance on sections of the footpath to the dual carriageway just north of the energy centre, as noted below.

Footpath to the east side of the maternity unit.

We advised the Brookfield team on 16th December that ponding on the new extended footpath to the east side of the maternity unit has the potential to be a significant slip hazard in cold weather.

We have asked them to confirm their action to address this hazard. (See Supervisor's Communication General Matters / Other Instructions (CI 13.1) No 237).

Ponding at the extended footpath area on the east side of the maternity unit, and potential specification non-compliance on sections of the footpath to the dual carriageway just north of the energy centre.

We asked Brookfield to confirm that the footpath make up to the dual carriageway just north of the energy centre complies with the specification (See photos below) Brookfield has confirmed that Land Engineering are to remove section of non complying asphalt and replace with specified material and layers. Land Engineering are to provide photo commentary showing removal and replacement in correct layers alongside delivery tickets evidencing material installed. Consequently Supervisor's Communication General Matters / Other Instructions (CI 13.1) No 236 is closed out.

4.3.5 Mechanical Services

Nothing to report.

4.3.06 Electrical Services

We noted that the drawing for Level 2 Core C bed Patient Lift Lobby allows for a light above each lift door. Only two have been fitted on one side and not above the lift doors. We have asked Brookfield to confirm if this change has been agreed. If this is not an agreed change we have asked them to confirm when the lights will be fitted in the correct positions.

4.3.10 Doors

Adjustment to floors beneath doors is continuing.

4.3.11 Windows

Nothing to report.

4.3.13 Ducting

Nothing to report.

4.3.14 Floors

Nothing to report.

4.3.15 Blockwork

Nothing to report.

4.3.16 Heating

There are gaps in the thermal insulation in the back box of the remote TRV's mounted on external walls controlling the radiant panel heater in Level 0, ZA ward OBW 009. There is the likelihood that this will cause the TRV to be affected by the lower temperature in the partition void causing the Radiant panel to emit heat unnecessarily wasting energy. This applies to other similar TRV's on outside walls. We have asked Brookfield to confirm if this has been considered and if remedial action will be taken to address this. Brookfield has asked Mercury to report on this issue. (See Supervisor's Communication General Matters / Other Instructions (Cl 13.1) No 199).

4.4 Current Defects.

Although some work has been carried out to improve the quality the pointing on the external blockwork on the south and east elevations. Some of the blockwork does not reflect the quality of the pointing on the blockwork benchmark sample. Brookfield has informed us that all mortar tinting is now complete. Brookfield Manager F Shaw is to review the pointing with NHS (P Moir). See Supervisor's Notification of Defect (Cl 42.2) No 81.

Some of the outlets taking the rainwater from the top level of the Car park are too high consequently water is ponding in the recessed channels.

We asked Brookfield to confirm what remedial work will be undertaken to resolve this issue and confirm when the work is complete. They have intimated that the recessed channels will be revised to give a fall to the outlets. See Supervisor's Notification of Defect (Cl 42.2) No 83.

The cladding to the column on the South Elevation of the Adult Hospital is damaged. Brookfield has confirmed that this has been repaired. Consequently Supervisor's Notification of Defect (Cl 42.2) No 87 is closed out.

The capping piece on the north facing elevation of the Children's Hospital has two discoloured areas. We asked Brookfield to confirm their remedial action to address this and confirm when complete. They have confirmed that if the marks can't be cleaned off, Prater will paint repair or replace panels if required. See outstanding works list. See Supervisor's Notification of Defect (Cl 42.2) No 88.

The text on the drawing for Level 2, Rooms END-033 and END-035 indicates a DATA1000 at each desk, which should be 2 x OUT010 & 1 x OUT131. The drawing however indicates 1 x OUT010 and 2 x OUT131. This is wrong, consequently there are too many data points and not enough power. This requires to be rectified as soon as possible. Please confirm when this is complete. See Supervisor's Notification of Defect (Cl 42.2) No 92.

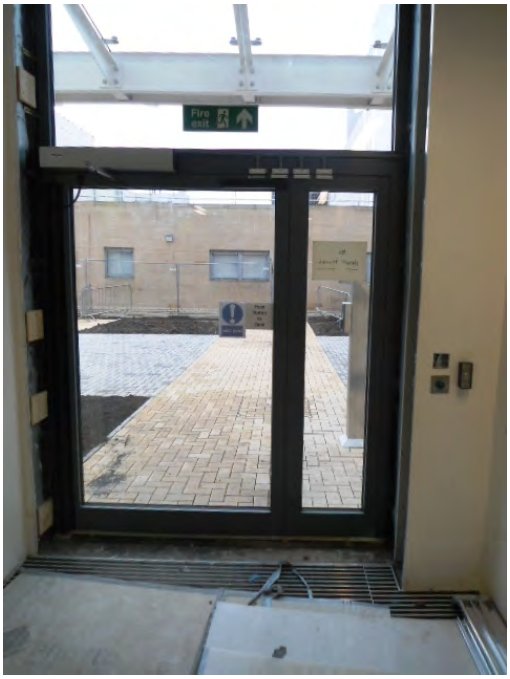
The NHS Fire Risk Assessor has been on site and noted that the air sampling unit within General Theatre One on the second floor has been painted over. We also noted that another unit in Theatre 4 has been partially painted over. These should be paint free. There is also an air sampling unit in the main Atrium north facing wall which We have asked Brookfield to confirm when these are addressed. See Supervisor's Notification of Defect (Cl 42.2) No 93.

We noted that the entrance door from the atrium into the AoDoS waiting area had no lock fitted and therefore could not be secured out of hours. On checking the as built drawing (NA-XX-02-PL-322-508) we note that it should be fitted with a deadlock (Key). We provided Brookfield with a drawing and asked them to given this high priority. They have confirmed that this has now been addressed, consequently Supervisor's Notification of Defect (Cl 42.2) No 94 is closed out.

There is a water stain on the fabric ceiling. We asked Brookfield to confirm when they have located the source of the water ingress and when they have carried out the appropriate remedial action. We have also asked them to confirm if the fabric is to be replaced or the stain removed. Brookfield that this has was immediately issued to Mercury, who are currently investigating and a response is awaited See Supervisor's Notification of Defect (Cl 42.2) No 95

The fire exit door on the West Elevation of the Children's Hospital adjacent to the Disposal Hold OBW-082 is not operational and the works are incomplete.

We asked Brookfield to confirm when the works to the fire exit door are complete and the door is functional as a fire exit. They have confirmed that this has been issued to both Mercury for electrical and BMCE managers to complete the door jambs etc. We had been previously made aware that the keys had been issued to NHS who left it on 'locked' position for security.
See Supervisor's Notification of Defect (Cl 42.2) No 96.

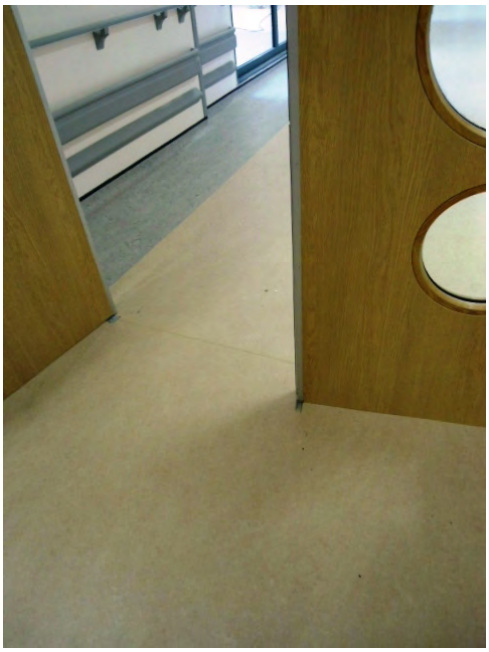


The partitions forming the Electrical Cupboard EMC-082 are incomplete. The partition above the door opening does not continue up to the underside of the concrete soffit and one partition is not formed against a concrete column. We asked Brookfield to confirm when this work is to be completed and the cupboard is totally enclosed. They confirmed that the cupboard was fully enclosed on the 20th February 2015. As the wall could not be formed due services above, a fire rated soffit has been formed. The installation of an additional smoke detector has commenced which is planned to be commissioned by Friday 27th February. Supervisor's Notification of Defect (Cl 42.2) No 97 is closed out.

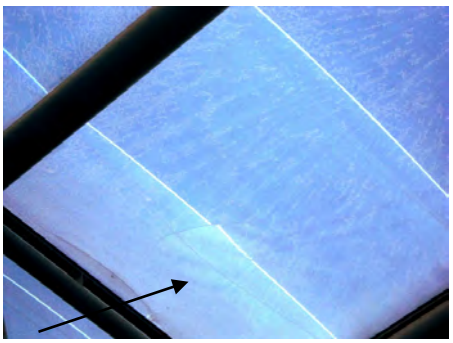
The fire rated partitions between the corridor and the Electrical Riser CCW-126 has incomplete fire stopping. The steelwork does not have intumescent paint. We asked Brookfield to confirm when this work has been completed. They have intimated that this has been passed to the relevant BMCE manager who is reviewing the actions to rectify the situation. They will provide a further response. See Supervisor's Notification of Defect (Cl 42.2) No 98.

The joints at window cills are opening up. Please confirm your remedial action to resolve this problem. See Supervisor's Notification of Defect (Cl 42.2) No 99.

The fire door is sticking on the floor preventing the door to open and close in the cooridor between CC1-032 and CC1-054.. Confirm when this door is fully operational. See Supervisor's Notification of Defect (Cl 42.2) No 100.



There is water trapped within the ETFE roof. Please confirm the cause and solution to this problem and confirm when resolved. See Supervisor's Notification of Defect (Cl 42.2) No 101.

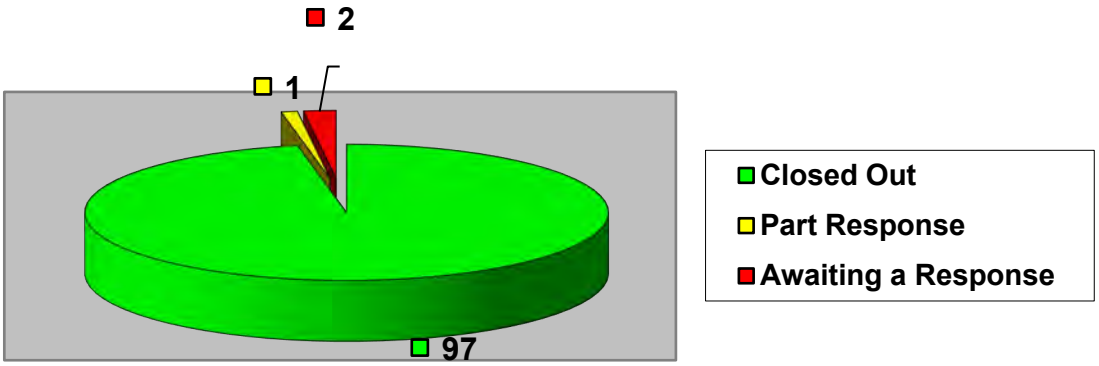


Water ponding on inner skin.

There is no fire stopping around the fire door on Level 12, Plantroom 121, Door M25-A. We have asked Brookfield to Confirm when the fire stopping has been completed. See Supervisor's Notification of Defect (Cl 42.2) No 102.

The fire stopping is incomplete to the Fire Enclosure in Core C above Level 12.
We have asked Brookfield to confirm when this is complete. See Supervisor's Notification of Defect (Cl 42.2) No 103.

5.0 INFORMATION REQUIRED



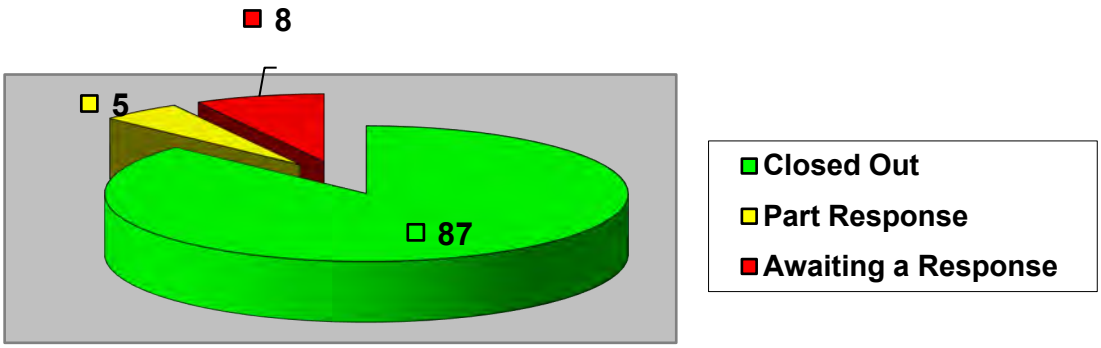
Item No.	Description	Date Requested	Comment	
Items 1 to 198 have been closed out				
199	There are gaps in the thermal insulation in back box of remote TVR's. Confirm remedial action.	20.03.14	Response received.	
Items 200 to 222 have been closed out				
223	Confirm that all vertical blind wands will be fitted throughout and will be fully functional prior to handover.	13.11.14	Closed out.	
224	Seeking confirmation that trip hazards similar to Communication No 209 will be considered for the installation of grills.	13.11.14	Response received.	
Items 225 to 234 have been closed out				
235	Confirm that the existing base details are capable of safely resisting the loads which may be applied to it and that it conforms to the design intent. Children's 4th floor.	06.01.15	Closed out.	
236	Confirm that the footpath make up to the dual carriageway just north of the energy centre complies with the specification	07.01.15	Closed out.	
237	Seeking confirmation on Brookfield's action to address the ponding to the footpath to the east side of the maternity unit.	08.01.15	Open.	
238	Three lights taken on the drawing only two fitted. Seeking confirmation that his is an agreed change.	09.01.15	Closed out.	
Items 239 have been closed out				
240	Seeking confirmation for the finish below the glazed frame to prevent water penetrating adjacent to the door into corridor CC4-054.	30.01.15	Open.	
241	Seeking confirmation that drainage pipes from AHU's will extended to the drainage outlet and step over's will be fitted.	02.02.15	Response received.	
242	Seeking confirmation if permanent perimeter protection will be fitted above cores accessed from Level 12.	25.02.15	Open.	
243	Seeking confirmation if there should be a door in Core D plantroom adjacent to the FM lift.	26.02.15	Open.	
244	Requesting Brookfield to demonstrate that the levels of paving are within the permissible deviation of ± 6mm in accordance	27.02.15	Open.	

6.0 SUPERVISORS TESTS AND INSPECTIONS

Tests not required	N/A
Tests required but not tested	Fail
Tests required which has passed tests	Pass

Tests				
Ref	Title	To be Notified by	Status	Test Date
01-342	Various tests undertaken and passed from the 09. 07.2012 To the 22.01 2015.			
343	Security - Several doors failed due to broken glasses at emergency egress points, damaged or disconnected wiring at magnets and magnets not aligned. Re-witnessed as part of test (369)	Brookfield	PASS	16.12.2014 17.01.2015
344-377	Various tests undertaken and passed from the 16. 12.2014 To the 25.01 2015.			
378	Fire shut down test of AHU's during fire activity. PR21 AHU 19 did not shut down.	Brookfield	FAIL	23.01.2015
379-380	Various tests undertaken and passed from the 23. 01.2015 To the 25.01 2015.			
381	Operation of ~~Aseptic suite~~ and kitchen server roller shutter doors during fire condition.	Brookfield	PASS FAIL	26.02.2015 25.01.2015

7.0 DEFECTS NOTIFICATIONS ISSUED



	Description	Date Requested	Comment	
Items 1 to 80 have been closed out.				
81	External Blockwork on the south and east elevations does not reflect the quality of the pointing on the blockwork benchmark sample.	31.10.14	Response received.	
82	Confirm when plasterboard with mould growth has been replaced.	12.11.14	Closed out.	
83	Seeking confirmation of remedial action to resolve ponding.	13.11.14	Response received.	
Items 84 to 87 have been closed out.				
88	Seeking confirmation of remedial measures to address the discolouration of the capping pieces.	20.11.14	Response received.	
Items 89 to 91 have been closed out.				
92	There are insufficient power points in rooms END-033 and END-035. Seeking confirmation when addressed.	30.01.15	Open	
93	Confirm when the air sampling unit within General Theatre One and Theatre 4 are paint free and the unit in the Atrium has been fitted properly.	05.02.15	Open	
94	No lock fitted NSGH Theatres Admission on Day of Surgery – Level 2	06.02.15	Closed out.	
95	Entrance door from the atrium into the AoDoS waiting area has no lock fitted.	19.02.15	Response received.	
96	Confirm action to repair roof leak and remove stain from the fabric ceiling.	19.02.15	Response received.	
97	Partition in Electrical Cupboard EMC-082 is incomplete.	19.02.15	Closed out.	
98	Confirm when fire stopping missing in room CCW-126 is complete.	24.02.15	Open	
99	Confirm to open window cill joints.	24.02.15	Open	
100	Confirm when fire doors between CC1-032 and CC1-054 will be fully functional.	25.02.15	Open	
101	Please confirm cause and solution to trapped awter in ETFE roof and confirm when resolved.	25.02.15	Open	
102	Confirm when fire stopping is complete to door M25-A	25.02.15	Open	
103	Confirm when fire stopping is complete to fire enclosure above Core C.	25.02.15	Open	

John Redmond, Technical Advisory Services

Property and infrastructure
Capita, The Beacon, 8th Floor, 176 St Vincent Street, Glasgow G2 5SG

	Signed	Date
Originated by	John Redmond	27th February 2015
Completed by	Douglas Wilson	27th February 2015

Brookfield MULTIPLEX BM

Client Training & Familiarisation Register

System Description	Chilled Water
Nature of Training	Detailed training – Systems & Equipment
Date	3rd February 2015

I hereby confirm that I have received training on the aforementioned systems

NAME:	SIGNATURE:	Site	
D. Smeaton	[redacted]	NHS X	HAD TO Leave.
M [illegible]		NHS	
B LAVERY		NHS	
S THOMSEN.		NHS.	
R. Freel		NHS	

Topics: Training on CHW system & equipment as per Agenda
Handout: CHW Training Presentation

Brookfield MULTIPLEX BM

Client Training Agenda

Project:	NSGH – Adults & Children's Hospital – FM / Estates Training	**Date**	03-02-15
System:	Chilled Water Systems		

Classroom Session Topics

1. System Description & Orientation
    a. System Layout
    b. CHW Pipework distribution
    c. Heat Stations & Areas Served

2. Key Components
    a. Air Cooled Chillers
    b. Absorption Chiller
    c. Plate Heat Exchangers
    d. Circulating Pumps
    e. Pressurisation units and expansion vessels
    f. Degassers
    g. Flowcon Automatic balancing wafers
    h. Flowcon Assemblies
    i. Terminal Units
        i. Fan coil units
        ii. Chilled Beams
    j. Reverse Acting By-Pass Valves
    k. Strainers & AAV

On Site Session

1. Orientation – Energy Centre & Plant rooms
2. Equipment Maintenance
    a. Air cooled Chillers – (Carrier)
    b. Absorption Chillers – (Carrier)

From: Colin Grindlay [redacted] on behalf of Colin Grindlay
Sent: 04 February 2015 08:42
To: Harris, Mark
Cc: David Wilson; Darren Pike
Subject: FW: NSGH - Sump Pumps

Morning Mark,

If you get a chance some point today, could you please cast your eyes over the correspondence below.

SP1 is now operational and there are some concerns the back pressure created by the pumps when they cut out (quite a loud bang) could potential result in a blown joint or if there is a blockage; it backing up in level 00 toliets.

Could you please review the WW design information and comments below to see if anything is out the ordinary that we have missed.

Mercury are proposing back flow prevention on the line

Colin Grindlay
M&E Manager - Construction

Brookfield Multiplex Europe
New South Glasgow Hospitals Project
Hardgate Road
Glasgow, G51 4SX, United Kingdom
[redacted]
W www.brookfieldmultiplex.com

Please consider the environment before printing this email.

From: Ciaran J. Kellegher [redacted]
Sent: 03 February 2015 19:05
To: Colin Grindlay
Cc: Robert F. O'Donovan; Jim Kennedy; Andrew Moore; Darren Pike; David Wilson; [redacted]
Subject: RE: NSGH - Sump Pumps

Colin

See below……we are only raising our concerns and suggesting that back flow prevention would be a wise modification to the system. Design is not our responsibility.

Ciaran

Ciaran Kellegher
Mechanical Project Manager

Mercury Engineering
NSGH Project Office

Hardgate Road
Glasgow
G51 4SX

[redacted]

From: Colin Grindlay [redacted]
Sent: 03 February 2015 09:25
To: Ciaran J. Kellegher
Cc: Robert F. O'Donovan; Jim Kennedy; Andrew Moore; Darren Pike; David Wilson
Subject: RE: NSGH - Sump Pumps

Ciaran,

Please see attached design information attached for your attention.

I am in discussions with ZBP regarding the size of the pipe 100mm dia for 28 l/s flow. Which to me seems very high on closer inspection.

However, please note there are a few items Mercury will need to review and advise. These are, but limited to the following:

1. ZBP Sump Pump Specification – ZBP-XX-XX-SH-600-368
    a. New Haden Pump Spec'd – MER selected Ritmac New Haden Pumps specified was Jung Compli2500 – We have installed same direct from manufacturer instead of rebadged product
    b. ZBP pump duty calls for 10l/s – Ritmac is 28l/s Pump duty requested is 10l/sec @ 7m. With product specified duty point when in use is approximately 11-12l/sec at approximately 7.5m; this is standard pump hydraulics and characteristic of any pump system of this type
    c. ZBP pump calls for 10KPa Head (7m) – Ritmac is 9m As per above comment, 9m head is only possible with reduced flow from station or closed valve situation

2. ZBP Sump Pump Detail – ZBP-XX-XX-DT-581-100
    a. MER pipework arrangement not installed as per ZBP detailed design– Installed to suit discharge route required for fixing pipework to structure on vertical run
    b. Common header of discharge pumps not installed as per ZBP detailed design Common header installed to provide better hydraulic flow conditions for pump station
    based on location of vertical pipework run.
    c. Location of flex not installed as per ZBP detailed design– Flexible Bellows installed in suitable location to provide support to pipework within the sump.
    d. Excessive pipework lengths on vertical discharge (comes up wrong side of sump pit) Installed as advised to allow vertical pipework to be fixed to structure.
    e. High level co-ordination results in excessive number of bends and offset restricting flow and increasing pipework resistance. a small number of additional elbows will have minimal effect on friction loss

3. Sanitisation High Level Services – ZBP-FM-B1-PL-581-061 & 062
    a. High level co-ordination results in excessive number of bends and offset restricting flow and increasing pipework resistance. Again a small number of additional elbows will have minimal effect on friction loss in pumped systems.

4. Mercury Technical Submittal - MER-XX-SL-TS-270_3 (NO+T ATTACHED 18Mb)
    a. Ritmac Pump H max is 9m
    b. Ritmac Q Max 28 l/s

c. K

System installed is as per specified and under normal conditions operates at specified duty parameters. Pump will not run at end of curve 28l/sec or closed valve pressure of 9m head under normal operating conditions. Max 28l/sec only possible with no system head (open pipe at discharge of pump) and max head only possible if discharge valve closed (or system blocked downstream with nowhere else to relive pressure or flow)

5. Sump Pump Operation
   a. Both pumps should never both work in hand – this should be a safety interlock to mitigate excessive pressure in pipework

Pressure from both pumps operating simultaneously is not 2x single pump head and both pumps operating at the same time against a closed valve will only generate the closed valve pressure equivalent to a single pump (this varies depending on sump in question but range somewhere between 9m & 15m for pumps installed). Hand operation is a manual operation feature and up to operator to know how to work system correctly. It is very uncommon to have interlock on Hand function as it is designed to allow operator to choose which pump and how many pumps run when under manual control; no such interlock feature was specified within design

   b. Mounting Arrangement on page 6 of TS shows high level pipework arrangement for sump pump tie into existing pipework – not installed onsite as per detail.

Compli system (referred on page 6 of TS Revision 0 as New Haden Sewpac System). The arrangement shown is a typical GA arrangement that the manufacturer provides on their literature and is not an absolute arrangement they require; discharge can be arranged to suit individual site requirements. Pipework as noted above is installed in the sump to allow vertical pipework to be fixed to the structure and provide suitable hydraulic flow conditions.

   c. Pumps inlet and outlet opposite. TS shows inlet and outlet 90 degrees to each other As above the GA drawing is a General arrangement which can be altered to suit site conditions, outlets put in line with inlets to allow the vertical discharge pipes to be closer to wall of sump for better fixing and support of discharge pipework.
   d. Page 9 detail of TS shows typical valve and flexible connection detail. Not installed onsite.

Above TS document I have is Revision 0 and page 9 does not have valve/flexible details. All sumps installed with valves and flex connections as noted in ZBP-XX-XX-DT-581-100

   e. High level drainage should be suitable for higher pressure (plastic rather than cast) Cast Iron is what is specified and regardless drainage pipework should not be under pressure other than water column form above drainage pipework and connections.

If you would like to discuss further or review onsite, let me know and I'll make myself available.

Regards,

Colin Grindlay
M&E Manager - Construction

Brookfield Multiplex Europe
New South Glasgow Hospitals Project
Hardgate Road
Glasgow, G51 4SX, United Kingdom
[redacted]
W www.brookfieldmultiplex.com

Please consider the environment before printing this email.

From: Ciaran J. Kellegher [redacted]
Sent: 02 February 2015 18:27
To: Colin Grindlay
Cc: Robert F. O'Donovan; Jim Kennedy; Andrew Moore
Subject: RE: NSGH - Sump Pumps

Colin

Have you discussed this with ZBP??.....Can you confirm that you are happy that the installation can stay as designed or issue a revised design based on the comments below.

Thanks
Ciaran

Ciaran Kellegher
Mechanical Project Manager

Mercury Engineering
NSGH Project Office
Hardgate Road
Glasgow
G51 4SX

[redacted]

From: Colin Peacock [redacted]
Sent: 29 January 2015 11:20
To: Colin Grindlay [redacted]
Cc: Ciaran J. Kellegher; Stephen Monaghan; Robert F. O'Donovan; David Milby; Jim Kennedy
Subject: NSGH - Sump Pumps

Colin,

Further to recent issues with the sump pumps and with respect, I write to record our concerns with the design of the high level basement discharge pipe work from sump pump SP1. We suggest the design of this discharge pipe work is revisited and checked to ensure the system will work correctly when under load with the building fully occupied.

We feel that the discharge pipe work from this sump pump should be a dedicated outlet in order to eliminate any possibility of backflow to the ground floor. The design of the pipe work, in our opinion, when operating at full capacity has the potential for effluent to escape from drainage connections to appliances on the ground floor where these are connected to the same external drainage outlet at high level within the basement. If there was increased pressure for any reason, and backflow occurred, this would obviously have a disastrous outcome.

Should you wish to discuss this in more detail please call, if you require a further site inspection please let me know and I will make ourselves available.

Regards,

[redacted]

John Crawford & Co (Mechanical) Ltd
1 Zetland Road
Hillington Park
Glasgow
G52 4BW

[redacted]

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Brookfield MULTIPLEX | BM

Client Training & Familiarisation Register

System Description	Ventilation
Nature of Training	Detailed training – Systems & Equipment
Date	5th February 2015

I hereby confirm that I have received training on the aforementioned systems

NAME:	SIGNATURE:	Site
GORDON HARVEY	[redacted]	N.H.S.
BILL MORRISON		NHS

Topics: Training on Ventilation & equipment as per Agenda
Handout: Ventilation Training Presentation

Brookfield MULTIPLEX BM

Client Training Agenda

Project:	NSGH – Adults & Children's Hospital – FM / Estates Training	**Date**	05-02-15
System:	Ventilation Systems		

Classroom Session Topics

1. System Description & Orientation
    a. Plantrooms
    b. Systems

2. Key Components
    a. Material Used
    b. Types of AHUs and Extract Fans
    c. Humidifiers
    d. Heater batteries
    e. Dampers

On Site Session

1. AHU sections and access
2. Hard Wired Frost thermostats
3. Pressure Gauges (magnahelix)
4. Filter access and removals
5. Fan Drives
6. Extract Fans
7. Humidifiers
8. Isolation Room Safe Change Units
9. Theatre Systems
10. Miscellaneous systems

nSGH Phase 2 Close-out Programme from Handover to Start of Migration Period (i.e. to start of Phase 3 Close-out Period)

Progress Update - 06/02/2015

'Work to' Programme issued 30/01/2015 to NHS Project Team (ref. 'Work To' Programme)

ID#	Activity Description	Resource Initials	Activity Duration	Programme Start Date	Programme Finish Date	Actual Start Date	Recorded % Complete	Actual Finish Date
1	**CLOSE-OUT PERIOD: HANDOVER PROGRAMME IN DETAIL**	**DL**	**156 days?**	**Mon 26/01/15**	**Fri 28/08/15**	**Mon 26/01/15**	**4%**	**NA**
2	NHS Commissioning Period Primary & Supporting Activities	**DL/PM**	**156 days?**	**Mon 26/01/15**	**Fri 28/08/15**	**Mon 26/01/15**	**4%**	**NA**
3	Initial Post Handover Activities (i.e. typically to be focused on in first week)	**As Noted**	**10 days**	**Mon 26/01/15**	**Fri 06/02/15**	**Mon 26/01/15**	**97%**	**NA**
4	Handover of nSGH to NHS (***Start of NHS Commissioning Period***)	DL/PM	1 day	Mon 26/01/15	Mon 26/01/15	Mon 26/01/15	100%	Mon 26/01/15
5	NHS Project Team / PM / Estates / Security / General Mobilisation to nSGH (Nb. inclusive of HO decant, etc)	All	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
6	Set up LAN Help Desk + Computers & issue of IG Badges, Security Protocols, Delivery Controls, etc)	KC/AC	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
7	Set up entrance / delivery controlled entry points in line with delivery & deployment requirements & protocols	KC/AC/LMP	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
8	Roll out NHS Commissioning Team Handsets (ref. general interface with Telecomms)	KM/JS/SC/KC	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
9	Install Fire Extinguishers to Initial Occupation Areas (ref. email from LM 23/01/15 - 100 fire extinguishers in total)	LM/IP	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
10	Assessment & Appraisal of agreed Handover Criteria between NHS & Brookfield (e.g. Snagging/Outstanding/Additional Works)	All	9 days	Tue 27/01/15	Fri 06/02/15	Tue 27/01/15	80%	NA
11	Implement Hospital Occupation Flow as developed Pre-Handover (NB. 'point of reference' activity)	All	1 day	Mon 02/02/15	Mon 02/02/15	Mon 02/02/15	100%	Mon 02/02/15
12	Incorporate Standard Protection by BMG to agreed areas	KC/ACT	9 days	Tue 27/01/15	Fri 06/02/15	Tue 27/01/15	100%	Fri 06/02/15
13	Set-up the Administering of Inductions, Orientations, PTW's, etc.	KC/IP	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
14	Set-up & implement Waste Management Protocols & associated operational infrastructure	KC/IP	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
15	Set-up system for the administering of risk Assessments & method statements	KC/IP	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
16	Set-up sanitation protocols (e.g. Operational washroom + access inclusive of consumables, drinking water points, etc)	KC/IP	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
17	Set-up Catering / Messing Protocols & associated facilities for NHS Commissioning Period	KC/IP	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
18	Set-up Traffic Management / Car Parking / Transportation Logistics & Protocols	SY	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
19	Managing NHS Commissioning Period interface with Brookfield	PM	156 days	Mon 26/01/15	Fri 28/08/15	Mon 26/01/15	1%	NA
20	**Snagging Works by Brookfield (NB. Internal & external / ref. Agreed IDMS information)**	**PM/DH**	**60 days**	**Mon 26/01/15**	**Fri 24/04/15**	**Mon 26/01/15**	**6%**	**NA**
21	**Analyse, schedule & sequence Brookfield's defined list of Snagging Works (NB. Adults & NCH not expansted for now)**	**PM/DH/IM**	**60 days**	**Mon 26/01/15**	**Fri 24/04/15**	**Mon 26/01/15**	**6%**	**NA**
22	Basement Level (NB. at start - 120 defects / snags in total)	HG/MM/acL	20 days	Mon 23/03/15	Fri 17/04/15	NA	0%	NA
23	Ground Floor Level (NB. at start - 564 defects / snags in total)	HG/MM/acL	30 days	Mon 16/03/15	Fri 24/04/15	NA	0%	NA
24	1st Floor Level (NB. at start - 466 defects / snags in total)	HG/MM/acL	30 days	Mon 02/02/15	Fri 13/03/15	Mon 02/02/15	20%	NA
25	2nd Floor Level (NB. at start - 1079 defects / snags in total)	HG/MM/acL	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
26	3rd Floor Level (NB. at start - 328 defects / snags in total)	HG/MM/acL	30 days	Mon 02/02/15	Fri 13/04/15	NA	0%	NA
27	4th Floor Level (NB. at start - 249 defects / snags in total)	HG/MM/acL	30 days	Mon 02/02/15	Fri 13/03/15	Mon 02/02/15	20%	NA
28	5th Floor Level (NB. at start - 72 defects / snags in total)	HG	30 days	Mon 02/02/15	Fri 13/03/15	Mon 02/02/15	20%	NA
29	6th Floor Level (NB. at start - 55 defects / snags in total)	HG	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
30	7th Floor Level (NB. at start - 184 defects / snags in total)	HG	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
31	8th Floor Level (NB. at start - 151 defects / snags in total)	HG	30 days	Mon 02/03/15	Fri 10/04/15	NA	0%	NA
32	9th Floor Level (NB. at start - 203 defects / snags in total)	HG	30 days	Mon 02/03/15	Fri 10/04/15	NA	0%	NA
33	10th Floor Level (NB. at start - 135 defects / snags in total)	HG	30 days	Mon 16/03/15	Fri 24/04/15	NA	0%	NA
34	11th Floor Level (NB. at start - 291 defects / snags in total)	HG	30 days	Mon 16/03/15	Fri 24/04/15	NA	0%	NA
35	12th Floor Level (NB. at start - 203 defects / snags in total)	HG	30 days	Mon 16/03/15	Fri 24/04/15	NA	0%	NA
36	13th Level (e.g. access to helipad, stairwell, etc) - no snagging or defects identified yet (***Indicative***)	HG	30 days	Mon 16/03/15	Fri 24/04/15	NA	0%	NA
37	External Works, including courtyard & roof top areas (NB. at start - 176 defects / snags in total)	HG/MM/acL	65 days	Mon 26/01/15	Fri 24/04/15	Mon 26/01/15	20%	NA
38	**Outstanding Works by Brookfield (NB. Location as noted - Adults, NCH or Both)**	**PM/DH**	**156 days**	**Mon 26/01/15**	**Fri 28/08/15**	**NA**	**0%**	**NA**
39	**Analyse, schedule & sequence Brookfield's defined Outstanding Works (NB. noted end dates are as agreed with BM)**	**PM/DH/IM**	**156 days**	**Mon 26/01/15**	**Fri 28/08/15**	**NA**	**0%**	**NA**
40	VIE Slab and associated works - Maternity Unit	MM/acL	113 days	Mon 26/01/15	Tue 30/06/15	NA	0%	NA
41	Neuro Link bridge (connection to 'ALL') * Adults / Ins	HG/MM/acL	92 days	Mon 26/01/15	Fri 17/04/15	NA	0%	NA
42	Neuro Link bridge (polygal connection) - Adults / Ins	HG/MM/acL	47 days	Mon 26/01/15	Tue 31/03/15	NA	0%	NA
43	Neuro Link Bridge (connection to INS) - Adults / INS	HG/MM/acL	113 days	Mon 26/01/15	Tue 30/06/15	NA	0%	NA
44	Separation Tank - Adult ED Dept.	HG/MM/acL	35 days	Mon 26/01/15	Fri 13/03/15	NA	0%	NA
45	Art Strategy installation - complete to all areas	HG/MM/acL	25 days	Mon 26/01/15	Fri 27/02/15	NA	0%	NA
46	Land Eng: incomplete landscape works to all external areas	PM/DH	47 days	Mon 26/01/15	Tue 31/03/15	NA	0%	NA
47	Cores A&B & Main Entrance (meet and greet panels glass cabinets) - Adult Hospital	HG/MM/acL	25 days	Mon 26/01/15	Fri 27/02/15	NA	0%	NA
48	Lead lined units and associated worktops (ADB codes STF1021, 1024 & 1025) - Adult / Nuc. Medicine	HG/MM/acL	25 days	Mon 26/01/15	Fri 27/02/15	NA	0%	NA
49	DCFP Room 024 (ROMPA wall padding by BM) - DCFP	HG/MM/acL	47 days	Mon 26/01/15	Tue 31/03/15	NA	0%	NA
50	Additional divider screens and fabric boards - ML009 / RAD082 / DOPD032	HG/MM/acL	25 days	Mon 26/01/15	Fri 27/02/15	NA	0%	NA
51	'group 3 areas (where board subs are working) - Adults & NCH	HG/MM/acL	98 days	Mon 26/01/15	Wed 13/04/15	NA	0%	NA
52	Adult sanctuary (door access hatch) - Adults	HG/MM/acL	25 days	Mon 26/01/15	Fri 27/02/15	NA	0%	NA
53	Interventional theatre (+fit works) - Adults (Ltr)	HG/MM/acL	7 days	Mon 26/01/15	Tue 03/02/15	NA	0%	NA
54	Adult sanctuary (install Gustav's panels) - Adults	HG/MM/acL	25 days	Mon 26/01/15	Fri 27/02/15	NA	0%	NA
55	Decontamination Room (i.e. complete) - ED Dept.	HG/MM/acL	25 days	Mon 26/01/15	Fri 27/02/15	NA	0%	NA
56	MRI Rooms (knock out panels) - Various	HG/MM/acL	25 days	Mon 26/01/15	Fri 27/02/15	NA	0%	NA
57	New VIE turning circle - Adults	PM/DH	25 days	Mon 26/01/15	Fri 27/02/15	NA	0%	NA
58	New VIE pavement works south of road - bus stop not required) - Adults	PM/DH	13 days	Mon 26/01/15	Wed 11/02/15	NA	0%	NA
59	Main entrance walls and signage - Campus	PM/DH	58 days	Mon 26/01/15	Wed 15/04/15	NA	0%	NA
60	Neuro steel bridge works - INS	PM/DH	58 days	Mon 26/01/15	Wed 15/04/15	NA	0%	NA
61	Street lights to boulevard, complete landscaping to boulevard - Campus	PM/DH	58 days	Mon 26/01/15	Wed 15/04/15	NA	0%	NA
62	BREEAM Report application - Adults & NCH	HG/MM/acL	47 days	Mon 26/01/15	Tue 31/03/15	NA	0%	NA
63	AUV (performance tests and trials) - Adult Hospital	PM/DH/KC/IP	25 days	Mon 26/01/15	Fri 27/02/15	NA	0%	NA
64	Structbl (replacement of panels, complete install and review BMU protection) - Adult's	PM/DH/HG/MM/acL	47 days	Mon 26/01/15	Tue 31/03/15	NA	0%	NA
65	Sanctuary (sun pipes) - NCH	HG/MM/acL	25 days	Mon 26/01/15	Fri 27/02/15	NA	0%	NA
66	Sanctuary (stained glass install) - NCH	HG/MM/acL	25 days	Mon 26/01/15	Fri 27/02/15	NA	0%	NA
67	Schallalion radio nuclide room doors - NCH	HG/MM/acL	35 days	Mon 26/01/15	Fri 13/03/15	NA	0%	NA
68	DCFP anti-ligature works - NCH	HG/MM/acL	45 days	Mon 26/01/15	Fri 27/03/15	NA	0%	NA
69	Telecoms 600 pair lines install plus additional 600 lines req. by Board - Adult's & NCH	HG/MM/acL/KM/JS/SC	25 days	Mon 26/01/15	Fri 27/02/15	NA	0%	NA
70	External LED lighting - Adult	PM/DH	47 days	Mon 26/01/15	Tue 31/03/15	NA	0%	NA
71	Patient entertainment (screens) - NCH	HG/MM/acL/IP	70 days	Mon 26/01/15	Thu 30/04/15	NA	0%	NA
72	External facade (BM drawings) - Adult's & NCH	HG/MM/acL	47 days	Mon 26/01/15	Tue 31/03/15	NA	0%	NA
73	L HHV (+M works) - Laboratory	HG/MM/acL	25 days	Mon 26/01/15	Fri 27/02/15	NA	0%	NA
74	Isolation rooms (+M+PA works) - ***no milestone date on above noted master schedule, therefore indicative shown***	HG/MM/acL	25 days	Mon 26/01/15	Fri 27/02/15	NA	0%	NA
75	Internal signage, wayfinding, door signage - Adult's & NCH	HG/MM/acL	21 days	Mon 26/01/15	Mon 23/02/15	NA	0%	NA
76	Neo-natal link bridge (internals and ext. Cladding panels) - NCH	PM/DH/HG/MM/acL	47 days	Mon 26/01/15	Tue 31/03/15	NA	0%	NA
77	Neo-natal link bridge (knock out panel replacement) - NCH	PM/DH/HG/MM/acL	136 days	Mon 26/01/15	Fri 31/07/15	NA	0%	NA
78	Lifts (works to beneficial life) - Adult's & NCH	HG/MM/acL/KC/IP	47 days	Mon 26/01/15	Tue 31/03/15	NA	0%	NA
79	Pneumatic tube gantry (removal) - Laboratory	HG/MM/acL	55 days	Mon 26/01/15	Fri 10/04/15	NA	0%	NA
80	Core G.1.13 (complete helipad ramp, install bird sounder and clean area) - Adult's	PM/DH/JM/HG/MM/acL	25 days	Mon 26/01/15	Fri 27/02/15	NA	0%	NA
81	Theatres (complete Starkstrom install incl. DVI/SDI sockets and accessories on arms) - Adult's & NCH	HG/MM/acL	20 days	Mon 26/01/15	Fri 20/02/15	NA	0%	NA
82	Hardgate Road (i.e. white lining)	PM/DH	58 days	Mon 26/01/15	Wed 15/04/15	NA	0%	NA
83	Energy model (evidence of compliance with energy target) - Adult's & NCH	KC/IP	25 days	Mon 26/01/15	Fri 27/02/15	NA	0%	NA
84	NEC Supervisors Communication No 236	PM/DH	10 days	Mon 26/01/15	Fri 06/02/15	NA	0%	NA
85	NEC Supervisors Communication No 237	PM/DH	10 days	Mon 26/01/15	Fri 06/02/15	NA	0%	NA
86	NEC Supervisors Communication No 238	PM/DH	10 days	Mon 26/01/15	Fri 06/02/15	NA	0%	NA
87	NEC Supervisors Defect No 081	PM/DH	15 days	Mon 26/01/15	Fri 13/02/15	NA	0%	NA
88	NEC Supervisors Defect No 088	PM/DH	15 days	Mon 26/01/15	Fri 13/02/15	NA	0%	NA
89	Completion of sweep up programme and inspections with Supervisor - Adult's & NCH	PM/DH/KC	60 days	Mon 26/01/15	Fri 17/04/15	NA	0%	NA
90	Medical Gas System (testing & witnessing of med gas system by CSO - *Both / note tie-in with NHS Specialist Commissioning*)	KC/IP	25 days	Mon 26/01/15	Fri 27/02/15	NA	0%	NA
91	Completion of Children's Park SUDS - NCH	PM/DH	113 days	Mon 26/01/15	Tue 30/06/15	NA	0%	NA
92	Completion of Children's Park - NCH	PM/DH	156 days	Mon 26/01/15	Fri 28/08/15	NA	0%	NA
93	Completion of Car Park 1	PM/DH	55 days	Mon 26/01/15	Fri 10/04/15	NA	0%	NA
94	**Additional Works by Brookfield (***NB. No split yet into Adults & NCH + signed off CO's not consulted / referred to yet***)**	**PM/DH**	**60 days**	**Mon 26/01/15**	**Fri 17/04/15**	**NA**	**0%**	**NA**
95	**Analyse, schedule & sequence Brookfield's defined list of Additional Works (NB. Indicative dates currently shown)**	**PM/DH/IM**	**60 days**	**Mon 26/01/15**	**Fri 17/04/15**	**NA**	**0%**	**NA**
96	Basement Level (NB. Exact workload TBC / all as formally instructed by NHS)	HG/MM/acL	50 days	Mon 26/01/15	Fri 03/04/15	NA	0%	NA
97	Ground Floor Level (NB. Exact workload TBC / all as formally instructed by NHS)	HG/MM/acL	50 days	Mon 26/01/15	Fri 03/04/15	NA	0%	NA
98	1st Floor Level (NB. Exact workload TBC / all as formally instructed by NHS)	HG/MM/acL	50 days	Mon 26/01/15	Fri 03/04/15	NA	0%	NA
99	2nd Floor Level (NB. Exact workload TBC / all as formally instructed by NHS)	HG/MM/acL	50 days	Mon 26/01/15	Fri 03/04/15	NA	0%	NA
100	3rd Floor Level (NB. Exact workload TBC / all as formally instructed by NHS)	HG/MM/acL	50 days	Mon 26/01/15	Fri 03/04/15	NA	0%	NA
101	4th Floor Level (NB. Exact workload TBC / all as formally instructed by NHS)	HG/MM/acL	50 days	Mon 26/01/15	Fri 03/04/15	NA	0%	NA

nSGH NHS Commissioning Period Programme
Rev 1 / Master Update

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

Programmer Owner: Ian Matthewson (nSGH NHS Senior Project Planner) [redacted]

A47069198

nSGH Phase 2 Close-out Programme from Handover to Start of Migration Period (i.e. to start of Phase 3 Close-out Period)

Progress Update - 06/02/2015

'Work to' Programme issued 30/01/2015 to NHS Project Team (ref. 'Work To' Programme)

ID#	Activity Description	Resource Initials	Activity Duration	Programme Start Date	Programme Finish Date	Actual Start Date	Recorded % Complete	Actual Finish Date
102	5th Floor Level (NB. Exact workload TBC / all as formally instructed by NHS)	HG/MMacL	50 days	Mon 26/01/15	Fri 03/04/15	NA	0%	NA
103	6th Floor Level (NB. Exact workload TBC / all as formally instructed by NHS)	HG/MMacL	50 days	Mon 26/01/15	Fri 03/04/15	NA	0%	NA
104	7th Floor Level (NB. Exact workload TBC / all as formally instructed by NHS)	HG/MMacL	50 days	Mon 26/01/15	Fri 03/04/15	NA	0%	NA
105	8th Floor Level (NB. Exact workload TBC / all as formally instructed by NHS)	HG/MMacL	50 days	Mon 26/01/15	Fri 03/04/15	NA	0%	NA
106	9th Floor Level (NB. Exact workload TBC / all as formally instructed by NHS)	HG/MMacL	50 days	Mon 26/01/15	Fri 03/04/15	NA	0%	NA
107	10th Floor Level (NB. Exact workload TBC / all as formally instructed by NHS)	HG/MMacL	50 days	Mon 26/01/15	Fri 03/04/15	NA	0%	NA
108	11th Floor Level (NB. Exact workload TBC / all as formally instructed by NHS)	HG/MMacL	50 days	Mon 26/01/15	Fri 03/04/15	NA	0%	NA
109	12th Floor Level (NB. Exact workload TBC / all as formally instructed by NHS)	HG/MMacL	50 days	Mon 26/01/15	Fri 03/04/15	NA	0%	NA
110	External Works, including courtyard & roof top areas (NB. Exact ditto)	HG/MMacL	60 days	Mon 26/01/15	Fri 17/04/15	NA	0%	NA
111	**Soft Landings interface with Brookfield during NHS Commissioning Period**	**PM/DH/KC/IP**	**64 days**	**Mon 26/01/15**	**Thu 23/04/15**	**Mon 26/01/15**	**25%**	**NA**
112	set up soft landing 'initial after care' support team with smoothers	PM/DH/KC/IP	2 days	Mon 26/01/15	Wed 28/01/15	Mon 26/01/15	100%	Wed 28/01/15
113	Agree reporting and feedback loops, inclusive of associated interfaces	PM/DH/KC/IP	5 days	Mon 26/01/15	Fri 30/01/15	Mon 26/01/15	100%	Fri 30/01/15
114	implement agreed soft Landing's 'initial after care' process (i.e. in partnership with smoothers soft Landing 'team)	PM/DH/KC/IP	64 days	Mon 02/02/15	Thu 23/04/15	Mon 02/02/15	13%	NA
115	NHS Standard Commissioning Operations (NB. Full breakdown TBC)	KC/IP	60 days	Mon 02/02/15	Fri 24/04/15	Mon 02/02/15	30%	NA
116	Routine Estates checks & maintenance (NB. exact dates & breakdown TBC)	IP	60 days	Mon 02/02/15	Fri 24/04/15	Mon 02/02/15	15%	NA
117	Fire Alarm Testing & associated FM operational checks (NB. exact dates & breakdown TBC)	IP	20 days	Mon 02/02/15	Fri 27/02/15	Mon 02/02/15	45%	NA
118	Hospital BMS checks & handover interface with Brookfield (NB. exact dates & detail TBC)	IP	20 days	Mon 02/02/15	Fri 27/02/15	Mon 02/02/15	35%	NA
119	Catering commissioning (NB. exact dates & breakdown TBC)	DM/cD	20 days	Mon 02/02/15	Fri 27/02/15	Mon 02/02/15	35%	NA
120	AV/IT / Services Yard Commissioning (NB. exact dates & breakdown TBC)	IP	10 days	Mon 02/02/15	Fri 13/02/15	Mon 02/02/15	70%	NA
121	NHS Specialist Commissioning & Installation Operations (NB. Full breakdown TBC)	KC/IP	60 days	Mon 02/02/15	Fri 24/04/15	Mon 02/02/15	10%	NA
122	Water Testing & Commissioning (NB. exact dates & breakdown TBC)	IP/DH	20 days	Mon 02/02/15	Fri 27/02/15	Mon 02/02/15	40%	NA
123	Fire Safety Commissioning & Migration Testing (NB. Complete with Fire Extinguishers - exact dates & breakdown TBC)	IP/KM	30 days	Mon 02/02/15	Fri 13/03/15	Mon 02/02/15	25%	NA
124	Renal Commissioning (NB. exact dates & breakdown TBC)	FW+R.Tec/DH	20 days	Mon 02/03/15	Fri 27/03/15	NA	0%	NA
125	Medical Gas Commissioning (NB. exact dates & breakdown TBC)	IP/DH	20 days	Mon 16/02/15	Fri 13/03/15	NA	0%	NA
126	Scope Decontamination Commissioning (NB. exact dates & breakdown TBC)	AS/DH	20 days	Mon 02/03/15	Fri 27/03/15	NA	0%	NA
127	Aseptic suite Commissioning (Yes. exact dates & breakdown tBC)	LM/FW/DH	20 days	Mon 02/03/15	Fri 27/03/15	NA	0%	NA
128	Commissioning of Group 3 imaging equipment (Yes. exact dates & breakdown tBC, in line with Wessex trainer dates)	LH/Usg/Rad/DH	1 day	Fri 24/04/15	Fri 24/04/15	NA	0%	NA
129	Helipad Commissioning Transfer & Training Flights (NB. inclusive of operational transfer from existing SGH)	JM	30 days	Mon 02/03/15	Fri 10/04/15	NA	0%	NA
130	H&T Installation & Commissioning Works (NB. In line with latest H&T Excel Programme from EMcC & MX)	EMcC/MG	61 days	Mon 26/01/15	Mon 20/04/15	Mon 26/01/15	23%	NA
131	Week 1 - Staff Inductions, Network Patching, Migration, Support, Day Medical Trial (etc) all as per H&T's detailed Excel Programme	EMcC/MG	5 days	Mon 26/01/15	Fri 30/01/15	Mon 26/01/15	100%	Fri 30/01/15
132	Week 2 - Network Patching, Installation & Support (various locations - Medical Day Unit, Adult ED, ITU/HDU, etc)	EMcC/MG	5 days	Mon 02/02/15	Fri 06/02/15	Mon 02/02/15	100%	Fri 06/02/15
133	Week 3 - Ditto plus: Adult CCU, Theatres, Endoscopy, etc.)	EMcC/MG	5 days	Mon 09/02/15	Fri 13/02/15	Mon 09/02/15	80%	NA
134	Week 4 - Ditto plus: Adult AAU, OPD, R&T, Discharge Lounge, Pharmacy, Entrance, Med. Illustration, Stroke Ward, etc.	EMcC/MG	5 days	Mon 16/02/15	Fri 20/02/15	NA	0%	NA
135	Week 5 - Part ditto plus other locations (e.g. Hemat Ward, Uwmsnology Ward, etc - ref. noted subject programme for full details)	EMcC/MG	5 days	Mon 23/02/15	Fri 27/02/15	NA	0%	NA
136	Week 6 - Part ditto plus ditto (e.g. Decontamination, Medical Records, PICU, etc, etc - ref. ditto)	EMcC/MG	5 days	Mon 02/03/15	Fri 06/03/15	NA	0%	NA
137	Week 7 - Part ditto plus ditto (e.g. Children's R&T, Aseptic Unit, Imaging, Nuc. Medicine, etc, etc - ref. ditto)	EMcC/MG	5 days	Mon 09/03/15	Fri 13/03/15	NA	0%	NA
138	Week 8 - Part ditto plus ditto (e.g. Child Protection, Schiehallion Ward, DCFP, NICU, Ward Support, etc, etc - ref. ditto)	EMcC/MG	5 days	Mon 16/03/15	Fri 20/03/15	NA	0%	NA
139	Week 9 - Part ditto plus ditto (e.g. Anaesthetics, Acute Receiving Ward, etc, etc - ref. ditto)	EMcC/MG	5 days	Mon 23/03/15	Fri 27/03/15	NA	0%	NA
140	Week 10 - Installation, Support & Testing to Office Block	EMcC/MG	5 days	Mon 30/03/15	Fri 03/04/15	NA	0%	NA
141	Week 11 - General tidying up plus final H&T commissioning checks	EMcC/MG	5 days	Mon 06/04/15	Fri 10/04/15	NA	0%	NA
142	Week 12 - General tidying up plus final H&T commissioning checks	EMcC/MG	5 days	Mon 13/04/15	Fri 17/04/15	NA	0%	NA
143	Completion of H&T NHS Commissioning Period Works (***NB. Key milestone / H&T operational interface***)	EMcC	1 day	Mon 20/04/15	Mon 20/04/15	NA	0%	NA
144	Telecomms Installation & Commissioning Works (NB. exact dates & breakdown TBC)	KMcS/SC	65 days	Mon 26/01/15	Fri 24/04/15	Mon 26/01/15	7%	NA
145	Finalise legals / the appointment of EE	KMcS/SC	10 days	Mon 26/01/15	Fri 20/02/15	Mon 26/01/15	75%	NA
146	EE in-building mobile phone 'pre-meeting' (NB. ***Indicative at present / week commencing milestone / exact data TBA***)	SC	2 days	Mon 23/02/15	Fri 27/02/15	NA	0%	NA
147	Install Racking Equipment to Node Room 101	SC	5 days	Mon 02/03/15	Fri 06/03/15	NA	0%	NA
148	Establish connections to 9 other Node Rooms via fibre network (ref. Hub Rm #'s 101, 103, 104, 124, 125, 142, 143, 158 & 159)	SC	10 days	Mon 09/03/15	Fri 20/03/15	NA	0%	NA
149	Wire established connections out (where rec'd) to antennae	SC	5 days	Mon 23/03/15	Fri 27/03/15	NA	0%	NA
150	Complete Fibre from Handgate Road	SC	30 days	Mon 26/01/15	Fri 06/03/15	NA	0%	NA
151	Roll out Telephone Handsets	SC	30 days	Mon 02/02/15	Fri 13/03/15	NA	0%	NA
152	Roll out Wireless Handsets	SC	15 days	Mon 09/03/15	Fri 27/03/15	NA	0%	NA
153	Deliver & Installation of Fire Extinguishers (i.e. balance away from above noted initial delivery of 180)	LM/ACT/JM	10 days	Mon 02/03/15	Fri 13/03/15	NA	0%	NA
154	Pre-Exclusive Operations & Installation Works (NB. exact dates & breakdown TBC)	ACT	60 days	Mon 02/02/15	Fri 24/04/15	Mon 02/02/15	12%	NA
155	Patient Handling Equipment / Zurich Examination Plan (NB. exact kick off date TBA with IP - indicative shown for now)	IP	17 days	Mon 09/02/15	Tue 03/03/15	NA	0%	NA
156	Level 11, Surgery, Wards 21 / 22 / 23 / 24 (6 Patient Handling to each) - referred to as Day 1	IP/HG/Zurich	1 day	Mon 09/02/15	Mon 09/02/15	NA	0%	NA
157	Level 10, Surgery, Wards 17 / 18 / 19 / 20 (6 Patient Handling to each) - referred to as Day 2	IP/HG/Zurich	1 day	Tue 10/02/15	Tue 10/02/15	NA	0%	NA
158	Level 9, Medicine, Wards 13 / 14 / 15 / 16 (6 Patient Handling to each) - referred to as Day 3	IP/HG/Zurich	1 day	Wed 11/02/15	Wed 11/02/15	NA	0%	NA
159	Level 8, Elderly / Medicine, Wards 9 / 10 / 11 / 12 (36 Patient Handling to each) - referred to as Days 4, 5, 6 & 7	IP/HG/Zurich	4 days	Thu 12/02/15	Tue 17/02/15	NA	0%	NA
160	Level 7, Medicine, Wards S / 6 / 7 / 8 (6 Patient Handling to each) - referred to as Day 8	IP/HG/Zurich	1 day	Wed 18/02/15	Wed 18/02/15	NA	0%	NA
161	Level 6, Medicine, Wards 1 / 2 / 3 / 4 (6 Patient Handling to each) - referred to as Day 9	IP/HG/Zurich	1 day	Thu 19/02/15	Thu 19/02/15	NA	0%	NA
162	Level 5, Medicine, Wards A / B / C / D (6 Patient Handling to each) - referred to as Day 10	IP/HG/Zurich	1 day	Fri 20/02/15	Fri 20/02/15	NA	0%	NA
163	Level 4, Renal & Haemato-oncology, Wards / Depts. ditto (respectively 12 & 2 Patient Handling to each) - referred to as Day 11	IP/HG/Zurich	1 day	Mon 23/02/15	Mon 23/02/15	NA	0%	NA
164	Level z, Uwmsnology, Wards 1 / 1 Patient Handling to each) - referred to as Day 11	IP/HG/Zurich	1 day	Mon 23/02/15	Mon 23/02/15	NA	0%	NA
165	Level 1, Critical Care, Wards Critical Care (12 Patient Handling to each) - referred to as Day 11 & 12	IP/HG/Zurich	2 days	Mon 23/02/15	Tue 24/02/15	NA	0%	NA
166	Ground, Stroke Ward & AAU, Wards ditto (6 & 15 Patient Handling to each) - referred to as Day 13	IP/HG/Zurich	1 day	Wed 25/02/15	Wed 25/02/15	NA	0%	NA
167	NCH Level 3, Inpatient, Wards 1 / 2 / 3 (6+6+7 Patient Handling to each) - referred to as Day 14	IP/MMacL/Zurich	1 day	Thu 26/02/15	Thu 26/02/15	NA	0%	NA
168	NCH Level 2, ARU / Schiehallion Ward + Day Care, Wards ditto (6+1+2 Patient Handling to each) - referred to as Day 15	IP/MMacL/Zurich	1 day	Fri 27/02/15	Fri 27/02/15	NA	0%	NA
169	NCH Level 1, Cardiology / PICU / 23 Hour Ward, Wards ditto (1+2+3 Patient Handling to each) - referred to as Day 15	IP/MMacL/Zurich	1 day	Fri 27/02/15	Fri 27/02/15	NA	0%	NA
170	NCH Ground, Observation Ward / Outpatients / Rehab & Therapies, Wards ditto (1+7+2 Patient Handling to each) - referred to as Day 16	IP/MMacL/Zurich	1 day	Mon 02/03/15	Mon 02/03/15	NA	0%	NA
171	Hotel Mop up - referred to as Day 17 (Zurich's Examination Plan) for February 2015	IP/Zurich	1 day	Tue 03/03/15	Tue 03/03/15	NA	0%	NA
172	Completion of Zurich Examination Requirements for Patient Handling Equipment (i.e. milestone event)	IP/Zurich	1 day	Tue 03/03/15	Tue 03/03/15	NA	0%	NA
173	Pharmacy Installation Works (e.g. Robots, etc - exact dates & breakdown TBC)	FW/Pharmacy/DH	20 days	Mon 16/03/15	Fri 10/04/15	NA	0%	NA
174	Domestic Services Works in e. Clinical Clearance - exact dates & breakdown TBC)	KC	30 days	Mon 16/03/15	Fri 24/04/15	NA	0%	NA
175	Installation of Dispensers (NB. Effectively commenced 02/02/2015)	FM/cC	35 days	Mon 02/02/15	Fri 20/03/15	Mon 02/02/15	20%	NA
176	Installation of Sundary / Additional NHS Signage (e.g. Dementia Signage, Lift Signage, etc)	PM/FM/cC/ACT(RA)	18 days	Wed 11/02/15	Fri 06/03/15	Wed 11/02/15	5%	NA
177	Retail Installation & Fit-out Works (NB. Exact dates & durations are in line with GF's current programme)	GF	65 days?	Mon 02/02/15	Fri 24/04/15	NA	0%	NA
178	**Retail Fit-out to Adult's Hospital**	**GF**	**60 days**	**Mon 02/02/15**	**Fri 24/04/15**	**NA**	**0%**	**NA**
179	**Unit A1 - Marks & Spencer (NB. ***Updated detailed breakdown required, start date & period as advised by GF 09/02/15***)**	GF	30 days	Mon 16/03/15	Fri 24/04/15	NA	0%	NA
180	**Unit A2 - WH Smiths (NB. ***Updated detailed breakdown required, start date & period as advised by GF 09/02/15***)**	GF	30 days	Mon 16/03/15	Fri 24/04/15	NA	0%	NA
181	**Unit A3 - Camden Food Co. (NB. ***Updated detailed breakdown required, inclusive of start date***)**	GF	60 days	Mon 02/02/15	Fri 24/04/15	NA	0%	NA
182	**Unit A4 - Tenant TBC (NB. ***Updated detailed breakdown required, inclusive of start date***)**	GF	60 days	Mon 02/02/15	Fri 24/04/15	NA	0%	NA
183	**Unit A5 - Souped Up & Juiced (NB. ***Updated detailed breakdown req'd, start date & period as advised by GF 09/02/15***)**	GF	30 days	Mon 16/03/15	Fri 24/04/15	NA	0%	NA
184	**Unit A?? - Aroma to Adult's Hospital Atrium Area (breakdown rec'd from GF with detail incorporated as detailed)**	**GF**	**17 days**	**Thu 05/03/15**	**Fri 27/03/15**	**NA**	**0%**	**NA**
185	Walls / Drylinings	GF/HG	2 days	Thu 05/03/15	Fri 06/03/15	NA	0%	NA
186	Wall Tiling	GF/HG	7 days	Mon 09/03/15	Tue 17/03/15	NA	0%	NA
187	Counter / Services / Shutter	GF/HG	2 days	Mon 16/03/15	Tue 17/03/15	NA	0%	NA
188	Equipment Install	GF/HG	1 day	Mon 16/03/15	Mon 16/03/15	NA	0%	NA
189	Graphics	GF/HG	2 days	Wed 18/03/15	Thu 19/03/15	NA	0%	NA
190	Snagging	GF/HG	2 days	Wed 18/03/15	Tue 24/03/15	NA	0%	NA
191	Coffee Installed	GF/HG	1 day	Wed 18/03/15	Wed 18/03/15	NA	0%	NA
192	Furniture Installed	GF/HG	2 days	Mon 23/03/15	Tue 24/03/15	NA	0%	NA
193	Coffee Induction / Training (***NB. Indicative dates shown / TBC by GF***)	GF/HG	2 days	Wed 25/03/15	Thu 26/03/15	NA	0%	NA
194	Unit Operational (***NB. Indicative dates shown / TBC by GF***)	GF/HG	1 day	Fri 27/03/15	Fri 27/03/15	NA	0%	NA
195	**Retail Fit-out to NCH**	**GF**	**60 days?**	**Mon 02/02/15**	**Fri 24/04/15**	**NA**	**0%**	**NA**
196	**Unit C1 - Aroma (NB. Updated detailed breakdown required)**	**GF**	**20 days?**	**Mon 02/03/15**	**Fri 27/03/15**	**NA**	**0%**	**NA**
197	Workshop / Manufacture	GF/MMacL	6 days	Mon 02/03/15	Mon 09/03/15	NA	0%	NA
198	Walls / Drylinings	GF/MMacL	2 days	Fri 06/03/15	Mon 09/03/15	NA	0%	NA
199	Wall Tiling	GF/MMacL	5 days	Tue 17/03/15	Mon 23/03/15	NA	0%	NA
200	Counter / Services / Shutter	GF/MMacL	6 days	Tue 10/03/15	Tue 17/03/15	NA	0%	NA
201	Equipment Install	GF/MMacL	1 day?	Tue 17/03/15	Tue 17/03/15	NA	0%	NA

nSGH NHS Commissioning Period Programme
Rev 1 / Master Update

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

Programmer Owner: Ian Matthewson (nSGH NHS Senior Project Planner) [redacted]

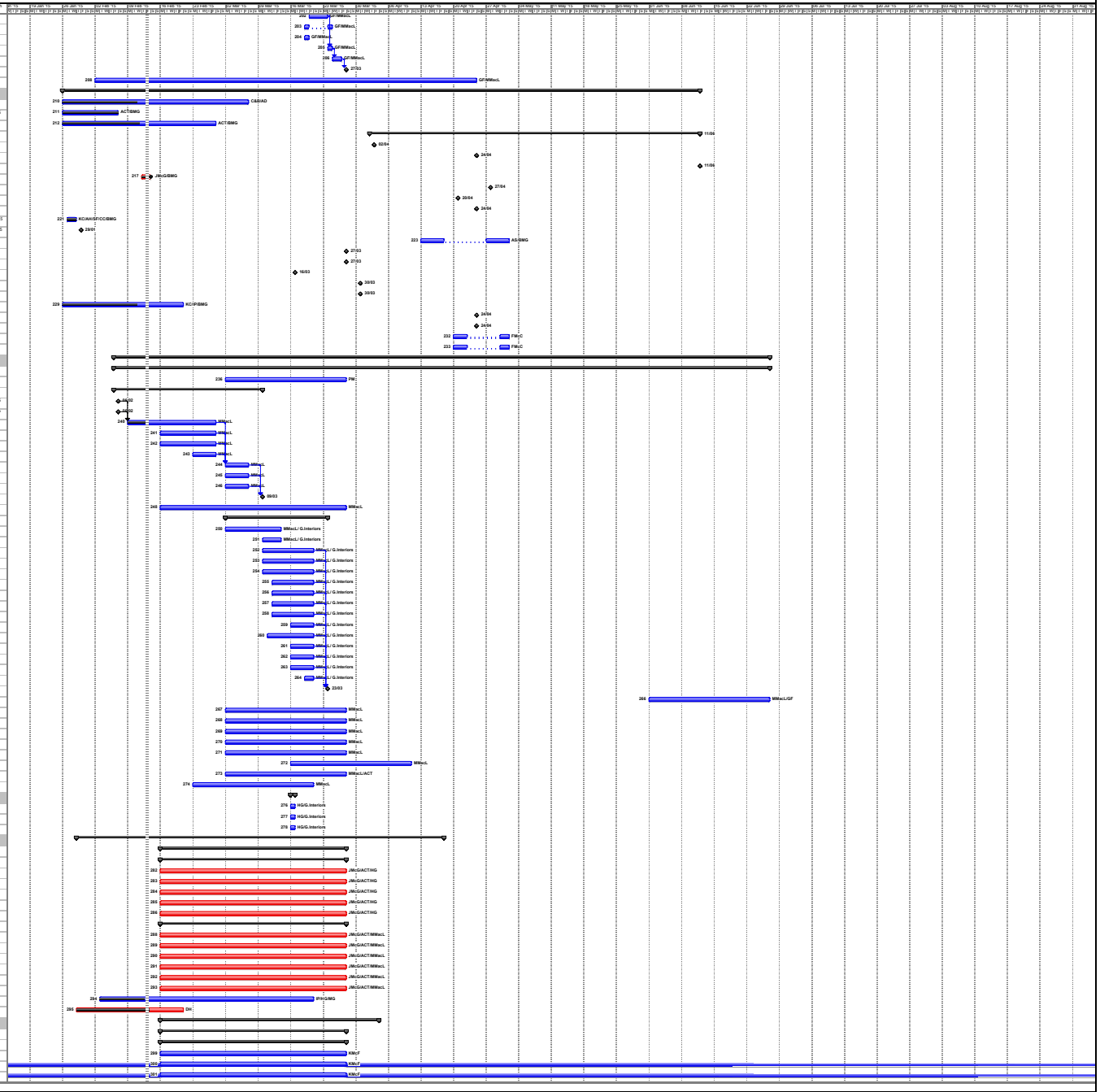
A47069198

nSGH Phase 2 Close-out Programme from Handover to Start of Migration Period (i.e. to start of Phase 3 Close-out Period)

Progress Update - 06/02/2015

'Work to' Programme issued 30/01/2015 to NHS Project Team (ref. 'Work To' Programme)

ID#	Activity Description	Resource Initials	Activity Duration	Programme Start Date	Programme Finish Date	Actual Start Date	Recorded % Complete	Actual Finish Date
202	Graphics	GF/MMacL	2 days	Fri 20/03/15	Mon 23/03/15	NA	0%	NA
203	Snagging	GF/MMacL	2 days	Thu 19/03/15	Tue 24/03/15	NA	0%	NA
204	Coffee Installed	GF/MMacL	1 day?	Thu 19/03/15	Thu 19/03/15	NA	0%	NA
205	Furniture Installed	GF/MMacL	1 day?	Tue 24/03/15	Tue 24/03/15	NA	0%	NA
206	Coffee Induction / Training (***NB. Indicative dates shown ! 1WL by GF***)	GF/MMacL	2 days	Wed 25/03/15	Thu 26/03/15	NA	0%	NA
207	Unit Operational (***NB. Indicative dates shown ! TBC by GF***)	GF/MMacL	1 day	Fri 27/03/15	Fri 27/03/15	NA	0%	NA
208	**Unit C2 - Yorkhill Children's Charity (NB. Coordination interface with MMacL / updated detailed breakdown required)**	GF/MMacL	60 days	Mon 02/02/15	Fri 24/04/15	NA	0%	NA
209	NHS Early Moves / Migration (ref. key interface with C&B for MMEV's + BMG for actual Move management Exercise)	ACT/Au Noted	180 days	Mon 26/01/15	Thu 11/06/15	Mon 26/01/15	41%	NA
210	C&B to Finalise & issue MHA's for all Departmental Lorry Moves (i.e. in line with sequential requirements)	C&B/ALL	30 days	Mon 26/01/15	Fri 06/02/15	Mon 26/01/15	40%	NA
211	BMG to further familiarise themselves with the new hospital building (NB. Initially started 19/01/15)	ACT/BMG	10 days	Mon 26/01/15	Fri 06/02/15	Mon 26/01/15	100%	Fri 06/02/15
212	BMG to Finalise all 1-2-1 Meetings and Finalise Early Move Logistic Requirements	ACT/BMG	25 days	Mon 26/01/15	Fri 27/02/15	Mon 26/01/15	32%	NA
213	**Medical Health Records (NB. To be addressed in 3 wave / tranches as noted)**	**LMcA/BMG**	**82 days**	**Thu 02/04/15**	**Thu 11/06/15**	**NA**	**0%**	**NA**
214	Thursday 02/04/15 – Legal staff from SGH & VIV, RMC staff from VIC, Coding Staff from SGH & VIC	LMcA/BMG	1 day	Thu 02/04/15	Thu 02/04/15	NA	0%	NA
215	24/04/15 – Health Records from SGH/VIC (NB. Date coincides with Phase 3 Close-out / Migration Period)	LMcA/BMG	1 day	Fri 24/04/15	Fri 24/04/15	NA	0%	NA
216	11/06/15 – Health records from Yorkhill (Nb. Leven date is beyond Phase 2 Close-out Period & into Phase 3 / Migration Period)	LMcA/BMG	1 day	Thu 11/06/15	Thu 11/06/15	NA	0%	NA
217	Medical Physics - will move on 12th & 13th February (ref. MMcA email 10/02/15)	JMcG/BMG	2 days	Thu 12/02/15	Fri 13/02/15	Thu 12/02/15	75%	NA
218	Pharmacy - current date of 27/4/15 as recently advised by Joanne stanton	AM/JM/BMG	1 day	Mon 27/04/15	Mon 27/04/15	NA	0%	NA
219	Diagnostics (NB. Milestone date shown for now, ref. LP's detailed Excel programme, full details to be incorporated shortly)	LP/BMG	1 day	Mon 20/04/15	Mon 20/04/15	NA	0%	NA
220	Aseptic Suite/Pharmacy - current date of 24/4/15 and the weekend thereof (ref. Scott Nicol email advising same)/maybe wic 13/4/15	SN/BMG	1 day	Fri 24/04/15	Fri 24/04/15	NA	0%	NA
221	Project Team migration to new facilities / Project Office set-up in NSGH	KC/AW/SF/CC/BMG	2 days	Tue 27/01/15	Wed 28/01/15	Tue 27/01/15	100%	Wed 28/01/15
222	Procurement Team - will effectively move away from handover date (i.e. as part of Project team move)	ACT/BMG	1 day	Thu 29/01/15	Thu 29/01/15	Thu 29/01/15	100%	Thu 29/01/15
223	Scope Decontamination - exact date TBC / indicative time period shown for now (NB.***03/04/15 has been muted as a possible date***)	AS/BMG	10 days	Mon 13/04/15	Fri 01/05/15	NA	0%	NA
224	Catering - current date of 26/3/15 (Sunday) given with milestone as noted taken from wrk of 27/3/15 (ref. ACT email)	DMcD/BMG	1 day	Fri 27/03/15	Fri 27/03/15	NA	0%	NA
225	Catering Management - ditto / understood to be part of the above too	DMcD/BMG	1 day	Fri 27/03/15	Fri 27/03/15	NA	0%	NA
226	Partial Theatres / Theatre Managers (now firm date as confirmed by ACT in email 05/02/15)	FMcC/JMcG/BMG	1 day	Mon 16/03/15	Mon 16/03/15	NA	0%	NA
227	Chaplaincy / sanctuary - current date given at 20/2/15, noted as a milestone date (ref. ALL email)	ALL/BMG	1 day	Mon 30/03/15	Mon 30/03/15	NA	0%	NA
228	Dietetics (Nb relocation to existing south Medical Physics - ***date given may be delayed to 26/4/15 - 1WL***)	ALL/BMG	1 day	Mon 30/03/15	Mon 30/03/15	NA	0%	NA
229	FM & Estates (NB. Likely phased in practice with interface with BMG TBC)	KC/PI/BMG	20 days	Mon 26/01/15	Fri 20/02/15	Mon 26/01/15	60%	NA
230	Helipad Requirements in terms of Early Move / Transfer Logistics (NB. BMG's involvement TBA)	JM	1 day	Fri 24/04/15	Fri 24/04/15	NA	0%	NA
231	Renal Support / Technicians Early Move (24/04/15 - as confirmed in Removals Project Team Meeting 29/01/15)	ACT	1 day	Fri 24/04/15	Fri 24/04/15	NA	0%	NA
232	2 x HDU Beds (NB. ***indicative date / period shown for now***)	FMcC	5 days	Mon 20/04/15	Fri 01/05/15	NA	0%	NA
233	Children's ED (NB. ***indicative date / period shown for now***)	FMcC	5 days	Mon 20/04/15	Fri 01/05/15	NA	0%	NA
235	**Enhancement Works by NHS**	**HG/MMacL**	**102 days**	**Fri 06/02/15**	**Fri 26/06/15**	**Fri 06/02/15**	**2%**	**NA**
236	**Children's Hospital Enhancement Works**	**MMacL**	**102 days**	**Fri 06/02/15**	**Fri 26/06/15**	**Fri 06/02/15**	**2%**	**NA**
236	Medicinema (NB. Exact dates & breakdown TBC)	PM	20 days	Mon 02/03/15	Fri 27/03/15	NA	0%	NA
237	**Paragon / Science Centre Project Enhancements (NB. breakdown as per MMacL's email 22/01/15)**	**MMacL**	**22 days**	**Fri 06/02/15**	**Mon 09/03/15**	**Fri 06/02/15**	**10%**	**NA**
238	Enabling works associated with power and data cables - check completed / shown as a milestone	MMacL	1 day	Fri 06/02/15	Fri 06/02/15	Fri 06/02/15	100%	Fri 06/02/15
239	Graphics applied to emergency Department windows - check completed / shown as a milestone	MMacL	1 day	Fri 06/02/15	Fri 06/02/15	Fri 06/02/15	100%	Fri 06/02/15
240	Out Patients - Install all wall mounted units and one of the two large Wall pod modules	MMacL	15 days	Mon 09/02/15	Fri 27/02/15	Mon 09/02/15	27%	NA
241	Out Patients - Install the second of the two large Wall pod modules. Install Interactives and AV Hardware into wall units	MMacL	10 days	Mon 16/02/15	Fri 27/02/15	NA	0%	NA
242	Imaging and Diagnostics - Install Teen Space, 2 wall modules, Central Table	MMacL	10 days	Mon 16/02/15	Fri 27/02/15	NA	0%	NA
243	Emergency Department - Install steel frame, PCs and all modules	MMacL	5 days	Mon 23/02/15	Fri 27/02/15	NA	0%	NA
244	Commissioning of PCs and interactives (NB. To all areas)	MMacL	5 days	Mon 02/03/15	Fri 06/03/15	NA	0%	NA
245	Snagging (NB. To all areas)	MMacL	5 days	Mon 02/03/15	Fri 06/03/15	NA	0%	NA
246	Staff training and hand over (NB. To all areas)	MMacL	5 days	Mon 02/03/15	Fri 06/03/15	NA	0%	NA
247	Practical Completion & Sign-off of works by NHS	MMacL	1 day	Mon 09/03/15	Mon 09/03/15	NA	0%	NA
248	Schiehallion Projects (NB. exact dates & breakdown TBC)	MMacL	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
249	**TCT Project Installations (NB. Detailed breakdown as per MMacL's email 22/01/15 complete with Excel Programme)**	**MMacL**	**16 days**	**Mon 02/03/15**	**Mon 23/03/15**	**NA**	**0%**	**NA**
250	Paint drying time	MMacL/ G.Interiors	10 days	Mon 02/03/15	Fri 13/03/15	NA	0%	NA
251	Delivery of bespoke furniture (i.e. during noted week with 10th & 13th targeted)	MMacL/ G.Interiors	4 days	Tue 10/03/15	Fri 13/03/15	NA	0%	NA
252	Single Room 003 (ref. Grosvenor Interior's detailed programme breakdown)	MMacL/ G.Interiors	9 days	Tue 10/03/15	Fri 20/03/15	NA	0%	NA
253	Single Room 006 (ref. ditto)	MMacL/ G.Interiors	9 days	Tue 10/03/15	Fri 20/03/15	NA	0%	NA
254	Single Room 007 (ref. ditto)	MMacL/ G.Interiors	9 days	Tue 10/03/15	Fri 20/03/15	NA	0%	NA
255	Single Room 010 (ref. ditto)	MMacL/ G.Interiors	7 days	Thu 12/03/15	Fri 20/03/15	NA	0%	NA
256	single room WAT 1906 (ref. ditto)	MMacL/ G.Interiors	7 days	Thu 12/03/15	Fri 20/03/15	NA	0%	NA
257	Single Room BMT 007 (ref. ditto)	MMacL/ G.Interiors	7 days	Thu 12/03/15	Fri 20/03/15	NA	0%	NA
258	single room - Overspill 1 (ref. ditto)	MMacL/ G.Interiors	7 days	Thu 12/03/15	Fri 20/03/15	NA	0%	NA
259	Single Room – Overspill 2 (ref. ditto)	MMacL/ G.Interiors	5 days	Mon 16/03/15	Fri 20/03/15	NA	0%	NA
260	Recreation Room (ref. ditto)	MMacL/ G.Interiors	8 days	Wed 11/03/15	Fri 20/03/15	NA	0%	NA
261	Daycase DCU 007 (ref. ditto)	MMacL/ G.Interiors	5 days	Mon 16/03/15	Fri 20/03/15	NA	0%	NA
262	Daycase DCU 011 BMT Ward (ref. ditto)	MMacL/ G.Interiors	5 days	Mon 16/03/15	Fri 20/03/15	NA	0%	NA
263	Corridors - Wall Glamour Filling + ITAV Filling + Accessorising / Styling (ref. ditto)	MMacL/ G.Interiors	5 days	Mon 16/03/15	Fri 20/03/15	NA	0%	NA
264	Other Miscellaneous Elements (e.g. Mastic Furniture / Wall junctions, etc. ref. ditto)	MMacL/ G.Interiors	2 days	Thu 19/03/15	Fri 20/03/15	NA	0%	NA
265	TCT access (milestone activity)	MMacL/ G.Interiors	1 day	Mon 23/03/15	Mon 23/03/15	NA	0%	NA
266	Initial Unit (inked with 'Le' & name - exact dates & breakdown TBC) / ***current start date as advised by Le' 09/02/15***)	MMacL/GF	20 days	Mon 01/06/15	Fri 26/06/15	NA	0%	NA
267	Child Protection Enhancements (NB. exact dates & breakdown TBC)	MMacL	20 days	Mon 02/03/15	Fri 27/03/15	NA	0%	NA
268	MHS Scanner Enhancements (NB. exact dates & breakdown TBC)	MMacL	20 days	Mon 02/03/15	Fri 27/03/15	NA	0%	NA
269	Sensory Rooms Fit-out (NB. exact dates & breakdown TBC)	MMacL	20 days	Mon 02/03/15	Fri 27/03/15	NA	0%	NA
270	Family Information Centre (NB. exact dates & breakdown TBC)	MMacL	20 days	Mon 02/03/15	Fri 27/03/15	NA	0%	NA
271	PICU Enhancements (NB. exact dates & breakdown TBC)	MMacL	20 days	Mon 02/03/15	Fri 27/03/15	NA	0%	NA
272	Radio Lollipop Enhancements (NB. exact dates & breakdown TBC)	MMacL	20 days	Mon 16/03/15	Fri 10/04/15	NA	0%	NA
273	Parent Beds Installed (NB link up with Equipping / Procurement - exact dates & breakdown TBC)	MMacL/ACT	20 days	Mon 02/03/15	Fri 27/03/15	NA	0%	NA
274	DCPP to Ward 4 (NB. exact dates & breakdown TBC)	MMacL	20 days	Mon 23/03/15	Fri 20/03/15	NA	0%	NA
275	Adult Hospital Enhancement Works (NB. Effectively tied in with TCT's enhancement work to NCH)	HG	1 day	Mon 16/03/15	Mon 16/03/15	NA	0%	NA
276	Adult BMT Level 4 Room HOW - 031 (ref. Wall Glamour work)	HG/G.Interiors	1 day	Mon 16/03/15	Mon 16/03/15	NA	0%	NA
277	Adult BMT Level 4 Room HOW - 029 (ref. Wall Glamour work)	HG/G.Interiors	1 day	Mon 16/03/15	Mon 16/03/15	NA	0%	NA
278	Adult BMT Level 4 Corridors	HG/G.Interiors	1 day	Mon 16/03/15	Mon 16/03/15	NA	0%	NA
279	Additional NHS Works	PM/HG/MMacL	67 days	Thu 29/01/15	Fri 17/04/15	Thu 29/01/15	2%	NA
280	**Installation of Patient Monitoring System (NB. exact dates, along with further breakdown TBC)**	**JMcG**	**30 days**	**Mon 16/02/15**	**Fri 27/03/15**	**NA**	**0%**	**NA**
281	**Adult's Hospital / Patient Monitors - ***indicative dates / time periods*** **	**JMcG**	**30 days**	**Mon 16/02/15**	**Fri 27/03/15**	**NA**	**0%**	**NA**
282	Critical Care - Level 1 / FFL (NB. New Equipment / Supplier TBC)	JMcG/ACT/HG	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
283	A&E - Level 0 / GFL (NB. Transfer)	JMcG/ACT/HG	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
284	AAU - Level 0 / GFL (NB. Transfer)	JMcG/ACT/HG	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
285	Stroke Ward - Level 1 / FFL (Nb. New equipment / supplier tbc)	JMcG/ACT/HG	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
286	Cardiology Ward - Level 6 / Sixth FL (NB. New Equipment / Supplier TBC)	JMcG/ACT/HG	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
287	**Children's Hospital / Patient Monitors - ***indicative dates / time periods*** **	**JMcG**	**30 days**	**Mon 16/02/15**	**Fri 27/03/15**	**NA**	**0%**	**NA**
288	PICU - Level 1 / FFL (NB. Transfer)	JMcG/ACT/MMacL	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
289	Cardiac Ward - Level 1 / FFL (NB. Transfer)	JMcG/ACT/MMacL	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
290	A&E - Level 0 / GFL (NB. Transfer)	JMcG/ACT/MMacL	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
291	Clinical Decision Unit - Level 0 / GFL (NB. New Equipment / Supplier TBC)	JMcG/ACT/MMacL	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
292	Lennerton Wards 1, 2 & 3 + Acute Receiving Unit Levels 2 & 3 (i.e. FFL PICU to FFL as noted) (Nb. New equipment / supplier tbc.)	JMcG/ALL/ MMacL	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
293	Schiehallion - Level 2 / SFL (Nb. New equipment / supplier tbc.)	JMcG/ALL/ MMacL	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
294	**Adult Patient Entertainment Installation Works (NB. exact dates & breakdown TBC)**	**IPH/GMG**	**34 days**	**Tue 03/02/15**	**Fri 20/03/15**	**Tue 03/02/15**	**22%**	**NA**
295	**Separating wall within the Endoscopy Decontamination Suite + installation of 6 No. Endoscopy Decontamination Washers**	**DH**	**17 days**	**Thu 29/01/15**	**Fri 20/02/15**	**Thu 29/01/15**	**70%**	**NA**
296	AV Equipment Installation Works to Seminar Room Areas & the like (ref. AV Levels 1, 2, 3, 4 & 6 as stated)	KMcF	36 days	Mon 16/02/15	Fri 03/04/15	NA	0%	NA
297	To Adult Hospital (NB. exact dates & breakdown TBC)	KMcF/HG	36 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
298	**New AV Installation Works (i.e. Levels 1, 2,3 & 4 as noted below);**	**KMcF**	**36 days**	**Mon 16/02/15**	**Fri 27/03/15**	**NA**	**0%**	**NA**
299	AV Level 1 Room # NCH-03-GWS-045 Seminar / Education Room (15 places - 3rd Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
300	AV Level 2 Room # NCH-02-AFD-007 Office (BP), 2nd Floor. Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
301	AV Level 3 Room # NCH-03-GWS-045 Seminar / Education Room (15 places - 3rd Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA



nSGH NHS Commissioning Period Programme Rev 1 / Master Update

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

Programmer Owner: Ian Matthewson (nSGH NHS Senior Project Planner) T [redacted]

A47069198

nSGH Phase 2 Close-out Programme from Handover to Start of Migration Period (i.e. to start of Phase 3 Close-out Period)

Progress Update - 06/02/2015

'Work to' Programme issued 30/01/2015 to NHS Project Team (ref. 'Work To' Programme)

ID#	Activity Description	Resource Initials	Activity Duration	Programme Start Date	Programme Finish Date	Actual Start Date	Recorded % Complete	Actual Finish Date
302	AV Level 2 Room # NCH-00-OPD-010 Meeting Room (Ground Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
303	AV Level 3 Room # NCH-00-OPD-016 Meeting Room (Ground Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
304	AV Level 3 Room # NCH-00-REH-051 Classroom (Ground Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
305	AV Level 3 Room # NCH-00-REH-054 Group Teaching Room (Ground Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
306	AV Level 2 Room # NCH-02-GWS-008 Conference / Meeting Rooms (1st Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
307	AV Level 3 Room # NCH-03-GWS-009 Conference / Meeting Rooms (Third Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
308	AV Level 3 Room # NCH-03-GWS-027 Seminar / Education Room (16 places to Third Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
309	AV Level 3 Room # NCH-04-DCFP-008 Multi-disciplinary Team Room (Fourth Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
310	AV Level 4 Room # NCH-00-RCG-007 Seminar & Training Room (20 Persons, Ground Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
311	**Transfer AV Installation Works:**	**KMcF**	**30 days**	**Mon 16/02/15**	**Fri 27/03/15**	**NA**	**0%**	**NA**
312	Transfer Room # & Location: Luminology / NCH-00-OPD-063. Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
313	Transfer Room # & Location: Retrieb (Patient) / NCH-00-REH-024. Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
314	Transfer Room # & Location: PICU 7 / NCH-01-CLW-040. Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
315	Transfer Room # & Location: PICU 2 / NCH-01-CCW-111. Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
316	Transfer Room # & Location: Telemed to Hospital @ Night / NCH-02-SCH-093. Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
317	Transfer Room # & Location: Committee Room to L3 Ward Support / NCH-03-GWS-051. Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
318	Transfer Room # & Location: Smartboard 1 / NCH-00-REH-007. Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
319	Transfer Room # & Location: Smartboard 2 / NCH-00-REH-010. Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
320	Transfer Room # & Location: Smartboard 3 / NCH-02-SCH-077. Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
321	Transfer Room # & Location: Smartboard 4 / NCH-04-DCFP-020. Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
322	**To Children's Hospital (NB. exact dates & breakdown TBC)**	**KMcF/MMacL**	**30 days**	**Mon 16/02/15**	**Fri 27/03/15**	**NA**	**0%**	**NA**
323	**New AV Installation Works (i.e. Levels 1, 2, 3, 4 & 5 as noted below):**	**KMcF**	**30 days**	**Mon 16/02/15**	**Fri 27/03/15**	**NA**	**0%**	**NA**
324	AV Level 1 Room # NSGH-01-OPD1-068 Staff Resource / Education / Meetings (First Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
325	AV Level 2 Room # NSGH-00-OPDO-063 Meetings / Seminar (Ground Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
326	AV Level 3 Room # NSGH-B1-40T-001 Training / Meeting Room (Basement). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
327	AV Level 2 Room # NSGH-00-AAH-CJU Seminar / Hospital @ Night (Ground Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
328	AV Level 2 Room # NSGH-00-MLTJ Seminar & Training Room (20 Persons - Ground Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
329	AV Level 3 Room # NSGH-00-ORT-026 Group Area - Shared (Ground Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
330	AV Level 3 Room # NSGH-00-ORT-037 Group Teaching Room (Ground Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
331	AV Level 3 Room # NSGH-01-STW-011 Seminar Room / Meetings / Education (First Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
332	AV Level 3 Room # NSGH-02-FMA2-007 Core D Bed Management Ops Centre (First Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
333	AV Level 3 Room # NSGH-02-RENO-066 Seminar Room (20 Persons Second Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
334	AV Level 3 Room # NSGH-02-THE-002 Waiting / Seminar Room (60 Places Second Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
335	AV Level 3 Room # NSGH-03-FM3-016 Training (Third Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
336	AV Level 3 Room # NSGH-03-FMA3-006 Core D FM Meeting Room (Third Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
337	AV Level 3 Room # NSGH-03-WSO-033 Seminar / Education Room 80m2 (Third Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
338	AV Level 3 Room # NSGH-17-WO-T-023 Seminar / Education Room 40m2 (Landmark Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
339	AV Level 4 Room # NSGH-07-WO-T-032 Seminar / Education Room 80m2 (Landmark Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
340	AV Level 3 Room # NSGH-01-CCW-222 Seminar / Training Room (40-43 places First Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
341	AV Level 3 Room # NSGH-04-WS4-027 Seminar / Education Room 80m2 (Fourth Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
342	AV Level 3 Room # NSGH-09-WS9-033 Seminar / Education Room 80m2 (Ninth Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
343	AV Level 3 Room # NSGH-01-RAF-112 Seminar Room (35 Places to First Floor). Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
344	**Transfer AV Installation Works:**	**KMcF**	**30 days**	**Mon 16/02/15**	**Fri 27/03/15**	**NA**	**0%**	**NA**
345	Transfer Room # & Location: Retrieb (Adult) / NSGH-01-CPOU-010. Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
346	**To Administration Block (NB. All new AV installation works & Ground Floor)**	**KMcF/ GF**	**30 days**	**Mon 16/02/15**	**Fri 27/03/15**	**NA**	**0%**	**NA**
347	AV Level 1 Room # 2607_AA75LO-34F, Meeting Room, Ground Floor. Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
348	AV Level 1 Room # 2607_AA75LO-35F, Meeting Room, Ground Floor. Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
349	AV Level 1 Room # 2607_AA75LO-36F, Meeting Room, Ground Floor. Exact date & duration TBC by KMcF	KMcF	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
350	**Overall Commissioning & Sign-off of AV Installation Works (i.e. New & Transfer)**	KMcF	10 days	Mon 23/03/15	Fri 03/04/15	NA	0%	NA
351	Installation of Legacy Artwork (NB. exact dates & breakdown TBC)	HGM/MacL	5 days	Mon 13/04/15	Fri 17/04/15	NA	0%	NA
352	Installation of New Artwork (NB. exact dates & breakdown TBC)	HGM/MacL	20 days	Mon 23/03/15	Fri 17/04/15	NA	0%	NA
353	Management of 'Other' NHS works (NB. Full breakdown TBC)	FW/JMcG	40 days	Mon 02/02/15	Fri 27/03/15	Mon 02/02/15	0%	NA
354	Integrated Theatres Installation (NB. Awaiting confirmation from Yorkhill Charity) - indicative date / period shown	FW/JMcG	20 days	Mon 16/02/15	Fri 13/03/15	NA	0%	NA
355	Additional Fittings for Adult & Children's Pendants - indicative date / period shown	FW/JMcG	20 days	Mon 16/02/15	Fri 13/03/15	NA	0%	NA
356	Nuc. Med. - Drainage Access (ref. Radiation Decay Testing) - indicative date / period shown	FW/JMcG	10 days	Mon 16/02/15	Fri 27/02/15	NA	0%	NA
357	SAS Fixed Station Installations (Adult, NCH & Heliped) - indicative date / period shown	IP	10 days	Mon 16/02/15	Fri 27/02/15	NA	0%	NA
358	Statutory Inspections (e.g. Ceiling Mounted Patient Lifting Equipment) - indicative date & period shown, intermittent process	IP	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
359	Estates Workshop Fit-out	IP	20 days	Mon 02/02/15	Fri 27/02/15	Mon 02/02/15	25%	NA
360	Estates 1M1 Satellite / Hall stay H-out	IP	20 days	Mon 02/02/15	Fri 27/02/15	Mon 02/02/15	25%	NA
361	Installation of Disposal Curtains (Adult Hospital followed by NCH)	KC/HG/MMacL	10 days	Mon 13/04/15	Fri 24/04/15	NA	0%	NA
362	Pre-Stocking of Departments (NB. exact dates & breakdown TBC / indicative at present)	GK	59 days	Tue 27/01/15	Fri 17/04/15	Tue 27/01/15	30%	NA
363	Pre-stocking Preliminary Meetings to agree finalised generic ward top-up list, etc.	GK/PMcQ	9 days	Tue 27/01/15	Fri 06/02/15	Tue 27/01/15	85%	NA
364	Pre-stocking new hospital visit to familiarize & agree best storage layout	GK/PMcQ	1 day	Wed 28/01/15	Wed 28/01/15	NA	0%	NA
365	Finance - list provision of new cost centres and IL/As (Ref. GK's email of 27/01/15)	GK	10 days	Mon 02/02/15	Fri 13/02/15	Mon 02/02/15	75%	NA
366	Sort Miscellaneous matters (e.g. access to building / AGV access, protection requirements if any, etc)	GK/KC/JM	10 days	Mon 02/02/15	Fri 13/02/15	Mon 02/02/15	75%	NA
367	Confirmation dates for Pre-stocking Activities (NB. Wards will likely have to be done at weekends - ref. GK's email 27/01/15)	GK	10 days	Mon 16/02/15	Fri 27/02/15	NA	0%	NA
368	Start of Pre-stocking Activities for Phase 2 Close-out Period (NB. Indication duration shown at present - full breakdown TBC)	GK	35 days	Mon 02/03/15	Fri 17/04/15	NA	0%	NA
369	Linen Laundry Services (NB. Exact dates & breakdown TBC)	KM/JM	30 days	Mon 02/03/15	Fri 17/04/15	NA	0%	NA
370	Installation of Linen Trolleys	KM/JM	20 days	Mon 02/03/15	Fri 27/03/15	NA	0%	NA
371	Linen Caged to Unspoiler Holds	KM/JM	10 days	Mon 16/03/15	Fri 27/03/15	NA	0%	NA
372	Pre-Stocking of Linen	KM/JM	15 days	Mon 30/03/15	Fri 17/04/15	NA	0%	NA
373	Installation of Washers & Dryers to Basement (NB. exact dates & breakdown TBC)	KC	10 days	Mon 16/03/15	Fri 03/04/15	NA	0%	NA
374	Training & Familiarisation of Equipment, Systems, etc. (NB. Exact dates & breakdown TBC)	KC/ACT/IP	50 days	Mon 16/02/15	Fri 24/04/15	NA	0%	NA
375	Emergency Supports Exercises & Testing (NB. Exact dates & breakdown TBC)	SJF/McC	40 days	Mon 16/03/15	Fri 24/04/15	NA	0%	NA
376	**Site Visits**	**KC/HG/MMacL**	**50 days**	**Mon 16/02/15**	**Fri 24/04/15**	**NA**	**0%**	**NA**
377	Internal NHS Parties (e.g. Consultants, Dept. Heads, etc - exact dates & breakdown TBC)	KC/HG/MMacL	50 days	Mon 16/02/15	Fri 24/04/15	NA	0%	NA
378	External NHS Parties (e.g. Media, Dignitaries, General Public, etc - NB. exact dates & breakdown TBC)	KC/HG/MMacL	50 days	Mon 16/02/15	Fri 24/04/15	NA	0%	NA
379	Statutory Parties (e.g. HSE, HSENI, SEPA, etc - NB. exact dates & breakdown TBC)	KC/IP	45 days	Mon 16/02/15	Fri 20/03/15	NA	0%	NA
380	Continued Development of BMG's remit for Phase 3 Migration Period	ACT	60 days	Mon 02/02/15	Fri 24/04/15	Mon 02/02/15	10%	NA
381	Finalise Migration Period Workbooks	C&B/AD	60 days	Mon 02/02/15	Fri 24/04/15	Mon 02/02/15	15%	NA
382	Develop & Finalise Pre-stocking Strategy for Phase 3 Migration Period	GK	20 days	Mon 02/03/15	Fri 27/03/15	NA	0%	NA
383	Completion of NHS Commissioning / Phase 2 Close-out Period (NB. Milestone Event)	DL/PM	1 day	Thu 23/04/15	Thu 23/04/15	NA	0%	NA
384	Start of Phase 3 Migration Period (NB Milestone Event / subsequent activities & dates are currently under development)	DL/PM/FMcC	49 days	Fri 24/04/15	Tue 30/06/15	NA	0%	NA
385	**Stage 1 & Groups 1 to 4 / Wards & Depts. as noted**	**FMcC**	**7 days**	**Fri 24/04/15**	**Sun 03/05/15**	**NA**	**0%**	**NA**
386	Group 1 / Ward / Dept - SGH OPD	FMcC	1 day	Fri 24/04/15	Fri 24/04/15	NA	0%	NA
387	Group 2 / Ward / Dept - SGH Therapies	FMcC	1 day	Sat 25/04/15	Sat 25/04/15	NA	0%	NA
388	Group 3A / Ward / Dept - WIG Ward G6 Renal Dialysis (10 Stations)	FMcC	0 days	Sun 26/04/15	Sun 26/04/15	NA	0%	NA
389	Group 3B / Ward / Dept - GRI Wards 12, 13, 25 Renal Dialysis (12 Stations)	FMcC	0 days	Sun 26/04/15	Sun 26/04/15	NA	0%	NA
390	Completion of Pre-equipping of 200 Beds (Not 'Carry on from NHS Commissioning Period)	FMcC	6 days	Fri 24/04/15	Thu 30/04/15	NA	0%	NA
391	Group 4 / Ward / Dept - SGH ICU, NICU, L4/L5/L6 Theatres, Endoscopy, Wards 6 & 8A	FMcC	1 day	Fri 01/05/15	Fri 01/05/15	NA	0%	NA
392	Group 5 / Ward / Dept - SGH ICU, NICU/PI, Rad, Wards (susp. & Med), CCU, Cardiology, Card Surgery, Ortho / Trauma, Urology	FMcC	0 days	Sat 02/05/15	Sat 02/05/15	NA	0%	NA
393	Group 6 / Ward / Dept - SGH Wards: 1, 5, 6, 21, 23, 24, 26, 52 + CEPOD & Trauma Theatres	FMcC	0 days	Sun 03/05/15	Sun 03/05/15	NA	0%	NA
394	**Stage 2 & Groups 7 & 8 / Wards & Depts. as noted**	**FMcC**	**5 days**	**Mon 04/05/15**	**Sun 10/05/15**	**NA**	**0%**	**NA**
395	Transfer of 325 Beds from SGH to New Hospital	FMcC	4 days	Mon 04/05/15	Thu 07/05/15	NA	0%	NA
396	Group 7A / GGH+SGH / ENT - Ward 4A GGH & Ward 62 SGH	FMcC	1 day	Fri 08/05/15	Fri 08/05/15	NA	0%	NA
397	Group 7B / WIG / Vascular	FMcC	0 days	Sat 09/05/15	Sat 09/05/15	NA	0%	NA
398	Group 8 / WHJ / Renal Inpatients	FMcC	0 days	Sun 10/05/15	Sun 10/05/15	NA	0%	NA
399	**Stage 3 & Groups 9 to 11 / Wards & Depts. as note**	**FMcC**	**10 days**	**Mon 11/05/15**	**Sun 24/05/15**	**NA**	**0%**	**NA**
400	Transfer of 100 Beds from WIG to New Hospital	FMcC	5 days	Mon 11/05/15	Fri 15/05/15	NA	0%	NA
401	Group 9 / VI / ED, Wards 4, 5, 8, 9, 12, 14 & 16, D & Elective Theatres E Floor	FMcC	1 day	Fri 15/05/15	Sat 16/05/15	NA	0%	NA

nSGH NHS Commissioning Period Programme
Rev 1 / Master Update

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

Programmer Owner: Ian Matthewson (nSGH NHS Senior Project Planner) [redacted]

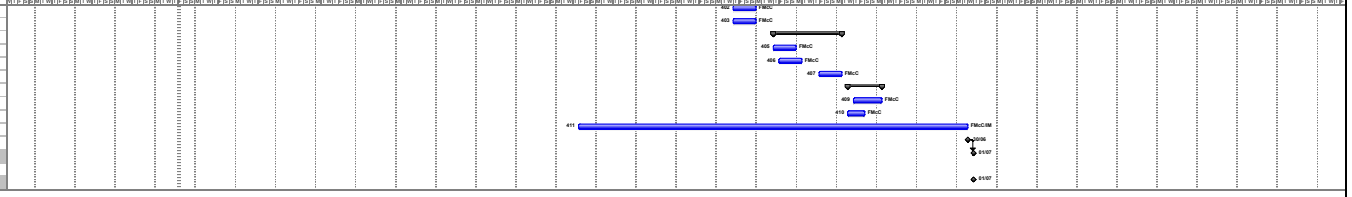
A47069198

nSGH Phase 2 Close-out Programme from Handover to Start of Migration Period (i.e. to start of Phase 3 Close-out Period)

Progress Update - 06/02/2015

'Work to' Programme issued 30/01/2015 to NHS Project Team (ref. 'Work To' Programme)

ID#	Activity Description	Resource Initials	Activity Duration	Programme Start Date	Programme Finish Date	Actual Start Date	Recorded % Complete	Actual Finish Date
402	Group 10 / V / LGG, 11G, Wards 1, 2, 4, 6, 7, 10, 17, A & B, Endoscopy, L&A/OD theatre	FMcC	2 days	Wed 21/05/15	Sun 24/05/15	NA	0%	NA
403	Group 11 / VI / MHU Wards 2 North & 3 North / South	FMcC	2 days	Thu 21/05/15	Sun 24/05/15	NA	0%	NA
404	**Stage 4 & Groups 12 & 13 / Wards & Depts. as noted**	**FMcC**	**8 days**	**Thu 28/05/15**	**Mon 08/06/15**	**NA**	**0%**	**NA**
405	Transfer of 324 Beds from VI to New Hospital	FMcC	2 days	Thu 28/05/15	Sun 31/05/15	NA	0%	NA
406	Group 12 / WIG / ED, Wards F1 to F4 inclusive, AAU, L8, L10, GDI & E3+E4	FMcC	2 days	Fri 29/05/15	Mon 01/06/15	NA	0%	NA
407	Group 13 / GGH / Wards 2A, 3B, 3C, 4B, 5B, 5C, 6C, 7C, 8A, 8B, 8C / OPAT / Brownlee & Beatson Wards 18 + 19	FMcC	2 days	Fri 05/06/15	Mon 08/06/15	NA	0%	NA
408	**Stage 5 & Groups 14 & 15 / Wards & Depts. as noted**	**FMcC**	**4 days**	**Wed 10/06/15**	**Mon 15/06/15**	**NA**	**0%**	**NA**
409	Group 14 / RHSC / Outpatients	FMcC	3 days	Thu 11/06/15	Mon 15/06/15	NA	0%	NA
410	Group 15 / RHSC / Inpatients	FMcC	2 days	Wed 10/06/15	Fri 12/06/15	NA	0%	NA
411	Miscellaneous Moves from WIG, GRI & MHU, GGH (e.g. admin, office management, etc - exact details / breakdown TBC)	FMcC/IM	49 days	Fri 24/04/15	Tue 30/06/15	NA	0%	NA
412	Completion of Phase 3 Migration Period (NB. Milestone Event)	DL/PM	1 day	Tue 30/06/15	Tue 30/06/15	NA	0%	NA
413	Demolition / Decommissioning Operations (details TBC along with programme / phasing overlaps where applicable)	MG/IM	1 day	Wed 01/07/15	Wed 01/07/15	NA	0%	NA
414								
415	Demolition Works to existing SGH (Details TBC along with associated programme / phasing overlaps where applicable)	HM/CD/MG/IM	1 day	Wed 01/07/15	Wed 01/07/15	NA	0%	NA



nSGH NHS Commissioning Period Programme
Rev 1 / Master Update

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

Programmer Owner: Ian Matthewson (nSGH NHS Senior Project Planner) [redacted]

5

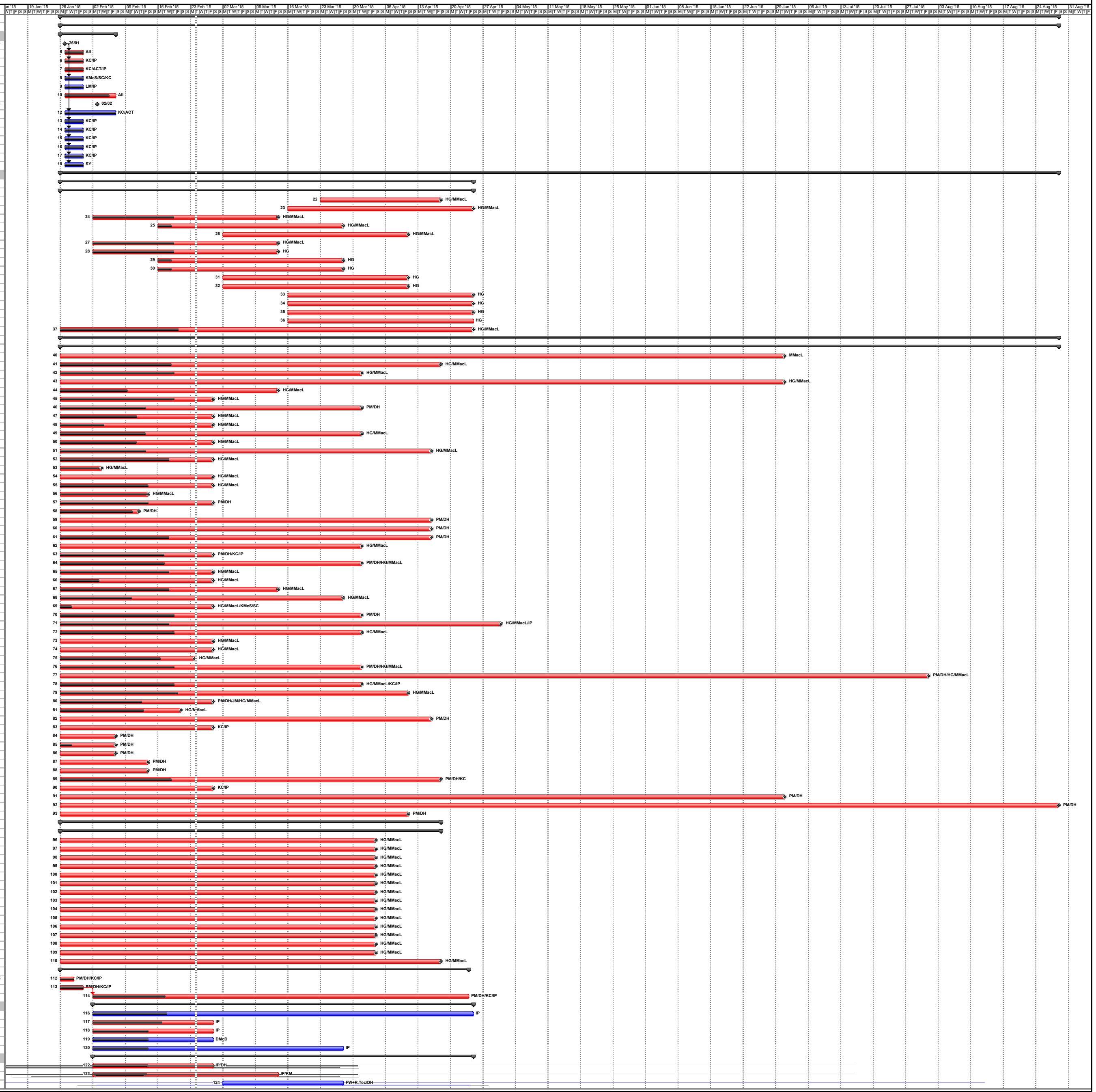
A47069198

nSGH Phase 2 Close-out Programme from Handover to Start of Migration Period (i.e. to start of Phase 3 Close-out Period)

Progress Update - 20/02/2015

'Work to' Programme issued 30/01/2015 to NHS Project Team (ref. 'Work To' Programme)

ID#	Activity Description	Resource Initials	Activity Duration	Programme Start Date	Programme Finish Date	Actual Start Date	Recorded % Complete	Actual Finish Date
1	**Phase 2 of NHS Close-out Period Programme for nSGH:**	**DL**	**156 days?**	**Mon 26/01/15**	**Fri 28/08/15**	**Mon 26/01/15**	**13%**	**NA**
2	**NHS Commissioning Period Primary & Supportive Activities**	**DL/PM**	**156 days?**	**Mon 26/01/15**	**Fri 28/08/15**	**Mon 26/01/15**	**13%**	**NA**
3	**Initial Post Handover Activities (i.e. typically to be focused on in first week)**	**As Noted**	**10 days**	**Mon 26/01/15**	**Fri 06/02/15**	**Mon 26/01/15**	**98%**	**NA**
4	Handover of nSGH to NHS (***Start of NHS Commissioning Period***)	DL/PM	1 day	Mon 26/01/15	Mon 26/01/15	Mon 26/01/15	100%	Mon 26/01/15
5	NHS Project Team / FM / Estates / Security / General Mobilisation to nSGH (NB. Inclusive of P/O decant, etc)	All	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
6	Set up FM Help Desk + Compilation & Issue of ID Badges, Security Protocols, Delivery Controls (etc)	KC/IP	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
7	Set up entrance / delivery controlled entry points in line with delivery & deployment requirements & protocols	KC/ACT/IP	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
8	Roll out NHS Commissioning Team Handsets (ref. general interface with Telecomms)	KMcS/SC/KC	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
9	Install Fire Extinguishers to Initial Occupation Areas (ref. email from LM 23/01/15 - 100 fire extinguishers in total)	LM/IP	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
10	Assessment & Appraisal of agreed Handover Criteria between NHS & Brookfield (e.g. Snagging/Outstanding/Additional Works)	All	9 days	Tue 27/01/15	Fri 06/02/15	Tue 27/01/15	85%	NA
11	Implement Hospital Occupation Flow as developed Pre-Handover (NB. 'point of reference' activity)	All	1 day	Mon 02/02/15	Mon 02/02/15	Mon 02/02/15	100%	Mon 02/02/15
12	Incorporate Standard Protection by BMG to agreed areas	KC/ACT	9 days	Tue 27/01/15	Fri 06/02/15	Tue 27/01/15	100%	Fri 06/02/15
13	Set-up the Administering of Inductions, Orientations, PTW's, etc.	KC/IP	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
14	Set-up & implement Waste Management Protocols & associated operational infrastructure	KC/IP	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
15	Set-up system for the administering of Risk Assessments & Method Statements	KC/IP	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
16	Set-up sanitation protocols (e.g. Operational Washroom Facilities inclusive of consumables, drinking water points, etc)	KC/IP	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
17	Set-up Catering / Messing Protocols & associated facilities for NHS Commissioning Period	KC/IP	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
18	Set-up Traffic Management / Car Parking / Transportation Logistics & Protocols	SY	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
19	**Managing NHS Commissioning Period Interface with Brookfield**	**PM**	**156 days**	**Mon 26/01/15**	**Fri 28/08/15**	**Mon 26/01/15**	**16%**	**NA**
20	**Snagging Works by Brookfield (NB. Internal & external / ref. Agreed IDMS information)**	**PH/DH**	**65 days**	**Mon 26/01/15**	**Fri 24/04/15**	**Mon 26/01/15**	**14%**	**NA**
21	**Analyse, schedule & sequence Brookfield's defined list of Snagging Works (NB. Adults & NCH not separated for now)**	**PM/DH/IM**	**65 days**	**Mon 26/01/15**	**Fri 24/04/15**	**Mon 26/01/15**	**14%**	**NA**
22	Basement Level (NB. at start - 120 defects / snags in total)	HG/MMacL	20 days	Mon 23/03/15	Fri 17/04/15	NA	0%	NA
23	Ground Floor Level (NB. at start - 564 defects / snags in total)	HG/MMacL	30 days	Mon 16/03/15	Fri 24/04/15	NA	0%	NA
24	1st Floor Level (NB. at start - 468 defects / snags in total)	HG/MMacL	30 days	Mon 02/02/15	Fri 13/03/15	Mon 02/02/15	45%	NA
25	2nd Floor Level (NB. at start - 1079 defects / snags in total)	HG/MMacL	30 days	Mon 16/02/15	Fri 27/03/15	Mon 16/02/15	10%	NA
26	3rd Floor Level (NB. at start - 508 defects / snags in total)	HG/MMacL	30 days	Mon 02/03/15	Fri 10/04/15	NA	0%	NA
27	4th Floor Level (NB. at start - 248 defects / snags in total)	HG/MMacL	30 days	Mon 02/02/15	Fri 13/03/15	Mon 02/02/15	45%	NA
28	5th Floor Level (NB. at start - 72 defects / snags in total)	HG	30 days	Mon 02/02/15	Fri 13/03/15	Mon 02/02/15	45%	NA
29	6th Floor Level (NB. at start - 55 defects / snags in total)	HG	30 days	Mon 16/02/15	Fri 27/03/15	Mon 16/02/15	10%	NA
30	7th Floor Level (NB. at start - 184 defects / snags in total)	HG	30 days	Mon 16/02/15	Fri 27/03/15	Mon 16/02/15	10%	NA
31	8th Floor Level (NB. at start - 151 defects / snags in total)	HG	30 days	Mon 02/03/15	Fri 10/04/15	NA	0%	NA
32	9th Floor Level (NB. at start - 203 defects / snags in total)	HG	30 days	Mon 02/03/15	Fri 10/04/15	NA	0%	NA
33	10th Floor Level (NB. at start - 135 defects / snags in total)	HG	30 days	Mon 16/03/15	Fri 24/04/15	NA	0%	NA
34	11th Floor Level (NB. at start - 201 defects / snags in total)	HG	30 days	Mon 16/03/15	Fri 24/04/15	NA	0%	NA
35	12th Floor Level (NB. at start - 203 defects / snags in total)	HG	30 days	Mon 16/03/15	Fri 24/04/15	NA	0%	NA
36	13th Level (e.g. access to helipad, stairwell, etc) - no snagging or defects identified yet (***Indicative***)	HG	30 days	Mon 16/03/15	Fri 24/04/15	NA	0%	NA
37	External Works, including courtyard & roof top areas (NB. at start - 176 defects / snags in total)	HG/MMacL	65 days	Mon 26/01/15	Fri 24/04/15	Mon 26/01/15	30%	NA
38	**Outstanding Works by Brookfield (NB. Location as noted - Adults, NCH or Both)**	**PM/DH**	**156 days**	**Mon 26/01/15**	**Fri 28/08/15**	**Mon 26/01/15**	**22%**	**NA**
39	**Analyse, schedule & sequence Brookfield's defined Outstanding Works (NB. noted end dates are as agreed with BM)**	**PM/DH/IM**	**156 days**	**Mon 26/01/15**	**Fri 28/08/15**	**Mon 26/01/15**	**22%**	**NA**
40	VIE Slab and associated works - Maternity Unit (NB. Exact start date TBC by BM)	MMacL	113 days	Mon 26/01/15	Tue 30/06/15	NA	0%	NA
41	Neuro Link Bridge (connection to T&LC) - Adults / INS	HG/MMacL	60 days	Mon 26/01/15	Fri 17/04/15	Mon 26/01/15	30%	NA
42	Neuro Link Bridge (oxygen connection) - Adults / INS (***NB. Asbestos Survey Info. TBC by NHS - ref. IM/IP email 20/02/15***)	HG/MMacL	47 days	Mon 26/01/15	Tue 31/03/15	Mon 26/01/15	40%	NA
43	Neuro Link Bridge (connection to INS) - Adults / INS (NB. Exact start date TBC by BM)	HG/MMacL	113 days	Mon 26/01/15	Tue 30/06/15	NA	0%	NA
44	Separation Tank - Adult ED Dept. (NB. Delivery from Pipex expected wc 09/03/15 following DT sign-off)	HG/MMacL	35 days	Mon 26/01/15	Fri 13/03/15	Mon 26/01/15	30%	NA
45	Art Strategy installation - complete to all areas	HG/MMacL	25 days	Mon 26/01/15	Fri 27/02/15	Mon 26/01/15	75%	NA
46	Land Eng: incomplete landscape works to all external areas	PM/DH	47 days	Mon 26/01/15	Tue 31/03/15	Mon 26/01/15	30%	NA
47	Cores A&B & Main Entrance (meet and greet panels glass cabinets) - Adult Hospital (***NB. Awaiting NHS Approval***)	HG/MMacL	25 days	Mon 26/01/15	Fri 27/02/15	Mon 26/01/15	50%	NA
48	Lead lined units and associated worktops (ADB codes STF1021, 1024 & 1025) - Adult / Nuc. Medicine (***NHS input req'd?***)	HG/MMacL	25 days	Mon 26/01/15	Fri 27/02/15	Mon 26/01/15	30%	NA
49	DCFP Room 024 (ROMPA wall padding by BM) - DCFP (***NB. Currently a wall padding issue that BM are addressing***)	HG/MMacL	47 days	Mon 26/01/15	Tue 31/03/15	Mon 26/01/15	30%	NA
50	Additional divider screens and fabric boards - MIL009 / RAG082 / DOPDO22 (***NB. BM awaiting delivery***)	HG/MMacL	25 days	Mon 26/01/15	Fri 27/02/15	Mon 26/01/15	50%	NA
51	Group 5 areas (where Board subs are working) - Adults & NCH (***NB. Mtg 19/02/15 to discuss NHS handback + additional cost***)	HG/MMacL	58 days	Mon 26/01/15	Wed 15/04/15	Mon 26/01/15	25%	NA
52	Adult sanctuary (roof access hatch) - Adults (***NB. BM have advised will be installed 23/02/15***)	HG/MMacL	25 days	Mon 26/01/15	Fri 27/02/15	Mon 26/01/15	70%	NA
53	Interventional theatre (PMI works) - Adults (L2) - (***BM have advised 90% complete & awaiting arms to pendents due 26/02/15***)	HG/MMacL	7 days	Mon 26/01/15	Tue 03/02/15	Mon 26/01/15	90%	NA
54	Adult sanctuary (install Gustav's panels) - Adults (***NB. BM have advised work will commence 23/02/15***)	HG/MMacL	25 days	Mon 26/01/15	Fri 27/02/15	NA	0%	NA
55	Decontamination Room (i.e. complete) - ED Dept. (***NB. Slightly behind. BM awaiting NHS decision on sanitary ware & fittings***)	HG/MMacL	25 days	Mon 26/01/15	Fri 27/02/15	Mon 26/01/15	60%	NA
56	MRI Rooms (knock out panels) - Various	HG/MMacL	15 days	Mon 26/01/15	Fri 13/02/15	Mon 26/01/15	100%	Fri 13/02/15
57	New VIE turning circle - Adults	PM/DH	25 days	Mon 26/01/15	Fri 27/02/15	Mon 26/01/15	60%	NA
58	New VIE (pavement works south of road - bus stop not required) - Adults (***NB. Wearing course remains outstanding***)	PM/DH	13 days	Mon 26/01/15	Wed 11/02/15	Mon 26/01/15	90%	NA
59	Main entrance walls and signage - Campus (NB. Exact start date TBC by BM)	PM/DH	58 days	Mon 26/01/15	Wed 15/04/15	NA	0%	NA
60	Neuro steel bridge works - INS (NB. Exact start date TBC by BM)	PM/DH	58 days	Mon 26/01/15	Wed 15/04/15	NA	0%	NA
61	Street lights to boulevard, complete landscaping to boulevard - Campus	PM/DH	58 days	Mon 26/01/15	Wed 15/04/15	Mon 26/01/15	30%	NA
62	BREEAM Report application - Adults & NCH (NB. Exact start date TBC by BM)	HG/MMacL	47 days	Mon 26/01/15	Tue 31/03/15	NA	0%	NA
63	AGV (performance tests and trials) - Adult Hospital (***NB. On prog. But BM await linen cages to complete performance testing***)	PM/DH/KC/IP	25 days	Mon 26/01/15	Fri 27/02/15	Mon 26/01/15	65%	NA
64	Structal (replacement of panels, complete install and review BMU protection) - Adult's	PM/DH/HG/MMacL	47 days	Mon 26/01/15	Tue 31/03/15	Mon 26/01/15	35%	NA
65	Sanctuary (sun pipes) - NCH	HG/MMacL	25 days	Mon 26/01/15	Fri 27/02/15	Mon 26/01/15	70%	NA
66	Sanctuary (stained glass install)	HG/MMacL	25 days	Mon 26/01/15	Fri 27/02/15	Mon 26/01/15	25%	NA
67	Schiehallion radio nuclide room doors - NCH	HG/MMacL	35 days	Mon 26/01/15	Fri 13/03/15	Mon 26/01/15	50%	NA
68	DCFP anti-ligature works - NCH (***NB. BM require meeting with NCH users to agree spec. / scheduled 27/02/15***)	HG/MMacL	45 days	Mon 26/01/15	Fri 27/03/15	Mon 26/01/15	25%	NA
69	Telecoms 600 pair lines install plus additional 600 lines req. by Board - Adult's & NCH (***NB. BM await access + board***)	HG/MMacL/KMcS/SC	25 days	Mon 26/01/15	Fri 27/02/15	Mon 26/01/15	10%	NA
70	External LED lighting - Adult	PM/DH	47 days	Mon 26/01/15	Tue 31/03/15	Mon 26/01/15	40%	NA
71	Patient entertainment (screens) - NCH	HG/MMacL/IP	70 days	Mon 26/01/15	Thu 30/04/15	Mon 26/01/15	25%	NA
72	External facade (BM drawings) - Adult's & NCH	HG/MMacL	47 days	Mon 26/01/15	Tue 31/03/15	Mon 26/01/15	40%	NA
73	LTHW (PMI works) - Laboratory (***NB. NHS & BM meeting 20/02/15 to discuss***)	HG/MMacL	25 days	Mon 26/01/15	Fri 27/02/15	NA	0%	NA
74	Isolation Rooms (HEPA filters) - ***NB. BM have advised will install prior to Patient Occupancy / Exact Date TBA***	HG/MMacL	25 days	Mon 26/01/15	Fri 27/02/15	NA	0%	NA
75	Internal signage, wayfinding, door signage - Adult's & NCH (***NB. BM anticipate finishing end of February***)	HG/MMacL	21 days	Mon 26/01/15	Mon 23/02/15	Mon 26/01/15	75%	NA
76	Neo-natal link bridge (internals and ext. Cladding panels) - NCH	PM/DH/HG/MMacL	47 days	Mon 26/01/15	Tue 31/03/15	Mon 26/01/15	40%	NA
77	Neo-natal link bridge (knock out panel replacement) - NCH (***NB. Exact date TBA by BM & NHS***)	PM/DH/HG/MMacL	136 days	Mon 26/01/15	Fri 31/07/15	NA	0%	NA
78	Lifts (works to beneficial lifts) - Adult's & NCH	HG/MMacL/KC/IP	47 days	Mon 26/01/15	Tue 31/03/15	Mon 26/01/15	40%	NA
79	Pneumatic tube gantry (removal) - Laboratory	HG/MMacL	55 days	Mon 26/01/15	Fri 10/04/15	Mon 26/01/15	35%	NA
80	Core G L13 (complete helipad ramp, install bird sounder and clean area) - Adult's	PM/DH/JM/HG/MMacL	25 days	Mon 26/01/15	Fri 27/02/15	Mon 26/01/15	55%	NA
81	Theatres (complete Starkstrom install incl. DVI/SDI sockets and accessories on arms) - Adult's & NCH	HG/MMacL	20 days	Mon 26/01/15	Fri 20/02/15	Mon 26/01/15	70%	NA
82	Hardgate Road (i.e. white lining)	PM/DH	58 days	Mon 26/01/15	Wed 15/04/15	NA	0%	NA
83	Energy model (evidence of compliance with energy target) - Adult's & NCH	KC/IP	25 days	Mon 26/01/15	Fri 27/02/15	NA	0%	NA
84	NEC Supervisors Communication No.236 (***NB. Tarmac to be removed & relayed***)	PM/DH	10 days	Mon 26/01/15	Fri 06/02/15	NA	0%	NA
85	NEC Supervisors Communication No.237 (***NB. New design rec'd from WSP & CI issued to Land Eng. By BM***)	PM/DH	10 days	Mon 26/01/15	Fri 06/02/15	Mon 26/01/15	25%	NA
86	NEC Supervisors Communication No.238 (***NB. BM await Mercury response to lighting***)	PM/DH	10 days	Mon 26/01/15	Fri 06/02/15	NA	0%	NA
87	NEC Supervisors Defect No.081 (***NB. BM to agreed pointing with Peter Moir of the NHS Project Team***)	PM/DH	15 days	Mon 26/01/15	Fri 13/02/15	NA	0%	NA
88	NEC Supervisors Defect No.088 (***NB. BM await remedial to be completed prior to decision***)	PM/DH	15 days	Mon 26/01/15	Fri 13/02/15	NA	0%	NA
89	Completion of sweep up programme and inspections with Supervisor - Adult's & NCH	PM/DH/KC	60 days	Mon 26/01/15	Fri 17/04/15	Mon 26/01/15	30%	NA
90	Medical Gas System (testing & witnessing of med gas system by CSO - *Both / note tie-in with NHS Specialist Commissioning*)	KC/IP	25 days	Mon 26/01/15	Fri 27/02/15	NA	0%	NA
91	Completion of Children's Park SUDS - NCH	PM/DH	113 days	Mon 26/01/15	Tue 30/06/15	NA	0%	NA
92	Completion of Children's Park - NCH	PM/DH	156 days	Mon 26/01/15	Fri 28/08/15	NA	0%	NA
93	Completion of Car Park 1	PM/DH	55 days	Mon 26/01/15	Fri 10/04/15	NA	0%	NA
94	**Additional Works by Brookfield (***NB. No split yet into Adults & NCH + signed off CO's not consulted / referred to yet***)**	**PM/DH**	**60 days**	**Mon 26/01/15**	**Fri 17/04/15**	**NA**	**0%**	**NA**
95	**Analyse, schedule & sequence Brookfield's defined list of Additional Works (NB. Indicative dates currently shown)**	**PM/DH/IM**	**60 days**	**Mon 26/01/15**	**Fri 17/04/15**	**NA**	**0%**	**NA**
96	Basement Level (NB. Exact workload TBC / all as formally instructed by NHS)	HG/MMacL	50 days	Mon 26/01/15	Fri 03/04/15	NA	0%	NA
97	Ground Floor Level (NB. Exact workload TBC / all as formally instructed by NHS)	HG/MMacL	50 days	Mon 26/01/15	Fri 03/04/15	NA	0%	NA
98	1st Floor Level (NB. Exact workload TBC / all as formally instructed by NHS)	HG/MMacL	50 days	Mon 26/01/15	Fri 03/04/15	NA	0%	NA
99	2nd Floor Level (NB. Exact workload TBC / all as formally instructed by NHS)	HG/MMacL	50 days	Mon 26/01/15	Fri 03/04/15	NA	0%	NA
100	3rd Floor Level (NB. Exact workload TBC / all as formally instructed by NHS)	HG/MMacL	50 days	Mon 26/01/15	Fri 03/04/15	NA	0%	NA
101	4th Floor Level (NB. Exact workload TBC / all as formally instructed by NHS)	HG/MMacL	50 days	Mon 26/01/15	Fri 03/04/15	NA	0%	NA
102	5th Floor Level (NB. Exact workload TBC / all as formally instructed by NHS)	HG/MMacL	50 days	Mon 26/01/15	Fri 03/04/15	NA	0%	NA
103	6th Floor Level (NB. Exact workload TBC / all as formally instructed by NHS)	HG/MMacL	50 days	Mon 26/01/15	Fri 03/04/15	NA	0%	NA
104	7th Floor Level (NB. Exact workload TBC / all as formally instructed by NHS)	HG/MMacL	50 days	Mon 26/01/15	Fri 03/04/15	NA	0%	NA
105	8th Floor Level (NB. Exact workload TBC / all as formally instructed by NHS)	HG/MMacL	50 days	Mon 26/01/15	Fri 03/04/15	NA	0%	NA
106	9th Floor Level (NB. Exact workload TBC / all as formally instructed by NHS)	HG/MMacL	50 days	Mon 26/01/15	Fri 03/04/15	NA	0%	NA
107	10th Floor Level (NB. Exact workload TBC / all as formally instructed by NHS)	HG/MMacL	50 days	Mon 26/01/15	Fri 03/04/15	NA	0%	NA
108	11th Floor Level (NB. Exact workload TBC / all as formally instructed by NHS)	HG/MMacL	50 days	Mon 26/01/15	Fri 03/04/15	NA	0%	NA
109	12th Floor Level (NB. Exact workload TBC / all as formally instructed by NHS)	HG/MMacL	50 days	Mon 26/01/15	Fri 03/04/15	NA	0%	NA
110	External Works, including courtyard & roof top areas (NB. Exact ditto)	HG/MMacL	60 days	Mon 26/01/15	Fri 17/04/15	NA	0%	NA
111	**Soft Landings interface with Brookfield during NHS Commissioning Period**	**PM/DH/KC/IP**	**64 days**	**Mon 26/01/15**	**Thu 23/04/15**	**Mon 26/01/15**	**30%**	**NA**
112	Set up soft landing 'initial after care' support team with Brookfield	PM/DH/KC/IP	3 days	Mon 26/01/15	Wed 28/01/15	Mon 26/01/15	100%	Wed 28/01/15
113	Agree reporting and feedback loops, inclusive of associated interfaces	PM/DH/KC/IP	5 days	Mon 26/01/15	Fri 30/01/15	Mon 26/01/15	100%	Fri 30/01/15
114	Implement agreed Soft Landing's 'initial after care' process (i.e. in partnership with Brookfield's Soft Landing Team)	PM/DH/KC/IP	59 days	Mon 02/02/15	Thu 23/04/15	Mon 02/02/15	20%	NA
115	**NHS Standard Commissioning Operations (NB. Full breakdown TBC)**	**KC/IP**	**60 days**	**Mon 02/02/15**	**Fri 24/04/15**	**Mon 02/02/15**	**33%**	**NA**
116	Routine Estates checks & maintenance (NB. exact dates & breakdown TBC)	IP	60 days	Mon 02/02/15	Fri 24/04/15	Mon 02/02/15	20%	NA
117	Fire Alarm Testing & associated FM operational checks (NB. exact dates & breakdown TBC)	IP	20 days	Mon 02/02/15	Fri 27/02/15	Mon 02/02/15	55%	NA
118	Hospital BMS checks & handover interface with Brookfield (NB. exact dates & detail TBC)	IP	20 days	Mon 02/02/15	Fri 27/02/15	Mon 02/02/15	50%	NA
119	Catering commissioning (NB. exact dates & breakdown TBC)	DMcD	20 days	Mon 02/02/15	Fri 27/02/15	Mon 02/02/15	50%	NA
120	AGV's / Service Yard Commissioning (NB. exact dates & breakdown TBC)	IP	40 days	Mon 02/02/15	Fri 27/03/15	Mon 02/02/15	25%	NA
121	**NHS Specialist Commissioning & Installation Operations (NB. Full breakdown TBC)**	**KC/IP**	**60 days**	**Mon 02/02/15**	**Fri 24/04/15**	**Mon 02/02/15**	**11%**	**NA**
122	Water Testing & Commissioning (NB. exact dates & breakdown TBC)	IP/DH	20 days	Mon 02/02/15	Fri 27/02/15	Mon 02/02/15	50%	NA
123	Fire Safety Commissioning & Migration Testing (NB. Complete with Fire Extinguishers - exact dates & breakdown TBC)	IP/KM	30 days	Mon 02/02/15	Fri 13/03/15	Mon 02/02/15	33%	NA
124	Renal Commissioning (NB. exact dates & breakdown TBC)	FW+R.Tec/DH	20 days	Mon 02/03/15	Fri 27/03/15	NA	0%	NA



nSGH NHS Commissioning Period Programme
Rev 1 / Master Update

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

Programmer Owner: Ian Matthewson (nSGH NHS Senior Project Planner) - [redacted]

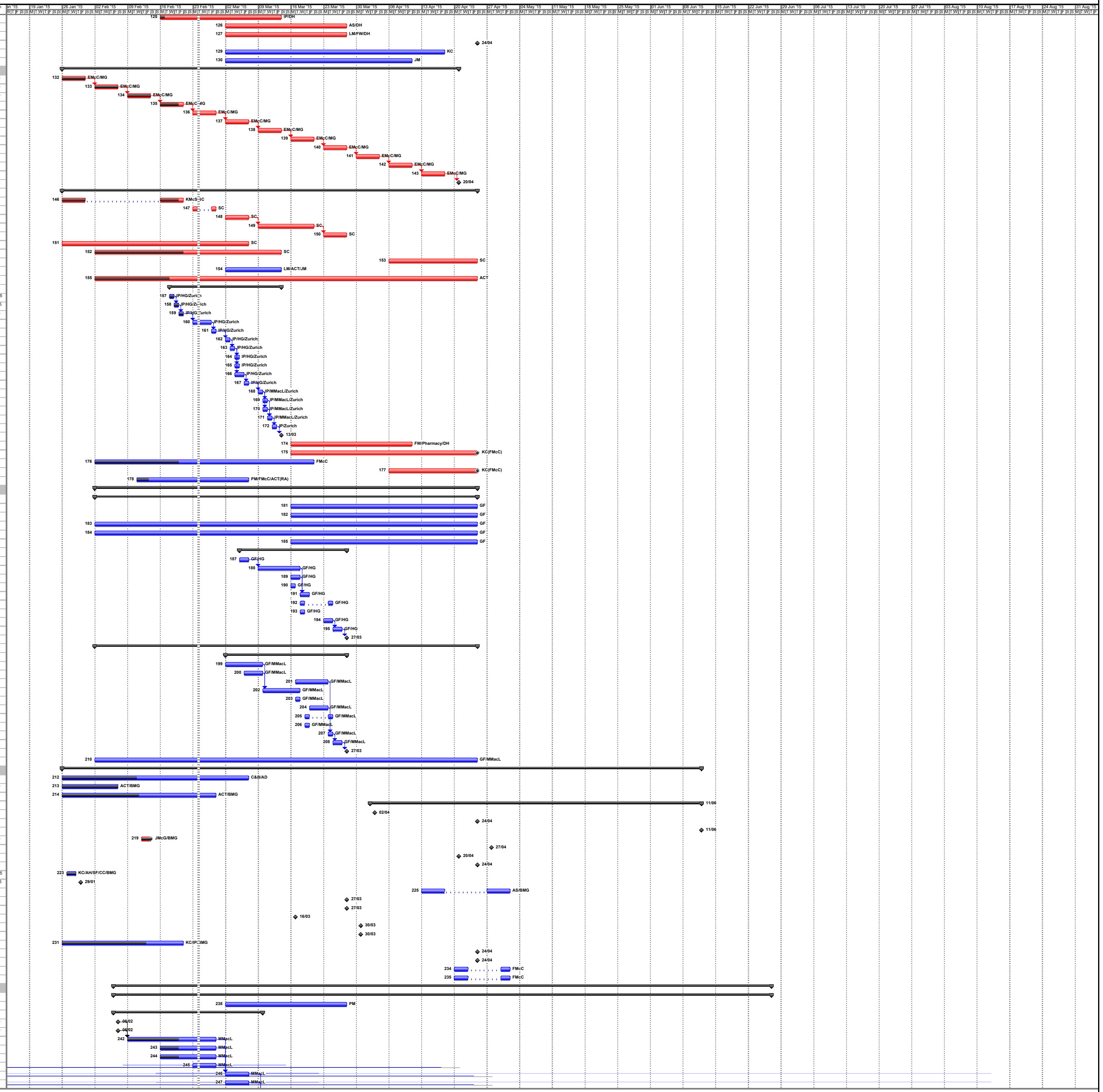
A47069198

nSGH Phase 2 Close-out Programme from Handover to Start of Migration Period (i.e. to start of Phase 3 Close-out Period)

Progress Update - 20/02/2015

'Work to' Programme issued 30/01/2015 to NHS Project Team (ref. 'Work To' Programme)

ID#	Activity Description	Resource Initials	Activity Duration	Programme Start Date	Programme Finish Date	Actual Start Date	Recorded % Complete	Actual Finish Date
125	Medical Gas Commissioning (NB. exact dates & breakdown TBC)	IP/DH	20 days	Mon 16/02/15	Fri 13/03/15	Mon 16/02/15	5%	NA
126	Scope Decontamination Commissioning (NB. exact dates & breakdown TBC)	AS/DH	20 days	Mon 02/03/15	Fri 27/03/15	NA	0%	NA
127	Aseptic Suite Commissioning (NB. exact dates & breakdown TBC)	LM/FW/DH	20 days	Mon 02/03/15	Fri 27/03/15	NA	0%	NA
128	Commissioning of Group 5 Imaging Equipment (NB. exact dates & breakdown TBC in line with finalised transfer dates)	LP/Diagnostics/DH	1 day	Fri 24/04/15	Fri 24/04/15	NA	0%	NA
129	AGV Commissioning & Establishment of Operational Readiness (NB. exact dates TBC)	KC	35 days	Mon 02/03/15	Fri 17/04/15	NA	0%	NA
130	Helipad Commissioning Transfer & Training Flights (NB. inclusive of operational transfer from existing SGH)	JM	30 days	Mon 02/03/15	Fri 10/04/15	NA	0%	NA
131	**HI&T Installation & Commissioning Works (NB. In line with latest HI&T Excel Programme from EMcC & MG)**	**EMcC/MG**	**61 days**	**Mon 26/01/15**	**Mon 20/04/15**	**Mon 26/01/15**	**31%**	**NA**
132	Week 1 - Staff Inductions, Network Patching, Migration, Support, Day Medical Trial (etc) all as per HI&T's detailed Excel Programme	EMcC/MG	5 days	Mon 26/01/15	Fri 30/01/15	Mon 26/01/15	100%	Fri 30/01/15
133	Week 2 - Network Patching, Installation & Support (various locations - Medical Day Unit, Adult ED, ITU/HDU, etc)	EMcC/MG	5 days	Mon 02/02/15	Fri 06/02/15	Mon 02/02/15	100%	Fri 06/02/15
134	Week 3 - Ditto plus: Adult CCU, Theatres, Endoscopy, etc.)	EMcC/MG	5 days	Mon 09/02/15	Fri 13/02/15	Mon 09/02/15	100%	Fri 13/02/15
135	Week 4 - Ditto plus: Adult AAU, OPD, R&T, Discharge Lounge, Pharmacy, Entrance, Med. Illustration, Stroke Ward, etc.	EMcC/MG	5 days	Mon 16/02/15	Fri 20/02/15	Mon 16/02/15	80%	NA
136	Week 5 - Part ditto plus other locations (e.g. Renal Ward, Dermatology Ward, etc - ref. noted Excel Programme for full details)	EMcC/MG	5 days	Mon 23/02/15	Fri 27/02/15	NA	0%	NA
137	Week 6 - Part ditto plus ditto (e.g. Decontamination, Medical Records, PICU, etc, etc - ref. ditto)	EMcC/MG	5 days	Mon 02/03/15	Fri 06/03/15	NA	0%	NA
138	Week 7 - Part ditto plus ditto (e.g. Children's R&T, Aseptic Unit, Imaging, Nuc. Medicine, etc, etc - ref. ditto)	EMcC/MG	5 days	Mon 09/03/15	Fri 13/03/15	NA	0%	NA
139	Week 8 - Part ditto plus ditto (e.g. Child Protection, Schiehallion Ward, DCFP, NICU, Ward Support, etc, etc - ref. ditto)	EMcC/MG	5 days	Mon 16/03/15	Fri 20/03/15	NA	0%	NA
140	Week 9 - Part ditto plus ditto (e.g. Anaesthetics, Acute Receiving Ward, etc, etc - ref. ditto)	EMcC/MG	5 days	Mon 23/03/15	Fri 27/03/15	NA	0%	NA
141	Week 10 - Installation, Support & Testing to Office Block	EMcC/MG	5 days	Mon 30/03/15	Fri 03/04/15	NA	0%	NA
142	Week 11 - General tidying up plus final HI&T commissioning checks	EMcC/MG	5 days	Mon 06/04/15	Fri 10/04/15	NA	0%	NA
143	Week 12 - General tidying up plus final HI&T commissioning checks	EMcC/MG	5 days	Mon 13/04/15	Fri 17/04/15	NA	0%	NA
144	Completion of HI&T NHS Commissioning Period Works (***NB. Key milestone / HI&T operational interface***)	EMcC	1 day	Mon 20/04/15	Mon 20/04/15	NA	0%	NA
145	**Telecomms Installation & Commissioning Works (NB. exact dates & breakdown TBC)**	**KMcS/SC**	**65 days**	**Mon 26/01/15**	**Fri 24/04/15**	**Mon 26/01/15**	**22%**	**NA**
146	Finalise legals / the appointment of EE	KMcS/SC	10 days	Mon 26/01/15	Fri 20/02/15	Mon 26/01/15	90%	NA
147	EE in-building mobile phone 'pre-meeting' (NB. ***Indicative at present / week commencing milestone / exact date TBA***)	SC	2 days	Mon 23/02/15	Fri 27/02/15	NA	0%	NA
148	Install Racking Equipment to Node Room 101	SC	5 days	Mon 02/03/15	Fri 06/03/15	NA	0%	NA
149	Establish connections to 9 other Node Rooms via fibre network (ref. Hub Rm #'s 101, 103, 104, 124, 125, 142, 143, 158 & 159)	SC	10 days	Mon 09/03/15	Fri 20/03/15	NA	0%	NA
150	Wire established connections out (where req'd) to antennae	SC	5 days	Mon 23/03/15	Fri 27/03/15	NA	0%	NA
151	Complete Fibre from Hardgate Road (***Update req'd from NHS Telecomms***)	SC	30 days	Mon 26/01/15	Fri 06/03/15	NA	0%	NA
152	Roll out Telephone Handsets	SC	30 days	Mon 02/02/15	Fri 13/03/15	Mon 02/02/15	50%	NA
153	Roll out Wireless Handsets	SC	15 days	Mon 06/04/15	Fri 24/04/15	NA	0%	NA
154	**Deliver & Installation of Fire Extinguishers (i.e. balance away from above noted initial delivery of 100)**	LM/ACT/JM	10 days	Mon 02/03/15	Fri 13/03/15	NA	0%	NA
155	**Pre-Equipping Operations & Installation Works (NB. exact dates & breakdown TBC)**	ACT	60 days	Mon 02/02/15	Fri 24/04/15	Mon 02/02/15	20%	NA
156	**Patient Handling Equipment / Zurich Examination Plan (NB. exact kick off date TBA with IP - indicative shown for now)**	**IP**	**18 days**	**Wed 18/02/15**	**Fri 13/03/15**	**Wed 18/02/15**	**14%**	**NA**
157	Level 11, Surgery, Wards 21 / 22 / 23 / 24 (6 Patient Handling to each) - referred to as Day 1	IP/HG/Zurich	1 day	Wed 18/02/15	Wed 18/02/15	Wed 18/02/15	100%	Wed 18/02/15
158	Level 10, Surgery, Wards 17 / 18 / 19 / 20 (6 Patient Handling to each) - referred to as Day 2	IP/HG/Zurich	1 day	Thu 19/02/15	Thu 19/02/15	Thu 19/02/15	100%	Thu 19/02/15
159	Level 9, Medicine, Wards 13 / 14 / 15 / 16 (6 Patient Handling to each) - referred to as Day 3	IP/HG/Zurich	1 day	Fri 20/02/15	Fri 20/02/15	Fri 20/02/15	100%	Fri 20/02/15
160	Level 8, Elderly / Medicine, Wards 9 / 10 / 11 / 12 (26 Patient Handling to each) - referred to as Days 4, 5, 6 & 7	IP/HG/Zurich	4 days	Mon 23/02/15	Thu 26/02/15	NA	0%	NA
161	Level 7, Medicine, Wards 5 / 6 / 7 / 8 (6 Patient Handling to each) - referred to as Day 8	IP/HG/Zurich	1 day	Fri 27/02/15	Fri 27/02/15	NA	0%	NA
162	Level 6, Medicine, Wards 1 / 2 / 3 / 4 (6 Patient Handling to each) - referred to as Day 9	IP/HG/Zurich	1 day	Mon 02/03/15	Mon 02/03/15	NA	0%	NA
163	Level 5, Medicine, Wards A / B / C / D (6 Patient Handling to each) - referred to as Day 10	IP/HG/Zurich	1 day	Tue 03/03/15	Tue 03/03/15	NA	0%	NA
164	Level 4, Renal & Haemato-oncology, Wards / Depts. ditto (respectively 12 & 2 Patient Handling to each) - referred to as Day 11	IP/HG/Zurich	1 day	Wed 04/03/15	Wed 04/03/15	NA	0%	NA
165	Level 2, Dermatology, Wards 1 (1 Patient Handling to each) - referred to as Day 11	IP/HG/Zurich	1 day	Wed 04/03/15	Wed 04/03/15	NA	0%	NA
166	Level 1, Critical Care, Wards Critical Care (12 Patient Handling to each) - referred to as Day 11 & 12	IP/HG/Zurich	2 days	Wed 04/03/15	Thu 05/03/15	NA	0%	NA
167	Ground, Stroke Ward & AAU, Wards ditto (6 & 15 Patient Handling to each) - referred to as Day 13	IP/HG/Zurich	1 day	Fri 06/03/15	Fri 06/03/15	NA	0%	NA
168	NCH Level 3, Impatient, Wards 1 / 2 / 3 (6+6+7 Patient Handling to each) - referred to as Day 14	IP/MMacL/Zurich	1 day	Mon 09/03/15	Mon 09/03/15	NA	0%	NA
169	NCH Level 2, ARU / Schieallion Ward + Day Care, Wards ditto (6+1+2 Patient Handling to each) - referred to as Day 15	IP/MMacL/Zurich	1 day	Tue 10/03/15	Tue 10/03/15	NA	0%	NA
170	NCH Level 1, Cardiology / PICU / 23 Hour Ward, Wards ditto (1+2+3 Patient Handling to each) - referred to as Day 15	IP/MMacL/Zurich	1 day	Tue 10/03/15	Tue 10/03/15	NA	0%	NA
171	NCH Ground, Observation Ward / Outpatients / Rehab & Therapies, Wards ditto (1+7+2 Patient Handling to each) - referred to as Day 16	IP/MMacL/Zurich	1 day	Wed 11/03/15	Wed 11/03/15	NA	0%	NA
172	Hoist Mop up - referred to as Day 17 (Zurich's Examination Plan) for February 2015	IP/Zurich	1 day	Thu 12/03/15	Thu 12/03/15	NA	0%	NA
173	Completion of Zurich Examination Requirements for Patient Handling Equipment (i.e. milestone event)	IP/Zurich	1 day	Fri 13/03/15	Fri 13/03/15	NA	0%	NA
174	**Pharmacy Installation Works (e.g. Robots, etc - exact dates & breakdown TBC)**	FW/Pharmacy/DH	20 days	Mon 16/03/15	Fri 10/04/15	NA	0%	NA
175	**Domestic Services Works (e.g. Clinical Cleaning & Infection Control Sign Off - exact dates & breakdown TBC)**	KC(FMcC)	30 days	Mon 16/03/15	Fri 24/04/15	NA	0%	NA
176	**Installation of Dispensers (NB. Effectively commenced 02/02/2015)**	FMcC	35 days	Mon 02/02/15	Fri 20/03/15	Mon 02/02/15	40%	NA
177	**Infection Control Sign-Off**	KC(FMcC)	15 days	Mon 06/04/15	Fri 24/04/15	NA	0%	NA
178	**Installation of Sundry / Additional NHS Signage (e.g. Dementia Signage, Lift Signage, etc)**	PM/FMcC/ACT(RA)	18 days	Wed 11/02/15	Fri 06/03/15	Wed 11/02/15	15%	NA
179	**Retail Installation & Fit-out Works (NB. Exact dates & durations are in line with GF's current programme)**	**GF**	**60 days?**	**Mon 02/02/15**	**Fri 24/04/15**	**NA**	**0%**	**NA**
180	**Retail Fit-out to Adult's Hospital**	**GF**	**60 days**	**Mon 02/02/15**	**Fri 24/04/15**	**NA**	**0%**	**NA**
181	**Unit A1 - Marks & Spencer (NB. ***Updated detailed breakdown required, start date & period as advised by GF 09/02/15***)**	GF	30 days	Mon 16/03/15	Fri 24/04/15	NA	0%	NA
182	**Unit A2 - WH Smiths (NB. ***Updated detailed breakdown required, start date & period as advised by GF 09/02/15***)**	GF	30 days	Mon 16/03/15	Fri 24/04/15	NA	0%	NA
183	**Unit A3 - Camden Food Co. (NB. ***Updated detailed breakdown required, inclusive of start date***)**	GF	60 days	Mon 02/02/15	Fri 24/04/15	NA	0%	NA
184	**Unit A4 - Tenant TBC (NB. ***Updated detailed breakdown required, inclusive of start date***)**	GF	60 days	Mon 02/02/15	Fri 24/04/15	NA	0%	NA
185	**Unit A5 - Souped Up & Juiced (NB. ***Updated detailed breakdown req'd, start date & period as advised by GF 09/02/15***)**	GF	30 days	Mon 16/03/15	Fri 24/04/15	NA	0%	NA
186	**Unit A?? - Aroma to Adult's Hospital Atrium Area (breakdown rec'd from GF with detail incorporated as detailed)**	**GF**	**17 days**	**Thu 05/03/15**	**Fri 27/03/15**	**NA**	**0%**	**NA**
187	Walls / Drylinings	GF/HG	2 days	Thu 05/03/15	Fri 06/03/15	NA	0%	NA
188	Wall Tiling	GF/HG	7 days	Mon 09/03/15	Tue 17/03/15	NA	0%	NA
189	Counter / Services / Shutter	GF/HG	2 days	Mon 16/03/15	Tue 17/03/15	NA	0%	NA
190	Equipment Install	GF/HG	1 day	Mon 16/03/15	Mon 16/03/15	NA	0%	NA
191	Graphics	GF/HG	2 days	Wed 18/03/15	Thu 19/03/15	NA	0%	NA
192	Snagging	GF/HG	2 days	Wed 18/03/15	Tue 24/03/15	NA	0%	NA
193	Coffee Installed	GF/HG	1 day	Wed 18/03/15	Wed 18/03/15	NA	0%	NA
194	Furniture Installed	GF/HG	2 days	Mon 23/03/15	Tue 24/03/15	NA	0%	NA
195	Coffee Induction / Training (***NB. Indicative dates shown / TBC by GF***)	GF/HG	2 days	Wed 25/03/15	Thu 26/03/15	NA	0%	NA
196	Unit Operational (***NB. Indicative dates shown / TBC by GF***)	GF/HG	1 day	Fri 27/03/15	Fri 27/03/15	NA	0%	NA
197	**Retail Fit-out to NCH**	**GF**	**60 days?**	**Mon 02/02/15**	**Fri 24/04/15**	**NA**	**0%**	**NA**
198	**Unit C1 - Aroma (NB. Updated detailed breakdown required)**	**GF**	**20 days?**	**Mon 02/03/15**	**Fri 27/03/15**	**NA**	**0%**	**NA**
199	Workshop / Manufacture	GF/MMacL	6 days	Mon 02/03/15	Mon 09/03/15	NA	0%	NA
200	Walls / Drylinings	GF/MMacL	2 days	Fri 06/03/15	Mon 09/03/15	NA	0%	NA
201	Wall Tiling	GF/MMacL	5 days	Tue 17/03/15	Mon 23/03/15	NA	0%	NA
202	Counter / Services / Shutter	GF/MMacL	6 days	Tue 10/03/15	Tue 17/03/15	NA	0%	NA
203	Equipment Install	GF/MMacL	1 day?	Tue 17/03/15	Tue 17/03/15	NA	0%	NA
204	Graphics	GF/MMacL	2 days	Fri 20/03/15	Mon 23/03/15	NA	0%	NA
205	Snagging	GF/MMacL	2 days	Thu 19/03/15	Tue 24/03/15	NA	0%	NA
206	Coffee Installed	GF/MMacL	1 day?	Thu 19/03/15	Thu 19/03/15	NA	0%	NA
207	Furniture Installed	GF/MMacL	1 day?	Tue 24/03/15	Tue 24/03/15	NA	0%	NA
208	Coffee Induction / Training (***NB. Indicative dates shown / TBC by GF***)	GF/MMacL	2 days	Wed 25/03/15	Thu 26/03/15	NA	0%	NA
209	Unit Operational (***NB. Indicative dates shown / TBC by GF***)	GF/MMacL	1 day	Fri 27/03/15	Fri 27/03/15	NA	0%	NA
210	**Unit C2 - Yorkhill Children's Charity (NB. Coordination interface with MMacL / updated detailed breakdown required)**	GF/MMacL	60 days	Mon 02/02/15	Fri 24/04/15	NA	0%	NA
211	**NHS Early Moves / Migration (ref. key interface with C&B for MWB's + BMG for actual Move management Exercise)**	**ACT/As Noted**	**100 days**	**Mon 26/01/15**	**Thu 11/06/15**	**Mon 26/01/15**	**43%**	**NA**
212	C&B to Finalise & Issue MWB's for all Departmental Early Moves (i.e. in line with sequential requirements)	C&B/AD	30 days	Mon 26/01/15	Fri 06/03/15	Mon 26/01/15	40%	NA
213	BMG to further familiarise themselves with the new hospital building (NB. Initially started 19/01/15)	ACT/BMG	10 days	Mon 26/01/15	Fri 06/02/15	Mon 26/01/15	100%	Fri 06/02/15
214	BMG to Finalise all 1-2-1 Meetings and Finalise Early Move Logistic Requirements	ACT/BMG	25 days	Mon 26/01/15	Fri 27/02/15	Mon 26/01/15	50%	NA
215	**Medical Health Records (NB. To be addressed in 3 wave / tranches as noted)**	**LMcA/BMG**	**52 days**	**Thu 02/04/15**	**Thu 11/06/15**	**NA**	**0%**	**NA**
216	Thursday 02/04/15 – Legal staff from SGH & VIV, RMC staff from VIC, Coding Staff from SGH & VIC	LMcA/BMG	1 day	Thu 02/04/15	Thu 02/04/15	NA	0%	NA
217	24/04/15 – Health Records from SGH/VIC (NB. Date coincides with Phase 3 Close-out / Migration Period)	LMcA/BMG	1 day	Fri 24/04/15	Fri 24/04/15	NA	0%	NA
218	11/06/15 – Health Records from Yorkhill (NB. Given date is beyond Phase 2 Close-out Period & into Phase 3 / Migration Period)	LMcA/BMG	1 day	Thu 11/06/15	Thu 11/06/15	NA	0%	NA
219	Medical Physics - will move on 12th & 13th February (ref. BMG's email 10/02/15)	JMcG/BMG	2 days	Thu 12/02/15	Fri 13/02/15	Thu 12/02/15	100%	Fri 13/02/15
220	Pharmacy - current date of 27/4/15 as recently advised by Joanne Barton	AM/JB/BMG	1 day	Mon 27/04/15	Mon 27/04/15	NA	0%	NA
221	Diagnostics (NB. Milestone date shown for now, ref. LP's detailed Excel programme, full details to be incorporated shortly)	LP/BMG	1 day	Mon 20/04/15	Mon 20/04/15	NA	0%	NA
222	Aseptic Suite/Pharmacy - current date of 24/4/15 and the weekend thereof (ref. Scott Nicol email advising same)/maybe w/c 13/4/15	SN/BMG	1 day	Fri 24/04/15	Fri 24/04/15	NA	0%	NA
223	Project Team migration to new facilities / Project Office set-up in NSGH	KC/AH/SF/CC/BMG	2 days	Tue 27/01/15	Wed 28/01/15	Tue 27/01/15	100%	Wed 28/01/15
224	Procurement Team - will effectively move away from handover date (i.e. as part of Project team move)	ACT/BMG	1 day	Thu 29/01/15	Thu 29/01/15	Thu 29/01/15	100%	Thu 29/01/15
225	Scope Decontamination - exact date TBC / indicative time period shown for now (NB.***23/04/15 has been muted as a possible date***)	AS/BMG	10 days	Mon 13/04/15	Fri 01/05/15	NA	0%	NA
226	Catering - current date of 29/3/15 (Sunday) given with milestone as noted taken from w/e of 27/3/15 (ref. ACT email)	DMcD/BMG	1 day	Fri 27/03/15	Fri 27/03/15	NA	0%	NA
227	Catering Management - ditto / understood to be part of the above too	DMcD/BMG	1 day	Fri 27/03/15	Fri 27/03/15	NA	0%	NA
228	Partial Theatres / Theatre Managers (now firm date as confirmed by ACT in email 05/02/15)	FMcC/JMcG/BMG	1 day	Mon 16/03/15	Mon 16/03/15	NA	0%	NA
229	Chaplaincy / Sanctuary - current date given is 30/3/15, noted as a milestone date (ref. ACT email)	ACT/BMG	1 day	Mon 30/03/15	Mon 30/03/15	NA	0%	NA
230	Dietetics (NB relocation to existing SGH Medical Physics - ***date given may be delayed to 26/4/15 - TBC***)	ACT/BMG	1 day	Mon 30/03/15	Mon 30/03/15	NA	0%	NA
231	FM & Estates (NB. Likely phased in practice with interface with BMG TBC)	KC/IP/BMG	20 days	Mon 26/01/15	Fri 20/02/15	Mon 26/01/15	70%	NA
232	Helipad Requirements in terms of Early Move / Transfer Logistics (NB. BMG's involvement TBA)	JM	1 day	Fri 24/04/15	Fri 24/04/15	NA	0%	NA
233	Renal Support / Technicians Early Move (24/04/15 - as confirmed in Removals Project Team Meeting 29/01/15)	ACT	1 day	Fri 24/04/15	Fri 24/04/15	NA	0%	NA
234	2 x HDU Beds (NB. ***Indicative date / period shown for now***)	FMcC	5 days	Mon 20/04/15	Fri 01/05/15	NA	0%	NA
235	Children's ED (NB. ***Indicative date / period shown for now***)	FMcC	5 days	Mon 20/04/15	Fri 01/05/15	NA	0%	NA
236	**Enhancement Works by NHS**	**HG/MMacL**	**102 days?**	**Fri 06/02/15**	**Fri 26/06/15**	**Fri 06/02/15**	**5%**	**NA**
237	**Children's Hospital Enhancement Works**	**MMacL**	**102 days?**	**Fri 06/02/15**	**Fri 26/06/15**	**Fri 06/02/15**	**5%**	**NA**
238	Medicinema (NB. Exact dates & breakdown TBC)	PM	20 days	Mon 02/03/15	Fri 27/03/15	NA	0%	NA
239	**Paragon / Science Centre Project Enhancements (NB. breakdown as per MMacL's email 22/01/15)**	**MMacL**	**22 days**	**Fri 06/02/15**	**Mon 09/03/15**	**Fri 06/02/15**	**33%**	**NA**
240	Enabling works associated with power and data cables - check completed / shown as a milestone	MMacL	1 day	Fri 06/02/15	Fri 06/02/15	Fri 06/02/15	100%	Fri 06/02/15
241	Graphics applied to Emergency Department windows - check completed / shown as a milestone	MMacL	1 day	Fri 06/02/15	Fri 06/02/15	Fri 06/02/15	100%	Fri 06/02/15
242	Out Patients - Install all wall modules and one of the two large Wall pod modules	MMacL	15 days	Mon 09/02/15	Fri 27/02/15	Mon 09/02/15	60%	NA
243	Out Patients - Install the second of the two large Wall pod modules. Install Interactives and AV Hardware into wall units	MMacL	10 days	Mon 16/02/15	Fri 27/02/15	Mon 16/02/15	40%	NA
244	Imaging and Diagnostics - Install Teen Space, 2 wall modules, Central Table	MMacL	10 days	Mon 16/02/15	Fri 27/02/15	Mon 16/02/15	40%	NA
245	Emergency Department - Install steel frame, PCs and all modules	MMacL	5 days	Mon 23/02/15	Fri 27/02/15	NA	0%	NA
246	Commissioning of PCs and interactives (NB. To all areas)	MMacL	5 days	Mon 02/03/15	Fri 06/03/15	NA	0%	NA
247	Snagging (NB. To all areas)	MMacL	5 days	Mon 02/03/15	Fri 06/03/15	NA	0%	NA



nSGH NHS Commissioning Period Programme
Rev 1 / Master Update

Legend: Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

Programmer Owner: Ian Matthewson (nSGH NHS Senior Project Planner) - [redacted]

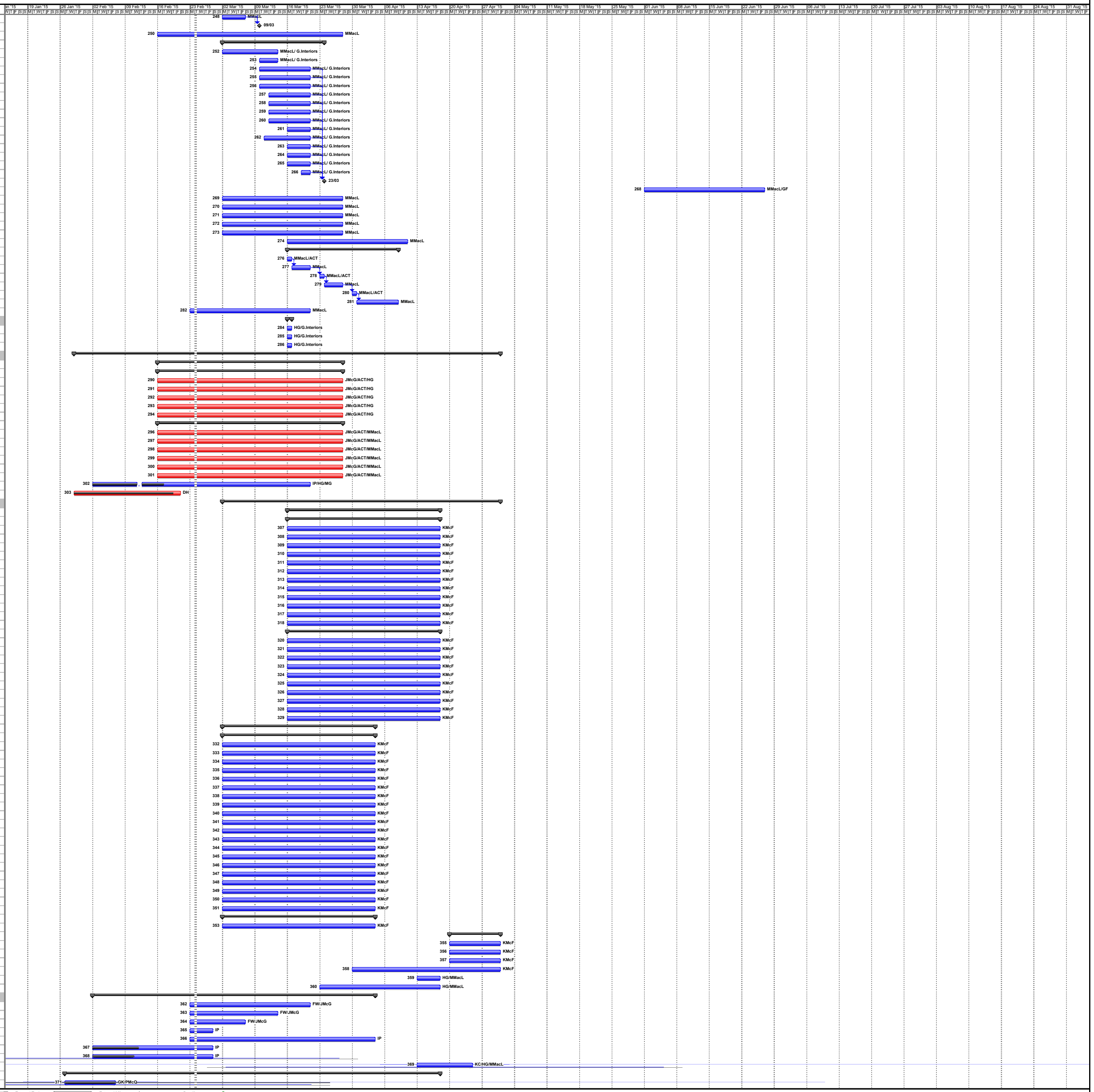
A47069198

nSGH Phase 2 Close-out Programme from Handover to Start of Migration Period (i.e. to start of Phase 3 Close-out Period)

Progress Update - 20/02/2015

'Work to' Programme issued 30/01/2015 to NHS Project Team (ref. 'Work To' Programme)

ID#	Activity Description	Resource Initials	Activity Duration	Programme Start Date	Programme Finish Date	Actual Start Date	Recorded % Complete	Actual Finish Date
248	Staff training and hand over (NB. To all areas)	MMacL	5 days	Mon 02/03/15	Fri 06/03/15	NA	0%	NA
249	Practical Completion & Sign-off of works by NHS	MMacL	1 day	Mon 09/03/15	Mon 09/03/15	NA	0%	NA
250	Schiehallion Projects (NB. exact dates & breakdown TBC)	MMacL	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
251	**TCT Project Installations (NB. Detailed breakdown as per MMacL's email 22/01/15 complete with Excel Programme)**	**MMacL**	**16 days**	**Mon 02/03/15**	**Mon 23/03/15**	**NA**	**0%**	**NA**
252	Paint drying time	MMacL/ G.Interiors	10 days	Mon 02/03/15	Fri 13/03/15	NA	0%	NA
253	Delivery of bespoke furniture (i.e. during noted week with 10th & 13th targeted)	MMacL/ G.Interiors	4 days	Tue 10/03/15	Fri 13/03/15	NA	0%	NA
254	Single Room 003 (ref. Grosvenor Interior's detailed programme breakdown)	MMacL/ G.Interiors	9 days	Tue 10/03/15	Fri 20/03/15	NA	0%	NA
255	Single Room 006 (ref. ditto)	MMacL/ G.Interiors	9 days	Tue 10/03/15	Fri 20/03/15	NA	0%	NA
256	Single Room 007 (ref. ditto)	MMacL/ G.Interiors	9 days	Tue 10/03/15	Fri 20/03/15	NA	0%	NA
257	Single Room 010 (ref. ditto)	MMacL/ G.Interiors	7 days	Thu 12/03/15	Fri 20/03/15	NA	0%	NA
258	Single Room BMT 066 (ref. ditto)	MMacL/ G.Interiors	7 days	Thu 12/03/15	Fri 20/03/15	NA	0%	NA
259	Single Room BMT 067 (ref. ditto)	MMacL/ G.Interiors	7 days	Thu 12/03/15	Fri 20/03/15	NA	0%	NA
260	Single Room - Overspill 1 (ref. ditto)	MMacL/ G.Interiors	7 days	Thu 12/03/15	Fri 20/03/15	NA	0%	NA
261	Single Room - Overspill 2 (ref. ditto)	MMacL/ G.Interiors	5 days	Mon 16/03/15	Fri 20/03/15	NA	0%	NA
262	Recreation Room (ref. ditto)	MMacL/ G.Interiors	8 days	Wed 11/03/15	Fri 20/03/15	NA	0%	NA
263	Daycase DCU 007 (ref. ditto)	MMacL/ G.Interiors	5 days	Mon 16/03/15	Fri 20/03/15	NA	0%	NA
264	Daycase DCU 011 BMT Ward (ref. ditto)	MMacL/ G.Interiors	5 days	Mon 16/03/15	Fri 20/03/15	NA	0%	NA
265	Corridors - Wall Glamour Fitting + IT/AV Fitting + Accessorising / Styling (ref. ditto)	MMacL/ G.Interiors	5 days	Mon 16/03/15	Fri 20/03/15	NA	0%	NA
266	Other Miscellaneous Elements (e.g. Mastic Furniture / Wall junctions, etc, ref. ditto)	MMacL/ G.Interiors	2 days	Thu 19/03/15	Fri 20/03/15	NA	0%	NA
267	TCT access (milestone activity)	MMacL/ G.Interiors	1 day	Mon 23/03/15	Mon 23/03/15	NA	0%	NA
268	Retail Unit (linked with GF's remit - exact dates & breakdown TBC / ***current start date as advised by GF 09/02/15***)	MMacL/GF	20 days	Mon 01/06/15	Fri 26/06/15	NA	0%	NA
269	Child Protection Enhancements (NB. exact dates & breakdown TBC)	MMacL	20 days	Mon 02/03/15	Fri 27/03/15	NA	0%	NA
270	MRI Scanner Enhancements (NB. exact dates & breakdown TBC)	MMacL	20 days	Mon 02/03/15	Fri 27/03/15	NA	0%	NA
271	Sensory Rooms Fit-out (NB. exact dates & breakdown TBC)	MMacL	20 days	Mon 02/03/15	Fri 27/03/15	NA	0%	NA
272	Family Information Centre (NB. exact dates & breakdown TBC)	MMacL	20 days	Mon 02/03/15	Fri 27/03/15	NA	0%	NA
273	PICU Enhancements (NB. exact dates & breakdown TBC)	MMacL	20 days	Mon 02/03/15	Fri 27/03/15	NA	0%	NA
274	Radio Lollipop Enhancements (NB. exact dates & breakdown TBC)	MMacL	20 days	Mon 16/03/15	Fri 10/04/15	NA	0%	NA
275	**Parent Beds Installed (NB link up with Equipping / Procurement - exact dates & breakdown TBC)**	**MMacL/ACT**	**18 days?**	**Mon 16/03/15**	**Wed 08/04/15**	**NA**	**0%**	**NA**
276	Induction & 1st delivery of 40 beds, inclusive of deployment (NB. Working from the top down)	MMacL/ACT	1 day	Mon 16/03/15	Mon 16/03/15	NA	0%	NA
277	Installation of first 40 beds	MMacL	4 days	Tue 17/03/15	Fri 20/03/15	NA	0%	NA
278	2nd delivery & deployment of 40 beds	MMacL/ACT	1 day?	Mon 23/03/15	Mon 23/03/15	NA	0%	NA
279	Installation of second 40 beds	MMacL	4 days	Tue 24/03/15	Fri 27/03/15	NA	0%	NA
280	3rd delivery & deployment of remaining 31 beds	MMacL/ACT	1 day?	Mon 30/03/15	Mon 30/03/15	NA	0%	NA
281	Installation of remaining 31 beds (NB. Note likely Easter holiday disruption, hence longer duration)	MMacL	7 days	Tue 31/03/15	Wed 08/04/15	NA	0%	NA
282	DCFP to Ward 4 (NB. exact dates & breakdown TBC)	MMacL	20 days	Mon 23/02/15	Fri 20/03/15	NA	0%	NA
283	**Adult Hospital Enhancement Works (NB. Effectively tied in with TCT's enhancement work to NCH)**	**HG**	**1 day**	**Mon 16/03/15**	**Mon 16/03/15**	**NA**	**0%**	**NA**
284	Adult BMT Level 4 Room HOW - 031 (ref. Wall Glamour work)	HG/G.Interiors	1 day	Mon 16/03/15	Mon 16/03/15	NA	0%	NA
285	Adult BMT Level 4 Room HOW - 029 (ref. Wall Glamour work)	HG/G.Interiors	1 day	Mon 16/03/15	Mon 16/03/15	NA	0%	NA
286	Adult BMT Level 4 Corridors	HG/G.Interiors	1 day	Mon 16/03/15	Mon 16/03/15	NA	0%	NA
287	**Additional NHS Works**	**PM/HG/MMacL**	**67 days**	**Thu 29/01/15**	**Thu 30/04/15**	**Thu 29/01/15**	**2%**	**NA**
288	**Installation of Patient Monitoring System (NB. exact dates, along with further breakdown TBC)**	**JMcG**	**30 days**	**Mon 16/02/15**	**Fri 27/03/15**	**NA**	**0%**	**NA**
289	**Adult's Hospital / Patient Monitors**	**JMcG**	**30 days**	**Mon 16/02/15**	**Fri 27/03/15**	**NA**	**0%**	**NA**
290	Critical Care - Level 1 / FFL (NB. New Equipment / Supplier TBC)	JMcG/ACT/HG	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
291	A&E - Level 0 / GFL (NB. Transfer)	JMcG/ACT/HG	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
292	AAU - Level 0 / GFL (NB. Transfer)	JMcG/ACT/HG	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
293	Stroke Ward - Level 1 / FFL (NB. New Equipment / Supplier TBC)	JMcG/ACT/HG	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
294	Cardiology Ward - Level 6 / Sixth FL (NB. New Equipment / Supplier TBC)	JMcG/ACT/HG	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
295	**Children's Hospital / Patient Monitors**	**JMcG**	**30 days**	**Mon 16/02/15**	**Fri 27/03/15**	**NA**	**0%**	**NA**
296	PICU - Level 1 / FFL (NB. Transfer)	JMcG/ACT/MMacL	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
297	Cardiac Ward - Level 1 / FFL (NB. Transfer)	JMcG/ACT/MMacL	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
298	A&E - Level 0 / GFL (NB. Transfer)	JMcG/ACT/MMacL	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
299	Clinical Decision Unit - Level 0 / GFL (NB. New Equipment / Supplier TBC)	JMcG/ACT/MMacL	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
300	General Wards 1, 2 & 3 + Acute Receiving Unit Levels 2 & 3 (i.e. FFL thru' to TFL as noted) (NB. New Equipment / Supplier TBC)	JMcG/ACT/MMacL	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
301	Scheihallion - Level 2 / SFL (NB. New Equipment / Supplier TBC)	JMcG/ACT/MMacL	30 days	Mon 16/02/15	Fri 27/03/15	NA	0%	NA
302	**Adult Patient Entertainment Installation Works (NB. exact dates & breakdown TBC)**	**IP/HG/MG**	**34 days**	**Mon 02/02/15**	**Fri 20/03/15**	**Mon 02/02/15**	**30%**	**NA**
303	**Separating wall within the Endoscopy Decontamination Suite + installation of 6 No. Endoscopy Decontamination Washers**	**DH**	**17 days**	**Thu 29/01/15**	**Fri 20/02/15**	**Thu 29/01/15**	**90%**	**NA**
304	**AV Equipment Installation Works to Seminar Room Areas & the like (ref. AV Levels 1, 2, 3, 4 & 5 as stated)**	**KMcF**	**45 days**	**Mon 02/03/15**	**Thu 30/04/15**	**NA**	**0%**	**NA**
305	**To Children's Hospital (NB. ***exact sequencing TBC***)**	**KMcF**	**25 days**	**Mon 16/03/15**	**Fri 17/04/15**	**NA**	**0%**	**NA**
306	**New AV Installation Works (i.e. Levels 1, 2,3 & 4 as noted below - ***exact sequencing TBC***):**	**KMcF**	**25 days**	**Mon 16/03/15**	**Fri 17/04/15**	**NA**	**0%**	**NA**
307	AV Level 1 Room # NCH-03-GWS-045 Seminar / Education Room (15 places - 3rd Floor)	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
308	AV Level 2 Room # NCH-02-AFD-007 Office (8P), 2nd Floor	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
309	AV Level 3 Room # NCH-03-GWS-045 Seminar / Education Room (15 places - 3rd Floor)	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
310	AV Level 3 Room # NCH-00OPD-015 Meeting Room (Ground Floor)	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
311	AV Level 3 Room # NCH-00OPD-016 Meeting Room (Ground Floor)	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
312	AV Level 3 Room # NCH-00-REH-051 Classroom (Ground Floor)	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
313	AV Level 3 Room # NCH-00-REH-054 Group Teaching Room (Ground Floor)	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
314	AV Level 3 Room # NCH-03-GWS-008 Conference / Meeting Rooms (Third Floor)	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
315	AV Level 3 Room # NCH-03-GWS-009 Conference / Meeting Rooms (Third Floor)	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
316	AV Level 3 Room # NCH-03-GWS-027 Seminar / Education Room (15 places to Third Floor)	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
317	AV Level 3 Room # NCH-04-DCFP-008 Multi-disciplinary Team Room (Fourth Floor)	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
318	AV Level 4 Room # NCH-00-RCG-007 Seminar & Training Room (20 Persons, Ground Floor)	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
319	**Transfer AV Installation Works - *** exact sequencing TBC***:**	**KMcF**	**25 days**	**Mon 16/03/15**	**Fri 17/04/15**	**NA**	**0%**	**NA**
320	Transfer Room # & Location: Cardiology / NCH-00-OPD-053. Exact date & duration TBC by KMcF	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
321	Transfer Room # & Location: Rehab (Paeds) / NCH-00-REH-024. Exact date & duration TBC by KMcF	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
322	Transfer Room # & Location: PICU 1 / NCH-01-CCW-045. Exact date & duration TBC by KMcF	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
323	Transfer Room # & Location: PICU 2 / NCH-01-CCW-111. Exact date & duration TBC by KMcF	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
324	Transfer Room # & Location: Telemed to Hospital @ Night / NCH-02-SCH-093. Exact date & duration TBC by KMcF	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
325	Transfer Room # & Location: Committee Room to L3 Ward Support / NCH-03-GWS-031. Exact date & duration TBC by KMcF	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
326	Transfer Room # & Location: Smartboard 1 / NCH-00-REH-007. Exact date & duration TBC by KMcF	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
327	Transfer Room # & Location: Smartboard 2 / NCH-00-REH-010. Exact date & duration TBC by KMcF	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
328	Transfer Room # & Location: Smartboard 3 / NCH-02-SCH-077. Exact date & duration TBC by KMcF	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
329	Transfer Room # & Location: Smartboard 4 / NCH-04-DCFP-020. Exact date & duration TBC by KMcF	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
330	**To Adult Hospital (NB. ***exact sequencing TBC***)**	**KMcF/MMacL**	**25 days**	**Mon 02/03/15**	**Fri 03/04/15**	**NA**	**0%**	**NA**
331	**New AV Installation Works (i.e. Levels 1, 2, 3, 4 & 5 as noted below - *** exact sequencing TBC***):**	**KMcF**	**25 days**	**Mon 02/03/15**	**Fri 03/04/15**	**NA**	**0%**	**NA**
332	AV Level 1 Room # NSGH-01-OPD1-068 Staff Resource / Education / Meetings (First Floor)	KMcF	25 days	Mon 02/03/15	Fri 03/04/15	NA	0%	NA
333	AV Level 2 Room # NSGH-00-OPDO-063 Meetings / Seminar (Ground Floor)	KMcF	25 days	Mon 02/03/15	Fri 03/04/15	NA	0%	NA
334	AV Level 3 Room # NSGH-B1-KIT-001 Training / Meeting Room (Basement)	KMcF	25 days	Mon 02/03/15	Fri 03/04/15	NA	0%	NA
335	AV Level 3 Room # NSGH-00-AAW-230 Seminar / Hospital @ Night (Ground Floor)	KMcF	25 days	Mon 02/03/15	Fri 03/04/15	NA	0%	NA
336	AV Level 3 Room # NSGH-00EMC-133 Seminar & Training Room (30 Persons - Ground Floor)	KMcF	25 days	Mon 02/03/15	Fri 03/04/15	NA	0%	NA
337	AV Level 3 Room # NSGH-00-ORT-026 Group Area - Shared (Ground Floor)	KMcF	25 days	Mon 02/03/15	Fri 03/04/15	NA	0%	NA
338	AV Level 3 Room # NSGH-00-ORT-037 Group Teaching Room (Ground Floor)	KMcF	25 days	Mon 02/03/15	Fri 03/04/15	NA	0%	NA
339	AV Level 3 Room # NSGH-01-STW-011 Seminar Room / Meetings / Education (First Floor)	KMcF	25 days	Mon 02/03/15	Fri 03/04/15	NA	0%	NA
340	AV Level 3 Room # NSGH-02-FMA2-007 Core D Bed Management Ops Centre (First Floor)	KMcF	25 days	Mon 02/03/15	Fri 03/04/15	NA	0%	NA
341	AV Level 3 Room # NSGH-02-RENO-066 Seminar Room (20 Persons Second Floor)	KMcF	25 days	Mon 02/03/15	Fri 03/04/15	NA	0%	NA
342	AV Level 3 Room # NSGH-02-THE-002 Waiting / Seminar Room (60 Places Second Floor)	KMcF	25 days	Mon 02/03/15	Fri 03/04/15	NA	0%	NA
343	AV Level 3 Room # NSGH-03-FM3-016 Training (Third Floor)	KMcF	25 days	Mon 02/03/15	Fri 03/04/15	NA	0%	NA
344	AV Level 3 Room # NSGH-03-FMA3-008 Core D FM Meeting Room (Third Floor)	KMcF	25 days	Mon 02/03/15	Fri 03/04/15	NA	0%	NA
345	AV Level 3 Room # NSGH-05-WS5-033 Seminar / Education Room 40m2 (Fifth Floor)	KMcF	25 days	Mon 02/03/15	Fri 03/04/15	NA	0%	NA
346	AV Level 3 Room # NSGH-11-WS11-033 Seminar / Education Room 40m2 (Eleventh Floor)	KMcF	25 days	Mon 02/03/15	Fri 03/04/15	NA	0%	NA
347	AV Level 4 Room # NSGH-07-WS7-033 Seminar / Education Room 80m2 (Seventh Floor)	KMcF	25 days	Mon 02/03/15	Fri 03/04/15	NA	0%	NA
348	AV Level 5 Room # NSGH-01-CCW-222 Seminar / Training Room (40-45 places First Floor)	KMcF	25 days	Mon 02/03/15	Fri 03/04/15	NA	0%	NA
349	AV Level 5 Room # NSGH-04-WS4-027 Seminar / Education Room 80m2 (Fourth Floor)	KMcF	25 days	Mon 02/03/15	Fri 03/04/15	NA	0%	NA
350	AV Level 5 Room # NSGH-09-WS9-033 Seminar / Education Room 80m2 (Ninth Floor)	KMcF	25 days	Mon 02/03/15	Fri 03/04/15	NA	0%	NA
351	AV Level 5 Room # NSGH-01-RAF-112 Seminar Room (35 Places to First Floor)	KMcF	25 days	Mon 02/03/15	Fri 03/04/15	NA	0%	NA
352	**Transfer AV Installation Works:**	**KMcF**	**25 days**	**Mon 02/03/15**	**Fri 03/04/15**	**NA**	**0%**	**NA**
353	Transfer Room # & Location: Rehab (Adult) / NSGH-01-OPDO-010. Exact date & duration TBC by KMcF	KMcF	25 days	Mon 02/03/15	Fri 03/04/15	NA	0%	NA
354	**To Administration Block (NB. All new AV installation works & Ground Floor)**	**KMcF/ GF**	**10 days**	**Mon 20/04/15**	**Thu 30/04/15**	**NA**	**0%**	**NA**
355	AV Level 1 Room # 2907_AA(70)LO-34F, Meeting Room, Ground Floor. Exact date & duration TBC by KMcF	KMcF	10 days	Mon 20/04/15	Thu 30/04/15	NA	0%	NA
356	AV Level 1 Room # 2907_AA(70)LO-35F, Meeting Room, Ground Floor. Exact date & duration TBC by KMcF	KMcF	10 days	Mon 20/04/15	Thu 30/04/15	NA	0%	NA
357	AV Level 1 Room # 2907_AA(70)LO-36F, Meeting Room, Ground Floor. Exact date & duration TBC by KMcF	KMcF	10 days	Mon 20/04/15	Thu 30/04/15	NA	0%	NA
358	**Overall Commissioning & Sign-off of AV Installation Works (i.e. New & Transfer)**	KMcF	25 days	Mon 30/03/15	Thu 30/04/15	NA	0%	NA
359	Installation of Legacy Artwork (NB. exact dates & breakdown TBC)	HG/MMacL	5 days	Mon 13/04/15	Fri 17/04/15	NA	0%	NA
360	Installation of New Artwork (NB. exact dates & breakdown TBC)	HG/MMacL	20 days	Mon 23/03/15	Fri 17/04/15	NA	0%	NA
361	**Management of 'other' NHS works (NB. Full breakdown TBC)**	**IP/FW/JMcG**	**45 days**	**Mon 02/02/15**	**Fri 03/04/15**	**Mon 02/02/15**	**13%**	**NA**
362	Integrated Theatres Installation (NB. Awaiting confirmation from Yorkhill Charity) - indicative date / period shown	FW/JMcG	20 days	Mon 23/02/15	Fri 20/03/15	NA	0%	NA
363	Additional Fittings for Adult & Children's Pendants - indicative date / period shown	FW/JMcG	15 days	Mon 23/02/15	Fri 13/03/15	NA	0%	NA
364	Nuc. Med. - Drainage Access (ref. Radiation Decay Testing) - indicative date / period shown	FW/JMcG	10 days	Mon 23/02/15	Fri 06/03/15	NA	0%	NA
365	SAS Fixed Station Installations (Adult, NCH & Helipad) - indicative date / period shown	IP	5 days	Mon 23/02/15	Fri 27/02/15	NA	0%	NA
366	Statutory Inspections (e.g. Ceiling Mounted Patient Lifting Equipment) - indicative date & period shown, intermittent process	IP	30 days	Mon 23/02/15	Fri 03/04/15	NA	0%	NA
367	Estates Workshop Fit-out	IP	20 days	Mon 02/02/15	Fri 27/02/15	Mon 02/02/15	40%	NA
368	Estates TMT Service / Test Bay Fit-out	IP	20 days	Mon 02/02/15	Fri 27/02/15	Mon 02/02/15	35%	NA
369	Installation of Disposal Curtains (Adult Hospital followed by NCH)	KC/HG/MMacL	10 days	Mon 13/04/15	Fri 24/04/15	NA	0%	NA
370	**Pre-Stocking of Departments (NB. exact dates & breakdown TBC / indicative at present)**	**GK**	**59 days**	**Tue 27/01/15**	**Fri 17/04/15**	**Tue 27/01/15**	**41%**	**NA**
371	Pre-stocking Preliminary Meetings to agree finalised generic ward top-up list, etc.	GK/PMcQ	9 days	Tue 27/01/15	Fri 06/02/15	Tue 27/01/15	100%	Fri 06/02/15



nSGH NHS Commissioning Period Programme
Rev 1 / Master Update

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

Programmer Owner: Ian Matthewson (nSGH NHS Senior Project Planner) - [redacted]

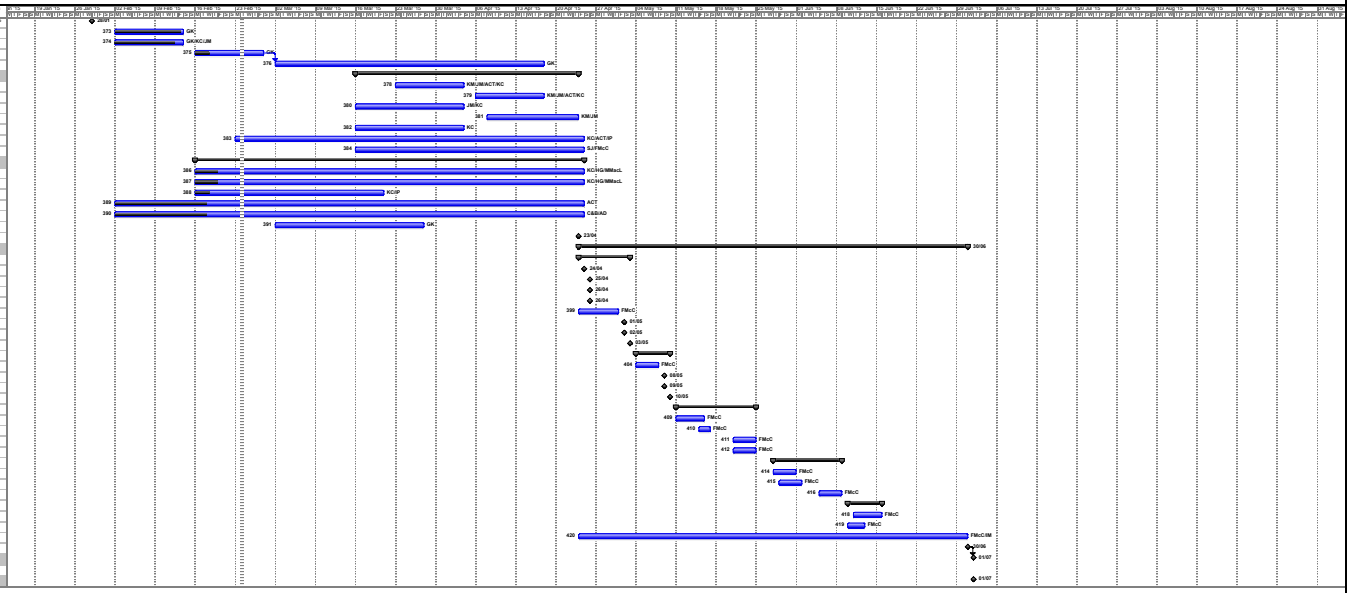
A47069198

nSGH Phase 2 Close-out Programme from Handover to Start of Migration Period (i.e. to start of Phase 3 Close-out Period)

Progress Update - 28/02/2015

'Work to' Programme issued 30/01/2015 to NHS Project Team (ref. 'Work To' Programme)

ID#	Activity Description	Resource Initials	Activity Duration	Programme Start Date	Programme Finish Date	Actual Start Date	Recorded % Complete	Actual Finish Date
372	Pre-stocking new hospital risk to Ismaleurve & agree bed storage layout	GK/KP/MHJ	1 day	Wed 28/01/15	Wed 28/01/15	Wed 28/01/15	100%	Wed 28/01/15
373	Finance - for provision of new cost centres and IDAs (ref. GK's email of 27/01/15)	GK	10 days	Mon 02/02/15	Fri 13/02/15	Mon 02/02/15	95%	NA
374	Sort Miscellaneous matters (e.g. access to building / AGV access & availability, protection requirements if any, etc)	GK/KC/JM	10 days	Mon 02/02/15	Fri 13/02/15	Mon 02/02/15	85%	NA
375	Confirmation dates for Pre-stocking Activities (NB. Wards will likely have to be done at weekends - ref. GK's email 27/01/15)	GK	10 days	Mon 16/02/15	Fri 27/02/15	Mon 16/02/15	25%	NA
376	Start of Pre-stocking Activities for Phase 2 Close-out Period (NB. Indication duration shown at present - full breakdown TBC)	GK	35 days	Mon 02/03/15	Fri 17/04/15	NA	0%	NA
377	Linen Laundry Services (NB. Exact dates & breakdown TBC)	KM/JM	28 days	Mon 16/03/15	Thu 23/04/15	NA	0%	NA
378	Installation of Linen Storage Trolleys (i.e. Procurement delivery & deployment to various locations)	KM/JM/ACT/KC	10 days	Mon 23/03/15	Fri 03/04/15	NA	0%	NA
379	Linen Cages to Disposal Holds (i.e. Procurement delivery & deployment)	KM/JM/ACT/KC	10 days	Mon 06/04/15	Fri 17/04/15	NA	0%	NA
380	Interface with Aura's to be established from a deployment perspective (NB. are Aura's available & ready to deploy, etc)?	JM/KC	15 days	Mon 16/03/15	Fri 03/04/15	NA	0%	NA
381	Pre-Stocking of Linen (i.e. delivery to hospital by KM + deployment to storage locations by JM)	KM/JM	12 days	Wed 08/04/15	Thu 23/04/15	NA	0%	NA
382	Installation of Washers & Dryers to Basement (NB. exact dates & breakdown TBC)	KC	15 days	Mon 16/03/15	Fri 03/04/15	NA	0%	NA
383	Training & Familiarisation of Equipment, Systems, etc. (NB. Exact dates & breakdown TBC)	KC/ACT/SP	45 days	Mon 23/03/15	Fri 24/04/15	NA	0%	NA
384	Scenario Exercises (e.g. Patient user experience dummy runs, etc) & Testing (NB. Exact dates & breakdown TBC)	SJ/FMcC	30 days	Mon 16/03/15	Fri 24/04/15	NA	0%	NA
385	Site Visits	KC/HG/MMacL	60 days	Mon 16/02/15	Fri 24/04/15	Mon 16/02/15	8%	NA
386	Internal NHS Parties (e.g. Consultants, Dept. Heads, etc - exact dates & breakdown TBC)	KC/HG/MMacL	50 days	Mon 16/02/15	Fri 24/04/15	Mon 16/02/15	8%	NA
387	External NHS Parties (e.g. Media, Dignitaries, General Public, etc - NB. exact dates & breakdown TBC)	KC/HG/MMacL	50 days	Mon 16/02/15	Fri 24/04/15	Mon 16/02/15	8%	NA
388	Statutory Parties (e.g. Fire, Police, SEPA, etc - NB. exact dates & breakdown TBC)	KC/SP	25 days	Mon 16/02/15	Fri 20/03/15	Mon 16/02/15	10%	NA
389	Continued Development of BMO's remit for Phase 3 Migration Period	ALI	60 days	Mon 02/02/15	Fri 24/04/15	Mon 02/02/15	20%	NA
390	Finalise Migration Period Workbooks	C&B/AD	60 days	Mon 02/02/15	Fri 24/04/15	Mon 02/02/15	20%	NA
391	Develop & Finalise Pre-stocking Strategy for Phase 3 Migration Period	GK	20 days	Mon 02/03/15	Fri 27/03/15	NA	0%	NA
392	Completion of NHS Commissioning / Phase 2 Close-out Period (NB. Milestone Event)	DL/PM	1 day	Thu 23/04/15	Thu 23/04/15	NA	0%	NA
393	Start of Phase 3 Migration Period (NB Milestone Event / subsequent activities & dates are currently under development)	DL/PM/FMcC	49 days	Fri 24/04/15	Tue 30/06/15	NA	0%	NA
394	Stage 1 & Groups 1 to 6 / Wards & Depts. as noted	FMcC	7 days	Fri 24/04/15	Sun 03/05/15	NA	0%	NA
395	Group 1 / Ward / Dept - SGH OPD	FMcC	1 day	Fri 24/04/15	Fri 24/04/15	NA	0%	NA
396	Group 2 / Ward / Dept - SGH / Hemipark	FMcC	1 day	Sat 25/04/15	Sat 25/04/15	NA	0%	NA
397	Group 3A / Ward / Dept - WGI Ward G6 Renal Dialysis (10 Stations)	FMcC	0 days	Sun 26/04/15	Sun 26/04/15	NA	0%	NA
398	Group 3B / Ward / Dept - GRI Wards 12, 13, 25 Renal Dialysis (12 Stations)	FMcC	0 days	Sun 26/04/15	Sun 26/04/15	NA	0%	NA
399	Completion of H/w equipping of 300 beds (Ref. 'Sixty 60 Ward' NHS Commissioning Period)	FMcC	4 days	Fri 24/04/15	Wed 29/04/15	NA	0%	NA
400	Group 4 / Ward / Dept - SGH ITU, HDU, Elective Theatres, Endoscopy, Wards 8 & 8A	FMcC	1 day	Fri 01/05/15	Fri 01/05/15	NA	0%	NA
401	Group 5 / Ward / Dept - SGH ED, GPOCH, Rec Wards (Surg. & Med), CCU, Cardiology, Gen Surgery, Ortho Trauma, Urology	FMcC	0 days	Sat 02/05/15	Sat 02/05/15	NA	0%	NA
402	Group 6 / Ward / Dept - SGH Wards: 1, 3, 6, 21, 22, 24, 26, 32 + L&F/UAD & Trauma Theatres	FMcC	0 days	Sun 03/05/15	Sun 03/05/15	NA	0%	NA
403	Stage 2 & Groups 7 & 8 / Wards & Depts. as noted	FMcC	5 days	Mon 04/05/15	Sun 10/05/15	NA	0%	NA
404	Transfer of 326 Beds from SGH to New Hospital	FMcC	4 days	Mon 04/05/15	Thu 07/05/15	NA	0%	NA
405	Group 7A / GGH+SGH / ENT - Ward 4A GGH & Ward 62 SGH	FMcC	1 day	Fri 08/05/15	Fri 08/05/15	NA	0%	NA
406	Group 7B / WIG / Vascular	FMcC	0 days	Sat 09/05/15	Sat 09/05/15	NA	0%	NA
407	Group 8 / WIG / Renal Inpatients	FMcC	0 days	Sun 10/05/15	Sun 10/05/15	NA	0%	NA
408	Stage 3 & Groups 9 to 11 / Wards & Depts. as note	FMcC	10 days	Mon 11/05/15	Sun 24/05/15	NA	0%	NA
409	Transfer of 104 beds from WIru to New Hospital	FMcC	3 days	Mon 11/05/15	Fri 15/05/15	NA	0%	NA
410	Group 9 / VI / ED, Wards 4, 5, 8, 9, 12, 14 & 16, D & Elective Theatres E Floor	FMcC	1 day	Fri 15/05/15	Sat 16/05/15	NA	0%	NA
411	Group 10 / VI / CCU, ITU, Wards 1, 2, 3, 6, 7, 10, 17, A & B, Endoscopy, CEPOD Theatre	FMcC	2 days	Thu 21/05/15	Sun 24/05/15	NA	0%	NA
412	Group 11 / VI / MHU Wards 2 North & 2 North / South	FMcC	2 days	Thu 21/05/15	Sun 24/05/15	NA	0%	NA
413	Stage 4 & Groups 12 & 13 / Wards & Depts. as noted	FMcC	8 days	Thu 28/05/15	Mon 08/06/15	NA	0%	NA
414	Transfer of 324 Beds from VI to New Hospital	FMcC	2 days	Thu 28/05/15	Sun 31/05/15	NA	0%	NA
415	Group 12 / WIG / ED, Wards F1 to F4 inclusive, AAU, L8, L10, G2 & E3+E4	FMcC	2 days	Fri 29/05/15	Mon 01/06/15	NA	0%	NA
416	Group 13 / GGH / Wards 2A, 2B, 3C, 4B, 5B, 5C, 6C, 7C, 8A, 8B, 8C / OPAT / Brownies & Beatson Wards 18 + 19	FMcC	2 days	Fri 05/06/15	Mon 08/06/15	NA	0%	NA
417	Stage 5 & Groups 14 & 15 / Wards & Depts. as noted	FMcC	4 days	Wed 10/06/15	Mon 15/06/15	NA	0%	NA
418	Group 14 / RHSC / Outpatients	FMcC	3 days	Thu 11/06/15	Mon 15/06/15	NA	0%	NA
419	Group 15 / RHSC / Inpatients	FMcC	2 days	Wed 10/06/15	Fri 12/06/15	NA	0%	NA
420	Miscellaneous Moves from WIU, GRI & MHU, GGH (e.g. admin, office management, etc - exact details / breakdown TBC)	FMcC/IM	49 days	Fri 24/04/15	Tue 30/06/15	NA	0%	NA
421	Completion of Phase 3 Migration Period (NB. Milestone Event)	DL/PM	1 day	Tue 30/06/15	Tue 30/06/15	NA	0%	NA
422	Demolition / Decommissioning Operations (details TBC along with programme / phasing overlaps where applicable)	MG/IM	1 day	Wed 01/07/15	Wed 01/07/15	NA	0%	NA
423								
424	Demolition Works to existing SGH (Details TBC along with associated programme / phasing overlaps where applicable)	HM/DMG/IM	1 day	Wed 01/07/15	Wed 01/07/15	NA	0%	NA



nSGH NHS Commissioning Period Programme
Rev 1 / Master Update

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

A47069198

NHS Greater Glasgow and Clyde

Infection Prevention and Control Work Plan 2014/2015

(This document supports the implementation of the NHS Board IPC Programme 2014/15)

Approval

NHS Greater Glasgow & Clyde Board Infection Control Manager

NHS Greater Glasgow & Clyde Board Infection Control Committee

Submitted to:

NHS Greater Glasgow & Clyde Acute Infection Control Committee

NHS Greater Glasgow & Clyde Partnerships Infection Control Support Group

Update March 2015

CONTENTS

		PAGE
1.	NEW INITIATIVES / PROJECTS 2014 / 2015	3.
2.	CORE PROGRAMMES OF WORK	
A)	Surveillance and Continuous Quality Improvement	4.
B)	Education	6.
C)	Policies	7.
D)	Decontamination	8.
E)	Clinical Governance & Patient Safety	9.
F)	Healthcare Hygiene, Cleaning Services and the Built Environment	10.
G)	Hand Hygiene	11.
H)	Person Centred Care	11.
I)	Inspectorate Directorate / Quality Improvement Scotland HAI Standard	12.
J)	Scrutiny	12.
K)	MRSA KPIs	12.
L)	On the Move	12.
3.	GLOSSARY	13.

Update March 2015

1. NEW INITIATIVES / PROJECTS - 2014 / 15

Topic	Actions	Critical Dependency(s)	Lead	Bi-monthly Update January	Implementation Date
Undertake surveillance and quality improvement programmes in addition to the mandatory requirements of HDL (2006)38	Review available data, quality assure against existing available data and if possible plan strategies to survey all services for SSI.	ICNet functionality ?HDL from SGHD re additional mandatory requirements	Surveillance Co-ordinator and Lead Nurse Surveillance (Ann Kerr)	CNO letter was due to be issued in January 20145. Not yet available at 17.02.15.	CNO letter dependant
IPCT Service Evaluation	IPCT will conduct a survey of SCN / SN / HCA to determine areas for improvement.	None	Lead Nurse IPC Clyde and Person Centred Care (Joan Higgins)		Completed. Results sent to IPC SMT June 2014.
Measure compliance / knowledge of policies	Nationally influence the development of an audit tool to enable SCNs to measure compliance with Standard Infection Control Precautions.	Development of LanQip. Possible nursing IT developments CAAS.	ANDIPC (IPC only) (Sandra McNamee)		Completed
Develop new Infection Prevention Control Audit based on clinical priorities	Audit Group will develop an IPC Audit based on compliance with SICPs, MRSA KPI, CVC / PVC / CAUTI Bundles.	None	Lead Nurse IPC South West / Audit Group (Clare Mitchell)	UAT currently underway in all sites. On schedule to be rolled out by 31 March 2015.	March 2015
Explore IT solutions regarding the reporting of the results from the IPC Audit	IT Project Board will explore options for collecting information from the IPC Audit. This will include the selection of appropriate hardware to support local IPCTs.	Available IT systems / finance	ANDIPC and Lead Nurse Surveillance (Sandra McNamee, Ann Kerr)	UAT currently underway in all sites. E-mail address for SCN obtained. Require CN and LN address for reporting.	March 2015

Update March 2

Topic	Actions	Critical Dependency(s)	Lead	Bi-monthly Update January	Implementation Date
South Glasgow Hospitals (Adult)	• Board Hand Hygiene Co-ordinator working with Project Team to decide location of gel and HH dispensers and posters for staff (7000 + rooms).	Releasing time from other HH commitments	ANDIPC	HH Co-ordinator permanently on site	
	• Location of PPE dispensers. Team at SGH to assist project team with this.	IPCT resource	Lead Nurse IPC South West	Ongoing with local team.	
	• Pseudomonas risk assessment for critical care and haemato-oncology areas to be completed.	None	NCIPC		Completed.
	• IPCT requested meeting to discuss the move of the BMTU and the CDU to the new build as this was not in the original specification.	Project Team to facilitate	NCIPC / Co-ordinating ICD / ICM / ANDIPC		Completed.
	• IPCT North West to participate in the group reviewing systems for transferring equipment to new-SGH.	IPCT resource	Lead Nurse IPC North West	Ongoing.	
	• Attend the Generic Ward Operational Group.	None	NCIPC		Completed.
South Glasgow Hospitals (Children)	• Board Hand Hygiene Co-ordinator working with Project Team to determine locations for hand hygiene products (as above).	IPCT resource	NCIPC		Completed.
	• NCIPC working with Project Team to determine allocation of 'Danicentres' throughout new build for the provision of disposable PPE.	IPCT resource	NCIPC	Ongoing.	
	• Review of 'infected patient' pathway from ED to AAU and onward.	IPCT resource	NCIPC	Review of high-risk 'infected patient' undertaken and report back to Senior Nurse.	
	• Review of specialised service adjacencies in ward bed configuration.	IPCT resource	NCIPC		Completed. Reported to AICC 2014.
	• Review of ventilation standards in lobbied single rooms (both hospitals)	IPCT resource	NCIPC	Ventilation standards reviewed by LIPCD with project team. Ongoing.	
	• Pseudomonas risk assessment for critical care and haemato-oncology areas to be completed (as above)	IPCT resource	NCIPC	Risk assessment will be undertaken annually.	

Update March 20

Topic	Actions	Critical Dependency(s)	Lead	Bi-monthly Update January	Implementation Date
On the Move	• Attend Corporate Team On the Move Group. • Submit data on staff who are currently on sites that will migrate to the new-SGH. • Try and secure accommodation for staff who will need to migrate but who do not need to be located in South Glasgow Hospitals. • Service review complete. • OD day being organised for October 2014.	None	ANDIPC	Meetings continue to be attended and staff informed. IPCT OD day held in October 2014 to discuss on the move and ASR.	TBC
Vale of Leven Inquiry Report	• Prepare IPC action plan in response to the specific recommendation related to IPCT.	Clarification from NHSGGC and SGHD	ICM		Action plan to be returned January 2015
Ebola Preparedness	• Participate in development of training materials with Health Protection Scotland. • Plan prepared to provide training to all EDs and the Communicable Diseases Units. • Evaluate and recommend list of PPE. • Participate in the PHPU Steering Group.	IPCT nursing resource for training	NCIPC	Tabletop exercise attended. Training rolled out as requested by steering group. Active participation in national groups.	Actions ongoing dependant on emerging issues.

Update March 2015

2. CORE PROGRAMMES OF WORK

A) Surveillance and Continuous Quality Improvement

Topic	Actions	Lead	Report / Update Available
To reduce MRSA / MSSA bacteraemia (SABs) to 24 cases per 100,000 occupied bed days by 31 March 2015 (HEAT)	Prepare monthly reports based on information from the enhanced surveillance of SABs.	Clinical Project Manager (Ann Kerr)	Monthly Acute and quarterly Directorate reports issued.
	Align outcome data from team to information collected by SPSP where possible. Support interventions from this information.	IPC Data Team / QIFs	Ongoing.
	Continue cross-directorate SAB Steering Group Meetings.	Clinical Project Manager (Ann Kerr)	Meetings to occur bi-monthly. Minutes available.
	IPCT to carry out enhanced surveillance of all reported SABs.	IPCTs	Ongoing. Output informs monthly Acute and quarterly Directorate Reports issued.
	IPCT to continue to support and update educational sessions around venepuncture and line management. Promote NES Aseptic Technique modules as learning resource.	IPCTs / Education (Lynn Pritchard)	Ongoing. Reports on numbers undertaking are available on request.
	Information from the updated Clinical Review Tool will be included in the Directorate SAB Reports. Returns will be included in the Directorate Monthly Reports.	Clinical Project Manager (Ann Kerr)	Monthly Acute and quarterly Directorate Reports issued.
	IPCTs will carry out audits of clinical practice in relation to the managements of PVC / CVC when a SAB is associated with an invasive device and as part of the IPC Audit.	IPCTs	Results will be included in the Monthly Directorate Reports.
	Report progress against target to NHS Board via the bi-monthly HAIRT and Quality & Performance Report.	ICM (Tom Walsh)	Every two months to BICC and Q&P.
	QIFs will target areas for improvement based on information collected.	QIFs / Clinical Project Manager (Ann Kerr)	
To reduce the incidence of C. *difficile* to 32 cases per 100,000 occupied bed days in ages 15 and over by 31 March 2015 (HEAT)	Monitor both HAI and non-HAI cases and produce and return to clinical areas SPC charts in relation to HAI *C. difficile*.	IPC Data Management / IPCTs (Ann Kerr)	Ongoing. Reported monthly to Wards and Directorates. Reported monthly to Nurse Director for Partnerships.
	Support the Antimicrobial Management Team in promoting antimicrobial policies which limit broad spectrum antibiotic agents implicated in *C. difficile*, MRSA and other similar infections.	ICDs	Ongoing. ICDs attend Antimicrobial Utilisation Committee.
	Support clinical teams in the management and reporting of *C. difficile* cases to reduce the risk of onward transmission.	IPCTs	Ongoing.

Update March 2015

Topic	Actions	Lead	Report / Update Available
Undertake surveillance and quality improvement programmes which are compliant with national requirements	NHSGGC continue to comply with HDL (2006)38.	Surveillance Co-ordinator / IPC Data Management (Ann Kerr)	Ongoing. Quarterly SSI Reports issued to clinicians.
Alert Organism / Communicable Disease Surveillance	IPCTs will continue to collect data on all alert organisms or communicable diseases referred to them to detect trends and identify areas for action.	IPCTs	Ongoing. Data supports the update of SPCCs which are issued monthly.
Ensure delivery of IT work plan and utilise IT systems for continuous improvement	IPC Lead Surveillance Nurse will deliver actions outlined in Project Plan and act on recommendations from IPCT to develop or utilise existing IT systems.	IPCTs / IPC Lead Surveillance Nurse (Ann Kerr)	IPC Lead Surveillance Nurse to report to IPC SMT monthly on progress.

Update March 2015

B) Education

Topic	Actions	Lead	Report/ Update Available
To ensure that IPCTs have access to education and training as appropriate	Continue to support and promote the education of the IPCT workforce by linking with Practice Development, Learning & Education within NHSGGC, and nationally with NHS Education for Scotland.	Education (Lynn Pritchard)	Ongoing
Ensure that staff in Primary Care have access to training on local decontamination	Support NES online / local decontamination training for staff.	IPCTs	Ongoing
To ensure that the workforce has access to education as per ICP Education Strategy	Continue to support and promote the IPC Modules on learnPro.	Education (Lynn Pritchard)	Ongoing
To ensure managers have access to IPC training records	Ensure members of the IPCT log training / education sessions on Oracle in order to provide clinical staff with up-to-date records of training.	ANDIPC (Sandra McNamee)	Ongoing
Ensure that training is provided and aligned to NHSGGC policies in relation to the management of invasive devices	Review existing presentations and ensure that they accurately reflect and include the key elements in the revised CVC / PVC Policy.	Education (Lynn Pritchard)	July 2014

Update March 2015

C) Policies

Topic	Actions	Lead	Report/ Update Available
To maintain and enhance the NHSGGC Infection Prevention and Control of Infection Policy Manual	There will be a planned programme for the review / updating of all policies as per QIS HAI Standards.	IPC Policy Group (Pamela Joannidis)	Ongoing
	Develop new policies as required based on the requirements of the organisation and in response to new legislation, guidance or emerging pathogens.	IPC Policy Group (Pamela Joannidis)	Ongoing
	Place IPC policies on the IPC website and promote this site.	IPC Policy Group (Pamela Joannidis)	Ongoing
Implement the National Infection Prevention and Control Manual as available	Review contents and prepare addendums as required, as per Policy / SOP.	IPC Policy Group (Pamela Joannidis)	As available
Ensure that updated or newly developed IPC Policies and Standard Operating Procedures are fit for purpose and meet / complement other organisational objectives	Ensure consultation by implementing the IPC SOP Procedure for the Development and Approval of IPC Policies, SOPs and Patient Information in NHSGGC.	ANDIPC (Sandra McNamee)	Ongoing

Update March 2015

D) Decontamination

Topic	Actions	Lead	Report/ Update Available
CJD	Review the Advisory Committee on Dangerous Pathogens (ACDP) Guidance on "transmissible spongiform encephalopathy agents: safe working and the prevention of infection", and make recommendations to the parts of the organisation to which issues within this applies.	CJD Group (PHPU Lead tbc)	Ongoing. CJD is a standing item on the BICC Agenda.
Central Decontamination Unit	Support the central decontamination unit by attending quarterly decontamination meetings at Cowlairs Decontamination Unit and provide education as required / requested.	Decontamination Group (Kate Hamilton / Dr Sarah Whitehead)	Ongoing. Included in Facilities update to BICC.
Central Decontamination Units	Carry out an IPC Environmental Audit on all units managed by CDU.	IPCTs	Ongoing. Reports will be included in Directorate re-posts
IPC Decontamination Group (Sub-Group of BICC)	IPCT will chair and support the work of this group and give advice as requested by clinical services and liaise with HPS / HFS. Work being carried out to establish decontamination page on NHSGGC IC Website and the introduction of internal safety action notices.	ICDs (Dr Sarah Whitehead / Dr Alison Balfour)	Ongoing. Decontamination Group reports to BICC / AICC / PICSG as appropriate.

Update March 2015

E) Clinical Governance & Patient Safety (SPSP and SPSI)

Topic	Actions	Lead	Report/ Update Available
To comply with the principles outlined in the QIS Clinical Governance and Risk Management Standards	The IPC service will have structures and processes in place to identify, manage and communicate risks throughout the organisation.	ICM (Tom Walsh)	Risk Register developed and submitted to BICC for approval. Highest rated risks are submitted to the Corporate Risk Register.
	IPCTs will continue to assist clinical teams to complete the Root Cause Analysis tool for severe cases of CDI, and log onto Datix any severe case or case where it appears as a factor on the patient's death certificate.	IPCTs / Clinical Teams NHSGGC	Datix is reviewed within the directorate specific clinical governance systems. Overview given by Risk Manager to AICC / BICC.
To comply with the principles outlined in the QIS Infection Control Standards	Produce an Annual Report based on the IPC Programme for approval by the BICC and the NHSGGC Quality & Performance Committee.	ICM (Tom Walsh)	May 2015
To comply with the requirements of the SGHD in relation to the HAIRT Report	Populate the NHS SGHD bi-monthly HAIRT Report for presentation to the NHS Board and the NHSGGC Quality and Performance Committee.	ICM (Tom Walsh)	The HAIRT is published on the NHSGGC website bi-monthly. Presented to NHSGGC Board and Quality and Performance Committee (summary).
To ensure that the IPCT are supporting staff to apply IPC Policies and SOPs in relation to invasive devices management and SICPs to promote patient safety.	The IPC Audit will be undertaken as a minimum every 12 months in all wards and Clinical Departments, or more frequently as indicated by results, i.e. RED or AMBER score.	IPCTs	Reports returned to SCNs and Lead Nurses. Score reported in Directorate Monthly Reports.
To ensure that evidence based practice in relation to infection prevention and control is promoted by IPCTs in NHSGGC	The IPCTs in NHSGGC will participate in the SPSP and SPSI as required.	SPSP (Joan Higgins / Karon Cormack)	Ongoing
	Data will be shared between IPCTs and SPSP / SPSI where appropriate.	IC Data Management (Ann Kerr)	Ongoing
To comply with the requirements of the SGHD in relation to the HAI Report Card	Populate the HAI Report Card.	IC Data Management (Ann Kerr)	Ongoing. Reports posted on NHSGGC website each month.

Update March 2015

F) Healthcare Hygiene, Cleaning Services and the Built Environment

Topic	Actions	Lead	Report/ Update Available
To comply with national guidance on cleanliness standards and provide patients and visitors with a clean hospital environment	To ensure compliance with national monitoring of standards by participating in the peer and public review of cleaning services.	IPCTs (Elisabeth Sutherland)	Ongoing
	IPCT participate in the site Facilities Groups.	IPCTs	Ongoing. Minutes from these groups are submitted to the Facilities Clinical Governance Committee.
	Participate in the training of public reviewers.	Patient Experience (Pamela Joannidis)	Ongoing
To ensure that NHSGGC premises are designed and built to facilitate the prevention and control of infection	Co-ordinating ICD jointly chairs with GM Facilities, the NHSGGC Water Group. This group reviews guidance with regards to the control of Legionella and *Pseudomonas*.	CICD / Facilities (Craig Williams / Mary Anne Kane)	Water Group meets bi-monthly. This group reports to BICC and Facilities Clinical Governance Committee.
	Ensure that all advice in relation to new builds complies with HFS Building Notes and Guidance Documents.	IPCTs	Ongoing
	Ensure that PPM and validation of theatres is ongoing.	S&A / CICD (Craig Williams)	Ventilation Group meets quarterly and reports to AICC.

Update March 2015

G) Hand Hygiene

Topic	Actions	Lead	Report/ Update Available
Continue to involve the public and patients in compliance in relation to hand hygiene	Participate in Patient Experience events as requested.	**LHBC** (Stefan Morton)	**Ongoing**
	Educate and support members of the public to participate in local monitoring of hand hygiene compliance	**LHBC** (Stefan Morton)	**Ongoing**
	Continue to update the IPC website with regards to Hand Hygiene initiatives and information.	**LHBC** (Stefan Morton)	**Ongoing**
Promote a zero tolerance approach to HH compliance in NHSGGC as per CEL(2009)5	To continue to support staff to undertake local hand hygiene audits based on SPSP methodology which will now include information on technique as well as opportunity.	**LHBC** (Stefan Morton)	**Ongoing**
Provide assurance that NHSGGC continue to support continuous improvement in relation to HH	Prepare an assurance plan for Health Protection Scotland and NHSGGC.	**LHBC** (Stefan Morton)	**Update September 2014**

H) Person Centred Care (PCC) / Patient Experience

Topic	Actions	Lead	Report/Update Available
To ensure that systems and processes are in place to secure public involvement in issues related to HAI and that these systems are linked to the NHSGGC Patient Experience Framework	Map all Patient Experience (PE) activity to the Participation Standards documented in a log of activity reviewed at Acute Operating Division (AOD) PE Steering Group.	**Patient Experience** (Pamela Joannidis)	**Ongoing**
	A representative from the IPCT will attend the AOD PE Steering Group.	**Patient Experience** (Pamela Joannidis)	**Ongoing**
	Patient information will continue to be developed and updated as necessary.	**Patient Experience** (Pamela Joannidis)	**Ongoing**
	A member of the IPCT will visit every patient who has been identified with an alert organism or communicable disease and if able will give the patient verbal and written information.	**Person Centred Care** (Joan Higgins)	**Ongoing**
Monitoring of the National Cleaning Services Specification	Members from the IPCT will continue to participate in the Monitoring Framework for Cleaning Services PPI Review Support Group.	**IPCTs** (Pamela Joannidis)	**Ongoing**
NHS QIS Standards of HAI	Support public partners who attend the BICC and PICSG.	**Patient Experience** (Pamela Joannidis / Sandra McNamee)	**Ongoing**

Update March 2015

I) Inspectorate Directorate / Quality Improvement Scotland HAI Standard

Topic	Actions	Lead	Report/ Update Available
Comply with NHS QIS HAI Standards and populate the online portfolio of evidence to demonstrate compliance with the standards	Review and update relevant evidence as it is updated or developed in response to the HEI action plan following each visit.	**HEI Leads (AICC)** (Rory Farrelly)	**Report on the progress of action plans is a standing item on the AICC agenda.**
	Co-ordinate and post the evidence submitted by other departments within NHSGGC.	**ICM** (Tom Walsh)	**Ongoing**
Participate in the NHSGGC Corporate HEI Inspection	Participate in the Acute Operating Division Corporate HEI inspection audits.	**IPCTs**	**Ongoing**

J) Scrutiny

Topic	Actions	Lead	Report/ Update Available
Comply with IPC Elements of the Health Improvement Scotland (HIS) Annual Scrutiny & Inspection Plan	Map IPCT information against that required in the new plan and address any deficiencies or points of clarity required.	TBC	TBC

K) MRSA KPIs

Topic	Actions	Lead	Report/ Update Available
Support staff to comply with CNO (2013)1 and complete the MRSA Clinical Risk Assessment	Nursing admission document will include MRSA CRA.	IPC Lead Surveillance Nurse (Ann Kerr)	Results included in monthly Directorate Reports.
	IPC Audit compliance with MRSA Screening national target through local collation and upload to HPS Portal.	IPCTs / IPC Lead Surveillance Nurse / IPC Data Team	Results included in monthly Directorate Reports.
	IPCTs / QIFs will promote and support staff to complete and comply with CNO (2013)1.	IPCTs / QIFs	N/A

L) On the Move

Topic	Actions	Lead	Report/ Update Available
Plan services to meet the needs of the Clinical Services Review and the integration of Health and Social Care.	Convene a group with all relevant stakeholders (IPCT, SMT, LN, HR) to ensure that staff are kept informed and supported during any changes which arise due to organisational change.	**ICM**	**As required**

Update March 2015

3. GLOSSARY

ACDP	**Advisory Committee on Dangerous Pathogens**
AMT	**Antimicrobial Management Team**
AOD	**Acute Operating Division**
Alert organism alert condition	Any of a number of organisms or infections that could indicate, or cause, outbreaks of infection in the hospital or community.
Bacteraemia	Infection in the blood. Also known as Blood Stream Infection (BSI).
BICC	**Board Infection Control Committee**
CDAD	***Clostridium difficile*** Associated Disease
CDI	***Clostridium difficile*** Infection
CEL	**Chief Executive Letter** issued by Scottish Government Health Directorates (SGHD)
CMO	**Chief Medical Officer**
CVC	**Central Vascular Catheter**
C. difficile	***Clostridium difficile*** also referred to as ***C. diff*** (or ***C-diff***) is a Gram-positive spore-forming anaerobic bacteria. C. *difficile* is the commonest cause of gastro-intestinal infection in hospitals. It causes two conditions; antibiotic associated diarrhoea and the more severe and occasionally life-threatening pseudomembranous colitis. Control of the organism can be problematic due to the formation of spores and difficulty in removing them. Patients who have had antibiotics within the last eight weeks are most at risk of acquisition of the organism.
Cleanliness Champion	**Cleanliness Champion** A Ministerial led initiative to offer a specific education programme to HCWs. http://www.scotland.gov.uk/Topics/Health/NHS-Scotland/19529/19322
Code of Practice	**Code of Practice.** The NHS Scotland Code of Practice for the Local Management of Hygiene and Healthcare Associated Infection issued 2004 contains the components that must be complied with by all NHS HCWs in Scotland. http://www.scotland.gov.uk/Publications/2004/05/19315/36624
GRO	**General Registers Office**
HAI	Originally used to mean hospital acquired infection, the official 'Scottish Government' term is now **Healthcare Associated Infection**. These are considered to be infections that were not incubating prior to contact with a healthcare facility or undergoing a health-care intervention. It must be noted that HAI infection is not always an avoidable infection.
HAI SCRIBE &HBN 30	Scottish Health Facilities Note 30: version 3. Infection Control in Built Environment: Design and Planning.
HCW	**Healthcare Worker**
HDL	**Health Department Letter**
HEAT Target	**Health Efficiency and Access to Treatment**. Targets set by the Scottish Government.
HH	**Hand Hygiene**
HPS	**Health Protection Scotland**
IPCN/T/O/D/M	**Infection Control Nurse / Team / Officer / Doctor / Manager**
ICP	**Infection Control Programme**
KPI	**Key Performance Indicator**
LHBC	**Local Health Board Co-ordinator** (Hand Hygiene)
MRSA	**Meticillin resistant *Staphylococcus aureus.*** A *Staphylococcus aureus* resistant to first line antibiotics; most commonly known as a hospital acquired organism.
MSSA	**Meticillin Sensitive *Staphylococcus aureus***
PCAT	**Primary Care Audit Tool**
PHPU	**Public Health Protection Unit**
PVC	**Peripheral Vascular Catheter**
QIS	**Quality Improvement Scotland**
SAB	***Staphylococcus aureus* bacteraemia**
SIRN	**Scottish Infection Research Network**
SOP	**Standard Operating Procedure**
SPC	**Statistical Process Control Charts**
SPSP	**Scottish Patient Safety Programme**
VRE	**Vancomycin resistant enterococcus** - an alert organism. A common organism that can be inherently resistant to Vancomycin but can also acquire (and transfer resistance) to other organisms. Has caused outbreaks reported in the literature in a variety of high-risk settings, eg renal or bone marrow transplant units.

The NHS Greater Glasgow & Clyde Infection Prevention and Control Programme recognises that a wide variety of healthcare is undertaken in diverse settings and this may lead to additional initiatives being undertaken locally.

Under March 2015

NSGH Labs Building

Energy Centre LTHW Integration

Labs Flushing, Water Treatment, Balancing and Associated Works

Methodology Revision 02

Prepared for:

NHS – Ian Powrie

Prepared By:

Brookfield Multiplex Construction Ltd
Hardgate Road
Glasgow , G51 4SX

Project No: **NSGH-3a**

Issue: **Two**

Date: **12th March 2015**

Executive Summary

The following document outlines the methodology for the Labs Flushing and Energy Centre LTHW Connection for Phase 3a of the NSGH Site Construction works located within the Labs Building. Phase 2 of the Labs construction works were completed and handed over for operation during March 2012.

The scope of the flushing & balancing works relate to the following systems and services installed during the project:

Mechanical Services:

- Primary LTHW Plant and Recirculation located in Energy Centre
- Secondary LTHW Plant and Recirculation located in Labs Plantrooms

BMS Control Interfaces to all of the above systems:

- Control Functions
- Manual Overrides
- Global Commands
- Temperature Set Points

Document Authorisation

Author	**Colin Grindlay**
Checked	David Wilson

Document Revision Summary

Revision	**Date**	**Description & Issue**	
		Issue Description	**Issue To**
01	09/03/2015	Internal Issue	David Wilson
02	12/03/2015	Official Issue	NHS, Mercury & BMCE

Note: All actual changes from previous document revision are identified in *italic.*

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Table of Contents

1 INTRODUCTION 1

1.1 Energy Centre & Labs Building District Heating 1

1.2 Labs Building Water Quaility 1

1.3 Labs Flushing, Integration & Balancing 2

2 LABS FLUSHING METHODOLOGY 3

2.1 Introduction 3

2.2 Pre-Requisites 4

2.3 Methodology 5

2.4 Water Quality Checks 7

2.5 Inspection, Test Plan & Quality Assurance 7

The information contained in this document is submitted on the basis that it shall be kept secret and confidential and should not be disclosed to any third party without prior written consent of Brookfield Multiplex Construction.

1 Introduction

1.1 ENERGY CENTRE & LABS BUILDING DISTRICT HEATING

The Energy Centre heating distribution systems has a dedicated circuit and plate heat exchangers (PHE) for the labs building heating demand. From the PHE exchangers there is a pump set feeding all 4no. Plantroom pods within the Labs Building. Pod's 1 & 2 (West Elevation) and Pods 3 & 4 (east elevation including office pod) are group into 2 distribution legs from the Energy Centre heating system. The 2 no. Distribution legs have been filled, pressure tested, flushed and chemically cleaned. The valves have been isolated at the Plantroom Pod LTHW Heating Header and are currently running in by-pass mode – Awaiting the correct water quality and chemical levels to open up into Labs heating system.

1.2 LABS BUILDING WATER QUAILITY

Prior to opening the Energy Centre pipework and integrating, BMCE undertook water sampling analysis of the Labs heating system. On the 24-11-14, following our Water Quality Testing on the Labs LTHW System, please see below results and photograph of water samples taken from Pod's 1-4. Our specialist sub-co advised a full system reflush due to the levels of contaminants in the various systems which all go back to the EC Labs pump sets.

POD 1:

TDS- 2.78ppt

EC- 4.2ms

Iron- 0.5mg/l

Molybdate- 200ppm

PH- 6.5

Clarity is cloudy and small dirt particles present in sample.

POD 2:

TDS- 245ppm

EC- 336us

Iron- 0.5mg/l

Molybdate- 0

PH- 8.0

Clarity is straw and free from particles

POD 3:

TDS- 1.57ppt

EC- 2.4ms

Iron- 0.5mg/l

Molybdate- 175ppm

PH- 6.55

Clarity is cloudy and small dirt particles are present.

POD 4:

TDS: 343ppm

EC: 534us

Iron: 0.5mg/l

Molybdate: 0

PH 8.25

1.3 LABS FLUSHING, INTEGRATION & BALANCING

Following the water quality results above, It would be best interest of the NHS to resolve and flush the Labs Heating System prior to integration with new Energy Centre system. As discussed with NHS, we agreed the best way forward was to complete a full labs LTHW water flush and chemical clean to all 4no. Pods prior to the final EC & Labs integration. The systems will then be left cleaned, dosed with inhibitor and then handed over to NHS FM Estates.

2 Labs Flushing Methodology

2.1 INTRODUCTION

The main features of the LTHW water systems are reviewed in turn.

2.1.1 Primary LTHW Water Plant - Labs

Primary LTHW Water System is currently operational. There are 4 no. Plantroom Pods each with their own LTHW distribution pumps and circuits (VT, VT2, CT). There are dedicated boiler plant for each plantroom pod which provides the heat source for the LTHW pipework distribution. Once the Energy centre integrati0onn is completed the primary side boiler plant will become dormant and sit as emergency backup (or other as NHS see fit).

2.1.2 Primary LTHW Water Plant – Energy Centre

The secondary LTHW water system is fed from the EC primary MTHW heating distribution circuit. The secondary LTHW heating systems has been filled, pressure tested, flushed and chemically cleaned. The valves have been isolated at the Labs Plantroom Pod LTHW Heating Header and are currently running in by-pass mode – Awaiting the correct water quality and chemical levels to open up into Labs heating system.

2.1.3 Ancillary Plant & Equipment

The labs building has various Ancillary Plant & Equipment (Radiant Panels, Chilled Beams, AHU Batteries, Boilers etc) which will be directly affected by the labs flushing process. Therefore, there will be a considerable impact on the building heating control and distributing due to all the two port valves being required to be 100% fully open. This is one of the main considerations for this methodology toe ensure the building fabric and contents is not detrimentally effected/

2.2 PRE-REQUISITES

The following pre-requisites are required for Labs Flushing of the LTHW Water Systems:

1. All 2-Port Control Valves must be in their fully open position (FCU's / Rad Panels / AHU's / Chilled Beams).
2. Access to all rooms required (NHS to provide cards / codes)
3. Global Command for Valve Control in place (Schneider)
4. Boilers turned off Friday 13-03-15 at 1pm (or set at 40oC set point for background heating)
5. AHU Batteries and Frost Coil to be manually open to 100% (NHS)
6. Replace Faulty / Jammed control valves on Labs LTHW (NHS)
7. On call estates numbers to be provide in the event of an emergency.

The above systems will be validated by BMCE and NHS prior to the Labs Flushing commencing on 13-03-15.

2.3 METHODOLOGY

The Labs Flushing and Balancing will be carried out in accordance with the below description below.

2.3.1 NHS FM Pre- Flush Actions

1. Pod 1 & 2 (Friday 13-03-15)
    a. Turn Off Boilers Pod 1 & 2 LTHW Circuit (1pm)
    b. Manually Open AHU Frost & Heating Coils (NHS)
    c. Global Command to fully open all LTHW Heating Valves on Pod 1 & Pod 2 (Schneider)
    d. All AHU's for Pod 1 & 2 (week 1) & Pod 3 & 4 (week 2) to be switched off [excluding CAT 2 & CAT 3 Labs] (NHS)
    e. Local Electric Heater to be put into rooms for supplementary heating.

The above methodology is consistent as agreed with NHS and Currie Brown during site meeting of the 20th February 2015.

2.3.2 LTHW Water System (Secondary Labs LTHW, Primary Energy Centre LTHW)

1. Pod 1 & 2 (Friday 13-03-15 – 3pm) **WEEK 1**
    a. Ensure the pumps are operational from the Energy Centre to the pod loops
    b. Isolate Labs Pressurisation units.
    c. Open pod 1 LTHW flow to the labs header to inject fresh mains water from the energy centrer (ensure the return remains closed) then open the existing 2" drain at energy centre valve ensuring there is no change in pressure by also opening the mains water from the energy centre.
    d. Communication via mobile phones or radios to ensure the process is carried out in a controlled manner.
    e. When we are satisfied there is a balanced flush and everything is stable, we will move over to pod 2 and carry out the same process.
    f. As the labs are a completed and occupied building we will have an assistant by the drain / hose at all times to ensure there are no issues. We will have an Engineer in the Energy Centre who will assist the Engineer in the labs from time to time with labs water quality checks throughout pods 1&2.
    g. This process will ensure fresh water is entering all the existing labs circuits, it will also ensure the return water is mixing in the existing header / diluting to drain and not causing any cross contamination to the newly chemically cleaned pipework.
    h. During the process an Engineer will walk pods 1&2 to check the water quality is improving throughout with support from the Energy centre Engineer, he will also check pods 1&2 plant rooms where assistants are located. We are hoping this process will be successful over the weekend as all systems were left in a proportionally balanced state therefore should clean up proportionally assuming nothing has changed.
    i. Above process ongoing for Friday, Saturday & Sunday.
    j. Take water samples & record values
    k. Then finally Chemically Dose, retake samples & record values.

2.3.3 Completion Procedures for Week 1

1. Pod 1 & 2 (Sunday Night 15-03-15 – 5pm)
    a. Keep energy centre labs pumps in circulation but bypass and isolate at labs header.
    b. Enable labs press unit.
    c. Check system pressure and top up if required.
    d. Isolate Energy Centre Isolation Valves to Labs LTHW Header
    e. Switch on boliers
    f. Set AHU's valves to automatic operation (NHS)
    g. Global command valves back to automatic control (Schneider)
    h. Leave in automatic operation
    i. Commence Pod 3 & 4 on 20-02-15

2.3.4 LTHW Water System (Primary Labs LTHW, Secondary Energy Centre LTHW)

1. Pod 3 & 4 (Friday 20-03-15 – 3pm) **WEEK 2**
    a. Ensure the pumps are operational from the Energy Centre to the pod loops
    b. Open pod 3 LTHW flow to the labs header to inject fresh mains water (ensure the return remains closed) then open the existing 2" drain valve ensuring there is no change in pressure by also opening the mains water from the energy centre.
    c. Communication via mobile phones or radios to ensure the process is carried out in a controlled manner.
    d. When we are satisfied there is a balanced flush and everything is stable, we will move over to pod 4 and carry out the same process.
    e. As the labs are a completed and occupied building we will have an assistant by the drain / hose at all times to ensure there are no issues. We will have an Engineer in the Energy Centre who will assist the Engineer in the labs from time to time with labs water quality checks throughout pods 3&4.
    f. This process will ensure fresh water is entering all the existing labs circuits, it will also ensure the return water is mixing in the existing header / diluting to drain and not causing any cross contamination to the newly chemically cleaned pipework.
    g. During the process an Engineer will walk pods 3&4 to check the water quality is improving throughout with support from the Energy centre Engineer, he will also check pods 3&4 plant rooms where assistants are located. We are hoping this process will be successful over the weekend as all systems were left in a proportionally balanced state therefore should clean up proportionally assuming nothing has changed.
    h. Above process ongoing for Friday, Saturday & Sunday.
    i. Take water samples & record values
    j. Then finally Chemically Dose, retake samples & record values.

2.3.5 Completion Procedures for Week 2

1. Pod 3 & 4 (Sunday Night 22-03-15 – 5pm)
    a. Keep energy centre labs pumps in circulation but bypass and isolate at labs header.
    b. Enable labs press unit.
    c. Check system pressure and top up if required.
    d. Isolate Energy Centre Isolation Valves to Labs LTHW Header
    e. Switch on boilers
    f. Set AHU's valves to automatic operation (NHS)
    g. Global command valves back to automatic control (Schneider)
    h. Leave in automatic operation
    i. Re-Check Chemical Levels for Week 1 Pod 1 & Pod 2, record values; Re-dose if required
    j. Commence Integration Works for all pods

2.3.6 Pod 1, 2, 3 & 4 Integration and Final Checks

1. Pod 1, 2, 3 & 4 (time to suit NHS FM Estates)
    a. Switch off boilers
    b. Isolate boilers
    c. Bring Energy Centre secondary Labs Line Up to Operating Temperature
    d. Enable EC Labs distribution pumps
    e. Open isolation valves back to energy centre
    f. Isolate by-pass valves on energy centre secondary side.
    g. Monitor temps and pressure
    h. Ensure system healthy and leave to operate in normal automatic conditions
    i. Attend Labs in Week 3 to check chemical levels in Pods 1, 2, 3 & 4; Re-dose if required

2.4 WATER QUALITY CHECKS

Water Quality Checks will be carried out using BRSIA procedure:

1. TDS
2. EC
3. Iron
4. Molybdate
5. PH

2.5 INSPECTION, TEST PLAN & QUALITY ASSURANCE

Water quality samples and testing of samples will be witnessed by NHS representative. Certificates will be issued and loaded onto Zutec.

From: David Wilson [redacted] on behalf of David Wilson
Sent: 31 March 2015 08:36
To: Powrie, Ian
Cc: John Wales
Subject: RE: Cardiac Dept NSGUH

Ian,

I have checked with Schneider and they have now sorted the problem. They had left a heater battery on override.

Regards
David

David Wilson
Commissioning Manager - Construction

Brookfield Multiplex Europe
New South Glasgow Hospitals Project
Hardgate Road
Glasgow, G51 4SX, United Kingdom
[redacted]
W www.brookfieldmultiplex.com

Please consider the environment before printing this email.

From: Powrie, Ian [redacted]
Sent: 31 March 2015 07:00
To: David Wilson
Cc: John Wales
Subject: RE: Cardiac Dept NSGUH

David,

Feedback from lead nurse for the department is, rooms OPD 132, 129, 124 & 117 are all up at 26˚C, turning down the temperature controller has no effect.

Regards

Ian

[redacted]
Sector Estates Manager (NSGH)
Project Team, New South Glasgow Hospitals,
Southern General Hospitals Construction Site,
2nd Floor, Modular Building, Off Hardgate Road, Glasgow,G51 4SX
[redacted]

[redacted]

From: David Wilson [redacted]
Sent: 27 March 2015 08:58
To: Powrie, Ian
Cc: John Wales
Subject: FW: Cardiac Dept NSGUH

Ian,

We have checked what we think is the areas described as overheating but we could do with some room numbers to check?

Thanks
David

David Wilson
Commissioning Manager - Construction

Brookfield Multiplex Europe
New South Glasgow Hospitals Project
Hardgate Road
Glasgow, G51 4SX, United Kingdom
[redacted]
W www.brookfieldmultiplex.com

Please consider the environment before printing this email.

From: John Wales
Sent: 25 March 2015 17:46
To: David Wilson
Subject: Fw: Cardiac Dept NSGUH

David
Can you send onto Mercury.
Regards

John Wales
Quality Assurance Manager

Brookfield Multiplex Europe
New South Glasgow Hospitals Project
Hardgate Road
Glasgow, G51 4SX, United Kingdom
[redacted]
W www.brookfieldmultiplex.com

From: Powrie, Ian [redacted]
Sent: Wednesday, March 25, 2015 05:38 PM

To: John Wales
Subject: FW: Cardiac Dept NSGUH

Hi John,

Sorry I forwarded Elaine's out of office in error, issues are detailed below.

Regards

Ian

[redacted]
Sector Estates Manager (NSGH)
Project Team, New South Glasgow Hospitals,
Southern General Hospitals Construction Site,
2nd Floor, Modular Building, Off Hardgate Road, Glasgow,G51 4SX
[redacted]

From: Powrie, Ian
Sent: 25 March 2015 16:57
To: 'Elaine Robertson'
Subject: FW: Cardiac Dept NSGUH

Elaine,

I am receiving several reports regarding temperature controls in the following areas

1. Cardiac dept 27 °C, very warm cannot reduce temperature via room controllers.
2. Haemato oncology ward 25°C very warm cannot reduce temperature via room controllers, ventilation also appears to be off?

Can you please raise defect reports for these.

Regards

Ian

[redacted]
Sector Estates Manager (NSGH)
Project Team, New South Glasgow Hospitals,
Southern General Hospitals Construction Site,
2nd Floor, Modular Building, Off Hardgate Road, Glasgow,G51 4SX
[redacted]

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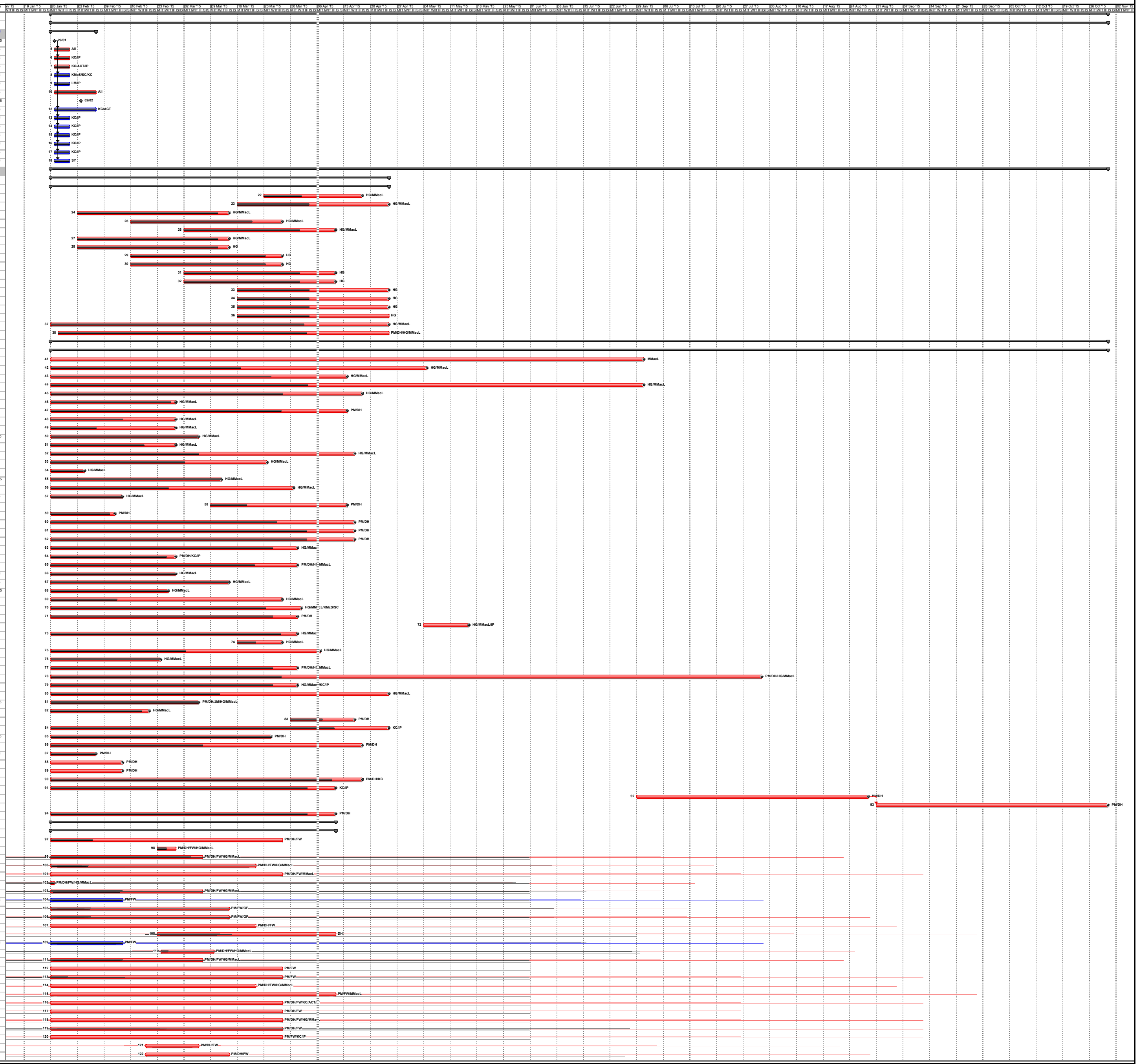
nSGH Phase 2 Close-out Programme from Handover to Start of Migration Period (i.e. to start of Phase 3 Close-out Period)

Progress Update as of 03/04/2015

'Work to' Programme issued 30/01/2015 to NHS Project Team (ref. 'Work To' Programme)

ID#	Activity Description	Resource Initials	Activity Duration	Programme Start Date	Programme Finish Date	Actual Start Date	Recorded % Complete	Actual Finish Date
1	**Phase 2 of NHS Close-out Period Programme for nSGH:**	**DL**	**201 days?**	**Mon 26/01/15**	**Fri 30/10/15**	**Mon 26/01/15**	**56%**	**NA**
2	**NHS Commissioning Period Primary & Supportive Activities**	**DL/PM**	**201 days?**	**Mon 26/01/15**	**Fri 30/10/15**	**Mon 26/01/15**	**56%**	**NA**
3	**Initial Post Handover Activities (i.e. typically to be focused on in first week)**	**As Noted**	**10 days**	**Mon 26/01/15**	**Fri 06/02/15**	**Mon 26/01/15**	**100%**	**Fri 06/02/15**
4	Handover of nSGH to NHS (***Start of NHS Commissioning Period***)	DL/PM	1 day	Mon 26/01/15	Mon 26/01/15	Mon 26/01/15	100%	Mon 26/01/15
5	NHS Project Team / FM / Estates / Security / General Mobilisation to nSGH (NB. Inclusive of P/O decant, etc)	All	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
6	Set up FM Help Desk + Compilation & Issue of ID Badges, Security Protocols, Delivery Controls (etc)	KC/IP	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
7	Set up entrance / delivery controlled entry points in line with delivery & deployment requirements & protocols	KC/ACT/IP	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
8	Roll out NHS Commissioning Team Handsets (ref. general interface with Telecomms)	KMcS/SC/KC	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
9	Install Fire Extinguishers to Initial Occupation Areas (ref. email from LM 23/01/15 - 100 fire extinguishers in total)	LM/IP	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
10	Assessment & Appraisal of agreed Handover Criteria between NHS & Brookfield (e.g. Snagging/Outstanding/Additional Works)	All	9 days	Tue 27/01/15	Fri 06/02/15	Tue 27/01/15	100%	Fri 06/02/15
11	Implement Hospital Occupation Flow as developed Pre-Handover (NB. 'point of reference' activity)	All	1 day	Mon 02/02/15	Mon 02/02/15	Mon 02/02/15	100%	Mon 02/02/15
12	Incorporate Standard Protection by BMG to agreed areas	KC/ACT	9 days	Tue 27/01/15	Fri 06/02/15	Tue 27/01/15	100%	Fri 06/02/15
13	Set-up the Administering of Inductions, Orientations, PTW's, etc.	KC/IP	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
14	Set-up & implement Waste Management Protocols & associated operational infrastructure	KC/IP	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
15	Set-up system for the administering of Risk Assessments & Method Statements	KC/IP	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
16	Set-up sanitation protocols (e.g. Operational Washroom Facilities inclusive of consumables, drinking water points, etc)	KC/IP	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
17	Set-up Catering / Messing Protocols & associated facilities for NHS Commissioning Period	KC/IP	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
18	Set-up Traffic Management / Car Parking / Transportation Logistics & Protocols	SY	4 days	Tue 27/01/15	Fri 30/01/15	Tue 27/01/15	100%	Fri 30/01/15
19	**Managing NHS Commissioning Period Interface with Brookfield**	**PM**	**201 days?**	**Mon 26/01/15**	**Fri 30/10/15**	**Mon 26/01/15**	**54%**	**NA**
20	**Snagging Works by Brookfield (NB. Internal & external / ref. Agreed IDMS information)**	**PH/DH**	**65 days**	**Mon 26/01/15**	**Fri 24/04/15**	**Mon 26/01/15**	**71%**	**NA**
21	**Analyse, schedule & sequence Brookfield's defined list of Snagging Works (NB. Adults & NCH not separated for now)**	**PM/DH/IM**	**65 days**	**Mon 26/01/15**	**Fri 24/04/15**	**Mon 26/01/15**	**70%**	**NA**
22	Basement Level (NB. at start - 120 defects / snags in total)	HG/MMacL	20 days	Mon 23/03/15	Fri 17/04/15	Mon 23/03/15	40%	NA
23	Ground Floor Level (NB. at start - 564 defects / snags in total)	HG/MMacL	30 days	Mon 16/03/15	Fri 24/04/15	Mon 16/03/15	50%	NA
24	1st Floor Level (NB. at start - 468 defects / snags in total)	HG/MMacL	30 days	Mon 02/02/15	Fri 13/03/15	Mon 02/02/15	90%	NA
25	2nd Floor Level (NB. at start - 1079 defects / snags in total)	HG/MMacL	30 days	Mon 16/02/15	Fri 27/03/15	Mon 16/02/15	80%	NA
26	3rd Floor Level (NB. at start - 508 defects / snags in total)	HG/MMacL	30 days	Mon 02/03/15	Fri 10/04/15	Mon 02/03/15	75%	NA
27	4th Floor Level (NB. at start - 248 defects / snags in total)	HG/MMacL	30 days	Mon 02/02/15	Fri 13/03/15	Mon 02/02/15	90%	NA
28	5th Floor Level (NB. at start - 72 defects / snags in total)	HG	30 days	Mon 02/02/15	Fri 13/03/15	Mon 02/02/15	90%	NA
29	6th Floor Level (NB. at start - 55 defects / snags in total)	HG	30 days	Mon 16/02/15	Fri 27/03/15	Mon 16/02/15	85%	NA
30	7th Floor Level (NB. at start - 184 defects / snags in total)	HG	30 days	Mon 16/02/15	Fri 27/03/15	Mon 16/02/15	85%	NA
31	8th Floor Level (NB. at start - 151 defects / snags in total)	HG	30 days	Mon 02/03/15	Fri 10/04/15	Mon 02/03/15	75%	NA
32	9th Floor Level (NB. at start - 203 defects / snags in total)	HG	30 days	Mon 02/03/15	Fri 10/04/15	Mon 02/03/15	75%	NA
33	10th Floor Level (NB. at start - 135 defects / snags in total)	HG	30 days	Mon 16/03/15	Fri 24/04/15	Mon 16/03/15	50%	NA
34	11th Floor Level (NB. at start - 201 defects / snags in total)	HG	30 days	Mon 16/03/15	Fri 24/04/15	Mon 16/03/15	50%	NA
35	12th Floor Level (NB. at start - 203 defects / snags in total)	HG	30 days	Mon 16/03/15	Fri 24/04/15	Mon 16/03/15	50%	NA
36	13th Level (e.g. access to helipad, stairwell, etc) - no snagging or defects identified yet (***Indicative***)	HG	30 days	Mon 16/03/15	Fri 24/04/15	Mon 16/03/15	50%	NA
37	External Works, including courtyard & roof top areas (NB. at start - 176 defects / snags in total)	HG/MMacL	65 days	Mon 26/01/15	Fri 24/04/15	Mon 26/01/15	75%	NA
38	**Snags & Defects identified by NHS Parties post handover (ref. BM incidence report initially rec'd 20/02/15-164# to date)**	PM/DH/HG/MMacL	63 days	Wed 28/01/15	Fri 24/04/15	Wed 28/01/15	75%	NA
39	**Outstanding Works by Brookfield (NB. Location as noted - Adults, NCH or Both)**	**PM/DH**	**201 days**	**Mon 26/01/15**	**Fri 30/10/15**	**Mon 26/01/15**	**64%**	**NA**
40	**Analyse, schedule & sequence Brookfield's defined Outstanding Works (NB. noted end dates are as agreed with BM)**	**PM/DH/IM**	**201 days**	**Mon 26/01/15**	**Fri 30/10/15**	**Mon 26/01/15**	**64%**	**NA**
41	VIE Slab and associated works - Maternity Unit (NB. Exact start date TBC by BM) - ***Being discussed at EW Meetings***	MMacL	113 days	Mon 26/01/15	Tue 30/06/15	NA	0%	NA
42	Neuro Link Bridge (connection to T&LC) - Adults / INS (***Projected finish date from INS Prog is 04/05/2015***)	HG/MMacL	72 days	Mon 26/01/15	Mon 04/05/15	Mon 26/01/15	50%	NA
43	Neuro Link Bridge (oxygen connection) - Adults / INS (***NB. Asbestos Survey Info. confirmed by NHS to BM***)	HG/MMacL	56 days	Mon 26/01/15	Mon 13/04/15	Mon 26/01/15	75%	NA
44	Neuro Link Bridge (connection to INS) - Adults / INS (NB. Exact start date TBC by BM)	HG/MMacL	113 days	Mon 26/01/15	Tue 30/06/15	Mon 26/01/15	44%	NA
45	Separation Tank - Adult ED Dept. (NB. Delivery from Pipex expected wc 09/03/15 following DT sign-off & completion target 23/03/2015)	HG/MMacL	60 days	Mon 26/01/15	Fri 17/04/15	Mon 26/01/15	75%	NA
46	Art Strategy installation - complete to all areas, with the exception of the hygienic infills that are now planned for early April)	HG/MMacL	25 days	Mon 26/01/15	Fri 27/02/15	Mon 26/01/15	95%	NA
47	Land Eng: incomplete landscape works to all external areas	PM/DH	56 days	Mon 26/01/15	Mon 13/04/15	Mon 26/01/15	80%	NA
48	Cores A&B & Main Entrance (meet and greet panels glass cabinets) - Adult Hospital (***approved by NHS. BM awaiting delivery***)	HG/MMacL	25 days	Mon 26/01/15	Fri 27/02/15	Mon 26/01/15	60%	NA
49	Lead lined units and associated worktops (ADB codes STF1021, 1024 & 1025) - Adult / Nuc. Medicine (***BM awaiting delivery***)	HG/MMacL	25 days	Mon 26/01/15	Fri 27/02/15	Mon 26/01/15	40%	NA
50	DCFP Room 024 (ROMPA wall padding by BM) - DCFP (***NB. Currently a wall padding issue that BM are addressing***)	HG/MMacL	29 days	Mon 26/01/15	Thu 05/03/15	Mon 26/01/15	100%	Thu 05/03/15
51	Additional divider screens and fabric boards - MIL009 / RAG082 / DOPDO22 (***NB. BM delivery date confirmed as 30/03/15***)	HG/MMacL	25 days	Mon 26/01/15	Fri 27/02/15	Mon 26/01/15	75%	NA
52	Group 5 areas (where Board subs are working) - Adults & NCH (***NB. Mtg 19/02/15 to discuss NHS handback + additional cost***)	HG/MMacL	58 days	Mon 26/01/15	Wed 15/04/15	Mon 26/01/15	50%	NA
53	Adult sanctuary (roof access hatch) - Adults (***NB. BM presently having difficulty around access***)	HG/MMacL	41 days	Mon 26/01/15	Mon 23/03/15	Mon 26/01/15	61%	NA
54	Interventional theatre (PMI works) - Adults (L2) - (***BM have advised complete with exception of UPS supply to PR***)	HG/MMacL	7 days	Mon 26/01/15	Tue 03/02/15	Mon 26/01/15	95%	NA
55	Adult sanctuary (install Gustav's panels) - Adults (***NB. BM have advised work will complete 11/03/2015***)	HG/MMacL	33 days	Mon 26/01/15	Wed 11/03/15	Mon 26/01/15	100%	Wed 11/03/15
56	Decontamination Room (i.e. complete) - ED Dept. (***NB. Slightly behind. BM awaiting Vulcathene pipework materials***)	HG/MMacL	46 days	Mon 26/01/15	Mon 30/03/15	Mon 26/01/15	50%	NA
57	MRI Rooms (knock out panels) - Various	HG/MMacL	15 days	Mon 26/01/15	Fri 13/02/15	Mon 26/01/15	100%	Fri 13/02/15
58	New VIE turning circle - Adults (***start date of 9/3/15 now confirmed by BM with likely finish date of mid-April 2015***)	PM/DH	26 days	Mon 09/03/15	Mon 13/04/15	Mon 09/03/15	30%	NA
59	New VIE (pavement works south of road - bus stop not required) - Adults (***NB. Wearing course remains outstanding***)	PM/DH	13 days	Mon 26/01/15	Wed 11/02/15	Mon 26/01/15	90%	NA
60	Main entrance walls and signage - Campus (NB. ***BM have advised on programme***)	PM/DH	58 days	Mon 26/01/15	Wed 15/04/15	Mon 26/01/15	75%	NA
61	Neuro steel bridge works - INS (NB. ***BM have advised on programme***)	PM/DH	58 days	Mon 26/01/15	Wed 15/04/15	Mon 26/01/15	85%	NA
62	Street lights to boulevard, complete landscaping to boulevard - Campus (NB. ***BM have advised on programme***)	PM/DH	58 days	Mon 26/01/15	Wed 15/04/15	Mon 26/01/15	85%	NA
63	BREEAM Report application - Adults & NCH (NB. ***BM have advised on programme***)	HG/MMacL	47 days	Mon 26/01/15	Tue 31/03/15	Mon 26/01/15	90%	NA
64	AGV (performance tests and trials) - Adult Hospital (***NB. On prog. but BM await linen cages to complete performance testing***)	PM/DH/KC/IP	25 days	Mon 26/01/15	Fri 27/02/15	Mon 26/01/15	90%	NA
65	Structal (replacement of panels, complete install and review BMU protection) - Adult's	PM/DH/HG/MMacL	47 days	Mon 26/01/15	Tue 31/03/15	Mon 26/01/15	85%	NA
66	Sanctuary (sun pipes) - NCH	HG/MMacL	25 days	Mon 26/01/15	Fri 27/02/15	Mon 26/01/15	100%	Fri 27/02/15
67	Sanctuary (stained glass install) ***Frames to Manufacture which BM are addressing***	HG/MMacL	35 days	Mon 26/01/15	Fri 13/03/15	Mon 26/01/15	100%	Fri 13/03/15
68	Schiehallion radio nuclide room doors - NCH	HG/MMacL	23 days	Mon 26/01/15	Wed 25/02/15	Mon 26/01/15	100%	Wed 25/02/15
69	DCFP anti-ligature works - NCH (***NB. Mtg held with Board. BM have costed & await PMI from Board***)	HG/MMacL	45 days	Mon 26/01/15	Fri 27/03/15	Mon 26/01/15	30%	NA
70	Telecoms additional 900 pair lines req. by Board - Adult's & NCH (***NB. BM commenced work with expected completion 01/04/15***)	HG/MMacL/KMcS/SC	48 days	Mon 26/01/15	Wed 01/04/15	Mon 26/01/15	85%	NA
71	External LED lighting - Adult	PM/DH	47 days	Mon 26/01/15	Tue 31/03/15	Mon 26/01/15	90%	NA
72	Patient entertainment (screens) - NCH ***Agreed start date between BM & DH as noted***	HG/MMacL/IP	10 days	Mon 04/05/15	Fri 15/05/15	NA	0%	NA
73	External facade (BM drawings) - Adult's & NCH	HG/MMacL	47 days	Mon 26/01/15	Tue 31/03/15	Mon 26/01/15	95%	NA
74	LTHW (PMI works) - Laboratory	HG/MMacL	10 days	Mon 16/03/15	Fri 27/03/15	Mon 16/03/15	50%	NA
75	Isolation Rooms (HEPA filters) - ***NB. BM have advised will install prior to Patient Occupancy / Exact Date TBA***	HG/MMacL	51 days	Mon 26/01/15	Mon 06/04/15	Mon 26/01/15	50%	NA
76	Internal signage, wayfinding, door signage - Adult's & NCH (***NB. BM anticipate finishing end of February***)	HG/MMacL	21 days	Mon 26/01/15	Mon 23/02/15	Mon 26/01/15	99%	NA
77	Neo-natal link bridge (internals and ext. Cladding panels) - NCH	PM/DH/HG/MMacL	47 days	Mon 26/01/15	Tue 31/03/15	Mon 26/01/15	90%	NA
78	Neo-natal link bridge (knock out panel replacement) - NCH	PM/DH/HG/MMacL	136 days	Mon 26/01/15	Fri 31/07/15	Mon 26/01/15	33%	NA
79	Lifts (works to beneficial lifts) - Adult's & NCH	HG/MMacL/KC/IP	47 days	Mon 26/01/15	Tue 31/03/15	Mon 26/01/15	90%	NA
80	Pneumatic tube gantry (removal) - Laboratory	HG/MMacL	65 days	Mon 26/01/15	Fri 24/04/15	Mon 26/01/15	50%	NA
81	Core G L13 (complete helipad ramp, install bird sounder and clean area) - Adult's	PM/DH/JM/HG/MMacL	29 days	Mon 26/01/15	Thu 05/03/15	Mon 26/01/15	100%	Thu 05/03/15
82	Theatres (complete Starkstrom install incl. DVI/SDI sockets and accessories on arms) - Adult's & NCH	HG/MMacL	20 days	Mon 26/01/15	Fri 20/02/15	Mon 26/01/15	90%	NA
83	Hardgate Road (i.e. white lining). BM have confirmed a planned commencement date of 30/03/2015	PM/DH	13 days	Mon 30/03/15	Wed 15/04/15	Mon 30/03/15	50%	NA
84	Energy model (evidence of compliance with energy target) - Adult's & NCH ***Part duration shown / extents to end of Feb 2017***	KC/IP	65 days	Mon 26/01/15	Fri 24/04/15	Mon 26/01/15	84%	NA
85	NEC Supervisors Communication No.236 (***NB. Tarmac to be removed & relayed***) BM advise will addressed next visit	PM/DH	42 days	Mon 26/01/15	Tue 24/03/15	Mon 26/01/15	100%	Tue 24/03/15
86	NEC Supervisors Communication No.237 (***NB. New design rec'd from WSP & CI issued to Land Eng. by BM***). Will address by 17/04/15	PM/DH	60 days	Mon 26/01/15	Fri 17/04/15	Mon 26/01/15	50%	NA
87	NEC Supervisors Communication No.238 (***NB. BM await Mercury response to lighting***)	PM/DH	10 days	Mon 26/01/15	Fri 06/02/15	Mon 26/01/15	100%	Fri 06/02/15
88	NEC Supervisors Defect No.081 (***NB. BM to agreed pointing with Peter Moir of the NHS Project Team***)	PM/DH	15 days	Mon 26/01/15	Fri 13/02/15	NA	0%	NA
89	NEC Supervisors Defect No.088 (***NB. BM await remedial to be completed prior to decision***)	PM/DH	15 days	Mon 26/01/15	Fri 13/02/15	NA	0%	NA
90	Completion of sweep up programme and inspections with Supervisor - Adult's & NCH	PM/DH/KC	60 days	Mon 26/01/15	Fri 17/04/15	Mon 26/01/15	90%	NA
91	Medical Gas System (testing & witnessing of med gas system by CSO - *Both / note tie-in with NHS Specialist Commissioning*)	KC/IP	55 days	Mon 26/01/15	Fri 10/04/15	Mon 26/01/15	90%	NA
92	Completion of Children's Park SUDS - NCH . In line with recent dates advised by BM	PM/DH	45 days	Mon 29/06/15	Fri 28/08/15	NA	0%	NA
93	Completion of Children's Park - NCH ***BM have advised will now be two months after noted August date***	PM/DH	45 days	Mon 31/08/15	Fri 30/10/15	NA	0%	NA
94	Completion of Car Park 1	PM/DH	55 days	Mon 26/01/15	Fri 10/04/15	Mon 26/01/15	90%	NA
95	**Additional Works (***agreed or otherwise / ref. PMI schedule rec'd 27/02/15***) by Brookfield Post-Handover**	**PM/DH/FW**	**55 days?**	**Mon 26/01/15**	**Fri 10/04/15**	**Mon 26/01/15**	**18%**	**NA**
96	**Analyse, schedule & sequence Brookfield's defined list of Additional Works (NB. Indicative dates currently shown)**	**PM/DH/FW/HG/MMacL/IM**	**55 days?**	**Mon 26/01/15**	**Fri 10/04/15**	**Mon 26/01/15**	**18%**	**NA**
97	PMI# 309 - Langlands Drive Bus Lay-by Service Diversions - ***Currently being Priced by BM after Gas Main exposed***	PM/DH/FW	45 days	Mon 26/01/15	Fri 27/03/15	Mon 26/01/15	20%	NA
98	PMI# 311 - Alterations to two hybrid/interventional theatres (THE228/232) - ***Actual Start date currently a Target Date***	PM/DH/FW/HG/MMacL	5 days	Mon 23/02/15	Fri 27/02/15	Mon 23/02/15	50%	NA
99	PMI# 316 - Proposed alteration to AAW-170 Auto Dispense Room - ***BM have confirmed complete but need to agree with FW***	PM/DH/FW/HG/MMacL	30 days	Mon 26/01/15	Fri 06/03/15	Mon 26/01/15	90%	NA
100	PMI# 319 - Neurosurgery Entrance - Amendments to room layouts - ***Priced PMI currently with NHS***	PM/DH/FW/HG/MMacL	40 days	Mon 26/01/15	Fri 20/03/15	Mon 26/01/15	20%	NA
101	PMI# 321 - NCH Theatres 109 & 114 - ***Price presently with NHS for approval / ref. BM email 11/03/15***	PM/DH/FW/MMacL	45 days	Mon 26/01/15	Fri 27/03/15	NA	0%	NA
102	PMI# 322 - LTHW system - ***BM have confirmed pods 1 & 2 w/e of 13/03/15, with pods 3 & 4 the following w/e***	PM/DH/FW/HG/MMacL	1 day?	Mon 26/01/15	Mon 26/01/15	Mon 26/01/15	50%	NA
103	PMI# 323 - MRI COLD WATER 'TOP UP' SUPPLY PLANTROOM 31 - ***BM to confirm work has been completed***	PM/DH/FW/HG/MMacL	30 days	Mon 26/01/15	Fri 06/03/15	Mon 26/01/15	50%	NA
104	PMI# 324 - Reconfiguration of software on Static Systems Nurse Call (***Not going ahead. PMI to be cancelled***)	PM/FW	15 days	Mon 26/01/15	Fri 13/02/15	Mon 26/01/15	100%	Fri 13/02/15
105	PMI# 325 - Retail Fit out - Additional M&E Services - M&S - ***BM to chase & complete / update status awaited***	PM/FW/GF	35 days	Mon 26/01/15	Fri 13/03/15	Mon 26/01/15	25%	NA
106	PMI# 326 - Retail Fit out - additional M&E services - WHS - ***BM to chase & complete / update status awaited***	PM/FW/GF	35 days	Mon 26/01/15	Fri 13/03/15	Mon 26/01/15	25%	NA
107	PMI# 327 - Omission of padded wall covering - ***BM presently disputing from an Omissions & Inclusions perspective***	PM/DH/FW	40 days	Mon 26/01/15	Fri 20/03/15	NA	0%	NA
108	PMI# 328 - Additional/Altered Power and Data (NB. PMI 344 telling us/BM to get on with it/Mtg 23/02/15 with DH).	DH	35 days	Mon 23/02/15	Fri 10/04/15	Mon 23/02/15	35%	NA
109	PMI# 329 - ROOM ACCESS SWIPE CARD SOFTWARE (***PMI understood to be Closed & N/A***)	PM/FW	15 days	Mon 26/01/15	Fri 13/02/15	Mon 26/01/15	100%	Fri 13/02/15
110	PMI# 330 - Anaesthetic Pendant RNM-037 (NB. PMI 351 telling us/BM to get on with it) - ***Progress/duration update from BM awaited***	PM/DH/FW/HG/MMacL	10 days	Tue 24/02/15	Mon 09/03/15	Tue 24/02/15	20%	NA
111	PMI# 332 - IT Hub Room Cabinets - ***BM to advise if work has been done yet***	PM/DH/FW/HG/MMacL	30 days	Mon 26/01/15	Fri 06/03/15	Mon 26/01/15	50%	NA
112	PMI# 333 - ARRIVAL SQUARE - ATTENDANCE FOR INSTALLATION OF 4 No. SHELTERS BY TRUEFORM (***Priced & with NHS***)	PM/FW	45 days	Mon 26/01/15	Fri 27/03/15	NA	0%	NA
113	PMI# 335 - ARRIVAL SQUARE - LIGHTING COLUMN OPPOSITE ADULT ENTRANCE - ***BM pricing***	PM/FW	45 days	Mon 26/01/15	Fri 27/03/15	Mon 26/01/15	10%	NA
114	PMI# 336 - Supply and Install of Schneider Control boxes - ***Priced & with NHS for approval***	PM/DH/FW/HG/MMacL	40 days	Mon 26/01/15	Fri 20/03/15	NA	0%	NA
115	PMI# 337 - Pull down beds in NCH - ***Priced & with NHS for approval***	PM/FW/MMacL	55 days	Mon 26/01/15	Fri 10/04/15	NA	0%	NA
116	PMI# 338 - Enabling works for install of Tumble dryers and High Spin Washers - ***BM currently pricing after scope mtg***	PM/DH/FW/KC/ACT/IP	45 days	Mon 26/01/15	Fri 27/03/15	NA	0%	NA
117	PMI# 339 - Energy Centre - Test sockets - ***Priced & with NHS for approval***	PM/DH/FW	45 days	Mon 26/01/15	Fri 27/03/15	NA	0%	NA
118	PMI# 340 - Changes to HOW-002 and HOW-028 - ***Priced & with NHS for approval***	PM/DH/FW/HG/MMacL	45 days	Mon 26/01/15	Fri 27/03/15	NA	0%	NA
119	PMI# 341 - Blood fridges (PMI 350 telling us to get on with it) - ***BM to proceed with works as confirmed in PMI#350***	PM/DH/FW	45 days	Mon 26/01/15	Fri 27/03/15	Mon 26/01/15	50%	NA
120	PMI# 343 - NSGH BASEMENT - ESTATES WORKSHOP FIT OUT - ***Priced & with NHS for approval***	PM/FW/KC/IP	45 days	Mon 26/01/15	Fri 27/03/15	NA	0%	NA
121	PMI# 345 - 4 @ MRI CONTROL ROOMS IPS OUTLETS - ***Priced & with NHS for approval***	PM/DH/FW	10 days	Fri 20/02/15	Thu 05/03/15	NA	0%	NA
122	PMI# 346 - STARKSTROM PENDANTS - ACCESSORIES AND DVI SOCKETS - ***BM's target dates shown / with NHS to sort***	PM/DH/FW	16 days	Fri 20/02/15	Fri 13/03/15	NA	0%	NA



nSGH NHS Commissioning Period Programme Rev 1 / Master Update	Task		Split		Progress		Milestone		Summary		Project Summary		External Tasks		External Milestone	Deadline

Programmer Owner: Euan Mackenzie (nSGH NHS Project Planner) -[redacted]

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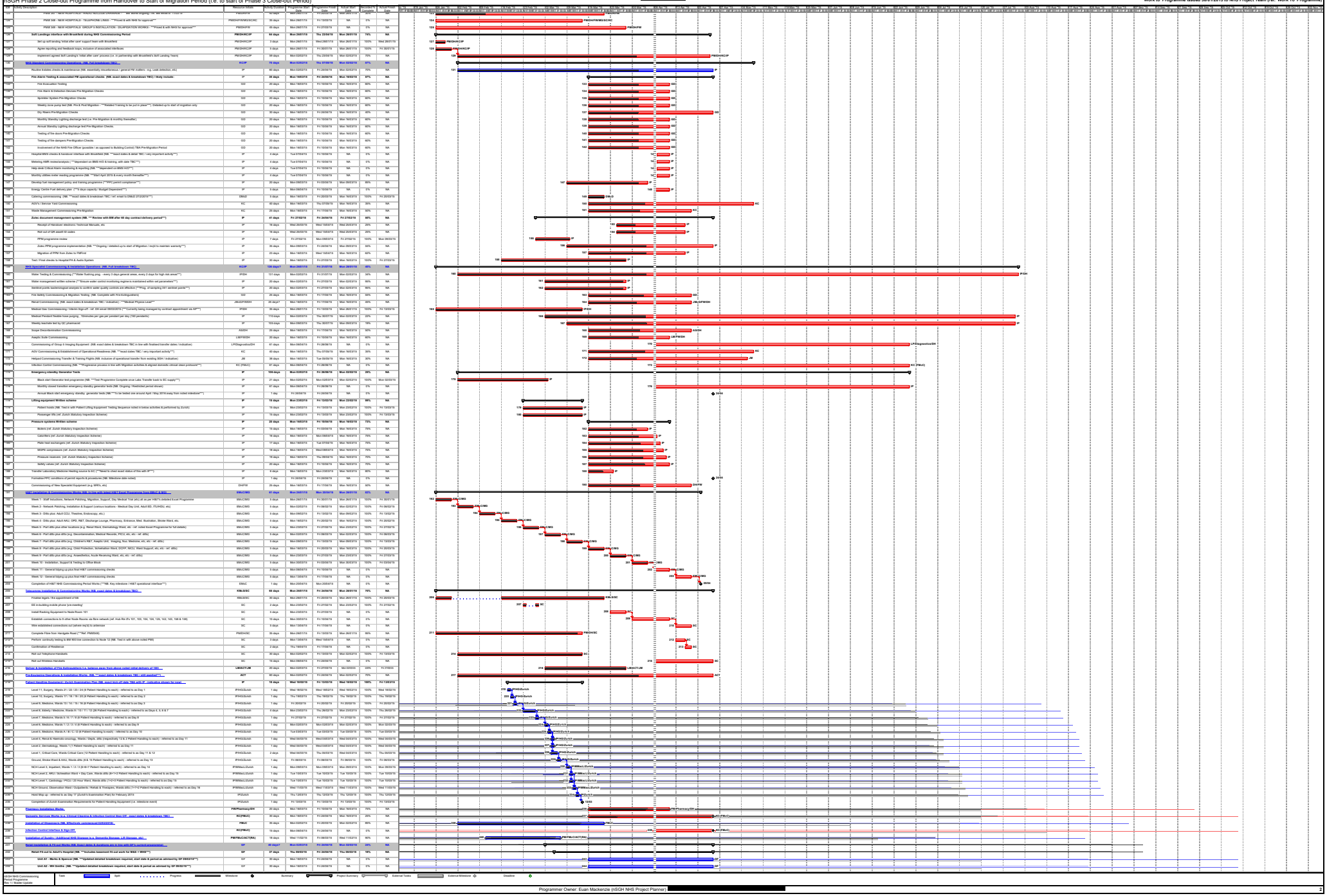
nSGH Phase 2 Close-out Programme from Handover to Start of Migration Period (i.e. to start of Phase 3 Close-out Period)
'Work to' Programme issued 30/01/2015 to NHS Project Team (ref. 'Work To' Programme)
Programme Owner: Euan Mackenzie (nSGH NHS Project Planner)

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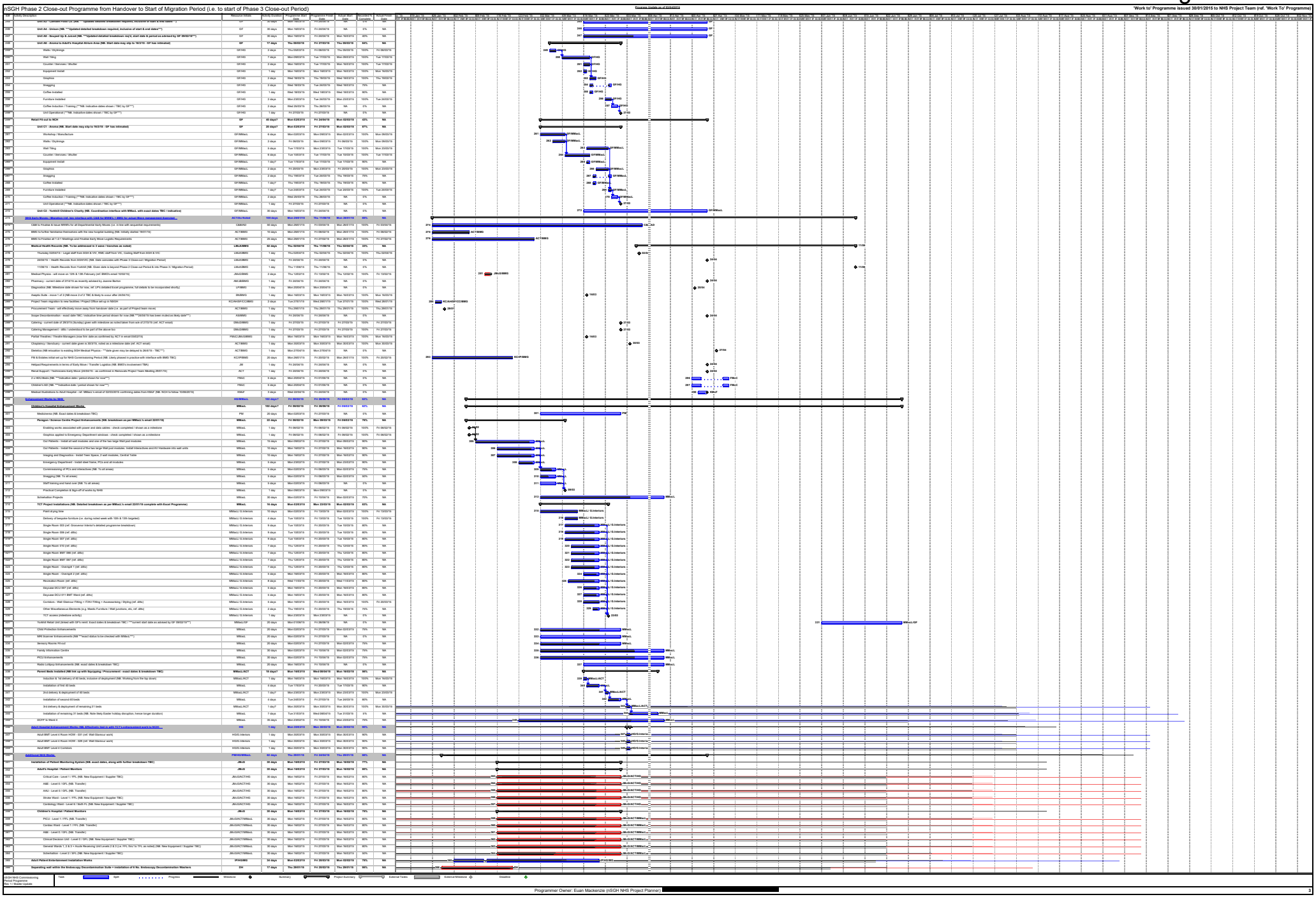
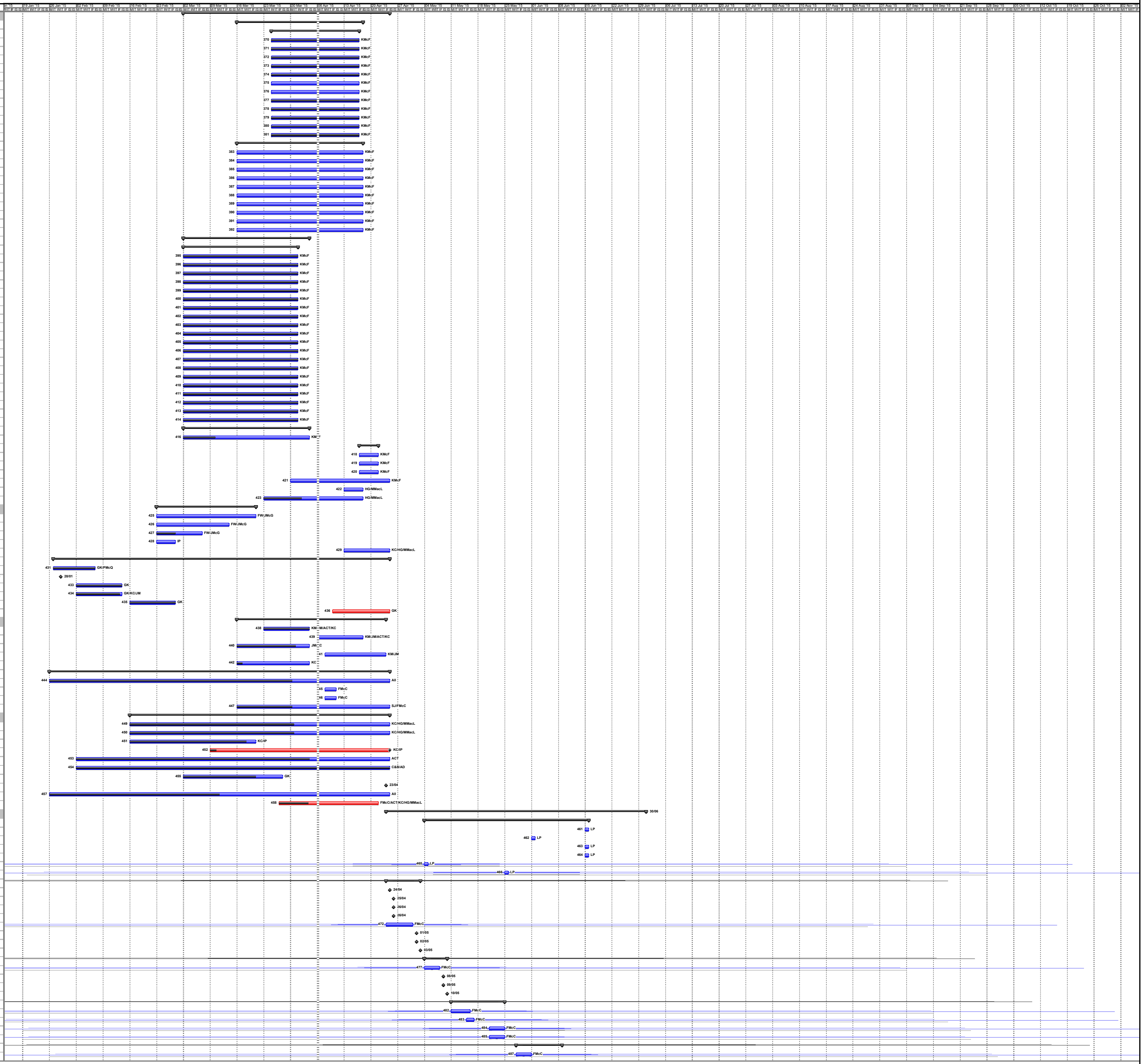

nSGH Phase 2 Close-out Programme from Handover to Start of Migration Period (i.e. to start of Phase 3 Close-out Period)
'Work to' Programme issued 30/01/2015 to NHS Project Team (ref. 'Work To' Programme)
Activity Description
Resource Initials
Activity Duration
Programme Start Date
Programme Finish Date
Actual Start Date
Duration % Complete
Actual Finish Date
Programme Owner: Euan Mackenzie (nSGH NHS Project Planner)

nSGH Phase 2 Close-out Programme from Handover to Start of Migration Period (i.e. to start of Phase 3 Close-out Period)

Progress Update as of 03/04/2015

'Work to' Programme issued 30/01/2015 to NHS Project Team (ref. 'Work To' Programme)

ID#	Activity Description	Resource Initials	Activity Duration	Programme Start Date	Programme Finish Date	Actual Start Date	Recorded % Complete	Actual Finish Date
367	**AV Equipment Installation Works to Seminar Room Areas & the like (ref. AV Levels 1, 2, 3, 4 & 5 as stated)**	**KMcF**	**40 days**	**Mon 02/03/15**	**Fri 24/04/15**	**Mon 02/03/15**	**65%**	**NA**
368	**To Children's Hospital (NB. ***exact sequencing TBC***)**	**KMcF**	**25 days**	**Mon 16/03/15**	**Fri 17/04/15**	**Mon 16/03/15**	**37%**	**NA**
369	**New AV Installation Works (i.e. Levels 1,2,3 & 4 as noted below - ***exact sequencing TBC***):**	**KMcF**	**17 days**	**Wed 25/03/15**	**Thu 16/04/15**	**Wed 25/03/15**	**83%**	**NA**
370	AV Level 1 Room # NCH-03-GWS-045 Seminar / Education Room (15 places - 3rd Floor)	KMcF	17 days	Wed 25/03/15	Thu 16/04/15	Wed 25/03/15	100%	Thu 16/04/15
371	AV Level 2 Room # NCH-02-AFD-007 Office (8P), 2nd Floor	KMcF	17 days	Wed 25/03/15	Thu 16/04/15	Wed 25/03/15	100%	Thu 16/04/15
372	AV Level 3 Room # NCH-03-GWS-045 Seminar / Education Room (15 places - 3rd Floor)	KMcF	17 days	Wed 25/03/15	Thu 16/04/15	Wed 25/03/15	100%	Thu 16/04/15
373	AV Level 3 Room # NCH-00OPD-015 Meeting Room (Ground Floor)	KMcF	17 days	Wed 25/03/15	Thu 16/04/15	Wed 25/03/15	100%	Thu 16/04/15
374	AV Level 3 Room # NCH-00OPD-016 Meeting Room (Ground Floor)	KMcF	17 days	Wed 25/03/15	Thu 16/04/15	Wed 25/03/15	100%	Thu 16/04/15
375	AV Level 3 Room # NCH-00-REH-051 Classroom (Ground Floor)	KMcF	17 days	Wed 25/03/15	Thu 16/04/15	NA	0%	NA
376	AV Level 3 Room # NCH-00-REH-054 Group Teaching Room (Ground Floor)	KMcF	17 days	Wed 25/03/15	Thu 16/04/15	NA	0%	NA
377	AV Level 3 Room # NCH-03-GWS-008 Conference / Meeting Rooms (Third Floor)	KMcF	17 days	Wed 25/03/15	Thu 16/04/15	Wed 25/03/15	100%	Thu 16/04/15
378	AV Level 3 Room # NCH-03-GWS-009 Conference / Meeting Rooms (Third Floor)	KMcF	17 days	Wed 25/03/15	Thu 16/04/15	Wed 25/03/15	100%	Thu 16/04/15
379	AV Level 3 Room # NCH-03-GWS-027 Seminar / Education Room (15 places to Third Floor)	KMcF	17 days	Wed 25/03/15	Thu 16/04/15	Wed 25/03/15	100%	Thu 16/04/15
380	AV Level 3 Room # NCH-04-DCFP-008 Multi-disciplinary Team Room (Fourth Floor)	KMcF	17 days	Wed 25/03/15	Thu 16/04/15	Wed 25/03/15	100%	Thu 16/04/15
381	AV Level 4 Room # NCH-00-RCG-007 Seminar & Training Room (20 Persons, Ground Floor)	KMcF	17 days	Wed 25/03/15	Thu 16/04/15	Wed 25/03/15	100%	Thu 16/04/15
382	**Transfer AV Installation Works - *** exact sequencing & dates TBC***:**	**KMcF**	**25 days**	**Mon 16/03/15**	**Fri 17/04/15**	**NA**	**0%**	**NA**
383	Transfer Room # & Location: Cardiology / NCH-00-OPD-053. Exact date & duration TBC by KMcF	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
384	Transfer Room # & Location: Rehab (Paeds) / NCH-00-REH-024. Exact date & duration TBC by KMcF	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
385	Transfer Room # & Location: PICU 1 / NCH-01-CCW-045. Exact date & duration TBC by KMcF	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
386	Transfer Room # & Location: PICU 2 / NCH-01-CCW-111. Exact date & duration TBC by KMcF	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
387	Transfer Room # & Location: Telemed to Hospital @ Night / NCH-02-SCH-093. Exact date & duration TBC by KMcF	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
388	Transfer Room # & Location: Committee Room to L3 Ward Support / NCH-03-GWS-031. Exact date & duration TBC by KMcF	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
389	Transfer Room # & Location: Smartboard 1 / NCH-00-REH-007. Exact date & duration TBC by KMcF	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
390	Transfer Room # & Location: Smartboard 2 / NCH-00-REH-010. Exact date & duration TBC by KMcF	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
391	Transfer Room # & Location: Smartboard 3 / NCH-02-SCH-077. Exact date & duration TBC by KMcF	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
392	Transfer Room # & Location: Smartboard 4 / NCH-04-DCFP-020. Exact date & duration TBC by KMcF	KMcF	25 days	Mon 16/03/15	Fri 17/04/15	NA	0%	NA
393	**To Adult Hospital (NB. ***exact sequencing TBC***)**	**KMcF/MMacL**	**25 days**	**Mon 02/03/15**	**Fri 03/04/15**	**Mon 02/03/15**	**96%**	**NA**
394	**New AV Installation Works (i.e. Levels 1, 2, 3, 4 & 5 as noted below - *** exact sequencing TBC***):**	**KMcF**	**22 days**	**Mon 02/03/15**	**Tue 31/03/15**	**Mon 02/03/15**	**100%**	**Tue 31/03/15**
395	AV Level 1 Room # NSGH-01-OPD1-068 Staff Resource / Education / Meetings (First Floor)	KMcF	22 days	Mon 02/03/15	Tue 31/03/15	Mon 02/03/15	100%	Tue 31/03/15
396	AV Level 2 Room # NSGH-00-OPDO-063 Meetings / Seminar (Ground Floor)	KMcF	22 days	Mon 02/03/15	Tue 31/03/15	Mon 02/03/15	100%	Tue 31/03/15
397	AV Level 3 Room # NSGH-B1-KIT-001 Training / Meeting Room (Basement)	KMcF	22 days	Mon 02/03/15	Tue 31/03/15	Mon 02/03/15	100%	Tue 31/03/15
398	AV Level 3 Room # NSGH-00-AAW-230 Seminar / Hospital @ Night (Ground Floor)	KMcF	22 days	Mon 02/03/15	Tue 31/03/15	Mon 02/03/15	100%	Tue 31/03/15
399	AV Level 3 Room # NSGH-00EMC-133 Seminar & Training Room (30 Persons - Ground Floor)	KMcF	22 days	Mon 02/03/15	Tue 31/03/15	Mon 02/03/15	100%	Tue 31/03/15
400	AV Level 3 Room # NSGH-00-ORT-026 Group Area - Shared (Ground Floor)	KMcF	22 days	Mon 02/03/15	Tue 31/03/15	Mon 02/03/15	100%	Tue 31/03/15
401	AV Level 3 Room # NSGH-00-ORT-037 Group Teaching Room (Ground Floor)	KMcF	22 days	Mon 02/03/15	Tue 31/03/15	Mon 02/03/15	100%	Tue 31/03/15
402	AV Level 3 Room # NSGH-01-STW-011 Seminar Room / Meetings / Education (First Floor)	KMcF	22 days	Mon 02/03/15	Tue 31/03/15	Mon 02/03/15	100%	Tue 31/03/15
403	AV Level 3 Room # NSGH-02-FMA2-007 Core D Bed Management Ops Centre (First Floor)	KMcF	22 days	Mon 02/03/15	Tue 31/03/15	Mon 02/03/15	100%	Tue 31/03/15
404	AV Level 3 Room # NSGH-02-RENO-066 Seminar Room (20 Persons Second Floor)	KMcF	22 days	Mon 02/03/15	Tue 31/03/15	Mon 02/03/15	100%	Tue 31/03/15
405	AV Level 3 Room # NSGH-02-THE-002 Waiting / Seminar Room (60 Places Second Floor)	KMcF	22 days	Mon 02/03/15	Tue 31/03/15	Mon 02/03/15	100%	Tue 31/03/15
406	AV Level 3 Room # NSGH-03-FM3-016 Training (Third Floor)	KMcF	22 days	Mon 02/03/15	Tue 31/03/15	Mon 02/03/15	100%	Tue 31/03/15
407	AV Level 3 Room # NSGH-03-FMA3-008 Core D FM Meeting Room (Third Floor)	KMcF	22 days	Mon 02/03/15	Tue 31/03/15	Mon 02/03/15	100%	Tue 31/03/15
408	AV Level 3 Room # NSGH-05-WS5-033 Seminar / Education Room 40m2 (Fifth Floor)	KMcF	22 days	Mon 02/03/15	Tue 31/03/15	Mon 02/03/15	100%	Tue 31/03/15
409	AV Level 3 Room # NSGH-11-WS11-033 Seminar / Education Room 40m2 (Eleventh Floor)	KMcF	22 days	Mon 02/03/15	Tue 31/03/15	Mon 02/03/15	100%	Tue 31/03/15
410	AV Level 4 Room # NSGH-07-WS7-033 Seminar / Education Room 80m2 (Seventh Floor)	KMcF	22 days	Mon 02/03/15	Tue 31/03/15	Mon 02/03/15	100%	Tue 31/03/15
411	AV Level 5 Room # NSGH-01-CCW-222 Seminar / Training Room (40-45 places First Floor)	KMcF	22 days	Mon 02/03/15	Tue 31/03/15	Mon 02/03/15	100%	Tue 31/03/15
412	AV Level 5 Room # NSGH-04-WS4-027 Seminar / Education Room 80m2 (Fourth Floor)	KMcF	22 days	Mon 02/03/15	Tue 31/03/15	Mon 02/03/15	100%	Tue 31/03/15
413	AV Level 5 Room # NSGH-09-WS9-033 Seminar / Education Room 80m2 (Ninth Floor)	KMcF	22 days	Mon 02/03/15	Tue 31/03/15	Mon 02/03/15	100%	Tue 31/03/15
414	AV Level 5 Room # NSGH-01-RAF-112 Seminar Room (35 Places to First Floor)	KMcF	22 days	Mon 02/03/15	Tue 31/03/15	Mon 02/03/15	100%	Tue 31/03/15
415	**Transfer AV Installation Works (***exact dates TBC***):**	**KMcF**	**25 days**	**Mon 02/03/15**	**Fri 03/04/15**	**Mon 02/03/15**	**25%**	**NA**
416	Transfer Room # & Location: Rehab (Adult) / NSGH-01-OPDO-010. Exact date & duration TBC by KMcF	KMcF	25 days	Mon 02/03/15	Fri 03/04/15	Mon 02/03/15	25%	NA
417	**To Administration Block (NB. All new AV installation works & Ground Floor)**	**KMcF/ GF**	**3 days**	**Fri 17/04/15**	**Tue 21/04/15**	**NA**	**0%**	**NA**
418	AV Level 1 Room # 2907_AA(70)LO-34F, Meeting Room, Ground Floor. Exact date & duration TBC by KMcF	KMcF	3 days	Fri 17/04/15	Tue 21/04/15	NA	0%	NA
419	AV Level 1 Room # 2907_AA(70)LO-35F, Meeting Room, Ground Floor. Exact date & duration TBC by KMcF	KMcF	3 days	Fri 17/04/15	Tue 21/04/15	NA	0%	NA
420	AV Level 1 Room # 2907_AA(70)LO-36F, Meeting Room, Ground Floor. Exact date & duration TBC by KMcF	KMcF	3 days	Fri 17/04/15	Tue 21/04/15	NA	0%	NA
421	**Overall Commissioning & Sign-off of AV Installation Works (i.e. New & Transfer)**	KMcF	20 days	Mon 30/03/15	Fri 24/04/15	NA	0%	NA
422	**Installation of Legacy Artwork (NB. exact dates & breakdown TBC)**	**HG/MMacL**	5 days	Mon 13/04/15	Fri 17/04/15	NA	0%	NA
423	**Installation of New Artwork (NB. exact dates & breakdown TBC)**	**HG/MMacL**	20 days	Mon 23/03/15	Fri 17/04/15	Mon 23/03/15	40%	NA
424	**Management of 'other' NHS works (NB. Full breakdown TBC)**	**IP/FW/JMcG**	**20 days**	**Mon 23/02/15**	**Fri 20/03/15**	**Mon 23/02/15**	**10%**	**NA**
425	Integrated Theatres Installation (NB. Awaiting confirmation from Yorkhill Charity) - ***indicative date / period shown***	FW/JMcG	20 days	Mon 23/02/15	Fri 20/03/15	NA	0%	NA
426	Additional Fittings for Adult & Children's Pendants - ***indicative date / period shown***	FW/JMcG	15 days	Mon 23/02/15	Fri 13/03/15	NA	0%	NA
427	Nuc. Med. - Drainage Access (ref. Radiation Decay Testing) - ***Indicative date / period shown. Exact work content TBC***	FW/JMcG	10 days	Mon 23/02/15	Fri 06/03/15	Mon 23/02/15	50%	NA
428	SAS Fixed Station Installations (Adult, NCH & Helipad) - ***indicative date / period shown***	IP	5 days	Mon 23/02/15	Fri 27/02/15	NA	0%	NA
429	**Installation of Disposal Curtains (Adult Hospital followed by NCH)**	**KC/HG/MMacL**	10 days	Mon 13/04/15	Fri 24/04/15	NA	0%	NA
430	**Pre-Stocking of Departments (NB. exact dates & breakdown TBC / indicative at present)**	**GK**	**64 days**	**Tue 27/01/15**	**Fri 24/04/15**	**Tue 27/01/15**	**77%**	**NA**
431	Pre-stocking Preliminary Meetings to agree finalised generic ward top-up list, etc.	GK/PMcQ	9 days	Tue 27/01/15	Fri 06/02/15	Tue 27/01/15	100%	Fri 06/02/15
432	Pre-stocking new hospital visit to familiarize & agree best storage layout	GK/PMcQ	1 day	Wed 28/01/15	Wed 28/01/15	Wed 28/01/15	100%	Wed 28/01/15
433	Finance - for provision of new cost centres and IDAs (ref. GK's email of 27/01/15)	GK	10 days	Mon 02/02/15	Fri 13/02/15	Mon 02/02/15	100%	Fri 13/02/15
434	Sort Miscellaneous matters (e.g. access to building / AGV access & availability, protection requirements if any, etc)	GK/KC/JM	10 days	Mon 02/02/15	Fri 13/02/15	Mon 02/02/15	95%	NA
435	Confirmation dates for Pre-stocking Activities (NB. Wards will likely have to be done at weekends - ref. GK's email 27/01/15)	GK	10 days	Mon 16/02/15	Fri 27/02/15	Mon 16/02/15	100%	Fri 27/02/15
436	Start of Pre-stocking Activities durimng Phase 2 NHS Commissioning Period (NB. Phase 3 Migration period shown separate)	GK	11 days	Fri 10/04/15	Fri 24/04/15	NA	0%	NA
437	**Linen Laundry Services (NB. Exact dates & breakdown TBC)**	**KM/JM**	**29 days**	**Mon 16/03/15**	**Thu 23/04/15**	**Mon 16/03/15**	**45%**	**NA**
438	Installation of Linen Storage Trolleys (i.e. Procurement delivery & deployment to various locations)	KM/JM/ACT/KC	10 days	Mon 23/03/15	Fri 03/04/15	Mon 23/03/15	100%	Fri 03/04/15
439	Linen Cages to Disposal Holds (i.e. Procurement delivery & deployment)	KM/JM/ACT/KC	10 days	Mon 06/04/15	Fri 17/04/15	NA	0%	NA
440	Interface with AGV's to be established from a deployment perspective all OK (NB. are AGV's available & ready to deploy, etc)?	JM/KC	15 days	Mon 16/03/15	Fri 03/04/15	Mon 16/03/15	75%	NA
441	Pre-Stocking of Linen (i.e. delivery to hospital by KM + deployment to storage locations by JM - ***monitor current linen cage caster issue***)	KM/JM	12 days	Wed 08/04/15	Thu 23/04/15	NA	0%	NA
442	**Installation of Washers & Dryers to Basement (NB. exact dates & breakdown TBC/Linked to PMI#338)**	**KC**	15 days	Mon 16/03/15	Fri 03/04/15	Mon 16/03/15	10%	NA
443	**Training & Familiarisation of Equipment, Systems, etc. (NB. Exact dates & breakdown TBC)**	**KC/ACT/IP/FMcC**	**65 days**	**Mon 26/01/15**	**Fri 24/04/15**	**Mon 26/01/15**	**64%**	**NA**
444	NHS Commissioning Period Staff Training Period with known particulars as listed below (NB. Migration Period Training not shown / TBA)	All	65 days	Mon 26/01/15	Fri 24/04/15	Mon 26/01/15	70%	NA
445	Overhead Hoist Training for Staff Nurses (Location - Ward 5)	FMcC	3 days	Wed 08/04/15	Fri 10/04/15	NA	0%	NA
446	Nurse Call Training for Staff Nurses (Location - Ward 5)	FMcC	3 days	Wed 08/04/15	Fri 10/04/15	NA	0%	NA
447	**Scenario Exercises (e.g. Patient user experience dummy runs, etc) & Testing (NB. Exact dates & breakdown TBC)**	**SJ/FMcC**	30 days	Mon 16/03/15	Fri 24/04/15	Mon 16/03/15	35%	NA
448	**Site Visits**	**KC/HG/MMacL**	**50 days**	**Mon 16/02/15**	**Fri 24/04/15**	**Mon 16/02/15**	**68%**	**NA**
449	Internal NHS Parties (e.g. Consultants, Dept. Heads, etc - exact dates & breakdown TBC)	KC/HG/MMacL	50 days	Mon 16/02/15	Fri 24/04/15	Mon 16/02/15	62%	NA
450	External NHS Parties (e.g. Media, Dignitaries, General Public, etc - NB. exact dates & breakdown TBC)	KC/HG/MMacL	50 days	Mon 16/02/15	Fri 24/04/15	Mon 16/02/15	62%	NA
451	Statutory Parties (e.g. Fire, Police, SEPA, etc - NB. exact dates & breakdown TBC)	KC/IP	25 days	Mon 16/02/15	Fri 20/03/15	Mon 16/02/15	90%	NA
452	**Closing of Hospital Building down in readiness for NHS Migration (***NB. Further Breakdone / Sequencing TBC***)**	**KC/IP**	35 days	Mon 09/03/15	Fri 24/04/15	Mon 09/03/15	5%	NA
453	**Continued Development of BMG's remit for Phase 3 Migration Period**	**ACT**	60 days	Mon 02/02/15	Fri 24/04/15	Mon 02/02/15	75%	NA
454	**Finalise Migration Period Workbooks**	**C&B/AD**	60 days	Mon 02/02/15	Fri 24/04/15	Mon 02/02/15	100%	Fri 24/04/15
455	**Develop & Finalise Pre-stocking Strategy for Phase 3 Migration Period**	**GK**	20 days	Mon 02/03/15	Fri 27/03/15	Mon 02/03/15	75%	NA
456	**Completion of NHS Commissioning / Phase 2 Close-out Period (NB. Milestone Event)**	**DL/PM**	**1 day**	**Thu 23/04/15**	**Thu 23/04/15**	**NA**	**0%**	**NA**
457	**Interface with Office Building + Teaching & Learning Building (NB. Details to be developed / fleshed out***) -*HO date 27/03/2015***	**All**	65 days	Mon 26/01/15	Fri 24/04/15	Mon 26/01/15	50%	NA
458	**Confirmation of NHS Migration Sequencing & Scheduling to Clinical Directors' Migration Group - ***Significant Milestone Event*****	**FMcC/ACT/KC/HG/MMacL**	18 days	Fri 27/03/15	Tue 21/04/15	Fri 27/03/15	33%	NA
459	**Start of Phase 3 Migration Period (NB ***Milestone Event / subsequent activities & dates are currently under development***)**	**DL/PM/FMcC**	**49 days?**	**Fri 24/04/15**	**Tue 30/06/15**	**NA**	**0%**	**NA**
460	**Group 5 Equipment Transfer Dates (ref. LP's email dated 05/03/2015 - pre & post activities TBA)**	**LP**	**31 days?**	**Mon 04/05/15**	**Mon 15/06/15**	**NA**	**0%**	**NA**
461	MRI transfer from Yorkhill (RCF024 / PAED)	LP	1 day?	Mon 15/06/15	Mon 15/06/15	NA	0%	NA
462	INT transfer from WIG (RAF080 / Adults)	LP	1 day?	Mon 01/06/15	Mon 01/06/15	NA	0%	NA
463	Gamma Camera transfer from Yorkhill (RNM033 / PAED)	LP	1 day?	Mon 15/06/15	Mon 15/06/15	NA	0%	NA
464	Cardiac Cath transfer from Yorkhill (RAF077 / PAED)	LP	1 day?	Mon 15/06/15	Mon 15/06/15	NA	0%	NA
465	CT transfer from SGH (Adults)	LP	1 day?	Mon 04/05/15	Mon 04/05/15	NA	0%	NA
466	CT transfer from VI (Adults)	LP	1 day?	Mon 25/05/15	Mon 25/05/15	NA	0%	NA
467	**Stage 1 & Groups 1 to 6 / Wards & Depts. as noted**	**FMcC**	**7 days**	**Fri 24/04/15**	**Sun 03/05/15**	**NA**	**0%**	**NA**
468	Group 1 / Ward / Dept - SGH OPD	FMcC	1 day	Fri 24/04/15	Fri 24/04/15	NA	0%	NA
469	Group 2 / Ward / Dept - SGH Therapies	FMcC	1 day	Sat 25/04/15	Sat 25/04/15	NA	0%	NA
470	Group 3A / Ward / Dept - WIG Ward G6 Renal Dialysis (10 Stations)	FMcC	0 days	Sun 26/04/15	Sun 26/04/15	NA	0%	NA
471	Group 3B / Ward / Dept - GRI Wards 12, 13, 25 Renal Dialysis (12 Stations)	FMcC	0 days	Sun 26/04/15	Sun 26/04/15	NA	0%	NA
472	Completion of Pre-Equipping of 350 Beds (NB. carry on from NHS Commissioning Period)	FMcC	6 days	Fri 24/04/15	Thu 30/04/15	NA	0%	NA
473	Group 4 / Ward / Dept - SGH ITU, HDU, Elective Theatres, Endoscopy, Wards 8 & 8A	FMcC	1 day	Fri 01/05/15	Fri 01/05/15	NA	0%	NA
474	Group 5 / Ward / Dept - SGH ED, GPOOH, Rec' Wards (Surg. & Med), CCU, Cardiology, Gen Surgery, Ortho Trauma, Urology	FMcC	0 days	Sat 02/05/15	Sat 02/05/15	NA	0%	NA
475	Group 6 / Ward / Dept - SGH Wards: 1, 5, 6, 21, 23, 24, 26, 52 + CEPOD & Trauma Theatres	FMcC	0 days	Sun 03/05/15	Sun 03/05/15	NA	0%	NA
476	**Stage 2 & Groups 7 & 8 / Wards & Depts. as noted**	**FMcC**	**5 days**	**Mon 04/05/15**	**Sun 10/05/15**	**NA**	**0%**	**NA**
477	Transfer of 325 Beds from SGH to New Hospital	FMcC	4 days	Mon 04/05/15	Thu 07/05/15	NA	0%	NA
478	Group 7A / GGH+SGH / ENT - Ward 4A GGH & Ward 62 SGH	FMcC	1 day	Fri 08/05/15	Fri 08/05/15	NA	0%	NA
479	Group 7B / WIG / Vascular	FMcC	0 days	Sat 09/05/15	Sat 09/05/15	NA	0%	NA
480	Group 8 / WIG / Renal Inpatients	FMcC	0 days	Sun 10/05/15	Sun 10/05/15	NA	0%	NA
481	**Stage 3 & Groups 9 to 11 / Wards & Depts. as note**	**FMcC**	**10 days**	**Mon 11/05/15**	**Sun 24/05/15**	**NA**	**0%**	**NA**
482	Transfer of 100 Beds from WIG to New Hospital	FMcC	5 days	Mon 11/05/15	Fri 15/05/15	NA	0%	NA
483	Group 9 / VI / ED, Wards 4, 5, 8, 9, 12, 14 & 16, D & Elective Theatres E Floor	FMcC	1 day	Fri 15/05/15	Sat 16/05/15	NA	0%	NA
484	Group 10 / VI / CCU, ITU, Wards 1, 2, 3, 6, 7, 10, 17, A & B, Endoscopy, CEPOD Theatre	FMcC	2 days	Thu 21/05/15	Sun 24/05/15	NA	0%	NA
485	Group 11 / VI / MHU Wards 2 North & 3 North / South	FMcC	2 days	Thu 21/05/15	Sun 24/05/15	NA	0%	NA
486	**Stage 4 & Groups 12 & 13 / Wards & Depts. as noted**	**FMcC**	**8 days**	**Thu 28/05/15**	**Mon 08/06/15**	**NA**	**0%**	**NA**
487	Transfer of 324 Beds from VI to New Hospital	FMcC	2 days	Thu 28/05/15	Sun 31/05/15	NA	0%	NA



nSGH NHS Commissioning Period Programme
Rev 1 / Master Update

Legend: Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

Programmer Owner: Euan Mackenzie (nSGH NHS Project Planner) [redacted]

A47069198

nSGH Phase 2 Close-out Programme from Handover to Start of Migration Period (i.e. to start of Phase 3 Close-out Period)

Programme Update as of 30/01/2015

'Work to' Programme issued 30/01/2015 to NHS Project Team (ref. 'Work To' Programme)

ID	Activity Description	Resource Initials	Activity Duration	Programme Start	Programme Finish	Actual Start	Complete %	Actual Finish
1046	Group 12 / 0004 / Ward 4A, Wards F1 and F4 Inclusive, Hsk Lve, Lv Inc, Isol & Ante	FMoC	4 days	Thu 29/05/14	Mon 15/06/15		0%	
1047	Group 13 / 0004 / Wards 2A, 2B, 2C, 4B, 5B, 5C, 6C, 7C, 8A, 8B, 8C / OPAT / Bowerlee & Bradson Wards 18 + 19	FMoC	2 days	Fri 05/06/15	Mon 08/06/15	NA	0%	NA
1048	**Group 5 & Wrdwide 11 & 12 / Wards & Depts. as noted**	FMoC	4 days	Wed 10/06/15	Mon 15/06/15	NA	0%	NA
1049	Group 14 / RHMC / Outpatients	FMoC	3 days	Thu 11/06/15	Mon 15/06/15	NA	0%	NA
1050	Group 15 / RHMC / Inpatients	FMoC	3 days	Wed 10/06/15	Fri 12/06/15	NA	0%	NA
1051	Miscellaneous Moves from WHC, GWI & MHU, SGH (e.g. admin, office management, etc - exact details / breakdown TBC)	FMoC/IM	66 days	Fri 29/05/15	Tue 29/09/15	NA	0%	NA
1052	Medical Illustrations to NCH (ref. MMoU, email dated 03/03/2015 + RMcP's confirmation thereto)	KMcP	3 days	Wed 10/06/15	Fri 12/06/15	NA	0%	NA
1053	**Completion of Phase 2 Migration Period (NB ***Milestone Event***)**	SL/PM	1 day	Tue 29/09/15	Tue 29/09/15	NA	0%	NA
1054	**Handing / Decommissioning Operations (***details TBC along with programme / phasing overlaps where applicable***)**	MG/IM	1 day	Wed 01/07/15	Wed 01/07/15	NA	0%	NA
1055								
1056	**Demolition Works to existing WMH (***details TBC along with associated programme / phasing overlaps where applicable***)**	HML/DMG/IM	1 day	Wed 01/07/15	Wed 01/07/15	NA	0%	NA

nSGH NHS Commissioning Period Programme
Rev 1 Weeks Update

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

Programmer Owner: Euan Mackenzie (nSGH NHS Project Planner)

5

From: Powrie, Ian [redacted] on behalf of Powrie, Ian
Sent: 15 April 2015 19:51
To: David Wilson [redacted] com]; Colin Grindlay [redacted]
Cc: Matthewson, Ian [redacted]; Moir, Peter [redacted]; David Hall [redacted] Loudon, David [redacted]
Subject: FW:Water management Risk Assessment
Attachments: waterservices.pdf; DMA Commissioning Queries 150409.docx

Hi David,

Please find attached some issues highlighted by our water management risk assessors DMA with regards to the commissioning records for the buildings water services.

It may be that these issues have been adequately covered else ware, I would therefore propose that we meet with DMA to review and address these issues in order to allow for the completion of our water management written scheme, can you please advise on a suitable date & time for this meeting prior to the 24th April.

I have also added my report on a couple of issues identified within the water tank room, the most concerning of which is the open breach between the raw water supply and the distribution pump set, which in effect means that the system has been supplied with non filtered water for an undetermined period after the commissioning and sanitisation. As discussed before you stopped for Annual leave.

There is also evidence of grit in filtrate water storage tanks, which I do not believe is related to the bypass line but cannot explain if the filtration plant is operating correctly?

Finally the trade tanks have over flowed again flooding the tank room, the ball gran float seemed to have slipped on its mounting and although it does shut off the water supply, the level was above the overflow before it closed. (this has been adjusted to below the over flow level again) these valves do not seem fit for purpose, can you please look at replacing them with a more reliable model?

The ball gran removed from tank ?B? after the last failure is still missing with the line valve isolated (creating a dead leg), can this also be replaced as a matter of urgency?

During this incident the tank level monitoring panel displayed a low level alarm, on inspection it was found that both high level switches had operated and both low level switches where sitting on their sides, un able to operate on water level, therefore the low level alarm indicated would suggest that this alarm panel is incorrectly wired? Requires investigation.

Regards

Ian

[redacted]
Sector Estates Manager (NSGH)
Project Team, New South Glasgow Hospitals,
Southern General Hospitals Construction Site,
2nd Floor, Modular Building, Off Hardgate Road, Glasgow,G51 4SX
[redacted]

[redacted]

****

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Water Services

Thursday, April 9, 2015

Prepared for Nhs GG&C

Identified 12 Issues

Ian Powrie

Nhs GG&C

Water Filter Breach

Assigned to Defect

Construction phase commissioning breach line left in place with valves open at both ends, by passing Memcor filtration plant an filtrate tank feeding raw water directly into potable water distribution system to both A&C hospitals. Potential impact on system water quality.

Distribution pump 2nd point of breach, valve left open

Water Filter Breach

Assigned to Defect

Raw water breach connection, valve open do not close notice fixed.

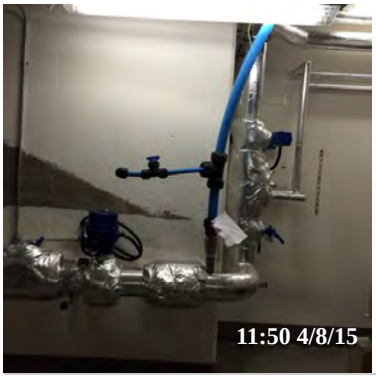
1st breach connection.

Govan Road Supply Valve 1

Assigned to Defect

Valve closed to raw water tank, potential dead leg.

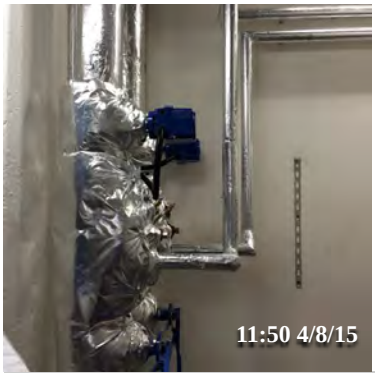
Please advise why valve is closed, risk if valve is reopened onto a fault condition?



Construction Site Water Take Off

Assigned to Defect

This has this potentially introduces a dead leg into the hospital raw water supply on the breach pipe.



Water Supply Automatic Transfer Valve

The supply valves are designed to automatically transfer site supply between both supply points every 11 hrs to prevent stagnation (dead legs) this is controlled via the BMS.

This function does not seem to be operating correctly as all 4 valves are in the fully open position?

Auto Valve Tank 1A

This valve is isolated crating a dead leg, is there a reason for this?

Govan Road Supply Control Valve Open

Open condition

Hard gate Road Water Supply Control Valve

Open condition

Raw Water Tank A

Open ended discharge line, should be fitted with blank end.

Memcor Training

Final stage training due following installation of membrane filters.

Can you please advise on suitable dates?

Plant Room Keys

Both doors are not fitted with plant suited locks? Can these please be added to the PG2 suite?

Report 6

Point 1

The commissioning records (CWS/DHWS OUTLET REPORTS) appear to vary across plantrooms/zones with differing information recorded on sheets with no corresponding method statement or guidance p[parameters provided to allow for interpretation of the results

Most sheets have temperatures recorded for “Multifix” and “Multitherm” locations on the “Hot Water Return”. However there are large variances on the other temperatures recorded for “Hot Water Flow”, “Cold Water Flow”, “Mixed Water Flow” and “Anti Scald Operational”.

Many sheets have no temperatures other than “Multifix” and “Multitherm” recorded on the “Hot Water Return”. (e.g. Plantroom 21 Critical Care Ward – Riser M6, 1st Floor)

Others have temperatures recorded across all columns (e.g. Plantroom 22 Basement FM & Kitchen Riser M30).

However, even when all columns filled in there appears to be discrepancies between “Hot Water Flow” temps. Many would appear to be a mixture of direct hot temps (i.e. 50 – 55°C) and those taken from TMVs (i.e. 38 - 41°C), with “Mixed Water Flow” being very difficult to determine what the temperatures reflect (i.e. 24 – 39°C) (e.g. Plantroom 31 Ground Floor Acute Assessment Riser M21)

“Anti-Scald Operational” completed in very few sheets (ticked when completed).

“Design temperatures” very rarely completed on any sheets.

There are no temperature monitoring records for any period after systems being filled other than the commissioning records referenced here.

Example of the info provided.

Outlet/Room Ref. No.	Hot Water Return		Hot Water Flow		Cold Water Flow		Mixed Water Flow		Anti-Scald
	Multitherm Temp. (°C)	Multifix Temp. (°C)	Design (°C)	Temp (°C)	Design (°C)	Temp (°C)	Design (°C)	Temp (°C)	Operational
MT	50.6								
45				41.1	<20	15.6		24.1	
46 WHB								39.3	
46 SH				41.8	<20	15.7			
46 Bath									
61				41.7	<20	164		23.7	

Point 2

Further to the type of information provided on the sheets described in Point 1, in many instances the temperatures recorded in the “Hot Water Return” and “Hot Water Flow” fall out-with those which we understand to be the hot water system control parameters (i.e. >55°C at all points).

Also in some instances “Cold Water Flow” temperatures were recorded above 20°C.

There are no mitigating circumstances recorded or remedial actions noted on the information DMA have access to on Zutec or details of steps taken (or considered) to minimise the potential for biofilm formation within the system when control measures/parameters were out of specification..

Point 3

There are no obvious records of the cold water “dump system” being commissioned.

Point 4

There is no method statement for the microbiological sampling procedure or an explanation of the choice of sample locations for both potable and legionella samples (would appear to be sentinel outlets for potable) or the pass/fail criteria applied (assumed to be 300 cfu/ml for TVCs).

Additionally there are no remedial actions or re-sampling procedures recorded after “failed” and multiple “failed” samples (i.e. samples which have “failed on the resample”.

The time period between disinfection being completed and the sampling being carried out (varying from 1 day to 3 days) SHTM 04-01 Part C advises “A period of at least three days – and preferably five – should be allowed for the system to settle prior to sampling activities commencing”

Point 5

There is no method statement for the cleaning and disinfection of the water tanks and hot/cold services. There are certificates attached to the smapling results referring to plantrooms and individually CWSTs 1, 2 3 & 4. However this does not make it clear if they are referring to Raw Water or Bulk water tanks and there is no reference to tanks being cleaned.

Also there were no notes of any areas omitted or disinfected separately or disinfections repeated after access issues or other problems completing a full system disinfection in one go. (We assume here that access to all areas in a building project of this size for a one off disinfection would be logistically demanding and we would normally expect to see some omissions for practical reasons – or a statement that there were no omissions).

Point 6

There are no leachate flushing method statements or records available on Zutec to DMA (though there have been signs noted within the building highlighting leachate flushing has been carried out).

Point 7

There are no flushing method statements or records available though we are aware that this has been carried out. DMA cannot confirm when flushing began and the exact frequency of this flushing in each areas as we assume the systems were filled in staged/systematic process with flushing being required immediately after first fill.

Point 8

There are no records of manufacturers commissioning procedures and the implementation of these procedures for the TMVs.

Point 9

There are no records of the training/competency of the companies (and/or individuals) who have undertaken the disinfection and sampling works e.g. LCA accreditation.

Point 10

Sentinel outlets have not been separated into hot and cold and there do not appear to be any listed for the trades system. For on-going monitoring and sampling requirements these should be separated to assist in identifying any localised issues e.g. heat gain/loss, high microbial counts to determine if occurring only in local run or more widespread throughout the floor (particularly given that many hot samples are being taken via TMV)

Notes on Assessment so far (very brief Summary!)

Many hot temperatures between 50 – 55°C (this is in line with commissioning reports though the majority of these have been via contact probes so there may be some margin for interpretation that could be applied given that the majority of direct hot temperatures are in excess of 55°C)

Many cold temperatures are higher than 20°C (and almost invariably a minimum of 5°C higher than tank temperatures) which would indicate a high level of heat gain in the cold system throughout the building

Raw water tank 1A was valved off and is showing signs of stagnation (film on water surface). We would advise this is cleaned and disinfected prior to be reinstated.

Bulk Water tanks 2A and 2B were almost completely empty when DMA inspected them. Jim Guthrie was present at the time and reconfigured bypass valves etc to allow the system to be fed from the full tanks (1Aand 1B).

Trades water tank (RHS) offline though full and showing signs of stagnation when DMA inspected them. We would advise this is cleaned and disinfected prior to be reinstated.

There was a MDPE bypass on the mains water (Hardgate Road) to the main booster pumps which appeared to be open and live at time of survey. Unable to confirm what the reason for this was. Also a short deadleg on this bypass.

In many areas (Department receptions etc.) there are connections for vending machine/water dispensers which are not in use and many have capped ends. Are these included in the flushing regime (and included in the disinfection)?

In many areas, particularly wards on the higher floors, the wet room floor drain was not sealed. Are the showers being included in the flushing regime?

There are flexible hoses fitted in some areas e.g. Double level sinks in facilities rooms and Arjo baths (connection onto the system as well as those internally on the bath) and on the zone pressure reducing valves.

Copper tails evident in some areas - mostly infra red taps (small final connection pieces) and also in the Endoscopy wash sinks.

There is a deadleg in the hydrotherapy pool plant area

Expansion vessels are not flow through type as recommended by SHTM

NHS Greater Glasgow and Clyde

Infection Prevention and Control Work Plan 2015 / 2016

(This document supports the implementation of the NHS Board IPC Programme 2015 / 2016)

Approval

NHS Greater Glasgow & Clyde Board Infection Control Manager

NHS Greater Glasgow & Clyde Board Infection Control Committee

Submitted to:

NHS Greater Glasgow & Clyde Acute Infection Control Committee

NHS Greater Glasgow & Clyde Partnerships Infection Control Support Group

April 2015

CONTENTS

		PAGE
1.	NEW INITIATIVES / PROJECTS 2015 / 2016	3.
2.	CORE PROGRAMMES OF WORK	
A)	Surveillance and Continuous Quality Improvement	7.
B)	Education	9.
C)	Policies	10.
D)	Decontamination	11.
E)	Clinical Governance & Patient Safety	12.
F)	Healthcare Hygiene, Cleaning Services and the Built Environment	13.
G)	Hand Hygiene	14.
H)	Person Centred Care / Patient Experience	15.
I)	Inspectorate Sector / Health Improvement Scotland HAI Standard	16.
J)	MRSA KPIs	16.
K)	On the Move	16.
3.	GLOSSARY	17.

April 2015

1. NEW INITIATIVES / PROJECTS – 2015/2016

Topic	Actions	Critical Dependency(s)	Lead	Progress Update	RAG Status
Undertake surveillance and quality improvement programmes in addition to the mandatory requirements of HDL (2006)38	Review available data, quality assure against existing available data and if possible plan strategies to survey all services for SSI.	ICNet functionality HDL from SGHD re additional mandatory requirements.	Lead Nurse Surveillance Ann Kerr		
Healthcare Improvement Scotland (HIS) Standards 2015	Update BICC ToR to ensure point of care to Board reporting structure for IPC committee is clear.	None	ICM Tom Walsh		
	SOP to describe what HAI audit information should be displayed in wards and what should be public facing information.	None	NCIPC Pamela Joannidis		
	Policy describing the role and responsibilities of clinical staff in relation to providing HAI information to healthcare teams and their role in providing and recording all communication with patients and their relatives especially where the cause of death is HAI related.	None	ANDIPC Sandra McNamee		
	Develop a strategy describing how IPC policies will be audited, the audit process itself and the proposed feedback mechanism including links to education and QI and the CAAS Standards.	None	ANDIPC Sandra McNamee		
	Prepare an annual report on audit activity.	None	ANDIPC Sandra McNamee		
Healthcare Improvement Scotland (HIS) Healthcare Associated Infection (HAI) theatre aide memoire	Ensure theatre areas are aware of and are prepared for HEI theatre inspections.	None	Sector IPCTs and local Theatre Lead Nurses and Service Managers		

April 2015

NEW INITIATIVES / PROJECTS – 2015/2016 (cont/…)

Topic	Actions	Critical Dependency(s)	Lead	Progress Update	RAG Status
Information governance during a time of organisational change	Continue to review aggregated IPC data and exception reports at BICC.	None	ICM Tom Walsh		
	Continue reporting key metrics (HAIRT) to NHS Board, Q&P and Clinical Governance Committees / Forums.	None	ICM Tom Walsh		
	Ensure and reinforce consistent application of IPC Policy and practice through the IPC Senior Management Team (SMT).	None	ICM Tom Walsh		
	Include in IPCT Risk Register.	None	ICM Tom Walsh		
Integration of Health and Social Care	Support IPCT with responsibility of directly managed services within the Integrated Joint Boards and Mental Health Services.		ANDIPC Sandra McNamee and LN IPCT West Sector (vacancy)		
Acute Service Review	*IPC data which is currently collected is essentially ward based and provides an overview of trends and rates not only in wards across sectors and sites. The migration of wards from disparate sites into the New South Glasgow University Hospitals (NSGUHs) and the acute service review will mean the re-organisation of three sectors into a site-based management structure and will require significant re-organisation and interpretation*				

April 2015

NEW INITIATIVES / PROJECTS – 2015/2016 (cont/…)

Topic	Actions	Critical Dependency(s)	Lead	Progress Update	RAG Status
Acute Service review (cont/…)	IPCT triggers will still be in place, i.e. any ward with two cases of CDI in a two-week period will require weekly review. This action will be extended to include all alert organisms of communicable diseases, e.g. MRSA, Group A Strep infection.	South West IPCT	Lead Nurse SW IPCT Clare Mitchell		
	All cases of all alert organisms or communicable diseases will continue to be reviewed by a member of the IPCT. All severe cases of CDI will be reported in the weekly report. The SAB Reports will continue to be issued and the GRO Data analysed by site and for the Board.	None	IPCT		
	Outbreaks, *Incidents* or *Triggers* will continue to be reported to the BICC and site committees as convened. Lead Nurses from each of the sectors will continue to meet weekly and provide an update on site issues to the ANDIPC. This will be the basis of the Directors Report.	None	Senior IPCT		
	Reports on SSI in relation to Caesarean section should be unchanged. Orthopaedic procedures are based on numbers performed so should remain stable but this will be closely monitored by the Lead Nurse for Surveillance.	Data team resource	Lead Nurse Surveillance Ann Kerr		
	SPCs will clearly state that this is an estimate based on amalgam of previous data.	None	Lead Nurse Surveillance Ann Kerr		
	The Hospital Acquired Infection Reporting Template (HAIRT) and the HAIRT Summary for the Quality & Performance Committee will continue to be populated but the site SPCs will be modified to reflect the change in bed numbers and issued with this.	Data Team resource	Lead Nurse Surveillance Ann Kerr		

April 2015

NEW INITIATIVES / PROJECTS – 2015/2016 (cont/…)

Topic	Actions	Critical Dependency(s)	Lead	Progress Update	RAG Status
On the Move (IPCT)	Potential impact on team dynamics by mixing two independent teams.	None	Clare Mitchell LN SW IPCT and Lynn Pritchard LN SE IPCT		
	Inconsistency in working practices may lead to confusion or concerns from staff.	None			
Ensure that CAAS Link Nurses have the correct training and support to fulfil their role as IPC Link Nurses	Set objectives and determine training required in order to monitor the standards	IPCT resource	Education Lead and LN IPC Lynn Pritchard and NCIPC Pamela Joannidis		
Vale of Leven Inquiry Report	Implement the IPCT actions in the NHSGGC Action Plan.	None	IPCT		
	Review the SGHD VOL Action Plan and implement as required.	May require additional resources – to be determined after plan is issued	IPCT		

April 2015

2. CORE PROGRAMMES OF WORK

A) Surveillance and Continuous Quality Improvement

Topic	Actions	Lead	Report / Update Available
To reduce MRSA / MSSA bacteraemia (SABs)	Prepare monthly reports based on information from the enhanced surveillance of SABs.	Lead Nurse Surveillance Ann Kerr	Monthly Acute and quarterly Sector Reports issued.
	Align outcome data from team to information collected by SPSP where possible. Support interventions from this information.	IPC Data Team / QIFs	Ongoing.
	Continue cross-Sector SAB Steering Group Meetings.	Lead Nurse Surveillance Ann Kerr	Meetings to occur bi-monthly. Minutes available.
	IPCT to carry out enhanced surveillance of all reported SABs.	IPCTs	Ongoing. Output informs monthly Acute and quarterly Sector Reports issued.
	Information from the Clinical Review Tool will be included in the Sector SAB Reports. Returns will be included in the Sector Monthly Reports.	Lead Nurse Surveillance Ann Kerr	Monthly Acute and quarterly Sector Reports issued.
	IPCTs will carry out audits of clinical practice in relation to the management of PVC / CVC when a SAB is associated with an invasive device and as part of the IPCAT.	IPCTs	Results will be included in the Monthly Sector Reports.
	Report progress against target to NHS Board via the bi-monthly HAIRT and Quality & Performance Report.	ICM Tom Walsh	Every two months to BICC and Q&P.
	QIFs will target areas for improvement based on information collected.	QIFs and NCIPC Pamela Joannidis	
To reduce the incidence of C. *difficile* to 32 cases per 100,000 occupied bed days in ages 15 and over by 31 March 2016	Monitor both HAI and non-HAI cases and produce and return to clinical areas SPC charts in relation to HAI *C. difficile*.	IPC Data Management / IPCTs (Ann Kerr)	Ongoing. Reported monthly to Wards and Sectors. Reported monthly to Nurse Director for Partnerships.
	Support the Antimicrobial Management Team in promoting antimicrobial policies which limit broad-spectrum antibiotic agents implicated in *C. difficile*, MRSA and other similar infections.	ICDs	Ongoing. ICDs attend Antimicrobial Utilisation Committee.
	Support clinical teams in the management and reporting of *C. difficile* cases to reduce the risk of onward transmission.	IPCTs	Ongoing.

April 2015

Surveillance and Continuous Quality Improvement (cont/ …)

Topic	Actions	Lead	Report / Update Available
Undertake surveillance and quality improvement programmes which are compliant with national requirements	NHSGGC continue to comply with HDL (2006)38.	Lead Nurse Surveillance Ann Kerr	Ongoing. Quarterly SSI Reports issued to clinicians.
Alert Organism / Communicable Disease Surveillance	IPCTs will continue to collect data on all alert organisms or communicable diseases referred to them to detect trends and identify areas for action.	IPCTs	Ongoing. Data supports the update of SPCCs which are issued monthly.
Ensure delivery of IT work plan and utilise IT systems for continuous improvement	NCIPC and IPC Lead Nurse Surveillance will deliver actions outlined in the Project Plan and act on recommendations from the IPCT to develop or utilise existing IT systems.	IPCT / NCIPC / Lead Nurse Surveillance (Pamela Joannidis and Ann Kerr)	NCIPC and IPC Lead Nurse Surveillance to report to the IPC SMT monthly on progress.

April 2015

B) Education

Topic	Actions	Lead	Report/ Update Available
To ensure that IPCTs have access to education and training as appropriate.	Continue to support and promote education of the IPCT workforce by linking with Practice Development, Learning & Education within NHSGGC, and nationally with NHS Education for Scotland.	Education Lead / Lead Nurse IPC Lynn Pritchard	Ongoing
Ensure that staff in Primary Care have access to training on local decontamination.	Support NES online.	IPCTs	Ongoing
Ensure that CAAS Link Nurses have the correct training and support to fulfil their role as IPC Link Nurses.	Set objectives and determine training required in order to monitor the standards.	Education Lead / Lead Nurse IPC Lynn Pritchard and NCIPC Pamela Joannidis	As determined by project.
	Evaluate the standards following pilot to ensure objectives will be met through them.		
To ensure that the workforce has access to education as per the IPC Education Strategy.	Continue to support and promote the IPC Modules on learnPro.	Education Lead / Lead Nurse IPC Lynn Pritchard	Ongoing

April 2015

C) Policies

Topic	Actions	Lead	Report/ Update Available
To maintain and enhance the NHSGGC Infection Prevention and Control of Infection Policy Manual	There will be a planned programme for the review / updating of all policies as per HIS HAI Standards.	IPC Policy Group Pamela Joannidis	Ongoing
	Develop new policies as required based on the requirements of the organisation and in response to new legislation, guidance or emerging pathogens.	IPC Policy Group Pamela Joannidis	Ongoing
	Place IPC policies on the IPC website and promote this site.	IPC Policy Group Pamela Joannidis	Ongoing
Implement the National Infection Prevention and Control Manual as available	Review contents and prepare addendums as required, as per Policy / SOP.	IPC Policy Group Pamela Joannidis	As available
Ensure that updated or newly developed IPC Policies and Standard Operating Procedures are fit for purpose and meet / complement other organisational objectives	Ensure consultation by implementing the IPC SOP Procedure for the Development and Approval of IPC Policies, SOPs and Patient Information in NHSGGC.	IPC Policy Group Pamela Joannidis	Ongoing

April 2015

D) Decontamination

Topic	Actions	Lead	Report/ Update Available
CJD	Review the Advisory Committee on Dangerous Pathogens (ACDP) Guidance on "transmissible spongiform encephalopathy agents: safe working and the prevention of infection", and make recommendations to the parts of the organisation to which issues within this applies.	CJD Group PHPU Lead Dr Iain Kennedy	Ongoing. CJD is a standing item on the BICC Agenda.
Central Decontamination Unit	Support the central decontamination unit by attending quarterly decontamination meetings at Cowlairs Decontamination Unit and provide education as required / requested.	Decontamination Group Kate Hamilton / Prof Craig Williams	Ongoing. Included in Facilities update to BICC.
Central Decontamination Units	Carry out an IPC Audit on all units managed by CDU.	IPCTs	Ongoing. Reports will be included in Sector re-posts.
IPC Decontamination Group (Sub-Group of BICC)	IPCT will chair and support the work of this group and give advice as requested by clinical services and liaise with HPS / HFS. Work being carried out to establish decontamination page on NHSGGC IPC website and the introduction of internal safety action notices.	ICDs Prof Craig Williams / Dr Alison Balfour	Ongoing. Decontamination Group reports to BICC / AICC / PICSG as appropriate.

April 2015

E) Clinical Governance & Patient Safety (SPSP and SPSI)

Topic	Actions	Lead	Report/ Update Available
To comply with the principles outlined in the HIS Clinical Governance and Risk Management Standards	The IPC service will have structures and processes in place to identify, manage and communicate risks throughout the organisation.	ICM Tom Walsh	Risk Register developed and submitted to BICC for approval. Highest rated risks are submitted to the Corporate Risk Register.
	IPCTs will continue to assist clinical teams to complete a clinical review tool for severe cases of CDI or SABs where it appears on the patients' death certificate and log both onto Datix.	IPCTs / Clinical Teams NHSGGC	Datix is reviewed within the Sector specific clinical governance systems. Overview given by Risk Manager to AICC / BICC.
To comply with the principles outlined in HIS Infection Control Standards	Produce an Annual Report based on the IPC Programme for approval by the BICC and the NHSGGC Quality & Performance Committee.	ICM Tom Walsh	May 2015
	Produce an Annual Infection Control Programme setting out the strategic agenda for IPC within NHSGGC.	ICM Tom Walsh	May 2015
To comply with the requirements of SGHD in relation to the HAIRT Report	Populate the NHS SGHD bi-monthly HAIRT Report for presentation to the NHS Board and the NHSGGC Quality and Performance Committee.	ICM Tom Walsh	The HAIRT is published on the NHSGGC website bi-monthly. Presented to NHSGGC Board and Quality and Performance Committee (summary).
To ensure that the IPCT are supporting staff to apply IPC Policies and SOPs in relation to invasive devices management and SICPs to promote patient safety	The IPC AT will be undertaken as a minimum every 12 months in all wards and Clinical Departments, or more frequently as indicated by results, i.e. overall RED or AMBER score.	IPCTs	Reports returned to SCNs and Lead Nurses and Chief Nurses. Score reported in Sector Monthly Reports.
To ensure that evidence based practice in relation to IPC is promoted by IPCTs in NHSGGC	The IPCTs in NHSGGC will participate in SPSP and SPSI as required.	Karon Cormack / Pamela Joannidis	Ongoing
	Data will be shared between IPCTs and SPSP / SPSI where appropriate.	Lead Nurse Surveillance Ann Kerr	Ongoing
To comply with the requirements of SGHD in relation to the HAI Report Card	Populate the HAI Report Card.	IPC Data Management (Ann Kerr)	Ongoing. Reports posted on NHSGGC website each month.

April 2015

F) Healthcare Hygiene, Cleaning Services and the Built Environment

Topic	Actions	Lead	Report/ Update Available
To comply with national guidance on cleanliness standards and provide patients and visitors with a clean hospital environment	To ensure compliance with national monitoring of standards by participating in the peer and public review of cleaning services.	IPCTs / Elisabeth Sutherland	Ongoing
	IPCT participate in the site Facilities Groups.	IPCTs	Ongoing. Minutes from these groups are submitted to Facilities Clinical Governance Committee.
	Participate in the training of public reviewers.	Patient Experience Pamela Joannidis	Ongoing
	Involve public reviewers in audit of IPC policy audit during this process.		
To ensure that NHSGGC premises are designed and built to facilitate the prevention and control of infection	The Co-ordinating ICD jointly chairs with the GM Facilities, the NHSGGC Water Group. This group reviews guidance with regards to the control of Legionella and *Pseudomonas*.	CICD / Facilities Prof Craig Williams / Mary Anne Kane	Water Group meets bi-monthly. This group reports to BICC and Facilities Clinical Governance Committee.
	Ensure that all advice in relation to new builds complies with HFS Building Notes and Guidance Documents.	IPCTs	Ongoing
	Ensure that PPM and validation of theatres is ongoing.	S&A / CICD Prof Craig Williams	Ventilation Group meets quarterly and reports to AICC.

April 2015

G) Hand Hygiene

Topic	Actions	Lead	Report/ Update Available
Continue to involve the public and patients on compliance in relation to hand hygiene	Participate in Patient Experience events as requested.	**LHBC** Stefan Morton	Ongoing
	Educate and support members of the public to participate in local monitoring of hand hygiene compliance.	**LHBC** Stefan Morton	Ongoing
	Continue to update the IPC website with regards to Hand Hygiene initiatives and information.	**LHBC** Stefan Morton	Ongoing
Promote a zero tolerance approach to HH compliance in NHSGGC as per CEL(2009)5	To continue to support staff to undertake local hand hygiene audits based on SPSP methodology which will now include information on technique as well as opportunity.	**LHBC** Stefan Morton	Ongoing
Provide assurance that NHSGGC continue to support continuous improvement in relation to hand hygiene	Prepare an assurance plan for Health Protection Scotland and NHSGGC.	**LHBC** Stefan Morton	**Ongoing**

April 2015

H) Person Centred Care (PCC) / Patient Experience

Topic	Actions	Lead	Report/Update Available
To ensure that systems and processes are in place to secure public involvement in issues related to HAI and that these systems are linked to the NHSGGC Patient Experience Framework	Map all Patient Experience (PE) activity to the Participation Standards documented in a log of activity reviewed at Acute Operating Division (AOD) PE Steering Group.	Patient Experience Pamela Joannidis	Ongoing
	A representative from the IPCT will attend the AOD PE Steering Group.	Patient Experience Pamela Joannidis	Ongoing
	Patient information will continue to be developed and updated as necessary.	Patient Experience Pamela Joannidis	Ongoing
	A member of the IPCT will visit every patient who has been identified with an alert organism or communicable disease and if able will give the patient verbal and written information.	Person Centred Care Joan Higgins	Ongoing
Monitoring of the National Cleaning Services Specification	Members from the IPCT will continue to participate in the Monitoring Framework for Cleaning Services PPI Review Support Group.	IPCTs Pamela Joannidis	Ongoing
Monitoring of IPC policies	The IPCT will provide opportunity for members of the public to take part in audit of the IPC policies in clinical areas.	IPCT Pamela Joannidis / Joan Higgins	Ongoing
NHS HIS Standards of HAI	Support public partners who attend the BICC and PICSG.	Patient Experience Pamela Joannidis / Sandra McNamee	**Ongoing**

April 2015

I) Inspectorate Sector / Health Improvement Scotland HAI Standards

Topic	Actions	Lead	Report/ Update Available
Comply with NHS HIS HAI Standards and populate the online portfolio of evidence to demonstrate compliance with the standards	Review and update relevant evidence as it is updated or developed in response to the HEI action plan following each visit.	HEI Leads	Report on the progress of action plans is a standing item on the AICC agenda.
	Co-ordinate and post the evidence submitted by other departments within NHSGGC.	ICM Tom Walsh	Ongoing
Participate in the NHSGGC Corporate HEI Inspection	Participate in the Acute Operating Division Corporate HEI inspection audits.	IPCTs	Ongoing

J) MRSA KPIs

Topic	Actions	Lead	Report/ Update Available
Support staff to comply with CNO (2013)1 and complete the MRSA Clinical Risk Assessment	Nursing admission document will include MRSA CRA.	IPCTs	Results included in monthly Sector Reports.
	IPC Audit compliance with MRSA Screening national target through local collation and upload to HPS Portal.	IPCTs / IPC Lead Nurse Surveillance / IPC Data Team	Results included in monthly Sector Reports and report sent to AICC.
	IPCTs / QIFs will promote and support staff to complete and comply with CNO (2013)1.	IPCTs / QIFs	N/A

K) On the Move

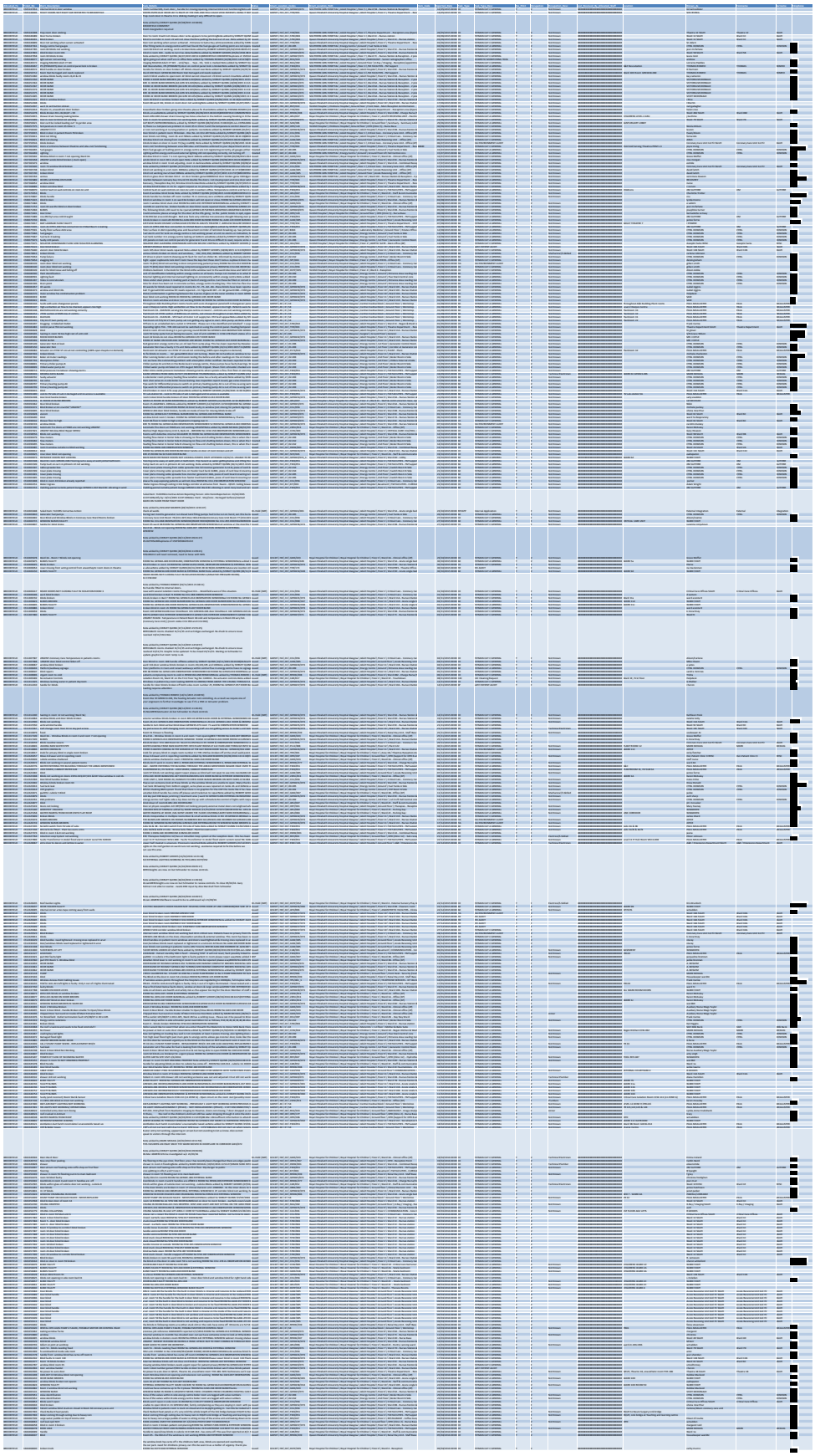
Topic	Actions	Lead	Report/ Update Available
Plan services to meet the needs of the Clinical Services Review and the integration of Health and Social Care.	Convene a group with all relevant stakeholders (IPCT, SMT, LN, HR) to ensure that staff are kept informed and supported during any changes which arise due to organisational change.	ICM Tom Walsh	As required.

April 2015

3. GLOSSARY

ACDP	**Advisory Committee on Dangerous Pathogens**
AMT	**Antimicrobial Management Team**
AOD	**Acute Operating Division**
Alert organism alert condition	Any of a number of organisms or infections that could indicate, or cause, outbreaks of infection in the hospital or community.
Bacteraemia	Infection in the blood. Also known as Blood Stream Infection (BSI).
BICC	**Board Infection Control Committee**
CDAD	***Clostridium difficile*** Associated Disease
CDI	***Clostridium difficile*** Infection
CEL	**Chief Executive Letter** issued by Scottish Government Health Sectors (SGHD)
CMO	**Chief Medical Officer**
CVC	**Central Vascular Catheter**
C. difficile	***Clostridium difficile*** also referred to as ***C. diff*** (or ***C-diff***) is a Gram-positive spore-forming anaerobic bacteria. C. *difficile* is the commonest cause of gastro-intestinal infection in hospitals. It causes two conditions; antibiotic associated diarrhoea and the more severe and occasionally life-threatening pseudomembranous colitis. Control of the organism can be problematic due to the formation of spores and difficulty in removing them. Patients who have had antibiotics within the last eight weeks are most at risk of acquisition of the organism.
Cleanliness Champion	**Cleanliness Champion** A Ministerial led initiative to offer a specific education programme to HCWs. http://www.scotland.gov.uk/Topics/Health/NHS-Scotland/19529/19322
Code of Practice	**Code of Practice.** The NHS Scotland Code of Practice for the Local Management of Hygiene and Healthcare Associated Infection issued 2004 contains the components that must be complied with by all NHS HCWs in Scotland. http://www.scotland.gov.uk/Publications/2004/05/19315/36624
GRO	**General Registers Office**
HAI	Originally used to mean hospital acquired infection, the official 'Scottish Government' term is now **Healthcare Associated Infection**. These are considered to be infections that were not incubating prior to contact with a healthcare facility or undergoing a health-care intervention. It must be noted that HAI infection is not always an avoidable infection.
HAI SCRIBE &HBN 30	Scottish Health Facilities Note 30: version 3. Infection Control in Built Environment: Design and Planning.
HCW	**Healthcare Worker**
HDL	**Health Department Letter**
HEAT Target	**Health Efficiency and Access to Treatment**. Targets set by the Scottish Government.
HH	**Hand Hygiene**
HPS	**Health Protection Scotland**
IPCN/T/O/D/M	**Infection Control Nurse / Team / Officer / Doctor / Manager**
ICP	**Infection Control Programme**
KPI	**Key Performance Indicator**
LHBC	**Local Health Board Co-ordinator** (Hand Hygiene)
MRSA	**Meticillin resistant *Staphylococcus aureus.*** A *Staphylococcus aureus* resistant to first line antibiotics; most commonly known as a hospital acquired organism.
MSSA	**Meticillin Sensitive *Staphylococcus aureus***
PCAT	**Primary Care Audit Tool**
PHPU	**Public Health Protection Unit**
PVC	**Peripheral Vascular Catheter**
HIS	**Quality Improvement Scotland**
SAB	***Staphylococcus aureus*** **bacteraemia**
SIRN	**Scottish Infection Research Network**
SOP	**Standard Operating Procedure**
SPC	**Statistical Process Control Charts**
SPSP	**Scottish Patient Safety Programme**
VRE	**Vancomycin resistant enterococcus** - an alert organism. A common organism that can be inherently resistant to Vancomycin but can also acquire (and transfer resistance) to other organisms. Has caused outbreaks reported in the literature in a variety of high-risk settings, eg renal or bone marrow transplant units.

Allocated_To	Ticket_No	Short_Description	Task_Details	Status	Struct_Location_Codes	Struct_Location_Path	Item_Code	Reported_Date	Task_Type	Task_Type_Desc	No_Print	Occupation	Occupation_Desc	Last_Received_By_Allocated_Staff	Location	Known_As	Forename	Surname	Telephone
BAM	1505343457	BURNS RISK - boiling water geyser dangerously high on wall.	Staff members around 5 foot tall are unable to safely reach geyser to fill cups. Dangerous as cannot	Issued	G405H \ IB \ 02 \ OPZ11	Queen Elizabeth University Hospital Glasgow \ Office Block \ Floor 2 \ Open Plan Zone 1 Area 1		26/05/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		darryl mcghee			
BAM	1505344022	Ladies changing room door not closing RAF-090	Repair door so secure closure	Issued	G405H \ IB \ 02 \ OPZ11	Queen Elizabeth University Hospital Glasgow \ Office Block \ Floor 2 \ Open Plan Zone 1 Area 1		27/05/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Admin Block Level 2 Zone 1 SGUH	Admin Block Level 2 Zone 1	SGUH	
BAM	1506349706	Leak in roof - water coming through ceiling	Office blockLevel 1 Zone 2Open plan 3	Issued	G405H \ IB \ 01 \ OPZ31	SOUTHERN GEN HOSPITAL \ Admin Block \ Floor 1 \ Open Plan Zone 3 Area 1		10/06/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Admin Block Level 1 Zone 3 SGUH	Admin Block Level 1 Zone 3	SGUH	
BAM	1506350428	Door to IT HUB Pod Faulty	The Glass Sliding Door to the IT Hub in the OFfice Block, 2nd Floor, Zone 3, 2.14 is faultySticks and is	Issued	G405H \ IB \ 00 \ OPZ21	SOUTHERN GEN HOSPITAL \ Admin Block \ Ground Floor \ Open Plan Zone 2 Area 1		12/06/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Admin Block Level 0 Zone 2 SGUH	Admin Block Level 0 Zone 2	SGUH	
BAM	1506350756	Leading edge double doors Splintered	Double doors RAF-101 first floor Imaging SGUH.Opening edge of door damaged, visitor to departm	Issued	G405H \ IB \ 02 \ OPZ11	Queen Elizabeth University Hospital Glasgow \ Office Block \ Floor 2 \ Open Plan Zone 1 Area 1		12/06/2015 00:00	SP	SAFE PATIENT AUDIT	Y	Z	Not Known	################################		Surjit Johal			[redacted]
BAM	1506350763	Fire Doors Sticking	Several fire doors on ground floor Imaging catching floor and not closing during fire alarm.	Issued	G405H \ IB \ 02 \ OPZ11	SOUTHERN GEN HOSPITAL \ Admin Block \ Floor 2 \ Open Plan Zone 1 Area 1		12/06/2015 00:00	SP	SAFE PATIENT AUDIT	Y	Z	Not Known	################################		Duncan Inch			[redacted]
BAM	1506352282	Secure door to ladies changing room not closing RAF 090	Adjust magnetic bar at top of door	Issued	G405H \ IB \ 02 \ OPZ11	Queen Elizabeth University Hospital Glasgow \ Office Block \ Floor 2 \ Open Plan Zone 1 Area 1		16/06/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Admin Block Level 2 Zone 1 SGUH	Admin Block Level 2 Zone 1	SGUH	
BAM	1506357682	Room Temp ENT-026	Good morning,My manager, Janis Hughes, has asked that I log a call in relation to the room temper	Issued	G405H \ IB \ 01 \ OPZ31	Queen Elizabeth University Hospital Glasgow \ Office Block \ Floor 1 \ Open Plan Zone 3 Area 1		30/06/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Admin Block Level 1 Zone 3 SGUH	Admin Block Level 1 Zone 3	SGUH	
BAM	1507357945	Pod Door not hung correctly - coming off the bottom runner	Office Block, Zone 2, (Consultant Office 0.13)	Issued	G405H \ IB \ 00 \ OPZ21	SOUTHERN GEN HOSPITAL \ Admin Block \ Ground Floor \ Open Plan Zone 2 Area 1		01/07/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Cathy Crooks			[redacted]
BAM	1507359068	Controlled Entry Door, Office Zone.01, Ground Floor not closing securely	Security risk as can walk straight through this door without using your I.D. badge	Issued	G405H \ IB \ 00 \ OPZ21	SOUTHERN GEN HOSPITAL \ Admin Block \ Ground Floor \ Open Plan Zone 2 Area 1		03/07/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Cathy Crooks			[redacted]
BAM	1507359069	Controlled Entry Door, Office Zone.01, Ground Floor not closing securely		Issued	G405H \ IB \ 00 \ OPZ21	SOUTHERN GEN HOSPITAL \ Admin Block \ Ground Floor \ Open Plan Zone 2 Area 1		03/07/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Cathy Crooks			[redacted]
BAM	1507363838	Room Temperature	Good morning,I logged an issue some time ago and no one has been out to visit the area. The temp	Issued	G405H \ IB \ 01 \ OPZ31	Queen Elizabeth University Hospital Glasgow \ Office Block \ Floor 1 \ Open Plan Zone 3 Area 1		14/07/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Lauren McKinnon			[redacted]
BAM	1507364847	secure door not closing	secure door A1 RAF090doesnt close and lock	Issued	G405H \ IB \ 02 \ OPZ11	Queen Elizabeth University Hospital Glasgow \ Office Block \ Floor 2 \ Open Plan Zone 1 Area 1	AA00	16/07/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################	Sterile Products	lauren lamont			[redacted]
BAM	1507365995	grab rail off wall in changing cubicle RAG039	grab rail needs put back on wall of cubicle	Issued	G405H \ IB \ 02 \ OPZ11	SOUTHERN GEN HOSPITAL \ Admin Block \ Floor 2 \ Open Plan Zone 1 Area 1		20/07/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Irene Anderson			
BAM	1507366732	ct plant room too hot 28 deg air extraction problem raf 078	ct plant room too hot 28 deg air extraction problem raf 078	Issued	G405H \ IB \ 02 \ OPZ11	Queen Elizabeth University Hospital Glasgow \ Office Block \ Floor 2 \ Open Plan Zone 1 Area 1		21/07/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		neil mitchell			[redacted]
BAM	1507368161	NOISE ABOVE CEILING	There is a loud vibration above the ceiling of room A 1 OPD1-026, in the Ophthalmic Outpatient Dep	Issued	G405H \ IB \ 02 \ OPZ11	Queen Elizabeth University Hospital Glasgow \ Office Block \ Floor 2 \ Open Plan Zone 1 Area 1		24/07/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		T Beach			
BAM	1508372398	HEATING TOO HOT	HEATING TOO HOT IN LEVEL 2 ZONE 1	Issued	G405H \ IB \ 02 \ OPZ11	Queen Elizabeth University Hospital Glasgow \ Office Block \ Floor 2 \ Open Plan Zone 1 Area 1		04/08/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		DAVID KEATING			[redacted]
BAM	1508373327	Temperature Issue	Room L3-034 Temperature is too high in this area, can the set point be lowered by 5 degrees.	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		06/08/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		John Harris			[redacted]
BAM	1508374613	SMS Faulty Controlled Entry	SMS, on level three of the Teaching & Learning Centre, have a faulty controlled entry door. The ma	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		11/08/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		John Harris			[redacted]
BAM	1508375156	Door hinges & ceiling tiles	In the library on level one the following items require fixing:L1-028 cupboard door is off its hingesL:	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		12/08/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		John Harris			[redacted]
BAM	1508375158	Heating in Library	The heating in L1-024 Library of the Teaching & Learning Centre does not seem to be working corre	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		12/08/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		John Harris			[redacted]
BAM	1508375245	self closing mechanism on fire door broken - screw fallen out	fire door between office zone 1.03 and Office Zone 1.02 at located next to print hub 1.02 - weightec	Issued	G405H \ IB \ 01 \ OPZ31	Queen Elizabeth University Hospital Glasgow \ Office Block \ Floor 1 \ Open Plan Zone 3 Area 1		12/08/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Admin Block Level 1 Zone 3 SGUH	Admin Block Level 1 Zone 3	SGUH	
BAM	1508375463	Fire Door inoperable	Fire Door/emergency exit on ground floor bottom of stairs at auditorium near plantroom is not clos	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		12/08/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		John Harris			[redacted]
BAM	1508375677	Temperature control locked	Temperature in office block is uncomfortably hot . 33 degrees ? WE cannot adjust the temperature	Issued	G405H \ IB \ 02 \ OPZ11	Queen Elizabeth University Hospital Glasgow \ Office Block \ Floor 2 \ Open Plan Zone 1 Area 1		13/08/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Admin Block Level 2 Zone 1 SGUH	Admin Block Level 2 Zone 1	SGUH	
BAM	1508376852	air con temp fluctuating	level 2 - zone 2 area temp fluctuating and not stable	Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		17/08/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		christine siebelt			[redacted]
BAM	1508378049	Social Work Office 1st Floor Admin Block Link Corridor	Social Work Office 1st Floor Admin Block Link Corridor - The door in this area is not working in is cor	Issued	G405H \ IB \ 01 \ OPZ11	Queen Elizabeth University Hospital Glasgow \ Office Block \ Floor 1 \ Open Plan Zone 1 Area 1		19/08/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		T Gallagher			
BAM	1508378798	fire door broken	Floor 1, zone 1, fire door at bottom of corridor. closing mechanism is broken an fire door is perman	Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		20/08/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		christine siebelt			[redacted]
BAM	1508379144	LINK BRIDGE SWIPE	The swipe coming from the main hospital to the Teaching and Learning Centre and the Office Block	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		21/08/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		John Harris			[redacted]
BAM	1508380769	URGENT AIR HANDLING ISSUE	Air handling units need to be on 24/7 both the third floor and the first floor of the Teaching & Learn	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		26/08/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		John Harris			[redacted]
BAM	1509383912	Urgent Health & Safety Issue Fire Curtain	The fire curtain on the 3rd floor of the Teaching & Learning Centre has slipped over the weekend ar	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		02/09/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		John Harris			[redacted]
BAM	1509384397	Link Bridge Swipe Inoperable	The link bridge swipe between the main hospital and the Teaching & Learning Centre and the Admi	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		03/09/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		John Harris			[redacted]
BAM	1509386797	ELECTRICAL POWER FAULTS	FLOOR SOCKET FAULT NO POWER AS METAL COPEX IS TOO SHORT TO REACH BUSBAR TO BE PLUGG	Issued	G405H \ IA \ 01 \ 032	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Floor 1 \ Library Staf		10/09/2015 00:00	A0	ESTMAN CAT A GENERAL	N	Z	Not Known	################################	TEACHING AND LEARNING	D HOPKINS			
BAM	1509386889	banging/tapping coming from damper in duct	faulty damper?? banging tapping coming from damper/duct as you enter zone 3 on the 1st floor. du	Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		10/09/2015 00:00	A0	ESTMAN CAT A GENERAL	Y	Z	Not Known	################################		christine siebelt			
BAM	1509387344	Lighting issue ground floor Teaching and Learning	Issue with the lights on the ground floor of the teaching learning cente. In 4 of the rooms the lights	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		11/09/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Harris			[redacted]
BAM	1509387345	Lighting issue ground floor Teaching and Learning	Issue with the lights on the ground floor of the teaching learning cente. In 4 of the rooms the lights	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		11/09/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Harris			[redacted]
BAM	1509387921	Noise in Library from AC	The air cooling system in room L1-026 which is situated in the library on the first floor of the Teachi	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		14/09/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		ohn Harris			[redacted]
BAM	1509388322	Re- reporting issue which is not completed	Ticket number 1509384727 which reported an issue with the air cooling system making a lot of nois	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		15/09/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		John Harris			[redacted]
BAM	1509388515	air conditioning problems	temperature jumping from 20 - 24 and fan running constant high	Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		15/09/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		christine siebelt			[redacted]
BAM	1509388519	air conditioning problems	level 0, zone 2 - temperature far too warm, resetting itself from 20 - 24all occupants complaining of	Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		15/09/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		christine siebelt			[redacted]
BAM	1509388529	air con problems	ground floor, zone 3 - air conditioning too warm and re-setting itselfoccupants complaining	Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		15/09/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		christine siebelt			[redacted]
BAM	1509388532	noise	1st floor - zone 3 - " intermittent noise from above consultants desks C1.12	Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		15/09/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		christine siebelt			[redacted]
BAM	1509388708	level 2, zone 2 - seat 78 - air con fan making a noise		Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		15/09/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		christine siebelt			[redacted]
BAM	1509388976	Eye Wash Station Inoperable	One of the eye wash stations on the third floor SMS of the Teaching & Learning Centre is not workir	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		16/09/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Audrey Jones			[redacted]
BAM	1509389132	Air Condition ing Problem (not regulating)	Child Protection / Office Block Elaine Archibald. Zone 3 area c Ground of Office block. Air condition	Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		16/09/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Christine Siebert			[redacted]
BAM	1509389224	Foul smells	Plumber has checked various areas within ground floor area of TLF regarding drain smells. On invest	Issued	G405H \ IA \ 00 \ 025	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Circul		16/09/2015 00:00	A0	ESTMAN CAT A GENERAL	Y	Z	Not Known	################################		CYRIL DOWSON	CYRIL	DOWSON	[redacted]
BAM	1509389291	level2 - zone 3 - pdru doors to be adjusted or rehung after damage in trans		Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		16/09/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		christine siebelt			[redacted]
BAM	1509390533	air conditioning problems	ground floor, zones are apparently resetting themselves and swinging between 35 and 24.thanks	Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		21/09/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		ristine siebelt			[redacted]
BAM	1509390536	air conditioning problems	ground floor, zones are apparently resetting themselves and swinging between 35 and 24.thanks	Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		21/09/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		ristine siebelt			[redacted]
BAM	1509390726	Air conditioning	URGENT REQUEST FOR SOMEONE TO COME AND CHECK AIR CONDITIONING UNITS IN ADMIN BLOC	Issued	G405H \ IB \ 02 \ OPZ21	Queen Elizabeth University Hospital Glasgow \ Office Block \ Floor 2 \ Open Plan Zone 2 Area 1		21/09/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Sharon dempsey			[redacted]
BAM	1509392762	URGENT CEILING LEAK	We have a leak coming through the ceiling in the main atrium. Can this please be treated as urgent	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		24/09/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		John Harris			[redacted]
BAM	1509393147	SINK ISSUE IN SMS	One of the sinks in not draining properly in SMS on the third floor of the Teaching & Learning Centr	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		25/09/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		John Harris			[redacted]
BAM	1509394445	room temp too hot	Room l2-007 seems to have a fault with the air cooling system. students and teachers are complain	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		30/09/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		John Harris			[redacted]
BAM	1509394530	Plumbing issue	Location of fault: Level 1 Teaching Lab. Two eye wash stations don't have a water supply running to	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		30/09/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		John Harris			[redacted]
BAM	1510395400	Motion Sensor in Printer room broke	Anna Toner - 86008 reported Motion Sensor broke in Printer Room OPen space 2, level 1, Zone 2 -	Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		02/10/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Nancy/Christine Seibert			[redacted]
BAM	1510396488	Chilled water leak	2nd floor outside toilets at lift lobby.Chilled water pipe leaking above ceiling.Has damaged light fitti	Issued	G405H \ GA \ L0 \ B034	Queen Elizabeth University Hospital Glasgow \ Laboratory Medicine \ Ground Floor \ Estates Office		06/10/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################	Teaching & Learning Centre	Colin Purdon	Colin	Purdon	
BAM	1510396849	problem not fixed - see email below from j brannan	Hi ChristineSeveral weeks ago you very kindly got estates to come up to level 1, zone 3 to see abou	Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		07/10/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		christine siebelt			[redacted]
BAM	1510397466	air con issues - ground floor - ground floor, zone 2/3	Morning ChristineI am in the Office Block (see below for exact location) and the air conditioning has	Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		08/10/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		christine siebelt			[redacted]
BAM	1510397698	air con problems	Sorry to keep going on about the air con, but I was wondering if any decision had been made yet re	Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		09/10/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		christine siebelt			[redacted]
BAM	1510399370	broken lock	level 2, zone 3, furthest away cubicle burst lock.	Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		14/10/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################	Office block	christine siebelt			[redacted]
BAM	1510399756	Air conditioner blowing freezing cold air in the T&L Centre	Air conditioner blowing freezing cold air in the T&L Centre in the Main Lecture Thearte	Issued	G405H \ IA \ 00 \ 007b	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Teach		15/10/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################	T&L Centre, Main Lecture Thearte	Helpdesk			
BAM	1510400107	air con issues	level 2 zone 1 - down at desks 104 area - air con too hot	Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		16/10/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		christine siebelt			[redacted]
BAM	1510401220	Light Staying on in the Lab	The lights are not switching off in the Laboratory on the first floor of the Teaching & Learning Centr	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		20/10/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Audrey Jones			[redacted]
BAM	1510401248	door hinge broken	ground floor / zone 2 / seat 2/5 - cupboard door hinge broken, door falling forward	Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		20/10/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		christine siebelt			[redacted]
BAM	1510401313	Fire Safety Door to Lecture Theatre	The inner fire safety door to the Lecture Theatre on the ground floor of the Teaching & Learning cer	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		20/10/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Audrey Jones			[redacted]
BAM	1510401552	stair strip	centre staircase level 2 - stair strip came off - suggest that BAM are recalled to screw it down rather	Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		20/10/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		christine siebelt			[redacted]
BAM	1510401607	Risen floor or door dropped SMS	On the third floor of the Teaching & Learning Centre at SMS when you enter the department at the	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		21/10/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Audrey Jones			[redacted]
BAM	1510401753	Noise from AC Clinical Skills	We have a very noisy AC unit in the Clinical Skills on the first floor of the Teaching & Learning Centr	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		21/10/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Audrey Jones			[redacted]
BAM	1510404959	no lights	ground floor - zone 1 - no lights in op1 and consultant pod lighting sporadic	Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		28/10/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		christine siebelt			[redacted]
BAM	1510405261	broken security door	Level: GroundZone: 2/1Fault: Security entrance door into zone from main atrium is not working. C	Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		28/10/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		christine siebelt			[redacted]
BAM	1510405265	door seal come away from door	level 1 - pring hub 102 - seal broken away from the door	Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		28/10/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		christine siebelt			[redacted]
BAM	1511407050	Air Con Coming In Waves	The air con is making wave like noises in room L1-001,L1-030 and L1-026 in the library on the first fl	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		03/11/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Audrey Jones			[redacted]
BAM	1511408243	Light in Clinical Skills	The light in the Clinical Skills department in the sim man store cupboard, keeps switching itself off. (	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		05/11/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Audrey Jones			[redacted]
BAM	1511410188	Air Cooling System Noisy Library	The air cooling system in the Library in most of the rooms, is very, very noisy and is coming in waves	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		10/11/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Audrey Jones			[redacted]
BAM	1511410416	Leak in the roof	We have a leak in the roof above SMS on the third floor of the Teaching & Learning Centre	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		10/11/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Audrey Jones			[redacted]
BAM	1511413270	Street Lighting Fault	Street lighting at the front of the TLC is non operational. Power distribution has been checked by lo	Issued	G405H \ IA \ 00 \ 013	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Plant		17/11/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################	Teaching & Learning Centre	C.Purdon			
BAM	1511413560	Level 2 Zone 3	Faulty taps at kitchen sink in Office Block Level 2 Zone 3.Tap sticks in ON position and vibrates. Repo	Issued	G405H \ IB \ 02 \ OPZ32	Queen Elizabeth University Hospital Glasgow \ Office Block \ Floor 2 \ Open Plan Zone 3 Area 2		17/11/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################	Office Block	C.Purdon			
BAM	1511414710	Projection Room over heating (URGENT)	The projection room at the rear of the lecture theatre in the Teaching & Learning Centre is overheat	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		20/11/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################	Teaching & Learning Centre	John Harris			[redacted]
BAM	1511414761	air con issues	2nd floor zone 2 - oppresive heat?	Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		20/11/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################	Office Block	christine siebelt			[redacted]
BAM	1511414762	air con issues	level 2 - zone 1 - temperature too high	Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		20/11/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################	Office Block	christine siebelt			[redacted]
BAM	1511414764	air con issues	level 2 - zone 2 - too hot	Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		20/11/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################	Office Block	christine siebelt			[redacted]
BAM	1511414768	air con issues	level 2, zone 1 - cold and draughty	Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		20/11/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################	Office Block	christine siebelt			[redacted]
BAM	1511417067	Noise from AC in room L2005	The noise from the AC in room L2005 on the second floor of the Teaching & Learning Centre is such	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		25/11/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################	Teaching & Learning Centre	Audrey Jones			[redacted]
BAM	1511417108	Noise in various rooms	The AC in room L0-007B and C on the ground floor, second floor rooms L2005 and L2008 is now exc	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		25/11/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################	Teaching & Learning Centre	Audrey Jones			[redacted]
BAM	1511417109	Noise in various rooms	The AC in room L0-007B and C on the ground floor, second floor rooms L2005 and L2008 is now exc	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		25/11/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################	Teaching & Learning Centre	Audrey Jones			[redacted]
BAM	1511417855	Bed broken	Bed broken in room 9. W-19. (Electrics??)	Issued	G405H \ BC \ 4 \ GN	Queen Elizabeth University Hospital Glasgow \ Neuro Surgical (INS) \ 4 th floor \ GENERAL		27/11/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Edi Addison			[redacted]
BAM	1511418689	outstanding problems	1510405261 - outstanding since 28th October - door to zone broken - security hazard1510401552 -	Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		30/11/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################	Office Block	christine siebelt			[redacted]
BAM	1512418897	Faulty bed	Carroll Montcalm Hi/Lo bed not raising. (Room 3, bed 2) L0/19.	Issued	G405H \ DE \ 0 \ GN	Queen Elizabeth University Hospital Glasgow \ PDRU \ Ground Floor \ General		01/12/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Julie Dyce			[redacted]
BAM	1512419021	Excessive AC noise in all library room	The AC in the library rooms on the first floor is now excessive and is making it hard to hear in the ro	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		01/12/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################	Teaching & Learning Centre	Audrey Jones			[redacted]
BAM	1512419267	No heating in office	Paediatric Neurosurgical Office on the second floor Institute of Neurological Sciences has no heatin	Issued	G405H \ BC \ 6 \ GN	Queen Elizabeth University Hospital Glasgow \ Neuro Surgical (INS) \ 6 th floor \ GENERAL		01/12/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		SGH NEUROSURGERY ADMIN 6TH FLOOR			
BAM	1512421112	NO HEATING, VENTS BLOWING COLD AIR	NO HEATING, VENTS BLOWING COLD AIR	Issued	G405H \ IB \ 01 \ OPZ11	Queen Elizabeth University Hospital Glasgow \ Office Block \ Floor 1 \ Open Plan Zone 1 Area 1		07/12/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################	SOCIAL WORK OFFICE BLOCK LVL 1	ANNE			[redacted]
BAM	1512421428	WATER COMING IN FROM ROOF	PREVIOUS JOB NO 1511412949PLEASE SEE CHRISTINE ON ARRIVAL	Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		07/12/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################	Office Block	CHRISTINE SIEBELT			[redacted]
BAM	1512421472	Roof Flashing has come off	Roof flashing on glass atrium roof has come off in the wind over the weekend of 5th 6th Dec.Flashi	Issued	G405H \ IA \ 04 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Floor 4 \ Plant (Exter		08/12/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################	Teaching & Learning Centre	Colin Purdon			
BAM	1512421929	Office Block	PV Panels. Both inverter control panels on roof at open plant area are showing fault condition.	Issued	G405H \ IB \ 02 \ 12	Queen Elizabeth University Hospital Glasgow \ Office Block \ Floor 2 \ Node Room		08/12/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################	Office Block Roof	Colin Purdon			
BAM	1512425377	Heating in Library Reading 17 degrees	The heating in the library in the first floor of the Teaching & Learning Centre is reading 17 degrees a	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		15/12/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################	Teaching & Learning	John Harris			[redacted]
BAM	1512425644	L1-030 Air Velocity	The air conditioning velocity in Room L1-030 is again blowing air very strongly into this room. The is	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		16/12/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################	Teaching & Learning Centre	Audrey Jones			[redacted]
BAM	1512426888	Ceiling Leak 3rd ~Floor	We have a leak in the ceiling in the south west stairwell next to SMS on the third floor of the Teachi	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		18/12/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################		John Harris			[redacted]
BAM	1512427910	Water coming in window	There is water coming in the window in the Study Room on the first floor of the Teaching & Learnin	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		22/12/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################		Audrey Jones			[redacted]
BAM	1512429640	leaking roof	Level 2, zone 3, Consultant Hub C0.2.08 - puddle on desk this morning. This is an ongoing issue - BA	Issued	G405H \ IB \ 00 \ GN	Queen Elizabeth University Hospital Glasgow \ Office Block \ Ground Floor \ Main Lobby		29/12/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################		christine siebelt			[redacted]
BAM	1601434551	plumber	URGENT-: leak at the sluice door,was reported 12/1/16	Issued	G405H \ BC \ 4 \ GN	Queen Elizabeth University Hospital Glasgow \ Neuro Surgical (INS) \ 4 th floor \ GENERAL		13/01/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################		jean mcgrillen			[redacted]
BAM	1601437204	Roof Leak	SMS level 3Roof leaks evident on ceiling tiles.	Issued	G405H \ IA \ 03 \ 034	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Floor 3 \ Reception		19/01/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################	Teaching & Learning Centre	Colin Purdon			
BAM	1601437621	AC Blowing Cold Air and Room Cold	Room L2-027 on the second floor of the Teaching & Learning Centre, the AC is blowing cold air and	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		20/01/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################	Teaching & Learning Centre	Audrey Jones			[redacted]
BAM	1601438103	Temp below NHSGGC Guidelines	The temperature in the Open Office on Level 2 of the Teaching & Learning Centre is below 17 degre	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		21/01/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################	Teaching & Learning Centre	Audrey Jones			[redacted]
BAM	1601439651	leak in gents toilet	water leak in ground floor gents toilet middle cubicle NEW OFFICE BLOCK BACK ENTRANCE TO NEU	Issued	G405H \ AE \ 0 \ GN	Queen Elizabeth University Hospital Glasgow \ Management building \ Ground Floor \ General		25/01/2016 00:00	SP	SAFE PATIENT AUDIT	Y	Z		################################		domestic supervisor maternity			
BAM	1601439686	Water damaged tiles	We have water damaged tiles in the following areas:3rd Floor stairwell at door to solar panels, 2 tile	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		26/01/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################	Teaching & Learning Centre	Audrey Jones			[redacted]
BAM	1601439688	Water Ingress SMS 3rd Floor	We have water ingress (still) on the 3rd floor of the Teaching & Learning Centre, SMS. This is in roc	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		26/01/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################		Audrey Jones			[redacted]
BAM	1601439744	Leak in Library	In the library on the first floor of the Teaching & Learning Centre we have a leak again in the ceiling	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		26/01/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################		Audrey Jones			[redacted]
BAM	1601439791	Cracks in Ceiling leaking badly	Office Block 1st Floor door marked Social Work Department department do not know their room n	Issued	G405H \ IB \ 01 \ 13	Queen Elizabeth University Hospital Glasgow \ Office Block \ Floor 1 \ Consultant Cellular Office		26/01/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################	Office Block 1st Floor Social Work Department	Helpdesk			[redacted]
BAM	1601440429	Access Controlled Door Inoperable	Our access controlled door at the front of the building at the Teaching & Learning Centre is not wor	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		27/01/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################	Teaching & Learning Centre	Audrey Jones			[redacted]
BAM	1601441374	Heating below NHSGGC Guidelines	The heating in the library is 16 degrees. People are sitting with hats and scarfs on.	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		28/01/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################	Teaching & Learning Centre	Audrey Jones			[redacted]
BAM	1601441739	Leak In Ceiling	We have a bad leak in the ceiling on the third floor of the Teaching & Learning Centre in room L3-02	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		29/01/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################	Teaching & Learning Centre	Audrey Jones			[redacted]
BAM	1602442797	Leak in the Library	We have a leak at floor/window join in L1-028. Which is in the library on the first floor of the Teachi	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		01/02/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################	Teaching & Learning Centre	Audrey Jones			[redacted]
BAM	1602442878	Loud Rattling Noise and Vibration in wall/ceiling	Please fix loud and annoying rattling/vibration in the wall/ceiling area between rooms A1 OPD1-026	Issued	G405H \ IB \ 02 \ OPZ11	Queen Elizabeth University Hospital Glasgow \ Office Block \ Floor 2 \ Open Plan Zone 1 Area 1		01/02/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################	Office Block	A Beach			[redacted]
BAM	1602443043	Fault with our Fire Alarm System (previously reported)	I reported this fault on the 11 January 2016 ticket number 1601433482. As below. Ticket was canc	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		02/02/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################	Teaching & Learning Centre	Audrey Jones			[redacted]
BAM	1602443371	Light fitting off again.	The fire escape on the third floor of the Teaching and Learning Centre at the side of the building ha	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		02/02/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################	Teaching & Learning Centre	Audrey Jones			[redacted]
BAM	1602443374	Ladies toilet tap broken	The ladies toilet on the 2nd floor of the Teaching & learning Centre has a broken tap (third sink).	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		02/02/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################	Teaching & Learning Centre	Audrey Jones			[redacted]
BAM	1602444455	Issues to be referred back to BAM	The following are issues which have to be referred back to BAM for the Teaching & Learning Centre	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		05/02/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################		Audrey Jones			[redacted]
BAM	1602445284	Front Door not closing properly	I have previously reported the front access door of the Teaching & Learning Centre as not work und	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		08/02/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################	Teaching & Learning	Audrey Jones			[redacted]
BAM	1602445290	Break Glass Faulty Third Floor	On the third floor of the Teaching and Learning Centre the break glass for emergency exit is inopera	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		08/02/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################		Audrey Jones			[redacted]
BAM	1602445678	Projector Inoperable	The projector wobbles when the air conditioning is on in room L2-027 ICT on the second floor of the	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		09/02/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################		Audrey Jones			[redacted]
BAM	1602445890	Light on Link Bridge Inoperable	One of the verticle lights on the link bridge between the Teaching & Learning Centre and the Office	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		09/02/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################		Audrey Jones			[redacted]
BAM	1602445891	Heating in Library in Teaching & Learning Centre	The temperature in room L1-025 is sitting at 16 degrees with 3 people occupying it this morning. Fo	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		09/02/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################		Audrey Jones			[redacted]
BAM	1602445908	Heating Issues in Aroma Coffee Shop	We have had several complaints today regarding the heating (as it is very cold) in the Aroma Coffee	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		09/02/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################	Teaching & Learning	Audrey Jones			[redacted]
BAM	1602446136	Cold air leaking from doors in D1.23.1 and D1.23.2	Cold air leaking from doors in D1.23.1 and D1.23.2Duct is open to HV room below on ground floor.N	Issued	G405H \ IA \ 01 \ 023	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Floor 1 \ Learning Re		10/02/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################	Teaching & Learning Centre	Colin Purdon			
BAM	1602446718	VERY COLD IN KITCHEN AT AROMA CAFE	Tracy (81207) at Aroma Cafe, TLC has reported that the kitchen temperature is very low.	Issued	G405H \ IA \ 00 \ 009	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Cafe A		11/02/2016 00:00	D0	ESTMAN CAT D GENERAL	Y	Z		################################	Teaching & Learning				
BAM	1602447771	Heating below Health & Safety Guidelines (Priority)	Two of the rooms in the Teaching & Learning Centre are sitting at below the Health & Safety Guidel	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		15/02/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################	Teaching & Learning	Audrey Jones			[redacted]
BAM	1602447912	Cold in Clinical Skills	The AC is blowing cold air in the clinical skills on the first floor of the Teaching & Learning Centre	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		15/02/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################	Teaching & Learning	Audrey Jones			[redacted]
BAM	1602448104	Heating in Library 15 degrees	The temperature in room L1-025 which is in the library on the first floor of the Teaching & Learning	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		16/02/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################	Teaching & Learning	Audrey Jones			[redacted]
BAM	1602448561	PV Panels on roof	PV panels have been moved around by the recent strong winds.One of the PV panels is now buckle	Issued	G405H \ IB \ 02 \ OPZ31	Queen Elizabeth University Hospital Glasgow \ Office Block \ Floor 2 \ Open Plan Zone 3 Area 1		16/02/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################	Office Block	Colin Purdon			
BAM	1602449484	Metal Facing from Revolving Door fallen off	A metal facing from the revolving front door at the Teaching & Learning Centre has fallen off	Issued	G405H \ IA \ 00 \ 002	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Recep		18/02/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################		Audrey Jones			[redacted]
BAM	1603459742	VAC Plant pump No4 winding are short circuit between phases	VAC Plant pump No4 winding are short circuit between phases in QEUH, Plant Room 31, VAC Plant	Issued	G405H \ HA \ 03 \ FM3/051	Queen Elizabeth University Hospital Glasgow \ Adult Hospital \ Floor 3 \ FM FACILITIES - FM Support		10/03/2016 00:00	A0	ESTMAN CAT A GENERAL	Y	Z	Not Known	################################	QEUH, Plant Room 31, VAC Plant				
BAM	1603464821	leak - office block level 2 zone 2	Water dripping on desks, computers and telephones from the office ceiling around desks 2/1/op/:	Issued	G405H \ IB \ 02 \ OPZ31	Queen Elizabeth University Hospital Glasgow \ Office Block \ Floor 2 \ Open Plan Zone 3 Area 1		24/03/2016 00:00	C0	ESTMAN CAT C GENERAL	Y	Z		################################		Admin Block Level 2 Zone 3 SGUH	Admin Block Level 2 Zone 3	SGUH	
BAM	1505336380	Temperature Control	Temperature in Office 108 on first floor at Ophthalmology Out Patient Clinic is unbearably hot and c	WIP	G405H \ IB \ 02 \ OPZ11	Queen Elizabeth University Hospital Glasgow \ Office Block \ Floor 2 \ Open Plan Zone 1 Area 1		08/05/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Tony Beach			[redacted]
BAM	1511413242	Street lighting faults	Street lighting at the front of the TLC is non operational. Power distribution has been checked by lo	Completed	G405H \ IA \ 00 \ 013	Queen Elizabeth University Hospital Glasgow \ Teaching and Learning Centre \ Ground floor \ Plant		17/11/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################	Teaching & Learning Centre Street lights	C. Purdon			
BAM	1504332954	test ticket #3	testing new SGUHNote added by Eugene Smyth (03/06/2015 10:39:41)here is BAM -	Cancelled	G405H \ HA \ 02 \ MP/002	Queen Elizabeth University Hospital Glasgow \ Adult Hospital \ Floor 2 \ MEDICAL PHYSICS - Recepti		29/04/2015 00:00	C0	ESTMAN CAT C GENERAL	Y	Z	Not Known	################################		Gail Bradbury			



From: Ciaran J. Kellegher [redacted] on behalf of Ciaran J. Kellegher
Sent: 27 May 2015 18:26
To: Colin Grindlay; Chris Shearer
Cc: David Wilson
Subject: RE: Labs Flushing - LTHW Connection to Energy Centre

Colin

I take it you are talking about the INS building??

I still think its crazy to connect into a 40year old system?.htg or domestic.

Can we look at it on Tuesday morning first thing?

Ciaran

Ciaran Kellegher
Regional Operations Director

Mercury Engineering & Building Services
Mercury House, Pavilion 3
Finnestown Business Park
Minerva Way, Glasgow
G3 8AU

[redacted]

From: Colin Grindlay [redacted]
Sent: 27 May 2015 15:11
To: 'Chris Shearer'; Ciaran J. Kellegher
Cc: David Wilson
Subject: FW: Labs Flushing - LTHW Connection to Energy Centre
Importance: High

Chirs / Ciaran,

Wouldn?t mind your expertise on this!

I am thinking:

- inline dosing set for chemical treatment in bolierhouse
- inline D&A separator with demountable bottom for filter cleaning.
- Auto Degassers system

Can you look at some rough costings with labour and materials.

I am thinking checking every week for 10 weeks????

Colin Grindlay
M&E Manager - Construction

Brookfield Multiplex Europe
New South Glasgow Hospitals Project
Hardgate Road
Glasgow, G51 4SX, United Kingdom
[redacted]
W www.brookfieldmultiplex.com

Please consider the environment before printing this email.

From: Colin Grindlay
Sent: 27 May 2015 15:08
To: 'McFadden, Jim'
Cc: Powrie, Ian; David Wilson
Subject: RE: Labs Flushing - LTHW Connection to Energy Centre

Jim,

Happy to discuss as noted below. I am free tomorrow late afternoon or Friday morning of this week.

As it stands contractually, BMCE are down to connect into the INS heating and domestic infrastructure once NHS have witnessed our side is clean, treated and acceptable.. No allowance within the contract has a scope of works either to test, chemically treat or improve the water quality within the INS existing wet system. These works would be the sole responsibility of the NHS.

We have a shared interest to ensure the new installation is not determinately affected by the 40+ year old system and therefore would be best to commence some remedial works to assist in the future.

As a starting point, see attached spirocombi dirt & air separator brochure for information. I would recommend the demountable options for easy filter cleaning.

Please let me know when you are free to chat.

Regards,

Colin Grindlay
M&E Manager - Construction

Brookfield Multiplex Europe
New South Glasgow Hospitals Project
Hardgate Road
Glasgow, G51 4SX, United Kingdom
[redacted]
W www.brookfieldmultiplex.com

Please consider the environment before printing this email.

From: McFadden, Jim [redacted]
Sent: 27 May 2015 14:49
To: Colin Grindlay
Cc: Powrie, Ian; David Wilson
Subject: RE: Labs Flushing - LTHW Connection to Energy Centre

Colin

Having picked up on the correspondence I have requested samples of water from the INS to be checked.

There are certain requirements within INS that would be more than beneficial given the present arrangement or lack of within INS.

I would have to recommend Brookfield install a dirt seperator as standard and a deaerator or a combination of both as part of the project.

I would expect the present system will no doubt be high in particulate and any air/air bubble removal will improve the present situation in terms of air entrapment/locking.

The present circuits are 40+year old.

Happy to discuss.

Regards

Jim

From: McFadden, Jim
Sent: 18 May 2015 10:57
To: Powrie, Ian
Subject: RE: Labs Flushing - LTHW Connection to Energy Centre

Ian

Ok with this.

Has H&V been employed for the Lab works.??

regards

jim

From: Powrie, Ian
Sent: 12 May 2015 07:35
To: McFadden, Jim
Subject: FW: Labs Flushing - LTHW Connection to Energy Centre

Hi Jim,

Hope you had a good Holiday.
Please see e-mail from Colin (Brookfield) below, can you please have samples taken of the LTHW within the INS and advise on the condition of its condition in ahead of the proposed interface to the EC? And establish if there is any remedial flushing and dosing required before this interface.

Regards

ian

From: Colin Grindlay [redacted]
Sent: 07 May 2015 09:34
To: Powrie, Ian
Cc:
Subject: Labs Flushing - LTHW Connection to Energy Centre

Ian,

As discussed last week, we have taken the labs flushing as far as our instruction allows.

We would advise the NHS employing H&V direct to back flush and clean all the strainers within the labs building to ensure the system extremities are clean and all block valves are cleared.

It may also be worthwhile to get samples taken off of the INS Building which we are due to tie into later on this year.

If you have any issues with the above, please let me know.

Regards,

Colin Grindlay
M&E Manager - Construction

Brookfield Multiplex Europe
New South Glasgow Hospitals Project
Hardgate Road
Glasgow, G51 4SX, United Kingdom
[redacted]
W www.brookfieldmultiplex.com

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From: Redfern, Jamie
Sent: 05 June 2015 12:35
To: Gibson, Brenda
Subject: Re: Hepa filtration

Yes no problem
No decision would be taken without your okay and input

Sent from my Samsung device

-------- Original message --------
From: "Gibson, Brenda" [redacted]
Date: 05/06/2015 12:28 PM (GMT+00:00)
To: "Redfern, Jamie" [redacted]
Subject: RE: Hepa filtration

TOO BUSY TO REPLY PROPERLY. DO NOT CHANGE MIGRATION PLAN UNTIL WE ALL TALK.

Brenda

From: Redfern, Jamie
Sent: 05 June 2015 12:26
To: Gibson, Brenda
Cc: Williams, Craig; Robertson, Lynne; Beattie, Jim; Dawes, Heather; Powrie, Ian
Subject: Hepa filtration

Hi Brenda
I just spoke to CW and he has noted
1. Hepafiltration should be functional by early next week in nch
2. As a result of works to do pt 1 and associated testing we will prob need to alter migration plan to later in the week.
As a result of this there should be no risk to the transplant case scheduled later in month.
I've ccd CW into email and he can confirm if accurate.
We can shortly agree how we take forward pt2 and what this means for us and any other clinical services.
Jamie

Sent from my Samsung device

From: Powrie, Ian [redacted] on behalf of Powrie, Ian
Sent: 07 June 2015 21:10
To: Colin Grindlay
Subject: Re: Building issues impacting migration

Colin

I did not mention the PTS as I had Swisslog engineer on site working on it and I did not expect it to take the time that it took? The concern over this is the loss of power creating the issue in the first place and it recurrence.

I did check Zutec, contacted the provider and confirmed you statement that there would be no cover available on a Saturday. It was not the valve that was intimated as being faulty but the jockey pump, and I acknowledged that this probably the first ether of us had been made aware of this.

You assistance in securing early response from Viking in the morning would be appreciated.

Regards

Ian

I.Powrie
Sector Estates Manager (NSGH)
Project Team, New South Glasgow Hospitals,
Southern General Hospitals Construction Site,
2nd Floor, Modular Building, Off Hardgate Road, Glasgow,G51 4SX
[redacted]

On 7 Jun 2015, at 18:53, Colin Grindlay [redacted] wrote:

> Ian,
>
> The PTS issues were not mentioned in our discussions yesterday or this morning.
>
> With regards to the helipad issue you advised you were going to check zutec for contacts details and get back to me. You did note the valve had not been operational for some months and this was the first BMCE had been notified.
>
> If you want to discuss this further please feel free to phone me and I'll do my best to assist.
>
> Regards,
>
> Colin

From: Powrie, Ian [redacted]
Sent: Sunday, June 07, 2015 06:18 PM GMT Standard Time
To: Alasdair Fernie
Cc: Loudon, David [redacted]; Kane, Mary Anne

[redacted]uk>; Hunter, William [redacted]; Ed H. McIntyre [redacted]; Colin Grindlay; David Wilson
Subject: RE: Building issues impacting migration

Alasdair,

Spoke to Colin Grindlay about 10:30am.

Regards

Ian

[redacted]
Ian Powrie,
Sector Estates Manager,
South Glasgow Hospitals Campus,
1345 Govan Rd,
Glasgow,
G51 4TF,

[redacted]

From: Alasdair Fernie [redacted]
Sent: 07 June 2015 17:34
To: Powrie, Ian
Cc: Loudon, David; Kane, Mary Anne; Hunter, William; Ed H. McIntyre; Colin Grindlay; David Wilson
Subject: Re: Building issues impacting migration

Ian

Can you advise who from BM you advised about the helipad and the PTS system when it happened.

Regards

Alasdair Fernie BSc (Hons) MRICS FCIOB
Project Director

Brookfield Multiplex Europe
[redacted]
Wwww.brookfieldmultiplex.com

On 7 Jun 2015, at 17:29, Powrie, Ian [redacted] wrote:

David/Alasdair

I have experience several issue over the week end impacting on the migration and clinical service and have detailed these below FYI and action:

1. A 2nd loss of power to Plant room 31 was experienced on Friday 5th June at approximately 17:20hrs, this resulted in the PTS system being out of service for 29hrs, despite carrying 3 separate free runs to clear the system we could not restore service, adversely impacted on portering services for the duration of the system outage. The Swisslog support engineer commissioned by NHS to cover migration periods took 13hours on Saturday to clear the system and restore all blocked stations to service, over 50 carriers where recovered from the system and transported to the labs manually. The laboratory Staff have indicated by e-mail that they will be processing this as a clinical risk.
2. Helipad has been taken out of service (Saturday 6th June 2015) due to loss of water pressure to foam cannons. Jockey pump reported by the fire team as being out of service since the point at which there where trained. However even with the main pump running there was no pressure at the foam station, looks like a local clapper valve problem as it is evident that this has been opened several times from the condition of the cover plate & fixing bolts. Therefore the Helipad has been taken out of service and the contingency arrangements implemented. Support was requested from Brookfield, advice provided was that there was no way to contact the installer out with hours. I have confirmed this by contacting the offices of Viking ltd directly, there are no out off hours contact arrangements. This morning the fire team advise that on their routine daily checks that pressure had been restored and asked if the helipad should be returned to service. In discussion with Billy Hunter it was agreed that the contingency arrangement should remain in place until the operation of the fire fighting equipment had been verified due to the intermittent water pressure.

3. Ward 4b: Haemato-oncology, 6 rooms reported with temperature ranging 26 - 28 °C, which was unbearable [redacted] due to the nature of their treatment. The system was still in heating mode & the control valves seemed to be passing, unfortunately the control valves are located in the patient rooms and as the patients are immune-compromised the ceilings cannot be opened up with the patient in the room this is proving to be a logistical challenge to release these rooms for investigation. So far 3 rooms have been repaired by relocating valves from office accommodation to these rooms. Risk associated with overheated rooms being closed to admissions in the coming week.

4. Fire alarm: Saturday 6th June @ approximately 16:00hrs, following completion of fire detection isolations for the Sciehallion ward isolation room HEPA filter challenge testing, the fire alarm system network went into fault, this was reported to Scotshield directly, who have confirmed that this is a Winmag fault and does not impact on remote signalling to the ARC or Contact centres.

5. Lighting: on Saturday 6th June, Ward 7b several rooms reported lights would not switch off, this was rectified by Mercury by 16:00hrs on the same day.

6. Finally on a positive note the Sciehallion isolation rooms HEPA installation, challenge tests are complete and the deep clean has started ready for micro bacteriological testing tomorrow.

Regards

ian

[redacted]
Ian Powrie,
Sector Estates Manager,
South Glasgow Hospitals Campus,
1345 Govan Rd,
Glasgow,
G51 4TF,

[redacted]

****
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From: Powrie, Ian [redacted] on behalf of Powrie, Ian
Sent: 14 June 2015 14:20
To: David Wilson
Subject: RE: heating Issues

Thanks David,
Regards

ian

[redacted]
Ian Powrie,
Sector Estates Manager,
South Glasgow Hospitals Campus,
1345 Govan Rd,
Glasgow,
G51 4TF,

[redacted]

From: David Wilson [redacted]
Sent: 12 June 2015 17:19
To: Powrie, Ian
Subject: RE: heating Issues

Ian

See attached defects update

1. Ward 11a, room disc No GENW21-017: once the occupancy control was reinstated it became clear that the heating valve was passing, this has been Isolation and the valve removed for repair, Paul McAllister has it in the NCH office. Passing valve now resolved and room back under control.
2. NCH- ED CDU, room disc No OBW-015: Room over heated showing un-occupied, suspect heating valve is passing. Room occupied and valve sorted ? now operating correctly.
3. NCH wards 2a, 4 rooms out of use as the lighting cannot be switched off. Dali Gateway fault ? Gateway changed and re-commissioned
4. NCH wards 2c, 4 rooms out of use as the lighting cannot be switched off. Dali Gateway fault ? Gateway changed and re-commissioned
5. NCH wards 1e, 4 bedded room out of use as the lighting cannot be switched off. ? There was one fitting (CAR0-50) that was not switching ? this was rectified on Tuesday 9th June ? Spoke to Ward charge nurse who said all lights were working?
6. Schiehallion ward, 2 cubicles out of use as the lighting cannot be switched off. Same fault as item 3 above- Dali Gateway fault ? Gateway changed and re-commissioned
7. ARU, Doctor room air conditioning ? Only room that looked like it was overheating was ARU-030 ? Wiring fault identified. Heating isolated at present and will be rewired on Monday.
8. WS4-027 Command and control room over heating. ? Room checked and unable to find any faults - Further investigation on Monday

Regards
David

David Wilson
Commissioning Manager - Construction

Brookfield Multiplex Europe
New South Glasgow Hospitals Project
Hardgate Road
Glasgow, G51 4SX, United Kingdom
[redacted]
W www.brookfieldmultiplex.com

From: Powrie, Ian [redacted]
Sent: Thursday, June 11, 2015 6:10 PM
To: David Wilson
Subject: heating Issues

Hi David,

Futher to our discussions earlier today, I would be grateful if you could address the following heating issues as a matter of urgency:

1. Ward 11a, room disc No GENW21-017: once the occupancy control was reinstated it became clear that the heating valve was passing, this has been Isolation and the valve removed for repair, Paul McAllister has it in the NCH office.
2. NCH- ED CDU, room disc No OBW-015: Room over heated showing un-occupied, suspect heating valve is passing.
3. NCH wards 2a, 4 rooms out of use as the lighting cannot be switched off.
4. NCH wards 2c, 4 rooms out of use as the lighting cannot be switched off.
5. NCH wards 1e, 4 bedded room out of use as the lighting cannot be switched off.
6. Schiehallion ward, 2 cubicles out of use as the lighting cannot be switched off.
7. ARU, Doctor room air conditioning
8. WS4-027 Command and control room over heating.

Cheers

Ian

[redacted]
Ian Powrie,
Sector Estates Manager,
South Glasgow Hospitals Campus,
1345 Govan Rd,
Glasgow,
G51 4TF,

[redacted]

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From: Frew, Shiona [redacted]
Sent: 01 July 2015 17:16
To: Frew, Shiona; 'Grant Wallace'; 'Darren Pike'; 'darren.smith[redacted]'; 'Gavin Burnett'; 'fergus.shaw[redacted]com'; 'Alasdair Fernie'; Moir, Peter; Loudon, David; David Hall; Douglas Ross; 'Gavin Burnett'; 'David.Wilson[redacted]'; 'Gillon Armstrong'; Forsyth, Graham
Subject: RE: EW Meeting - 24/06/2015
Attachments: 24062015 - EW Tracker.doc

Dear All

Please find attached the EW tracker (as issued last week for information) for discussion at tomorrow's EW meeting which is scheduled to take place in the Conference Room, BMCL Project Offices at 8.30am.

Kind regards

Shiona

**** Please note my new contact details ****

Shiona Frew
Project Administrator
New South Glasgow Hospitals Project
Management Building - 1st floor rear
South Glasgow University Hospital Campus
1345 Govan Road
Glasgow

[redacted]

From: Frew, Shiona
Sent: 24 June 2015 17:50
To: Frew, Shiona; 'Grant Wallace'; 'Darren Pike'; 'darren.smith[redacted]'; 'Gavin Burnett'; 'fergus.shaw[redacted]'; 'Alasdair Fernie'; Moir, Peter; Loudon, David; 'David Hall'; 'Douglas Ross'; 'Gavin Burnett'; 'David.Wilson[redacted]'; 'Gillon Armstrong'; Forsyth, Graham
Subject: EW Meeting - 24/06/2015

Dear All

Please find attached a copy of the Early Warning Tracker for information. For ease of reference the text in red is the note of the discussion from the previous meeting. The tracker also captures the latest changes to Sypro.

The EWN meeting which would be expected to take place tomorrow (Thursday) at 8.30am in Meeting Room 1, Top floor has been **cancelled.**

Many thanks

Kind regards

Shiona

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NEW SOUTH GLASGOW HOSPITALS AND LABS PROJECT
NEC3 – STATUS UPDATE

EARLY WARNINGS

The following Early Warnings have been submitted to the NHS Board and are awaiting close out as at 24/06/2015:

Sypro ID	NHS Ref No	Item	Date Raised /Discussed	Status	Date Completed/ Status
23685	BMCE-EWN-000150	VIE 2 Slab and foundation increase	03/12/2014	Due to late amendments to the requirements from Air Products, the Boards specialist gases supplier, from those provided to BMCE by Air Products have resulted in the requirement to pile and increase slab depth, width and length from that previously required. This will result in additional cost and a delay to this requirement being completed by the stage 3 completion date.	
			04/12/2014	DH suggested that BMCL now have a progamme issue which is accepted on the basis that it is a life safety system. There is a programme of works which needs to be done and DH suggested that the works should be carried out in March/April i.e. after the link bridge is complete but before the first patient. DH requested a justification for the alteration to the cost.	
			08/01/2015	DP advised that WSP on-going with the design to establish if any additional cost from initial cost estimate.	
			15/01/2015	AF advised that the design from WSP would be provided to PM as a pack. The swept path enlargement info is in the same pack and AF requested that the NHS provide the swept path information to Air Products. DH enquired if there was formal agreement from Air Products regarding the slab and DP confirmed that the design is based on the information agreed with Air Products.	
			22/01/2015	DMF advised that BMCL had the details to be uploaded to Sypro and this would be undertaken w/c 26/01/2015. PM confirmed that the drawings had been received and provided to Air Products for them to confirm they are ok.	
			29/01/2015	GW advised that BMCL have indicative costs and are awaiting BBJ to confirm their costs. Circa £130k-150k. DH noted that this was to provide resilience. GW advised that BMCL had allowed for resilience and then Air Products changed the requirements. AF suggested that a separate meeting should be set-up to discuss the costs when available.	
			05/02/2015	GW advised that BMCL have more information to go through. AF suggested organising a separate meeting.	
			19/02/2015	Meeting arranged for 25.02.2015. Board to consider BMCE options for start date, if started now works could be complete by 3rd August, if held to coincide with piling works at INS entrance (with potential £15k saving) would not complete until 14th Sept. Board to review options to maintain resilience, also discuss with Hulley & Kirkwood Air Products and HPI.	
			26/02/2015	DP advised that there had been a meeting the previous day. The NHS were to have an internal discussion. BMCL are continuing to work to the latter date to link in with the Neurosciences works.	
			05/03/2015	DP advised that BMCL are still working to the later plan for piling. He understood that the NHS were going to discuss the costs. DP had received a drawing which he would provide to the NHS asap. BMCL will need to take over the pavement. GW advised that he had no instructed LEng to do the Civils works. Suggestion is that works are £100k and BMCL wish to discuss the costs. PM advised that the NHS would try to resolve the costs by the end of the week.	
			12/03/2015	DP noted that it was understood that PM would discuss initially with DL and thereafter with GW.	
			19/03/2015	PM advised that he would liaise with DL and the NHS would come to a principle re what is in contract. GW advised that BMCL have had a meeting and want to discuss a compromise solution. BMCL will do the	

				works. 26/03/2015 DL and PM to discuss 02/04/2015 PM noted that he had discussed this with DL who had advised that he is not in a position to negotiate. GW advised that this was not satisfactory as BMCL had carried out the works which were needed because the Board's supplier had changed requirements twice – the latest change only being 6 months previous. AFe suggested that there should be a separate meeting to wrap up specific matters i.e. VIE, Soft landing costs, etc. GW agreed to prepare a paper to explain the BMCL position re the VIE. 28/05/2015 Meeting being organised for 04/06/2015. Invite to be sent to FS.	
2457 6	BMCE-EWN-000154	Retrospective Building Warrants for PMI's	25/03/2015	Brookfield have been advised by building control that the following PMI's will be subject to Building Warrant applications: PMI 328 – (only for the electrical works – the data is low voltage and does not require a warrant) PMI 338 – full fit out PMI 340 – small power, power to water heater, lighting (warrant not required for one WHB) PMI 343 – fit out PMI 347 – Change of materials PMI 352 – additional electrical sockets PMI 357 – additional water supplies PMI 360 – additional power, water and drainage connections Design fees were specifically excluded for the majority of the PMI's and no costs for building warrants have been included. Brookfield will need to instruct the design team to produce the information required to put together a retrospective catch all Building Warrant up to PMI 360. Brookfield will advise on an individual basis for PMI's after PMI 360.
			26/03/2015	GB advised that he had identified the PMIs which required Building Warrants and he had discussed these with Building Control so that they are aware that warrant applications will be made in due course. GB was not sure that a single warrant application was the best approach as there is a risk that 1 item could delay all the warrant approvals. DH noted that the majority of applications will be retrospective warrant applications however there should be an opportunity to group items i.e. data & power. GW advised that the design for the application was being obtained from WW. DH noted that he thought it had been agreed to use the Mercury as fitted drawings rather than getting the WW dwg updated.
			02/04/2015	GB advised that he had good confirmation from GCC that they will accept Mercury as fitted drawings. There may be a couple that they can't accept and may need to get WW and/or Nightingale drawings. PM advised that if there are design costs involved that these be advised asap so that the NHS can get approval and the design process does not get delayed.
			23/4/2015	FS advised that the information was being pulled together and BMCL were ensuring that any costs for the Mercury as fitted drawings
			30/04/2015	GB advised that it would be towards the summer before the warrant applications are submitted. Pulling together a list of all the warrants is WIP. DH noted that some of the PMIs include for drawing update/design fees.
			07/05//2015	GB noted that collation of the Building Warrants is WIP
			14/05/2015	GB noted that he was pulling together all the building warrants together in circa 1 month. Awaiting Mercury providing final position and as fitted drawings.

			21/05/2015 28/05/2015 04/06/2015 11/06/2015	FS advised that BMCL will start to pull together the list suggesting that NHS changes will be minimal and should not impact on the BW application FS noted that GB will start working on the collation of the BW application – it was thought that there would not be many more data/power changes from the NHS. FS advised that GB is liaising with Mercury GB advised that this would be progressed once the works completed in the summer	
2556 2	BMCL-EWN-000158	Proximity of govan road feature wall to incoming gas main	10/06/2015	SGN have recently raised concerns over the proximity to their incoming gas main to the new feature wall which is being constructed at Govan Road in front of the gas housing (see attached sketch). They are concerned that they will not have unrestricted access to the whole pipe which passes under and runs along the back of the feature wall base, should they need to carry out urgent repairs. We had previously discussed the pipe passing below and are working to a bridging detail - but the position of the pipe at the back only became evident during the install of the RC base. Further discussion with SGN will continue this week.	

The following Early Warnings have been submitted to BMCL and are awaiting close out as at 24/06/2015

SyproID	NHS Ref No	Item	Date Raised /Discussed	Status	Date Closed out /Status
24641	NHS EW 057	ADULT HOSPITAL STRUCTAL SYSTEM	02/04/2015 23/4/2015 30/04/2015 07/05/2015 14/.05/2015 21/05/2015 28/05/2015 04/06/2015	Please undertake a comprehensive survey and prepare a report for Board review on the panel failure that occured on 1st April 2015. A metal outer panel is reported to have become dislodged from its carrier and fell to roof Level 4. The Board also wish to establish the safety measure being taken by BMCE while the cause is being established. AF advised that the install had been surveyed and the screw fixings would be replaced. The works would take 2-3 weeks to complete. BMCL would provide a programme for the works. DL advised that the NHS would need to understand the programme to ensure that the works do not cause any privacy issues for patients. DL requested that he be provided with a copy of the incident report FS advised that an updated incident report was awaited and that he would obtain a copy of the report and provide it to DL. FS noted that additional fixings are being put in so he had been advised that the works would take longer however there had been an additional team put on to carry out the works - it was suggested that it would take 3-4 weeks to complete the works. FS acknowledging that he had received the final survey and programme and would forward to PM asap – the programme indicates the works finishing in 3 weeks. FS advised that work is ongoing – programme shows the work finishing by 12th June 2015. FS noted that there are currently 2 operatives on site and that he would obtain an update asap. FS noted the following update from the contractor: all the hitch plates had been fitted so the rainobond panels will not come off the building. It takes 1 day to drop down elevation and there are 38 drops needed	

			11/06/2015	therefore potentially 38 days worth of work however this is dependent on the weather. FS advised that he had delivery dates for the replacement glass. FWS would provide a copy of the survey report. PM advised that operatives needed to be mindful when doing the glass works at the wards. FS advised that he had provided a copy of the report however had received a further update the previous evening and he would provide this update to PM asap. 2 glass panels had been broken however Sheila had previously requested that a couple of spare curved panels be made in case of breakage and the panels are back in fabrication.	
25234	NHS EW 058	CHILDRENS HOSPITAL ETFE ROOF - CORE K	18/05/2015 21/05/2015 28/05/2015 04/06/2015 11/06/2015	The leak in the ETFE roof has been ongoing since 2014. This leak has been recorded as a defect through the Capita defect reporting system. Today's rainfall again confirmed that the source of the leak has not been fixed and the Board require this matter to receive BMCE urgent attention. Occupation of the Children's Hospital is only 2 weeks away, this defect must be rectified in short term to ensure there is no water ingress post occupation. BMCE are to arrange a meeting on site with the Project Manager and prepare and submit a plan of works by 12 noon Friday 22nd May 2015. FS advised that he had been assured that the leak had been resolved – it is an issue with the Fatra + the tail up underneath the cladding panel. FS advised that the repair work had been carried out the previous Thursday. Prater have confirmed that the repair is a permanent repair. FS proposed to check that the repair had worked as there had been heavy rain the previous evening. FS advised that on the previous occasion of rain he had investigated and it was thought that it was now identified where the rain is coming in. PM noted that he would raise an EW regarding the hot wire matter. FS noted that a repair had been carried out on Thursday and he understood that there had been water ingress on Saturday. FS would review the roof later that day and proposed to test out using a hose. PM suggested that he would want to be present when the testing was being carried out.	
25494	NHS EW 059	ADULT HOSPITAL - VECTOR FOILTEC BURN OFF SYSTEM	04/06/2015 11/06/2015	The Board record their great concern on the discovery that faults have been found in the VF ETFE roofing burn off mechanism. The Board require to be provided with a report on the current situation, cause of the fault, and interim contingency plan to mitigate the risk and a plan and programme for remedial works to bring the system into full operation. This information is required no later than 4pm Weds 10th June 2015, certainly for interim position and timescale to remedy, fault finding may take somewhat longer. DW advised that some cables had been taken off and sent to an independent tester in Germany. The remedial works will take circa 2 weeks. Confirmation is awaited for when the cables will be back on site. Sheila is progressing and can provide explanation to PM. GB advised that BMCL had liaised with KHamill who has produced a report – GB noted that the points KH raised are minimal with the exception of the cafe which is his main concern. The only ignition spark point is the vending machine(s) at OPD which sit beneath the balcony and it is suggested that these could either be switched off or repositioned. DW advised that Sheila had issued the report. DW noted that there is a button on the BMS to open the vents and BMCL are going to tie this into the fire alarm. DW suggested that it would be mid July before the remedial works would be complete however BMCL were pushing to get this programme bettered. DW was asking that the company phase the provision of the materials. DH suggested that it may be beneficial to share the report with Strathclyde Fire & Rescue.	

PROJECT MANAGER'S INSTRUCTION

The following Project Manager's Instructions have been submitted to BMCL and are awaiting close out as at 24/06/2015

Sypro ID	NHS Ref No	Item	Date Raised /Discussed	Actions	Date Closed Out/Status
3040	PMI 309	Langlands Drive Bus Lay-by Service Diversions	16/10/2014	Please undertake diversionary works to existing services as described below. Please liase with Hugh McDerment to agree extend of works. All as discussed Paul McGuiness / Hugh McDerment. SGN Gas Main - BMCE to contact SGN and agree works to cap pipe at a position at nearest point west of tee off to PDRU building. SGN to confirm main does not serve any buildings down line from this point, pipe appears to be capped at Langlands Building LPG tanks. Once pipe capped, BMCE to vent pipe and remove from area of works. Water main - excavate and expose main to confirm depth, if not sufficient for pavement, or cannot be accommodated in pavement design then lower, if cannot be lowered then divert. IT/Comms Ducts - expose ducts to confirm depth, if insufficient or cannot be protected by concrete slab, lower ducts and 2 No. pits. All above to be inspected on site once opened up, Hugh McDerment to view on behalf of NHS and agree extend of works.	
			23/10/2014	PMI has now been forwarded - some work to be concluded with SGN and Scottish Water before the programme can be concluded.	
			30/10/2014	DP advised that he had contacted Scottish Water and Scottish Gas Networks and asked them to confirm their services noting that SW and SGN will obviously work to their own programme to carry out these works however DP would continue to review and push to get the works carried out.	
			13/11/2014	DP advised that SGN were due on site later that day to inspect the pipe and advise on any work required. DP noted that the water pipe was an NHS pipe so is easier to deal with.	
			20/11/2014	DS noted that DP has advised that the SGN gas pipe is ok. The tree removal is expected to commence 1st week December 2014. GW enquired if BMCL had an agreed scope of works re services i.e. water pipe. GW noted that it had previously been agreed that BMCL would have a walkround with Hugh McDerment to agree the scope of works. PM advised that once the pipe is exposed then there would be a site visit to agree the way forward.	
			27/11/2014	AFe noted that the trees would be coming down on Monday and BMCL would then create a path round the back. Thereafter the excavation would be undertaken. SGN rep have advised that there may be another gas pipe but this will not be known until excavate. PMcG is meeting with AFe later that day to discuss public/pedestrian separation.	
			04/12/2014	AF advised that works have been started, the wall had been taken down and the trees were to be taken down the next day (Fri).	
			11/12/2014	DH advised that there had been a suspicion of there being a 2nd gas pipe. DP advised that SGN have inspected as if it is a live pip and confirmed that there is plenty of coverage on it. BMCL are liaising with SGN.	
			08/01/2015	DP advised that BMCL are working with SGH and it was thought the works would be complete 3-4 weeks post handover. An old gas main had been located so operatives are being careful working in that area.	

			15/01/2015	DP advised that work is ongoing. A further rogue gas pipe had been identified and BMCL were working with SGN however it was thought that the pipe is at a sufficient depth to allow the BMCL works to be progressed	
			22/01/2015	AF suggested that there would be 4 weeks work post 26th January to conclude and this matter would be added to the schedule with a completion date of end Feb 2015.	
			29/01/2015	AF advised that BMCL were still targeting the end Feb for completion of these works. PM advised he will discuss with AF the alternate proposal to the blue proposed shelter and requested that BMCL do not fit in the blue bus stop. GW advised that he would provide cost info.	
			05/02/2015	GW advised that PMcG, HMcD and Land Eng are going to open up some services – further details will be available on 09/02/2015. PM advised that he had walked round with PMcG and that it is ithought that the bus stop may be constrained. PMcG Had agreed to get a drawing of the bus layby. There is potential impacts on the fence line works which need to be completed by 31st March 2015 as is Capital Plan funded.	
			12/02/2015	GW advised that the trial holes were currently being dug with a view to getting HMc to review on 13/02/2015. AF advised that he is of the view that progress not being achieved quick enough therefore he had asked for works to be pushed on.	
			19/02/2015	Site visit 18/02/2015 (PM, HMcD, PMcG, JP) agreed black ducts at east end of bus stop deep enough to remain with perhaps some localised dig to drop, at west end ducts will require to be dropped by further dig. Number of ducts to be rationalised as some empty and can be removed. BM to contact SGN and have CI gas pipe terminated. Boards fencing and car park project commences 23 February 2015.	
			26/02/2015	DP advised that there is 2 BMCL working – 1 squad is working on the ducts and the other the block. GW advised that the costs had been uploaded to Sypro. PM advised that he had received the price. GW advised that BMCL are ongoing with the work so require a CE. PM suggested that BMCL could excavate and drop the 3 live ducts and remove the	
			05/03/2015	ducts that are not live. PM needs an understanding of the quotation (circa £20k) before the CE can be issued.	
			12/03/2015	DP advised that reps are working on and DP would tie in with the reps later that day. PM advised that he will discuss with DR the £20k cost and that he needed to understand the original work content and what is being done.	
			19/03/2015	GW advised that he had further reviewed the costs and they look satisfactory. PM agreed to progress the CE noting that he just wanted to understand the costs and understand what was agreed in the scope of works.	
			26/03/2015	PM advised that he has the workings to review and needed to check out the existing agreed services drawing in advance of providing feedback. PM advised that he had not had an opportunity to review the existing services drawing. AF	
			02/04/2015	suggested that the works were being done/been completed. GW advised that the only thing outstanding is CE.	
			23/4/2015	PM advised that he would progress this item asap. GW enquired if there was anything that BMCL could do to assist. PM needed to review the drawing. GW advised that he would liaise with PMcG for a copy of the drawing.	
			30/04/2015	GW noted that a CE was required urgently for this item.	
			07/05/2015	PM requested that GB issued the drawings is PDF format. GB suggested that the drawings had been issued in PDF format. PM agreed to check he had received the drawings in PDF and review	

				asap.	
			14/05/2015	PM noted that he had received the drawings in autocad and would try to locate software to open them.	
			28/05/2015	GW advised that he needed a CE urgently – the works have been carried out.	
			11/06/2015	PM advised that he has a NHS CAD multi-layer drawing which shows the services. PM wanted the BMCL copy of this drawing as this is what BMCL refer to. PM agreed to liaise with PMcG.	
3359	PMI 338 -	Enabling works for install of Tumble dryers and High Spin Washers	09/02/2015	The Board request a quotation and programme for the enabling works required to accommodate 4no. JLA SD 80 (80lb) tumble dryers and 4no. JLA HD 305 (65lb) High Spin Washers. The works required are outlined on the attached drawing no 13/02103 Rev A Supply and installation of washers/dryers will be by others. The facility is to be located in the large store at the north-west corner of the Laboratories & FM building.	Cross ref CE 122
			12/02/2015	GW advised this is WIP to obtain costs.	
			19/02/2015	Post issue of PMI 342 design work is ongoing to prepare cost. DL noted that this work must be completed by 31st March 2015. BM to push for early design resolution.	
			26/02/2015	GW advised that the design was due back w/c 2/03/2015.DP advised that BMCL would struggle to complete the works by 31st March however the works would be completed by 24th April 2015. DL requested that the programme be discussed with KC.	
			05/03/2015	DH noted that a meeting to discuss was scheduled to take place the following day (DH, IP, FS). GW suggested that this may be costly and that the Board may not wish to progress this. The design was due to be received by BMCL on 06/03/2015 and once received BMCL would cost up.	
			12/03/2015	DH advised that a meeting with the designers had taken place and DH had raised with IP that there will be a challenge to complete this request before patients move into the hospitals. The NHS will need to identify an interim solution.	
			19/03/0215	It was noted that costs are awaited.	
			26/03/2015	GW noted that the WW drawing had just been received and that BMCL were awaiting info from BMJ. GW would send the WW drawing to Mercury asap.	
			02/04/2015	GB advised that BMJ had been instructed to do the elevations. When the design is received from WSP then will get the costs to the NHS asap. DP advised that there is more work involved in this request than first thought. GW advised that BMJ cost (circa £1500) and WSP knows that the info is coming. GB noted that there is lintels required, gas diversions, brickwork/blockwork. DH enquired if the NHS can get the electrics and gas works done. DP advised that these works are being started asap. AF advised that BMCL would provide the NHS with a programme for the works.	
			22/04/2015	FS advised that he was awaiting an update from CGrindlay. GW advised that LJ is obtaining the information. PM advised that he had liaised with LJ who had asked if PM would want a ball-park figure. GW advised that LJ was receiving the information in a lot slower than would have wanted hence the suggestion of providing a ball-park figure – LJ is pursuing the info as much as she can. DL advised that this matter needed to be moved on quickly as the interim solution for the NHS is very costly. GW advised that BMCL could provide the information as the receive it – GW suggested that a ball park figure was circa £150k.	
			30/04/2015	PM acknowledged receiving the costs and advised that he would request approval from DL. It was agreed that a meeting should be arranged – attendees FS, DW, DH and PM.	
			07/05/2015	PM advised that the costs did not appear to be value for money and DR has subsequently	

				reviewed the costs and would discuss with GW.
			14/05/2015	DH advised that DR and GW have discussed at GW is reviewing the scope of works and the associated costs. DH suggested that it would be beneficial for DH, CG and GW to discuss the scope of works.The engineers had advised that the drainage isn't big enough if all the machines are running and discharging at the same time. GB noted he had previous experience of this situation in another project and that an attenuation drain had to be built in.
			21/05/2015	SF to organise meeting
			28/05/2015	Meeting being organised to take place later that day.
			04/06/2015	DH advised that he is awaiting revised costs. DW noted that he would chase the costs up.
			11/06/2015	GW advised that he was meeting with Mercury later that day. BMCL Have been pursuing Mercury for costs.
3387	PMI 343	NSGH Basement – Estates Workshop Fit Out	16/02/2015	Please provide cost for fit out of shell space FMB-003 for the use of an estates workshop.
			19/02.2015	Board have confirmed they wish to proceed with design and costing work even if the works cannot be completed before 31st March 2015, BMCE to take forward.
			26/02/2015	GW advised that BMCL are awaiting fees from Wallace Whittle but it is understood that responses to RFIs are outstanding in order to proceed. BMCL have been engaging with suppliers however 31st March completion date is doubtful.
			05/03/2015	GW advised that cost info had been uploaded on 04/03/2015. PM enquired if the design work had commenced. GW advised that the design work had not commenced as yet as BMCL are awaiting an instruction. PM agreed to discuss with IP.
			12/03/2015	DH advised that GB is to apply for a warrant. DP noted that the number of air changes has been increased.
			19/03/2015	DP advised that the design had been received. BMCL have put queries to WW and information is expected back early w/c 23/03/2015
			26/03/2015	DP advised that the design is due to be provided imminently.
			02/04/2015	DP advised that done drawings, tied into 1, same as stores as sits in same area. GW advised that he had received the fee from Nightingale and would pass to the NHS asap.
			22/04/2015	PM and DL to discuss/agree the way forward asap.
			30/04/2015	PM advised that information is with IP. DW advised that there is a link between the ventilation for this item and the retail units and if do not go ahead with would need to check what can be done re ventilation. PM enquired if a blanking plate could be put on and DW advised that a blanking plate could be put on and BMCL would review what could be done. PM advised that this item would not be concluded quickly.
			07/05/2015	PM advised that the information is with IP for review.
			14/05/2015	DH noted that the basement workshop costs contained all the general works for the retail fit-outs. DW noted that the design was linked together and he hadn't realised that the cost had all been placed against this item. DH noted that the costs needed to be attributed appropriately.
			21/05/2015	SF to organise meeting. PM suggested that misinformation about the vent system had been received. DW suggested that a blanking plate could be used – would use a spigot. GW advised that the allocation of costs was now understood. GW is awaiting a further discussion with DR re value for money for the Board
			04/06/2015	DH noted that CG had confirmed that the BMCL retail unit works had been completed. Instruction to be given to BMCL to progress.
			11/06/2015	GW advised that he had rechecked the costs and he thinks that the costs are correct.

3405	PMI 348	NEW HOSPITALS - TELEPHONE LINES	19/02/2015 26/02/2015 05/03/2015 12/03/2015 19/03/2015 26/03/2015 02/04/2015 22/04/2015 30/04/2015 14/05/2015 21/05/2015 28/05/2015 11/06/2015	The Board require the undernoted quantity of telephone lines. The Board confirm the requirement for 900 (pairs) copper back-up lines connected to Node 12 at the rear of the Central Medical Block via existing ductwork. The exact ductwork route and length and any intermediate distribution frame will be confirmed by close of play 20th February 2015. GW advised that cost information is expected the following day. The route had now been agreed. GW noted that the agreed route is now longer. PM noted that the cost had been provided the previous day. DH noted that the Board and BMCL needed to agree the "base number" i.e. 600 or 900 lines as was to be for 10% of the lines GW noted that he was being advised that you do not count for mobiles and that Mercury are adamant that they only ever included for 300. Mercury would not go ahead with the work until they receive certainty that they will get paid for the 900 lines. BMCL cannot instruct the works until the baseline number has been agreed. DH and DR to discuss. . GW advised that he would instruct the works. AF and GW to discuss. Instruction will be raised to Mercury so that the works will be undertaken so as not to impact on the programme however BMCL position re the number of 'additional' lines is unchanged and discussion/agreement with NHS re number of lines is required. GW advised that a CE had been issued to Mercury. DH acknowledged that this matter re baseline no. of lines needed to be concluded. DH requested that BMCL provide a delivery date for when the lines are going in so that he can provide feedback to the telecoms reps. PM advised that he proposed to issue a CE for 300 lines in order not to delay any works. PM noted that the remainder of the lines needed to be debated. DP advised that he understood the works had commenced the previous day. GW suggested that this matter needed to be bottomed out before the end of April 2015. It was agreed that a meeting to discuss the 'extra' lines should be organized in due course. DP advised that the lines should have been installed and tested the previous night. DH enquired if Dennis knew this had taken place and it was agreed to check this out. GW advised that he would want the BMCL/NHS discussion re the 300 to 900/600 to 900 lines prior to the NHS issuing any CE. GW requested that a meeting be arranged w/c 06/04/2015. PM suggested that he could provide a CE for £35k in the interim whilst the baseline discussions were to be concluded. PM noted that CE 095 had been for the additional 300 lines. Baseline discussion to be organized. DH enquired if a meeting was being arranged to discuss the baseline number of lines and SF agreed to check. SF to organize meeting Meeting being organized for 04/06/2015 GW advised that CE is awaited. Revised costs are on Sypro (£10k). NHS requested to review asap.	
3458	PMI 353	Neurosurgery Entrance - Bin Store, IT Server and Tube Room relocation	04/03/2015	The Board request a cost for the relocation of the Bin Store, Pneumatic Tube and IT Server Rooms from proposed position within the existing building to the area intended for the Dental X-Ray room as per the attached sketch.	Cross ref CE 124

				This will negate the need to alter the existing dental x-ray room to accommodate the Store, Pneumatic Tube and IT Server Rooms within the new construction works. There will be no need to provide radiation protection within this space but shielding between existing and new spaces will be required. The access to the bin store needs to be located as close as possible to the main North South corridor. Radiation Protection to be as follows: The windows should be overlapped including frames with code 4 lead (1.8 mm Pb) plasterboard. If the existing 'external' walls are brick or concrete in construction then this will be sufficient. However if it is a steel outer (unknown thickness) only with cladding and insulation and plasterboard to inside then once these external walls become internal to the building then code 4 lead (1.8 mm Pb) plasterboard will be required from floor to 2 m height to protect public and staff working on the other side of these walls. 05/03/2015 GW advised that he would upload the costs asap. 19/03/2015 GW advised that this is under review by Paul. 26/03/2015 It was noted that GB is awaiting info re design fees, etc. 02/04/2015 GB advised that the fees from Nightingale and Mercury are awaited. Work is ongong. GB suggested that there may be fire issues and these would be flagged to the NHS asap. 22/04/2015 PM advised that GF and PHeath are looking at alternate plan so as not to move a pre-cast panel. 29/04/2015 GB noted that Heath has had some further discussion with GF. Liaison is ongoing with WSP re fire escape, etc. 07/05/2015 PM noted that PH, GF and GA laising. GB advised that agreement had been received regarding the proposals tabled at the INS Progress meeting – the cost changes were still to be agreed – primarily a couple of partitions. 14/05/2015 GB advised that the design strategy and fire strategy checks. The information was back with Paul. 21/05/2015 GW noted that the costs had been uploaded for NHS review on the 15/05/2015. PM agreed to review asap. 04/06/2015 PM advised that he would review the costs and confirm the way forward.	
3542	PMI 365	INS NEW ENTRANCE - INVESTIGATION WORKS	20/03/2015	Undertake trial digs to investigate unknown underground services. Please undertake trial pit digs to investigate unknown underground services at locations close to piles P21 and P21A as per attached drawing. Once exposed notify the Board's Project Manager to inspect and agree course of action. 26/03/2015 It was noted that an instruction had been issued the previous Friday to commence the works. 22/04/2015 GW advised that the costs would be discussed on the basis of the actual works carried out. 30/04/2015 GB suggested that investigative works were ongoing and that an asbestos pipe had been discovered. GW noted that BMCL would need to review the programme. 07/05/2015 PM noted that cost information was awaited 14/05/2015 FS noted that investigation works are ongoing 28/05/2015 FS advised that he has provided a full copy of the survey – probed all the areas GF noted that investigative works had commenced. There is a gas line which needs to be	Cross ref CE 125

				confirmed as being live or dead. There are a couple of other pipes which need to be identified as to what they are. GA advised that BMCL need to understand what the pipes are so that controls can be put in place before the pipes are checked out. GA noted that the gas pipe is for the old cafe but it was not known if this was dead/live. DW noted that there is no easy way to deal with unknown pipes. DH enquired if the pipe could be followed out to the path and check if there is a toby, etc. DW suggested that it would be better to identify the end of the pipe inside the building. GA noted that there is potentially gas at the imaging entrance, old steam pipe and drain from old fountain. DW suggested that the digging should be progressed towards the building. DH agreed this was the best course of action at this time and GA was asked to liaise with Land Eng. 04/06/2015 FS advised that it is work in progress to identify unknown services – services have been exposed into the building. PM noted that the fountain pipe has been discounted. The Gas pipe was to be checked going into the building.PM had advised that a small hole should be drilled into the top of the black marley pipe to check if this is running. FS noted that GA and GF continue to liaise about the services. PM advised that he had asked GF to get Estates Reps over to resolve the gas pipe issue asap. 11/06/2015 GA advised that the Gas board had been on site and had advised that it is their pipe. The gas board had shown the length of pipe on a drawing and suggested that the leg of steel pipe is redundant however they will need to come back out and open up a valve to ensure is redundant. Once the pipe has been proved as being redundant then BMCL/NHS can cut the steel pipe. There had been no timescales given for the return to site of the Gas board. GA would chase up the Gas Board on Monday (15/06/2015) . GW noted that the costs for the investigative works had been uploaded and requested a CE for the investigative works.	
3753	PMI 393 -	ADULT HOSPITAL CRITICAL CARE - ADDITIONAL DOOR ENTRY BUZZERS & SWIPE CARD ENTRY	12/05/2015 14/05/2015 21/05/2015 28/05/2015 04/06/2015 11/06/2015	Please provide a cost to install the additional access infrastructure as detail on the attached drawing. Please provide a costs to extend the existing door entry system in three locations as shown on the attached drawing, system to have same functionality in all locations. Also in two locations provide swipe card door enrty functionality to two doorsets, again as shown on the attached drawing. With the cost please provide a timescale to order materials and complete the installation. DW advised that Mercury are currently pricing. GW noted that this item was currently being priced DW advised that a cost is awaited from Mercury. GW advised that he was checking the costs before providing to the NHS PM advised that he had received the cost and he would need to get confirmation from the Users that they are prepared to cover the cost from their internal budget.	
3757	PMI 395 -	CHILDREN'S HOSPITAL - CARDIAC THEATRE THE-054 DOOR TO BY PASS ROOM	12/05/2015 14/05/2015	Please enlarge the door opening between rooms THE-054 Cardiac Theatre and THE-052 By Pass Prep Room. The door opening to be enlarged from a single doorset to a 1 1/2 doorset by the introduction of a small blank leaf nom. 380mm wide, fully encapsulated, 1 /2 pairs of hinges, slip bolts, latch keeper and new frame. All as per attached drawings. PM requested that BMCL please fit asap. FS noted that BMCL needed to get the lead work	

				redone/rechecked. BMCL to review what works are required. PM noted that deadline for the work to be completed by.	
			21/05/2015	PM advised that he had received a picto-gram and advised BMCL to put back together an NHS will cover the costs. PM to amend note to advise that this item is not being progressed.	
			28/05/2015	FS advised that Astins are onsite on 29/05/2015. BMCL have a door set and the door works would be carried out over the weekend. DH advised that he would confirm this with DL.	
			11/006/2015	FS advised that the doors are due to arrive on site later that day and he would link with the Theatre Manager to arrange a time to fit – it was thought it was likely to be Friday night.	
3764	PMI 396 -	Sprinkler Head RCI-013	13/05/2015	The Board request the relocation of 1no. sprinkler head in RCI-013, Interventional Radiology Lab, currently located between the Toshiba gantry rails and likely to incur damage upon movement of the gantry carriage.	Cross ref CE 128
			21/05/2015	DW noted that this item was being reviewed the previous day. Cost info will be provided asap.	
			28/05/2015	It was noted that this item was closed.	
			04/06/2015	DH noted that this is a Group 5 equipment list item – CE to be provided.	
3772	PMI 399	EXTERNAL WORKS - ADDITIONAL TURFING	14/05/2015	Please supply and install additional turfing to areas A & B indicated on attached drawing titled 'turfing at CP1'. Also please provide a cost for turfing the area indicated on the attached drawing titled Sketch 15000. In both locations, trees and shrubs already planted are to be left in position and the turf should be layed close to their base defined by a ring of bark mulch. Works to be complete by end of June latest.	
			21/05/2015	PM noted that cost info awaited	
			28/05/2015	GW agreed to provide the cost asap	
			11/06/2015	PM noted that Land Eng had already planted out 1 area and there was no benefit in ripping the planting back out. Only the 2 small areas require to be priced now.	
3777	PMI 400 -	ARRIVAL SQ TRAFFIC SIGNALS	18/05/2015	Please effect repairs to traffic signals as per the attached drawing and specifcation. This work requires to be undertaken as soon as possible as the current set up is affecting scheduling of bus services through Arrival Square. At location A on attached drawing, please reposition light sensor to give better coverage over lane and improve movement of bus services. Currently sensor partially screened by lamp head that is position infront of it. At location B on attached drawing re-fit damaged lamp head, in doing so increase the width between the two sets of signal heads for this lane to avoid further damage. Note this third time lamphead has been hit and needs to be positioned to avoid further damage.	
			21/05/2015	It was agreed that BMCLwill liaise with Siemens	
			28/05/2015	FS advised that [redacted] is liaising with Siemens and he would obtain feedback asap.	
			04/06/2015	FS advised that he had spoken to [redacted] the previous week and info is awaited back from Siemens. PM advised that PM and PMc had met with the Council as there was items which would stop the sign-off. It had been agreed to remove a lamp head of the islands and to rephrase the	

			11/06/2015	lights. PMI 411 had been raised to cover these items. GW noted that the cost had been uploaded on 05/06. PM advised that in his view the sensor head wasn't correctly positioned and suggested this was a Siemens defect.	
3780	PMI 401	CHILDREN'S HOSPITAL HYDROTHERAPY POOL - 2 SETS OF STEPS	19/05/2015 21/05/2015 28/05/2015 04/06/2015 11/06/2015	Please proceed and remove two sets of handrails at current location and provide free standing stainless steel 'ladder style' steps with hooped top rail fixed to pool surround. All as discussed and agreed with user group. Refer to attached picture but note base of ladder to sit on rubber sucker type feet. Steps to be rigid fix and secure. GW advised that the cost had been uploaded the previous day. FS noted that he had been advised that the treads are too far apart. It was noted that MMac had confirmed that 2 rails. FS noted that the correct steps had been organised. FS noted that there is still a debate re the sling and size of seat. BMCL need to know if it is an 18inch or 22inch seat – there is a 2 week order date. DH suggested that this should wait until PM returned from leave. GW requested that a CE be provided for the steps works. FS noted that there had been a comment that the stretcher is not fit for purpose. Awaiting clarification of what stretcher is required. FS noted that World Leisure have supplied everything in and around the pool It was noted that MMacleod was liaising with Physio for confirmation. It was noted that CE 0117 covered this item. FS advised that he had spoken to MMacL the previous day who had advised that the stretcher is not suitable (would not pass infection control) and it was suggested that a wheelchair option would be preferable. DH advised that he recalled that there had been an original drawing signed off however after this BMCL had changed their supplier to World Leisure. DH requested that BMCL provide the extra over cost. FS agreed to obtain the cost for the wheelchair and to check if WorldLeisure would take the stretcher back. FS advised that he had received the quote for the wheelchair adaptor the previous day (circa £4k). BMCL were awaiting confirmation from World Leisure that they will give credit back for the stretcher.	
3781	PMI 402	CPS -004 (Child Protection Unit) – Wall Mounted colposcope	19/05/2015 21/05/2015 04/06/2015 11/06/2015	The Board request wall strengthening, fixing of support plate, additional twin 13A socket (allowance already in ceiling for pendant) and containment for AV cabling as per the attached sketch. Costs to be allocated to PMI 328 contingency sum. PM enquired if this could be installed on a surface pattress and FS agreed. BMCL to progress with pattress with chamfered edge and to paint to make surface wipeable. FS advised that the builders works have been carried out. DW noted that the electrical works were likely to carried out over the coming week. DH enquired if BMCL could fit the fixings for the monitor bracket. GW noted that the cost was circa £4462.09. DW noted that the electrical works were getting done later that day. It was noted that the costs are to be allocated to PMI 328.	
3788	PMI 403 -	Provision of interlocked switch socket in OPD-183	25/05/2015 28/05/2015	The Board request the provision of 1no. 32A 2P&E Interlocked switched socket in OPD-183 NCH Out-patients treatment room for a V-beam Pulsed Pye Laser supply to be located above bedhead services trunking alongside vertical dropper. Costs to be allocated to PMI 328 contingency DW advised that CI had been issued to Mercury to carry out the works.	

			04/06/2015 11/06/2015	DW advised that delivery of a switch socket was awaited. DH noted that the door is leaf and half – the gasket doesn't reach the door. This is a laser room and there are concerned about laser penetrating through the gaps. BMCL were asked to investigate if a larger blade could be fitted. DW noted that the delivery of the socket is awaited and BMCL are chasing this up. DW would confirm the date for the works asap. FS agreed to check the door blade.	
3787	PMI 404 -	Installation of power & data within ceiling voids (GW3-036, GW3 - 039 & GW3 - 042)	25/05/2015 28/05/2015 04/06/2015 11/06/2015	The Board request a cost for the installation of power and data within ceiling voids in the following locations - GW3-036, - GW3 - 039 - GW3 - 042 In each location 2 x twin 13A and 1 double data outlets with each twin 13A to be fed via a fused isolation, switch with neon indicator located at high level in the room. GW advised that AK has been on leave and the cost info would be provided asap. DH suggest will be a couple of months. FS advised that BMCL did not want to be doing works when Yorkhill are moving into the hospitals. DH requested that BMCL look and see if there is sockets there and it just needs longer RJ45 cables. DH requested that BMCL identify any potential disturbance to the room. DW noted that BMCL may struggle to get Boston back on site but would continue to try. GW noted that the Mercury cost had been received |(circa 8k). LJamieson is in the process of reviewing the costs. DW advised that he would resend his comments to GW in LJ's absence.	
3813	PMI 405 -	Relocation of door access panels - MRI Suites	26/05/2015 28/05/2015 04/06/2015 11/06/2015	The Board request a cost to relocate door access panels at the 2no. ground floor MRI suites (NCH & NSGH) from their existing locations, at reception desks to the respective MRI Control rooms. In the NSGH location please allow for installing 1 no. 'push to exit' button in lieu of 'swipe to exit' on secure side of the door between MRI suite and reception/wait. DW noted that the CI had been issued to Mercury. Mercury to provide the cost and the timescale. BMCL will provide costs asap DH advised that these works were getting urgent (circa £5k). DW advised that he would resend his comments to GW in LJ's absence.	
3814	PMI 406 -	Enabling and facilitation works - MRI Transfer - NCH	26/05/2015 28/05/2015 04/06/2015 11/06/2015	The Board request a cost to provide enabling and and facilitating works associated with the delivery and installation of MRI transferring from Yorkhill to RHSC Level 1. Works to include temporary hoardings, ramps, downtakings at external wall and MRI and subsequent reinstatements. FS noted that BMCL have a programme and understand the scope of works. FS will liaise with JD Peirce to ensure they have got the panel and to get them to site. FS advised that BMCL had an internal meeting and AStephen will be the contact for this item. DH advised that the NHS were awaiting the scaffold plan. PM noted a cost of circa £27k. DH advised that he is chasing the scaffolding design.	Cross ref CE 121
3819	PMI 407 -	Installation of Vestibular Hook - REH 049	26/05/2015 28/05/2015 04/06/2015 11/06/2015	The Board request a cost for the installation of a vestibular hook within room no. REH-049 including support framework fixed to underside of structural slab as required. FS advised that he had sent the previous drawing to M&S to obtain a price. These works will not be achieved prior to Yorkhill moving in. GW advised that SMonk is being chased for a cost by LJamieson. FS advised that the cost was to be received later that week. DW advised that he would be checking out the room for services.	

3821	PMI 408 -	Install 2no fused spurs - SCH - 021	26/5/2015 28/05/2015 04/06/2015 11/06/2015	The Board request the installation of 2no. fused spurs at 2.0m above FFL in SCH-021 for 2no. chemo fridges. 2no. MSC-002 units to be removed to accommodate the fridges. Costs to be allocated to PMI 328 contingency. DH noted that these works are more urgent. JMiller has been progressing. DW advised that Mercury have been instructed to carry out the work. DW advised that he was trying to get Mercury to progress this asap. FS advised that the fused spurs had been done.	
3846	PMI 409 -	Changes to the Pneumatic Tube System	27/05/2015 04/06/2015 11/06/2015	The Board request the following changes be made to the Pneumatic Tube System: 1.Change the operation of the system so all Green Pharmacy carriers can be returned to the Pharmacy from any station in the hospital. 2. Change the operation of the system so that all Leak Proof carriers can only be sent to microbiology and pathology. 3. Change the current program from the agreed issued naming structure so it matches the actual hospital departments. 4. Add time schedule control for selected lab stations and pharmacy to close stations out with normal operating hours complete with message stating "Department closed" as detailed below co o For all Pathology samples, the PTS will operate between 9am and 7pm on weekdays and on Saturdays from 8am until 12:00 noon. o For all Cytology samples, the PTS will operate between 9am and 5pm on weekdays and on Saturdays from 8am until 12:00 noon. o For all Genetics samples, the PTS will operate between 9am and 5pm on weekdays. o For all Pharmacy samples, the PTS will operate between 08:30 and 16:30 on week days, Saturdays 09:00 and 11:45 and Sundays from 10:00 to 11:30. 5. As part of the re-commissioning process, carry out and record full address validation for submission with the full commissioning documentation to the Laboratory CPA auditors for Laboratory accreditation. DW advised that costs had been obtained for this matter. Confirmation of the station names and signed off by IP was required. It was noted that the Mercury cost was circa £8k and DW noted that he had instructed the works.	Cross Ref CE 130
3880	PMI-410	CHILDREN'S HOSPITAL THEATRE DEPT - WC ROOM THE-013 DAMAGED WHB	03/06/2015 11/06/2015	Please supply and install new hand rinse whb to replace broken whb. Make all finishes good. FS noted that the works had been carried out the previous day. GW advised that he would upload the cost asap.	
3881	PMI 411	ARRIVAL SQUARE - ROAD WORKS	03/06/2015	Please re-configure installed arrangement as follows. Transport Hub East - Northbound traffic and Fastlink - Two stop lines require to be relocated 2m prior to the primary poles, as discussed on site 2nd June 2015, NHS/BM/GCC.	

				Transport Hub Puffins (centre) -Zig Zag markings on away side of crossing points require to be relocated a minimum distance of 1.7m / maximum 3m from road studs. Electrical supply - the electrical supply for the traffic signals will require to be separated and a circuit breaker installed outwith the lighting control panel so that street lighting and traffic signals are not both affected when either needs to be isolated for maintenance. Doors to Signals control boxes - in some locations the operation of the access doors is hampered by soft landscaping. GCC suggested two 600x600mm pc slabs should be placed in front of door where this opens onto grass or other area.	
3883	PMI 412	NCH Rehab workshop and machine room - Changes to Supply (single phase to 3 phase)	04/06/2015	The Board request that the supplies to NCH Rehab workshop and machine room are to be as per the attached which alters 4no. supplies (Router x 2, Band Finisher and Band Saw) from single phase to 3 phase.	Cross Ref CE 129
3911	PMI 413	NCH THEATRES 1-3 LASER PROTECTION	11/06/2015	Installation of laser flaps on doors in three theatres by transfer of flaps from the NCH cath lab suite. The Board confirm that to meet laser protection requirements in Theatres 1-3 (THE-109/114/122) and Theatre 5 (THE-092) door vision panel flaps are required to all doors and therefore 2 No. additional flaps are required in each theatre as highlighted on the attached Sketch B. Additionally where ironmongery has been installed with thumb-turn to inside of shared dirty utility in lieu of key lock these should be swapped to have the thumb-turn on the theatre side. Also noted on Sketch B. To obtain vision panel flaps, these are to be removed from NCH cardiac cath lab RCI-005 and Interventional Radiology Lab RCI-013 as indicated on Sketch A. Holes left after removal to be made good (Magicman).	
3922	PMI 414	CHILDREN'S HOSPITAL EMERGENCY DEPT - VIDEO ENTRY SYSTEM	15/06/2015	Please provide a cost to relocate ambulance video entry system base from desk in area OBW-002 Staff / Enquiry to Staff Base in Chilren's ED area code EMC 061. External call point to remain in current location. Refer attached sketch.	
3923	PMI 415	- Additional IPS Sockets	15/06/2015	The Board request a cost for the installation of 4no. IPS twin socket outlets (medical) in trunking in RCG-071 and 2no. IPS twin sockets on trunking in RCG-069. Please cost RCG-071 as standalone & RCG 069 as complimentary as the former may proceed without the latter but not vice versa. If the quantities exceed capacities on the existing IPS Unit please advise prior to pricing.	
3924	PMI 416	CHILDREN'S HOSPITAL LEVEL 4 - DCFP ROOM 028	15/06/2015	Supply and install power, water and drainage services in this room to allow the Board to install 1 No washing machine and 1 No condensing tumble drier. Works to include; - 2no. 13A Sockets fitted 450mm FFL. - 1no. cold water supply fitted at 300mm FFL - 1no. hot water supply fitted at 300mm FFL - 2no. 50mm dia drainage connections fitted at low level with tundish for tumble dryer and dishwasher connections - All connections to kit by others (NHS FM). - Sterilisation of CWS & HWS by BMCE.	

3925	PMI 417 -	Excavation around existing gas main - Neurosurgery entrance	15/06/2015	The Board request the provision of quotation for the excavation around existing abandoned Gas Main outwith extension building line. Once excavated cut the pipe and plug with concrete as per discussions with SGN.	
3926	PMI 418 -	Additional investigative excavations - Neurosurgery Entrance	15/06/2015	The Board instruct the additional investigative excavations to confirm the extent of unknown services identified during the pile cap excavations. These services are detailed within the summary report INS Entrance -Trail Pit Photos and Services Clash Report (Dated 27th May 2015).	
3930	PMI 419	ADULT HOSPITAL - STAIR CORES A & B FIRE DOORS (2 sets)	16/06/2015	Please provide a cost for the introduction of hold open stays to the single sets of self closing fore doors in Cores A & B as indicated on the attached sketch. Stays to be linked to the fire alarm system and be wall mounted at door head level. These works are to provide barrier free access for wheelchair users Core A - doorset requires to be repositioned to give cover to open doorset and also allow free access for turning of wheelchairs into lift lobby. Core B - doors can remain in current location, Board will accept minor overlap of doorway to Cleaners Room. The Board are open to alternate solutions that achieve improved barrier free access for un attended wheelchair users.	
3936	PMI 420 -	CHILDRENS HOSPITAL - MRI INSTALLATION ADDITIONAL WORKS	17/06/2015	Amend works set out in PMI 406 as follows. Omit single direction ramp at gradient of 1:12 at change in level outside Neo-natal Unit. Add ramp with top landing 1220x1500mm with ramp 1220mm wide on grade 1:12, ramp to have guard rail to stop trolley falling off edge. Ramp to be constructed from regularised timber and 18mm plywood.	
3937	PMI 421	ADULT HOSPITAL OPD GROUND FLOOR ROOM ORT-014 - WALL BARS	17/06/2015	Please proceed and fit 2 sets of timber wall bars in room ORT 014. Wall bars are each nominally 2400mm high by 860mm wide and are fixed to the wall with angle brackets provided. Wall bars come flat pack and require to be put together, all fixings supplied. Also provide a finished surface mounted patress top and bottom as per instructions, screw fix pattress to background studs to allow for reasonable load as discussed PMoir/FShaw/User 17/6/15. make all finishes good. Refere attached sketch for location.	
3948	PMI 422	CHILDREN'S HOSPITAL AUDIOLOGY SUITE - AMENDMENTS TO POWER AND PATCH PANELS	19/06/2015	Amendments to power and patch panels in 4 No audiology rooms. Also supply of blinds between test rooms and lobbies. 2No. Please proceed with works as set out on the attached quotation from Allaway Acoustics, works to include relocation of power and provision of new patch panels and provision of temporary cables.	

				Proceed and install blinds as discussed a meeting 17 June 2015. Works not to include provision of finger guards. 23 June 2015 additional works - please also relocate data sockets as per user requirements, change the PIR's to dimmer switches in each lobby. On options for data sockets proceed with the second option of using an extension cable to the current RJ45 socket and loop back into trunking and then run into new data outlet in position agreed with users.	
3960	PMI 423	CHILDRENS HOSPITAL - MEDICINEMA	23/06/2015	Please complete defects to two sets of doors as quickly as possible. Please attend site and commission two sets of automatic doors installed by BM through the contract, all connections have been made, push plates now installed but operating gear needs commissioned. Please complete defects to two sets of doors as quickly as possible, these have been on defects list for sometime and as Medicinema coming into use shortly these defects require to be completed. Door manufacturer to confirm integrity of 1 hour fire doors maintained following change of ironmongery to one set of doors and to the other damage to door following replacement of glass panel. Please attend site and commission two sets of automatic doors installed by BM through the contract, all connections have been made, push plates now installed but operating gear needs commissioned.	

COMPENSATION EVENTS

Sypro ID	NHS Ref No	Item	Date Raised/ discussed	Actions	Date Closed Out/Status
15222	CE 109	CHILDREN'S HOSPITAL - DCFP ANTI LIGATURE WORKS	14/05/2015 21/05/2015 28/05/2015 11/06/2015	Please proceed with works set out in PMI 373. PM advised that he had looked at the door with Hugh and advised Hugh to progress.The rest of the kit in the room is ready to be progressed. C&B Had been asked to look at a couple of the prices in the cost info. GW advised that he had gone back to Andy and the Static and Crawford sub-contractor costs. GW would get these uploaded to Sypro asap. BMCL had concern about doing the work as at risk of not having a confirmed cost. FS noted that as BMCL did not know the final sink type then it had now become apparent that the IPS would need to be changed, floor will need repaired, ect. PM agreed to review on site. DW advised that there is now an issue re relocation of TRV – BMCL are trying to identify a solution - TRV is not anti-lig. Alternative would be to remove the TRV/isolate and remove the radiant panel. PMI to de discussed under CE DH advised that he would liaise with DR. FS advised that all the works had been completed with the exception of anti-lig knobs which were to be fitted later that day. BMCL were aware that the light switches did not have tamper proof screws. DH suggested that BMCL should try to obtain the tamper proof screws asap. DH agreed to chase DR for a response to the cost information	Cross ref CE 126?
15451	CE 116	ADULT HOSPITAL IMAGING	28/05/2015	Isolation of services to pendant prior to removal by Starkstrom at no cost, make finishes good.	

		ROOM RAF-080 REMOVAL OF 1 No. STARKSTROM PENDANT		Agreed cost £9,489.06 incl OH+P but excl. VAT. 04/06/2015 DH noted that there had been an issue raised the previous day. Philips have lowered the ceiling by 300mm and there is now 1 sprinkler head which will not reach the ceiling. DW agreed to investigate. PM noted that he had checked the cost build-up and there were no costs included for Starkstrom. 11/06/2015 It was agreed this CE could be closed. Separate PMI to be issued re sprinkler head – flexi hose proposal does not work.	
15560	CE 121	CHILDRENS HOSPITAL - MRI TRANSFER REINSTATEMENT WORKS	12/06/2015	Please proceed and provide attendance and reinstatement works associated by the delivery of a MRI transferred from Yorkhill Hospital and as set out in PMI 406.	24/06/2015
15593	CE 122	FACILITIES - ENABLING WORKS FOR MOP WASHER/DRYERS	17/06/2015	Please proceed and install M&E services and carry out minor building works to enable the installation of tumble dryers and high spin washers in the Laboratory & Facilities Block ground floor.	24/06/2015
15595	CE 123	CHILDRENS HOSPITAL GW3 - INSTALL OF POWER & DATA IN CEILINGS	17/06/2015	Proceed with works set out in PMI 404 to provide additional power and date in rooms GW3-036; GW30039 and GW3-042.	24/06/2015
15608	CE 124	Neurosurgical Block Entrance Works - Amendments to First Floor Layout	17/06/2015	Proceed with works to reconfigure the first floor plan to retain the dental X-Ray room in existing position.	24/06/2015
15609	CE 125	Neurosurgical Block Entrance Works - Investigation of and removal underground services	18/06/2015	Undertake investigation to establish position and type of uncharted services, hand dig around, establish if live or redundant, terminate and remove.	24/06/2015
15610	CE 126	CHILDREN'S HOSPITAL - DCFP WARD ADDITIONAL ANTI-LIG WORKS	18/06/2015	Proceed with works as set out in PMI 373, for two high risk en suite shower and WC rooms, and to nurse call system.	24/06/2015
15611	CE 127	ENERGY CENTRE - FLUE GAS EMISSIONS MONITORING	18/06/2015	To meet requirements of SEPA, supply and install flue gas testing sockets to 7 No boiler flues and 3 No CHP flues.	24/06/2015
15612	CE 128	CHILDREN'S HOSPITAL IMAGING ROOM RCI-013	18/06/2015	As a result of a clash between the head track for Group 5 imaging equipment a sprinkler head require to be isolated, repositioned and re energised, please proceed with works as set out in PMI 396.	24/06/2015
15665	CE 129	CHILDREN'S HOSPITAL REHAB DEPT - WORKSHOP POWER SUPPLIES	22/06/2015	Please proceed with works as set out in PMI 412 to uprate 5 No power supplies in the workshop area.	24/06/2015
15669	CE 130	PNEUMATIC TUBE SYSTEM - ADAPTATIONS TO PROGRAMMING FOR DIAGNOSTIC SERVICES	23/06/2015	Please proceed and make programming changes to the pneumatic tube system as set out in PMI 409.	24/06/2015
15681	CE 131	EXTERNAL WORKS - LANGLANDS DRIVE LAY-BY SERVICES DIVERSIONS	23/06/2015	Confirmation of works undertaken under PMI 309 to divert and lay new ducts for IT cables that were uncharted and not recorded on external services drawings issued by the Board at tender stage. Costs for hand dig and lowering of 6 No ducts in addition to diversion.	24/06/2015

Other items that require discussion:

- Soft landing costs – GW advised this is work in progress to colour code. GW have given indicative cost and will provide an explanation of the costs w/c 01/12/2014 (27/11/2014) AF advised that GW has given DL the cost. Mercury costs still to be advised. Feedback awaited from DL (04/12/2014) DP advised that he would liaise with AF for an update (11/12/2014) This matter will be progressed at the meeting taking place at 2pm on 08/01/2015 (08/01/2015) AF advised that costs are being identified. AF had spoken to KC and IP. IP had suggested some other items. The IP requested items would be identified separately when BMCL provide the costs to NHS for review (15/01/2015) DL noted that these were still awaited. AF advised that soft landing costs were to be discussed with EMcI so that costs could be provided from Mercury (22/01/2015) AF advised that the Mercury cost had been provided to BMCL however BMCL want to discuss this with Mercury prior to providing to the NHS (29/01/2015) GW advised that JB and DW have gone through the Mercury costs with DP. BMCL will have an internal discussion before meet with NHS. Cost will be provided to the NHS early w/c 09/02/2015) (05/02/2015) AF advised that a meeting to discuss the costs had been arranged for 3pm later that day. (12/02/2015). Meeting 19/02/2015 to discuss. (19/02/2015). It was noted that DL and AF are having discussions. DP advised that BMCL were trying to give a spread therefore need to know quickly so can retain Mercury resource on site. IP and DP have gone through the list. GW noted that BMCL still have staff costs to be covered as BMCL are doing the principal contractor role, RAMS, inductions, additional security, beneficial use lift staffing, etc. PM agreed to discuss with DL (05/03/2015) DP advised that BMCL have a timing concern and getting the paperwork in place. Workload does not justify the Mercury resource previously identified. BMCL had advised Schindler that all lifts to be re-commissioned by 17th April 2015. KC had been advised that the beneficial use lifts would be taken off use at end of March. BMCL have a proposal regarding the lifts, confirmation awaited from Schindler. Programme will initially be discussed with DH. (12/03/2015) GW noted that a decision from DL was required very soon. DP noted that timing now is getting close to being unable to have the admin put in place. DP reported that he had spoken to KC re taking down the beneficial lifts on 3rd April and these will be handed back on 7th April 2015. (26/03/2015) PM noted that DP had advised that in a place to take forward. Advised that in previous discussions with AF that AF was to have a rethink about the management cost element (02/04/2015) GW advised that he had spoken with DL and DL had confirmed that he would organize a meeting. AF requested that SF checks with AHirst if meeting is being arranged (30/04/2015) It was noted that a meeting is being organized (14/05/2015) It was noted that a meeting had been arranged to take place on 29/05/2015 (28/05/2015) GW advised that there had been a meeting with DL. BMCL had been requested to list out all the staff time on the project (04/06/2015)

- Decontamination tank – it was noted that this may have a longer delivery time than previously expected therefore the works may not be complete by 26th January 2015. BMCL will wait until the date is confirmed and will raise as an issue as required. (11/12/2014) DP noted this is WIP. BMCL are starting to do drainage works and the tank is expected to be delivered 6th February 2015 and all works to be concluded by 24th February 2015. (15/01/2015) AF advised that he had a drawing to be provided to the NHS (08/01/2015) AF advised that he would tie in with KC re the works (22/01/2015) AF suggested that the works may be commenced w/c 09/02/2015 (05/02/2015) AF advised that the works are still to be commenced. PMcG has had difficulty getting the design solution. FS will progress (12/2/2015). Now planned to commence 9th March 2015 and will take 10 days to complete. (19/02/2015). GW advised that work is underway and he understood the tank has been delivered – GW will check and confirm re tank delivery (12/03/2015) DP advised that the tank is due to be delivered on 24/03/2015 and the hole is currently being dug (19/03/2015) FS reported that he had been advised by the manufacturer that the tank needs to be remade as there is an issue with the tank that was initially made. FS had only been informed of this matter earlier that day and would obtain further information and would subsequently provide further feedback to the NHS. (26/03/2015) FS advised that the tank was due on site that day (02/04/2015) FS advised that the tank has been installed. DW noted that there is a couple of panels to go in as yet. CG is liaising with HGriffin re the location for the panels (30/04/2015) It was noted that the level panel had been installed. A switch is needed however there is a permanent diversion to the tank at this time. (07/05/2015) DW noted that the switch for the valve is awaited (14/05/2015) DW advised that operatives should be on-site w/c 25/05/2015 (21/05/2015) DW advised BMCL were awaiting the manufacturer diverting switch. DH advised that the NHS want the system to be up and running by 30/05/2015. DW advised that the system is operation however the diverting switch will not be fitted prior to 30th March 2015. BMCL will leave the valve open so the tank will need to be eventually pumped out. (28/05/2015) DW advised that BMCL are still awaiting the switch and try to push this on (04/06/2015) DW advised that he was pushing to get the contractor on site to do the panel mod. DH advised this needed to be pushed on asap (11/06/2015)

- Medical gas alarm transducers retrofit – DH requested that DP provide information regarding the timescales (15/01/2015) DP advised this is WIP. BMCL are pushing to get the transducers fitted, tested and witnessed. DH noted that the outstanding risk is circa 7 transducers which are not on site as yet to be fitted. (22/01/2015) AF advised that DP would be asked to provide an update (29/01/2015) DP advised that they were all fitted and circa 60% tested. Witnessing to commence 09/02/2015. DH suggested that IS is on leave (05/02/2015). All now fitted and tested, with witnessing by H&K ongoing. Nitrous total flow test 18/02/2015, await result. (19/02/2015). DP advised that the witnessing was currently being worked through. Sign off would be needed by IP as AE (05/03/2015) DP advised that HPI had been contacted to confirm that their paperwork needs to be completed by 31st March 2015. DH advised that ISandford is on site doing late shifts for testing. (12/03/2015) DH advised that it was thought that the witness testing was circa 70% and H&K had been advised that they need to get all the paperwork complete by 31st March 2015.(19/03/2015) DP noted that he thought that work was all complete but that he would check and provide feedback later that day (26/03/2015) DP Advised that he understood that all the works had been carried out (02/04/2015) DW advised that the system is all up and running and signed up. There are a couple of transducers to be replaced as pressures are drifting. (30/4/2015) DW advised that he would seek a status update (07/05/2015) DW noted that there was a difference n opinion between IS and HPI – work in progress to conclude (14/05/2015) DW advised that there is an issue – the schedule has been given to IS so that he can mark it up (21/05/2015) DW noted that IS has the info and he would chase up IS so that this matter could be closed out. (28/05/2015) DW advised that he is awaiting ISandford to confirm which transducer is to be changed. DW advised that he will continue to push. (04/06/2015) DW noted that ISandford had provided a list. HPI and Mercury are being geared up to start swapping out the transducers (11/06/2015)

- Fire stopping reinstatement – It was noted that BMCL had observed instances where the fire stopping had not been re-instated by NHS contractor. BMCL were concerned that they have had Capita and Building Control carrying out above ceiling sign-off and BMCL cannot now guarantee that there may be areas where fire stopping is missing. It was suggested that the NHS should reconsider their contractor works for those who have been on site and for those still to come on site. (26/03/2015) JR has advised NHS that thorough walkround had been done with Capita and Building Control. BMCL should not get involved in this NHS review. DH advised that he had spoken to IP re a couple of different contractors and ensuring that fire stopping is reinstated. DH has also spoken to Group 5 suppliers who had been back on site (02/04/2015) FS noted that level 1 and level 2 have been checked. The ground floor would be checked over that day, 23/04/2015. MCL would need to discuss with Mercury re missing bags. DW advised that BMCL are adamant that there are a few areas that BMCL have not been back in to and suggest that EE may have accessed these areas. PM agreed to liaise with DL. DW noted that BMCL had a couple of instances that an issue with lighting had been discovered and if had been identified that the KNX had been disturbed. FS noted that there had also been instances where the IPS/Spur was found to be off and suggested that a check of the tower could be left for now and there is not much compartmentalization. AF suggested that in a couple of months time that a 2 man squad be tasked with carrying out rechecking. AF suggested that a view of the way forward re rechecking should be taken in 4 weeks time. GW enquired if the NHS could raise a PMI for this item and that the costs could be debated at a later date. PM to provide PMI before closing item. ((30/04/2015) FS advised that levels 1, 2 and 3 had been completed and that he didn't expect that the tower checks would take a lot of time. BMCL would provide marked up drawings asap (07/05/2015) FS advised that BMCL had carried checks up to level 7. Some areas on the ground floor need to be done and these are being carried out at weekend. Check of level 6 identified only 1 bag missing. BMCL would also need to retrospectively check the risers in the tower. (14/05/2015) FS advised that checked were being carried out on level 10 and level 11 would be checked w/c 25/05/2015 (21/05/2015) FS advised that BMCL checks had been completed to level 11 and were now started in the basement. Mercury are replacing any missing bags. A marked up drawing would be provided via Aconex. PMI awaited from NHS (28/05/2015) FS advised that Astins had completed their survey the previous day. Mercury have fire bag drawings and everything had been reinstated. GW advised that there needed to be a discussion re costs and BMCL did not consider these to be BMCL costs (circa £70k (04/06/2015) FS advised that Mercury have replaced all the missing bags. BMCL would upload all the info to Zutec. GW noted that a PMI and a discussion about the works was required (11/006/2015)

- MRI/Anaesthetic Prep rooms – blue socket – DP agreed to discuss this with DW (02/04/2015) DH advised that query is why don't have any blue sockets. DW advised that he understood the area had been built as per signed off drawing. (30/04/2015) DW advised that the blue socket is not on the signed off drawings. DH agreed to check the bedhead drawings (14/05/2015) DH agreed to check the drawings asap (21/05/2015) DH advised that he had looked at the rooms. The NHS would not have asked for blue sockets to prep room as users had subsequently changed the use of the prep room. The second room was a previous change. DH and DW to review the trunking onsite. DH agreed to issue a PMI (11/06/2015)

- External works – AF advised that he would want to go over the landscape drawing and understand what the expectation is for official opening. AF was meeting with DL the next day (30/4/2015) FS advised that turf is going into areas – an over marked drawing will be provided. PM will provide a PMI once drawings received. (07/05/2015) FS advised that BMCL were not providing a drawing however the planting as discussed would be carried out. (14/05/2015) PM advised that he undertaken a walkround with PMc re hoarding. GW advised that the NHS had agreed the hoarding proposal and suggested that there may be a need to put more metal hoarding up. PM noted that PMcG would provide a drawing to the NHS for review. PM to advise where he would prefer to have the 'better' fencing installed (21/05/2015) GA advised that PMc has a marked up drawing which had been discussed with Townhill. GW advised that BMCL needed to understand what happens to the other side of the road once demo done at the car park. DH requested a copy of the marked-up drawing (28/05/2015) PM advised that he had walked the line of the fence and a drawing had been prepared. In principle PM was ok with the fencing however he would need to understand the boulevard fencing i.e. does it have debris netting. PM noted that the invisibly splay at the pedestrian crossing could be improved upon. PM advised that he could mark up the visibility splay. Agreed this item could be closed as matters are WIP. (04/06/2015) PM advised that he wished to see a drawing re the fence and that he would provide information regarding the splay (11/06/2015)

- Consultants Wind Survey – GB noted that they have been organized to come on site on Monday to look at a solution for the entrance re openness to conditions. There has been a query re the wind study. DH also noted that the landscaping is very immature at this time so doesn't provide any windbreak at this time. (14/05/2015) FS advised that the consultants were on site on Monday (21/05/2015) It was noted that BMCL are reviewing – have met with WSP. Looking at updating the wind survey. Orientation of some buildings differs from the early masterplan which the wind study was based on. WSP are updating on the basis of the current buildings and current orientation of buildings (28/05/2015) GB advised that the consultants were preparing a model update at moment on basis of positions of buildings. GW advised that he would need to know if the NHS wanted a wind survey to be carried out – cost circa £50k. GW suggested that GB, DS and GW discuss. PM agreed to discuss with DL (11/06/2015)

- TUV SUD report issue (Emission testing - SEPA)– Cross ref PMI 339 and PMI 379. CE awaited (28/05/2015) GW advised that costs had been received from Mercury for the install of sockets. DW advised that the costs include for the install of the Bosch TUV. Designed scaffold was also required. GW advised that he would provide the costs via Sypro. GW to provide TUV report to GW (11/06/2015)

- Nuclear Medicine – It was noted that there was one room in Nuclear Medicine that still had cabinets to be installed and this had been raised with Jordan. FS agreed to liaise with Jordan (04/06/2015) FS advised that the cabinets are due on site on 25/06/2015. There may be an issue obtaining the worktop however. (11/06/2015)

- Patient Entertainment System – DH noted that he had been advised that there is a problem with the screens in schiehallion – the screen is pixilated. He had been advised that this is a Board issue. IT are however advising that it is an Airwave issue. DW noted that Airwave problem based on type of network and he would check this out (11/06/2015)

- IPS Repairs – FW noted that there was an issue re type of dispenser fitted as they don't cover the existing holes (11/06/2015)

- Demo works – It was noted that PMc has identified some matters requiring discussion i.e. more car parking spaces to be lost, services trenches, services disconnections, etc. (11/06/2015)

[redacted]

From: Peters, Christine
Sent: 24 June 2015 12:00
To: Walsh, Tom; McNamee, Sandra; Powrie, Ian
Cc: Kane, Mary Anne; Hunter, William; Pritchard, Lynn; Harkness, Anne; Bell, David
Subject: RE: VHF/Mers Preparedness

Tom, David

That is precisely what is being pursued.

Regards,
Christine

From: Walsh, Tom
Sent: 24 June 2015 11:58
To: Peters, Christine; McNamee, Sandra; Powrie, Ian
Cc: Kane, Mary Anne; Hunter, William; Pritchard, Lynn; Harkness, Anne; Bell, David
Subject: FW: VHF/Mers Preparedness

Hi Christine, Sandra, Lynn

It seems clear that ID team and Director have in place agreed interim plans to manage any VHF/ MERS cases in SGUH.

The areas we need clarification on are :

1. Is the ventilation system in the area functioning?
2. Do we have HEPA filters in place?

Can we clarify this today as a matter of urgency, even if means missing our SMT.

Many thanks

Tom

Tom Walsh
Board Infection Control Manager
NHSGGC

From: Joannidis, Pamela
Sent: 24 June 2015 11:40
To: Walsh, Tom; McNamee, Sandra
Subject: FW: VHF/Mers Preparedness

From: Bell, David
Sent: 24 June 2015 11:40
To: Peters, Christine; Harkness, Anne; Lloyd, Mhairi; Hughes, Liz; Gordon, Jonny; Long, Jason
Cc: Powrie, Ian; Kennedy, Iain; Joannidis, Pamela; Brown, Anthony
Subject: RE: VHF/Mers Preparedness

If the Decon room ventilation is broken then we need it fixed asap – Mhairi is on the case. We were not aware of this last week; maybe it just was not turned on?? There is no doubt that the decon room is the best place in the hospital for a ? High Poss VHF case. There are 2 Medical HDU beds with isolation and we were assured, negative pressure, but to get the patient into one of these presents massive IC risks (Pamela walked the route). So if estates can turn on or fix the ventilation now, then the decontam room is usable and the best solution for now. Yes, there are storage issues and even no hot water, but that is better than a high risk patient with vomiting contaminating one of the main hospital corridors or lifts. I think we have to be pragmatic here. The Medical HDU isolation rooms are also usable, and Erica and Liz and I have walked around these before. The ACDP guidance is clear that VHF viruses are not thought to be aerosol transmitted (P42). If I had a patient with profuse vomiting, I would still argue that the best place is the decontam room at present. If the patient is stable, then medical HDU. If the ventilation cannot be fixed in the decontam room, then the ID consultant on call will have to decide. We have the PPE kit ready.
I honestly believed that we had had the ventilation specs checked a long time ago

We identified an alternate area in A&E on Friday for temporary assessment of a ?VHF case - the triage area. There are multiple single rooms there and a patient could go be isolated there temporally. But the ventilation will not be negative pressure.

There are lots of things we need to improve moving forward, particularly staff PPE training. I think we all agree on this, but we cannot achieve everything overnight. Now that A&E, Paeds and ID are on the same site, we will be able to do this together and there are enough interested people who want to make this happen.

I think we do have an interim solution with the decon room as it now stands if we can fix / turn on the ventilation.

David

From: Peters, Christine
Sent: 24 June 2015 10:24
To: Harkness, Anne
Cc: Bell, David
Subject: RE: VHF/Mers Preparedness

Thanks Anne,
My concerns are

1. The ID consultants currently think the plan is the decon room, and until it is fixed by estates it cannot be used, certainly another room could be used in ED, with a transfer to HDU , however not all rooms are equal and the planned room needs to be identified as it has been in the other EDs – if that has already been done that's great – but this was not indicated to me by anyone

2. Craig informed me that he had not seen anything in writing about the ventilation and asked me to check, which is was my starting point, Ian Powrie was also not in a position to definitely tell me about the ventilation yesterday.

Regards,
Christine

From: Harkness, Anne
Sent: 24 June 2015 09:54
To: Peters, Christine
Cc: Bell, David
Subject: RE: VHF/Mers Preparedness

The short answer – is that as director of the site I am taking an overview of all aspects of this and david is the lead for our VHF and other high risk planning

We need to bear in mind that none of our old or other EDs have such a facility – so in the short term we would use a room in ED for assessment – as we do on all other sites

For a ? high risk admission we would use a room in medical HDU – we have already agreed and walked that route – and ht eon call ID consultant will make that call

There is no need to pore over the plans and specs as they have already been agreed by others - there is no need to start from scratch

Anne Harkness
Director south sector

From: Peters, Christine
Sent: 24 June 2015 09:49
To: Bell, David; Lloyd, Mhairi; Hughes, Liz; Gordon, Jonny; Long, Jason
Cc: Powrie, Ian; Kennedy, Iain; Harkness, Anne; Joannidis, Pamela; Brown, Anthony
Subject: RE: VHF/Mers Preparedness

Thank you David, Anne and Mhairi,

As we stand we can agree that the room is not ready for high risk patients should they be admitted today.

Therefore

1. What is the plan until the room is fit for use?
2. Who is leading on ensuring that the room is signed off and totally emergency ready ?

Apologies for being a come lately, however I have received no handover about this planning and am therefore starting from scratch.

With regard to the ventilation drawings I will pour over them and report back.

Regards,

[redacted]
Dr Christine Peters
Consultant Microbiologist
Southern General Hospital
GGC
[redacted]
[redacted]

From: Bell, David
Sent: 24 June 2015 08:52
To: Lloyd, Mhairi; Peters, Christine; Hughes, Liz; Gordon, Jonny; Long, Jason
Cc: Powrie, Ian; Kennedy, Iain; Harkness, Anne; Joannidis, Pamela; Brown, Anthony
Subject: RE: VHF/Mers Preparedness

Christine,

Thanks

A lot of the issues you raised were discussed or noted last Friday when some of us met– Paeds ID, Paeds AE, Adult ID, Adult A&E. You were not aware of that meeting but I will make sure that you are involved in future meetings so we have Infection control input too. We need to avoid repeating ourselves or having parallel meetings about the same things. We had previous IC input at a previous meeting about the decontamination room back in May when Pamela Joannidis was present.

With regard to your specific points:

1. The ventilation specs have been forwarded to you now by Anne Harkness and these were previously OK'd by Craig Williams from IC. You can look at these yourself to see whether you agree. If the ventilation system is not currently working then that is something we were not aware of. Mhairi Lloyd has raised this with estates as a priority to fix as well as the water etc
2. The storage space / kit. We noted last Friday that there was excess chemical decontamination kit in the rooms and some of it is approaching expiry date. Anthony Brown, A&E ANP, has already contacted the suppliers to get these serviced, and then the plan is put together a common approach to chemical incidents between adults and paeds – see email below. Once this is done, the plan was to rationalise the decontamination kit and create more space in the room for the "Infection PPE". This would in turn allow the doffing room to be cleared. In an emergency now, we could clear the doffing room (there is not much in there) and there is space in the "donning" room to get the PPE on.
3. Monitoring kit – which could be disposed of, has been identified already by Mhairi

At the moment, the Brownlee PPE is all stored on 5C (the new ID ward). Liz Hughes has boxes of this packed and ready, and in the event of a VHF case now, we would bring this down to the Decon room. The boxes are packed with everything that is needed for the buddy and the team with the patient, and have checklists etc. **In the immediate term we would use that and so we are ready to use this now**. In the near future, the plan is to have a shared store of this in the room that Paeds and Adult A&E and ID teams would all train with and use.

The rooms are the best place to manage a ?VHF in the new hospital – this has been agreed by all the teams who would actually have to look after the patients. The facility is better than we had at the Brownlee and Yorkhill. Hopefully your concerns about the ventilation can be addressed quickly.

We had planned to do a training exercise in the second half of July – lots of people are on leave from now for a couple of weeks including myself. We also need to expand and repeat the PPE training so that enough adult, A&E and Paeds staff are comfortable with this. Again this was discussed last week and Anthony and Mhairi and hopefully Liz Hughes were to meet to try to standardise this (Liz was not at the meeting)

MERS is a different issue – again the ventilation system is critical, as is the ventilation system in the 2 Medical HDU rooms that are isolation rooms. Can you find out if these have the filters and are suitable??? We had assumed that the HDU rooms were where we would manage resistant TB / MERS cases

I am on leave from tonight until July 6th. My ID colleagues are aware that the current ?VHF plan is to use the decontam room with the kit from 5C

David

From: Brown, Anthony
Sent: 22 June 2015 12:12
To: Lloyd, Mhairi; Gordon, Jonny; Bell, David; Lundy, Wendy; Russell, Fiona; Doherty, Conor
Cc: Munro, Kim
Subject: De-con

I have been in touch with Respirex. The adult de-con suits will be serviced on **Friday 10th July** and the Paed suits will be serviced on **Monday 13th July**.

Mhairi - could you please send me the names of the link nurses from the adult side so we can arrange a date/time to meet together to make sure we have a common approach.

If I can be of any further help with this, please let me know.

Many thanks,

Anthony Brown
Associate Nurse Practitioner
Emergency Dept.
RHSC.
[redacted]

From: Lloyd, Mhairi
Sent: 23 June 2015 15:53
To: Peters, Christine; Bell, David; Hughes, Liz; Gordon, Jonny; Long, Jason
Cc: Powrie, Ian; Kennedy, Iain; Harkness, Anne; Joannidis, Pamela
Subject: RE: VHF/Mers Preparedness

Dear All

I reported this on FM website and have now spoken with Ian Powrie (yesterday) in person about this area and the fact it is not yet fit for purpose and he has told me he will look at it – until the structure is ready we cannot look at the content any further. I am at present contacting the senior nurses from the original group of trainers that we had across the three sites.

I have already enquired about key pads for the doors to the unit but these are at a £500 cost.
There is limited space for equipment and a lack of storage within the ED therefore we do not have anywhere to store anything from here – does paeds have anywhere??

I can be available whenever you want another meeting

Regards

Mhairi

From: Peters, Christine
Sent: 23 June 2015 14:04
To: Bell, David; Hughes, Liz; Lloyd, Mhairi; Gordon, Jonny; Long, Jason
Cc: Powrie, Ian; Kennedy, Iain; Harkness, Anne; Joannidis, Pamela
Subject: VHF/Mers Preparedness

Hi David,

I walked around A+E at the SGH this morning with Jason to look at the Decon room as the possible accommodation for a VHF patients +/- Mers-CoV etc.

Main issue: not ready for use today for a number of reasons:

- Hot water and drainage are being looked at by estates, ceiling tiles have been removed and it seemed to me that the ventilation was not working – the air was stale and air entry was not apparent – but may have been due to estates working
- The room is dirty and needs a clean including the vents
- The equipment that would be required is not ready to be rolled out promptly
- PPE and checklists located elsewhere in A+E (of course this is easily fixed, but I am pointing out it is not ready to rock as of now)
- Access to the room is limited requiring keys and if the case is a cold caller in A+E waiting area and acutely ill this would pose a problem (again easily surmountable when identified as an issue)
- A large amount of stored equipment that would need to be separated off from doffing areas

As a place to prepare for use it has potential for VHF, but we will need to do a detailed preparation and walk through

- Planning and alterations to accommodate flow and patient placement and storage will need to be talked through with those in charge of major incident and chemical hazard planning as the room is primarily designed for them and if the room is to be in a ready state for both types of emergency we will need close collaboration as the needs are different.

In terms of Mers, as far as Ian Powrie (copied in and in charge of Estates) is aware this is NOT a negative pressure room. He is kindly going to check on the exact spec for us, but as there was no pressure gauge and air flow would indicate a positive pressure today I would not put ? MERS there. We need to check if there is a HEPA extract filter.

Can I suggest that we tee up an urgent meeting to finalise the plans for a VHF case in the immediate term and identify what needs to be put in place for a longer term plan?
Liz is away on AL from Friday, so before then would be ideal,

Kind regards,

[redacted]
Dr Christine Peters
Consultant Microbiologist
Southern General Hospital
GGC
[redacted]

From: Cullen, Karen
Sent: 30 June 2015 09:17
To: Peters, Christine
Cc: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20); Williams Craig (NHS GREATER GLASGOW & CLYDE - SGA20); Lavery, Brian; Powrie Ian (NHS GREATER GLASGOW & CLYDE - SGA20); Mallon, John; Young Janet (NHS GREATER GLASGOW & CLYDE - SGA20)
Subject: Air Sampling Particle Counts NSGUH Ward 4B Arran
Attachments: Particle count NSGUH Wd 4B Arran.pdf

Hi Christine

Please find attached Particle Counts for NSGUH Ward 4B Arran.
I have Copied in Ian Powrie from Estates as requested by Teresa/Craig.

Kind Regards

[redacted]

Technical Manager

Glasgow Royal Infirmary
New Lister Building
Clinical Microbiology
Alexandra Parade
Glasgow
G32 2ER
[redacted]

****
NHSGG&C Disclaimer

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****

LF 220

AIR SAMPLING REQUEST FORM

WARD 4B SGUH

SAMPLED BY : [redacted]
DATE: 29/6/15

Read by.....
Date.....

LOCATION 4B NSGUH

SOURCE	LABORATORY NO.	GROWTH ON SAB 7 DAYS 22°C	GROWTH ON SAB 7 DAYS 30°C	GROWTH ON TSA 7 DAYS 30°C	CUMULATIVE (Ave) PARTICLE COUNTS 0.5µm	ORGANISM ISOLATED (COMMENT)
WARD 4B R76	15.1901444.N				4658	1 VISITOR
R77	15.1901445.E				2475	CHLORODUST PRESENT
R78	15.1901446.Y				1129	
R79	15.1901447.P				1850	
R80	15.1901448.F				~~4769~~ 4211	EMPTY
R81	15.1901449.T				2769	1 VISITOR 1 STAFF PRESENT
R82	15.1901450.Y				4391	

Signed by..... Checked by..... Date .....

Address : Clinical Microbiology, New Lister Building, Alexandra Parade, Glasgow G32 2ER Tel : 0141 201 8546

A47069198

LF 220

AIR SAMPLING REQUEST FORM

WARD 43 SGUH

SAMPLED BY : [redacted]
DATE: 29/6/15

Read by.....
Date.....

LOCATION 4B NSGUH

SOURCE	LABORATORY NO.	GROWTH ON SAB 7 DAYS 22°C	GROWTH ON SAB 7 DAYS 30°C	GROWTH ON TSA 7 DAYS 30°C	CUMULATIVE (Ave) PARTICLE COUNTS 0.5µm	ORGANISM ISOLATED (COMMENT)
WARD 43 R83	15.1901451.P				7621	
R84	15.1901452.F				N/A	NOT SAMPLED DOOR WIDE OPEN
R85	15.1901453.T				970	
R86	15.1901454.M				2785	
R87	15.1901455.V				2503	INVISION 1 STAFF PRESENT
R88	15.1901456.R				1645	
R89	15.1901457.D				1072	

Signed by..... Checked by..... Date .....

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A47069198

LF 220

AIR SAMPLING REQUEST FORM

LAMINAR 4B SCUH

SAMPLED BY : [redacted]
DATE: 29/6/15

Read by.....
Date.....

LOCATION 4B NSGUH

SOURCE	LABORATORY NO.	GROWTH ON SAB 7 DAYS 22°C	GROWTH ON SAB 7 DAYS 30°C	GROWTH ON TSA 7 DAYS 30°C	CUMULATIVE (Ave) PARTICLE COUNTS 0.5µm	ORGANISM ISOLATED (COMMENT)
R90	15.1901458.S				960	empty
R91	15.1901459.Z				5931	
R92	15.1901460.R				2611	
R93	15.1901461.D				5440	
R94	15.1901462.S				1468	
R95	15.1901463.Z				2354	
R96	15.1901464.Q				579197	

Signed by..... Checked by..... Date .....

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A47069198

LF 220

AIR SAMPLING REQUEST FORM

LAND 4B SGUH

SAMPLED BY : [redacted]
DATE: 29/6/15

Read by.....
Date.....

LOCATION 4B NSGUH

SOURCE	LABORATORY NO.	GROWTH ON SAB 7 DAYS 22°C	GROWTH ON SAB 7 DAYS 30°C	GROWTH ON TSA 7 DAYS 30°C	CUMULATIVE (Ave) PARTICLE COUNTS 0.5µm	ORGANISM ISOLATED (COMMENT)
R97	15.1901465.H				164255	FIRST SAMPLE
R97	15.1901466.W				115112	SECOND SAMPLE
R98	15.1901467.A				11313	
R99	15.1901468.C				3592	
CORRIDOR NEAR R90	15.1901469.K				18479	
CORRIDOR NEAR R97	15.1901520.J				17161	

Signed by.....

Checked by..... Date .....

Address : Clinical Microbiology, New Lister Building, Alexandra Parade, Glasgow G32 2ER Tel : 0141 201 8546

A47069198

CAPITA

NEW SOUTH GLASGOW HOSPITAL

ADULT AND CHILDREN'S HOSPITAL AND ENERGY CENTRE

NEC 3 SUPERVISORS REPORT NO. 51

JULY 2015

NEW SOUTH GLASGOW HOSPITAL ADULT AND CHILDREN'S HOSPITAL AND ENERGY CENTRE

SUPERVISOR'S REPORT NO. 51 JULY 2015

CONTENTS

NEW SOUTH GLASGOW HOSPITAL ADULT AND CHILDREN'S HOSPITAL AND ENERGY CENTRE

PAGE	CONTENTS	
1.0	EXECUTIVE SUMMARY: THE NEW ADULT AND CHILDREN'S HOSPITAL	3
2.0	DESIGN COMPLIANCE CHECK	4
3.0	PROCEDURES REVIEW	4
4.0	CONSTRUCTION REVIEW	7
5.0	INFORMATION REQUIRED	15
6.0	SUPERVISOR'S TESTS AND INSPECTIONS	17
7.0	DEFECT NOTIFICATIONS ISSUED	18

1.0 EXECUTIVE SUMMARY: ADULT & CHILDREN'S HOSPITAL

In accordance with our NEC3 Contract, this is the monthly report for July on the activities carried out and responsibilities undertaken by the NEC3 Supervisors. We undertook post completion inspections and inspections of the incomplete work at Stage 3 completion.

We have inspected the remaining works in the Neuro Link Bridge and the quality of the works is satisfactory. We also received copies of the water test results and these were satisfactory.

Brookfield is working through the list of defects identified prior to the car park being handed over to the Client. We await confirmation when these will be complete to carry out a further inspection.

Road surfacing work has been completed on the dual carriageway leading to Govan Road, and at the south of the main building, with a generally good quality finish. Local ponding on the north side of Govan Road remains outstanding. The footpath ponding at the extended footpath area on the east side of the maternity unit remains outstanding.

There were no Supervisor's Communication General Matters / Other Instructions No issued during July 2015.

Supervisor's Notification of Defect No's, 137

- Seeking confirmation when the damaged cladding has been rectified.

.

2.0 DESIGN COMPLIANCE CHECK

Currently nothing to report.

3.0 PROCEDURES REVIEW

3.1 Contractor's QA Procedures / Compliance Inspections

General Inspections

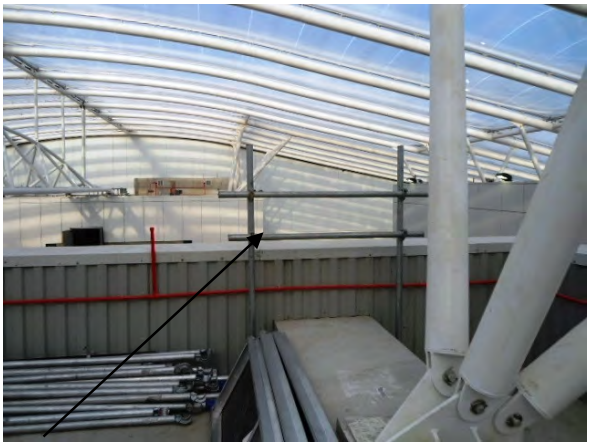
We carried out inspections with Brookfield to the section of the Neuro Link Bridge providing access to the Neurosurgery Building prior to the completion. Only minor snagging items were identified.

During an inspection of the Children's Roof adjacent to Plantroom 41A we noted that there were no bulkhead lights fitted above the doors. There were also no lights fitted in the room on the roof providing access and egress via the cat ladder in Core L. These were not taken in the approved drawings. Brookfield has issued a communication to BMCE M&E Managers for action / response. See Supervisor's Communication General Matters / Other Instructions (CI 13.1) No 246

Post Completion Inspections / Issues

There is temporary scaffolding providing perimeter protection at concrete floor beams above the cores accessed from Level 12. The client intimated that protection is required. We have asked Brookfield to confirm when this will be undertaken. See Supervisor's Communication General Matters / Other Instructions (CI 13.1) No 242.

Temporary scaffolding providing perimeter protection.



Temporary scaffolding providing perimeter protection.

There is a roof leak in the children Atrium and Brookfield are in the process of addressing this problem.

SUPERVISOR'S REPORT NO. 51 JULY 2015

SHTM 04-01 Pt A recommends that all hot water outlets provided for food hygiene and decontamination should be provided with a notice 'CAUTION-VERY HOT WATER'. We asked Brookfield to confirm that these will be fitted to all locations where this occurs. They have confirmed that all the signs have been fitted. Consequently General Matters / Other Instructions (CI 13.1) No 245 is closed out.

We carried out an inspection with Brookfield of part of the link corridor which will provide access between the Adult and Children's Hospital and Neurosurgery and the Teaching and Learning Centre. We noted that there was one area of incomplete intumescent coating to one column and not two as previously reported. Brookfield confirmed that they have addressed the problem and provide photographic evidence of the completed work.

Project Manager's Schedule of Incomplete Works at Completion

Brookfield has a tracker in place which will be reviewed weekly. Six of the works from the schedule are complete. We have noted below the works which are not on programme to completion.

- New Tank Installed. Road Surfacing Completed. Switch to power Supply Panel to be fitted.
- No 8 Cores A&B & Main Entrance - meet and greet panels glass cabinets: Approved by NHS 25/02/15, Complete.
- No 18 New VIE Turning Circle: Fencing is complete.
- No 24 AGV Performance Tests and Trials: Brookfield still await linen carts from NHS to complete performance testing – w/c TBC.

Defects at completion

Currently there are 102 outstanding defects reported at completion to be addressed. There are also 63 additional defects identified following our joint inspections after completion. Many of these are of a minor nature.

Post Completion Defects

The defects post completion are being consolidated into one schedule by Brookfield and are being closed out.

NEW SOUTH GLASGOW HOSPITAL ADULT AND CHILDREN'S HOSPITAL AND ENERGY CENTRE

SUPERVISOR'S REPORT NO. 51 **JULY 2015**

Below is the current status with Defects.

Final Sweep IDMS – 41 (18 Structal)

Incident Reports – 45

FM First – 259 Open, 315 In Progress, 437 Closed

3.2 Witness Testing and Commissioning.

Currently nothing to report.

3.3 Board Equipment Installation,

Currently nothing to report.

3.4 Non Conformance Reports

We reviewed Brookfield's NCR Tracker and noted the issues raised by the Package Managers. Brookfield confirmed that the tinting to the blockwork is complete to the pointing on the south and east elevations. An NCR has also been raised in relation to manholes which are below the level of the surrounding tar. (See photo opposite.)

SUPERVISOR'S REPORT NO. 51 JULY 2015

4.0 CONSTRUCTION REVIEW

4.1 Visits to the Works

The following members of our team undertook site inspections, reviewed documentation, attended meetings and met with relevant Contractors representatives on-site personnel:- John Redmond (Lead NEC3 Supervisor) 1st to 3h, 6th , 7th, 9th, 13th 16th , 18th , 28th , 29th and 30th Willie Roxburgh on the 3rd, 16th, 27th and 31st. Capita's NEC3 Supervisor's visited the site 16 days.

4.2 Elements of the Works available for inspection

Neuro bridge (partly limited due to access).
All external roads.
All site external works.
Perimeter hard and soft landscaping.

4.3 Current Observations

The visual inspections of the work carried out to date indicate that the works are generally being carried out to a satisfactory standard. We continue to be assisted by the site teams and the NHS Project Team in resolving various construction, mechanical, electrical, and quality issues. We continue to close out our Supervisor's Notification and Defects when we have received satisfactory responses.

4.3.1 Structural and Civil Works

Car Park 1.

Brookfield is working through the list of defects identified prior to the car park being handed over to the Client. We have asked Brookfield to inform us when the defects are completed.

4.3.2 Children's Area

Nothing to report

4.3.3 External Works

<u>Govan Road/Renfrew Road & ACH Entrance Road.</u>

Road surfacing work has been completed on the dual carriageway leading to Govan Road, and at the south of the main building, with a generally good quality finish. Local ponding on the north side of Govan Road remains outstanding. The footpath ponding at the extended footpath area on the east side of the maternity unit remains outstanding.

SUPERVISOR'S REPORT NO. 51 **JULY 2015**

We advised the Brookfield team on 16th December that ponding on the new extended footpath to the east side of the maternity unit has the potential to be a significant slip hazard in cold weather. We asked them to confirm their action to address this hazard. Brookfield has confirmed that Land Engineering have been instructed to lift the full width of tar and re-lay with a fall from the ramp to the new road kerb.

Brookfield had confirmed that work would commence week beginning 13th April. However they are awaiting an asphalt squad. (See Supervisor's Communication General Matters / Other Instructions (CI 13.1) No 237).

Footpath to the east side of the maternity unit.

Ponding at the extended footpath area on the east side of the maternity unit, and potential specification non-compliance on sections of the footpath to the dual carriageway just north of the energy centre.

Ponding is also apparent locally on the granite hardstanding in places around the main Children's entrance canopy. Wind-blown surface water on the canopy is not being collected at canopy level in many places. Brookfield are aware of this and are in liaison with their subcontractor to try to resolve.

Significant local ponding has also become apparent on the route from the Children's main entrance to the covered bicycle stand near the Hardgate Road multi storey car park, just west of the children's hospital main entrance. Brookfield are aware of this and are working with their subcontractor, Land Engineering to come up with an acceptable solution.

4.3.4 Mechanical Services

We received copies of the water test results and these were satisfactory.

4.3.5 Electrical Services

Nothing to report.

4.3.6 Doors

Nothing to report.

4.3.7 Windows

Nothing to report.

4.3.8 Ducting

Nothing to report.

4.3.9 Floors

Nothing to report.

4.3.10 Blockwork

Nothing to report.

4.3.11 Heating

There are gaps in the thermal insulation in the back box of the remote TRV's mounted on external walls controlling the radiant panel heater in Level 0, ZA ward OBW 009. There is the likelihood that this will cause the TRV to be affected by the lower temperature in the partition void causing the Radiant panel to emit heat unnecessarily wasting energy. This applies to other similar TRV's on outside walls. We asked Brookfield to confirm if this has been considered and if remedial action will be taken to address this. Brookfiled has confirmed that all remedial action has been carried out and other similar TRV's on outside walls have been checked and rectified where required. Consequently Supervisor's Communication General Matters / Other Instructions (CI 13.1) No 199 is closed out.

4.4 Current Defects.

Some of the outlets taking the rainwater from the top level of the Car park are too high consequently water is ponding in the recessed channels. The client has agreed that any remedial work would exacerbate the problem.

The capping piece on the north facing elevation of the Children's Hospital has two discoloured areas. We asked Brookfield to confirm their remedial action to address this and confirm when complete. They have confirmed that if the marks can't be cleaned off, Prater will paint repair or replace panels if required. See outstanding works list. See Supervisor's Notification of Defect (Cl 42.2) No 88.

The text on the drawing for Level 2, Rooms END-033 and END-035 indicates a DATA1000 at each desk, which should be 2 x OUT010 & 1 x OUT131. The drawing however indicates 1 x OUT010 and 2 x OUT131. This is wrong; consequently there are too many data points and not enough power. Brookfield confirmed that the additional power etc has been installed and the correct amount of sockets etc has been installed. Consequently Supervisor's Notification of Defect (Cl 42.2) No 92 is closed out.

The NHS Fire Risk Assessor has been on site and noted that the air sampling unit within General Theatre One on the second floor has been painted over. We also noted that another unit in Theatre 4 has been partially painted over. These should be paint free. There is also an air sampling unit in the main Atrium north facing wall which we asked Brookfield to confirm when these are addressed. They have confirmed that the painted over sampling point has been rectified. Brookfield intimated that the point on the North wall has been pulled back on Level 5 but would need to look specifically. Gary Kimmins from Mercury is aware of it but requires rope access. We await confirmation when this will be dealt with. See Supervisor's Notification of Defect (Cl 42.2) No 93.

The joints at window cills are opening up. We asked Brookfield to confirm their remedial action to resolve this problem. They have filled and painted the joints but they have opened up again. They are sealing a joint with sealant to determine if this is a better solution. We await their response. See Supervisor's Notification of Defect (Cl 42.2) No 99

Following a joint inspection of the theatres and adjoining rooms on Level 2 we identified cracks in the following rooms:
THE-124 General Theatre 6 ENT: Crack below the window.
THE-232 Interventional 1 Vasco/Urology: Horizontal crack right hand side of the touch screen.

SUPERVISOR'S REPORT NO. 51 JULY 2015

Following a joint inspection of Car Park 1 we identified various defects / snags which were issued to Brookfield. We asked them to confirm when these have been addressed. We have recently undertaken a joint inspection with Brookfield and noted that some of the Defects have been rectified. They are attending to the remaining outstanding Defect. See Supervisor's Notification of Defect (Cl 42.2) No 116.

The Board have employed Competent Body Zurich Engineering to undertake an inspection of the pressure systems associated with the new buildings and systems handed over on 26th January 2015. This was done in order produce the statutory written scheme required under the Pressure Systems Safety Regulations (PSSR) 2000 for the safe operation and inspection of relevant systems.

During their review, a number of defects have been found within the installed plant. Brookfield has responded as follows.

1) Configuration of boiler safety valves.
   Brookfield response: Design drawings being discussed with NHS and Zurich 02/06/15.
2) A safe method of discharge of medium pressure/temperature water and steam blow off from boilers (120 degC / 5.7bar).
   Brookfield response: Design drawings being discussed with NHS and Zurich 02/06/15.
3) Certificate of Conformity for boilers.
   Brookfield response: Issued to NHS Zurich.
4) Certificate of Conformity for economisers.
   Brookfield response: Issued to NHS Zurich.
5) Certificate of conformity for all pressure systems pipework.
   Brookfield response: Issued to NHS Zurich.
6) CE marking of pressure vessels and heat exchangers.
   Brookfield response: Complete.
7) Pressurisation Units – safety vales rating and fixing requirements.
   Brookfield response: Complete.
8) Boiler drain points.
   Brookfield response: Complete.

We asked Brookfield to confirm their plans to rectify the above points and any interim operational solutions that may have to be employed to enable the Board to bring the facilities into full operation on 24th April 2015. We also asked them to confirm when all items will be fully rectified. Brookfield has responded as above and have stated that a further inspection will be required by Zurich following the Mercury remedial works.Supervisor's Notification of Defect (Cl 42.2) No 124.

Following recent excavations around the buildings to expose and repair collapsed main drains, the Board request video surveys to be undertaken and reports provided of the repaired drain runs and also other neighbouring runs that may have been affected by proximity to the 200t crane. Brookfield has confirmed that they passed this to their Managers and we await their response. See Supervisor's Notification of Defect (Cl 42.2) No 125.

SUPERVISOR'S REPORT NO. 51 **JULY 2015**

The Bicycle Shelter roof does not drain rainwater to the two corner outlets, consequently the rainwater is ponding. We asked Brookfield to confirm their proposed remedial action to resolve this defect. They have confirmed that following a meeting with the designer a level survey is required. The plan is to introduce a further outlet. See Supervisor's Notification of Defect (Cl 42.2) No 129.

Following an inspection of external parts of the hospital we identified various defects. (See attached marked up drawing. We have inspected the progress of rectification with Brookfield and will undertake a further inspections when the remaining works are completed. See Supervisor's Notification of Defect (Cl 42.2) No 130.

Gap between cladding and blockwork interface.

Nuts not fitted to glazed fixings to ramp.

SUPERVISOR'S REPORT NO. 51 **JULY 2015**

Timber wedges inappropriately used to support glazzed panels.

Excesive gap at the bottom of the door frame.

While undertaking an inspection with Brookfield we noted that the PIR in room STW-041 was not functioning. Brookfield reported this to Mercury and has now confirmed that this has been addressed. Consequently Supervisor's Notification of Defect (Cl 42.2) No 131 is closed out.

The concrete joint between the 6th floor and the down ramp is break up. We asked Brookfield to confirm the remedial measures to address this defect. They have instructed Dunne to carry out remedial works. See Supervisor's Notification of Defect (Cl 42.2) No 132.

NEW SOUTH GLASGOW HOSPITAL ADULT AND CHILDREN'S HOSPITAL AND ENERGY CENTRE

SUPERVISOR'S REPORT NO. 51 JULY 2015

The defects identified in Supervisor's Notifications of Defects No 106, 107, 112, 113, 115, 117, 118, 121, 126 and 128 have been either completed or substantially completed. Consequently these have been closed out.

The remaining defects as listed below have been amalgamated under Supervisor's Notification of Defect (Cl 42.2) No 134.

Below is the current status of the outstanding Defects.

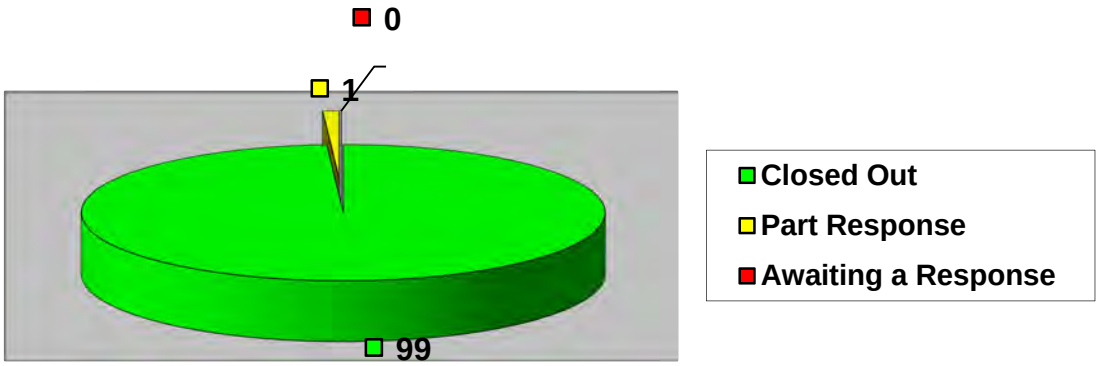
Level 00 – Level 01 – Level 02 – Level 03 – Level 05 – Level 08 – Level 09 – Level 10 – Level 11 –	60 12 39 01 01 03 01 09 06		Level 00 – Level 01 – Level 02 – Level 03 – Level 05 – Level 08 – Level 09 – Level 10 – Level 11 –	**10** **03** **08** **01** **01**
Total Defects at inspection 132			Total Defects remaining to be complete 23	

Entrance adjacent to Hardgate Road.

Following an inspection of the Lightwell adjacent to Hospital Street CC0-015 we identified incomplete decoration and grubby marks on walls within the Lightwell. There was also a damaged corner bead. Brookfield arranged for their painting sub-contractor to return to site and rectify the defects. We carried out an inspection with Brookfield and the work was satisfactorily completed. Consequently Supervisor's Notification of Defect (Cl 42.2) No 136 is closed out.

It appears that the cladding on the west facing elevation has been damaged and an unsuccessful attempt has been made to repair the damage. We asked Brookfield to confirm when this defect has been rectified. They have confirmed that this has been passed onto the sub-contractor Prater to rectify the unsuccessful attempt at the repair. See Supervisor's Notification of Defect (Cl 42.2) No 137.

5.0 INFORMATION REQUIRED



NEW SOUTH GLASGOW HOSPITAL ADULT AND CHILDREN'S HOSPITAL AND ENERGY CENTRE

SUPERVISOR'S REPORT NO. 51 **JULY 2015**

Item No.	Description	Date Requested	Comment	
Items 1 to 198 have been closed out				
199	There are gaps in the thermal insulation in back box of remote TVR's. Confirm remedial action.	20.03.14	Closed out.	
Items 200 to 236 have been closed out				
237	Seeking confirmation on Brookfield's action to address the ponding to the footpath to the east side of the maternity unit.	08.01.15	Response received.	
Items 240 to 241 have been closed out				
242	Seeking confirmation if permanent perimeter protection will be fitted above cores accessed from Level 12.	25.02.15	Response received.	
Items 243 to 244 have been closed out				
245	Confirm that 'CAUTION-**VERY HOT WATER'** notices will be fitted to all hot water outlets provided for food hygiene and decontamination.	19.03.15	Closed out.	
246	No lights fitted to above the doors leading from the room to plantroom 41A	30.03.15	Response received.	
Items 247 to 251have been closed out				

NEW SOUTH GLASGOW HOSPITAL ADULT AND CHILDREN'S HOSPITAL AND ENERGY CENTRE

SUPERVISOR'S REPORT NO. 51 **JULY 2015**

6.0 SUPERVISORS TESTS AND INSPECTIONS

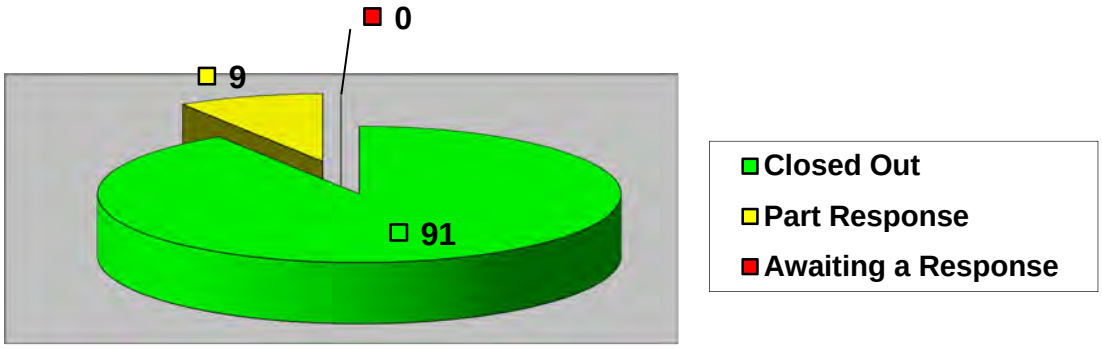
Tests not required	N/A
Tests required but not tested	Fail
Tests required which has passed tests	Pass

Tests				
Ref	Title	To be Notified by	Status	Test Date
01-377	Various tests undertaken and passed from the 09. 07.2012 To the 22.01 2015.			
378	Fire shut down test of AHU's during fire activity. PR21 AHU 19 did not shut down.	Brookfield	Retested successfully but not present. See Supervisor's Report No 50	23.01.2015
379-381	Various tests undertaken and passed from the 23. 01.2015 to the 02.04 2015.			

NEW SOUTH GLASGOW HOSPITAL ADULT AND CHILDREN'S HOSPITAL AND ENERGY CENTRE

SUPERVISOR'S REPORT NO. 51 **JULY 2015**

7.0 DEFECTS NOTIFICATIONS ISSUED



NEW SOUTH GLASGOW HOSPITAL ADULT AND CHILDREN'S HOSPITAL AND ENERGY CENTRE

SUPERVISOR'S REPORT NO. 51 **JULY 2015**

	Description	Date Requested	Comment	
Items 1 to 82 have been closed out.				
83	Seeking confirmation of remedial action to resolve ponding.	13.11.14	Response received.	
Items 84 to 87 have been closed out.				
88	Seeking confirmation of remedial measures to address the discolouration of the capping pieces.	20.11.14	Response received.	
Items 89 to 91 have been closed out.				
92	There are insufficient power points in rooms END-033 and END-035. Seeking confirmation when addressed.	30.01.15	Closed out.	
93	Confirm when the air sampling unit within General Theatre One and Theatre 4 are paint free and the unit in the Atrium has been fitted properly.	05.02.15	Response received.	
Items 94 to 98 have been closed out.				
99	Confirm to open window cill joints.	24.02.15	Response received.	
Items 100 to 115 have been closed out.				
116	Various defects car Park 1.	08.04.15	Response received.	
Items 117 to 123 have been closed out.				
124	Defects in relation to the Zurich Engineers inspection.	16.04.15	Response received.	
125	Seeking video surveys with reject to drain repairs.	16.04.15	Response received.	
Items 126 to 128 have been closed out.				
129	Ponding to Bicycle Shelter.	11.05.15	Response received.	
130	Various external fabric defects.	11.05.15	Response received.	
131	PIR not functioning in room STW-041.	11.05.15	Closed out.	
132	6th floor down ramp is break up.	13.05.15	Response received.	
133	Ponding to main pedestrian entrance to Car Park 1.	13.05.15	Closed out.	
134	The defects identified in Supervisor's Notifications of Defects No 106, 107, 112, 113, 115, 117, 118, 121, 126 and 128 have been either competed or substantially completed. These have been closed out and the remaining defects amalgamated under this Defect Notification.	03.06.15	Response received.	
135	The door selector to the entrances adjacent to Hardgate Road does not allow the doors to close over properly. The primary opening door at the entrance to the main stair intermittently does not close over and remains in the open position.	16.06.15	Closed out.	
136	Incomplete decoration and marks on walls.	18.06.15	Closed out.	
137	Seeking confirmation when the damaged cladding has been rectified.	01.07.15	Response received.	

NEW SOUTH GLASGOW HOSPITAL ADULT AND CHILDREN'S HOSPITAL AND ENERGY CENTRE

SUPERVISOR'S REPORT NO. 51 **JULY 2015**

John Redmond, Technical Advisory Services

Property and infrastructure
Capita, 4th Floor, 7 West Nile Street, Glasgow G1 2PR

	Signed	Date
Originated by	John Redmond	10th August 2015
Completed by	David Ramsay	10th August 2015

NHS Greater Glasgow and Clyde

Infection Prevention and Control Work Plan 2015 / 2016

(This document supports the implementation of the NHS Board IPC Programme 2015 / 2016)

Approval

NHS Greater Glasgow & Clyde Board Infection Control Manager

NHS Greater Glasgow & Clyde Board Infection Control Committee

Submitted to:

NHS Greater Glasgow & Clyde Acute Infection Control Committee

NHS Greater Glasgow & Clyde Partnerships Infection Control Support Group

July 2015

CONTENTS

		PAGE
1.	NEW INITIATIVES / PROJECTS 2015 / 2016	3.
2.	CORE PROGRAMMES OF WORK	
A)	Surveillance and Continuous Quality Improvement	7.
B)	Education	9.
C)	Policies	10.
D)	Decontamination	11.
E)	Clinical Governance & Patient Safety	12.
F)	Healthcare Hygiene, Cleaning Services and the Built Environment	13.
G)	Hand Hygiene	14.
H)	Person Centred Care / Patient Experience	15.
I)	Inspectorate Sector / Health Improvement Scotland HAI Standard	16.
J)	MRSA KPIs	16.
K)	On the Move	16.
3.	GLOSSARY	17.

JULY 2015

1. NEW INITIATIVES / PROJECTS – 2015/2016

Topic	Actions	Critical Dependency(s)	Lead	Progress Update / Date for Completion	RAG Status
Undertake surveillance and quality improvement programmes in addition to the mandatory requirements of HDL (2006)38	Review available data, quality assure against existing available data and if possible plan strategies to survey all services for SSI.	ICNet functionality HDL from SGHD re additional mandatory requirements.	Lead Nurse Surveillance Ann Kerr	CEL on mandatory surveillance still outstanding. GREEN status as fully compliant with mandatory surveillance as of May 2015.	**GREEN**
Healthcare Improvement Scotland (HIS) Standards 2015	Update BICC ToR to ensure point of care to Board reporting structure for IPC committees is clear.	None	ICM Tom Walsh	May 2015. Complete.	**GREEN**
	SOP to describe what HAI audit information should be displayed in wards and what should be public facing information.	None	NCIPC Pamela Joannidis	July 2015. Draft paper combining this and the proposed policy describing the role and responsibility of clinical staff in relation to HAI information drafted.	**GREEN**: First draft circulated with July 2015 papers.
	Policy describing the role and responsibilities of clinical staff in relation to providing HAI information to healthcare teams and their role in providing and recording all communication with patients and their relatives especially where the cause of death is HAI related.	None	ANDIPC Sandra McNamee	July 2015. Please see above.	**GREEN**: First draft circulated with July 2015 papers.
	Develop a strategy describing how IPC policies will be audited, the audit process itself and the proposed feedback mechanism including links to education and QI and the CAAS Standards.	None	ANDIPC Sandra McNamee	July 2015. To be circulated with July papers for approval at BICC.	**GREEN**: First draft circulated with July 2015 papers.
	Prepare an annual report on audit activity.	None	ANDIPC Sandra McNamee	March 2016	**GREEN**

July 2015

NEW INITIATIVES / PROJECTS – 2015/2016 (cont/…)

Topic	Actions	Critical Dependency(s)	Lead	Progress Update	RAG Status
Healthcare Improvement Scotland (HIS) Healthcare Associated Infection (HAI) theatre aide memoire	Ensure theatre areas are aware of and are prepared for HEI theatre inspections.	None	Sector IPCTs and local Theatre Lead Nurses and Service Managers	Ongoing. IPC continue to meet with theatre users group to ensure that NHSGGC is compliant with elements of the audit and if not this is flagged to the senior management team.	**AMBER**: Process not yet complete. No inspections have taken place in theatres to test interpretation of the standard/ tool.
Information Governance during a time of Organisational Change	Continue to review aggregated IPC data and exception reports at BICC.	None	ICM Tom Walsh	Ongoing via HAIRT and Q&P Summary	**GREEN**: Complete
	Continue reporting key metrics (HAIRT) to NHS Board, Q&P and Clinical Governance Committees / Forums.	None	ICM Tom Walsh	Ongoing via HAIRT and Q&P Summary	**GREEN**: Complete
	Ensure and reinforce consistent application of IPC Policy and practice through the IPC Senior Management Team (SMT).	None	ICM Tom Walsh	July 2015. Paper now appendix in NHSGGC Clinical Governance Structure as per instructions of HAI executive lead.	**GREEN**: Complete
	Include in IPCT Risk Register.	None	ICM Tom Walsh	IPCT Risk Register updated May 2015.	**GREEN:** Complete
Integration of Health and Social Care	Support IPCT with responsibility of directly managed services within the Integrated Joint Boards and Mental Health Services.	None	ANDIPC Sandra McNamee and LN IPCT West Lynn Pritchard	July 2015 Dedicated Partnership Team will commence on 1 July 2015.	**AMBER**: Team in place, work plan to be agreed with Nurse Director.
Acute Service Review	*IPC data which is currently collected is essentially ward based and provides an overview of trends and rates not only in wards across sectors and sites. The migration of wards from disparate sites into the New South Glasgow University Hospitals (NSGUHs) and the acute service review will mean the re-organisation of three sectors into a site-based management structure and will require significant re-organisation and interpretation.*	None	Lead Nurse Surveillance Ann Kerr	May 2015	**GREEN**: Complete first report issued in May 2015.

July 2015

NEW INITIATIVES / PROJECTS – 2015/2016 (cont/…)

Topic	Actions	Critical Dependency(s)	Lead	Progress Update	RAG Status
Acute Service review (cont/…)	IPCT triggers will still be in place, i.e. any ward with two cases of CDI in a two-week period will require weekly review. This action will be extended to include all alert organisms of communicable diseases, e.g. MRSA, Group A Strep infection.	South West IPCT	IPC Lead Nurses		**GREEN:** Complete
	All cases of all alert organisms or communicable diseases will continue to be reviewed by a member of the IPCT. All severe cases of CDI will be reported in the weekly report. The SAB Reports will continue to be issued and the GRO Data analysed by site and for the Board.	None	IPCT		**GREEN:** Complete
	Outbreaks, *Incidents* or *Triggers* will continue to be reported to the BICC and site committees as convened. Lead Nurses from each of the sectors will continue to meet weekly and provide an update on site issues to the ANDIPC. This will be the basis of the Directors Report.	None	Senior IPCT		**GREEN:** Complete
	Reports on SSI in relation to Caesarean sections should be unchanged. Orthopaedic procedures are based on numbers performed so should remain stable but this will be closely monitored by the Lead Nurse for Surveillance.	IPC Data Team resource	Lead Nurse Surveillance Ann Kerr		**GREEN:** Complete
	Statistical Process Control charts (SPCs) for Hospital acquired CDI and MRSA will clearly state that this is an estimate based on amalgam of previous data.	None	Lead Nurse Surveillance Ann Kerr	New SPCs created and issued in June2015 to new SGUH wards.	**GREEN:** Complete
	The Hospital Acquired Infection Reporting Template (HAIRT) and the HAIRT Summary for the Acute Services Committee will continue to be populated but the site SPCs will be modified to reflect the change in bed numbers and issued with this.	IPC Data Team resource	Lead Nurse Surveillance Ann Kerr	New SPCs issued in June 2015 to new SGUH wards. Careful evaluation of the impact on bed changes in other sites may require modification of ward and site SPCs.	**GREEN:** Complete

July 2015

NEW INITIATIVES / PROJECTS – 2015/2016 (cont/…)

Topic	Actions	Critical Dependency(s)	Lead	Progress Update	RAG Status
On the Move (IPCT)	Potential impact on team dynamics by mixing two independent teams.	None	Clare Mitchell LN SW IPCT and Lynn Pritchard LN SE IPCT	Both teams are now located in SGUHs	**GREEN:** Complete
	Inconsistency in working practices may lead to confusion or concerns from staff.	None		LN for SE now LN Partnerships. Single Lead should ensure consistency of practice.	**GREEN:** Complete
Ensure that CAAS Link Nurses have the correct training and support to fulfil their role as IPC Link Nurses	Set objectives and determine training required in order to monitor the standards.	IPCT resource	Education Lead and LN IPC Lynn Pritchard and NCIPC Pamela Joannidis	NCIPC working with project lead to ensure objectives for IPCT link. Local teams supporting pilot sites.	**AMBER**: Still in testing phase. Objectives and methods of support may need to be adapted.
Vale of Leven Inquiry Report	Implement the IPCT actions in the NHSGGC Action Plan.	None	IPCT	Action Plan updated as requested by SGHDs.	**AMBER**: In progress not complete.
	Review the SGHD VoL Action Plan and implement as required.	May require additional resources. To be determined after plan is issued.	IPCT	Action Plan updated as requested by SGHDs .	**AMBER**: In progress not complete.

July 2015

2. CORE PROGRAMMES OF WORK

A) Surveillance and Continuous Quality Improvement

Topic	Actions	Lead	Report / Update Available
To reduce MRSA/ MSSA bacteraemia (SABs) to 24 cases per 100,000 acute occupied bed days by 31 March 2016	Prepare monthly reports based on information from the enhanced surveillance of SABs.	Lead Nurse Surveillance Ann Kerr	Monthly Acute and quarterly Sector Reports issued.
	Align outcome data from team to information collected by SPSP where possible. Support interventions from this information.	IPC Data Team / QIFs	Ongoing.
	Bi-monthly Cross Directorate SAB group disbanded in May 2015. This will now be incorporated as a succinct standing agenda item on future AICC meetings.	Lead Nurse Surveillance Ann Kerr	Meetings to occur bi-monthly. Minutes available.
	IPCT to carry out enhanced surveillance of all reported SABs.	IPCTs	Ongoing. Output informs monthly Acute and quarterly Sector Reports issued.
	Information from the Clinical Review Tool will be included in the Sector SAB Reports. Returns will be included in the Sector Monthly Reports.	Lead Nurse Surveillance Ann Kerr	Monthly Acute and quarterly Sector Reports issued.
	IPCTs will carry out audits of clinical practice in relation to the management of PVC / CVC when a SAB is associated with an invasive device and as part of the IPCAT.	IPCTs	Results will be included in the Monthly Sector Reports.
	Report progress against target to NHS Board via the bi-monthly HAIRT and Quality & Performance Report.	ICM Tom Walsh	Every two months to BICC and Acute Services Committee (ASC).
	QIFs will target areas for improvement based on information collected.	QIFs and NCIPC Pamela Joannidis	
To reduce the incidence of C. *difficile* to 32 cases per 100,000 occupied bed days in ages 15 and over by 31 March 2016	Monitor both HAI and non-HAI cases and produce and return to clinical areas SPC charts in relation to HAI *C. difficile*.	IPC Data Management / IPCTs (Ann Kerr)	Ongoing. Reported monthly to Wards and Sectors. Reported monthly to Nurse Director for Partnerships.
	Support the Antimicrobial Management Team (AMT) in promoting antimicrobial policies which limit broad-spectrum antibiotic agents implicated in *C. difficile*, MRSA and other similar infections.	ICDs	Ongoing. ICDs attend Antimicrobial Utilisation Committee (AUC).
	Support clinical teams in the management and reporting of *C. difficile* cases to reduce the risk of onward transmission.	IPCTs	Ongoing.

JUN 2015

Surveillance and Continuous Quality Improvement (cont/ …)

Topic	Actions	Lead	Report / Update Available
Undertake surveillance and quality improvement programmes which are compliant with national requirements	NHSGGC continue to comply with HDL (2006)38.	Lead Nurse Surveillance Ann Kerr	Ongoing. Monthly SSI Reports issued to clinicians.
Alert Organism / Communicable Disease Surveillance	IPCTs will continue to collect data on all alert organisms or communicable diseases referred to them to detect trends and identify areas for action.	IPCTs	Ongoing. Data supports the update of SPCCs which are issued monthly.
Ensure delivery of IT work plan and utilise IT systems for continuous improvement	NCIPC and IPC Lead Nurse Surveillance will deliver actions outlined in the Project Plan and act on recommendations from the IPCT to develop or utilise existing IT systems.	IPCT / NCIPC / Lead Nurse Surveillance (Pamela Joannidis and Ann Kerr)	NCIPC and IPC Lead Nurse Surveillance to report to the IPC SMT monthly on progress.

JULY 2015

B) Education

Topic	Actions	Lead	Report/ Update Available
To ensure that IPCTs have access to education and training as appropriate.	Continue to support and promote education of the IPCT workforce by linking with Practice Development, Learning & Education within NHSGGC, and nationally with NHS Education for Scotland.	Education Lead / Lead Nurse IPC Lynn Pritchard	Ongoing
Ensure that staff in Primary Care have access to training on local decontamination.	Support NES online.	IPCTs	Ongoing
Ensure that CAAS Link Nurses have the correct training and support to fulfil their role as IPC Link Nurses.	Set objectives and determine training required in order to monitor the standards.	Education Lead / Lead Nurse IPC Lynn Pritchard and NCIPC Pamela Joannidis	As determined by project
	Evaluate the standards following pilot to ensure objectives will be met through them.		
To ensure that the workforce has access to education as per the IPC Education Strategy.	Continue to support and promote the IPC Modules on learnPro.	Education Lead / Lead Nurse IPC Lynn Pritchard	Ongoing

JULY 2015

C) Policies

Topic	Actions	Lead	Report/ Update Available
To maintain and enhance the NHSGGC Infection Prevention and Control of Infection Policy Manual	There will be a planned programme for the review / updating of all policies as per HIS HAI Standards.	IPC Policy Group Pamela Joannidis	Ongoing
	Develop new policies as required based on the requirements of the organisation and in response to new legislation, guidance or emerging pathogens.	IPC Policy Group Pamela Joannidis	Ongoing
	Place IPC policies on the IPC website and promote this site.	IPC Policy Group Pamela Joannidis	Ongoing
Implement the National Infection Prevention and Control Manual as available	Review contents and prepare addendums as required, as per Policy / SOP.	IPC Policy Group Pamela Joannidis	As available
Ensure that updated or newly developed IPC Policies and Standard Operating Procedures (SOPs) are fit for purpose and meet / complement other organisational objectives	Ensure consultation by implementing the IPC SOP Procedure for the Development and Approval of IPC Policies, SOPs and Patient Information in NHSGGC.	IPC Policy Group Pamela Joannidis	Ongoing

JULY 2015

D) Decontamination

Topic	Actions	Lead	Report/ Update Available
CJD	Review the Advisory Committee on Dangerous Pathogens (ACDP) Guidance on "transmissible spongiform encephalopathy agents: safe working and the prevention of infection", and make recommendations to the parts of the organisation to which issues within this applies.	CJD Group PHPU Lead Dr Iain Kennedy	Ongoing. CJD is a standing item on the BICC Agenda.
Central Decontamination Unit	Support the central decontamination unit by attending quarterly decontamination meetings at Cowlairs Decontamination Unit and provide education as required / requested.	Decontamination Group Kate Hamilton / Prof Craig Williams and Dr Andrew Smith (Lead Microbiology Consultant for Medical Device Decontamination)	Ongoing. Included in Facilities update to BICC.
Central Decontamination Units	Carry out an IPC Audit on all units managed by CDU.	IPCTs	Ongoing. Reports will be included in Sector re-posts.
IPC Decontamination Group (Sub-Group of BICC)	IPCT will chair and support the work of this group and give advice as requested by clinical services and liaise with HPS / HFS. Work being carried out to establish decontamination page on NHSGGC IPC website and the introduction of internal safety action notices.	ICDs Prof Craig Williams / Dr Alison Balfour	Ongoing. Decontamination Group reports to BICC / AICC / PICSG as appropriate.

July 2015

E) Clinical Governance & Patient Safety (SPSP and SPSI)

Topic	Actions	Lead	Report/ Update Available
To comply with the principles outlined in the HIS Clinical Governance and Risk Management Standards	The IPC service will have structures and processes in place to identify, manage and communicate risks throughout the organisation.	ICM Tom Walsh	Risk Register developed and submitted to BICC for approval. Highest rated risks are submitted to the Corporate Risk Register.
	IPCTs will continue to assist clinical teams to complete a clinical review tool for severe cases of CDI or SABs where it appears on the patients' death certificate, and log both onto Datix.	IPCTs / Clinical Teams NHSGGC	Datix is reviewed within the Sector specific clinical governance systems. Overview given by Risk Manager to AICC / BICC.
To comply with the principles outlined in HIS Infection Control Standards	Produce an Annual Report based on the IPC Programme for approval by the BICC and the NHSGGC Acute Services Committee.	ICM Tom Walsh	May 2015
	Produce an Annual Infection Control Programme setting out the strategic agenda for IPC within NHSGGC.	ICM Tom Walsh	May 2015
To comply with the requirements of SGHD in relation to the HAIRT Report	Populate the NHS SGHD bi-monthly HAIRT Report for presentation to the NHS Board and the NHSGGC Acute Services Committee.	ICM Tom Walsh	The HAIRT is published on the NHSGGC website bi-monthly. Presented to NHSGGC Board and ASC (summary).
To ensure that the IPCT are supporting staff to apply IPC Policies and SOPs in relation to invasive devices management and SICPs to promote patient safety	The IPCAT will be undertaken as a minimum every 12 months in all wards and Clinical Departments, or more frequently as indicated by results, i.e. overall RED or AMBER score.	IPCTs	Reports returned to SCNs, Lead Nurses and Chief Nurses. Score reported in Sector Monthly Reports.
To ensure that evidence based practice in relation to IPC is promoted by IPCTs in NHSGGC	The IPCTs in NHSGGC will participate in SPSP and SPSI as required.	Karon Cormack / Pamela Joannidis	Ongoing
	Data will be shared between IPCTs and SPSP / SPSI where appropriate.	Lead Nurse Surveillance Ann Kerr	Ongoing
To comply with the requirements of SGHD in relation to the HAI Report Card	Populate the HAI Report Card.	IPC Data Management (Ann Kerr)	Ongoing. Reports posted on NHSGGC website each month.

JUN 2015

F) Healthcare Hygiene, Cleaning Services and the Built Environment

Topic	Actions	Lead	Report/ Update Available
To comply with national guidance on cleanliness standards and provide patients and visitors with a clean hospital environment	To ensure compliance with national monitoring of standards by participating in the peer and public review of cleaning services.	IPCTs / Elisabeth Sutherland	Ongoing
	IPCT participate in the site Facilities Groups.	IPCTs	Ongoing. Minutes from these groups are submitted to Facilities Clinical Governance Committee.
	Participate in the training of public reviewers.	Patient Experience Pamela Joannidis	Ongoing
	Involve public reviewers in audit of IPC policy audit during this process.		
To ensure that NHSGGC premises are designed and built to facilitate the prevention and control of infection	The Co-ordinating ICD jointly chairs with the GM Facilities, the NHSGGC Water Group. This group reviews guidance with regards to the control of Legionella and *Pseudomonas*.	CICD / Facilities Prof Craig Williams / Mary Anne Kane	Water Group meets bi-monthly. This group reports to BICC and Facilities Clinical Governance Committee.
	Ensure that all advice in relation to new builds complies with HFS Building Notes and Guidance Documents.	IPCTs	Ongoing
	Ensure that PPM and validation of theatres is ongoing.	S&A / CICD Prof Craig Williams	Ventilation Group meets quarterly and reports to AICC.

JULY 2015

G) Hand Hygiene

Topic	Actions	Lead	Report/ Update Available
Continue to involve the public and patients on compliance in relation to hand hygiene	Participate in Patient Experience events as requested.	**LHBC** Stefan Morton	Ongoing
	Educate and support members of the public to participate in local monitoring of hand hygiene compliance.	**LHBC** Stefan Morton	Ongoing
	Continue to update the IPC website with regards to Hand Hygiene initiatives and information.	**LHBC** Stefan Morton	Ongoing
Promote a zero tolerance approach to hand hygiene compliance in NHSGGC as per CEL(2009)5	To continue to support staff to undertake local hand hygiene audits based on SPSP methodology which will now include information on technique as well as opportunity.	**LHBC** Stefan Morton	Ongoing
Provide assurance that NHSGGC continues to support continuous improvement in relation to hand hygiene	Prepare an assurance plan for Health Protection Scotland and NHSGGC.	**LHBC** Stefan Morton	Ongoing

JULY 2015

H) Person Centred Care (PCC) / Patient Experience

Topic	Actions	Lead	Report/Update Available
To ensure that systems and processes are in place to secure public involvement in issues related to HAI and that these systems are linked to the NHSGGC Patient Experience Framework	Map all Patient Experience (PE) activity to the Participation Standards documented in a log of activity reviewed at Acute Operating Division (AOD) PE Steering Group.	Patient Experience Pamela Joannidis	Ongoing
	A representative from the IPCT will attend the AOD PE Steering Group.	Patient Experience Pamela Joannidis	Ongoing
	Patient information will continue to be developed and updated as necessary.	Patient Experience Pamela Joannidis	Ongoing
	A member of the IPCT will visit every patient who has been identified with an alert organism or communicable disease and if able will give the patient verbal and written information.	Person Centred Care Joan Higgins	Ongoing
Monitoring of the National Cleaning Services Specification	Members from the IPCT will continue to participate in the Monitoring Framework for Cleaning Services PPI Review Support Group.	IPCTs Pamela Joannidis	Ongoing
Monitoring of IPC policies	The IPCT will provide opportunity for members of the public to take part in audit of the IPC policies in clinical areas.	IPCT Pamela Joannidis / Joan Higgins	Ongoing
NHS HIS Standards of HAI	Support public partners who attend the BICC and PICSG.	Patient Experience Pamela Joannidis / Sandra McNamee	Ongoing

JUN 2015

I) Inspectorate Sector / Health Improvement Scotland HAI Standards

Topic	Actions	Lead	Report/ Update Available
Comply with NHS HIS HAI Standards and populate the online portfolio of evidence to demonstrate compliance with the standards	Review and update relevant evidence as it is updated or developed in response to the HEI action plan following each visit.	HEI Leads	Report on the progress of action plans is a standing item on the AICC agenda.
	Co-ordinate and post the evidence submitted by other departments within NHSGGC.	ICM Tom Walsh	Ongoing
Participate in the NHSGGC Corporate HEI Inspection	Participate in the Acute Operating Division Corporate HEI inspection audits.	IPCTs	Ongoing

J) MRSA KPIs

Topic	Actions	Lead	Report/ Update Available
Support staff to comply with CNO (2013)1 and complete the MRSA Clinical Risk Assessment	Nursing admission document will include MRSA CRA.	IPCTs	Results included in monthly Sector Reports.
	IPC Audit compliance with MRSA Screening national target through local collation and upload to HPS Portal.	IPCTs / IPC Lead Nurse Surveillance / IPC Data Team	Results included in monthly Sector Reports and report sent to AICC.
	IPCTs / QIFs will promote and support staff to complete and comply with CNO (2013)1.	IPCTs / QIFs	N/A

K) On the Move

Topic	Actions	Lead	Report/ Update Available
Plan services to meet the needs of the Clinical Services Review and the integration of Health and Social Care.	Convene a group with all relevant stakeholders (IPCT, SMT, LN, HR) to ensure that staff are kept informed and supported during any changes which arise due to organisational change.	ICM Tom Walsh	As required.

JUN 2015

3. GLOSSARY

ACDP	**Advisory Committee on Dangerous Pathogens**
AMT	**Antimicrobial Management Team**
AOD	**Acute Operating Division**
Alert organism alert condition	Any of a number of organisms or infections that could indicate, or cause, outbreaks of infection in the hospital or community.
Bacteraemia	Infection in the blood. Also known as Blood Stream Infection (BSI).
BICC	**Board Infection Control Committee**
CDAD	***Clostridium difficile*** Associated Disease
CDI	***Clostridium difficile*** Infection
CEL	**Chief Executive Letter** issued by Scottish Government Health Sectors (SGHD)
CMO	**Chief Medical Officer**
CVC	**Central Vascular Catheter**
C. difficile	***Clostridium difficile*** also referred to as ***C. diff*** (or ***C-diff***) is a Gram-positive spore-forming anaerobic bacteria. C. *difficile* is the commonest cause of gastro-intestinal infection in hospitals. It causes two conditions; antibiotic associated diarrhoea and the more severe and occasionally life-threatening pseudomembranous colitis. Control of the organism can be problematic due to the formation of spores and difficulty in removing them. Patients who have had antibiotics within the last eight weeks are most at risk of acquisition of the organism.
Cleanliness Champions	**Cleanliness Champions** A Ministerial led initiative to offer a specific education programme to HCWs.
Code of Practice	**Code of Practice.** The NHS Scotland Code of Practice for the Local Management of Hygiene and Healthcare Associated Infection issued 2004 contains the components that must be complied with by all NHS HCWs in Scotland. http://www.scotland.gov.uk/Publications/2004/05/19315/36624
GRO	**General Registers Office**
HAI	Originally used to mean hospital acquired infection, the official 'Scottish Government' term is now **Healthcare Associated Infection**. These are considered to be infections that were not incubating prior to contact with a healthcare facility or undergoing a health-care intervention. It must be noted that HAI infection is not always an avoidable infection.
HAI SCRIBE &HBN 30	Scottish Health Facilities Note 30: version 3. Infection Control in Built Environment: Design and Planning.
HCW	**Healthcare Worker**
HDL	**Health Department Letter**
HEAT Target	**Health Efficiency and Access to Treatment**. Targets set by the Scottish Government.
HH	**Hand Hygiene**
HPS	**Health Protection Scotland**
IPCN/T/O/D/M	**Infection Prevention Control Nurse / Team / Officer / Doctor / Manager**
ICP	**Infection Control Programme**
KPI	**Key Performance Indicator**
LHBC	**Local Health Board Co-ordinator** (Hand Hygiene)
MRSA	**Meticillin resistant *Staphylococcus aureus.*** A *Staphylococcus aureus* resistant to first line antibiotics; most commonly known as a hospital acquired organism.
MSSA	**Meticillin Sensitive *Staphylococcus aureus***
PCAT	**Primary Care Audit Tool**
PHPU	**Public Health Protection Unit**
PVC	**Peripheral Vascular Catheter**
HIS	**Quality Improvement Scotland**
SAB	***Staphylococcus aureus*** **bacteraemia**
SIRN	**Scottish Infection Research Network**
SOP	**Standard Operating Procedure**
SPC	**Statistical Process Control Charts**
SPSP	**Scottish Patient Safety Programme**
VRE	**Vancomycin resistant enterococcus** - an alert organism. A common organism that can be inherently resistant to Vancomycin but can also acquire (and transfer resistance) to other organisms. Has caused outbreaks reported in the literature in a variety of high-risk settings, e.g. renal or bone marrow transplant units.

May 2015

From: Peters, Christine [redacted]
Sent: 26 June 2015 11:18
To: Walsh, Tom
Cc: Inkster, Teresa (NHSmail); Wright, Pauline
Subject: New Build

Hi Tom,

sorry about the deluge of emails. QUick summary of issues and actions:

1. **Legionella in new build** :

- requested results in writing to enable clinical risk assessment - may need to change some sinks from automated detectors to manual pending full information

2. **BMT accomodation Adults :**
ventilation

- awaiting full documentation on current accomodation specs and validation
- Teresa and I are putting together requirements for accreditation and CDC specification on what would be ideal
- pentamidine room specs also requested
- Teresa organising air testing on 5B
- need to have a high level discussion about the way forward when the information is in hand

water

- need full reports and to ensure legionella not in any of these outlets when that information becomes available as above
- continue water flushing as per Beatson protocol

Cleaning

- revert to Beatson protocols

3. **Decon room for VHF patients/ Mers**

- clearly not ready for use, not designed for this and needs a design team redesign, validation and commissioning for new use
- ? how do we take this forward

4. **Lobbied Isolation room**

- Hepa filters need to be put in place where immunosuppressed adults will be housed - I assume the reason for Beatson coming to new build is the critical care facilities - need to clearly identify which lobbied rooms they are to be housed in and put HEPA in there first ? who makes this decision
- requested validation data and leak testing needs to be carried out and signed off
- all lobbied rooms the light fittings sealed- this was being taken forward by Ian powrie as an urgent matter

5. **Theatres**

- requested all validation data and monitoring system information

Please advise how best to tie all this together and take matters forward in as efficient and co-ordinated manner as possible,

kind regards,

Christine

10

9. email

[redacted]

From: Walsh, Tom
Sent: 26 June 2015 11:26
To: Peters, Christine
Subject: RE: New Southern Building

Christine

Many thanks for all the info on this.

We are going to escalate concerns to The Chief Operating Officer and Medical Director.

Tom

From: Peters, Christine
Sent: 26 June 2015 11:24
To: Hamilton, Pauline; Walsh, Tom
Subject: RE: New Southern Building

thanks Pauline, I can now attend that meeting - I will be off on Wednesday instead (packing) as I think it would be useful to attend.

regards
Christine

From: Hamilton, Pauline
Sent: 24 June 2015 09:06
To: Walsh, Tom; Peters, Christine
Subject: RE: New Southern Building

Hi

Yes, meeting has been arranged for 6 July. I'll forward e-mail with arrangements.

Regards
Pauline [redacted]

From: Walsh, Tom
Sent: 23 June 2015 17:41
To: Peters, Christine
Cc: Hamilton, Pauline
Subject: Re: New Southern Building

Hi Christine

I think Craig may have set up a meeting re this already. Have copied Pauline in to confirm

Cheers

Rom

Sent from my BlackBerry 10 smartphone.

From: Peters, Christine
Sent: Tuesday, 23 June 2015 14:31
To: Powrie, Ian
Cc: Walsh, Tom; Inkster, Teresa (NHSmail)
Subject: New Southern Building

Hi Ian,

Thank you very much for your time today – it was very useful for me to have a conversation around the new build spec and ventilation parameters. I now understand why it is so difficult to get specific details from the enormous amount of data that has been handed over to you. It is unclear what the design parameters and requirements were and who gave sign off for these, particularly with reference to isolation facilities and the decon room in A+E.

We agreed to have a meeting with David Hall and Teresa to go over queries we have and to look at monitoring systems going forward, particularly in relation to the lobbied ventilated isolation facilities. I will be available tomorrow afternoon and Thursday morning.

In the meantime I will go around the hospital and identify particular rooms that I would like to have full details on regarding ventilation and we can populate a table with this information for reference.

Kind regards,

[redacted]
Dr Christine Peters
Consultant Microbiologist
Southern General Hospital
GGC
[redacted]
[redacted]

From: Peters, Christine [redacted]
Sent: 29 June 2015 17:44
To: Walsh, Tom; Inkster, Teresa (NHSmail); Williams, Craig
Subject: Positive Pressure Lobbied Rooms: gap analysis DRAFT
Attachments: Positive Pressure Lobbied Rooms.docx

Hi All,
I have had a bash at tabulating the requirements for the positive pressure lobbied rooms as a starter for 10.

I have restricted myself to requirements for the purposes of isolating patients with airborne infections which is the primary function of this design of suite.

The use of these rooms for Protective isolation of immune-suppressed patients is not directly recommended in the 2005 document , and it is not mentioned at all in the 2013 up-date. Therefore I have not included this patient group in this analysis. My concerns for the use of these facilities for this group is:

1. No supply HEPA filtered air at present
2. Negative pressure in an unsealed room = ingress for outside even if HEPA coming into lobby
3. Positioning of extract in the patient bedroom as well as toilet – I am unconvinced that this does not interfere with a clear direction of airflow from clean to dirty – but that is just an opinion

I am sure you will be able to fill in gaps and add your thoughts,

Regards,

[redacted]
Dr Christine Peters
Consultant Microbiologist
Southern General Hospital
GGC
[redacted]

Positive Pressure Lobbied Rooms for isolation of patients with airborne infections

	Required	Current	Action
Design	Lobby – 8-12 Pascals to corridor	Designed to 10 Pascals differential	
	Toilet : 10 air exchanges and negative pressure to patients bedroom	Verbal report 3 changes per hour, separate extract from bedroom ? effect on air flow and pressure differential in bedroom?	
	Well sealed room Ceiling – sealed and solid construction	Ceiling NOT solid, Light fittings have openings to ceiling space	
	Stabiliser between lobby and patients room	Present	
	Transfer grille in the en-suite door	Present	
	Isolation room exchanges 10 per hour	Verbal report as 10	
	Access to hot and cold water services should be via access panels in lobby or corridor	Access required to ceiling space in patients bedroom – already had to access all shehallion rooms to fix a component of the system	
	Routine maintenance and service should not involve access to patients room		
	Filters with visual means of checking differential pressure across them	? no information at present	
Commissioning	Air permeability tests ATTMA Technical Standard L2	No	
	Filters : particle counter test BS EN 1822	?????? no written information available	
	System Operating standard :		

	Patients room 10 exchanges per hour En suite negative pressure with respect to patient room Failure of supply or extract fan will indicated at nurses station and estates department Positive pressure 8-12 pascals between lobby and corridor	Alarm at nurses station taken out of design and therefore not fitted	
Monitoring	Annual testing of conformity to operating standard Log book : Schematic layout Ventilation design parameters Record of actual performance Records of routine service and maintenance Records of repairs and modification Monitoring of pressure by staff Method statement for disinfecting system Clear communication strategies with infection control re failures and remedial work required	? what is in place	
Maintenance	Method for removal of extract HEPA – Permit to work and disposal SOPs Filter changes AHU drainage System cleaning Performance indication Performance measurement Record of any remedial work or changes to system	?	

Reference: HBN 04-01 Supplement 1 2005 and 2013

Acute Services Structure – July 2015

Greater Glasgow and Clyde

Chief Officer
Grant Archibald

- Lead Director for Acute Medical Services — David Stewart
- Head of OD — Ann Crumley
- Chief Nurse Professional Governance & Regulation — Elaine Love
  - Head of Practice Development — Toby Mohammed
- Associate Director HR — Vacant
  - Head of Medical Staffing — Raymond Rose
  - Business Manager Occupational Health — Rona Wall
- Head of Finance Corporate — Colin Neil
- Head of Administration — Paul Cannon
- Director North — Jonathan Best
- Director South — Anne Harkness
- Director Regional Services — Gary Jenkins
- Director Women & Children's Services — Kevin Hill
- Director Clyde — Marie Farrell
- Director Diagnostics — Aileen MacLennan

North Sector

- Chief Nurse — John Stuart
- Chief of Medicine — Chris Deighan
- Director — Jonathan Best
- Head of Finance
- Head of People & Change — Brian Curran
- Chief AHP — Ann Ross
- Head of Planning — Barry Sillers
- General Manager Older People — Neil McCallum
  - Clinical Service Manager Older People — Richard Hassell
- General Manager Surgery — Susan McFadyen
  - Clinical Service Manager Theatres, Anaesthetics & Critical Care — Catherine Loughran
  - Clinical Service Manager Ortho & Ophth — Catherine Mclean
  - Clinical Service Manager Surgical Specialties — Jacqueline Wilson
  - Clinical Service Manager Urol OPD, Endoscopy & Site Lead Stobhill — Ian Gorman
- General Manager Medicine — VACANT
  - Clinical Service Manager ED — VACANT
  - Clinical Service Manager Medical — Rosemary Brogan

Regional Services

- Chief Nurse — Marion Macdonald
- Chief of Medicine — David Dunlop
- Director — Gary Jenkins
- Head of People & Change — Andy Carter
- Head of Finance — VACANT
- Chief AHP — Heather Cameron
- Head of Planning — Barry Sillers
- General Manager Renal / Transplant / Plastics / Burns / OMFS / CIC — Julia Little
  - Clinical Service Manager Renal — Margaret McLucas
  - Clinical Service Manager Plastics / OMFS / Burns — Eleanor Somerville
- General Manager Spec Onc & Clin Haem — Melanie McColgan
  - Clinical Service Manager Haemato-oncology — Myra Campbell
  - Clinical Service Manager Oncology — Craig Broadfoot
- General Manager Neurosciences & Spinal Injuries, Westmarc & Disabilities — Susan Walker
  - Service Manager Westmarc — John Colvin
  - Clinical Service Manager Neurosciences — Gina Clark

South Sector

- Chief Nurse — Elaine Burt
- Chief of Medicine — George Welch
- Director — Anne Harkness
- Head of Finance
- Head of People & Change — David Dall
- Chief AHP — Catherine Nivieson
- Head of Planning — Neil Ferguson
- General Manager Older People — Arwel Williams
  - Clinical Service Manager West & Site Lead GGH — Mary Mackenzie
  - Clinical Service Manager South — Janice Elliott
- General Manager Theatres & Critical Care — Michelle Carr
  - Clinical Service Manager Theatres, Anaes & Critical Care — Linda McMullin
- General Manager Surgery — Susan Groom
  - Clinical Service Manager Urol, ENT, OPD & Site Lead VIC — Russell Coulthard
  - Clinical Service Manager Orthopaedics — Karen Loudon
  - Clinical Service Manager Ophthalmology Board Wide — Jim Bretherton
  - Clinical Service Manager General Surgery / Vascular — Anne Traquair Smith
- General Manager Medicine — Cath MacFarlane
  - Clinical Service Manager Medicine — Isabel Brown
- General Manager ED & Acute Assessment — Michelle Boyd
  - Clinical Service Manager ED & Acute Assessment — Deborah Ambridge
  - Clinical Service Manager OOH Board Wide — Joan Barr

Clyde Sector

- Chief Nurse — Joyce Brown
- Chief of Medicine — Dr Chris Jones
- Director — Marie Farrell
- Head of People & Change — Joan Smith
- Head of Finance — VACANT
- Chief AHP — Louise Watson
- Head of Planning — Jacqui McGeough
- General Manager Older People — John Kennedy
  - Clinical Service Manager Speech & Language Therapy — Catherine Dunnet
  - Clinical Service Manager Older People IRH — Catriona Glenn
  - Clinical Service Manager Older People RAH / VoL — Marie Owen
- General Manager Surgery — Jacki Smart
  - Clinical Service Manager Surgical Specialties — Rebecca Reid
  - Clinical Service Manager Theatres, Anaes & Critical Care — Laura Young
  - Clinical Service Manager Orthopaedics — Rahul Shanker
- General Manager Medicine — Jacqueline Nicol
  - Clinical Service Manager RAH / VOL — Kirsty Orr
  - Clinical Service Manager Medicine IRH — VACANT
  - Clinical Service Manager Dermatology — Gerry McCormack

Diagnostics

- Chief of Medicine — Rachel Green
- Director — Aileen MacLennan
- Head of People & Change — Sarah Leslie
- Head of Finance
- Head of Planning — Jacqui McGeough
- General Manager Laboratory Medicine — Isobel Neil
  - Assistant Gen Manager Biochemistry / Haem / Immunology — Jane Gibb
  - Assistant Gen Manager Microbiology, Virology / Ref Labs / Phlebotomy — Bernadette Findlay
- General Manager Imaging — Lynn Ross
  - Clinical Service Manager Imaging North — Jean Wright
  - Clinical Service Manager Imaging South & Clyde — Margaret Sherwood
- General Manager Med Illustration/Clinical Physics/Bioengineering — Antoinette Parr
  - Scientific Director Clinical Physics / Bioengineering — David Keating
  - Head of Service Medical Illustration — Kathy McFall

Facilities

(reports directly to the Chief Executive)

- Associate Director — Facilities
- Director — David Loudon
- Head of People & Change — Stephen Wallace
- Head of Finance — Robert Anderson
- Head of Procurement — Gordon Beattie
- General Manager South / Clyde — William Hunter
  - Site Manager SGUH — Vacant
  - Site Manager RAH — Lorna Campbell
  - Site Manager Inverclyde Royal — David Macdonald
  - Sector Estates Manager South & Clyde — VACANT
- General Manager Facilities - Partnerships — David Pace
  - Site Manager South/West Partnerships — Elizabeth Sutherland
  - Site Manager North/East Partnerships — Stewart McKenzie
  - Sector Estates Manager Partnerships — Ken McLean
- General Manager Facilites - North / West — Alistair Maclean
  - Sector Estates Manager — VACANT
  - Site Facilities GRI, GGH, Lightburn Hospital — Rosie Cherry

A47069198

Women & Children's

- Chief Nurse — VACANT
- Head of Midwifery — Evelyn Frame
- Chief of Medicine — Alan Mathers
- Director — Kevin Hill
- Head of People & Change — James Farrelly
- Head of Finance — Myra Dunn
- Chief AHP
- Head of Planning — Neil Ferguson
- General Manager Paediatrics / Neonatology — Jamie Redfern
  - Clinical Service Manager Paed Emergency Acute — Lynne Robertson
  - Clinical Service Manager Cardiac Surgery & Neonatology, Theatres, Anaes, CC — Heather Dawes
- General Manager Obs & Gynae — Michelle McLauchlan
  - Clinical Service Manager Obs & Gynae PRM — Liz Terrace
  - Clinical Service Manager Obs & Gynae RAH — Claire Stewart
  - Clinical Service Manager Obs & Gynae SGUH — Katie McEwan

12. SBAR

(12)

[redacted]

From: Parker Anne (NHS GREATER GLASGOW & CLYDE - SGA20) [redacted]
Sent: 05 July 2015 17:47
To: Jones, Brian (NHSmail)
Cc: Inkster, Teresa (NHSmail); Peters, Christine
Subject: Re: response to poor environmental quailty

Thanks - my colleagues who are not on annual leave are happy. Haven't spoken to Gary yet plan to do so tonight and will specifically name Theresa and Christine as infection control team.
Very happy to put brief statement from CDc in. Feel we need to present way forward
Anne

Sent from my iPhone

On 5 Jul 2015, at 17:11, Jones Brian (NHS GREATER GLASGOW & CLYDE - SGA20) [redacted] wrote:

> Anne
> This is good. Might be worth including CDC specs for the rooms - Teresa/Christine can you provide please?
> As the microbiologist for the programme I would like to be a signatory.
> Thanks
> BJ
>
> Sent from my iPhone
>
> On 5 Jul 2015, at 12:18, Parker Anne (NHS GREATER GLASGOW & CLYDE - SGA20) [redacted] wrote:
>
> > Any thoughts? How drive to wigan went OK.
> >
> > Sent from my BlackBerry 10 smartphone on the EE network.
> >
> > **From:** Parker Anne (NHS GREATER GLASGOW & CLYDE - SGA20) [redacted]
> > **Sent:** Sunday, 5 July 2015 09:43
> > **To:** Mcquaker Ian (NHS GREATER GLASGOW & CLYDE - SGA20); Clark Andrew (NHS GREATER GLASGOW - SGA20); Irvine David (NHS GREATER GLASGOW & CLYDE - SGA20); Macdonald Ian (NHS GREATER GLA CLYDE - SGA20); Loudon Gail (NHS GREATER GLASGOW & CLYDE - SGA20); Hart Alistair (NHS GREATER & CLYDE - SGA20); anne.morrison [redacted]
> > **Subject:** response to poor environmental quailty
> >
> > I would propose sending the attached along with the following email to David Dunlop, Rachel Green, Dave Stewart and Jennifer Armstrong. I will discuss with Gary before I do so and will not send if you feel this is inappropriate. Please feel happy to comment and change
> >
> > Dear
> > We are sure you are aware of the current concerns with regard to environmental quality on Ward 4B1. We attach our analysis of the situation and recommendations to help resolve this. We would like to thank the representatives of infection control present at several meetings for their analysis of the situation and work to provide data, which has enabled us to reach these conclusions and the Regional Services management team for their prompt recognition of the potential consequences and

their handling of the situation. We are keen to ensure that the move back to the Beatson is for as limited a time as possible

regards

Dr Anne Parker MD, FRCP, FRCPath
Consultant Haematologist
Beatson, West of Scotland Cancer Centre
Great Western Rd
GLASGOW
G12 0YN
[redacted]

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<Response to Environmental Quailty.docx>

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Situation

The South Glasgow clinical haematology and Scottish adult allogeneic transplant in patient service have moved into potentially unsafe accommodation, for this particular patient group, in the new facilities at the Queen Elizabeth University Hospital, Glasgow. This is following on from advice given by infection control that the safety of the environment for immune-compromised patients in terms of water and air quality cannot be guaranteed in the new accommodation on Ward 4B1, QEUH.

Background

All haemato-oncology patients are potentially at risk because of a poor quality environment, but the patients at highest risk are those undergoing allogeneic transplant, closely followed by those receiving high dose chemotherapy with stem cell rescue and acute leukaemia induction. There are a number of standards set for these patient groups and the following are pertinent to the current situation.

The NICE guidelines for Improving Outcomes for haematological cancer (2003) states that acute leukaemia patients should have access to

- In-patient unit that minimises airborne microbial contamination.
- For isolation: a number of single rooms with en-suite facilities. All patients receiving induction therapy or other high-dose chemotherapy should be housed in single rooms with en-suite facilities.
- Full haematology and blood transfusion laboratories on site. Rapid availability of blood counts and blood products including products such as CMV seronegative and gamma-irradiated blood components

The Bone Marrow Transplant standards are set by JACIE in the 6th edition standards

- *B2.1 There shall be a designated inpatient unit of appropriate location and adequate space and design that minimizes airborne microbial contamination.*
- *B2.6 There shall be written guidelines for communication, patient monitoring, and prompt transfer of patients to an intensive care unit or equivalent when appropriate.*
- *B2.13 There shall be an intensive care unit or equivalent coverage available.*
  Explanation: The Clinical Program must have documentation that there is ready access to an ICU or equivalent coverage in an immediate fashion for its patients when appropriate. This requires the ability to provide multisystem support including assisted respiration. Ordinarily, this would be within the institution but contractual arrangements with another institution may be considered if transfer procedures are in place to ensure prompt service and patient safety.

The SGH team moved at the end of April from old suboptimal accommodation with 14 beds on ward 24 to purpose built single rooms with en suite facilities.

The transplant team moved on June 6 from the Beatson, which had a long track record of excellent accommodation in terms of patient support, air and water quality. The team knew that following the move there would be some compromise in environmental quality, due to lack of negatively pressured anterooms. However, the transplant team were assured that the quality of environmental care provided would be sufficient for their populations needs and met regulatory standards. After consideration, the BMT team felt that the move provided a significant gain in quality of care for transplant patient's due to co-location with acute specialties and critical care support. In addition, the award of national service designation for allogeneic transplantation meant that the transplant team required additional bed spaces which were not available in the Beatson facility. It was understood that, prior to the move of the 2 services, the accommodation had the appropriate specifications for the allogeneic BMT patient population and during commissioning validation had had been carried out to ensure that these specifications had been met,. There was no indication at any time prior to the move, to either team or Regional Services management, that there were any problems with the specification or post commissioning validation. The team were reassured during a visit to the ward that the air handling system had central monitoring and was fit for purpose.

The first indication of possible problems was in the week of June 8th when an email was received by Dr Anne Parker, indicating that the 2 rooms with ante-rooms in the renal unit were not functioning to the expected level of air quality. On review, neither room was being used appropriately with

doors shut, but the BMT team were not intending to use the rooms and no concerns about other areas were raised. However, this was not the case after the meeting on Wednesday July 1st, when it became clear that none of the rooms on ward 4B1 came close to the standards required to provide a safe environment for highly immuno-compromised patients. It was agreed that remedial action would be taken and the meeting reconvened on Friday July 3rd at 4pm. At this meeting it became clear that neither water nor air quality of an appropriate standard could be guaranteed, and that major works would be required to achieve this.
As part of the move all allogeneic in-patients had an increase in the intensity of their antifungal prophylaxis and were switched from itraconazole to posaconazole to cover the move maximise prophylaxis cover during the transition. Following information about overall air quality the high dose chemotherapy with stem cell rescue patients were changed from fluconazole to itraconazole to give aspergillus cover.

Analysis

- The current accommodation at QUEH is not fit for high risk haemato-oncology patients to remain in safely, and would not pass the JACIE inspection planned for the Autumn 2015.
- There are no immediate measures available to promptly remedy the faults at the QUEH.
- Suitable accommodation, which meets environmental standards, is available at the Beatson, West of Scotland Cancer Centre, however, there are only 20 beds rather than the 24 available in the QEUH.
- The current provision of critical care support at the Beatson, WOSCC, is inadequate to meet the needs of this vulnerable population and the lack of co-location of other acute specialties is a cause for concern
- Antifungal prophylaxis measures had been taken for some patients prior to the concerns being raised and for other subsequently.

Recommendations

1) Move all high risk patients, currently in ward 4B1, to the Beatson, West of Scotland Cancer Centre, wards B8 and B9 where water and air quality are compliant with requirements. This would include all allogeneic transplant recipients, all acute leukaemia's undergoing induction chemotherapy and all patients receiving high dose chemotherapy with stem cell rescue.
2) Refine protocols already in place to provide immediate access to critical care assessment at the Beatson, West of Scotland Cancer Centre site with rapid transfer to the Queen Elizabeth University Hospital, Glasgow for critical care monitoring as required.
3) Discuss as soon as possible with patients, relatives and friends the implications of the above for them and explain the remedial action already taken and plans for the move.
4) Put in place a plan to remedy the faults in the accommodation at QEUH to allow a speedy return.
5) Review GG&C haemato-oncology in patient and day case practise as the move will reduce the number of in-patient beds available for GG&C
6) Work in close partnership with colleagues from other discplines and all management teams to ensure the resolution of this situation promptly and safely to ensure best patient care.

17. msg

[redacted]

From: Peters, Christine
Sent: 07 July 2015 12:03
To: Williams, Craig
Cc: Hood, John; Inkster, Teresa (NHSmail); Jones, Brian; Jenkins, Gary
Subject: RE: BMT SGUH

Hi Craig,

I agree that 5-10 is the best target range, just need to be clear where this is referenced to.

The issues are complex and requesting sealed rooms only makes sense if a concurrent positive pressure is maintained.

Regards,

Christine

From: Williams, Craig
Sent: 07 July 2015 11:48
To: Peters, Christine
Cc: Inkster, Teresa (NHSmail)
Subject: RE: BMT SGUH

Dear Christine

Thanks for the comments, the detials will be picked up during future discussions probably through the group that Anne Harkness is about to set up. The key point of the document is to establish that we requesetd sealed rooms. I take the point about the pressue differential and CDC but having discussed this with Peter Hoffmann he is of the view that a reliable 5kPa pressure differential is the key thing so I left the 5-10 in place

Craig

From: Peters, Christine
Sent: 07 July 2015 11:25
To: Jenkins, Gary; Williams, Craig; Inkster, Teresa (NHSmail); Hood, John; Jones, Brian
Cc: Walsh, Tom
Subject: RE: BMT SGUH

Hi All,
We have only had 20 minutes to look at this document. We would rather have a full scale discussion round a table as the issues are so enormous and we all seem to have different pieces of information at our disposal.

Regards,

Teresa Inkster and Christine Peters Joint signed

From: Jenkins, Gary
Sent: 07 July 2015 10:58
To: Williams, Craig; Inkster, Teresa (NHSmail); Hood, John; Jones, Brian; Peters, Christine
Cc: Walsh, Tom
Subject: RE: BMT SGUH

Craig,

We should also mention that there is no negative pressure in the pentamadine room.
The other issue in your bullet point, air exchanges at >12 - it stated yes, should it not state no as this has not yet been achieved?

I have also gone through this with Anne Parker, Myra Campbell, Laura Meehan and Alison McCardle; they are all comfortable with it.

Thanks
Gary

From: Williams, Craig
Sent: 07 July 2015 10:35
To: Inkster, Teresa (NHSmail); Hood, John; Jones, Brian; Peters, Christine; Jenkins, Gary
Cc: Walsh, Tom
Subject: BMT SGUH

Dear All

Attached is a draft of a document to clarify the original building requirements and briefly describes the building and validation process. Is everyone content that if the building is provided to the original specification it will provide a safe environment for patients. Comments by 1130 please

Craig

[redacted]

From: Peters, Christine
Sent: 07 July 2015 11:25
To: Jenkins, Gary; Williams, Craig; Inkster, Teresa (NHSmail); Hood, John; Jones, Brian
Cc: Walsh, Tom
Subject: RE: BMT SGUH
Attachments: BMT documentTeresa and Christine comments.doc

Hi All,
We have only had 20 minutes to look at this document. We would rather have a full scale discussion round a table as the issues are so enormous and we all seem to have different pieces of information at our disposal.

Regards,

Teresa Inkster and Christine Peters Joint signed

From: Jenkins, Gary
Sent: 07 July 2015 10:58
To: Williams, Craig; Inkster, Teresa (NHSmail); Hood, John; Jones, Brian; Peters, Christine
Cc: Walsh, Tom
Subject: RE: BMT SGUH

Craig,

We should also mention that there is no negative pressure in the pentamadine room.
The other issue in your bullet point, air exchanges at >12 – it stated yes, should it not state no as this has not yet been achieved?

I have also gone through this with Anne Parker, Myra Campbell, Laura Meehan and Alison McCardle; they are all comfortable with it.

Thanks
Gary

From: Williams, Craig
Sent: 07 July 2015 10:35
To: Inkster, Teresa (NHSmail); Hood, John; Jones, Brian; Peters, Christine; Jenkins, Gary
Cc: Walsh, Tom
Subject: BMT SGUH

Dear All

Attached is a draft of a document to clarify the original building requirements and briefly describes the building and validation process. Is everyone content that if the building is provided to the original specification it will provide a safe environment for patients. Comments by 1130 please

Craig

From: Peters, Christine
Sent: 07 July 2015 12:24
To: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20); Williams Craig (NHS GREATER GLASGOW & CLYDE - SGA20); Hood, John; Jones, Brian; Jenkins Gary (NHS GREATER GLASGOW & CLYDE - SGA20)
Cc: Walsh, Tom
Subject: RE: BMT SGUH

Follow Up Flag: Follow Up
Flag Status: Completed

Categories: Green Category

I am in agreement with Teresa.

Regards,

[redacted]
Dr Christine Peters
Consultant Microbiologist
Southern General Hospital
GGC
[redacted]

From: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20) [redacted]
Sent: 07 July 2015 12:19
To: Williams, Craig; Hood, John; Jones, Brian; Peters, Christine; Jenkins, Gary
Cc: Walsh, Tom
Subject: RE: BMT SGUH

Dear all,

I am uncomfortable with the statement in this document regarding commissioning. It is my opinion that the infection control team should be involved in the validation process , review validation reports and ensure air and water quality **prior** to patients moving in to the unit .

Kind Regards
Teresa

Dr Teresa Inkster
Consultant Microbiologist and Infection Control Doctor
Dept of Microbiology
Lister Building
Glasgow Royal Infirmary
[redacted]

From: Williams, Craig [redacted]
Sent: 07 July 2015 10:35
To: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20); Hood John (NHS GREATER GLASGOW & CLYDE -

SGA20); brian.jones[redacted]; Peters Christine (NHS GREATER GLASGOW & CLYDE - SGA20); Jenkins Gary (NHS GREATER GLASGOW & CLYDE - SGA20)
Cc: Walsh Thomas (NHS GREATER GLASGOW & CLYDE - SGA20)
Subject: BMT SGUH

Dear All

Attached is a draft of a document to clarify the original building requirements and briefly describes the building and validation process. Is everyone content that if the building is provided to the original specification it will provide a safe environment for patients. Comments by 1130 please

Craig

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From: Kane, Mary Anne [redacted]
Sent: 07 July 2015 12:21
To: Jenkins, Gary; Peters, Christine
Subject: FW: ward 4b (HOW) commissioning data.
Attachments: Copy of Schedule of Isolation Rooms.xlsx; 31 - AHU 63 SUPPLY (4TH FLOOR HAEMATOLOGY) REPORT.pdf; 31 - AHU 63 EXTRACT (4TH FLOOR HAEMOTOLOGY) REPORT.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

FYI

From: Powrie, Ian
Sent: 07 July 2015 12:16
To: Williams, Craig
Cc: Kane, Mary Anne
Subject: ward 4b (HOW) commissioning data.

Hi Craig,

As discussed please find attached FYI the above commissioning data for ward 4b, as provided by Brookfield multiplex.
Having reviewed these I have confirm that Brookfield did not carry out DOP HEPA filter challenge tests or differential pressure tests from the isolation rooms to the corridor as “these rooms where not defined as isolation rooms”.

Let me know if you need any further input/ information?

Regards

Ian

[redacted]
Ian Powrie,
Sector Estates Manager,
South Glasgow Hospitals Campus,
1345 Govan Rd,
Glasgow,
G51 4TF,
[redacted]

AHU Ref:	Room Ref	HEPA Filter Fitted	Design Air Change	Design Room Pressure	Vent Commissioned	Pressure Cascade Measured	HEPA Tested
41 AHU 02 41-02 EF01	OBW 053	No	In accordance with HBN 04-Supp 1 +10		Yes	Yes	N/A
41 AHU 01 41-01 EF01	OBW-048	No	In accordance with HBN 04-Supp 1 +10		Yes	Yes	N/A
Level 1							
41-AHU 16 41-16/EF01	CCW-100	No	In accordance with HBN 04-Supp 1 +10		Yes	Yes	N/A
41-AHU 34 41-34/EF01	CCW-104	No	In accordance with HBN 04-Supp 1 +10		Yes	Yes	N/A
41-AHU 13 41-13/EF01	CCW-084	No	In accordance with HBN 04-Supp 1 +10		Yes	Yes	N/A
41-AHU 15 41-15/EF01	CCW-067	No	In accordance with HBN 04-Supp 1 +10		Yes	Yes	N/A
41-AHU18 41-18/EF01	CAR-013	No	In accordance with HBN 04-Supp 1 +10		Yes	Yes	N/A
41-AHU37 41-37/EF01	CAR-014	No	In accordance with HBN 04-Supp 1 +10		Yes	Yes	N/A
21 AHU 08 Isolation Fan room	CCW-051	Yes, extract only safe change unit	In accordance with HBN 04-Supp 1 +10		Yes	Yes	Yes
21 AHU 09 Isolation Fan room	CCW-165	Yes, extract only safe change unit	In accordance with HBN 04-Supp 1 +10		Yes	Yes	Yes
21 AHU 15 Isolation Fan room	CCW-157	Yes, extract only safe change unit	In accordance with HBN 04-Supp 1 +10		Yes	Yes	Yes
21 AHU 14 Isolation Fan room	CCW-078	Yes, extract only safe change unit	In accordance with HBN 04-Supp 1 +10		Yes	Yes	Yes
21 AHU 10 Isolation Fan room	CCW-242	Yes, extract only safe change unit	In accordance with HBN 04-Supp 1 +10		Yes	Yes	Yes
21 AHU 11 Isolation Fan room	CCW-025	Yes, extract only safe change unit	In accordance with HBN 04-Supp 1 +10		Yes	Yes	Yes
21 AHU 12 Isolation Fan room	CCW-245	Yes, extract only safe change unit	In accordance with HBN 04-Supp 1 +10		Yes	Yes	Yes
21 AHU 13 Isolation Fan room	CCW-111	Yes, extract only safe change unit	In accordance with HBN 04-Supp 1 +10		Yes	Yes	Yes
21 AHU 16 Isolation Fan room	CCW-140	Yes, extract only safe change unit	In accordance with HBN 04-Supp 1 +10		Yes	Yes	Yes
21 AHU 17 Isolation Fan room	CCW-241	Yes, extract only safe change unit	In accordance with HBN 04-Supp 1 +10		Yes	Yes	Yes
Level 2							
41-AHU 39 41-39/EF01	ARU-111	No	In accordance with HBN 04-Supp 1 +10		Yes	Yes	N/A
41-AHU 38 41-38/EF01	ARU-106	No	In accordance with HBN 04-Supp 1 +10		Yes	Yes	N/A
Schiehallion Ward							
41AHU19 41-19 EF01	SCH-009	Yes	In accordance with HBN 04-Supp 1 +10		Yes	Yes	N/A
41AHU23 41 – 23 EF01	SCH-013	Yes	In accordance with HBN 04-Supp 1 +10		Yes	Yes	N/A
41AHU28 41-28 EF01	SCH-018	Yes	In accordance with HBN 04-Supp 1 +10		Yes	Yes	N/A
41AHU29 41-29 EF01	SCH-019	Yes	In accordance with HBN 04-Supp 1 +10		Yes	Yes	N/A
41AHU32 41-32 EF01	SCH-068	Yes	In accordance with HBN 04-Supp 1 +10		Yes	Yes	N/A
41AHU31 41-31 EF01	SCH-071	Yes	In accordance with HBN 04-Supp 1 +10		Yes	Yes	N/A
41AHU30 41-30 EF01	SCH-075	Yes	In accordance with HBN 04-Supp 1 +10		Yes	Yes	N/A
41AHU33 41-33 EF01	SCH-064	Yes	In accordance with HBN 04-Supp 1 +10		Yes	Yes	N/A
Level 3							
41-AHU 45 41-45/EF02	GW3-055	No	In accordance with HBN 04-Supp 1 +10		Yes	Yes	N/A
41-AHU 44 41-44/EF02	GW3-051	No	In accordance with HBN 04-Supp 1 +10		Yes	Yes	N/A
41-AHU 42 41-42/EF01	GW2-055	No	In accordance with HBN 04-Supp 1 +10		Yes	Yes	N/A
41-AHU 41 41-41/EF01	GW1-053	No	In accordance with HBN 04-Supp 1 +10		Yes	Yes	N/A
41-AHU 40 41-40/EF01	GW1-058	No	In accordance with HBN 04-Supp 1 +10		Yes	Yes	N/A
41-AHU 43 41-43/EF01	GW2-020	No	In accordance with HBN 04-Supp 1 +10		Yes	Yes	N/A
Level 4							
122-AHU 08 122-08/EF01	RENW-044	To be fitted – date to be confirmed	In accordance with HBN 04-Supp 1 +10		Yes	Yes (To be adjusted after HEPA Install)	N/A
122-AHU 09 122-09/EF01	RENW-043	To be fitted – date to be confirmed	In accordance with HBN 04-Supp 1 +10		Yes	Yes (To be adjusted after HEPA Install)	N/A
31 AHU 63 Supply & Extract	HOW-031	Yes	6	Positive	Yes	Sample tested only	N/A
31 AHU 63 Supply & Extract	HOW-029	Yes	6	Positive	Yes	Sample tested only	N/A
31 AHU 63 Supply & Extract	HOW-026	Yes	6	Positive	Yes	Sample tested only	N/A
31 AHU 63 Supply & Extract	HOW-024	Yes	6	Positive	Yes	Sample tested only	N/A
31 AHU 63 Supply & Extract	HOW-021	Yes	6	Positive	Yes	Sample tested only	N/A
31 AHU 63 Supply & Extract	HOW-020	Yes	6	Positive	Yes	Sample tested only	N/A
31 AHU 63 Supply & Extract	HOW-017	Yes	6	Positive	Yes	Sample tested only	N/A
31 AHU 63 Supply & Extract	HOW-015	Yes	6	Positive	Yes	Sample tested only	N/A
31 AHU 63 Supply & Extract	HOW-012	Yes	6	Positive	Yes	Sample tested only	N/A
31 AHU 63 Supply & Extract	HOW-011	Yes	6	Positive	Yes	Sample tested only	N/A
31 AHU 63 Supply & Extract	HOW-009	Yes	6	Positive	Yes	Sample tested only	N/A
31 AHU 63 Supply & Extract	HOW-067	Yes	6	Positive	Yes	Sample tested only	N/A
31 AHU 63 Supply & Extract	HOW-064	Yes	6	Positive	Yes	Sample tested only	N/A
31 AHU 63 Supply & Extract	HOW-062	Yes	6	Positive	Yes	Sample tested only	N/A
31 AHU 63 Supply & Extract	HOW-059	Yes	6	Positive	Yes	Sample tested only	N/A
31 AHU 63 Supply & Extract	HOW-058	Yes	6	Positive	Yes	Sample tested only	N/A
31 AHU 63 Supply & Extract	HOW-055	Yes	6	Positive	Yes	Sample tested only	N/A
31 AHU 63 Supply & Extract	HOW-053	Yes	6	Positive	Yes	Sample tested only	N/A
31 AHU 63 Supply & Extract	HOW-050	Yes	6	Positive	Yes	Sample tested only	N/A
31 AHU 63 Supply & Extract	HOW-202	Yes	6	Positive	Yes	Sample tested only	N/A
31 AHU 63 Supply & Extract	HOW-198	Yes	6	Positive	Yes	Sample tested only	N/A
31 AHU 63 Supply & Extract	HOW-195	Yes	6	Positive	Yes	Sample tested only	N/A
31 AHU 63 Supply & Extract	HOW-193	Yes	6	Positive	Yes	Sample tested only	N/A
31 AHU 63 Supply & Extract	HOW-190	Yes	6	Positive	Yes	Sample tested only	N/A

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EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL Nº. 01563 821991
FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 31

SYSTEM: 31 – AHU 63 SUPPLY (4TH FLOOR HAEMATOLOGY)

	AIR SYSTEMS PRE COMMISSIONING SHEET	✓	X	N/A
1.	Check AHU for damage and that all the components are secure	✓		
2.	Check the transit straps have been removed, if applicable	✓		
3.	Check pulleys are secure, tight, aligned and belts are correctly tensioned, if applicable	✓		
4.	Check with the controls engineer that the system is available to run and that plant rotation is correct	✓		
5.	Check all ductwork/air terminals are fitted and that air regulating dampers are open	✓		
6.	Check louvres are fitted and clear from obstructions, if applicable	✓		
7.	Check fire dampers are open, if applicable	✓		
8.	Check the motor overloads are suitable and set			✓
9.	Check VAV or CAV boxes are installed correctly and ready for use.			✓
10.	Check the floor plenums are complete, if applicable			✓
11.	Complete commissioning test sheets.	✓		

COMMENTS:

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16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL Nº. 01563 821991
FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

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AHU TEST SHEET

SYSTEM: 31 – AHU 63 SUPPLY (4TH FLOOR HAEMATOLOGY)

AHU											
AHU Manufacturer		Barkell		Fan Size		355					
Fan Manufacturer		Comefri		AHU Serial No		OP1B3043173					
Fan Type		Centrifugal		AHU Model Nº.		NTHZ 355 R					
		Design		**Test**						**% Design**	
Air Volume (L/S)		1940		2050						106	
External Static Pressure (Pa)		430		Inlet	240	Outlet	332	Total	572		
Fan Rotational Speed (R.P.M)		2570		2050							
Filter Test Data	Pre Filter (Pa)	Inlet	*	Outlet	*			ΔP	40		
	Sec Filter (Pa)	Inlet	*	Outlet	*			ΔP	55		

MOTOR			
Manufacturer	TEC	Output kW	5.5
Serial Nº	1204-06812693	Motor Full Load Current	10.4 Amps
Voltage	400	Motor Running Current	7.19 Amps
	Design	**Test**	
Rotational Speed.	2920	2628	

DRIVE DETAILS			
Motor Pulley/Shaft Size (mm∅)	132 X 1	38	Motor Pulley Taper Lock Size	1610
Fan Pulley/Shaft Size (mm∅)	150 X 2	40	Fan Pulley Taper Lock Size	2012
Belt Type/Size	XPZ	975	Nº. Of Belts	2
Shaft Centres mm	270		Adjustment	- 30 + 20 mm
Variable Speed Drive	Yes		Set Point	45 Hz

STANDBY PLANT							
Test Air Volume	2050	Inlet Pressure	240	Motor Rotational Speed	2628	Motor Running Current	
% Design	106	Outlet Pressure	332	Fan Rotational Speed	2313	7.19	Amps
Variable Speed Drive			Yes	Set Point	45 Hz		

Comments.

Motor 2 Serial No. 1204-06812862

Motor & Fan Pulley = SPZ

Control static pressure set point = 332 Pa

* Filter pressures taken from magnehelic gauges.

Main Volume = TH1 - 1111 l/s + TH2 – 939 l/s = 2050 l/s

Instrument Used (Ref Nº.) HV12/1, HV12/4, HV12/5

Date: 23/8/14	Engineer: Stephen Murdoch & Gregor Fulton	Sheet 3 of 10

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16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL Nº. 01563 821991
FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

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DUCT VOLUME TEST SHEET

SYSTEM: 31 – AHU 63 SUPPLY (4TH FLOOR HAEMATOLOGY)

VELOCITY PROFILE (taken facing air flow) **TEST HOLE LOCATION: LEVEL 4 RISER T3**

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width	Height	M2		L/S		M/S	
TH1				500	500	0.2500		1040		4.16	
4.30	4.80	4.70									
4.20	4.70	4.50									
4.20	4.40	4.20									
Velocity Sub Totals											
12.70	13.90	13.40									

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
40	9	4.44	1111	107	168

Remarks: Test hole serves Branch A

Instrument Used: HV12/1

Date: 23/8/14	Engineer: Stephen Murdoch & Gregor Fulton	Sheet 4 of 10

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
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FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

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DUCT VOLUME TEST SHEET

SYSTEM: 31 – AHU 63 SUPPLY (4TH FLOOR HAEMATOLOGY)

VELOCITY PROFILE (taken facing air flow) **TEST HOLE LOCATION: LEVEL 4 RISER T3**

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width	Height	M2		L/S		M/S	
TH2				700	350	0.2450		900		3.67	
3.80	4.20	4.80	5.20								
4.40	3.30	2.90	4.40								
4.00	3.00	2.50	3.50								
Velocity Sub Totals											
12.20	10.50	10.20	13.10								

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
46	12	3.83	939	104	171

Remarks: Test Hole serves Branch B

Instrument Used: HV12/1

Date: 23/8/14	Engineer: Stephen Murdoch & Gregor Fulton	Sheet 5 of 10

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16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL Nº. 01563 821991
FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

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GRILLE TEST SHEET

SYSTEM: 31 – AHU 63 SUPPLY (4TH FLOOR HAEMATOLOGY)

VELOCITY PROFILE (taken facing air flow) **TEST HOLE LOCATION: CEILING VOID**

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
TH3		200				0.0314		80		2.55	
2.70	2.70										
2.80	2.90										
2.70	2.70										
2.60	2.50										
Velocity Sub Totals											
10.80	10.80										

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
21.6	8	2.70	85	106	20

Remarks: Test Hole serves 512-H6005. Test Volume 85 l/s ÷ Balometer Volume 77 l/s = 1.10 Factor

Instrument Used: HV12/1

Date: 23/8/14	Engineer: Stephen Murdoch & Gregor Fulton	Sheet 6 of 10

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16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL Nº. 01563 821991
FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

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GRILLE TEST SHEET

SYSTEM: 31 – AHU 63 SUPPLY (4TH FLOOR HAEMATOLOGY)

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
BRANCH A						
512-HG005	80	57	76	1.1	83.60	105
512-HG004	80	53	76	1.1	83.60	105
512-HG003	80	47	73	1.1	80.30	100
512-HG002	80	56	75	1.1	82.50	103
512-HG001	80	61	75	1.1	82.50	103
513-HG009	80	82	73	1.1	80.30	100
513-HG010	80	95	73	1.1	80.30	100
513-HG011	80	94	76	1.1	83.60	105
513-HG016	80	81	77	1.1	84.70	106
513-HG015	80	86	76	1.1	83.60	105
513-HG014	80	77	73	1.1	80.30	100
513-HG013	80	93	74	1.1	81.40	102
513-HG012	80	105	76	1.1	83.60	105

Remarks

Instrument Used: HV12/15

Date: 23/8/14	Engineer: Stephen Murdoch & Gregor Fulton	Sheet 7 of 10

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16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL Nº. 01563 821991
FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

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GRILLE TEST SHEET

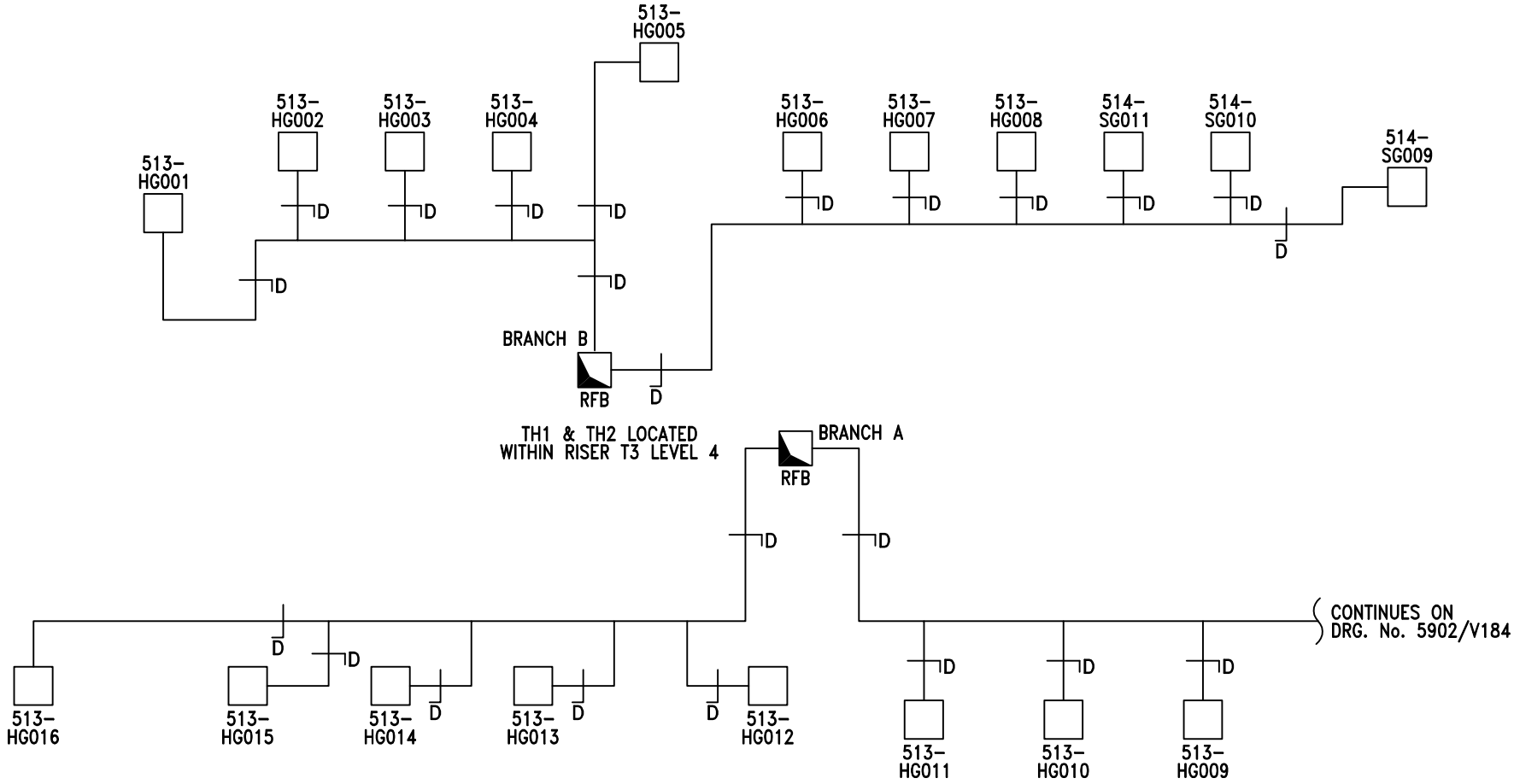
SYSTEM: 31 – AHU 63 SUPPLY (4TH FLOOR HAEMATOLOGY)

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
BRANCH B						
513-HG001	100	127	93	1.1	102.30	102
513-HG002	80	68	75	1.1	82.50	103
513-HG003	80	79	75	1.1	82.50	103
513-HG004	80	72	73	1.1	80.30	100
513-HG005	80	120	73	1.1	80.30	100
514-SG009	80	84	77	1.1	84.70	106
514-SG010	80	68	73	1.1	80.30	100
514-SG011	80	72	77	1.1	60.00	107
513-HG008	80	70	77	1.1	59.90	105
513-HG007	80	80	79	1.1	10.70	107
513-HG006	80	92	77	1.1	10.70	107

Remarks

Instrument Used: HV12/15

Date: 23/8/14	Engineer: Stephen Murdoch & Gregor Fulton	Sheet 8 of 10

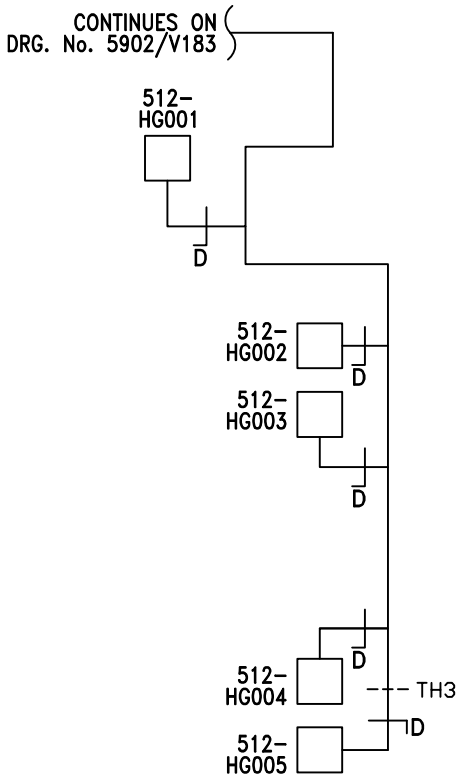


FOURTH FLOOR

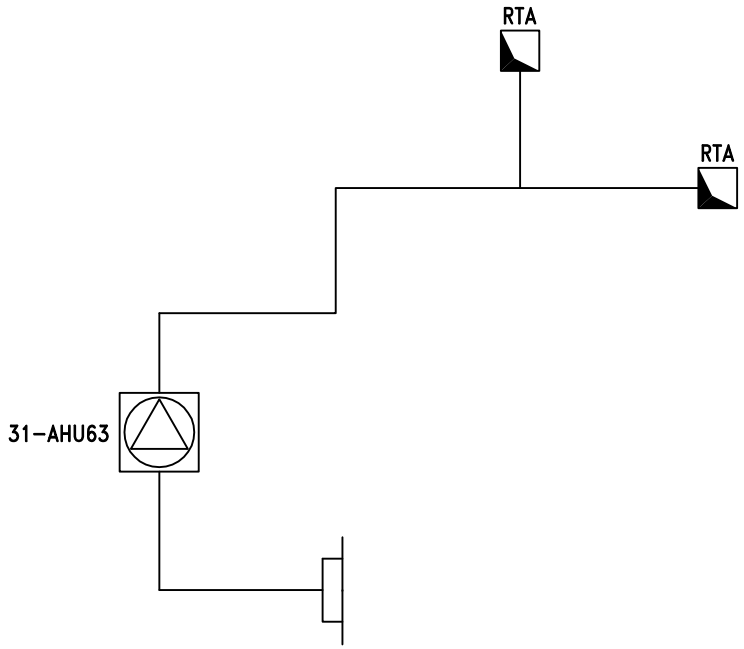
SHEET: 9 OF 10

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
A47089198
Fax: 01563 822220 email: talk2us@handv.co.uk

CONTRACT:	NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 31
CLIENT:	MERCURY ENGINEERING UK
TITLE:	SCHEMATIC LAYOUT OF 31-AHU 63 SUPPLY 4TH FLOOR HAEMATOLOGY
DRAWN:	KL/SM
DATE:	01/07/15
DRG. No.:	5902/V183



FOURTH FLOOR



PLANTROOM 31

SHEET: 10 OF 10

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
A47/089198
Fax: 01563 822220 email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 31

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

31-AHU 63 SUPPLY
4TH FLOOR HAEMATOLOGY

DRAWN: KL/SM

DATE: 01/07/15

DRG. No.: 5902/V184

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL Nº. 01563 821991
FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

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SYSTEM: 31 – AHU 63 EXTRACT (4TH FLOOR HAEMOTOLOGY)

	AIR SYSTEMS PRE COMMISSIONING SHEET	✓	X	N/A
1.	Check AHU for damage and that all the components are secure	✓		
2.	Check the transit straps have been removed, if applicable	✓		
3.	Check pulleys are secure, tight, aligned and belts are correctly tensioned, if applicable	✓		
4.	Check with the controls engineer that the system is available to run and that plant rotation is correct	✓		
5.	Check all ductwork/air terminals are fitted and that air regulating dampers are open	✓		
6.	Check louvres are fitted and clear from obstructions, if applicable	✓		
7.	Check fire dampers are open, if applicable	✓		
8.	Check the motor overloads are suitable and set			✓
9.	Check VAV or CAV boxes are installed correctly and ready for use.			✓
10.	Check the floor plenums are complete, if applicable			✓
11.	Complete commissioning test sheets.	✓		

COMMENTS:

ENGINEER: STEPHEN MURDOCH **DATE: 30/8/14** **SHEET 2 OF 9**

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL Nº. 01563 821991
FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

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AHU TEST SHEET

SYSTEM: 31 – AHU 63 EXTRACT (4TH FLOOR HAEMOTOLOGY)

AHU											
AHU Manufacturer			Barkell		Fan Size			355			
Fan Manufacturer			Comefri		AHU Serial No			OP1B3043173			
Fan Type			Centrifugal		AHU Model Nº.			NTHZ 355 R			
			Design		**Test**					**% Design**	
Air Volume		(L/S)	1391		1404					101	
External Static Pressure		(Pa)	535		Inlet	360	Outlet	50	Total	410	
Fan Rotational Speed		(R.P.M)	1900		1907						
Filter Test Data	Pre Filter	(Pa)	Inlet	*	Outlet	*			ΔP	15	
	Sec Filter	(Pa)	Inlet	N/A	Outlet	N/A			ΔP	N/A	

MOTOR				
Manufacturer	TEC	Output kW	2.2	
Serial Nº	1305-0984906	Motor Full Load Current	8.51	Amps
Voltage	400	Motor Running Current	8.12	Amps
	Design	**Test**		
Rotational Speed.	1445	1445		

DRIVE DETAILS			
Motor Pulley/Shaft Size (mm∅)	132 x 1	28	Motor Pulley Taper Lock Size	1610
Fan Pulley/Shaft Size (mm∅)	100 x 2	40	Fan Pulley Taper Lock Size	1610
Belt Type/Size	XPA	932	Nº. Of Belts	2
Shaft Centres mm	280		Adjustment	- 40 + 20 mm
Variable Speed Drive	Yes		Set Point	50 Hz

STANDBY PLANT							
Test Air Volume	1404	Inlet Pressure	360	Motor Rotational Speed	1445	Motor Running Current	
% Design	101	Outlet Pressure	50	Fan Rotational Speed	1907	8.12	Amps
Variable Speed Drive			Yes	Set Point	50 Hz		

Comments.

Motor 2 Serial No. 1305-098491

Motor & Fan Pulley = SPA

* Filter pressures taken from magnehelic gauges.

Instrument Used (Ref Nº.) HV12/1, HV12/4, HV12/5

Date: 30/8/14	Engineer: Stephen Murdoch & Gregor Fulton	Sheet 3 of 9

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EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL Nº. 01563 821991
FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

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DUCT VOLUME TEST SHEET

SYSTEM: 31 – AHU 63 EXTRACT (4TH FLOOR HAEMOTOLOGY)

VELOCITY PROFILE (taken facing air flow) **TEST HOLE LOCATION: LEVEL 4 RISER T4**

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width	Height	M2		L/S		M/S	
Main TH				700	450	0.3150		1391		4.42	
5.20	5.10	5.40	5.70								
5.20	4.70	4.70	5.20								
5.10	4.10	3.40	4.00								
4.80	3.70	2.70	2.30								
Velocity Sub Totals											
20.30	17.60	16.20	17.20								

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
71.3	16	4.46	1404	101	243

Remarks:

Instrument Used: HV12/1

Date: 30/8/14	Engineer: Stephen Murdoch & Gregor Fulton	Sheet 4 of 9

H & V
H & V
H & V

Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL Nº. 01563 821991
FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 31

DUCT VOLUME TEST SHEET

SYSTEM: 31 – AHU 63 EXTRACT (4TH FLOOR HAEMOTOLOGY)

VELOCITY PROFILE (taken facing air flow) **TEST HOLE LOCATION: CEILING VOID**

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
TH1		160				0.0201		50		2.49	
2.30	2.20										
2.40	2.40										
2.30	2.40										
2.30	2.30										
Velocity Sub Totals											
9.30	9.30										

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
18.6	8	2.33	47	94	59

Remarks: Test hole serves 512-TEG006. Test Hole 47 l/s ÷ Balometer Volume 40 l/s = 1.18 Factor.

Instrument Used: HV12/1

Date: 30/8/14 | Engineer: Stephen Murdoch & Gregor Fulton | Sheet 5 of 9

H & V
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H & V

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CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 31

GRILLE TEST SHEET

SYSTEM: 31 – AHU 63 EXTRACT (4TH FLOOR HAEMOTOLOGY)

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
514-TEG003	50	24	40	1.18	47.20	94
514-TEG002	50	34	40	1.18	47.20	94
514-TEG001	50	31	40	1.18	47.20	94
513-TEG008	50	26	40	1.18	47.20	94
513-TEG006	50	40	40	1.18	47.20	94
513-TEG007	50	40	40	1.18	47.20	94
513-TEG005	50	53	40	1.18	47.20	94
513-TEG004	50	53	40	1.18	47.20	94
513-TEG001	70	64	57	1.18	67.26	96
513-TEG003	50	28	40	1.18	47.20	94
513-TEG002	50	44	40	1.18	47.20	94
513-TEG011	40	75	32	1.18	37.76	94
513-TEG009	62	150	50	1.18	59.00	95
513-TEG010	59	173	48	1.18	56.64	96

Remarks:

Instrument Used: HV12/15

Date: 30/8/14	Engineer: Stephen Murdoch & Gregor Fulton	Sheet 6 of 9

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H & V
H & V

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EST: 1975

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GRILLE TEST SHEET

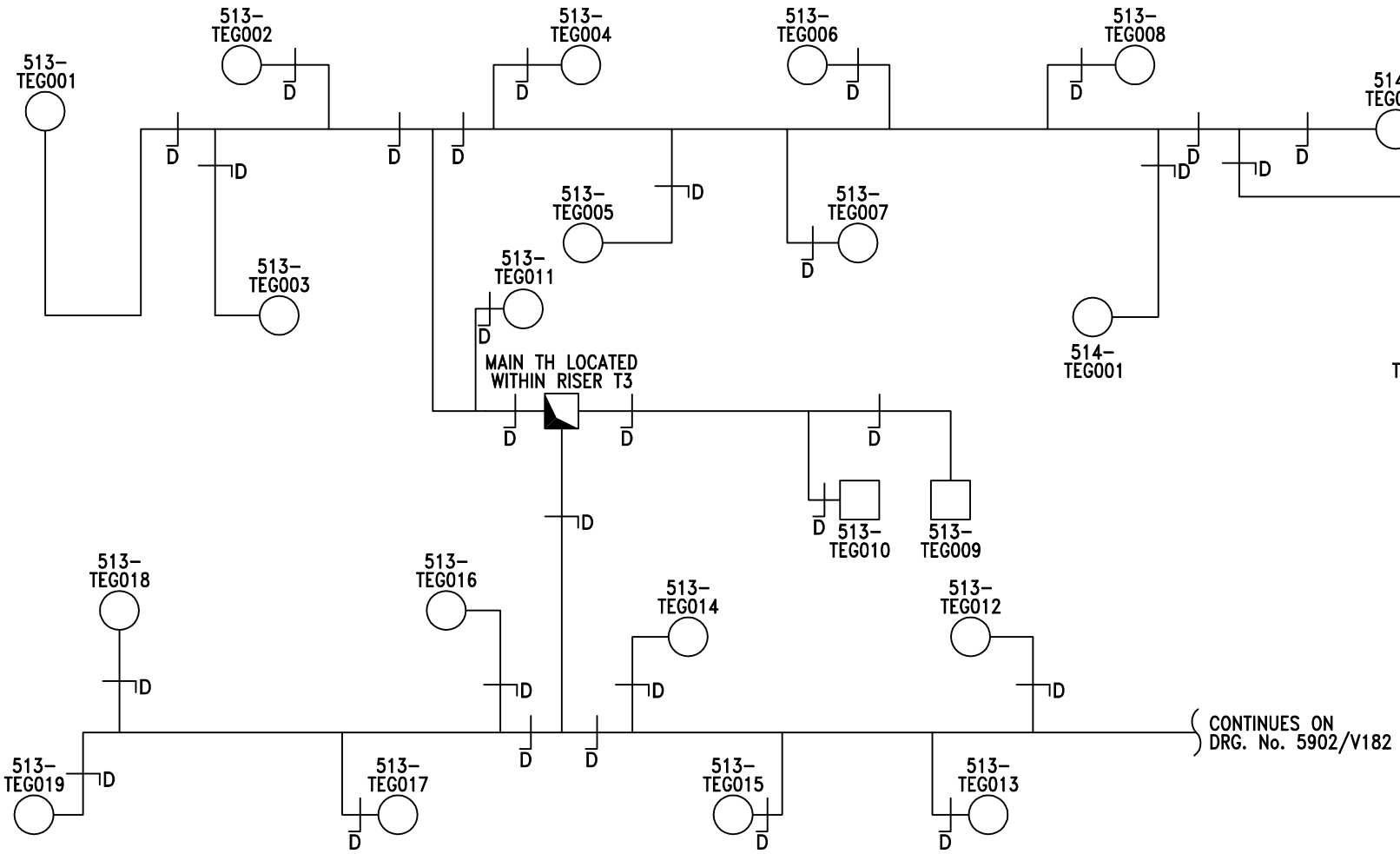
SYSTEM: 31 – AHU 63 EXTRACT (4TH FLOOR HAEMOTOLOGY)

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
512-TEG006	50	24	40	1.18	47.20	94
512-TEG005	50	23	42	1.18	49.56	99
512-TEG002	50	26	40	1.18	47.20	94
512-TEG003	50	29	41	1.18	48.38	97
512-TEG004	20	24	17	1.18	20.06	100
512-TEG001	50	29	41	1.18	48.38	97
513-TEG012	45	40	39	1.18	46.02	102
513-TEG013	50	42	41	1.18	48.38	97
513-TEG015	50	42	44	1.18	51.92	104
513-TEG014	45	46	36	1.18	42.48	94
513-TEG019	50	32	40	1.18	47.20	94
513-TEG018	50	44	40	1.18	47.20	94
513-TEG017	50	53	40	1.18	47.20	94
513-TEG016	50	44	40	1.18	47.20	94

Remarks:

Instrument Used: HV12/15

Date: 30/8/14	Engineer: Stephen Murdoch & Gregor Fulton	Sheet 7 of 9



FOURTH FLOOR

SHEET: 8 OF 9

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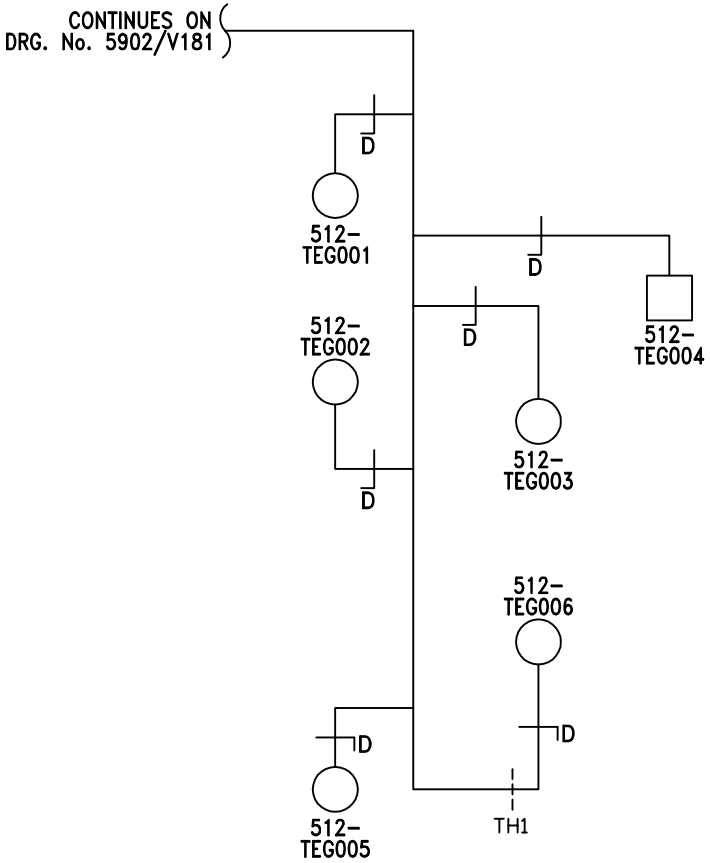
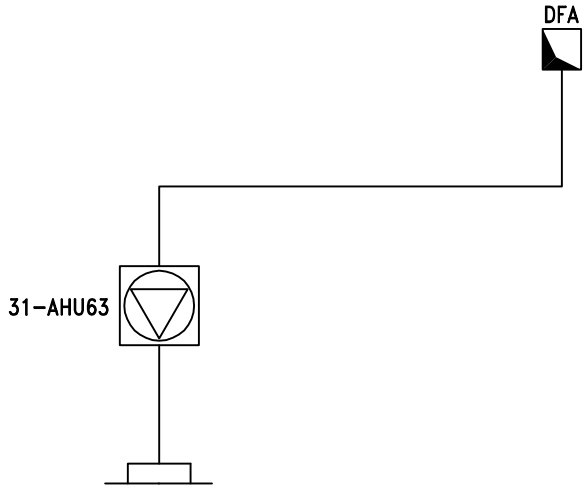
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220 email: talk2us@handv.co.uk

A47/089198

CONTRACT:	NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 31
CLIENT:	MERCURY ENGINEERING UK
TITLE:	SCHEMATIC LAYOUT OF 31-AHU 63 EXTRACT 4TH FLOOR HAEMATOLOGY
DRAWN:	KL/SM
DATE:	01/07/15
DRG. No.:	5902/V181



FOURTH FLOOR



PLANTROOM 31

SHEET: 9 OF 9

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Tel : 01563 821991
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Fax: 01563 822220 email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 31

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

31-AHU 63 EXTRACT
4TH FLOOR HAEMATOLOGY

DRAWN: KL/SM

DATE: 01/07/15

DRG. No.: 5902/V182

From: Moir, Peter [redacted] on behalf of Moir, Peter
Sent: 07 July 2015 12:59
To: David Wilson
Subject: FW: Urgent/Important - Schiehallion testing

David

Did you manage to pass the HEPA information to Ian this morning?

What is outstanding on sealing rooms in Scheihallion in NCH I thought this had plasterboard ceilings.

I will head over and perhaps we can have a chat re this.

Regards

Peter

-----Original Message-----
From: Kane, Mary Anne
Sent: 07 July 2015 12:13
To: Powrie, Ian; Moir, Peter
Subject: FW: Urgent/Important - Schiehallion testing

It is imperative that we get the validation data now for all HEPA filtered areas of the hospital . We are at risk of loosing all of the areas from use unless we provide this data which will be a PR nightmare for the Board .
Ian you require to ensure that Christine gets the legionella paperwork today Peter - Need a definitive answer on sealing the BMT rooms on Shiehallion Ian/Peter - I am being told air sampling continues to fail in Schaellion - is this correct - need an update please ASAP

-----Original Message-----
From: Williams, Craig
Sent: 07 July 2015 11:13
To: Hill, Kevin
Cc: Kane, Mary Anne; Walsh, Tom
Subject: FW: Urgent/Important - Schiehallion testing

Dear Kevin

I thought that I should bring this to your attention. In the light of current concerns around the adult BMT unit it might be helpful to have a clear timetable for the completion of the work on sealing the BMT rooms on Schiehallion to asssure the haematologists that the rooms provided for their patienst are as selaed as possible

Best wishes

Craig

-----Original Message-----

From: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20)
[redacted]
Sent: 06 July 2015 16:52
To: Williams, Craig
Cc: Joannidis, Pamela
Subject: FW: Urgent/Important - Schiehallion testing

Craig - see below for the situation in Schiehallion. I still have not seen copies of the original spec for the unit, validation reports or water sampling results. I also do not have an update as to when the remaining 6 rooms will have the light fittings sealed. There is a 2nd transplant due to be undertaken shortly so this work needs to be completed ASAP.

Kind Regards
Teresa

Dr Teresa Inkster
Consultant Microbiologist and Infection Control Doctor Dept of Microbiology Lister Building Glasgow Royal Infirmary Direct dial : [redacted]

_____

From: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20)
Sent: 03 July 2015 09:50
To: Walsh Thomas (NHS Greater Glasgow & Clyde)
Subject: FW: Urgent/Important - Schiehallion testing

Sorry Tom , I should have copied you in on this Best wishes Teresa

Dr Teresa Inkster
Consultant Microbiologist and Infection Control Doctor Dept of Microbiology Lister Building Glasgow Royal Infirmary Direct dial : [redacted]

_____

From: McVeigh, Alanna [redacted]
Sent: 03 July 2015 09:42
To: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20); Leighton Sheenagh (NHS GREATER GLASGOW & CLYDE - SGA20); pamela.joannidis[redacted]; Kirkwood Jean (NHS GREATER GLASGOW & CLYDE - SGA20); Barmanroy, Jackie
Cc: Williams Craig (NHS GREATER GLASGOW & CLYDE - SGA20); MacKinnon, Yvonne; Gibson, Brenda; Ewins, Anna-Maria; Robertson Lynne (NHS GREATER GLASGOW & CLYDE - SGA20); Mcauley Mary (NHS GREATER GLASGOW & CLYDE - SGA20); Powrie Ian (NHS GREATER GLASGOW & CLYDE - SGA20); Coyne Patricia (NHS GREATER GLASGOW & CLYDE - SGA20)
Subject: RE: Urgent/Important - Schiehallion testing

Hi Teresa

Thank you for your email below which answers all my queries. Very much appreciated. I have previously asked Ian for the validation reports so would be grateful of a copy when this is available.

Best wishes.

Alanna

-----Original Message-----
From: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20)
[redacted]
Sent: 02 July 2015 19:04
To: Leighton, Sheenagh; Joannidis, Pamela; Kirkwood, Jean; McVeigh, Alanna; Barmanroy, Jackie
Cc: Williams, Craig; MacKinnon, Yvonne; Gibson, Brenda; Ewins, Anna-Maria; Robertson, Lynne; McAuley, Mary; Powrie, Ian; Coyne, Patricia
Subject: RE: Urgent/Important - Schiehallion testing

Thanks Sheenagh

I thought it would be useful to summarise the discussions at our meeting this afternoon which was held in response to the queries in the email below from Alanna yesterday.

1) Air sampling has been centralised at the GRI microbiology lab so reports will be issued in this format - the info contained in the reports will include particle counts, air sampling results and comments in relation to people in the vicinity of the testing and/or cleaning in progress at the time . This info will aid with interpretation.

2+3)Ideally particle counts should be < 1000 at 0.5um. What type of patient is in the room is irrelevant as all these rooms should meet the spec for a BMT unit. We should not expect to see any fungus on the plates from these rooms. Elevated particle counts +/- fungal growth requires a risk assessment on each occasion by infection control. This should include checking for water ingress and that engineering parameters are satisfactory. Infection control will advise whether these rooms need to be closed.

4+5) It would be useful for the GRI lab to have a schedule for air sampling in 2A and I will follow this up with Prof Williams on his return. I expect this will involve monthly sampling on a rotational basis. Currently as we have identified issues on the unit we are testing at an increased frequency and will continue to do so until we are satisfied with the air quality.

6) It would be useful to have names of individuals we should send reports to in addition to the ICD , lead ICN and estates officer for the site. For adult BMT we send reports to Robert Boyd, Quality Manager.

In relation to the final point re placement of a transplant patient, it was decided in a meeting with Prof Williams and clinicians last week to proceed with a transplant case and to place [redacted] in the safest room . As I explained in the meeting I cannot presently state that one room is safer than another based on particle counts and air sampling results . Particle counts and air sampling have been performed on 4 consecutive occasions since 9/6/15. Each time, counts have been elevated throughout the unit and we have had fungus including Aspergillus growing on plates from certain rooms and the corridors. As I explained air sampling takes place for just a few minutes and as a result we will miss bursts of fungal spores. In addition I have yet to see any validation reports for the ventilation system or Legionella sampling results for 2A.

I was made aware by Ian Powrie on 25/7 that there is an issue with light fittings in the rooms. On inspection by myself and Pamela it was evident that the light fittings are not sealed and there is direct communication with the void above with visible dust on these fittings. This may explain the elevated particle counts/fungal growth. So, although we have lobbied rooms and HEPA filtration we have holes in the ceiling and therefore an unsealed room which does not meet the spec for a BMT patient .

Following discussion with Ian Powrie sealed light fittings will be fitted today in Rooms 17 and 18 - this was in progress when I visited the unit this afternoon. Cleaning will take place tonight and repeat particle counts and air sampling will take place tomorrow morning . As discussed there is a clinical need for a childs transplant to go ahead and therefore they will be admitted to either room 17 or room 18 . Prophylactic Ambisome will be administered three times a week and depending on results of sampling may be increased to treatment dose.

Sealed light fittings will be acquired as soon as possible for the rest of the unit. In addition we discussed cleaning the unit with Actichlor plus.

I will discuss tomorrows particle counts with Jean when they become available.

Kind Regards
Teresa

Dr Teresa Inkster
Consultant Microbiologist and Infection Control Doctor Dept of Microbiology Lister Building Glasgow Royal Infirmary Direct dial : [redacted]

_____

From: Leighton, Sheenagh [redacted]
Sent: 02 July 2015 16:22
To: pamela.joannidis[redacted]; Kirkwood Jean (NHS GREATER GLASGOW & CLYDE - SGA20); Mcveigh Alanna (NHS GREATER GLASGOW & CLYDE - SGA20); Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20); Barmanroy, Jackie
Cc: Williams Craig (NHS GREATER GLASGOW & CLYDE - SGA20); MacKinnon, Yvonne; Gibson, Brenda; Ewins, Anna-Maria; Robertson Lynne (NHS GREATER GLASGOW & CLYDE - SGA20); Mcauley Mary (NHS GREATER GLASGOW & CLYDE - SGA20); Powrie Ian (NHS GREATER GLASGOW & CLYDE - SGA20); Lavery Brian (NHS GREATER GLASGOW & CLYDE - SGA20); Coyne Patricia (NHS GREATER GLASGOW & CLYDE - SGA20)
Subject: RE: Urgent/Important - Schiehallion testing

Hi Folks,

I have contacted the wall washer and have informed him he requires to use Actichlor to was down the wall.
I will instruct the domestic staff that the must use actichlor for daily clean of surfaces and floors in the strict and the transplant rooms.

Sheenagh

From: Joannidis, Pamela
Sent: 02 July 2015 08:33
To: Kirkwood, Jean; Leighton, Sheenagh; McVeigh, Alanna; Inkster, Teresa (NHSmail); Barmanroy, Jackie
Cc: Williams, Craig; MacKinnon, Yvonne; Gibson, Brenda; Ewins, Anna-Maria; Robertson, Lynne; McAuley, Mary; Powrie, Ian; Lavery, Brian
Subject: RE: Urgent/Important - Schiehallion testing

Thanks Jean

Can we meet in the ward?
Pamela

From: Kirkwood, Jean
Sent: 02 July 2015 08:32
To: Joannidis, Pamela; Leighton, Sheenagh; McVeigh, Alanna; Inkster, Teresa (NHSmail); Barmanroy, Jackie
Cc: Williams, Craig; MacKinnon, Yvonne; Gibson, Brenda; Ewins, Anna-Maria; Robertson, Lynne; McAuley, Mary; Powrie, Ian; Lavery, Brian
Subject: RE: Urgent/Important - Schiehallion testing

Free at 2pm - 2.30.
many thanks
Jean

From: Joannidis, Pamela
Sent: 01 July 2015 23:12
To: Leighton, Sheenagh; McVeigh, Alanna; Kirkwood, Jean; Inkster, Teresa (NHSmail); Barmanroy, Jackie
Cc: Williams, Craig; MacKinnon, Yvonne; Gibson, Brenda; Ewins, Anna-Maria; Robertson, Lynne; McAuley, Mary; Powrie, Ian; Lavery, Brian
Subject: RE: Urgent/Important - Schiehallion testing

Hi Jean
We (ICD Dr Inkster, Jackie and myself) spoke to eve this evening. I agree it would be useful to meet tomorrow. Are you free anytime after 2pm? Ian , Teresa, can you also make this?
Pamela

From: Leighton, Sheenagh
Sent: 01 July 2015 18:53
To: McVeigh, Alanna; Kirkwood, Jean; Lavery, Brian
Cc: Williams, Craig; Joannidis, Pamela; MacKinnon, Yvonne; Gibson, Brenda; Ewins, Anna-Maria; Robertson, Lynne; McAuley, Mary; Powrie, Ian
Subject: RE: Urgent/Important - Schiehallion testing

Hi Alanna,

I would like to take advice on wall washing. The domestic staff will not wash the full length of a walls or windows. They are only required to remove marks from walls.

I assume this child would be in strict isolation, I would like clarification if second clean is required as it is my understanding that entry to room is limited.

Happy to discuss. I agree we need to give clear guidelines to all staff concerned

Sheenagh

From: McVeigh, Alanna
Sent: 01 July 2015 15:58
To: Kirkwood, Jean; Lavery, Brian
Cc: Williams, Craig; Joannidis, Pamela; MacKinnon, Yvonne; Gibson, Brenda; Ewins, Anna-Maria; Robertson, Lynne; McAuley, Mary; Powrie, Ian; Leighton, Sheenagh
Subject: Urgent/Important - Schiehallion testing

Dear All

Please see attached 3 SOPs that I have been trying to get agreed (via email) since we moved - which are all relevant to the email below. I stop for leave on Friday for one week and would be really grateful if we could get these completed before I stop as we need clear guidance for staff and confident that everything is in place for the patient being isolated for transplant.

Best wishes.

Alanna

From: Kirkwood, Jean
Sent: 01 July 2015 15:41
To: McVeigh, Alanna; Lavery, Brian
Cc: Williams, Craig; Joannidis, Pamela; MacKinnon, Yvonne; Gibson, Brenda; Ewins, Anna-Maria; Robertson, Lynne; McAuley, Mary
Subject: RE: Urgent/Important - Schiehallion testing

Hi there,
As SCN within Ward 2A, I am unclear what rules I am applying to the isolation cubicles.
I would like to have some SOP issued about frequency of air sampling, implications of results i.e. air particle count v fungal loads!
I urgently require to identify a cubicle for our transplant patient.
Pamela, if you are free tomorrow I would welcome any guidance.
many thanks
Jean

From: McVeigh, Alanna
Sent: 01 July 2015 15:15
To: Lavery, Brian
Cc: Williams, Craig; Joannidis, Pamela; Kirkwood, Jean; MacKinnon, Yvonne; Gibson, Brenda; Ewins, Anna-Maria
Subject: Urgent/Important - Schiehallion testing
Importance: High

Hi Brian

I'm hoping you can help me! If not, can you please advise who can?

Jean Kirkwood has sent the attached on to me and we have a few queries relating to the results and format. Can I also check if these are the latest results or are the samples currently being taken weekly which would mean result should be available from yesterday?

1. I've attached the format we previously received - is it possible to receive this format again or will the attached be the new format?

2. Can you please advise on the thresholds for particle counts (min/max for safe use) - we don't have any guidance on this and not sure if there is a sliding scale for room use dependent on patient type. At the moment all our rooms are in use - some for general haematology/oncology patients and some for strict isolation, even though we have a range of counts in the isolation

rooms from 519 to 163,306 (above report). We are concerned we don't have any guidance on when a room should be closed for use.

3. The above also applies to plate growth - Rooms 17, 18, 20 & 24 are all in use yet had fungus/yeast growth. At what point should the room be closed for use?

4. The attached only shows isolation room air sampling - can you please advise if other rooms in the ward have/are to be sampled and if so how regularly?

5. Can you please advise how regularly the isolation rooms will be sampled and if there will be a rotation ie 2 rooms per month etc?

6. Would it be possible to copy me in on future air sampling reports?

We are very concerned at the moment that we have a [redacted] tomorrow. The initial plan was to put this [redacted] into Room [redacted] but this is currently in use for a [redacted] (however, if this is the best room for the [redacted] its likely the current [redacted] would be moved). The second choices currently (based on the attached) would be rooms 20 & 22 as have no plate growth and less than 2,000 particles. Can you confirm that these are the best options?

Many thanks.

Alanna McVeigh
SCT Quality Manager / Administrator
Schiehallion Ward (Ward 2A)
Royal Hospital for Sick Children
1345 Govan Road
GLASGOW G51 4TF
[redacted]

From: Kirkwood, Jean
Sent: 23 June 2015 15:06
To: McVeigh, Alanna
Subject: FW: Schiehallion testing

From: Lavery, Brian
Sent: 23 June 2015 14:56
To: Williams, Craig
Cc: Inkster, Teresa (NHSmail); Kirkwood, Jean; Cullen, Karen; Mallon, John
Subject: Schiehallion testing

Hi Craig

Please find attached reports for the environmental testing in Ward 2A on 16/6/15 All fungi have been sent to Mycology for identification.

Regards

Brian Lavery
Technical Manager / IT Manager
Microbiology Department
New Lister Building
Glasgow Royal Infirmary
Alexandra parade
Glasgow G31 2ER

****
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From: Alasdair Fernie [redacted] on behalf of Alasdair Fernie
Sent: 10 July 2015 14:31
To: Calderwood, Robert
Subject: Re: Early test results for Haemato-oncology ward
Attachments: image001.jpg

I'm delighted with that. If I get that sealed ceiling to stand up then we will be in the right place or certainly heading that way.

I wanted to thank you for the way the meeting was held today. It was much appreciated.

Alasdair Fernie BSc (Hons) MRICS FCIOB
Project Director

Brookfield Multiplex Europe
[redacted]
Wwww.brookfieldmultiplex.com

On 10 Jul 2015, at 14:27, Calderwood, Robert [redacted] wrote:

> Alasdair
> A very good start to a resolution.
> Robert
>
> **From:** Alasdair Fernie [redacted]
> **Sent:** 10 July 2015 14:20
> **To:** Calderwood, Robert; Archibald, Grant; Moir, Peter; 'David Hall'
> **Cc:** Ross Ballingall; John Ballantyne; David Wilson
> **Subject:** Early test results for Haemato-oncology ward
>
> Gents
>
> Following this mornings meeting I wanted to feed back our early results for the pressure testing carried out in the ward.
>
> We have tested 2 rooms and are almost finished installing the new ceiling type in room 3. (we will install services back in this ceiling today and early Monday to carry out pressure test out Monday morning).
>
> This new ceiling type is still a lay in grid, but has a rubber seal system imbedded in the support frame closing the air gaps when the tile is placed into position.
>
> Room 1 ? Perimeter Trim sealed ? between 5 and 6 pascals achieved.

Room 2 ? perimeter trim and all tiles sealed at edges ? between 7 to 9 pascals achieved

Room 3 ? Testing to be carried out Monday Morning and will advise then.

Taking this above into consideration we would not be satisfied with the perimeter trim seal only but can take the positive from the full room being sealed achieving an upper level closer to 10 pascals.

I will update you on Monday Moring on the Room 3 results.

We have arranged to clean the rooms and the area on Monday after this test and will liaise with Peter to have a particle test carried out by your team on Tuesday afternoon all going well.

We will work on the Maintenance schedule for the rooms and have this read for review early next week so as to allow a clear view od what impact this has on the operation of the individual wards etc.

regards

Alasdair Fernie BSc (Hons) MRICS FCIOB
Project Director

<image001.jpg>
Brookfield Multiplex Europe
[redacted]
W www.brookfieldmultiplex.com

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From: David Wilson [redacted] on behalf of David Wilson
Sent: 18 July 2015 10:24
To: ian.powrie [redacted] MaryAnne.Kane [redacted] Peter.Moir [redacted] Anne.Harkness [redacted] Michelle.Carr [redacted] Margaret.McLucas [redacted] Lynne.Robertson [redacted] Clare.Mitchell [redacted] Craig.Williams [redacted]
Subject: Re: Air permeability tests at the weekend

Ian,

Its the lobby that is at 10Pa. As my previous email we are trying to complete this task in the conditions we have at present. My understanding from yesterdays communications was that you were unable to vacate the adjacent rooms and could only give us a room at a time (this was different than the discussions on Wednesday). We will have all the equipment required to measure differential pressure in adjoining areas to ensure we have the required 20Pa and meet the required pressure and permissible leakage laid out inSHPN 04 supplement 1. This will be easier given that you can now allow us to isolate the vent in the adjacent rooms particularly adjacent lobby.

I will call later today to discuss.

Regards
David
David Wilson
Commissioning Manager - Construction

Brookfield Multiplex Europe
New South Glasgow Hospitals Project
Hardgate Road
Glasgow, G51 4SX, United Kingdom
[redacted]
W www.brookfieldmultiplex.com

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From: Powrie, Ian [redacted]
Sent: Saturday, July 18, 2015 09:37 AM
To: Kane, Mary Anne [redacted]; David Wilson; Moir, Peter [redacted]; Harkness, Anne [redacted]; Carr, Michelle [redacted]; McLucas, Margaret [redacted]; Robertson, Lynne [redacted]; Mitchell, Clare [redacted]; Williams, Craig [redacted]
Subject: RE: Air permeability tests at the weekend

Dear all,

Please find enclosed the HAI Scribe assessment for the this week ends work, Infection control recommend that there are no patient requiring isolation i n the adjacent rooms do to the possibility of dust discharge into these rooms if there were to be a breach between them. Schiehallion have [redacted] in isolation rooms, the [redacted] will be moved by Sunday morning as they may be at increased risk as a result of this work. C Williams has advised that only patients in isolation need to be removed from adjoining rooms as a precautionary measure.
The relevant pages of the Scribe completed are the Type/Risk and pages 4-8 and Pages 32 – 37.

David this allows for the ventilation either side of the test room to be isolated ensuring compliance with the requirements of SHPN 04-01, can you please ensure that this is arranged.
Unfortunately I do not agree that the pressure in the adjacent room has negligible impact as if they are at 10Pa and therefore the resultant pressure difference with the test room is 10Pa, potentially negating the 20Pa test pressure application and the validity of the test. I am of until Tuesday, can you please call me to discuss before commencing these works on Sunday, any other issues feel free to call.

As indicated by Mary Anne i will consult with our Ventilation Authorising Engineer (AE) on this next week.

Regards

Ian

From: Kane, Mary Anne
Sent: 17 July 2015 14:44
To: 'David Wilson'; Powrie, Ian; Moir, Peter; Harkness, Anne; Carr, Michelle; McLucas, Margaret; Robertson, Lynne; Mitchell, Clare; Williams, Craig
Subject: RE: Air permeability tests at the weekend

The testing regime needs to be according the HBN - Ian Powrie will require to agree methodology with the contractor and the Board AE

From: David Wilson [redacted]
Sent: 17 July 2015 12:53
To: Powrie, Ian; Moir, Peter; Harkness, Anne; Carr, Michelle; McLucas, Margaret; Robertson, Lynne; Kane, Mary Anne; Mitchell, Clare; Williams, Craig
Subject: RE: Air permeability tests at the weekend

Ian,

Unless we get the whole area handed over to us then we need to work with what we have got. Bearing in mind the corridors will be at a very low pressure in relation to the rest of the building then it should not make any significant difference. We can leave the door from the street corridor to the ward corridor open for the duration of the test if need be. The adjoining bedrooms will be at low pressure as it is the lobby's that are pressurised so they should not introduce a problem. Where the lobby's of two isolation rooms are back to back then for the duration of the test (2 minutes) we could open the door from the lobby to the corridor (leaving the bedroom door closed).

Regards
David

David Wilson
Commissioning Manager - Construction

Brookfield MULTIPLEX BM

Brookfield Multiplex Europe

New South Glasgow Hospitals Project
Hardgate Road
Glasgow, G51 4SX, United Kingdom
[redacted]
W www.brookfieldmultiplex.com

From: Powrie, Ian [redacted]
Sent: Friday, July 17, 2015 12:35 PM
To: David Wilson; Moir, Peter; Harkness, Anne; Carr, Michelle; McLucas, Margaret; Robertson, Lynne; Kane, Mary Anne; Mitchell, Clare; Williams, Craig
Subject: RE: Air permeability tests at the weekend

David,

Process detailed below is in line with the guidance within SHPN 04-01 with the exception of the requirement to "

"Turn off the suite supply and extract ventilation systems and those serving adjoining spaces. (Rationale: All adjoining spaces need to be at atmospheric pressure in order to establish the **true leakage rate**.)"

As discussed at our meeting on Wednesday, did you obtain a view from H&V specialist ventilation commissioning engineer as to the validity of this requirement?
Obviously with this requirement in place it will extend the scope of the HEI SCRIBE assessment, which would need to be assessed before proceeding this afternoon?
I would also be concerned that the works planned for this afternoon would not be conclusive if the ventilation in adjoining spaces are not taken to atmospheric pressure?

Regards

Ian
[redacted]
Ian Powrie,
Sector Estates Manager,
South Glasgow Hospitals Campus,
1345 Govan Rd,
Glasgow,
G51 4TF,
[redacted]

From: David Wilson [redacted]
Sent: 17 July 2015 10:56
To: Powrie, Ian; Moir, Peter; Harkness, Anne; Carr, Michelle; McLucas, Margaret; Robertson, Lynne; Kane, Mary Anne
Subject: RE: Air permeability tests at the weekend

Ian,

Unfortunately I am at a meeting off site this afternoon so will be unable to attend. I know you will probably already be aware of the method of testing, but for confirmation we will install a fan unit within the lobby to corridor door and installing monitoring tubes within the lobby and corridor and wedge open the lobby to room and room to ensuite doors. The fan will run for 2-5 minutes in one test and the same on the second test. This afternoon we will switch of the air handling unit serving the rooms to be tested and seal up the grilles and pressure relief dampers and inspect the rooms. On completion of the successful tests we will remove the temporary seals and switch on the relevant AHU.

Regards
David

David Wilson
Commissioning Manager - Construction

Brookfield Multiplex Europe
New South Glasgow Hospitals Project
Hardgate Road
Glasgow, G51 4SX, United Kingdom
[redacted]
W www.brookfieldmultiplex.com

From: Powrie, Ian [redacted]
Sent: Friday, July 17, 2015 10:44 AM
To: Moir, Peter; Harkness, Anne; Carr, Michelle; McLucas, Margaret; Robertson, Lynne; Kane, Mary Anne; David Wilson
Subject: RE: Air permeability tests at the weekend

Peter/David,

As discussed at our meeting on Wednesday we need to carry out an HEI SCRIBE risk assessment prior to these works, could we meet to address this afternoon.
Claire Lead ICT nurse for the site is available from 13:30.

Please confirm your availability

Regards

ian

[redacted]
Ian Powrie,
Sector Estates Manager,
South Glasgow Hospitals Campus,
1345 Govan Rd,
Glasgow,
G51 4TF,
[redacted]

From: Moir, Peter
Sent: 17 July 2015 10:30
To: Harkness, Anne; Powrie, Ian; Carr, Michelle; McLucas, Margaret; Robertson, Lynne; Kane, Mary Anne; 'David Wilson'
Subject: RE: Air permeability tests at the weekend

All

Following responses confirm the two isolation rooms to be pressure tested on Sunday are;

QEUH – Room is RENW-046, lobby is RENW-044 Level 4 (as per note below)

RHC – Room is SCH-072, lobby is SCH-071 Level 2 (as per email from Lynne Robertson)

Brookfield plan to visit these rooms today and carry out preparatory works which I am advised will not disrupt or disturb the running of the ward, if there are any problems please contact me immediately. Contact numbers below.

Regards

Peter

[redacted]

From: Harkness, Anne
Sent: 16 July 2015 22:40
To: Moir, Peter
Cc: Powrie, Ian; Carr, Michelle; McLucas, Margaret; Robertson, Lynne; Kane, Mary Anne
Subject: Air permeability tests at the weekend

This weekend we will test 2 rooms on Sunday

1 in renal - room RENW-046 contact Margaret McLucas

1 in Schieallion – room number to be confirmed contact Lynne Robertson

Rooms will be available from first thing Sunday

There is no point in testing the adult critical care rooms and then fitting the filters .

It will not be possible to close all of Schieallion so we will do in parts

Next week we should do

3 rooms on Thursday 2 in schieallion and 1 in adult critical care
3 rooms on Friday 2 in childrens acute receiving and 1 in adult critical care

3 rooms on 6th august 2 in schieallion and 1 in adult critical care

Then for the week of the 10th we should test the balance – 19 in total (to be confirmed)

I am at a conference tomorrow but trust this is enough for the weekend , will be around on Sunday if necessary .

Anne

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From: Moir, Peter [redacted] on behalf of Moir, Peter
Sent: 21 July 2015 10:42
To: David Wilson
Cc: David Hall; Gillon Armstrong
Subject: RE: NSGH A&C - Pentamidine Room

David

Yes please, I want your document to spell out exactly what the Board are going to get by way of a finished room, the M&E systems and air pressures / flow rates so once we have sign off there is no way back for anyone...I?m sure you are in the same place. So hatches, gauges spec and location in corridor, paint, ceiling specs in both room and en-suite

Be ready for a meeting at reasonably short notice to run through your proposals, and I think there may be a meeting with Robert or grant at end of week to final sign off before you start works on Monday.

Regards

Peter

From: David Wilson [redacted]
Sent: 21 July 2015 10:26
To: David Hall
Cc: Moir, Peter
Subject: NSGH A&C - Pentamidine Room

David,

The current air change rate for the pentamidine room is 10 a/c per hour. As discussed we previously tweaked this room to achieve around -2Pa negative to corridor. Do you want me to add this to the Ward 4b brief as we discussed yesterday.

David

David Wilson
Commissioning Manager - Construction

Brookfield Multiplex Europe
New South Glasgow Hospitals Project
Hardgate Road
Glasgow, G51 4SX, United Kingdom
[redacted]
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From: David Wilson [redacted] on behalf of David Wilson
Sent: 27 July 2015 09:28
To: Moir, Peter
Cc: Grant Wallace; Loudon, David
Subject: RE: HAEMATO -ONCOLOGY WARD - PRESSURE GAUGES

Peter,

I will review with Mercury to see what systems are available.

Regards
David

David Wilson
Commissioning Manager - Construction

Brookfield Multiplex Construction Europe Ltd
Fairfield
Suite 12
1048 Govan Road
Glasgow, G51 4XP, United Kingdom
[redacted]
W www.brookfieldmultiplex.com

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Please note we have now moved office!

From: Moir, Peter [redacted]
Sent: Monday, July 27, 2015 9:11 AM
To: David Wilson
Cc: Grant Wallace; Loudon, David
Subject: HAEMATO -ONCOLOGY WARD - PRESSURE GAUGES

David

As agreed, the cost for the install of gauges sits with the Board. The users would like BM to establish if these can be digital similar to the existing set up at the Beatson. The would also like the facility for the gauge to be alarmed so that after 5 minutes of pressure below 5pa an alarm would sound at the nurse station.

This arrangement would need to be procured and installed to meet the timetable already agreed, if this is not possible then the magnahelic gauges will have to be what is installed.

I will issue a PMI this morning.

Regards

Peter Moir
ARIAS

Deputy Project Director

South Glasgow Hospitals Project Office
NHS Greater Glasgow & Clyde
Room L1/25
Management Building
1345 Govan Road
Glasgow G51 4TF

[redacted]

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From: Moir, Peter [redacted] on behalf of Moir, Peter
Sent: 29 July 2015 11:44
To: David Wilson
Subject: L4B UPGARDE WORKS

Daviod

Could you please confirm the following;

Can you provide a guarantee that the uprated AHU system will have enough reserve to maintain 5-10pa when the HEPA filters reach the end of their service life.

Can you also confirm what the recommended replacement interval will be for these filters on the basis there will be pre-filters in the main AHU as well.

Can you get back to me on point one asap please.

Regards

Peter Moir
ARIAS

Deputy Project Director

South Glasgow Hospitals Project Office
NHS Greater Glasgow & Clyde
Room L1/25
Management Building
1345 Govan Road
Glasgow G51 4TF

[redacted]

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21b. FW Sampling to date overview

[redacted]

From: Peters, Christine
Sent: 30 November 2015 16:14
To: Inkster, Teresa (NHSmail)
Subject: FW: Sampling to date overview

From: Wright, Pauline
Sent: 12 August 2015 12:32
To: Peters, Christine
Subject: FW: Sampling to date overview

From: Mitchell, Clare
Sent: 06 August 2015 14:37
To: Wright, Pauline
Subject: FW: Sampling to date overview

Clare Mitchell
Lead Infection Prevention & Control Nurse
Office Block (Zone 2/1)
Queen Elizabeth University Hospital
1345 Govan Road
Glasgow, G51 4TF
[redacted]

From: McNamee, Sandra
Sent: 06 August 2015 14:07
To: Mitchell, Clare
Subject: RE: Sampling to date overview

That would be great if you could Clare

From: Mitchell, Clare
Sent: 06 August 2015 14:00
To: McNamee, Sandra
Subject: FW: Sampling to date overview

Sandra,

Yesterday Dr Gillian Shankland phoned Jackie to inform her of the sample results - 1 colony of aspergillus in Room 18 in Schiehallion (ward 2a). This was verbal and preceeds the written report of all rooms sampled. I can contact Dr Shankland and check theother results of rooms that were sampled. As Pauline was around yesterday we asked her advice.

(Below is an update from Craig to the CSM, paediatrics last week).

Regards

Clare

Clare Mitchell
Lead Infection Prevention & Control Nurse
Office Block (Zone 2/1)
Queen Elizabeth University Hospital
1345 Govan Road
Glasgow, G51 4TF
[redacted]

From: Williams, Craig
Sent: 03 August 2015 12:32
To: Robertson, Lynne
Cc: Gibson, Brenda; Mitchell, Clare; Kirkwood, Jean; Ewins, Anna-Maria; Redfern, Jamie; Walsh, Tom; McNamee, Sandra; Powrie, Ian
Subject: RE: Sampling to date overview

Dear Lynne

Thanks I discussed this with Jean last week. There seems to be some confusion here about the particle counting. The rooms were built to a national standard specification. As you note we are currently working through the rooms with the air permeability tests. As the rooms pass these tests they are OK to be used for any purpose including transplants. If the rooms do not leak then the particles are not coming from dust leaking into the room.

The particle counts are only an indicator of the number of particles in the room, this can very day to day depending upon the number of people in the room whether dust has been carried in with linen etc. There is no national standard for particle counting and the level of 1000 developed locally at the Beatson is for rooms operating under different clinical circumstances i.e staff gowned and capped prior to entry. We should not decide which rooms to use based on particle counts.

As you can see from the results the tests have not been carried out weekly and I would propose that we test the rooms as they complete the air permeability tests and then drop back to our previous sampling frequency. It is important that the staff monitor the pressure differential and report any problems to the estates dept.

I assume you are being lept up to date with the program for the additonal testing and results. I am on annual leave after today, if you have any problems Sandra McNamee is around

Best wishes

Craig

Prof Craig Williams
Consultant Microbiologist Royal Hospital for Children, Glasgow
Lead Infection Control Doctor, NHSGGC
Professor of HAI, UWS

[redacted]
w. www.uws.ac.uk/hai

From: Robertson, Lynne
Sent: 03 August 2015 10:39
To: Williams, Craig
Cc: Gibson, Brenda; Mitchell, Clare; Kirkwood, Jean; Ewins, Anna-Maria; Redfern, Jamie
Subject: FW: Sampling to date overview

Hi Craig

Jean Kirkwood has provided me with the air sampling results for Ward 2A

Is it possible to have a proper system and process for this so we are clear of staff roles, responsibilities and actions

There appears to be samples taken weekly but not in all of the identified isolation rooms

Who is responsible for taking and reviewing the results, then determining the significance of the results and the action required as appropriate. Also there needs to be agreement clinically and managerially who this is communicated with.

There is also the work being carried out by Ian Powrie regarding air permeability in the isolation rooms and the review of the results and any actions

Happy to help in what way I can.

Regards
Lynne

Lynne Robertson | Clinical Services Manager| NHS Greater Glasgow and Clyde
Royal Hospital for Children | 1345 Govan Road| Glasgow G51 4TF
[redacted]

From: Julie Miller [redacted] on behalf of Julie Miller
Sent: 11 August 2015 19:07
To: Frew, Shiona
Subject: RE: RSK Report for Schiehallion

Hello Shiona,

I had explained to Peter that the RSK reports were on the system but this is not for the Schiehallion ward (the reports are on the system for the building air tests where there were around 40- 50 rooms tested).

We have only tested 3 of the rooms – he was in our old office with me and took down the figures in his book (and we also discussed the 5% differential) – which were:-

Children's L2
Schiehallion Ward (SCH- 072)
Positive Pressure Test Leakage – 0.81l/s per m3 @ 20Pa
Negative Pressure Test Leakage – 0.9l/s per m3 @ 20Pa

Schiehallion Ward Bed 18 (SCH-068)

Positive Pressure Test – 0.89 l/s per m3 @ 20Pa
Negative Pressure Test - 0.96 l/s per m3 @ 20Pa

Schiehallion Ward Bed 20 (SCH-075)

Positive Pressure Test – 0.77 l/s per m3 @ 20Pa
Negative Pressure Test - 0.86 l/s per m3 @ 20Pa

I did explain that we had not received a formal issued report for RSK – I understand that the formal full report was going to be issued once all of the rooms had been tested. However if we need to formalise a report for just these rooms, I can ask RSK to produce one.

Best regards
Julie

From: Frew, Shiona [redacted]
Sent: 11 August 2015 11:52
To: Julie Miller
Subject: RSK Report for Schiehallion

Hi Julie

Peter asked me to check on Aconex for the RSK Report for Schiehallion but I am unable to find the report - I can get the RSK proposal and agreed testing but not the final report. Is there any chance you could forward a copy to me?

many thanks

kind regards

Shiona

****

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From: Peter Hoffman [redacted]
Sent: 14 August 2015 12:17
To: Hood John (NHS GREATER GLASGOW & CLYDE)
Subject: RE: BMTU RHC

Dear John,

Comments (much as expected):

The rooms may be to specification but the specification is irrelevant.
The permeability test a) does not show total sealing and b) apply in the day of testing and the rooms are likely to get more leaky as time passes.
The smoke tests show ingress of unfiltered air through gaps in the rooms' integrity. This is not good news and assessment needs to be done as to the suitability of these rooms for BMT patients.
The effects of reducing the extract could be probably tested by partially obscuring the extract grille (a sheet or two of A4 paper on the grille, no need to tape it in place – the flow of air will keep them in place) and seeing the effects on air ingress judged by smoke flow compared to before the intervention. Suggest do this on the more major of the extracts – likely to be the one in the bathroom. If this looks promising, only then interfere with the extract damper settings.
If there is going to be the major disruption option, then why not make the patient room HEPA-filtered positive and the anteroom a bit negative – such that what is generated in the patient's room does not get into the corridor? This is not something I am particularly worried about but there may be local concerns that could be addressed by this approach.

Regards,
Peter

From: Hood, John [redacted]
Sent: 14 August 2015 11:17
To: Peter Hoffman
Subject: FW: BMTU RHC

Dear Peter,
Many thanks for all your valuable and much appreciated help with this problem.
As discussed any comments on email below would be happily received.
Kindest regards
John

From: Moir, Peter
Sent: 14 August 2015 09:18
To: McNamee, Sandra; Hood, John
Cc: Hood, John; Loudon, David
Subject: RE: BMTU RHC

Sandra

Couple of comments in blue, you may wish to canvas John's opinion before inclusion.

P.

From: McNamee, Sandra
Sent: 13 August 2015 15:04

To: Hood, John; Moir, Peter
Subject: BMTU RHC

Hi
Hopefully this is an accurate although brief summary of our meeting.

- Air pressure tests have been undertaken by both microbiology and by Brookfield Multiplex (witnessed by Project Team member) and both confirm that the rooms are working within the parameters required in the Board's Employer's Requirements specification issued to Brookfield .
- Peter has confirmed that the rooms that have been tested thus far, have passed the permeability test – comment Dr Hood – in this design if seals fail, the air will be pulled into the room and this could result in the ingress of bacteria and viruses from the corridor into the protective isolation room. (I'm not particularly easy with this statement, it's not an impossibility, but the rooms are well sealed and operating at a pressure 1-2pa above corridor).
- Dr Hood will conduct smoke tests in rooms 18 & 19 today and report back results.
- General discussion regarding the possibility of increasing the positivity of the rooms. Two proposals:
    - Moderate disruption - Reduce the extract through grille in patient room; this should increase the positivity of the rooms but will not address the issue that air will flow into the rooms if the seals are compromised and we have no way of knowing how this change in pressure will affect the anteroom. (This could be trialled as on advice from Brookfield, each room has its own individual air handling unit and any rebalancing of airflow would not affect adjacent rooms in occupation).
    - Major disruption – make both the patient room and the antirooms positively pressured. This will probably require parts of the unit to be sealed and isolated from the rest while work to achieve this is undertaken.
      *Dr Hood recommends consulting with a ventilation expert before proceeding with either of these options.

There would appear to be a need to have a clinical debate regarding the possible benefits, specifically to children, of having the ability for the rooms to be effective in both the protection of children undergoing BMTU and the isolation of children with viruses. I think the Board also needs to develop standard guidance for the design and operation of BMT rooms in its hospitals, as there appears to be no National guidance for hospital designers and Health Board's.

Sandra McNamee
Associate Nurse Director
Infection Prevention & Control
[redacted]

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****

From: Loudon, David [redacted] on behalf of Loudon, David
Sent: 19 August 2015 17:36
To: Alasdair Fernie
Subject: Fwd: Bmt
Attachments: ATT00001.htm; tbp-patient-placement-isolation-and-cohorting.pdf

Will call you tomorrow.

David

David W Loudon MCIOB CBIFM MBA
Director of Facilities and Capital Planning
NSH Greater Glasgow & Clyde

Begin forwarded message:

From: "Powrie, Ian" [redacted]
Date: 19 August 2015 17:29:54 BST
To: "Loudon, David" [redacted]
Subject: FW: Bmt

Hi David,

David Wilson was not available to attend but he sent Gillon as sealant the issues raised are related to building elements.

The issue is that the IPS panels in the Lobby, patient bed room and en-suite are all exposed to the ceiling void, the ceiling void is under positive pressure and depending upon the circumstances found in the suite these are positive to the en-suite (circa 10 pa) and patient room (circa 2 pa) therefore if the ventilation failed there could be a resultant air flow from the ceiling void to the patient room directly and via the en-suite to the patient room. It should be noted that while the IPS and other penetrations are sealed to a relatively high standard they are not yet absolute as determined by smoke test. However the sealing in room 19 is very poor and does not provide much of a seal against the IPS or ceiling voids etc.

Dr Hood carried out air sampling settle plates within the un-suite IPS and room to establish if this is the reason for the variable fungal results.

We also attempted to reduce the extract flow rate in the suite in order to make the patient room more positive than to protect against is from the risk of air infiltration from the IPS units should the seal integrity fail?
Unfortunately this could not be verified as the extract inverter is at its low level limit and therefore the flow switch will not allow it to be adjusted , Julie (Brookfield) is arranging for the for Schneider to modify the limits to carry out this trial tomorrow. If this proves successful we will have H&V in on Friday to measure the room air change rate (ACR) to ensure that we can maintain the 10 ACR per hour required.

Again if successful we will require this proposal to be validated by the ventilation designer before seeking approval to implement these changes to all protective isolation rooms. Arrangements are also in-place to have rooms 18 & 19 resealed by pro-seal address the quality of sealing in the these rooms (initial works carried out by Labourer).

Once these rooms have been sealed, restored to original design and cleaned they can be returned to service to allow transfer of patients in order to programme the remaining air permeability in ward 2A.

It should be noted that the last air permeability test results that were shared with me where :

Schiehallion Ward SCH-068

Positive Pressure Test – 0.89 l/s per m3 @ 20Pa
Negative Pressure Test - 0.96 l/s per m3 @ 20Pa
Average - 0.93l/s

Schiehallion Ward SCH-075

Positive Pressure Test – 0.77 l/s per m3 @ 20Pa
Negative Pressure Test - 0.86 l/s per m3 @ 20Pa
Average - 0.82 l/s

Ward 3B GW2-020

Positive Pressure Test – 0.86 l/s per m3 @ 20Pa
Negative Pressure Test - 0.97 l/s per m3 @ 20Pa
Average - 0.92 l/s

Ward 3B (GW2-055)

Positive Pressure Test – 0.62 l/s per m3 @ 20Pa
Negative Pressure Test - 0.78 l/s per m3 @ 20Pa
Average - 0.7 l/s

These are being claimed as a passing the test requirements, while they pass the flow rate test they do not pass the positive\Negative differential pressure test (i.e. be within 5% of each other). These figures are not being reported above and come out at 7.2%, 10.45%, 11.32% & 20.48% respectively. We have yet to see formal test report results and recommendations.

Copy of **"Transmission Based Precautions Literature Review: Patient Placement (Isolation/Cohorting)"** attached, page 10 states

" More recently isolation suites have included a positive pressure lobby which enables the room to be used for both source and protective isolation" and is referenced to Scottish Health Planning Note (SHPN) 04 In-patient Accommodation: Options for Choice (Supplement 1 Isolation Facilities in Acute Care Settings).

Regards

Ian

[redacted]
Ian Powrie,
Sector Estates Manager,
South Glasgow Hospitals Campus,
1345 Govan Rd,
Glasgow,
G51 4TF,
[redacted]

From: Williams, Craig
Sent: 19 August 2015 16:17
To: Powrie, Ian
Subject: Bmt

Dear Ian

Thanks for all of your help with this, hopefully we'll get some good results tomorrow.

Could you forward me the HPS document

Best wishes

Craig

Sent from my BlackBerry 10 smartphone on the EE network.

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Transmission Based Precautions Literature Review:
Patient Placement (Isolation/Cohorting)

Version: 1.0
Owner/Author: Infection Control Team
Review Date: October 2015

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Key Information:		
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This literature review will be updated in real time if any significant changes are found in the professional literature or from national guidance/policy.			
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		Steering (Expert Advisory) Group for SICPs and TBPs		

Linked Documentation:	
Document title	**Document Filepath**
National Infection Prevention and Control Manual	

HPS ICT Document Information Grid	
Title:	Transmission Based Precautions Literature Review: Patient Placement (Isolation/Cohorting)
Purpose:	To inform the Transmission Based Precautions chapter of the National Infection Prevention and Control Manual on the use of isolation/cohorting in order to facilitate prevention and control of HAIs in NHSScotland hospital settings.
Target audience:	All NHS Scotland staff involved in the prevention and control of infection in the hospital setting.
Circulation list:	Infection Control Managers, Infection Prevention and Control Teams, Public Health Teams
Description:	This literature review examines the available professional literature on the use of isolation/cohorting in the hospital setting. For the purposes of this review the hospital setting is deemed to include: all services, clinics, or departments in the primary, secondary and tertiary hospital settings – for example, Specialised Centres, District General, Ambulatory Care, Day, Community, Children's. The review did not examine primary care settings, for example, Health Centres, GP surgeries, General Dental Practices, or patient's own homes.
Update/review schedule:	HPS TBPs are updated in real time with changes made to recommendations as required.
Cross reference:	Standard Infection Control Precautions Literature Review: Patient Placement (Providing care in the most appropriate place in the hospital setting) http://www.hps.scot.nhs.uk/haiic/ic/publicationsdetail.aspx?id=50112
Feedback/contact details:	[redacted]
Update level:	Practice – ***Initial review therefore currently not applicable*** Research – ***Initial review therefore currently not applicable***

Contents:

1. Objectives 5
2. Recommendations 6
3. Discussion 10
Implications for research 16
References 17

1. Objectives

The aim of this review is to examine the extant scientific literature regarding patient placement (isolation/cohorting) in the hospital environment to form evidence based recommendations for practice. The specific objectives of the review are to determine:

- What is an isolation suite/room?
- Are there any legislative requirements relating to the use of an isolation suite/room?
- What is a single room?
- What is a cohort area?
- How should patient placement decisions be made?
- Under what circumstances should a patient be placed in an isolation room?
- Under what circumstances should a patient be placed in an single room?
- Under what circumstances should a patient be placed in an cohort area?
- What is “cohort nursing”, and under what circumstances should it be implemented?

Note:
Transmission Based Precautions (TBPs) are measures that may be required in addition to Standard Infection Control Precautions (SICPs). It is assumed, for the purpose of this literature review, that all SICPs are adhered to, and therefore are not the focus of this literature review and the associated recommendations.

2. Recommendations

This review makes the following recommendations based on an assessment of the extant scientific literature on patient placement (isolation/cohorting):

What is isolation suite/room?

An isolation suite/room is defined as an "enhanced single room with en-suite facilities and ventilated lobby".

(Mandatory requirement therefore no grade of recommendation can be made)

Are there any legislative requirements relating to the use of an isolation suite/room?

As part of local COSHH assessments a log book should be completed for each isolation suite. These log books should be located in the lobby. The following information should be recorded for each isolation suite:

- a schematic layout of the isolation suite and ventilation system serving it;
- information on the ventilation design parameters;
- a record of the actual ventilation performance at initial validation ("Acceptance testing");
- records of the annual validations;
- records of the lobby pressure, taken by ward staff from gauges and monitoring devices provided;
- records of any routine service and maintenance activities;
- records of any repairs or modifications;
- a method statement for disinfecting the system.

(Mandatory requirement therefore no grade of recommendation can be made)

What is a single room?

See Standard Infection Control Precautions Literature Review*: Patient Placement (Providing care in the most appropriate place in the hospital setting*) for the definition of, and requirements for, a single room
http://www.hps.scot.nhs.uk/haiic/ic/publicationsdetail.aspx?id=50112

What is a cohort area?

A cohort area is a bay/ward in which a group of patients (cohort) with the same infection are placed together. Cohorts are created based on clinical diagnosis, microbiological confirmation when available, epidemiology, and mode of transmission of the infectious agent.

(AGREE rating: Recommend)

How should patient placement decisions be made?

Patient placement decisions should be based on risk assessment which should consider the route of transmission alongside patient factors and symptoms that increase the risk of cross transmission (e.g. vomiting, diarrhoea, an unexplained rash, fever or respiratory symptoms).

(Good Practice Point)

Under what circumstances should a patient be placed in an isolation suite/room?

An isolation suite/room should be used, if available, to accommodate a patient known or suspected to be infected with a microorganism spread by the airborne (aerosol) route whilst the patient is considered infectious.

(AGREE rating: Recommend)

The door of an isolation suite/room must remain closed when not in use, and door opening should be kept to a minimum.

(Good Practice Point (GPP))

Under what circumstances should a patient be placed in a single room?

Patients who are known or suspected to be infected with a microorganism spread by the contact or droplet route should be cared for in single rooms when available.

(AGREE rating: Recommend)

Hospitals should have systems in place to be able to rapidly identify:

- patients who have been transferred from a hospital abroad;
- patients who have been hospitalised abroad within the last 12 months'
- patients who have previously been positive for CPE (carbapenemase producing enterobacteriaceae) at any body site.

These patients should be immediately isolated in a single room.

(Mandatory requirement therefore no grade of recommendation can be made)

Patients should remain isolated in a single room whilst they remain symptomatic and/or are considered infectious.

(Good Practice Point (GPP))

The decision to discontinue isolation should be based on clinical judgement.

(Good Practice Point (GPP))

The door of a single room must remain closed when not in use.

(Good Practice Point (GPP))

Under what circumstances should a patient be placed in a cohort area?

Patient cohorting may be appropriate when single rooms are not available and there is more than one patient with the same confirmed infection

(AGREE rating: Recommend)

Patient cohorting should be combined with other infection prevention and control measures e.g. hand hygiene, PPE and environmental decontamination.

(Grade D recommendation)

Patients should be separated by at least 3 feet (1m) from each other in a cohort area, and bed curtains can be drawn as an additional physical barrier.

(AGREE rating: Recommend)

What is "cohort nursing", and under what circumstances should it be implemented?

Cohort nursing (staff cohorting) is defined as the use of a dedicated team of healthcare staff to care for patients infected with a single infectious agent.

Cohort nursing may be implemented to minimise the risk of contamination between groups of symptomatic and non-symptomatic patients if there is adequate staff resource available to do so.

(AGREE rating: Recommend)

3. Discussion

What is isolation suite/room?

An isolation suite is defined as an "enhanced single room with en-suite facilities and ventilated lobby (isolation suite)" within the Scottish Health Facilities Note (SHFN) 30[3] and Scottish Health Planning Note (SHPN) 04 In-patient Accommodation: Options for Choice (Supplement 1 Isolation Facilities in Acute Care Settings).[4] Inclusion of a ventilation system distinguishes an isolation suite/room from a single room.[4] Where a patient presents an infection risk to others, a "negative pressure" isolation suite is used (source isolation).[4] More recently isolation suites have included a positive pressure lobby which enables the room to be used for both source and protective isolation by preventing air entering the corridor or escaping from the room. The lobby also provides an area for healthcare workers to prepare before entering/exiting the room. The ventilation should be +10 Pascals in the lobby with respect to the corridor; patients' room should have 10 air changes per hour and be neutral in pressure to that of the corridor; the en-suite having at least 10 air changes per hour and a negative pressure to that of the patient's room.[4] For more detailed information on the requirements for an isolation suite, see SHPN 04 SHPN 04 In-patient Accommodation: Options for Choice (Supplement 1 Isolation Facilities in Acute Care Settings).[4]

An isolation suite/room is defined as an "enhanced single room with en-suite facilities and ventilated lobby".

(Mandatory requirement therefore no grade of recommendation can be made)

Are there any legislative requirements relating to the use of an isolation suite/room?

As part of local COSHH assessments a log book should be completed for each isolation suite. These log books should be located in the lobby. The following information should be recorded for each isolation suite:

- a schematic layout of the isolation suite and ventilation system serving it;
- information on the ventilation design parameters;
- a record of the actual ventilation performance at initial validation ("Acceptance testing");
- records of the annual validations;

- records of the lobby pressure, taken by ward staff from gauges and monitoring devices provided;
- records of any routine service and maintenance activities;
- records of any repairs or modifications;
- a method statement for disinfecting the system.

(Mandatory requirement therefore no grade of recommendation can be made)

What is a single room?

See Standard *Infection Control Precautions Literature Review: Patient Placement (Providing care in the most appropriate place in the hospital setting*) for the definition of, and requirements for, a single room http://www.hps.scot.nhs.uk/haiic/ic/publicationsdetail.aspx?id=50112

What is a cohort area?

A cohort area is a bay/ward in which a group of patients (cohort) with the same infection are placed together.[1;2] Cohorts are created based on clinical diagnosis, microbiological confirmation when available, epidemiology, and mode of transmission of the infectious agent.[2]

(AGREE rating: Recommend)

How should patient placement decisions be made?

There is a hierarchy of patient placement decisions, informed by risk assessment, that should be undertaken for patients requiring care using Transmission Based Precautions. This should include assessment of the route of transmission and potential spread of the infection alongside risk factors such as exposure to blood and body fluids.[2] Patient factors and symptoms that may contribute to cross transmission should also be considered (e.g. vomiting, diarrhoea, an unexplained rash, fever or respiratory symptoms).

As single rooms are often in short supply the use of an isolation priority tool is suggested in the literature.[5-7]

Patient placement decisions should be based on risk assessment which should consider the route of transmission alongside patient factors and symptoms that increase the risk

of cross transmission (e.g. vomiting, diarrhoea, an unexplained rash, fever or respiratory symptoms).

(AGREE rating: Recommend)

Under what circumstances should a patient be placed in an isolation suite/room?

There is consensus on the role of suitable ventilation in the prevention of infectious agents disseminated by the airborne (aerosol) route. One systematic review in which 40 original studies were evaluated by a team of experts in the field of engineering and microbiology, demonstrated strong evidence of an association between the spread of airborne infectious diseases such as chickenpox and measles and the direction of airflow and supported the use of negative pressure isolation rooms for the control of specific infectious agents.[8] For the purposes of infection prevention and control, an isolation suite/room is the preferred choice for patients known or suspected to have infections spread by the airborne (aerosol) route.[2]

An isolation suite/room should be used, if available, to accommodate a patient known or suspected to be infected with a microorganism spread by the airborne (aerosol) route whilst the patient is considered infectious.

(AGREE rating: Recommend)

Where the single room is a negative pressure room (i.e. to prevent escape of airborne microorganisms from the room), or a positive pressure room (i.e. protective isolation to prevent airborne microorganisms from entering the room), then the door should remain closed to help maintain the correct pressure differential.[9] There is evidence that door opening can disrupt the containment effectiveness of negative pressure rooms, allowing the dispersal of airborne particles into adjacent areas.[10;11] Therefore, it is recommended that door-opening is kept to a minimum, and doors should remain closed when not in use.

The door of an isolation suite/room must remain closed when not in use, and door opening should be kept to a minimum.

(Good Practice Point (GPP))

Under what circumstances should a patient be placed in an single room?

There is consistent evidence that isolation in a single room is effective in reducing transmission of infections spread by the contact or droplet routes, when combined with other infection prevention and control measures such as hand hygiene and PPE.[2;6;12-21] In addition single room isolation has been shown to be effective for control of infections which can cause extensive environmental contamination (e.g. patients with *C. difficile* infection)[2;22-28] and infections with microorganisms which are resistant to antibiotics.[29-31]

Patients who are known or suspected to be infected with a microorganism spread by the contact or droplet route should be cared for in single rooms when available.

(AGREE rating: Recommend)

Recently carbapenemase producing enterobacteriaceae (CPE) have become a major public health issue and guidance has been issued for NHSScotland which recommends patients identified as high risk must be isolated in a single room.[29] High risk patients are defined as those who: have been transferred from a hospital abroad; have been hospitalised abroad within the last 12 months; have previously tested positive for CPE at any body site.[29] A CMO letter to reinforce this requirement has also been circulated.[32]

Hospitals should have systems in place to be able to rapidly identify:

- **patients who have been transferred from a hospital abroad;**
- **patients who have been hospitalised abroad within the last 12 months;**
- **patients who have previously been positive for CPE at any body site.**

These patients should be immediately isolated in single rooms.

(Mandatory requirement therefore no grade of recommendation can be made)

The duration that a patient should remain isolated in a single room is determined by clinical judgement and depends on factors such as whether the patient is immunocompromised as this may result in prolonged shedding of microorganisms.[2;25]

Patients should remain isolated in a single room whilst they remain symptomatic and/or are considered infectious.

(Good Practice Point (GPP))

The decision to discontinue isolation should be based on clinical judgement.

(Good Practice Point (GPP))

Very limited evidence was identified relating to the dispersal of airborne microorganisms associated with door opening in non-pressurised rooms. One observational study found that keeping patient doors closed was associated with lower rates of hospital-acquired diarrhoea in paediatric wards.[33] However, it is considered good practice to keep the doors to such rooms closed, as this provides physical separation patients in isolation from other patients.[1] Therefore, the door to the isolation room should remain closed, and should only be opened when entering/leaving, however, Department of Health guidance recognises that in some cases this may not be possible.[1;2]

The door of the single room must remain closed when not in use.

(Good Practice Point (GPP))

Under what circumstances should a patient be placed in a cohort area?

Cohorting forms part of a hierarchy of patient placement decisions for patients requiring care using Transmission Based Precautions. This approach is particularly relevant when there are increased numbers of cases e.g. MRSA and/or if single rooms are in short supply.[1-3;28] Although it is difficult to elucidate the evidence to support the effectiveness of cohorting as it is mainly used during outbreaks, the findings suggest that it is effective when combined with other infection prevention and control measures such as hand hygiene, appropriate PPE and environmental decontamination.[2;13;16;21;26;28;34-36] However, it is important to ensure that there is adequate separation of at least 3 feet (approximately 1 metre) between patients. The use of curtains may also be used as a further means of separation.[2;37]

Patient cohorting may be required when single rooms are not available and there is more than one patient with the same infection.

(AGREE rating: Recommend)

Patient cohorting should be combined with other infection prevention and control measures e.g. hand hygiene, PPE and environmental decontamination.

(Grade D recommendation)

Patients should be separated by at least 3 feet (approximately 1m) from each other in a cohort area, and bed curtains can be drawn as an additional physical barrier.

(AGREE rating: Recommend)

What is "cohort nursing", and under what circumstances should it be implemented?

Cohort nursing (staff cohorting) is defined as the use of a dedicated team of healthcare staff to care for patients infected with a single infectious agent.[1;2] Evidence suggests that this approach may be beneficial when control methods have been unsuccessful and/or an outbreak is continuing.[38-40] There is some evidence to suggest that cohort nursing is an effective intervention to further minimise the risk of cross contamination and should be implemented if there are adequate resources to do so.[1;28;34-36]

Cohort nursing (staff cohorting) may be implemented to minimise the risk of contamination between groups of symptomatic and non-symptomatic patients if there is adequate staff resource available to do so.

(AGREE rating: Recommend)

Implications for research

Further research into the use and effectiveness of both patient and staff cohorting would be beneficial to inform guidance.

There is a need to further study the potential negative psychological effects of isolation on patients, and how these can be minimised.

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From: Loudon, David [redacted] on behalf of Loudon, David
Sent: 20 August 2015 11:51
To: David Wilson; Powrie, Ian
Cc: Alasdair Fernie; Gillon Armstrong; Moir, Peter
Subject: RE: NSGH A&C - Current Issues

David

Please see my comments below.

Regards

David

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHS Greater Glasgow & Clyde
Management Building
Govan Road
Glasgow
G51 4SX

[redacted]

From: David Wilson [redacted]
Sent: 20 August 2015 10:40
To: Loudon, David; Powrie, Ian
Cc: Alasdair Fernie; Gillon Armstrong
Subject: NSGH A&C - Current Issues

David / Ian,

I thought it would be worthwhile noting down some of the current issues and a where we sit with them:

AGV Operation.
We are currently in communication with Swisslog and Schindler and arranging for their specialist engineers to be on site next week to resolve the ongoing communication fault. I have been trying to get them here this week but due to the limited number of persons with the IT Software skills required and holidays this has proved difficult. Swisslog have been remotely accessing the servers and with their on-site engineer resolving issues as they arise. Appreciate your efforts but as you know the AGV system is critical to efficient patient services. I have also had to put a fall back arrangement which is costing my directorate. I would anticipate that the visits next week will come up with a sustainable and reliable solution.

I have also been in discussion with them about improvements to their service when resolving defects particularly on working together to resolve rather than blame each other!. Both companies have told me that they are putting additional staff through the specialist software training required to be able to fault find and rectify issues.

I have also asked Swisslog to provide support this weekend in case of any issues. I will get back to you when I have further information on this.

Schindler ID

We are still chasing the completion of the lift access control (Schindler ID) and the current delay appears to be the completion of the software. We have taken this to director level within in Schindler tom put pressure on the software team in Switzerland. We need a definite timescale to have this matter resolved for once and all.

Fire Alarms

Scotshield have been working with gent (fire alarm panel manufacturer) on the false alarm issues on Level 1 Stroke Ward. To date they have changed the devices (detectors etc.) on the loop causing the problem, changed loop cards and now installed a new panel. None of these have rectified the problem. They have now put a data logging diagnostic tool on to the system to try and capture as much data as possible to get to the cause of the problem. At the moment the are looking at the possibility of electro magnetic interference which they are currently investigation.

As well as the full time on site engineer and the gent engineer, Scotshields Project manager and their Service Director have been on site and pushing to get this issue resolved. The Project Team is receiving very negative comments regarding the reliability of fire alarm systems and we need a sustainable solution to the challenges without delay. I appreciate that the system is complex but the users and fire authority don?t expect regular false alarms.

On the theatre repeater panel discussions, we have looked at the design and during the process it was agreed that there was no requirement for Fire alarm repeaters within the theatres, however there are two Nurse Call touch screen panels within the theatre corridor which when looking at notes from commissioning looked like they may display the fire message. To clarify this we intend to carry out a fire alarm test and check the panels. We will arrange this through estates but will leave this until the issues with the stroke ward panel are resolved. Let me know the outcome.

Isolation Room Air Permeability Testing

Gillon and his team have been working through the isolation room testing but this is proving slow due to access restrictions. There are also some issues that are arising particularly in relation to rooms with pendants which are not achieving the leakage rate of less than 1l/s per m3 of envelope volume. We will need to further discuss with your clinical / microbiological team on this.

We have also previously highlighted (both verbally and when emailing test results) that although the test results from the permeability tests have achieved the leakage rate criteria some have not met the 5% difference between the positive and negative results. During a meeting with Craig Williams (with myself, Ian, Peter Moir, Mary Anne Kane present) we discussed this and my understanding was this had been accepted, however I believe this has now altered (after microbiological testing in Schiehallion). It may be useful to meet up with Craig again to discuss this particularly going forward for the rest of the testing. I agree that another meeting with Craig Williams should be arranged as soon as possible. Peter Moir should also attend.

We assisted yesterday with some adjustments to the ventilation rates within Schiehallion, and happy to assist in this manor, but would highlight that the systems have been commissioned to design values (in accordance with the SHBN) and any changes made need to be fully considered. I also understand that quality issues with the sealing around the IPS was identified and it was agreed that BM will employ a sealant specialist to reseal the units.

Let me know of a date to that we can meet up with Craig etc. to discuss the testing criteria.

I know this is a bit of a long winded email but thought it worthwhile putting the status with the current issues in one mail.

Regards
David

David Wilson
Commissioning Manager - Construction

Brookfield Multiplex Construction Europe Ltd
Fairfield - Suite 12
1048 Govan Road
Glasgow, G51 4XS, United Kingdom
[redacted]
W www.brookfieldmultiplex.com

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From: David Wilson [redacted] on behalf of David Wilson
Sent: 31 August 2015 08:04
To: Loudon, David; Moir, Peter; Gillon Armstrong
Cc: Alasdair Fernie; Powrie, Ian
Subject: RE: Ward 2a, rooms 18 & 19.
Attachments: image001.jpg

David,

Not to my knowledge. The units have been running for some time in auto with pressure maintained.

I have asked Mercury to check all units anyway.

Regards
David

David Wilson
Commissioning Manager - Construction

Brookfield Multiplex Construction Europe Ltd Fairfield Suite 12
1048 Govan Road
Glasgow, G51 4XP, United Kingdom
[redacted]
W www.brookfieldmultiplex.com
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From: Loudon, David [redacted]
Sent: Sunday, August 30, 2015 3:09 PM
To: David Wilson; Moir, Peter; Gillon Armstrong
Cc: Alasdair Fernie; Powrie, Ian
Subject: RE: Ward 2a, rooms 18 & 19.

David

Ian Powrie mentioned to me on Thursday that the cause of the problem was due to BM / Mercury switching over to manual because the required pressures were not being maintained when on auto.

David

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning NHS Greater Glasgow & Clyde Management Building
Govan Road Glasgow
G51 4SX

[redacted]

[redacted]

From: David Wilson [redacted]
Sent: 28 August 2015 16:08
To: Moir, Peter; Gillon Armstrong
Cc: Alasdair Fernie; Loudon, David
Subject: RE: Ward 2a, rooms 18 & 19.

Peter,

Mercury have looked at this and it would appear that this was one of the rooms that the Estates team and clinical team were “adjusting” the ventilation (from the commissioned settings) The fans were in the manual position (not auto) They have now energized the supply fan to get the room back to a positive pressure. It would appear that on investigation that a few of the isolation fans are in manual? I have asked Julie and Mercury to go round the fans on Tuesday and set back to the commissioned setting.

Regards
David

David Wilson
Commissioning Manager - Construction

[brookfield_multiplex_logo]

Brookfield Multiplex Construction Europe Ltd Fairfield - Suite 12
1048 Govan Road
Glasgow, G51 4XS, United Kingdom
[redacted]
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From: Moir, Peter [redacted]
Sent: Friday, August 28, 2015 1:13 PM
To: Gillon Armstrong; David Wilson
Cc: Alasdair Fernie; Loudon, David
Subject: FW: Ward 2a, rooms 18 & 19.

Guys

This room appears to have a glitch on the supply air, we are supposed to be testing today can you check why not running at 10pa in lobby and get back to me.

Regards

peter

From: Kirkwood, Jean
Sent: 28 August 2015 09:29
To: Powrie, Ian; Williams, Craig
Cc: Moir, Peter; Madden, William; Hutton, Melanie
Subject: RE: Ward 2a, rooms 18 & 19.

Hi there,
Room 19 has a negative pressure this morning?
Have reported it on FM as urgent
many thanks
Jean

From: Powrie, Ian
Sent: 27 August 2015 17:57
To: Williams, Craig
Cc: Moir, Peter; Kirkwood, Jean
Subject: Ward 2a, rooms 18 & 19.

Hi Craig,

Both of the above rooms have been deep cleaned today and are ready for microbiological testing tomorrow.

Regards
Ian

****
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CAPITA

NEW SOUTH GLASGOW HOSPITAL

ADULT AND CHILDREN'S HOSPITAL AND ENERGY CENTRE

NEC 3 SUPERVISORS REPORT NO. 53

SEPTEMBER 2015

NEW SOUTH GLASGOW HOSPITAL ADULT AND CHILDREN'S HOSPITAL AND ENERGY CENTRE

SUPERVISOR'S REPORT NO. 53 **SEPTEMBER 2015**

CONTENTS

NEW SOUTH GLASGOW HOSPITAL ADULT AND CHILDREN'S HOSPITAL AND ENERGY CENTRE

PAGE	CONTENTS	
1.0	EXECUTIVE SUMMARY: THE NEW ADULT AND CHILDREN'S HOSPITAL	3
2.0	DESIGN COMPLIANCE CHECK	4
3.0	PROCEDURES REVIEW	4
4.0	CONSTRUCTION REVIEW	6
5.0	INFORMATION REQUIRED	13
6.0	SUPERVISOR'S TESTS AND INSPECTIONS	15
7.0	DEFECT NOTIFICATIONS ISSUED	16

1.0 EXECUTIVE SUMMARY: ADULT & CHILDREN'S HOSPITAL

In accordance with our NEC3 Contract, this is the monthly report for September on the activities carried out and responsibilities undertaken by the NEC3 Supervisors. We continue to review the progress to remedy the defects outstanding at Stage 3 completion. We have also been reviewing the post completion defects reported in the FM Summary

We have inspected the works in relation to the air permeability testing to 36 isolation rooms.

Brookfield is working through the list of defects identified prior to the car park being handed over to the Client. We await confirmation when these will be complete to carry out a further inspection.

External snagging works are continuing but with some ponding areas still to be addressed, notably on the footpath near the 24 hour maternity entrance and in the walkway to the northwest of the Children's hospital entrance.

Supervisor's Notification of Defect No 139, and 140 were issued during September.

- Seeking confirmation when Air Permeability Tests and associated remedial works are complete and provide test results.
- Seeking confirmation when the defective spindles to privacy visicom panels to timber doors and screens have been addressed.

.

2.0 DESIGN COMPLIANCE CHECK

Currently nothing to report.

3.0 PROCEDURES REVIEW

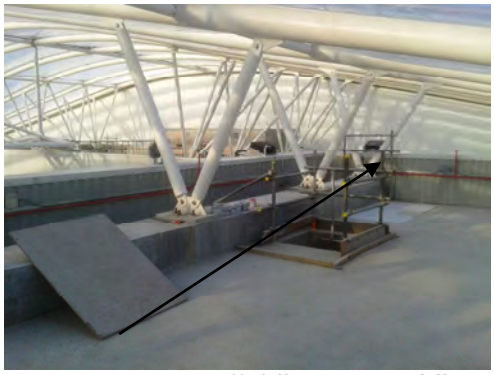
3.1 Contractor's QA Procedures / Compliance Inspections

General Inspections

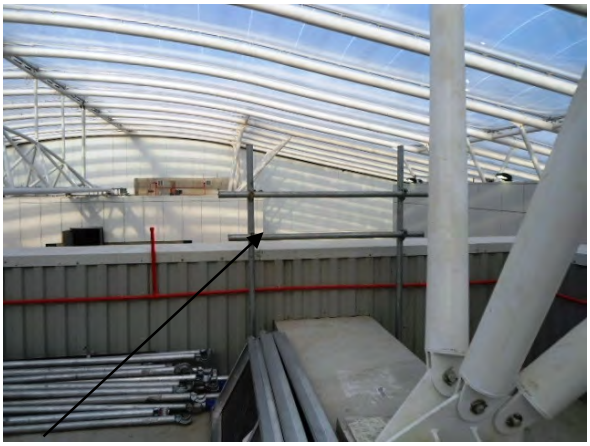
During an inspection of the Children's Roof adjacent to Plantroom 41A we noted that there were no bulkhead lights fitted above the doors. There were also no lights fitted in the room on the roof providing access and egress via the cat ladder in Core L. These were not taken in the approved drawings. Brookfield has issued a communication to BMCE M&E Managers for action / response. See Supervisor's Communication General Matters / Other Instructions (CI 13.1) No 246

Post Completion Inspections / Issues

There is temporary scaffolding providing perimeter protection at concrete floor beams above the cores accessed from Level 12. The client intimated that protection is required. We have asked Brookfield to confirm when this will be undertaken. They are currently arranging for this work to be carried out. See Supervisor's Communication General Matters / Other Instructions (CI 13.1) No 242.



Temporary scaffolding providing perimeter protection.



Temporary scaffolding providing perimeter protection.

SUPERVISOR'S REPORT NO. 53 **SEPTEMBER 2015**

Post Completion Defects

Below is the current status with Defects.

Final Sweep – 8 (18 Structal)

FM First Summary – 157 Open, 215 In Progress, 1270 Closed of these 13 were not defects.

There are numerous report of defects in relation to the operation of the blinds. Brookfield confirmed that their sub-contractor TDSL is currently carrying out remedial works to broken blinds and is repairing not only those reported through the FM Schedule but also other defects that they discover.

3.2 Witness Testing and Commissioning.

Nothing to report.

Following the discovery that Air Permeability Tests were not carried out within 36 isolation rooms in accordance with the Employer's Requirements NHS Guidance Documentations, document HBN 04-01. Brookfield is undertaken tests and remedial work to ensure the rooms are compliant.

During our inspection in the Hospital in September we were present during air permeability testing of room CCW-077 Bed 31. Additional work had to be carried out to the window beads by refitting them and fixing the screw heads with caps. Brookfield has been providing us with the test results for all rooms. There are currently 6 rooms requiring to be tested, 2 in Renal and 4 in Schiehallion. See Supervisor's Notification of Defect (C 42.2) No 138.

3.2 Witness Testing and Commissioning,

Currently nothing to report.

3.3 Board Equipment Installation,

Currently nothing to report.

3.4 Non Conformance Reports

SUPERVISOR'S REPORT NO. 53 **SEPTEMBER 2015**

Currently nothing to report.
An NCR has also been raised in relation to manholes which are below the level of the surrounding tar. (See photo opposite.)

4.0 CONSTRUCTION REVIEW

4.1 Visits to the Works

Site inspections were carried out by the NEC3 Supervisor's on the 2nd, 9th, 16th, 23rd and 30th September 2015.

4.2 Elements of the Works available for inspection

Snagging work to externals

4.3 Current Observations

The visual inspections of the work carried out to date indicate that the works are generally being carried out to a satisfactory standard. We continue to be assisted by the site teams and the NHS Project Team in resolving various construction, mechanical, electrical, and quality issues. We continue to close out our Supervisor's Notification and Defects when we have received satisfactory responses.

4.3.1 Structural and Civil Works

Car Park 1.

Brookfield is still working through the list of defects identified prior to the car park being handed over to the Client. They have informed us that CLAD UK are no longer trading consequently there is unfinished work. Brookfield is awaiting Dunnes getting back to them about the outstanding items.

Maternity VIE.

We have received drawings from Brookfield showing the piles, slab and walls. We will continue to monitor this work.

4.3.2 Children's Area

Nothing to report

4.3.3 External Works

Local ponding on the north side of Govan Road, previously reported, is seemingly a Glasgow City Council issue. The footpath ponding at the extended footpath area on the east side of the maternity unit remains outstanding and in the hardstanding to the northwest of the children's hospital, all as reported in more detail below.

Govan Road/Renfrew Road & ACH Entrance Road.

Road surfacing work has been completed on the dual carriageway leading to Govan Road, and at the south of the main building, with a generally good quality finish. Local ponding on the north side of Govan Road remains outstanding. The footpath ponding at the extended footpath area on the east side of the maternity unit remains outstanding.

We advised the Brookfield team on 16th December that ponding on the new extended footpath to the east side of the maternity unit has the potential to be a significant slip hazard in cold weather. We asked them to confirm their action to address this hazard. Brookfield has confirmed that Land Engineering have been instructed to lift the full width of tar and re-lay with a fall from the ramp to the new road kerb.

Brookfield had confirmed that work would commence week beginning 13th April. However they are awaiting an asphalt squad. (See Supervisor's Communication General Matters / Other Instructions (CI 13.1) No 237).

Footpath to the east side of the maternity unit.

Ponding is also apparent locally on the granite hardstanding in places around the main Children's entrance canopy. Wind-blown surface water on the canopy is not being collected at canopy level in many places. Brookfield are aware of this and are in liaison with their subcontractor to try to resolve.

Significant local ponding has also become apparent on the route from the Children's main entrance to the covered bicycle stand near the Hardgate Road multi storey car park, just west of the children's hospital main entrance. Brookfield are aware of this and are working with their subcontractor, Land Engineering to come up with an acceptable solution.

4.3.4 Mechanical Services

We received copies of the water test results and these were satisfactory.

4.3.5 Electrical Services

Nothing to report.

4.3.6 Doors

Nothing to report.

4.3.7 Windows

Nothing to report.

4.3.8 Ducting

Nothing to report.

4.3.9 Floors

Nothing to report.

4.3.10 Blockwork

Nothing to report.

4.3.11 Heating

4.4 Current Defects.

Some of the outlets taking the rainwater from the top level of the Car park are too high consequently water is ponding in the recessed channels. The client has agreed that any remedial work would exacerbate the problem.

The capping piece on the north facing elevation of the Children's Hospital has two discoloured areas. We asked Brookfield to confirm their remedial action to address this and confirm when complete. They have confirmed that if the marks can't be cleaned off, Prater will paint repair or replace panels if required. See outstanding works list. See Supervisor's Notification of Defect (Cl 42.2) No 88.

The NHS Fire Risk Assessor has been on site and noted that the air sampling unit within General Theatre One on the second floor has been painted over. We also noted that another unit in Theatre 4 has been partially painted over. These should be paint free. There is also an air sampling unit in the main Atrium north facing wall which we asked Brookfield to confirm when these are addressed. They have confirmed that the painted over sampling point has been rectified. Brookfield intimated that the point on the North wall has been pulled back on Level 5 but would need to look specifically. Gary Kimmins from Mercury is aware of it but requires rope access. We await

confirmation when this will be dealt with. See Supervisor's Notification of Defect (Cl 42.2) No 93.

The joints at window cills are opening up. We asked Brookfield to confirm their remedial action to resolve this problem. They have filled and painted the joints but they have opened up again. They are sealing a joint with sealant to determine if this is a better solution. We await their response. See Supervisor's Notification of Defect (Cl 42.2) No 99

Following a joint inspection of the theatres and adjoining rooms on Level 2 we identified cracks in the following rooms:
THE-124 General Theatre 6 ENT: Crack below the window.
THE-232 Interventional 1 Vasco/Urology: Horizontal crack right hand side of the touch screen.

Following a joint inspection of Car Park 1 we identified various defects / snags which were issued to Brookfield. We asked them to confirm when these have been addressed. We have recently undertaken a joint inspection with Brookfield and noted that some of the Defects have been rectified. They are attending to the remaining outstanding Defect. See Supervisor's Notification of Defect (Cl 42.2) No 116.

The Board have employed Competent Body Zurich Engineering to undertake an inspection of the pressure systems associated with the new buildings and systems handed over on 26th January 2015. This was done in order produce the statutory written scheme required under the Pressure Systems Safety Regulations (PSSR) 2000 for the safe operation and inspection of relevant systems.

During their review, a number of defects have been found within the installed plant. Brookfield responded as follows. All of the relevant documentation is with Zurich and Brookfield await the Assembly Declaration of Conformity.

1) Configuration of boiler safety valves.
   Brookfield response: Design drawings were discussed with NHS and Zurich and this is now complete.
2) A safe method of discharge of medium pressure/temperature water and steam blow off from boilers (120 degC / 5.7bar).
   Brookfield response Design drawings were discussed with NHS and Zurich and this is now complete.
3) Certificate of Conformity for boilers.
   Brookfield response: Issued to NHS Zurich.
4) Certificate of Conformity for economisers.
   Brookfield response: Issued to NHS Zurich.
5) Certificate of conformity for all pressure systems pipework.

Brookfield response: Issued to NHS Zurich.

6) CE marking of pressure vessels and heat exchangers.
   Brookfield response: Complete.
7) Pressurisation Units – safety vales rating and fixing requirements.
   Brookfield response: Complete.
8) Boiler drain points.
   Brookfield response: Complete.

All of the relevant documentation is with Zurich and Brookfield await the Assembly Declaration of Conformity. Supervisor's Notification of Defect (Cl 42.2) No 124.

Following recent excavations around the buildings to expose and repair collapsed main drains, the Board request video surveys to be undertaken and reports provided of the repaired drain runs and also other neighbouring runs that may have been affected by proximity to the 200t crane. Brookfield has confirmed that they passed this to their Managers and we await their response. See Supervisor's Notification of Defect (Cl 42.2) No 125.

The Bicycle Shelter roof does not drain rainwater to the two corner outlets, consequently the rainwater is ponding. We asked Brookfield to confirm their proposed remedial action to resolve this defect. They have confirmed that following a meeting with the designer a level survey is required. The plan is to introduce a further outlet. See Supervisor's Notification of Defect (Cl 42.2) No 129.

SUPERVISOR'S REPORT NO. 53 **SEPTEMBER 2015**

The concrete joint between the 6th floor and the down ramp is breaking up. We asked Brookfield to confirm the remedial measures to address this defect. They have instructed Dunne to carry out remedial works. See Supervisor's Notification of Defect (Cl 42.2) No 132.

The remaining defects as listed below have been amalgamated under Supervisor's Notification of Defect (Cl 42.2) No 134.
Below is the current status of the outstanding Defects.

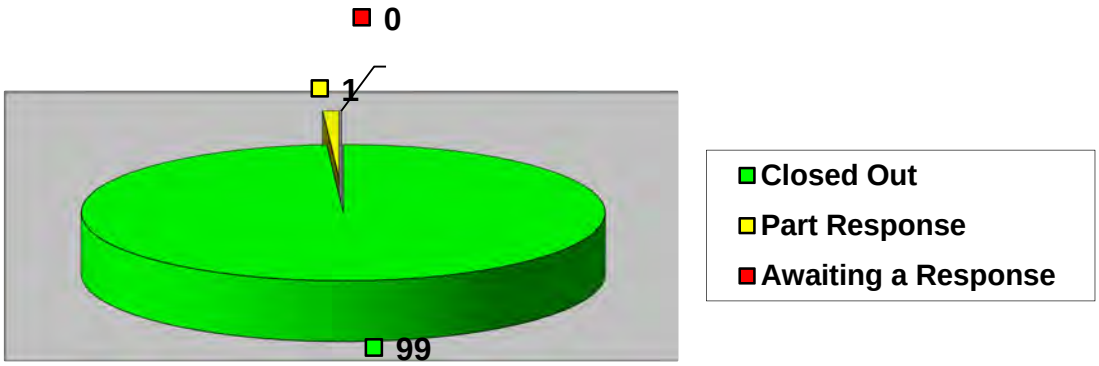
Level 00 – Level 01 – Level 02 – Level 03 – Level 05 – Level 08 – Level 09 – Level 10 – Level 11 –	60 12 39 01 01 03 01 09 06		Level 00 – Level 01 – Level 02 – Level 03 – Level 05 – Level 08 – Level 09 – Level 10 – Level 11 –	04 01 03
Total Defects at inspection 132			Total Defects remaining to be complete 08	

It appears that the cladding on the west facing elevation has been damaged and an unsuccessful attempt has been made to repair the damage. We asked Brookfield to confirm when this defect has been rectified. They have confirmed that this has been passed onto the sub-contractor Prater to rectify the unsuccessful attempt at the repair. See Supervisor's Notification of Defect (Cl 42.2) No 137.

SUPERVISOR'S REPORT NO. 53 **SEPTEMBER 2015**

There are Defective spindles to privacy visicom panels within timber doors and screens throughout the hospital. This is due to the nylon washer being reshaped by the spindle under the weight of the glass. This has led to the spindle being unable to move the washer as their shapes are incompatible. We have asked Brookfield to confirm when this defect will be addressed throughout the hospital. See Supervisor's Notification of Defect (Cl 42.2) No 140.

5.0 INFORMATION REQUIRED



NEW SOUTH GLASGOW HOSPITAL ADULT AND CHILDREN'S HOSPITAL AND ENERGY CENTRE

SUPERVISOR'S REPORT NO. 53 **SEPTEMBER 2015**

Item No.	Description	Date Requested	Comment	
Items 1 to 198 have been closed out				
199	There are gaps in the thermal insulation in back box of remote TVR's. Confirm remedial action.	20.03.14	Closed out.	
Items 200 to 236 have been closed out				
237	Seeking confirmation on Brookfield's action to address the ponding to the footpath to the east side of the maternity unit.	08.01.15	Response received.	
Items 240 to 241 have been closed out				
242	Seeking confirmation if permanent perimeter protection will be fitted above cores accessed from Level 12.	25.02.15	Response received.	
Items 243 to 244 have been closed out				
245	Confirm that 'CAUTION-**VERY HOT WATER'** notices will be fitted to all hot water outlets provided for food hygiene and decontamination.	19.03.15	Closed out.	
246	No lights fitted to above the doors leading from the room to plantroom 41A	30.03.15	Response received.	
Items 247 to 251have been closed out				

NEW SOUTH GLASGOW HOSPITAL ADULT AND CHILDREN'S HOSPITAL AND ENERGY CENTRE

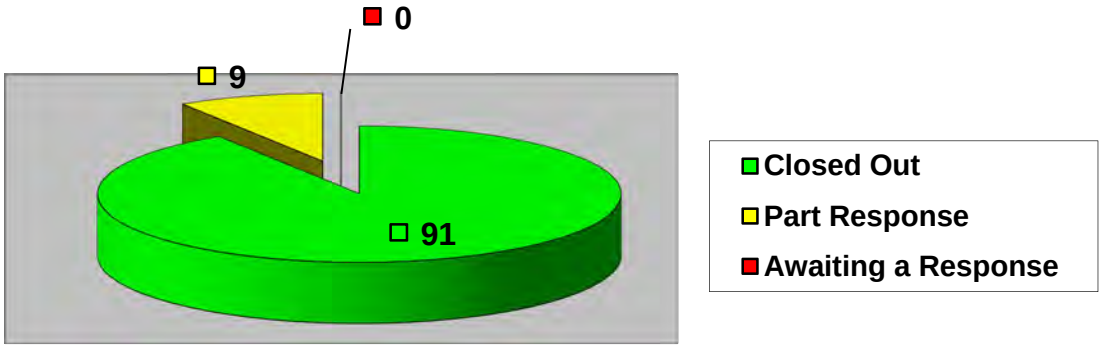
SUPERVISOR'S REPORT NO. 53 **SEPTEMBER 2015**

6.0 SUPERVISORS TESTS AND INSPECTIONS

Tests not required	N/A
Tests required but not tested	Fail
Tests required which has passed tests	Pass

Tests				
Ref	Title	To be Notified by	Status	Test Date
01-377	Various tests undertaken and passed from the 09. 07.2012 To the 22.01 2015.			
378	Fire shut down test of AHU's during fire activity. PR21 AHU 19 did not shut down.	Brookfield	Retested successfully but not present. See Supervisor's Report No 50	23.01.2015
379-381	Various tests undertaken and passed from the 23. 01.2015 to the 02.04 2015.			

7.0 DEFECTS NOTIFICATIONS ISSUED



NEW SOUTH GLASGOW HOSPITAL ADULT AND CHILDREN'S HOSPITAL AND ENERGY CENTRE

SUPERVISOR'S REPORT NO. 53 **SEPTEMBER 2015**

	Description	Date Requested	Comment	
Items 1 to 82 have been closed out.				
83	Seeking confirmation of remedial action to resolve ponding.	13.11.14	Response received.	
Items 84 to 87 have been closed out.				
88	Seeking confirmation of remedial measures to address the discolouration of the capping pieces.	20.11.14	Response received.	
Items 89 to 91 have been closed out.				
92	There are insufficient power points in rooms END-033 and END-035. Seeking confirmation when addressed.	30.01.15	Closed out.	
93	Confirm when the air sampling unit within General Theatre One and Theatre 4 are paint free and the unit in the Atrium has been fitted properly.	05.02.15	Response received.	
Items 94 to 98 have been closed out.				
99	Confirm to open window cill joints.	24.02.15	Response received.	
Items 100 to 115 have been closed out.				
116	Various defects car Park 1.	08.04.15	Response received.	
Items 117 to 123 have been closed out.				
124	Defects in relation to the Zurich Engineers inspection.	16.04.15	Response received.	
125	Seeking video surveys with reject to drain repairs.	16.04.15	Response received.	
Items 126 to 128 have been closed out.				
129	Ponding to Bicycle Shelter.	11.05.15	Response received.	
130	Various external fabric defects.	11.05.15	Response received.	
131	PIR not functioning in room STW-041.	11.05.15	Closed out.	
132	6th floor down ramp is break up.	13.05.15	Response received.	
133	Ponding to main pedestrian entrance to Car Park 1.	13.05.15	Closed out.	
134	The defects identified in Supervisor's Notifications of Defects No 106, 107, 112, 113, 115, 117, 118, 121, 126 and 128 have been either competed or substantially completed. These have been closed out and the remaining defects amalgamated under this Defect Notification.	03.06.15	Response received.	
135	The door selector to the entrances adjacent to Hardgate Road does not allow the doors to close over properly. The primary opening door at the entrance to the main stair intermittently does not close over and remains in the open position.	16.06.15	Closed out.	
136	Incomplete decoration and marks on walls.	18.06.15	Closed out.	
137	Seeking confirmation when the damaged cladding has been rectified.	01.07.15	Response received.	
138	4th floor door in the Car Park does not close over properly.	18.08.15	Closed out.	
139	Confirm when Air Permeability Tests and associated remedial works are complete and provide test results.	02.09.15	Response received.	
140	Defective spindles to privacy visicom panels to timber doors and screens.	29.09.15	Awaiting a response	

NEW SOUTH GLASGOW HOSPITAL ADULT AND CHILDREN'S HOSPITAL AND ENERGY CENTRE

SUPERVISOR'S REPORT NO. 53 **SEPTEMBER 2015**

John Redmond, Technical Advisory Services

Property and infrastructure
Capita, 4th Floor, 7 West Nile Street, Glasgow G1 2PR

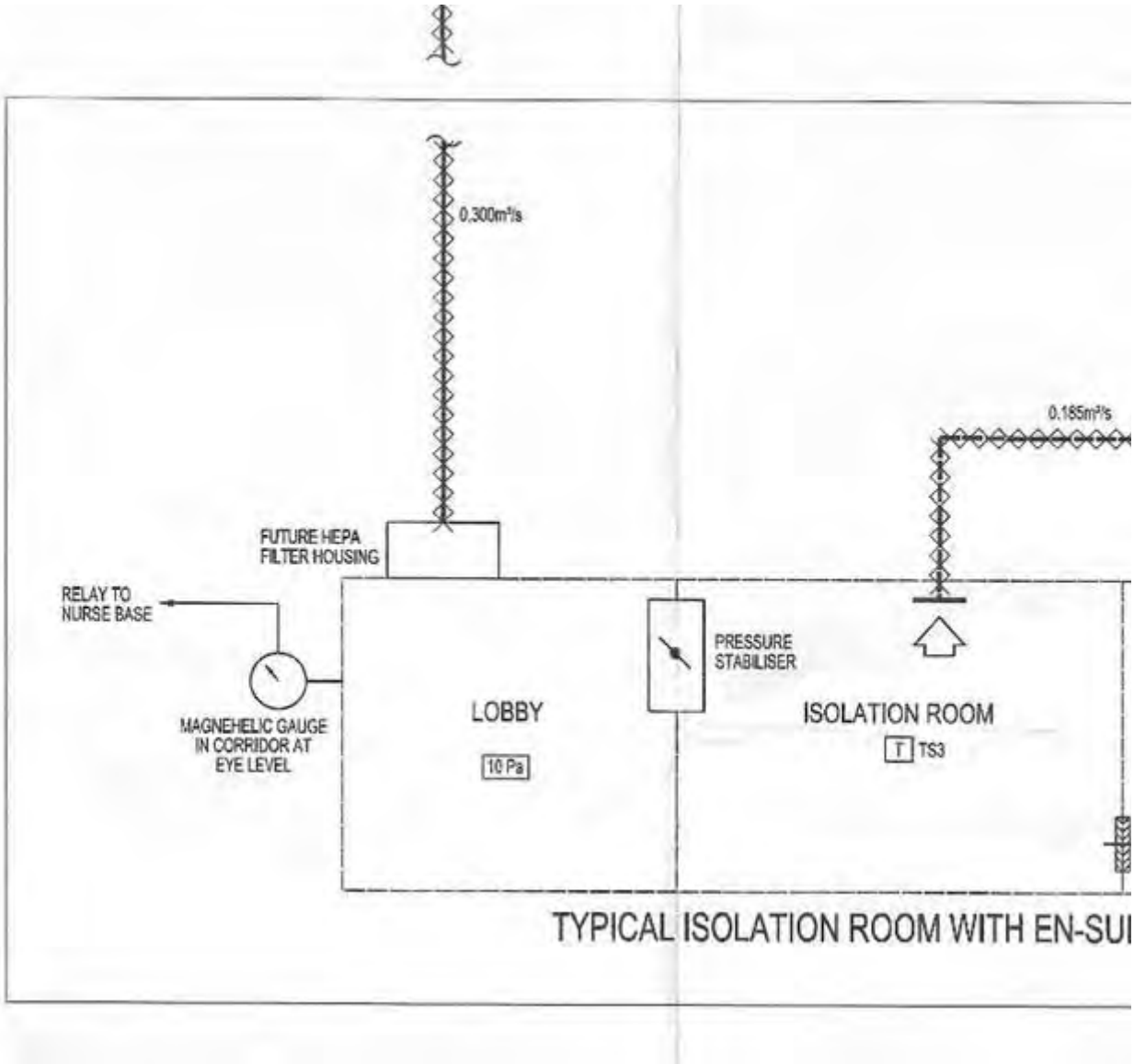
	Signed	Date
Originated by	John Redmond	13th October 2015
Completed by	David Ramsay	13h October 2015

A47069198

From: Darren Pike [redacted] on behalf of Darren Pike
Sent: 01 September 2015 09:49
To: Alasdair Fernie; Stewart McKechnie
Cc: David Wilson; Julie Miller; Gillon Armstrong
Subject: RE: BMT unit

All

Snapshot of typical isolation ward from ZBP below for info;



Darren Pike
Project M&E Manager

Brookfield Multiplex Construction Europe Ltd
RHSC & DCN Site Office
Little France Crescent
Edinburgh, EH16 4TJ, United Kingdom

A47069198

[redacted]
W www.brookfieldmultiplex.com

Please consider the environment before printing this email.

From: Alasdair Fernie
Sent: 01 September 2015 09:44
To: Stewart McKechnie
Cc: Darren Pike; David Wilson; Julie Miller; Gillon Armstrong
Subject: Fwd: BMT unit

Stewart

I understand you on holiday but may be picking emails

The NHS are reviewing the air pressures in the Scahallion and isolation rooms in both the adults and children's.

They are keen to have pressure in the room and toilet to ensure there is no possibility of "dirty" air coming into the room.

You can see an example of that they are hoping to achieve from the email Ian Powrie has sent (see below)

Can you advise based on our current design and insulation what would be possible to achieve.

What we would need to consider if the current design / install is not able to provide this supply.

What sort of time scale would we have to consider for the design should we need to redesign the system to allow what Ian has set out in the email below.

As ever the board are keen we provide them with feedback so I would greatly appreciate if you could come back to me by Thursday (or someone from your team)

Have a good holiday mate.

Al

Alasdair Fernie BSc (Hons) MRICS FCIOB
Project Director

Brookfield Multiplex Europe
[redacted]
Wwww.brookfieldmultiplex.com

Begin forwarded message:

From: "Loudon, David" [redacted]
Date: 31 August 2015 17:54:55 BST

To: Alasdair Fernie [redacted]
Subject: FW: BMT unit

FYI.

Awaiting confirmation that the numbers noted below are the clinical specification that would be required in the Schiehallion rooms.

David

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHS Greater Glasgow & Clyde
Management Building
Govan Road
Glasgow
G51 4SX

[redacted]

From: Powrie, Ian
Sent: 28 August 2015 11:45
To: Williams, Craig
Cc: Redfern, Jamie; McNamee, Sandra; Walsh, Tom; Gibson, Brenda; Hunter, William; Loudon, David
Subject: Re: BMT unit

Hi Craig,

As we discussed I have attempted to contact estates at both Leeds and Sheffield children's hospitals, unfortunately I have not managed to make contact with anyone at Sheffield despite several attempts.

Leeds Children's Hospital, BMTU is 4 years old, and is a retro fit development within a 40 year old building.

They have four isolation suites with the design based on HBN 04-01 supplement 1, all four suites are supplied from a single AHU with stand by AHU resilience, complete with H13 HEPA filtration within the AHU, there are no terminal HEPA's installed in the suite.

The facility is lobbied with a en-suite anti-room, The supply air is provided via the lobby which sits at a 8-12pa differential pressure to the corridor, with a pressure balanced transfer grille from the lobby to the isolated bed room. The lobby door and room door are interlocked to activate a local alarm should ether door be left open.

The bed room is at a differential pressure of 20-25pa to the en-suite, where the extract is 152 ltrs/s split 60% from the en-suite and 40% from the bed room, there are no transfer grilles between the bed room and the en-suite.

Feel free to give me a call today if you would like to discuss.

Regards

Ian

I.Powrie
Sector Estates Manager (NSGH)
Project Team, New South Glasgow Hospitals,
Southern General Hospitals Construction Site,
2nd Floor, Modular Building, Off Hardgate Road, Glasgow,G51 4SX
[redacted]

On 18 Aug 2015, at 15:16, Williams, Craig [redacted] wrote:

> Dear Jamie
>
> I've done a quick phone around of Microbiology Consultants taken from the list of Paediatric transplant centres listed on the BSBMT registry. Our build is in line with all of the other paediatric centres that I have been able to contact so far. There is a lot of variability in how the ongoing testing of the rooms is done which will be useful to discuss further. I will try and get hold of more centres prior to the meeting. Not sure if this tallies with Prof Gibsons findings
>
> Best wishes
>
> Craig
>
> Prof Craig Williams
> Consultant Microbiologist Royal Hospital for Children Glasgow
> Professor of HAI UWS
>
> <BMT Paediatric units.doc>

****
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From: Alasdair Fernie [redacted] on behalf of Alasdair Fernie
Sent: 01 September 2015 17:44
To: Loudon, David
Cc: Armstrong, Jennifer; Archibald, Grant; Williams, Craig; David Wilson; Julie Miller
Subject: Re: Schiehallion Ward - Royal Hospital for Children

David

I will come back to you on the points as soon as I have feedback on them. Unfortunately there are a number of the key members of the team on holiday which may slow down the feedback.

With regards the reliability of the system as it stands it is maintaining pressure at the correct levels. We checked this this afternoon.

There are 32 air handling systems running in the hospital with only one affected due to a faulty damper.

The rates were working with no issues after the last round of testing.

There had been a request by the estates team to understand if these could be altered to provide positive pressure in the rooms other than the lobby. Members of my team assisted in this discussion but where instructed not to carry out any changes. (If this has not happened I will find out)

The issue of pressure dropping on auto does not appear to have come back at this point and I understand we have not made any adjustments and we currently sit on auto.

Pressure will drop from time to time as doors to the lobby and toilets are opened and closed and this may have been the issue earlier.

I will ask my team monitor the rooms over the coming days and come back to you with the findings.

I am concerned that the reliability of the system may be being questioned when it is generally performing as intended.

Regards

Alasdair Fernie BSc (Hons) MRICS FCIOB
Project Director

Brookfield Multiplex Europe
[redacted]
Wwww.brookfieldmultiplex.com

On 1 Sep 2015, at 17:09, Loudon, David [redacted] wrote:

Alasdair

At a meeting today, the Board has taken a decision to request that the environmental standards noted at the Leeds Children?s Hospital be considered for the Schiehallion Ward in the Royal Hospital for Children.

You will appreciate the urgency behind his request and therefore, I would appreciate if you will expedite answers to the following questions:

1. Can the current air handling systems be adapted to achieve the environmental standards being achieved at Leeds? I have cut & pasted Ian Powrie?s e mail dated 28th August. You will note that the design is to HBN 04-01 supplement 1 and associated tables. I understand that contrary to the Leeds set up, a transfer / balance grill may be required on the bedroom door to the lobby.
2. I understand that BM has previously visited the rooms with an H&V consultant who has advised that the environmental standards should be deliverable in the Schiehallion Wards. Can you advise by return
3. Assuming that the environmental standards can be achieved within the Schiehallion suite, can you provide an indication of timescale. Owning to the urgency, the Board would expect 24/7 levels of activity.

We have also been advised that the air handling system has proven to be unreliable over the past few days and this has impacted on the Board?s ability to complete our infection control tests. We seek your assurances regarding the reliability of the system.

Please contact me should you wish to discuss any part of my message and I look forward to receiving your responses to the questions above as a matter of priority.

Regards

David

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHS Greater Glasgow & Clyde
Management Building
Govan Road
Glasgow
G51 4SX

[redacted]

****
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From: Loudon, David [redacted] on behalf of Loudon, David
Sent: 01 September 2015 17:19
To: Loudon, David; Alasdair Fernie
Cc: Armstrong, Jennifer; Archibald, Grant; Williams, Craig
Subject: RE: Schiehallion Ward - Royal Hospital for Children

Leeds environmental specification below.

From: Powrie, Ian
Sent: 28 August 2015 11:45
To: Williams, Craig
Cc: Redfern, Jamie; McNamee, Sandra; Walsh, Tom; Gibson, Brenda; Hunter, William; Loudon, David
Subject: Re: BMT unit

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Feel free to give me a call today if you would like to discuss.

Regards

Ian

I.Powrie
Sector Estates Manager (NSGH)
Project Team, New South Glasgow Hospitals,
Southern General Hospitals Construction Site,
2nd Floor, Modular Building, Off Hardgate Road, Glasgow,G51 4SX
[redacted]

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHS Greater Glasgow & Clyde

Management Building
Govan Road
Glasgow
G51 4SX

[redacted]

From: Loudon, David
Sent: 01 September 2015 17:09
To: Alasdair Fernie
Cc: Armstrong, Jennifer; Archibald, Grant; Williams, Craig
Subject: Schiehallion Ward - Royal Hospital for Children
Importance: High

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Regards

David

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Director of Facilities and Capital Planning
NHS Greater Glasgow & Clyde
Management Building
Govan Road
Glasgow
G51 4SX

[redacted]

****

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3

SUPERVISOR'S NOTIFICATION OF DEFECT (CI 42.2)	**Stage 3 A&C**			CAPITA
Short Description	Air Permeability Tests.			Date 2nd September 2015
Defect will prevent the Employer making use of the work	Yes	✓		Instruction No. 139
	No			

To: Contractor: Brookfield Multiplex Construction Europe

Project Office Address:

Project Office, Hardgate Road, Govan, Glasgow
Scotland United Kingdom G51 4SX

1. Dear Sir

Isolation Rooms

Following the discovery that Air Permeability Tests were not carried out within 36 isolation rooms in accordance with the Employer's Requirements NHS Guidance Documentations, document HBN 04-01. We recognise that you are in the process of carrying out test to these rooms and any necessary work to ensure that they comply. Please provide the test results for all room and confirm when the works are complete.

Notification Signed [redacted] Supervisor	Date: 2nd September 2015
Distribution: Peter Moir, Alasdair Fernie, David Hall.	

Response;

As you have indicated you have recognized we are in the process of carrying out test to these rooms and any necessary work to ensure that they comply. We have provided the test results and confirm works are ongoing to complete.

Test results and data issued on Friday 4th September;-

- Schedule of Isolation rooms data.
- Drawings highlighting individual rooms, noted accordingly with actions and test data.
- Air Permeability Testing from RSK.
- Isolation Room Schiehallion Ward L2- Hepa filter integrity Test report of 6th +7th June ’15.
- Copy of RDS’s for Schiehallion ward

From: Bushfield, John [redacted] on behalf of Bushfield, John
Sent: 02 September 2015 17:33
To: Darren Pike [redacted]
Cc: Rutherford, Brian [redacted]; Murray, Janette [redacted] GSH [redacted] McKechnie, Stewart [redacted]; Glasgow Filing [redacted]
Subject: 8001 BMT unit

Darren

SHPN 04 Supplement 1 indicated the larger amount of air extracted from the room

If HBN 04-01 Supplement 1 is to be used it is noted that the larger amount of air (63.3%) is extracted from the en-suite

Presently the room has a 450mm x 450mm louvered faced extract grille and the En-suite has a circular valve grille

The room could be modified by resetting of the volume control damper

The en-suite may require an up-rated extract grill to facilitate the increased volume to ensure that the noise is not excessive (this could be checked on a sample room.)

We have still to check the duct sizes but again noise could be checked on a sample room.

Also the HBN indicates a transfer grille between the En-suite and the room. This may be required again this could be checked on a sample room (with the door open and closed)

I hope that this assists. See below for direct response to items and let us know if you require any further details

Regards

John Bushfield
Director
BA IEng ACIBSE

TUV SUD Limited
The Venlaw Building
349 Bath Street
Glasgow
G2 4AA
United Kingdom

[redacted]
www.tuv-sud.co.uk/wallacewhittle

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From: Darren Pike [redacted]
Sent: 02 September 2015 16:03
To: Bushfield, John
Subject: FW: BMT unit
Importance: High

John ? see below will phone you in 30 seconds.

Darren Pike
Project M&E Manager

Brookfield Multiplex Construction Europe Ltd
RHSC & DCN Site Office
Little France Crescent
Edinburgh, EH16 4TJ, United Kingdom

[redacted]
W www.brookfieldmultiplex.com

Please consider the environment before printing this email.

From: Alasdair Fernie
Sent: 01 September 2015 09:44
To: Stewart McKechnie
Cc: Darren Pike; David Wilson; Julie Miller; Gillon Armstrong
Subject: Fwd: BMT unit

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What we would need to consider if the current design / install is not able to provide this supply. (possible amendment to grill in en-suite and probable installation of transfer grille)

What sort of time scale would we have to consider for the design should we need to redesign the system to allow what Ian has set out in the email below. (The amended commissioning figures could be produced quickly to allow a test room to be set up)

As ever the board are keen we provide them with feedback so I would greatly appreciate if you could come back to me by Thursday (or someone from your team)

Have a good holiday mate.

Al

Alasdair Fernie BSc (Hons) MRICS FCIOB
Project Director

Brookfield Multiplex Europe
[redacted]
Wwww.brookfieldmultiplex.com

Begin forwarded message:

From: "Loudon, David" [redacted]
Date: 31 August 2015 17:54:55 BST
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Subject: FW: BMT unit

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Director of Facilities and Capital Planning
NHS Greater Glasgow & Clyde
Management Building
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I.Powrie
Sector Estates Manager (NSGH)
Project Team, New South Glasgow Hospitals,
Southern General Hospitals Construction Site,
2nd Floor, Modular Building, Off Hardgate Road, Glasgow,G51 4SX
[redacted]

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>
> Best wishes
>
> Craig
>
> Prof Craig Williams
> Consultant Microbiologist Royal Hospital for Children Glasgow
> Professor of HAI UWS
>
> <BMT Paediatric units.doc>

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From: Hunter, William [redacted] on behalf of Hunter, William
Sent: 02 September 2015 11:47
To: Hood, John
Cc: Brattey, David; Matheson, Fiona; Gillon Armstrong; Julie Miller
Subject: RE: Schiehallion Ward

John, can you please confirm the time that smoke testing will be undertaken within the children?s hospital ? ward 2B/Schehallion. It would be helpful if David Brattey, Site Estates Manager and another colleague on behalf of Brookfield were in attendance.

Gillon/Julie, I think that the smoke test arrangements will be take place at some point this afternoon. Can you please let me know who will be available to attend.

David, for your information.

Regards

Billy

From: Williams, Craig
Sent: 02 September 2015 08:48
To: Hunter, William
Cc: Hood, John
Subject: Re: Schiehallion Ward

Dear Billy

John Hood is planning to come across this afternoon. I hope to join him if I am finished in Edinburgh. I will copy John in and hopefully he can confirm times. After he had finished we can clean the rooms down and retest.

Craig

Sent from my BlackBerry 10 smartphone on the EE network.

From: Hunter, William
Sent: Wednesday, 2 September 2015 8:32 AM
To: Williams, Craig
Cc: Brattey, David; Loudon, David; Matheson, Fiona
Subject: FW: Schiehallion Ward

Good morning Craig,

David Loudon has indicated that ICT colleagues plan to conduct a smoke test of 2B/Schehallion ward. Can you please pass on the date/time so that I can arrange for David Brattey, Site Estates Manager & someone from Brookfield to be in attendance. If I should be liaising with Christine or another colleague, can you let me know who this is.

David B...can you pls speak to me about this.

Thanks

Billy

From: Loudon, David
Sent: 01 September 2015 16:49
To: Williams, Craig
Cc: Alasdair Fernie; David Wilson; Hunter, William
Subject: Schiehallion Ward
Importance: High

Craig

I have been advised by BM that the gauges are currently sitting at 10pa in all of the rooms.

By copy of this message, I will also ask them to monitor the BMS and confirm if an audible alarm is fitted for pressure drops.

Per our discussion, I will instruct FM team to re-clean the rooms without delay and advise you when complete to enable further sampling.

Regards

David

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHS Greater Glasgow & Clyde
Management Building
Govan Road
Glasgow
G51 4SX

[redacted]

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From: Loudon, David [redacted] on behalf of Loudon, David
Sent: 01 September 2015 15:34
To: Alasdair Fernie
Cc: Gillon Armstrong; Moir, Peter
Subject: FW: Schiehallion Air Sampling Results 31/8/15
Attachments: Schiehallion August 31 2105.pdf

Alasdair

See message below and attached. As you are aware, patients are due to be returned to the rooms on the 4th September and we need to have assurances on the environment. Can you report back to me as a matter of urgency.

David

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHS Greater Glasgow & Clyde
Management Building
Govan Road
Glasgow
G51 4SX

[redacted]

From: Williams, Craig
Sent: 01 September 2015 15:29
To: Loudon, David
Subject: FW: Schiehallion Air Sampling Results 31/8/15

Dear David

Sorry forgot to cc you, found out about this earlier today, Billy is looking into it. The problem is that the air sampling will be impossible to interepret if the ventilation is not working reliably

Best wishes

Craig

From: Williams, Craig
Sent: 01 September 2015 15:21
To: Hunter, William
Subject: FW: Schiehallion Air Sampling Results 31/8/15

Dear Billy

As discussed, the ventilation was down on Friday when they went to air sample and looks like there were problems again yesterday

Best wishes

Craig

From: Lavery, Brian
Sent: 01 September 2015 11:43
To: Williams, Craig
Cc: Jones, Brian; Mallon, John; Inkster, Teresa (NHSmail); McVeigh, Alanna; Cullen, Karen; Dallas, Sally
Subject: Schiehallion Air Sampling Results 31/8/15

Hi Craig

Yesterdays particle count results from Ward 2A (R18 and R19) attached.

Please note : Scott observed the magnahelic gauge drop during sampling of the ante-room in R19. Scott was standing in the corridor whilst the particle counter was testing and he noticed the change in the gauge to -20.(see sample No.1902350V)

Regards

[redacted]
Technical Manager / IT Manager
Microbiology Department
New Lister Building
Glasgow Royal Infirmary
Alexandra parade
Glasgow G31 2ER

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LF 220

AIR SAMPLING REQUEST FORM

SAMPLED BY [redacted]
DATE: 31/8/15

Read by SR
Date 1/9/15

LOCATION SGH SCHIEHALLION WOZA.

SOURCE	LABORATORY NO.	GROWTH ON SAB 7 DAYS 22°C	GROWTH ON SAB 7 DAYS 30°C	GROWTH ON TSA 7 DAYS 30°C	CUMULATIVE (Ave) PARTICLE COUNTS 0.5µm	ORGANISM ISOLATED (COMMENT)
Rm 18 EN-SUITE	15.1902345.M				2000	
Rm 18 MAIN ROOM	15.1902346.V				1410	
Rm 18 ANTE ROOM	15.1902347.R				599	
Rm 19 EN-SUITE	15.1902348.D				4066	
Rm 19 MAIN ROOM	15.1902349.S				5363	
Rm 19 ANTE ROOM	15.1902350.V				3184	1ST READING (MACHINE GUAGE DROPPED TO -20) DURING READING.
Rm 19 ANTE ROOM	15.1902351.R				330	2ND READING

Signed by [redacted]

Checked by..... Date 1/9/15

Address : Clinical Microbiology, New Lister Building, Alexandra Parade, Glasgow G32 2ER Tel : 0141 201 8546

A47069198

LF 220

AIR SAMPLING REQUEST FORM

SAMPLED BY : [redacted]
DATE: 31/8/15

Read by SR
Date 1/9/15

LOCATION SGH SCHIEHALLION WARD 2A

SOURCE	LABORATORY NO.	GROWTH ON SAB 7 DAYS 22°C	GROWTH ON SAB 7 DAYS 30°C	GROWTH ON TSA 7 DAYS 30°C	CUMULATIVE (Ave) PARTICLE COUNTS 0.5µm	ORGANISM ISOLATED (COMMENT)
Rm 19 ANTE ROOM	15.1902352.D				258.	320 READING.

Signed by. [redacted]

Checked by..... Date 1/9/15

Address : Clinical Microbiology, New Lister Building, Alexandra Parade, Glasgow G32 2ER [redacted]

A47069198

From: Barmanroy, Jackie [redacted] on behalf of Barmanroy, Jackie
Sent: 02 September 2015 16:20
To: Peters, Christine; Gillon Armstrong; McMullin, Linda
Subject: Air Permeability Validation July 2015 (3)
Attachments: Air Permeability Validation July 2015 (3).docx

Good afternoon,

Please find attached the HAI Scribe done for permeability tests on level 4 and Schiehallion in the new children?s hospital.
Perhaps this could be used/adapted for ITU?

To be fair to the contractors I have since found out they thought this would cover all permeability testing throughout the build.

Please see stage 3 in the attached document.

Kind regards,

Jackie.

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NHS National Services Scotland

SHFN 30:
HAI-SCRIBE

Questionsets and checklists

Health Facilities Scotland
Engineering and Environment

January 2015

A47069198

Introduction

Scottish Health Facilities Note (SHFN) 30 in its 2014 published form comprises two parts:

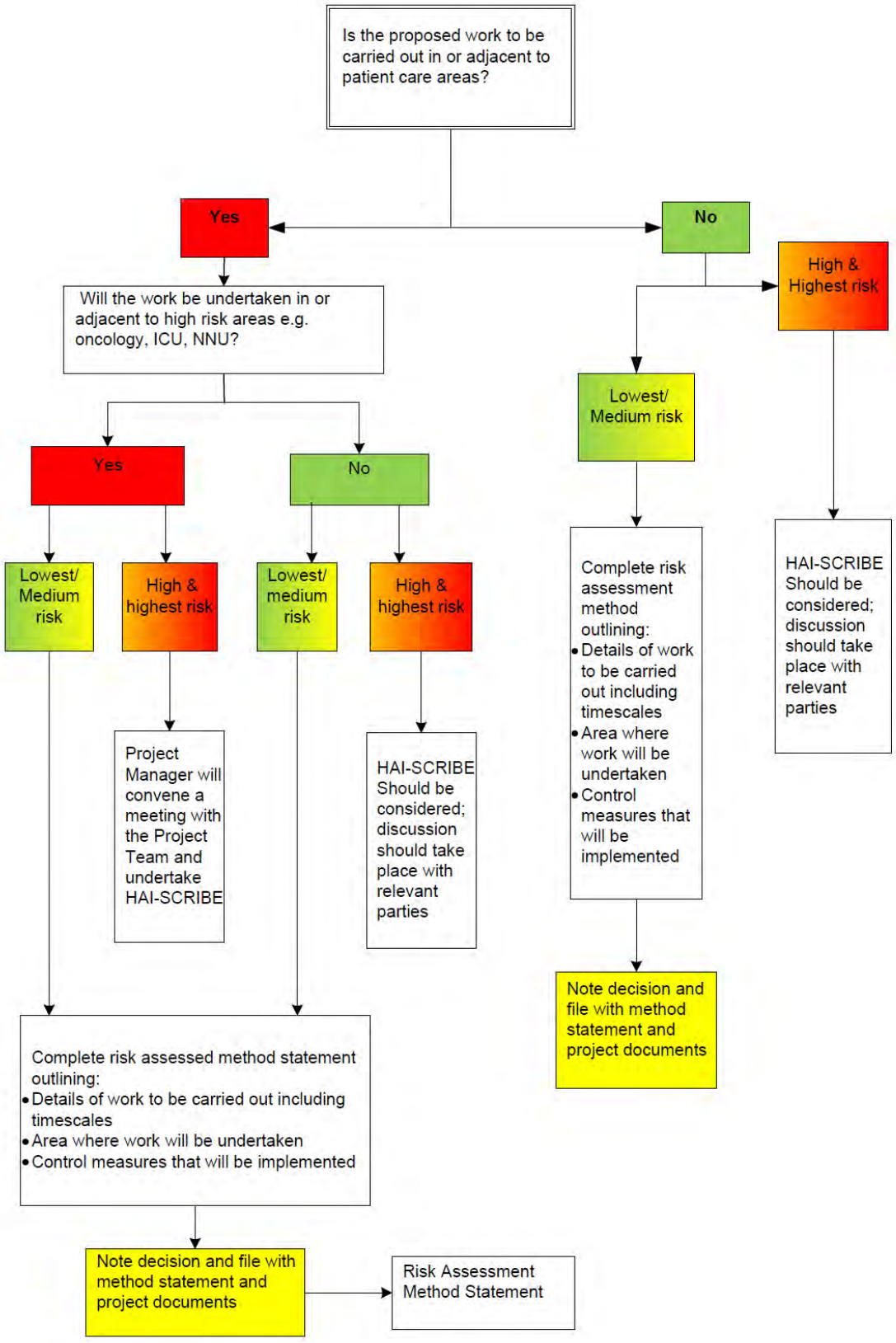
- **Part A**: Manual: Information for Design Teams, Construction Teams, Estates & Facilities and Infection Prevention & Control Teams.
- **Part B**: HAI-SCRIBE Implementation Strategy and Assessment Process.

Both have been published in book form.

It is appreciated that, as familiarity with the use of the procedures grows there will be progressively less need to rely on printed text, eventually leading to situations where questionsets and checklists will themselves be sufficient. Photocopying from published books is a ponderous and time-consuming process with a tendency to produce distorted images and/or damage binding. To facilitate the process, therefore, questionsets and checklists for each of the four project development stages have been produced in the form of an information pack ready for photocopying and distributing to project teams to assist in the HAI-SCRIBE review procedures as each new Project requires assessment. This pack is only available electronically.

The various proformas, comprising questionsets, checklists and certifications, are provided for the following:

- **Development Stage 1:** Initial briefing and proposed site for development:
- **Development Stage 2:** Design and planning:
- **Development Stage 3:** Construction and refurbishment work:
- **Development Stage 4:** Pre-handover check, ongoing maintenance and feed-back.


Is the proposed work to be carried out in or adjacent to patient care areas?
Yes
No
Will the work be undertaken in or adjacent to high risk areas e.g. oncology, ICU, NNU?
High & Highest risk
Lowest/ Medium risk
Yes
No
Lowest/ Medium risk
High & highest risk
Lowest/ medium risk
High & highest risk
Complete risk assessment method outlining:
• Details of work to be carried out including timescales
• Area where work will be undertaken
• Control measures that will be implemented
HAI-SCRIBE Should be considered; discussion should take place with relevant parties
Project Manager will convene a meeting with the Project Team and undertake HAI-SCRIBE
HAI-SCRIBE Should be considered; discussion should take place with relevant parties
Note decision and file with method statement and project documents
Complete risk assessed method statement outlining:
• Details of work to be carried out including timescales
• Area where work will be undertaken
• Control measures that will be implemented
Note decision and file with method statement and project documents
Risk Assessment Method Statement

Type	Construction/Refurbishment Activity
Type 1	**Inspection and non-invasive activities.** Includes, but is not limited to, removal of ceiling tiles or access hatches for visual inspection, painting which does not include sanding, wall covering, electrical trim work, minor plumbing and activities which do not generate dust or require cutting of walls or access to ceilings other than for visual inspection.
Type 2	**Small scale, short duration activities which create minimal dust.** Includes, but is not limited to, installation of telephone and computer cabling, access to chase spaces, cutting of walls or ceiling where dust migration can be controlled.
Type 3	**Any work which generates a moderate to high level of dust, aerosols and other contaminants or requires demolition or removal of any fixed building components or assemblies.** Includes, but is not limited to, sanding of walls for painting or wall covering, removal of floor coverings, ceiling tiles and casework, new wall construction, minor duct work or electrical work above ceilings, major cabling activities, and any activity which cannot be completed within a single work shift.
Type 4	**Major demolition and construction projects.** Includes, but it not limited to, activities which require consecutive work shifts, requires heavy demolition or removal of a complete cabling system, and new construction.

Table 1: Redevelopment and construction activity

Risk to patients of infection from construction work in healthcare premises, by clinical areas	
Risk rating	**Area**
Group 1 Lowest risk	1. Office areas; 2. Unoccupied wards; 3. Public areas/Reception; 4. Custodial facilities; 5. Mental Health facilities.
Group 2 Medium risk	1. All other patient care areas (unless included in Group 3 or Group 4); 2. Outpatient clinics (unless in Group 3 or Group 4); 3. Admission or discharge units; 4. Community/GP facilities; 5. Social Care or Elderly facilities.
Group 3 High risk	1. A & E (Accident and Emergency); 2. Medical wards; 3. Surgical wards (including Day Surgery) and Surgical outpatients; 4. Obstetric wards and neonatal nurseries; 5. Paediatrics; 6. Acute and long-stay care of the elderly; 7. Patient investigation areas, including; • Cardiac catheterisation; • Invasive radiology; • Nuclear medicine; • Endoscopy. Also (indirect risk) 8. Pharmacy preparation areas; 9. Ultra clean room standard laboratories (risk of pseudo-outbreaks and unnecessary treatment); 10. Pharmacy Aseptic suites.
Group 4 Highest Risk	1. Any area caring for immuno-compromised patients*, including: • Transplant units and outpatient clinics for patients who have received bone marrow or solid organ transplants; • Oncology Units and outpatient clinics for patients with cancer; • Haematology units • Burns Units. 2. All Intensive Care Units; 3. All operating theatres; Also (indirect risk) 4. CSSUs (Central Sterile Supply Units).

Table 2: Different areas of health care facility and the risk associated with each area.

	Construction Project Type			
Patient Risk Group	**TYPE 1**	**TYPE 2**	**TYPE 3**	**TYPE 4**
Lowest Risk	Class I	Class II	Class II	Class III/IV
Medium Risk	Class I	Class II	Class III	Class IV
High Risk	Class I	Class II	Class III/IV	Class IV
Highest Risk	Class II	Class III/IV	**Class III/IV**	Class IV

Table 3: Estimates the overall risk of infection arising and will indicate the class of precaution that should be implemented

Control measures			
	During Construction Work	**After Construction Work**	**By**
Class I	• Execute work by methods to minimise raising dust from construction operations;. • Immediately replace any ceiling tiles displaced during inspection.	• Clean areas by damp dusting with neutral detergent in warm water;. • Vacuum floor and damp mop.	Request via domestic supervisor. Request via domestic supervisor.
Class II	• Provide active means to prevent airborne dust from dispersing into atmosphere; • Water mist work surfaces to control dust while cutting; • Seal unused doors with duct tape; • Block off and seal air vents; • Place dust mat at entrance and exit of work area; • Remove or isolate HVAC system in areas where work is being performed.	• Dampwork surfaces and ledges with neutral detergent solution; • Contain construction waste before transport in tightly covered containers; • Damp mop and/or vacuum with HEPA filtered vacuum before leaving work area; • Remove isolation of HVAC system in areas where work is being performed.	Request via domestic supervisor. Estates staff. Request via domestic supervisor. Estates staff.
Class III	• Remove or Isolate HVAC system in area where work is being done to prevent contamination of duct system; • Complete all critical barriers eg plasterboard, plywood, plastic, to seal area from non work area or implement control cube method (cart with plastic covering and sealed connection to work site with HEPA vacuum for vacuuming prior to exit) before construction begins; • Maintain negative air pressure within work site utilizing HEPA equipped air filtration units; • Contain construction waste before transport in tightly covered containers; • Cover transport receptacles or carts. Tape covering unless solid lid.	• Do not remove barriers from work area until completed project is inspected by the Board's Health & Safety representative and Infection Control Department and thoroughly cleaned by the Board's domestic services staff;. • Remove barrier materials carefully to minimise spreading of dirt and debris associated with construction; • Vacuum work area with HEPA filtered vacuums; • Damp mop area with neutral detergent and warm water; • Remove isolation of HVAC system in areas where work is being performed.	Request by Estates Dept. Contractor/Estates Staff. Request via domestic supervisor. Request via domestic supervisor. Contractor/Estates Staff.

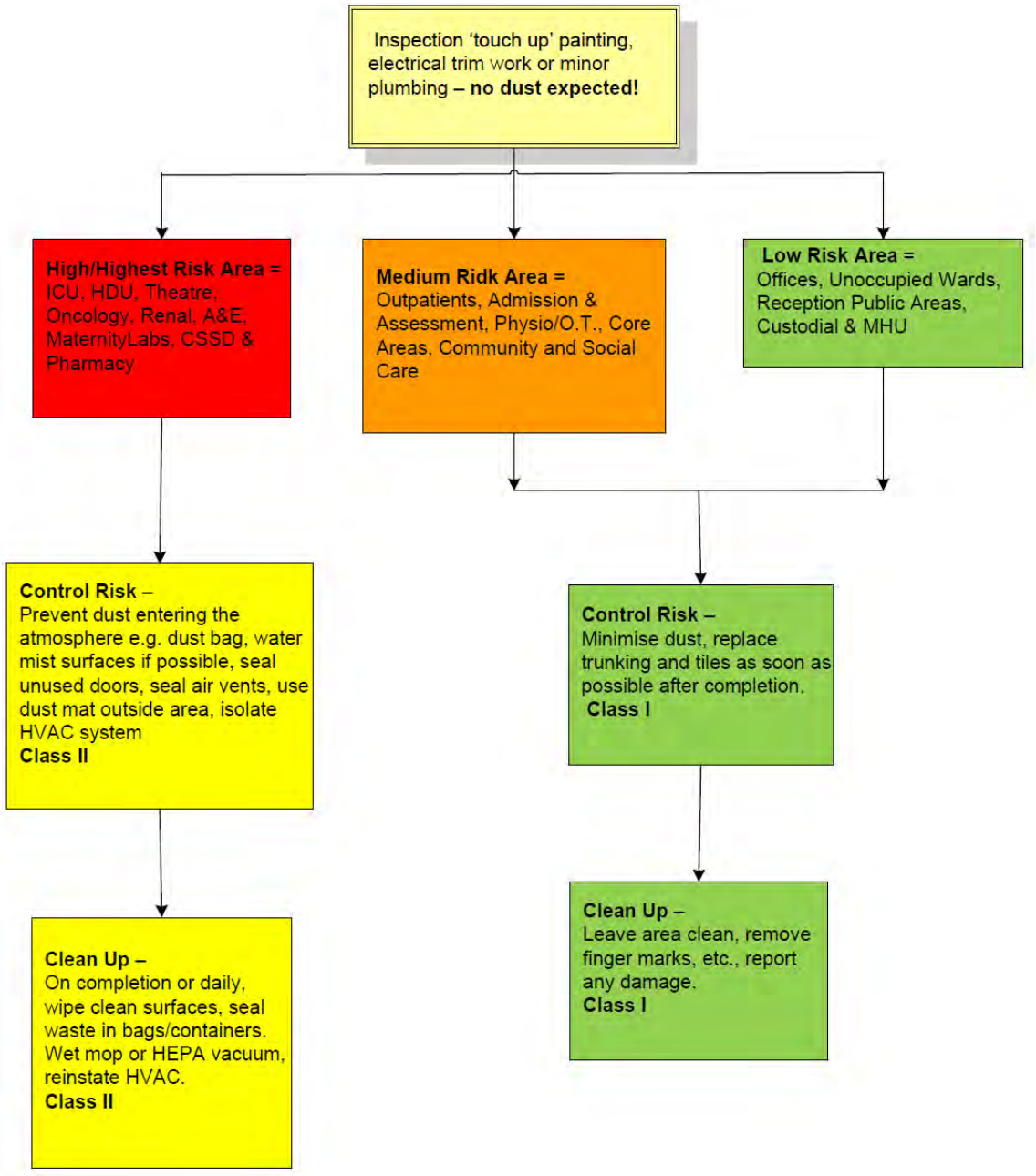
Table 4: Describes the required infection control precautions depending on class of risk

	During Construction Work	After Construction Work	By
Class IV	• Isolate HVAC system in area where work is being done to prevent contamination of duct system; • Complete all critical barriers eg plasterboard, plywood, plastic to seal area from non work area or implement control cube method (cart with plastic covering and sealed connection to work site with HEPA vacuum for vacuuming prior to exit) before construction begins; • Maintain negative air pressure within work site utilizing HEPA equipped air filtration units; • Seal holes, pipes, conduits, and punctures appropriately; • Construct anteroom and require all personnel to pass through this room so they can be vacuumed using a HEPA vacuum cleaner before leaving work site or they can wear cloth or paper coveralls that are removed each time they leave the work site; • All personnel entering work site are required to wear shoe covers. Shoe covers must be changed each time the worker exits the work area; • Do not remove barriers from work area until completed project is inspected.	• Remove barrier material carefully to minimise spreading of dirt and debris associated with construction; • Contain construction waste before transport in tightly covered containers;. • Cover transport receptacles or carts. Tape covering unless solid lid; • Vacuum work area with HEPA filtered vacuums; • Damp dust area with neutral detergent and warm water; • Scrub floor area with neutral detergent in warm water; • Remove isolation of HVAC system in areas where work is being performed.	Contractor. Contractor. Contractor. Request via domestic supervisor. Request via domestic supervisor. Contractor/Estates Staff.

Table 4 continued: Describes the required infection control precautions depending on class of risk

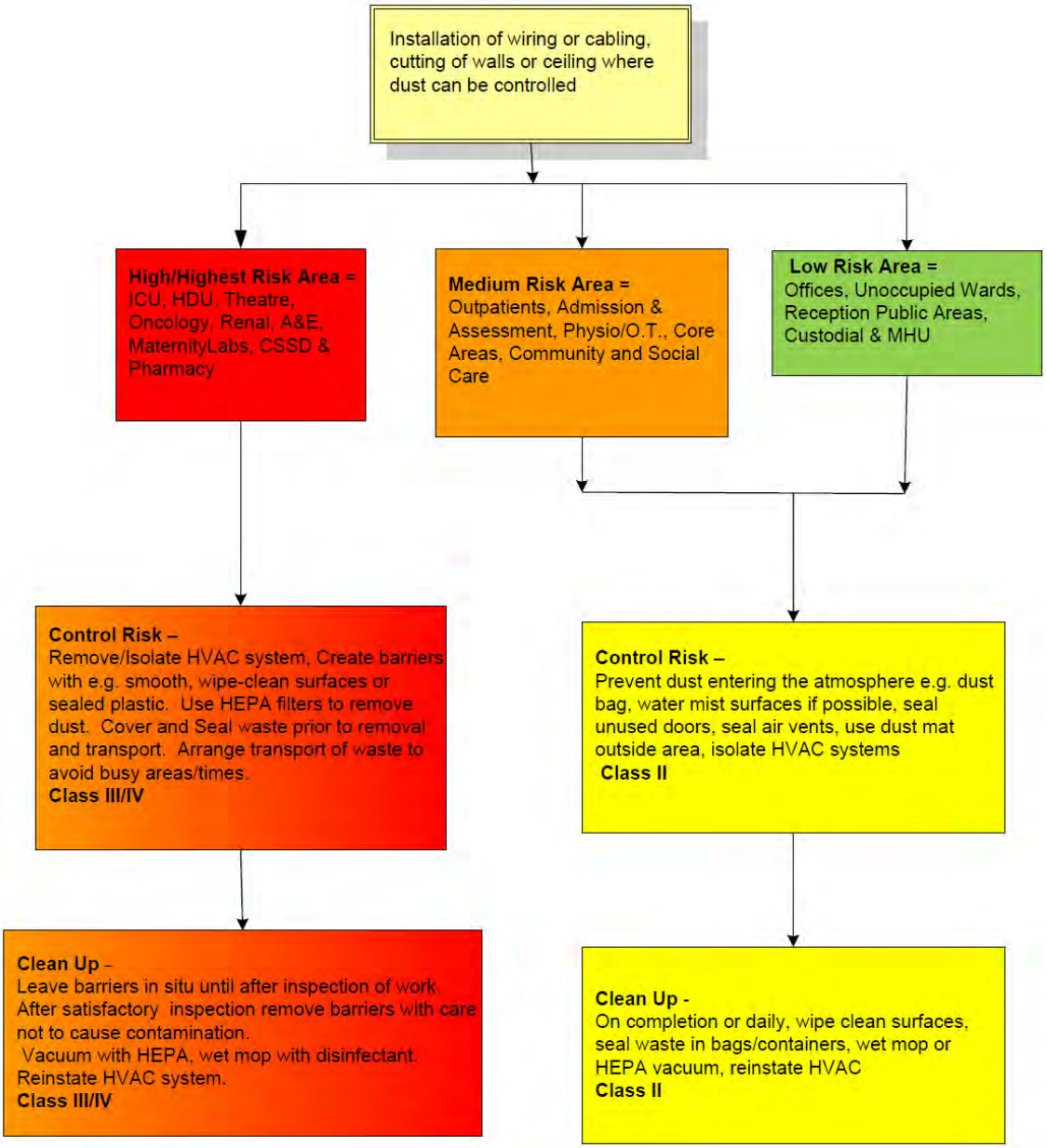
Appendix 4

Minor Works and Small Repairs



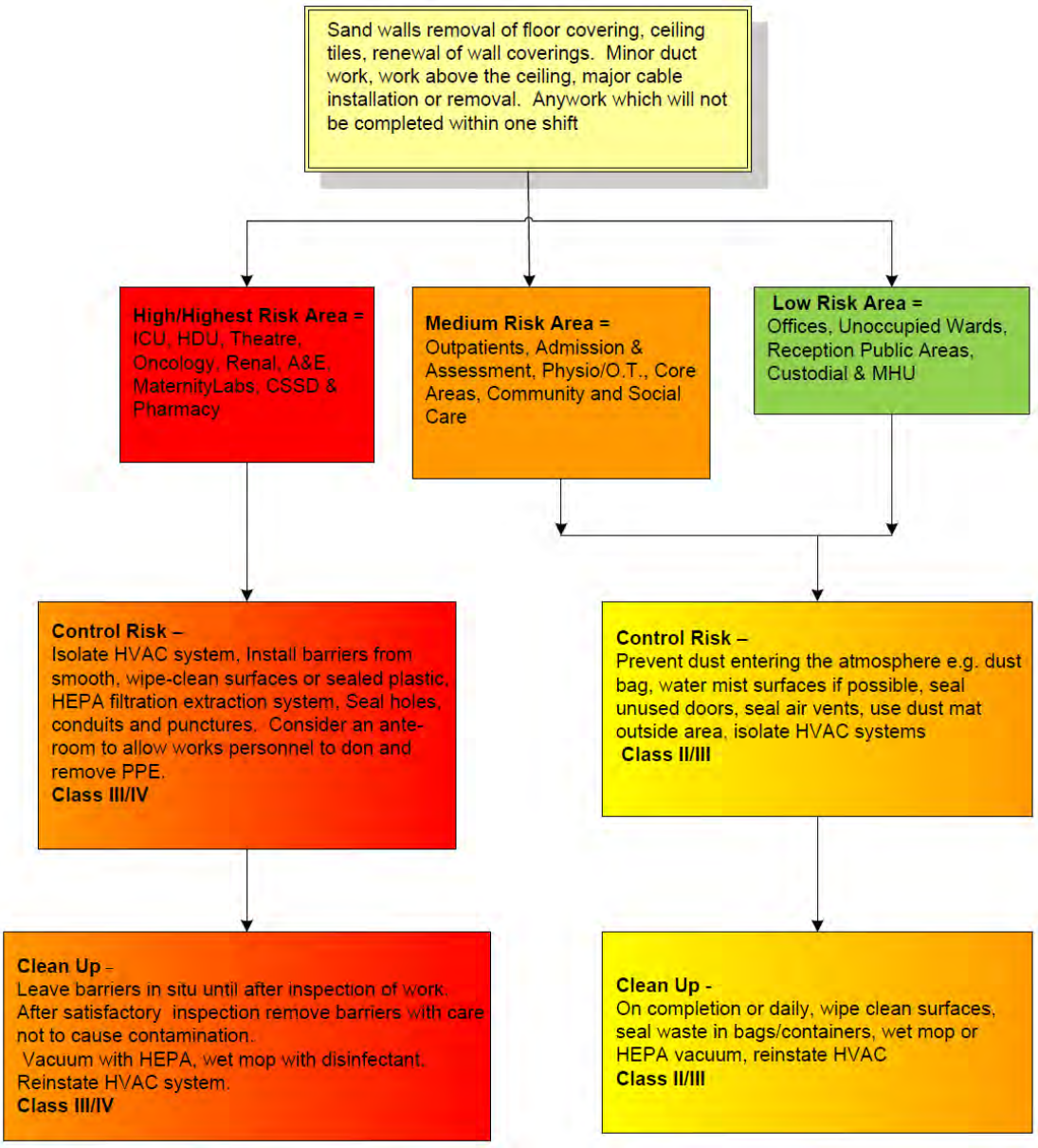
Appendix 5

Small Scale Work



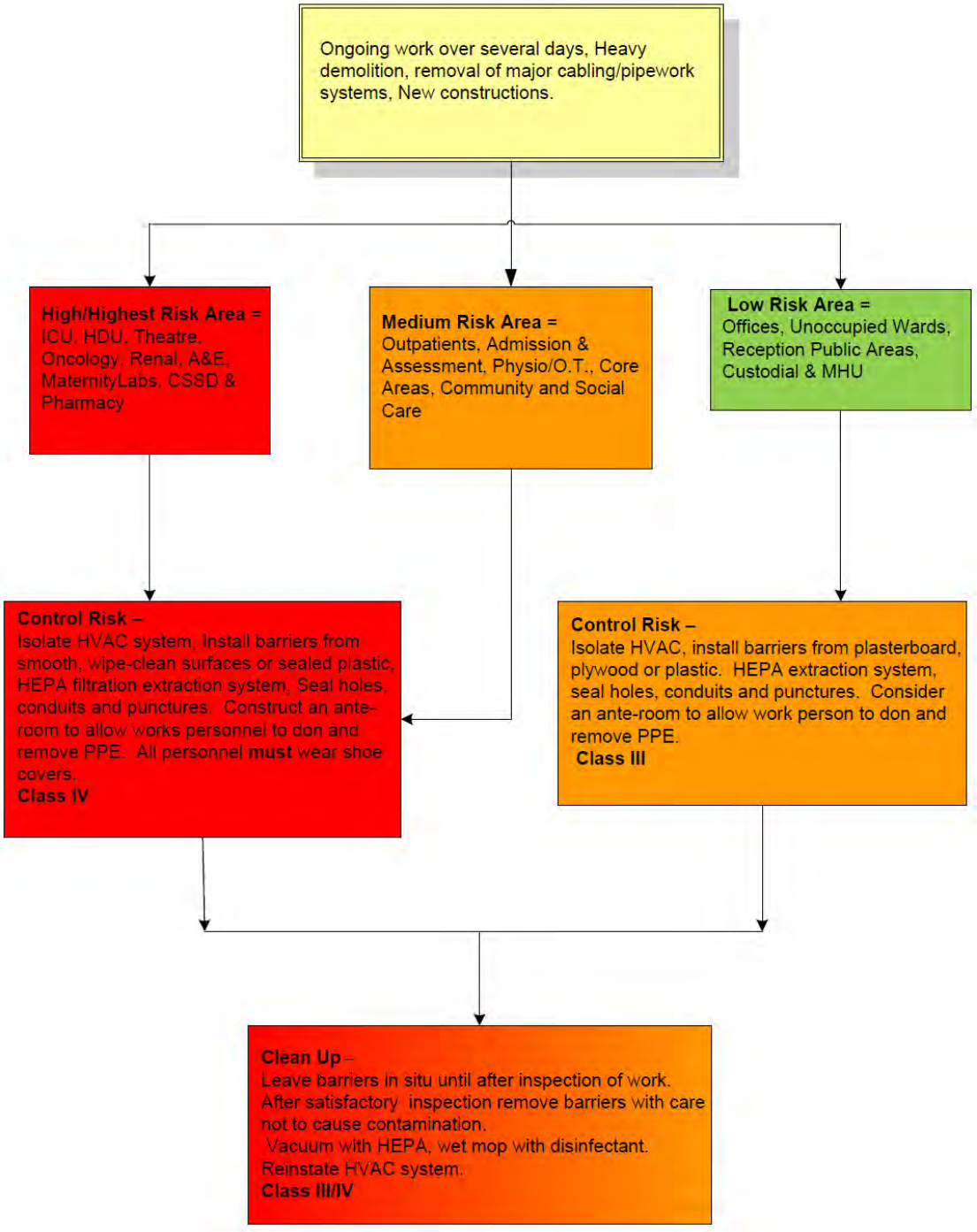
Appendix 6

Demolition work or removal of fixed structures or work where moderate-high level dust expected



Appendix 7

Major demolition work and construction



Initial Briefing Stage

Project particulars and checklists for Development Stage 1

Initial brief and proposed site for development HAI–SCRIBE Sign off		
HAI-SCRIBE Name of Project		
Name of Establishment		National allocated number
HAI-SCRIBE Review Team		
Completed By (Print Name)		Date
Signature(s)		Date
Stage 1:		
Additional Notes:		

Development Stage 1: Initial Brief and proposed Site for development: Identification of hazards, associated risks and control measures		
1.a	Brief description of the proposed development project and the planned development site	
1.b	Identify any potential hazards associated with the design and/or proposed site.	
1.c	Identify any risk associated with the hazards above	
1.d	Outline the control measures that require to be implemented to eliminate or mitigate the identified risks. Ensure these are entered on the project risk register.	
	Control Measures	
1.e	It has been recognised that control measures identified to address the project risk may have unintended consequences e.g. closure of windows can lead to increased temperatures in some areas. Such issues should be considered at this point, they should be noted and action to address these taken	
	Potential Problems	
	Control Measures	
1.f	Actions to be addressed	
By		Deadline

Development Stage 1 Initial Brief and proposed site for development: Checklist to ensure all aspects have been addressed		
1.1	Is contaminated land an issue? e.g. asbestos, oils and heavy metals. (Refer to the Contaminated Land Register) Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
1.2	Is there a locally recognised increased risk of contamination or infection e.g. cryptosporidium? If yes give details. Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
1.3	Are there industries or other sources in the neighbourhood which may present a risk of infection or pollution e.g. animal by-products processing plant? If yes give details Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
1.4	If there are any industries or other sources identified in question 1.3 above, will they affect the designed operation of the healthcare system? Consider the planned function of the design as well as issues such as: Ventilation Opening of doors and windows Water systems etc. Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		

Development Stage 1: Initial Brief and proposed site for development: Checklist to ensure all aspects have been addressed (continued)		
1.5	Are there construction/demolition works programmed in the neighbourhood which may present a risk of pollution or infection (including fungal infection)? Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
1.6	Are there cooling towers in the neighbourhood which may present a risk of *Legionella* infection? Consider also air handling units, water pipes etc. Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
1.7	Does the topography of the site in relation to the surrounding area and the prevailing wind direction present any HAI risk e.g. from entrainment of plumes containing *Legionella*? Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
1.9	Will the proposed development impact on the surrounding area in any way which may present potential for infection risk? Consider possible restrictions being applied to the operation of the proposed facility e.g. Facilities Management routes Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		

Development Stage 1 Initial Brief and proposed site for development: Checklist to ensure all aspects have been addressed (continued)		
1.10	Will lack of space limit the proposed development and any future expansion or change of use of the facility? Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
1.11	Has a demolition/refurbishment asbestos survey been carried out? Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
1.12	Has consideration been given to the projected lifespan of the facility and its impact on planning and development?	Yes ☐ No ☐ N/A ☐
Comments		
Additional notes - Stage 1		

Development Stage 1: HAI-SCRIBE applied to the initial brief and proposed site for development				
Certification that the following documents have been accessed and the contents discussed and addressed at the Infection Control and Patient Protection Meeting held on				
Venue		Date		
'Healthcare Associated Infection System for Controlling Risk in the Built Environment' *'HAI-SCRIBE' Implementation Strategy: Scottish Health Facilities Note (SHFN) 30: Part B*				
Declaration: We hereby certify that we have co-operated in the application of and where applicable to the aforesaid documentation.				
Present				
Print name	Signature	Company	Telephone Numbers	Email address

Design and Planning Stage

Project particulars and checklists for Development Stage 2

Development stage 2 : Design and planning HAI-SCRIBE Sign-off		
HAI-SCRIBE Name of Project		
Name of Establishment		National allocated number
HAI-SCRIBE Review Team		
HAI – SCRIBE Sign Off		
Completed by (Print name)		Date
Signature(s)		Date
Stage 2		
Additional notes		

Development Stage 2: Design and Planning Checklist to ensure all aspects have been addressed		
2.a	Brief description of the work being undertaken.	
2.b	Identify any potential hazards associated with this work.	
2.c	Identify any risk associated with the hazards identified above	
2.d	Outline the control measures that require to be implemented to eliminate or mitigate the identified risks. Ensure these are entered on the project risk register.	
	Control Measures	
2.e	It has been recognised that control measures identified to address the project risk may have unintended consequences e.g. closure of windows can lead to increased temperatures in some areas. Such issues should be considered at this point, they should be noted and action to address these taken	
	Potential Problems	
	Control Measures	
2.f	Actions to be addressed	

By	Deadline

	Development Stage 2: Design and Planning **General overview**	
2.1	In order to minimise the risk of HAI contamination is there separation of dirty areas from clean areas? Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
2.2	Are the food preparation areas (including ward kitchens) and distribution systems fit for purpose and complying with current food safety and hygiene standards? Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
2.3	Are waste management facilities and systems robust and fit for purpose and in compliance with the Waste (Scotland) Regulations? Consider: Local and central storage Systems for handling and compaction of waste Systems for segregation and security of waste (especially waste generated from healthcare requiring specialist treatment / disposal) to avoid mixing with other waste and recyclates. Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		

Development Stage 2: Design and Planning General overview (continued)		
2.4	Are there satisfactory arrangements for effective management of laundry facilities? Consider: Local and central storage Systems for movement of laundry to central storage Systems for handling laundry Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
2.5	Are there sufficient facilities and space for the cleaning and storage of equipment used by hotel services staff? Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
2.6	Are staff changing and showering facilities suitably sited and readily accessible for use, particularly in the event of contamination incidents? Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
2.7	Is the space around beds for inpatients, day case and recovery spaces in accordance with current relevant NHSScotland guidance?	Yes ☐ No ☐ N/A ☐
Comments		

Development Stage 2: Design and Planning General overview (continued)		
2.8	Are there sufficient single rooms to accommodate patients known to be an infection or potential infection risk?	Yes ☐ No ☐ N/A ☐
Comments		
2.9	Are all surfaces, fittings, fixtures and furnishings designed for easy cleaning?	Yes ☐ No ☐ N/A ☐
Comments		
2.10	Are soft furnishings covered in an impervious material in all clinical and associated areas, and are curtains able to withstand washing at disinfection temperatures?	Yes ☐ No ☐ N/A ☐
Comments		
2.11 P	Is the bathroom / shower / toilet accommodation sufficient and conveniently accessible, with toilet facilities no more than 12m from the bed area?	Yes ☐ No ☐ N/A ☐
Comments		
2.12 D	Are the bathroom/shower/toilet facilities easy to clean?	Yes ☐ No ☐ N/A ☐
Comments		
2.13	Where required are there sufficient en-suite single rooms with negative/positive pressure ventilation to minimise risk of infection spread from patients who are a known or potential infection risk?	Yes ☐ No ☐ N/A ☐
Comments		

NB: In the above and following Table “D” refers to “Design” and “P” refers to “Planning”

Development Stage 2: Design and Planning: Provision of hand-wash basins, liquid soap dispensers, paper towels and alcohol rub dispensers		
2.14	Does each single room have clinical hand-wash basin, liquid soap dispenser, paper towels, and alcohol rub dispenser in addition to the hand-wash basin in the en-suite facility?	Yes ☐ No ☐ N/A ☐
Comments		
2.15	Do intensive care and high dependency units have sufficient clinical hand-wash basins, liquid soap dispensers, paper towels, and alcohol rub dispensers conveniently accessible to ensure the practice of good hand hygiene? *An assessment should be made, however, to ensure that there is not an over-provision of hand-wash basins resulting in under-use.*	Yes ☐ No ☐ N/A ☐
Comments		
2.16	Is there provision of clinical hand-wash basins, liquid soap dispensers, paper towels, and alcohol rub dispensers in lower dependency settings like mental health units, acute, elderly and long term care settings appropriate to the situation with a ratio of 1 basin/dispenser to 4–6 beds?	Yes ☐ No ☐ N/A ☐
Comments		
2.17	Do out-patient areas and primary care settings have a clinical hand-wash basin close to where clinical procedures are carried out?	Yes ☐ No ☐ N/A ☐
Comments		
2.18	Do all toilets have a hand-wash basin, liquid soap dispenser and paper towels?	Yes ☐ No ☐ N/A ☐
Comments		
2.19	Are all clinical hand-wash basins exclusively for hand hygiene purposes?	Yes ☐ No ☐ N/A ☐
Comments		

Development Stage 2: Design and Planning: Provision of hand-wash basins, liquid soap dispensers, paper towels and alcohol rub dispensers (continued)		
2.20	Does each clinical hand-wash basin have wall mounted liquid soap dispenser, paper towel dispenser?	Yes ☐ No ☐ N/A ☐
Comments		
2.21 D	Does each clinical hand-wash basin satisfy the requirement not to be fitted with a plug?	Yes ☐ No ☐ N/A ☐
Comments		
2.22 D	Are elbow-operated or other non-touch mixer taps provided in clinical areas?	Yes ☐ No ☐ N/A ☐
Comments		
2.23 D	Does each hand-wash basin have a waterproof splash back surface?	Yes ☐ No ☐ N/A ☐
Comments		
2.24 D	Is each hand-wash basin provided with an appropriate waste bin for used hand towels?	Yes ☐ No ☐ N/A ☐
Comments		
Provision of facilities for Decontamination LDU		
2.25 D	Are separate, appropriately sized sinks provided locally, where required, for decontamination? (The sinks should be large enough to immerse the largest piece of equipment and there should be twin sinks, one for washing and one for rinsing. A clinical hand-wash basin should be provided close to the twin sinks).	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐

Comments

Development Stage 2: Design and Planning: Provision of facilities for Decontamination LDU (continued)		
2.26 P	Are appropriate decontamination facilities provided centrally for sterilisation of specialist equipment?	Yes ☐ No ☐ N/A ☐
Comments		
2.27 P	Is there adequate provision in terms of transport, storage, etc. to ensure separation of clean and used equipment and to prevent any risk of contamination of cleaned equipment?	Yes ☐ No ☐ N/A ☐
Comments		
2.28 P	Does the system in operation comply with the current guidance on decontamination facilities and procedures?	Yes ☐ No ☐ N/A ☐
Comments		
	Storage	
2.29 P	Is there suitable and sufficient storage provided in each area of the healthcare facility for the following if required patients' clothes and possessions, domestic cleaning equipment and laundry, large pieces of equipment e.g. beds, mattresses, hoists, wheelchairs, trolleys, and other equipment including medical devices, wound care, and intravenous infusion equipment, consumables etc?	Yes ☐ No ☐ N/A ☐
Comments		
2.30 P	Is there separate, suitable storage for contaminated material and clean material to prevent risk of contamination?	Yes ☐ No ☐ N/A ☐
Comments		

Development Stage 2: Design and Planning: Engineering services (Ventilation)		
2.31 P	Are heat emitters, including low surface temperature radiators, designed, installed and maintained in a manner that prevents build up of dust and contaminants and are they easy to clean?	Yes ☐ No ☐ N/A ☐
Comments		
2.32 D	Is the ventilation system designed in accordance with the requirements of SHTM 03-01 'Ventilation in Healthcare Premises'?	Yes ☐ No ☐ N/A ☐
Comments		
2.33 D	Is the ventilation system designed so that it does not contribute to the spread of infection within the healthcare facility? *(Ventilation should dilute airborne contamination by removing contaminated air from the room or immediate patient vicinity and replacing it with clean air from the outside or from low-risk areas within the healthcare facility.)*	Yes ☐ No ☐ N/A ☐
Comments		
2.34 D	Are ventilation system components e.g. air handling, ventilation ductwork, grilles and diffusers designed to allow them to be easily cleaned?	Yes ☐ No ☐ N/A ☐
Comments		
2.35 P & D	Are ventilation discharges located a suitable distance from intakes to prevent risk of contamination?	Yes ☐ No ☐ N/A ☐
Comments		

2.36 P	Does the design and operation of re-circulation of air systems take account of dilution of contaminates and the space to be served? *(NB: Recirculation would only arise in UCV theatres)*	Yes ☐ No ☐ N/A ☐
Comments		
Development Stage 2: Design and Planning: Engineering services (Ventilation) (continued)		
2.37	Is the ventilation of theatres and isolation rooms in accordance with current guidance?	Yes ☐ No ☐ N/A ☐
Comments		
2.38	Do means of control of pathogens consider whether dilution or entrainment is the more appropriate for particular situations?	Yes ☐ No ☐ N/A ☐
Comments		
2.39	Where ventilation systems are used for removal of pathogens, does their design and operation take account of infection risk associated with maintenance of the system?	Yes ☐ No ☐ N/A ☐
Comments		
2.40	Are specialised ventilation systems such as fume cupboards installed and maintained in accordance with manufacturers' instructions?	Yes ☐ No ☐ N/A ☐
Comments		
Engineering services (Lighting)		
2.41 D	Is the lighting designed so that lamps can be easily cleaned with minimal opportunity for dust to collect?	Yes ☐ No ☐ N/A ☐
Comments		
Engineering services (Water services)		

2.42 D	Are water systems designed, installed and maintained in accordance with current guidance?	Yes ☐ No ☐ N/A ☐
Comments		

Development Stage 2: Design and Planning: Engineering services (Water Services) (continued)		
2.43	Are facilities available to enable special interventions for *Legionella*?	Yes ☐ No ☐ N/A ☐
Comments		
2.44	Is the drainage system design, especially within the healthcare facility building, fit for purpose with access points for maintenance carefully sited to minimise HAI risk?	Yes ☐ No ☐ N/A ☐
Comments		
2.45	Are surface mounted services avoided and services concealed with sufficient access points appropriately sited to ease maintenance and cleaning? (These services would include water, drainage, heating, medical gas, wiring, alarm system, telecoms, equipment such as light fittings, bedhead services, heat emitters.)	Yes ☐ No ☐ N/A ☐
Comments		
Estates services (Pest control)		
2.46	Is the concealed service ducting designed, installed and maintained to minimise risk of pest infestation?	Yes ☐ No ☐ N/A ☐
Comments		
Estates services (Maintenance access)		
2.47	Does the design and build of the facility allow programmed maintenance of the fabric to ensure the integrity of the structure and particularly the	

	prevention of water ingress and leaks and prevention of pigeon and other bird access?	Yes ☐ No ☐ N/A ☐
Comments		

Development Stage 2: Design and Planning
Additional notes – Stage 2

Development stage 2: **HAI-SCRIBE applied to the planning and design stage of the development.**			
Certification that the following documents have been accessed and the contents discussed and addressed at the Infection Control and Patient Protection Meeting held on			
Venue		Date	
'Healthcare Associated Infection System for Controlling Risk in the Built Environment' *('HAI-SCRIBE) Implementation Strategy Scottish Health Facilities Note (SHFN) 30: Part B).*			
Declaration: We hereby certify that we have co-operated in the application of and where applicable to the aforesaid documentation.			
Present			
Print name	Signature	Company	Telephone Numbers	Email address

Construction and refurbishment Stage

Project particulars and checklists for Development Stage 3

Development stage 3: Construction and refurbishment work: Checklist to ensure all aspects have been addressed		
HAI-SCRIBE Name of Project	Air Permeability Test	
Name of Establishment	Schiehallion, RHSC, GG&C	
National allocated number		
HAI-SCRIBE Review Team	Ian Powrie, Peter Moir, Clare Mitchell, Gillion Armstrong	
HAI-SCRIBE Sign Off	17/07/2015	
Completed By (Project Manager) (Print Name) Peter Moir		Date 17/07/2015
Signature Peter Moir		Date 17/07/2015
Stage 3		

Additional Notes

Air permeability – Tests method

1. Establish the volume of the isolation suite envelope as defined above.
2. Seal all supply and extract terminals.
4. Wedge all internal doors open.
5. Fit a temporary board seal and test fan in the lobby to corridor doorway.
6. Run the fan to maintain a positive test pressure of 20 Pascal for at least two minutes.
7. Measure the airflow rate of the fan.
8. Reverse the fan and run it to maintain a negative test pressure of 20 Pascal for at least two minutes.
9. Measure the airflow rate of the fan.
10. Average the two airflow readings obtained.
11. Calculate the leakage rate in l/s of air per m^3 of envelope volume. If the isolation suite envelope is correctly sealed the readings should be within 5% of each other.

*****Immuno-compromised patients who are identified as high-risk patients have the greatest risk of infection caused by airborne or waterborne micro-organisms. Patients in this subset include persons who are severely neutropenic for prolonged periods of time (ie an absolute neutrophil count [ANC] of ≤ 500 cells/mL), allogeneic HSCT patients, and those who have received the most intensive chemotherapy (e.g. childhood acute myelogneous leukaemia patients). Immuno-suppresive conditions identified as risk factors for construction-related nosocomial fungal infections include graft-versus-host disease requiring treatment; prolonged neutropenia or granulocytopenia because of cytoxic chemotherapy; prolonged use of antibiotics; and steroid therapy. Other risk factors for the development of aspergillosis include dialysis and mechanical ventilation, smoking and patient age, the very young and very old being at greater risk Grauhan and colleagues reported that the risk of a fungal infection increases in patients who exhibit three or more risk factors ($p<0.001$). **CCDR (2001)**

Development stage 3: HAI-SCRIBE applied to Construction and refurbishment work Prior to the commencement of work		
3.1.1	Brief description of the work being carried out.	**Air Permeability Validation**
3.1.2	Using the matrix above establish the type and extent of construction and refurbishment /repair work, patients at risk and level of control measures.	
	Type of work **Type 2**	
	Patient risk group **Risk III/IV**	
	Risk class **III/IV**	
3.1.3	Identify any potential hazards associated with this work.	**Patients dust displacement through corridor**
3.1.4	Identify any risk associated with the hazards identified above.	**Patients in adjoining rooms may be exposed to dust**
3.1.5	Outline the control measures that require to be implemented to eliminate or mitigate the identified risks. Ensure these are entered on the project risk register.	**As per III/IV**
	Control measures: **Ensure ward corridor cleared prior to work. Adjacent room and corridor doors closed.**	
3.1.6	It has been recognised that control measures identified to address the project risk may have unintended consequences e.g. closure of windows can lead to increased temperatures in some areas. Such issues should be considered at this point, they should be noted and action to address these taken.	**Doors may need to be opened to allow staff/patient access. Work will stop whilst adjacent doors open.**
	Potential problems: **Doors may require to be opened to allow patients/staff access**	
	Control measures: **Work to cease when doors open when fans blowing air onto corridor**	
3.1.7	Actions to be addressed: • **Schiehallion - If patients require isolation staff to place patient in a room not adjacent to work (Room 19) Ensure doors closed and isolation room pressures group at 10Pa** • **Schiehallion and Ward 4a – Corridor doors to be kept closed.** • **Schiehallion - Commence work – 09:30 , Clean - 12:00** • **Completion of Work – 13:30** • **Ward 4a – Commence work 09 30, Clean 2pm – 4 pm, Complete work 4pm.** • **Cleaning planned and will be carried out by contractors. (routine clinical clean in ward prior to work commencing)** • **This will be witnessed by Brookfield commissioning**	

By **19/07/2015**	Deadline **19/07/2015**

Development stage 3: In terms of infection risk confirmation that the following been addressed		
3.2.1	The population groups most susceptible to infection. Items to be considered: Adjacent rooms, wards and departments Relocation of susceptible patients Have these issues and actions to be taken been noted in actions to be addressed section?	Yes [X] No [ ] N/A [ ] Yes [X] No [ ] N/A [ ]
Comments: **see actions to be addressed page 33**		
3.2.2	The hours of operation of the construction work and the impact of this on the clinical area. Have these issues and actions to be taken been noted in actions to be addressed section?	Yes [X] No [ ] N/A [ ] Yes [X] No [ ] N/A [ ]
Comments: **see actions to be addressed page 33**		
3.2.3	Separation of construction and healthcare activities including delivery and supply routes, removal of waste and patient transfers. Have these issues and actions to be taken been noted in actions to be addressed section?	Yes [ ] No [ ] N/A [X] Yes [ ] No [ ] N/A [X]
Comments		
3.2.4	The construction of temporary barriers and/or sealing of doors and windows to minimise contamination of the environment by dust and potentially infectious particles created during the construction works. Have these issues and actions to be taken been noted in actions to be addressed section?	Yes [ ] No [ ] N/A [X] Yes [ ] No [ ] N/A [X]
Comments		

Development stage 3: In terms of infection risk confirmation that the following been addressed (continued)						
3.2.5	Airflow patterns including:					
	Internal and external ventilation systems	Yes	x	No		N/A	
	Exhaust ventilation	Yes		No		N/A	x
	Sealing of doors and windows	Yes		No		N/A	x
	Oxygen and Suction points	Yes		No		N/A	x
	Air handlers, coils, fans and grilles	Yes	x	No		N/A	
	Have these issues and actions to be taken been noted in actions to be addressed section?	Yes		No		N/A	
Comments							
3.2.6	Work with sinks or plumbing which could give rise to aerosol water droplets in high risk areas.	Yes		No		N/A	x
	Have these issues and actions to be taken been noted in actions to be addressed section?	Yes		No		N/A	x
Comments							
3.2.7	Impact on stock storage areas including:					
	Sterile and non-sterile items	Yes		No		N/A	x
	Patient care equipment	Yes		No		N/A	x
	Medications	Yes		No		N/A	x
	Medical records and documentation	Yes		No		N/A	x
	Linen and waste facilities including sharps	Yes		No		N/A	x
	Have these issues and actions to be taken been noted in actions to be addressed section?	Yes		No		N/A	x
Comments							

Development stage 3: During the construction phase have the following been addressed?		
3.3.1	Where external work is being carried out: Prevention of insect and rodent entry and prevention of weather/water entry to internal areas during the construction phase. Have these issues and actions to be taken been noted in actions to be addressed section?	Yes [ ] No [ ] N/A [x] Yes [ ] No [ ] N/A [x]
Comments		
3.3.2	Cleaning of site and adjacent areas both during the construction phase and prior to handover. Have these issues and actions to be taken been noted in actions to be addressed section?	Yes [x] No [ ] N/A [ ] Yes [x] No [ ] N/A [ ]
Comments: **see actions to be addressed page 33**		
3.3.3	Enforcement of control and reporting system to ensure compliance with above issues. Have these issues and actions to be taken been noted in actions to be addressed section?	Yes [x] No [ ] N/A [ ] Yes [x] No [ ] N/A [ ]
Comments: **see actions to be addressed page 33**		

Additional notes - Stage 3

HAI scribe to be distributed to

- **Brookfield Principal Contractor**
- **Estates (Ian Powrie)**
- **Project Team (Peter Moir)**
- **Head Facilities Management (Mary Ann Kane)**
- **Clinical Team (Anne Harkness, Lynne Robertson)**

Development stage 3: HAI-SCRIBE applied to the construction / redevelopment phase				
Certification that the following documents have been accessed and the contents discussed and addressed at the Infection Control and Patient Protection Meeting held on				
Venue		Date		
'Healthcare Associated Infection System for Controlling Risk in the Built Environment' *('HAI-SCRIBE) Implementation Strategy Scottish Health Facilities Note (SHFN) 30: Part B).*				
Declaration: We hereby certify that we have co-operated in the application of and where applicable to the aforesaid documentation.				
Present				
Print name	Signature	Company	Telephone Numbers	Email address

Development stage 4 – Review of completed project		
HAI-SCRIBE Name of Project		
Name of Establishment		National allocated number
HAI-SCRIBE Review Team		
HAI – SCRIBE Sign Off		
Completed by (Print name)	Date	
Signature(s)	Date	
Stage 4		
Additional notes		

Pre-handover check, ongoing maintenance & feedback Stage:

Development Stage 4: Pre-handover check, ongoing maintenance and feed-back: General overview		
4.1	Is the space around beds in accordance with current NHSScotland guidance?	Yes ☐ No ☐ N/A ☐
4.2	Are there sufficient single rooms to accommodate patients known to be an infection of potential infection risk?	Yes ☐ No ☐ N/A ☐
4.3	Are all surfaces, fittings, fixtures and furnishings designed for easy cleaning?	Yes ☐ No ☐ N/A ☐
4.4	Are soft furnishings covered in an impervious material in all clinical and associated areas, and are curtains able to withstand washing at disinfection temperatures?	Yes ☐ No ☐ N/A ☐
4.5	Is the bathroom / shower / toilet accommodation sufficient and conveniently accessible, with toilet facilities no more than 12m from the bed area?	Yes ☐ No ☐ N/A ☐
4.6	Are the bathroom/shower/toilet facilities easy to clean?	Yes ☐ No ☐ N/A ☐
4.7	Where required are there sufficient en-suite single rooms with negative/positive pressure ventilation to minimise risk of infection spread from patients who are a known or potential infection risk?	Yes ☐ No ☐ N/A ☐
Provision of hand-wash basins, liquid soap dispensers, paper towels and alcohol rub dispensers		
4.8	Does each single room have a clinical hand-wash basin, liquid soap dispenser, paper towels, and alcohol rub dispenser over and above the hand-wash basin in the en-suite facility?	Yes ☐ No ☐ N/A ☐
4.9	Do intensive care and high dependency units have sufficient clinical hand wash basins, liquid soap dispensers, paper towels, and alcohol rub dispensers conveniently accessible to ensure the practice of good hand hygiene? An assessment should be made, however, to ensure that there is not an over-provision of hand-wash basins resulting in under-use.	Yes ☐ No ☐ N/A ☐
4.10	Is there provision of clinical hand-wash basins, liquid soap dispensers, paper towels, and alcohol rub dispensers in lower dependency settings like mental health units, acute, elderly and long term care settings appropriate to the situation with a ratio of 1 basin/dispenser to 4–6 beds?	Yes ☐ No ☐ N/A ☐
4.11	Do out-patient areas and primary care settings have a clinical hand-wash basin close to where clinical procedures are carried out?	Yes ☐ No ☐ N/A ☐

Development Stage 4

Development Stage 4: Pre-handover check, ongoing maintenance and feed-back: Provision of hand-wash basins, liquid soap dispensers, paper towels and alcohol rub dispensers (continued)		
4.12	Do all toilets have a hand-wash basin, liquid soap dispenser and paper towels?	Yes ☐ No ☐ N/A ☐
4.13	Are all clinical hand-wash basins exclusively for hand hygiene purposes?	Yes ☐ No ☐ N/A ☐
4.14	Does each clinical hand-wash basin have wall mounted liquid soap dispenser, paper towel dispenser?	Yes ☐ No ☐ N/A ☐
4.15	Does each clinical hand-wash basin satisfy the requirement not to be fitted with a plug?	Yes ☐ No ☐ N/A ☐
4.16	Are elbow-operated or other non-touch mixer taps provided in clinical areas?	Yes ☐ No ☐ N/A ☐
4.17	Does each hand-wash basin have a waterproof splash back surface?	Yes ☐ No ☐ N/A ☐
4.18	Is each hand-wash basin provided with an appropriate waste bin for used hand towels?	Yes ☐ No ☐ N/A ☐
	Provision of facilities for Decontamination	
4.19	Are separate, appropriately sized sinks provided locally, where required, for decontamination? *(The sinks should be large enough to immerse the largest piece of equipment and there should be twin sinks, one for washing and one for rinsing. A clinical hand-wash basin should be provided close to the twin sinks).*	Yes ☐ No ☐ N/A ☐
4.20	Are appropriate decontamination facilities provided centrally for sterilisation of specialist equipment?	Yes ☐ No ☐ N/A ☐
4.21	Is there adequate provision in terms of transport, storage, etc. to ensure separation of clean and used equipment and to prevent any risk of contamination of cleaned equipment?	Yes ☐ No ☐ N/A ☐
4.22	Does the system in operation comply with the current guidance on decontamination facilities and procedures?	Yes ☐ No ☐ N/A ☐
	Storage	
4.23	Is there suitable and sufficient storage provided in each area of the healthcare facility for the following if required patients' clothes and possessions, domestic cleaning equipment and laundry, large pieces of	Yes ☐ No ☐ N/A ☐

	equipment e.g. beds, mattresses, hoists, wheelchairs, trolleys, and other equipment including medical devices, wound care, and intravenous infusion equipment, consumables etc?	
Development Stage 4: Pre-handover check, ongoing maintenance and feed-back: Storage (continued)		
4.24	Is there separate, suitable storage for contaminated material and clean material to prevent risk of contamination?	Yes ☐ No ☐ N/A ☐
Engineering services (Ventilation)		
4.25	Are heat emitters, including low surface temperature radiators, designed, installed and maintained in a manner that prevents build up of dust and contaminants and are they easy to clean?	Yes ☐ No ☐ N/A ☐
4.26	Is the ventilation system designed in accordance with the requirements of SHTM 03-01 'Ventilation in Healthcare Premises'?	Yes ☐ No ☐ N/A ☐
4.27	Is the ventilation system designed so that it does not contribute to the spread of infection within the healthcare facility? *(Ventilation should dilute airborne contamination by removing contaminated air from the room or immediate patient vicinity and replacing it with clean air from the outside or from low-risk areas within the healthcare facility.)*	Yes ☐ No ☐ N/A ☐
4.28	Are the ventilation system components e.g. air handling, ventilation ductwork, grilles and diffusers designed to allow them to be easily cleaned?	Yes ☐ No ☐ N/A ☐
4.29	Are ventilation discharges located a suitable distance from intakes to prevent risk of contamination?	Yes ☐ No ☐ N/A ☐
4.30	Does the design and operation of re-circulation of air systems take account of dilution of contaminates and the space to be served? *(NB: Recirculation would only arise in UCV theatres)*	Yes ☐ No ☐ N/A ☐
4.31	Is the ventilation of theatres and isolation rooms in accordance with current guidance SHTM 03-01, SHPN 04-01 Supplement 1 and the Scottish Hospital Infection Manual)?	Yes ☐ No ☐ N/A ☐
4.32	Do means of control of pathogens consider whether dilution or entrainment is the more appropriate for particular situations?	Yes ☐ No ☐ N/A ☐
4.33	Where ventilation systems are used for removal of pathogens, does their design and operation take account of infection risk associated with maintenance of the system?	Yes ☐ No ☐ N/A ☐

4.34	Are specialised ventilation systems such as fume cupboards installed and maintained in accordance with manufacturers' instructions?	Yes ☐ No ☐ N/A ☐

Development Stage 4: Pre-handover check, ongoing maintenance and feed-back: Engineering services (Lighting)		
4.35	Is the lighting designed so that lamps can be easily cleaned with minimal opportunity for dust to collect?	Yes ☐ No ☐ N/A ☐
Engineering services (Vacuum Units)		
4.36	Are vacuum-controlled units with overflow protection devices for mechanical suction used to avoid contaminating the system with aspirated body fluid?	Yes ☐ No ☐ N/A ☐
Engineering services (Water services)		
4.37	Are water systems designed, installed and maintained in accordance with current guidance? (SHTM 04-01 series – Water safety)	Yes ☐ No ☐ N/A ☐
4.38	Are facilities available to enable special interventions for *Legionella* such as chlorination/chlorine dioxide, copper/silver ionisation treatment of water?	Yes ☐ No ☐ N/A ☐
4.39	Is the drainage system design, especially within the healthcare facility building, fit for purpose with access points for maintenance carefully sited to minimise HAI risk?	Yes ☐ No ☐ N/A ☐
4.40	Are surface mounted services avoided and services concealed with sufficient access points appropriately sited to ease maintenance and cleaning? (These services would include water, drainage, heating, medical gas, wiring, alarm system, telecoms, equipment such as light fittings, bedhead services, heat emitters.)	Yes ☐ No ☐ N/A ☐
Estates services (Pest control)		
4.41	Is the concealed service ducting designed, installed and maintained to minimise risk of pest infestation?	Yes ☐ No ☐ N/A ☐
Estates services (Maintenance access)		
4.42	Does the design and build of the facility allow programmed maintenance of the fabric to ensure the integrity of the structure and particularly the prevention of water ingress and leaks and prevention of pigeon and other bird access?	Yes ☐ No ☐ N/A ☐

Additional notes - Stage 4

From: Alasdair Fernie [redacted] on behalf of Alasdair Fernie
Sent: 03 September 2015 19:02
To: Loudon, David
Subject: Re: Royal Hospital for Children

David

We have constructed the rooms to the correct specification and have tested the rooms on both pressure and air leakage. These have showed to have passed at this time.

For clarity. We will do anything to get this area sorted for the board. It's not a cost issue its more making sure we have an agreed way forward and understand exactly what the infection control requirements are university that which have been provided to date. The instruction (formal) is not important at this time but more that we can get these rooms I the right place to suit the requirements that the Board are now planning to use these rooms for.

We have to date worked under instruction from your team to magic joints and recently attended a smoke test that the team highlighted 2 small areas they wanted BM to seal. This has been completed. Further communication to our site team has requested further sealing above the MF ceiling which we can do but will put the rooms back out of availability.

A completely sealed room is not the am design or Constuction intent and so require guidance from the Board as to what is the definite requirement to make these rooms work.

I hope this clarifies the situation.

Can you confirm what is required as we can work together to resolve for the users.

Regards

Alasdair Fernie BSc (Hons) MRICS FCIOB
Project Director

Brookfield Multiplex Europe
[redacted]
Wwww.brookfieldmultiplex.com

On 3 Sep 2015, at 18:53, Loudon, David [redacted] wrote:

> Alasdair
>
> Following our discussion this evening, can I ask you to confirm that
> BM have constructed and commissioned all of the rooms in the Schiehallion Ward in full accordance with the specifications (including STHM) and drawing etc signed off by the Board and they are compliant.

Can I also confirm that BM will not undertake any further works to the rooms unless instructed by the Board.

I have a meeting tomorrow afternoon with the Medical Director, Chief Officer and possibly the Chief Executive and wish to be clear on the facts beforehand

Regards

David

David W Loudon MCIOB CBIFM MBA
Director of Facilities and Capital Planning
NSH Greater Glasgow & Clyde
****
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From: Barmanroy, Jackie [redacted] on behalf of Barmanroy, Jackie
Sent: 03 September 2015 11:14
To: Gillon Armstrong
Subject: RE: Air Permeability Validation July 2015 (3)

Great see you then.

Jackie Barmanroy
Senior Nurse Infection Control
New Office Accomodation Block
Queen Elizabeth University Hospital/Royal Hospital for Children
[redacted]

From: Gillon Armstrong [redacted]
Sent: 03 September 2015 10:51
To: Barmanroy, Jackie; Brattey, David
Cc: Mitchell, Clare; Forsyth, Graham
Subject: RE: Air Permeability Validation July 2015 (3)

Jackie,

Would 15:00 today suit?

David,

At Jackie?s request could you confirm your availability to attend a Hai-Scribe review meeting today at 15:00.

Regards

Gillon Armstrong
Section Manager - Construction

Brookfield Multiplex Europe
Site Office
Institute of Neurological Science
Queen Elizabeth University Hospital
1345 Govan Road
Glasgow, G51 4TF, United Kingdom
[redacted]
Web www.brookfieldmultiplex.com

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From: Barmanroy, Jackie [redacted]
Sent: 03 September 2015 09:45
To: Gillon Armstrong
Cc: Mitchell, Clare; Forsyth, Graham
Subject: RE: Air Permeability Validation July 2015 (3)

Morning Gillon,

No problem, I was about to contact you!
Can I ask you to contact estates to send a representative, perhaps David Brattey or Colin Purdon?
I?m in a meeting at 2pm, otherwise can make time to do this today. Tomorrow is also good for me but I realise you?ll want to get on with the work.

Kind regards,

Jackie.
Jackie Barmanroy
Senior Nurse Infection Control
New Office Accomodation Block
Queen Elizabeth University Hospital/Royal Hospital for Children
[redacted]

From: Gillon Armstrong [redacted]
Sent: 03 September 2015 09:08
To: Barmanroy, Jackie
Cc: Forsyth, Graham
Subject: RE: Air Permeability Validation July 2015 (3)

Jackie,

Please accept my apologies, I was under the impression that this Hai-Scribe was for all areas. Could we meet up and complete this exercise for all remaining areas?

Thanks

Gillon Armstrong
Section Manager - Construction

Brookfield MULTIPLEX BM

Brookfield Multiplex Europe
Site Office
Institute of Neurological Science
Queen Elizabeth University Hospital
1345 Govan Road
Glasgow, G51 4TF, United Kingdom
[redacted]
Web www.brookfieldmultiplex.com

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From: Barmanroy, Jackie [redacted]
Sent: 02 September 2015 16:20
To: Peters, Christine; Gillon Armstrong; McMullin, Linda
Subject: Air Permeability Validation July 2015 (3)
Importance: High

Good afternoon,

Please find attached the HAI Scribe done for permeability tests on level 4 and Schiehallion in the new children?s hospital.
Perhaps this could be used/adapted for ITU?

To be fair to the contractors I have since found out they thought this would cover all permeability testing throughout the build.

Please see stage 3 in the attached document.

Kind regards,

Jackie.

****
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SYSTEM HYGIENICS

SOUTHERN GENERAL HOSPITAL GLASGOW

POST CLEAN REPORT

7th September 2015

SYSTEM HYGIENICS
Chaucer Industrial Estate, Dittons Road, Polegate East Sussex, BN26 6JF
Tel: 01323 481170 Fax: 01323 483061

INDEX

	Page No.
Introduction	2
Photo log	3
Before and After Photographs	4
Certificate of Analysis	14
Certificate of Cleanliness	15

INTRODUCTION

The ventilation ductwork systems have been thoroughly internally cleaned as detailed in this report.

All cleaning has been carried out to B&ES Guide to Good Practice TR19 (2nd Edition) cleanliness verification standards whereby no more than 0.3g dust / m² duct surface may be found using the 15 litre/min Preferred Vacuum Test Method.

We have taken photographs from various locations before and after our works have taken place to demonstrate the hygiene condition of ventilation ductwork systems.

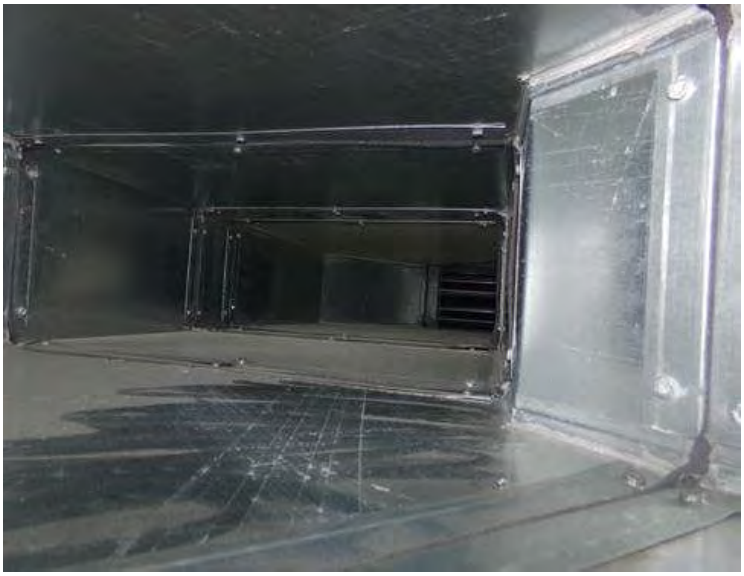
Signed [redacted]
Date 15th September 2015

Mr. Jeff Gardner
SALES ENGINEER

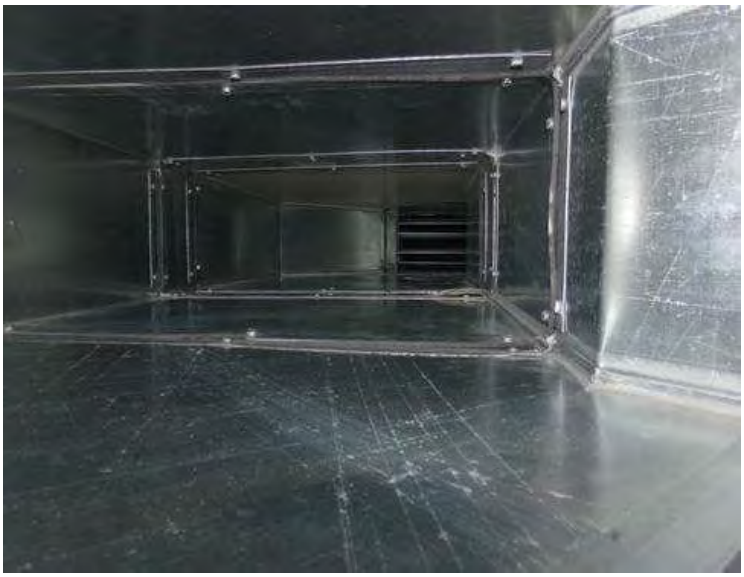
Email Address: [redacted]

[redacted]

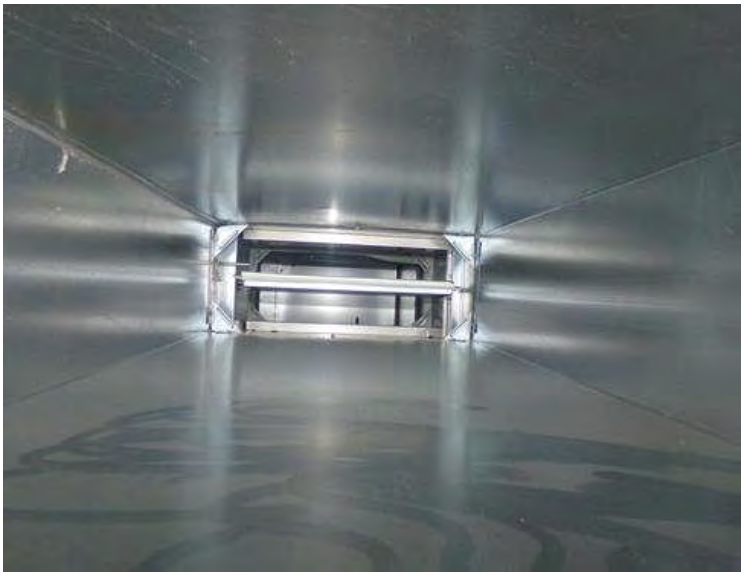
PHOTO LOG		
Locations: Location	**Before Clean**	**After Clean**
Level 4 – Supply duct	1	2
Level 4 – Supply duct	3	4
Level 4 – Supply duct	5	6
Level 4 – Supply duct	7	8
Level 4 – Supply duct	9	10
Level 4 – Supply duct	11	12
Level 4 – Supply duct	13	14
AHU 63 – Fresh air intake	15	16
AHU 64 – Filter chamber	17	18
AHU 63 – Fan chamber	19	20



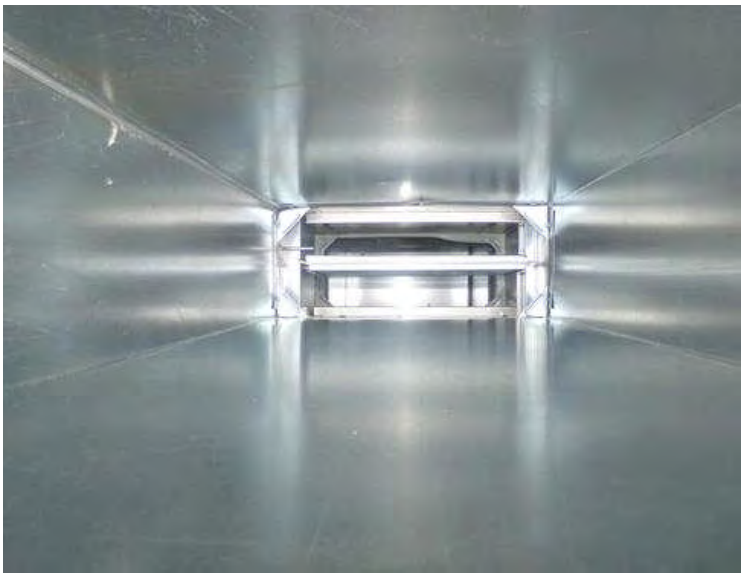
1. Level 4 – Supply duct – Before clean.



2. Level 4 – Supply duct – After clean.

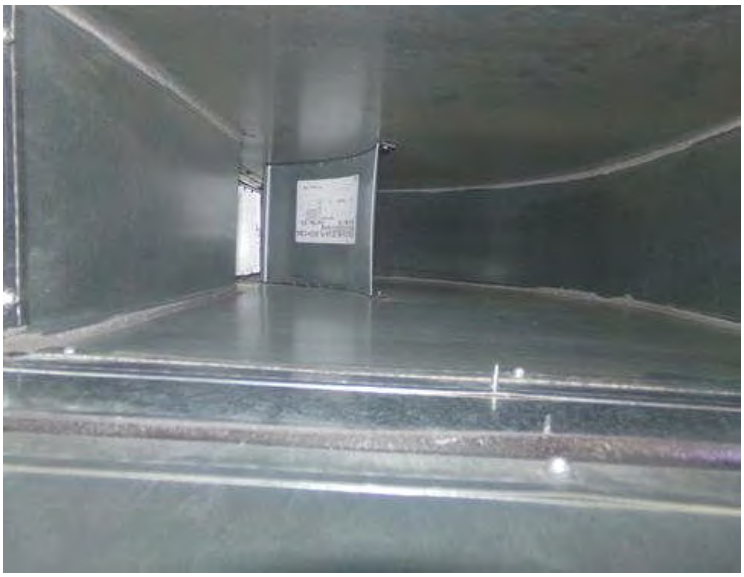


3. Level 4 – Supply duct – Before clean.



4. Level 4 – Supply duct – After clean.

5. Level 4 – Supply duct – Before clean.



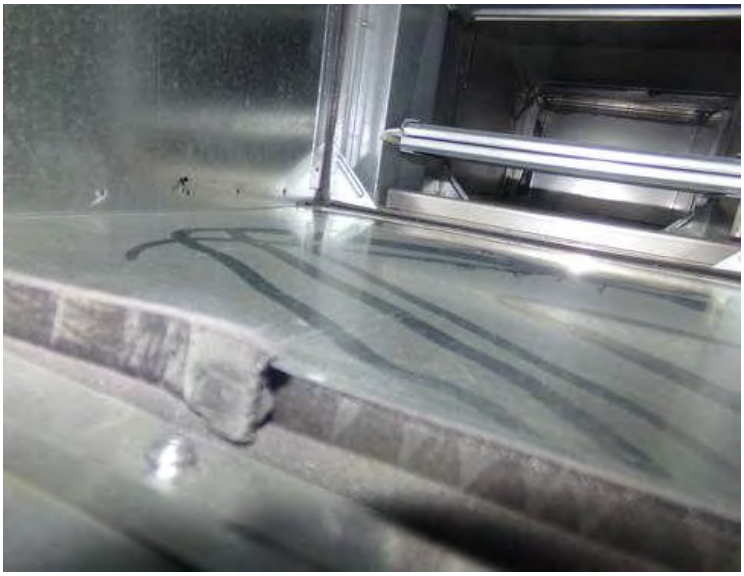
6. Level 4 – Supply duct – After clean.

7. Level 4 – Supply duct – Before clean.

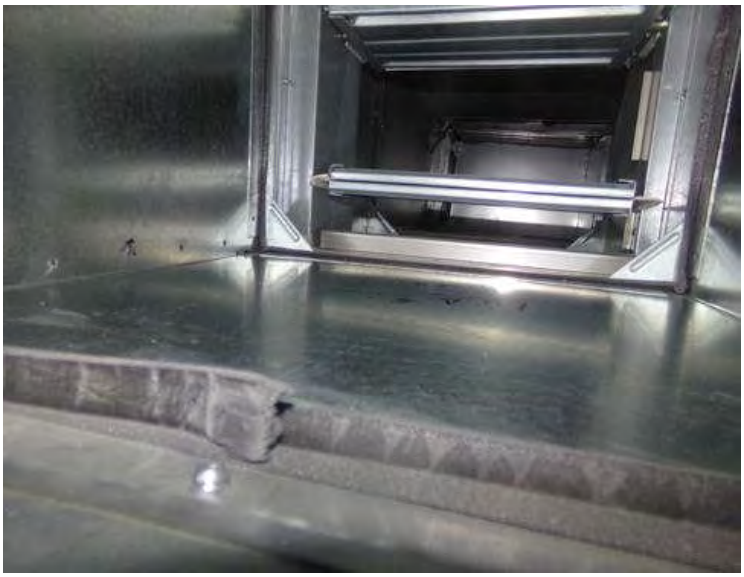
8. Level 4 – Supply duct – After clean.

9. Level 4 – Supply duct – Before Clean.

10. Level 4 – Supply duct – After Clean.



11. Level 4 – Supply duct – Before Clean.



12. Level 4 – Supply duct – After Clean.

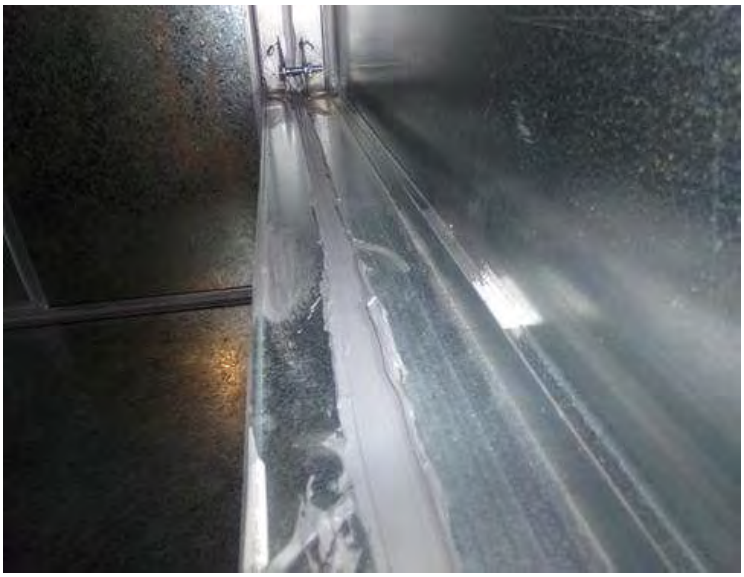
13. Level 4 – Supply duct – Before Clean.

14. Level 4 – Supply duct – After Clean.

15. AHU 63 – Fresh air intake – Before Clean.

16. AHU 63 – Fresh air intake – After Clean.

17. AHU 63 – Filter chamber – Before Clean.



18. AHU 63 – Filter chamber – After Clean.

19. AHU 63 – Fan chamber – Before Clean.

20. AHU 63 – Fan chamber – After Clean.

SYS/15/133
Issue no.1

University of Hertfordshire
Hatfield Herts
AL10 9AB

Biodet
Laboratory
Email [redacted]

System Hygienics Ltd
Chaucer Industrial Estate
Dittons Road, Polegate
East Sussex BN26 6JF

Ref: SYS/15/133
Date: 21st September 2015
Log No. 1761

CERTIFICATE OF ANALYSIS

Job No.:
Operator: M. Hickenbottom
Date Sampled: 09-Sep-2015
Date Received: 16-Sep-2015

Filters were weighed to determine the amount of particulate contamination.

Results:

Sample Nº	Location	Filter Difference (mg)
1	4th floor Supply Duct	0.0
2	4th floor Supply Duct	0.0
3	4th floor Supply Duct	0.0
4	4th floor Supply Duct	0.1
5	4th floor Supply Duct	0.2
6	4th floor Supply Duct	0.0

[redacted]

I.MOSS 21st September 2015
TECHNICAL MANAGER

CERTIFICATE OF CLEANLINESS

We hereby certify that the Extract & Supply Systems (referred to in the photo log) serving:-

Southern General Hospital
75 Hardgate Road
Glasgow

have been cleaned and completed on 07 September 2015 In accordance with B&ES Guide to Good Practice TR/19 (2nd Edition) standard, whereby no more than 0.3g dust per 1m² internal surfaces did remain. Please refer to legislation set out overleaf and attached laboratory analysis results reference SYS/15/133 dated 21 September 2015

System examined by our representative Mr Mark Hickenbottom.

presented by

SYSTEM HYGIENICS LIMITED
Chaucer Industrial Estate
Dittons Road, Polegate
East Sussex BN26 6JF

Signed [redacted]

24 September 2015

Date

STD78

EXCERPTS FROM WORKPLACE (HEALTH, SAFETY AND WELFARE) REGULATIONS 1992

MAINTENANCE OF WORKPLACE, AND OF EQUIPMENT, DEVICES AND SYSTEMS
Regulation 5

(1) The workplace and the equipment, devices and systems to which this regulation applies shall be maintained (including cleaned as appropriate) in an efficient state, in efficient working order and in good repair.

(2) Where appropriate, the equipment, devices and systems to which this regulation applies shall be subject to a suitable system of maintenance.

(3) The equipment, devices and systems to which this regulation applies are:-

(a) Equipment and devices a fault in which is liable to result in a failure to comply with any of these Regulations; and

(b) Mechanical ventilation systems provided pursuant to regulation 6 (whether or not they include equipment or devices within sub-paragraph (a) of this paragraph).

Approved Code of Practice (Regulation 5)

20. The workplace, and the equipment and devices mentioned in these Regulations, should be maintained in an efficient state, in efficient working order and in good repair. 'Efficient' in this context means efficient from the view of health, safety and welfare (not productivity or economy). If a potentially dangerous defect is discovered, the defect should be rectified immediately or steps should be taken to protect anyone who might be put at risk, for example by preventing access until the work can be carried out or the equipment replaced. Where the defect does not pose a danger but makes the equipment unsuitable for use, for example a sanitary convenience with a defective flushing mechanism, it may be taken out of service until it is repaired or replaced, but if this would result in the number of facilities being less than that required by the Regulations, the defect should be rectified without delay.

21. Steps should be taken to ensure that repair and maintenance work is carried out properly.

22. Regulation 5(2) requires a system of maintenance where appropriate, for certain equipment and devices and for ventilation systems. A suitable system of maintenance involves ensuring that:

(a) regular maintenance (including, as necessary, inspections, testing, adjustment, lubrication and cleaning) is carried out at suitable intervals;

(b) any potentially dangerous defects are remedies, and that access to defective equipment is prevented in the meantime;

(c) regular maintenance and remedial work is carried out properly; and

(d) a suitable record is kept to ensure that the system is properly implemented and to assist in validating maintenance programmes.

VENTILATION
Regulation 6

(1) Effective and suitable provision shall be made to ensure that every enclosed workplace is ventilated by a sufficient quantity of fresh or purified air.

(2) Any plant used for the purpose of complying with paragraph (1) shall include an effective device to give visible or audible warning of any failure of the plant where necessary for reasons of health or safety.

(3) This Regulation shall not apply to any enclosed workplace or part of a workplace which is subject to the provision of:-

(a) section 30 of the Factories Act 1961;

(b) regulations 49 to 52 of the Shipbuilding and Ship-Repairing Regulations 1960;

(c) regulation 21 of the Construction (General Provisions) Regulations 1961;

(d) regulation 18 of the Docks Regulations 1988.

Approved Code of Practice (Regulation 6)

32. In the case of mechanical ventilation systems which recirculate air, including air -conditioning systems, recirculated air should be adequately filtered to remove impurities. To avoid air becoming unhealthy, purified air should have some fresh air added to it before being recirculated. Systems should therefore be designed with fresh air inlets which should be kept open.

33. Mechanical ventilation systems (including air-conditioning systems) should be regularly and properly cleaned, tested and maintained to ensure that they are kept clean and free from anything which may contaminate the air.

34. The requirement of regulation 6(2) for a device to give warning of breakdown applies only 'where necessary for reasons of health or safety'. It will not apply in most workplaces. It will, however, apply to 'dilution ventilation' systems used to reduce concentration of dust or fumes in the atmosphere, and to any other situation where a breakdown in the ventilation system would be likely to result in harm to workers.

35. Regulation 6 covers general workplace ventilation, not local exhaust ventilation for controlling employees' exposure to asbestos, lead, ionising radiations or other substances hazardous to health. There are other health and safety regulations and approved codes of practice on the control of such substances.

EXCERPTS FROM HVCA GUIDE TO GOOD PRACTICE TR19 'Cleanliness of Ventilation Systems'

Section 9 - Verification of Cleanliness

9.1 The primary method of assessment is visual. For cleaned system verification the surface should be visibly clean and capable of meeting the level of cleanliness specified.

9.2 Verification where specified on general ventilation systems, should be by means of a vacuum test (VT), as described in Appendix D, based on the recommendations of the US National Air Duct Cleaners Association (NADCA) ACR 2005. A system will be considered acceptably cleaned if, following a VT, a result of not more than 0.75g/m² is achieved. This is equivalent to 0.75mg/100cm² as per ACR 2005.

9.3 It should be noted that verification should take place immediately after cleaning to avoid any possibility of post-clean interference. The client should be given the opportunity to witness testing of ductwork surfaces.

Section 5.2
A testing procedure is defined in this guide which may be used to establish whether or not it would be appropriate to clean a mechanical ventilation system. This provides one reasonable practicable way of satisfying the Regulation and ACOPs relevant to the cleanliness of ventilation systems.

Section 5.5
The owner or operator should select the type(s) of test(s) and frequency to be included within their testing regime to suit the particular requirements of the building served by the ventilation system. The regime should be reviewed regularly (eg. annually), to take into account any changes in the building yse, legislation and/or health and safety guidance.

Section A8
The specification should include a definition of the method of verifying the effectiveness of the treatment including the number and type of microbiological samples to be taken and their analysis eg. in-house or third-party laboratory.

System Hygienics Ltd recommends that the systems mentioned in our Certificate of Cleanliness be cleaned on at least an annual basis in accordance with the above Loss Prevention Council recommendations.

A specific Risk Assessment, taking account of the likely rate of grease accumulation and other factors, should be carried out to establish the required inspection and cleaning frequency.

From: Redfern, Jamie [redacted] on behalf of Redfern, Jamie
Sent: 09 September 2015 17:36
To: Gillon Armstrong
Subject: RE: Sealing of Suites within Childrens Hospital Ward 2A

Thanks Gillon

From: Gillon Armstrong [redacted]
Sent: 09 September 2015 16:12
To: Hunter, William; Redfern, Jamie
Cc: Dawes, Heather; Forsyth, Graham; Moir, Peter; Jerry Sullivan; Barmanroy, Jackie
Subject: RE: Sealing of Suites within Childrens Hospital Ward 2A

Jamie,

Thanks again for your help today. Please see attached a spreadsheet confirming the dates, agreed with the various departments, to allow us access to carry out the air permeability testing. I will keep you updated on our progress.

Regards

Gillon Armstrong
Section Manager - Construction

Brookfield MULTIPLEX BM

Brookfield Multiplex Europe
Site Office
Institute of Neurological Science
Queen Elizabeth University Hospital
1345 Govan Road
Glasgow, G51 4TF, United Kingdom
[redacted]
Web www.brookfieldmultiplex.com

Please consider the environment before printing this email.

From: Hunter, William [redacted]
Sent: 09 September 2015 14:40
To: Redfern, Jamie
Cc: Gillon Armstrong; Dawes, Heather
Subject: RE: Sealing of Suites within Childrens Hospital Ward 2A

Excellent, thanks to everyone for moving this forward.

Regards

Billy

From: Redfern, Jamie
Sent: 09 September 2015 14:38
To: Hunter, William

Cc: 'Gillon Armstrong'; Dawes, Heather
Subject: RE: Sealing of Suites within Childrens Hospital Ward 2A

Hi Billy

I did a walk round each ward area TODAY in RHC where sealing / permeability testing in cubicles remains outstanding.
Gillon has now met the senior charge nurse for each area and agreed a provisional plan for the majority of these rooms.
He seemed very happy with the progress we have made.
Included in this is a draft plan next week to seal and test two further rooms in ward 2a.
This would be 1 room Tuesday / Wednesday and the 2nd room Thursday Friday.
So by close of play next Friday we would aim to have 4 rooms sealed and tested in this ward as per agreement at Monday's meeting.
For the two additional rooms would then look for microbiology to do their additional testing.
At the end of next week we will review progress in 2a and look to agree a plan with Gillon to do the 4 remaining rooms in 2a and what remains outstanding across rest of hospital which should in effect be 2 rooms in critical care.
Hopefully this makes sense. Gillon is going to provide a spreadsheet which highlights this in a more structured fashion.
Cheers

Jamie

From: Hunter, William
Sent: 08 September 2015 09:19
To: Redfern, Jamie
Cc: 'Gillon Armstrong'
Subject: Sealing of Suites within Childrens Hospital Ward 2A

Jamie,

I have spoken to Gillon Armstrong this morning in connection with above and he is keen to complete the job of sealing all suites within ward 2A, to reflect the level of air permeability within which has been achieved within the two BMT suites.

Gillon, on behalf of Brookfield, requires access to these rooms and I had suggested that you may be best placed to arrange this. I also understand that you guys are scheduled to meet tomorrow therefore it would be helpful if access arrangements could be agreed which would then go some way to support our risk migration strategy as described last night by the Medical Director.

Can you please drop me an email to confirm that above request is ok.

Regards
Billy

William Hunter \ General Manager \ South & Clyde Sector Facilities Directorate \ NHS Greater Glasgow & Clyde \ New Laboratory Medicine & FM Building, Southern General Hospital \ [redacted]

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AHU Ref:	Room Ref	HEPA Filter Fitted	Design Air Change	Design Room Pressure	Vent Commissioned	Pressure Cascade Measured	HEPA Tested	Air Perm Test	Air Perm Results	Differential 5%	Report received from Stuart Boland	Air Test pass
41 AHU 02			In accordance with SHBN 04-Supp 1.									
41-02 EF01	OBW 051	No		+10	Yes	Yes	N/A	12-Aug	Pos 0.875l/s / Neg 0.914l/s Ave 0.894l/s	4.26%		Yes
41 AHU 01			In accordance with SHBN 04-Supp 1.									
41-01 EF01	OBW-050	No		+10	Yes	Yes	N/A	12-Aug	Pos 0.875l/s / Neg 0.856l/s Ave 0.865	1.90%		Yes
Level 1												
41-AHU 16			In accordance with SHBN 04-Supp 1.									
41-16/EF01	CCW 99	No		+10	Yes	Yes	N/A					
41-AHU 34			In accordance with SHBN 04-Supp 1.									
41-34/EF01	CCW 105	No		+10	Yes	Yes	N/A					
41-AHU 13			In accordance with SHBN 04-Supp 1.									
41-13/EF01	CCW 083	No		+10	Yes	Yes	N/A					
41-AHU 15			In accordance with SHBN 04-Supp 1.									
41-15/EF01	CCW 068	No		+10	Yes	Yes	N/A					
41-AHU18			In accordance with SHBN 04-Supp 1									
41-18/EF01	CAR 011	No		+10	Yes	Yes	N/A					
41-AHU37			In accordance with SHBN 04-Supp 1									
41-37/EF01	CAR 016	No		+10	Yes	Yes	N/A					
21 AHU 08			In accordance with SHBN 04-Supp 1.									
Isolation Fan room	CCW-051	Yes, extract only safe change unit		+10	Yes	Yes	Yes					
21 AHU 09			In accordance with SHBN 04-Supp 1.									
Isolation Fan room	CCW-165	Yes, supply and extract		+10	Yes	Yes	Yes					
21 AHU 15			In accordance with SHBN 04-Supp 1.									
Isolation Fan room	CCW-157	Yes, extract only safe change unit		+10	Yes	Yes	Yes		Pos 0.844l/s /Neg0.806l/s/Ave 0.825	4.50%		YES
21 AHU 14			In accordance with SHBN 04-Supp 1.									
Isolation Fan room	CCW-078	Yes - Supply & Extract		+10	Yes	Yes	Yes	Yes 27/07 - Fail	Pos 1.4l/s / Neg 1.37l/s / Ave 1.39l/s 2nd test Pos 0.669l/s/Neg 0.623l/s / Ave 0.646/3rd test Pos 0.633l/s /Neg 0.611l/s/Ave0.622l/s	3.48%		Yes
21 AHU 10			In accordance with SHBN 04-Supp 1.									
Isolation Fan room	CCW-242	Yes, extract only safe change unit		+10	Yes	Yes	Yes					
21 AHU 11			In accordance with SHBN 04-Supp 1.									
Isolation Fan room	CCW-025	Yes, extract only safe change unit		+10	Yes	Yes	Yes					
21 AHU 12			In accordance with SHBN 04-Supp 1.									
Isolation Fan room	CCW-245	Yes, extract only safe change unit		+10	Yes	Yes	Yes					
21 AHU 13			In accordance with SHBN 04-Supp 1.									
Isolation Fan room	CCW-111	Yes, extract only safe change unit		+10	Yes	Yes	Yes	06/08/2015	Pos 1.62l/s Neg 1.89l/s Ave 1.755l/s 2nd test Pos 0.758l/sNeg 0.792l/sAve0.775	4.29%		Yes
21 AHU 16			In accordance with SHBN 04-Supp 1.									
Isolation Fan room	CCW-140	Yes, extract only safe change unit		+10	Yes	Yes	Yes	06/08/2015	Pos 1.18l/s Neg1.63l/s Ave 1.405l/s			
21 AHU 17			In accordance with SHBN 04-Supp 1.									
Isolation Fan room	CCW-241	Yes, extract only safe change unit		+10	Yes	Yes	Yes					
Level 2												
41-AHU 39			In accordance with SHBN 04-Supp 1.						1) Pos 0.872l/s Neg 1.453l/s Ave 1.162l/s 2)Pos 0.639l/s Neg 0.714l/s Ave 0.676l/s 3)Pos 0.306l/s Neg 0.408l/s Ave 0.357	25%		Partial
41-39/EF01	ARU 109	No		+10	Yes	Yes	N/A	12/08/2015				
41-AHU 38			In accordance with SHBN 04-Supp 1.									
41-38/EF01	ARU 108	No		+10	Yes	Yes	N/A					
Schiehallion Ward												
41AHU19			In accordance with SHBN 04-Supp 1.									
41-19 EF01	SCH 010	Yes		+10	Yes	Yes	Yes					
41AHU23			In accordance with SHBN 04-Supp 1.									
41 – 23 EF01	SCH 011	Yes		+10	Yes	Yes	Yes					
41AHU28			In accordance with SHBN 04-Supp 1.									
41-28 EF01	SCH 017	Yes		+10	Yes	Yes	Yes					
41AHU29			In accordance with SHBN 04-Supp 1.									
41-29 EF01	SCH 020	Yes		+10	Yes	Yes	Yes					
41AHU32			In accordance with SHBN 04-Supp 1.									
41-32 EF01	SCH 068	Yes		+10	Yes	Yes	Yes	Yes 23/07/15 **2nd test 21/8/15**	Pos 0.89l/s / Neg 0.96l/s / Ave 0.93l/s **2nd test Pos 0.764l/s / 0.794l/s Ave 0.779l/s**	3.77%	YES	YES
41AHU31			In accordance with SHBN 04-Supp 1.									
41-31 EF01	SCH 072	Yes		+10	Yes	Yes	Yes	Yes 19/07/15 **2nd test 26/8/15**	Pos 0.831l/s / Neg 0.901/s / Ave 0.86l/s **2nd Test Pos 0.856l/s / Neg0.833l/s Ave0.844l/s**	2.68%	YES	YES
41AHU30			In accordance with SHBN 04-Supp 1.									
41-30 EF01	SCH 074	Yes		+10	Yes	Yes	Yes	Yes 23/07/15	Pos 0.77l/s / Neg 0.86l/s / Ave 0.82l/s	10.46%		Partial
41AHU33			In accordance with SHBN 04-Supp 1.									
41-33 EF01	SCH 066	Yes		+10	Yes	Yes	Yes					
Level 3												
41-AHU 45			In accordance with SHBN 04-Supp 1.									
41-45/EF02	GW3 054	No		+10	Yes	Yes	N/A					
41-AHU 44			In accordance with SHBN 04-Supp 1.									
41-44/EF02	GW3 053	No		+10	Yes	Yes	N/A					
41-AHU 42			In accordance with SHBN 04-Supp 1.									Partial
41-42/EF01	GW2-055	No		+10	Yes	Yes	N/A	Yes 23/07/15	Pos 0.62l/s / Neg 0.78l/s / Ave 0.70/s	20.51%		
41-AHU 41			In accordance with SHBN 04-Supp 1.									Partial
41-41/EF01	GW1 055	No		+10	Yes	Yes	N/A	12/08/2015	Pos 0.767l/s / Neg0.889l/s Ave 0.828l/s	13.70%		
41-AHU 40			In accordance with SHBN 04-Supp 1.									
41-40/EF01	GW1 006	No		+10	Yes	Yes	N/A	13/08/2015	Pos 0.942l/s Neg 0.936l/s Ave 0.939l/s	0.63%		YES
41-AHU 43			In accordance with SHBN 04-Supp 1.									Partial
41-43/EF01	GW2 022	No		+10	Yes	Yes	N/A	Yes 23/07/15	Pos 0.86l/s / Neg 0.97l/s / Ave 0.92l/s	11.33%		
Level 4												
122-AHU 08			In accordance with SHBN 04-Supp 1.			Yes (To be adjusted after HEPA install)						
122-08/EF01	RENW 041	To be fitted – date to be confirmed		+10	Yes		N/A					
122-AHU 09			In accordance with SHBN 04-Supp 1.									
122-09/EF01	RENW 046	Yes - Supply Only		+10	Yes	Yes	Yes					

From: David Wilson [redacted] on behalf of David Wilson
Sent: 21 September 2015 15:34
To: Powrie, Ian
Cc: Loudon, David; Moir, Peter; Hunter, William; Gillon Armstrong
Subject: RE: BMT Closed

Ian

See below for the further rooms tested on Friday. Our Jerry Sullivan will liaise with the charge nurse in Ward 2a today regarding the sealing and testing of the rooms.

Bedroom No.	Room no.	AHU	Air test 5% diff.passed
5	CCW-083	41-AHU-13	YES
15	GW3-055	41-AHU-45	YES
4	CCW-025	21-AHU-11	YES
44	CCW-140	21-AHU-16	YES
12	CCW-068	41-AHU-15	YES

David
David Wilson
Commissioning Manager - Construction

Brookfield MULTIPLEX BM

Brookfield Multiplex Construction Europe Ltd
Fairfield - Suite 12
1048 Govan Road
Glasgow, G51 4XS, United Kingdom
[redacted]
W www.brookfieldmultiplex.com

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Please note we have now moved office!

From: David Wilson
Sent: 21 September 2015 15:05
To: 'Powrie, Ian'
Cc: Loudon, David; Moir, Peter; Hunter, William; Gillon Armstrong
Subject: RE: BMT Closed

Ian,

Attached is the update from Thursday last week. I believe some further rooms were being tested on Friday. I will get an update for you from our guys on site (including rooms 22 & 24) and get back to you.

David

David Wilson
Commissioning Manager - Construction

Brookfield Multiplex Construction Europe Ltd
Fairfield - Suite 12
1048 Govan Road
Glasgow, G51 4XS, United Kingdom
[redacted]
W www.brookfieldmultiplex.com

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From: Powrie, Ian [redacted]
Sent: 21 September 2015 14:52
To: David Wilson
Cc: Loudon, David; Moir, Peter; Hunter, William; Gillon Armstrong
Subject: RE: BMT Closed

Hi David

In Gillon's absence I would be grateful if you could assist me, I have a meeting tomorrow with my GM & consultant micro-biologist (Infection control lead) regarding the status of the isolation room validations, particularly with regards to which rooms have HEPA's fitted, and have been resealed and passed their air permeability tests.

I would be grateful if you could provide me with an update report for tomorrow morning confirming the identity and status of each isolation room along with the test results to allow Infection control to finalise their policy on suitable patient placement for both source and protective isolation?

Can you also advise on the arrangements for resealing and air permeability validation of rooms 22 & 24 in ward 2a (Shiehallion) as per my e-mail request below, Gillon indicated that "We will review and action ASAP" In his absence who is progressing this request? the clinical team are expecting a quick turnaround to allow these rooms to be returned to service.

Many Thanks

Regards

Ian

[redacted]
Sector Estates Manager (South & Clyde)
Queen Elizabeth University Hospital Campus,
1345 Govan Rd,
Glasgow,
G51 4TF,
[redacted]

From: David Wilson [redacted]
Sent: 17 September 2015 13:10
To: Powrie, Ian
Cc: Loudon, David; Moir, Peter; Hunter, William; Williams, Craig; Gillon Armstrong
Subject: RE: BMT Closed

Ian,

I have copied Gillon into this as he is organizing the air permeability testing and he will advise on timescales.

Regarding the extract flow rates, I'm not aware of any agreement at the moment on this. We would need confirmation on the exact requirements prior to proceeding.

Thanks
David

David Wilson
Commissioning Manager - Construction

Brookfield Multiplex Construction Europe Ltd
Fairfield - Suite 12
1048 Govan Road
Glasgow, G51 4XS, United Kingdom
[redacted]
W www.brookfieldmultiplex.com

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From: Powrie, Ian [redacted]
Sent: 17 September 2015 12:29
To: David Wilson
Cc: Loudon, David; Moir, Peter; Hunter, William; Williams, Craig
Subject: FW: BMT Closed

David

I have been advised that Isolation rooms 22 & 24 within RHC ward 2a, are now vacant and available for sealing and air permeability testing, can you please advise on the time scale for turning this around in order for me to :

- Advise the ward manager of the down time required.
- Arrange for deep cleaning on completion.
- Arrange for Micro Biological testing.

I also understand that alterations to the extract flow rates etc have been agreed based on data received from LEEDs children's Hospital? Would this be an opportunity to implement and validate these changes in this rooms? Can you bring me up to speed on what was agreed in relation to this while I was on A\L?

Regards

Ian

[redacted]
Sector Estates Manager (South & Clyde)
Queen Elizabeth University Hospital Campus,
1345 Govan Rd,

Glasgow,
G51 4TF,
[redacted]

****
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KILKNOWE OFFICE
16 BARRMILL ROAD
GALSTON
AYRSHIRE
KA4 8HH
TEL – 01563 821991
FAX – 01563822220
e-mail - talk2us@handv.co.uk

ISSUED BY: IAN MCKENZIE

DATE: 7TH OCTOBER 2015

PRESENTATION BY: AD

APPROVED BY: KAREN GAVIN

DATE: 19TH OCTOBER 2015

QEUH – WARD 4B

VENTILATION REPORT

JOB No. 5902 OCTOBER 2015

MERCURY ENGINEERING & BUILDING SERVICES LTD.
MERCURY HOUSE
PAVILION 3
FINNIESTON BUSINESS PARK
MINERVA WAY
GLASGOW
G3 8AU

QEUH – WARD 4B

VENTILATION REPORT

INDEX

AHU 63 Supply (4th Floor Haematology)

AHU 63 Extract (4th Floor Haematology)

31-63/EF01 (4th Floor Haematology)

AHU 63 Room Pressures, Supply & Extract Volumes

AHU 63 Supply Filter Integrity Test

Calibration Certificates

QEUH – WARD 4B

VENTILATION REPORT

AHU 63 SUPPLY (4TH FLOOR HAEMATOLOGY)

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL Nº. 01563 821991
FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 31

SYSTEM: 31 – AHU 63 SUPPLY (4TH FLOOR HAEMATOLOGY)

	AIR SYSTEMS PRE COMMISSIONING SHEET	✓	X	N/A
1.	Check AHU for damage and that all the components are secure	✓		
2.	Check the transit straps have been removed, if applicable	✓		
3.	Check pulleys are secure, tight, aligned and belts are correctly tensioned, if applicable	✓		
4.	Check with the controls engineer that the system is available to run and that plant rotation is correct	✓		
5.	Check all ductwork/air terminals are fitted and that air regulating dampers are open	✓		
6.	Check louvres are fitted and clear from obstructions, if applicable	✓		
7.	Check fire dampers are open, if applicable	✓		
8.	Check the motor overloads are suitable and set			✓
9.	Check VAV or CAV boxes are installed correctly and ready for use.			✓
10.	Check the floor plenums are complete, if applicable			✓
11.	Complete commissioning test sheets.	✓		

COMMENTS:

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FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

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AHU TEST SHEET

SYSTEM: 31 – AHU 63 SUPPLY (4TH FLOOR HAEMATOLOGY)

AHU											
AHU Manufacturer			Barkell		Fan Size			355			
Fan Manufacturer			Comefri		AHU Serial No			OP1B3043173			
Fan Type			Centrifugal		AHU Model Nº.			NTHZ 355 R			
			Design		**Test**					**% Design**	
Air Volume		(L/S)	2800		2426					87	
External Static Pressure		(Pa)	2616		Inlet	356	Outlet	663	Total	1019	
Fan Rotational Speed		(R.P.M)	3850		3089						
Filter Test Data	Pre Filter	(Pa)	Inlet	*	Outlet	*			ΔP	55	
	Sec Filter	(Pa)	Inlet	*	Outlet	*			ΔP	120	

MOTOR				
Manufacturer	TEC	Output kW	11.0	
Serial Nº	1411-0923253	Motor Full Load Current	19.8	Amps
Voltage	400	Motor Running Current	15.0	Amps
	Design	**Test**		
Rotational Speed.	2930	2574		

DRIVE DETAILS									
Motor Pulley/Shaft Size	(mm∅)	180 X 2	38	Motor Pulley Taper Lock Size	2012				
Fan Pulley/Shaft Size	(mm∅)	150 X 4	50	Fan Pulley Taper Lock Size	2517				
Belt Type/Size		XPZ	975	Nº. Of Belts	4				
Shaft Centres mm		270		Adjustment	-	30	+	20	mm
Variable Speed Drive		Yes		Set Point	44 Hz				

STANDBY PLANT							
Test Air Volume	2426	Inlet Pressure	*	Motor Rotational Speed	2574	Motor Running Current	
% Design	87	Outlet Pressure	*	Fan Rotational Speed	3089	15.0	Amps
Variable Speed Drive			Yes	Set Point	44 Hz		

Comments.

Motor 2 Serial No. 1411-0923253

Motor & Fan Pulley = SPZ

Control static pressure set point = 663 Pa

* Filter pressures taken from magnehelic gauges.

Main Volume = TH1 - 1348 l/s + TH2 – 1078 l/s = 2426 l/s

Instrument Used (Ref Nº.) HV05/1, HV05/4 & HV05/5

Date: 7/10/15	Engineer: Ian McKenzie & Daniel Kane	Sheet 3 of 10

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DUCT VOLUME TEST SHEET

SYSTEM: 31 – AHU 63 SUPPLY (4TH FLOOR HAEMATOLOGY)

VELOCITY PROFILE (taken facing air flow) **TEST HOLE LOCATION: LEVEL 4 RISER T3**

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width	Height	M2		L/S		M/S	
TH1				500	500	0.2500		1040		4.16	
5.90	5.80	5.10									
5.50	5.70	5.10									
5.30	5.50	5.20									
5.10	5.50	5.00									
Velocity Sub Totals											
21.80	22.50	20.40									

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
64.7	12	5.39	1348	130	365

Remarks: Test hole serves Branch A

Instrument Used: HV05/1

Date: 7/10/15	Engineer: Ian McKenzie & Daniel Kane	Sheet 4 of 10

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DUCT VOLUME TEST SHEET

SYSTEM: 31 – AHU 63 SUPPLY (4TH FLOOR HAEMATOLOGY)

VELOCITY PROFILE (taken facing air flow) **TEST HOLE LOCATION: LEVEL 4 RISER T3**

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
TH2				700	350	0.2450		900		3.67	
6.00	4.80	4.50	7.10								
6.00	3.70	3.00	5.90								
5.50	3.50	2.90	4.50								
Velocity Sub Totals											
17.50	12.00	10.20	13.10								

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
52.8	12	4.40	1078	120	376

Remarks: Test Hole serves Branch B

Instrument Used: HV05/1

Date: 7/10/15	Engineer: Ian McKenzie & Daniel Kane	Sheet 5 of 10

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GRILLE TEST SHEET

SYSTEM: 31 – AHU 63 SUPPLY (4TH FLOOR HAEMATOLOGY)

VELOCITY PROFILE (taken facing air flow) **TEST HOLE LOCATION: CEILING VOID**

Test Hole Ref	Duct Dia (mm)	Duct Size (mm)	Duct Area	Design Air Volume	Design Air Velocity
		Width x Height	M2	L/S	M/S
TH3	200		0.0314	80	2.55
Velocity Sub Totals					

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa

Remarks: NOT REQUIRED - DIRECT BALOMETER VOLUMES USED.

Instrument Used: -

Date: 7/10/15	Engineer: Ian McKenzie & Daniel Kane	Sheet 6 of 10

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GRILLE TEST SHEET

SYSTEM: 31 – AHU 63 SUPPLY (4TH FLOOR HAEMATOLOGY)

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
BRANCH A						
512-HG005	80	57	91	*	*	*
512-HG004	80	53	97	*	*	*
512-HG003	80	47	92	*	*	*
512-HG002	80	56	95	*	*	*
512-HG001	80	61	105	*	*	*
513-HG009	80	82	84	*	*	*
513-HG010	80	95	83	*	*	*
513-HG011	80	94	87	*	*	*
513-HG016	80	81	83	*	*	*
513-HG015	80	86	84	*	*	*
513-HG014	80	77	106	*	*	*
513-HG013	80	93	100	*	*	*
513-HG012	80	105	91	*	*	*

Remarks: *Pressurised room, therefore direct Balometer readings recorded and used as final reading. Room volumes set to control room differential pressures.

Instrument Used: HV03/15

Date: 7/10/15	Engineer: Ian McKenzie & Daniel Kane	Sheet 7 of 10

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FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

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GRILLE TEST SHEET

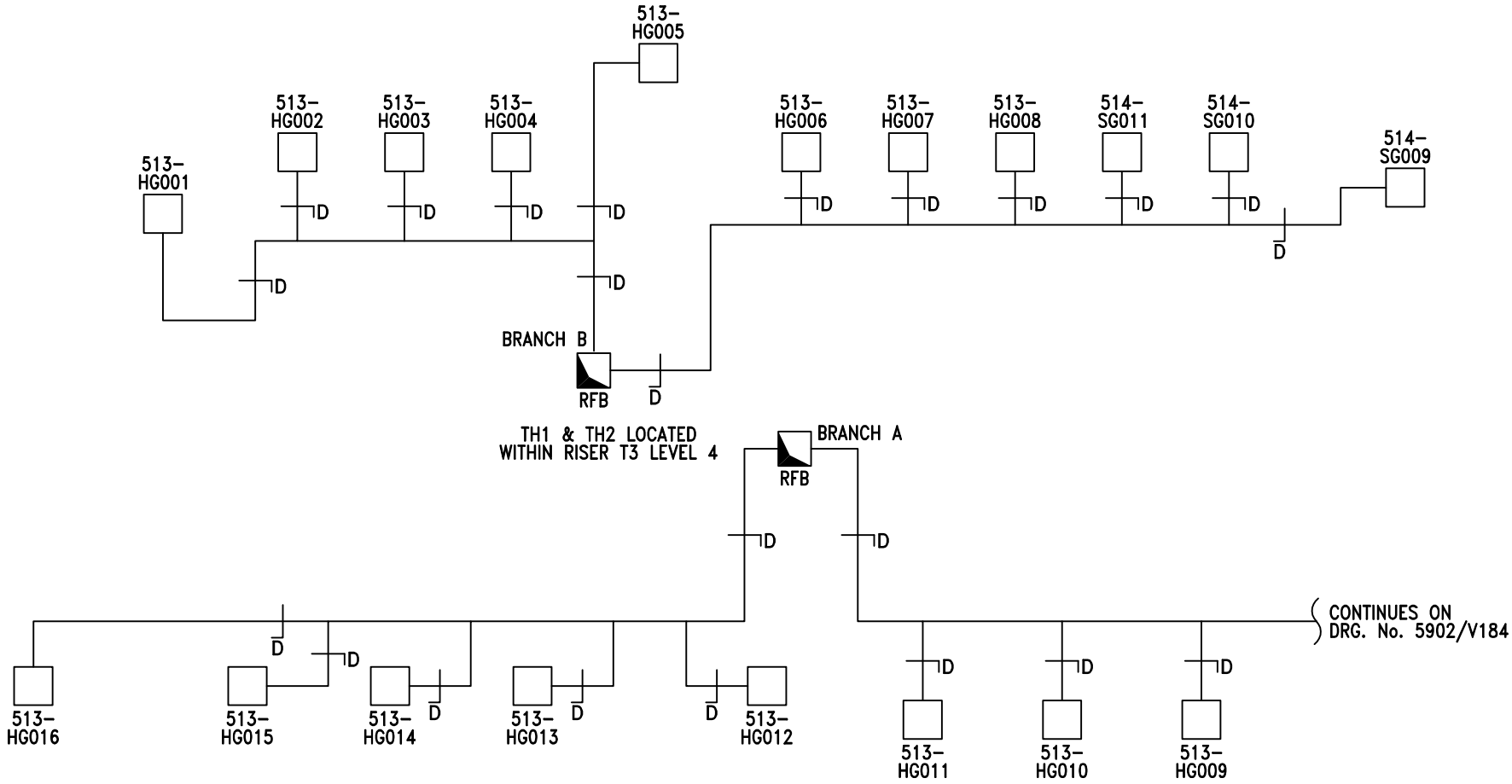
SYSTEM: 31 – AHU 63 SUPPLY (4TH FLOOR HAEMATOLOGY)

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
BRANCH B						
513-HG001	100	127	103	*	*	*
513-HG002	80	68	96	*	*	*
513-HG003	80	79	98	*	*	*
513-HG004	80	72	99	*	*	*
513-HG005	80	120	83	*	*	*
514-SG009	80	84	82	*	*	*
514-SG010	80	68	82	*	*	*
514-SG011	80	72	99	*	*	*
513-HG008	80	70	90	*	*	*
513-HG007	80	80	98	*	*	*
513-HG006	80	92	100	*	*	*

Remarks: Pressurised room, therefore direct Balometer readings recorded and used as final reading. Room volumes set to control room differential pressures.

Instrument Used: HV03/15

Date: 7/10/15	Engineer: Ian McKenzie & Daniel Kane	Sheet 8 of 10

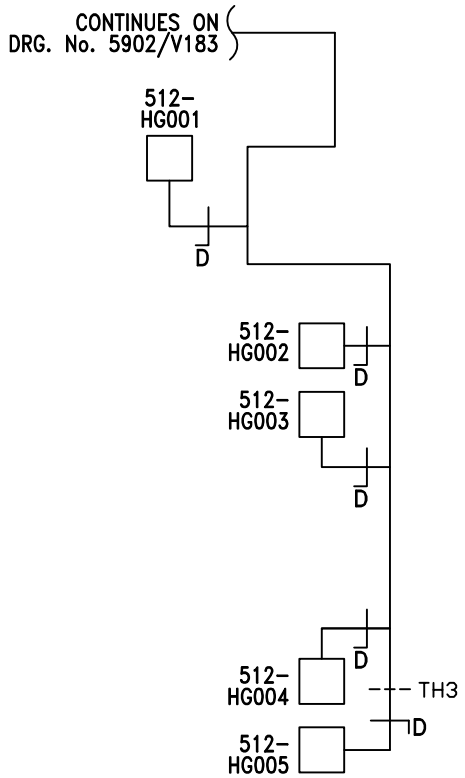


FOURTH FLOOR

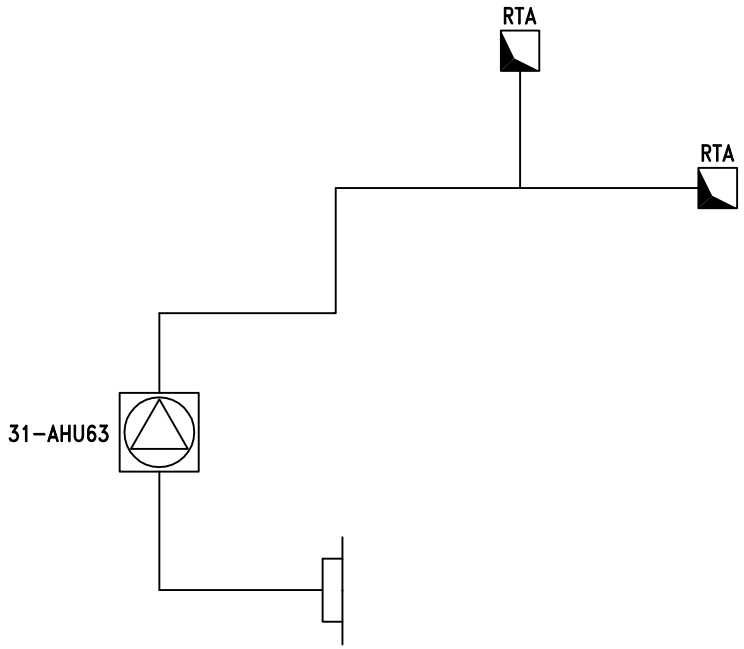
SHEET: 9 OF 10

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
A4/089198
Fax: 01563 822220 email: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 31	TITLE: SCHEMATIC LAYOUT OF	DRAWN: KL/SM
CLIENT: MERCURY ENGINEERING UK	31-AHU 63 SUPPLY 4TH FLOOR HAEMATOLOGY	DATE: 01/07/15
		DRG. No.: 5902/V183



FOURTH FLOOR



PLANTROOM 31

SHEET: 10 OF 10

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
A47/089198
Fax: 01563 822220 email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 31

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

31-AHU 63 SUPPLY
4TH FLOOR HAEMATOLOGY

DRAWN: KL/SM

DATE: 01/07/15

DRG. No.: 5902/V184

QEUH – WARD 4B

VENTILATION REPORT

AHU 63 EXTRACT (4TH FLOOR HAEMATOLOGY)

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Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL Nº. 01563 821991
FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

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SYSTEM: 31 – AHU 63 EXTRACT (4TH FLOOR HAEMOTOLOGY)

	AIR SYSTEMS PRE COMMISSIONING SHEET	✓	X	N/A
1.	Check AHU for damage and that all the components are secure	✓		
2.	Check the transit straps have been removed, if applicable	✓		
3.	Check pulleys are secure, tight, aligned and belts are correctly tensioned, if applicable	✓		
4.	Check with the controls engineer that the system is available to run and that plant rotation is correct	✓		
5.	Check all ductwork/air terminals are fitted and that air regulating dampers are open	✓		
6.	Check louvres are fitted and clear from obstructions, if applicable	✓		
7.	Check fire dampers are open, if applicable	✓		
8.	Check the motor overloads are suitable and set			✓
9.	Check VAV or CAV boxes are installed correctly and ready for use.			✓
10.	Check the floor plenums are complete, if applicable			✓
11.	Complete commissioning test sheets.	✓		

COMMENTS:

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EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL Nº. 01563 821991
FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

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AHU TEST SHEET

SYSTEM: 31 – AHU 63 EXTRACT (4TH FLOOR HAEMOTOLOGY)

AHU											
AHU Manufacturer			Barkell		Fan Size			355			
Fan Manufacturer			Comefri		AHU Serial No			OP1B3043173			
Fan Type			Centrifugal		AHU Model Nº.			NTHZ 355 R			
			Design		**Test**					**% Design**	
Air Volume		(L/S)	1391		965					69	
External Static Pressure		(Pa)	535		Inlet	170	Outlet	28	Total	198	
Fan Rotational Speed		(R.P.M)	1900		1907						
Filter Test Data	Pre Filter	(Pa)	Inlet	*	Outlet	*			ΔP	15	
	Sec Filter	(Pa)	Inlet	N/A	Outlet	N/A			ΔP	N/A	

MOTOR				
Manufacturer	TEC	Output kW	2.2	
Serial Nº	1305-0984906	Motor Full Load Current	8.51	Amps
Voltage	400	Motor Running Current	2.5	Amps
	Design	**Test**		
Rotational Speed.	1445	1445		

DRIVE DETAILS				
Motor Pulley/Shaft Size (mm∅)	132 x 1	28	Motor Pulley Taper Lock Size	1610
Fan Pulley/Shaft Size (mm∅)	100 x 2	40	Fan Pulley Taper Lock Size	1610
Belt Type/Size	XPA	932	Nº. Of Belts	2
Shaft Centres mm	280		Adjustment	- 40 + 20 mm
Variable Speed Drive	Yes		Set Point	30 Hz

STANDBY PLANT							
Test Air Volume	965	Inlet Pressure	*	Motor Rotational Speed	1445	Motor Running Current	
% Design	69	Outlet Pressure	*	Fan Rotational Speed	1907	2.5	Amps
Variable Speed Drive			Yes	Set Point	30 Hz		

Comments.

Motor 2 Serial No. 1305-098491

Motor & Fan Pulley = SPA

* Filter pressures taken from magnehelic gauges.

Instrument Used (Ref Nº.) HV05/1, HV05/4 & HV05/5

Date: 7/10/15	Engineer: Ian McKenzie & Daniel Kane	Sheet 3 of 9

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
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FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

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DUCT VOLUME TEST SHEET

SYSTEM: 31 – AHU 63 EXTRACT (4TH FLOOR HAEMOTOLOGY)

VELOCITY PROFILE (taken facing air flow) **TEST HOLE LOCATION: LEVEL 4 RISER T4**

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
Main TH				700	450	0.3150		1391		4.42	
3.70	3.40	3.60	3.80								
3.40	3.20	3.20	3.30								
3.50	2.70	2.40	2.80								
3.40	2.40	2.10	2.10								
Velocity Sub Totals											
14.00	11.70	11.30	12.00								

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
49	16	3.06	965	69	114

Remarks:

Instrument Used: HV05/1

Date: 7/10/15	Engineer: Ian McKenzie & Daniel Kane	Sheet 4 of 9

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
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FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

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DUCT VOLUME TEST SHEET

SYSTEM: 31 – AHU 63 EXTRACT (4TH FLOOR HAEMOTOLOGY)

VELOCITY PROFILE (taken facing air flow) **TEST HOLE LOCATION: CEILING VOID**

Test Hole Ref	Duct Dia (mm)	Duct Size (mm)	Duct Area	Design Air Volume	Design Air Velocity
		Width x Height	M2	L/S	M/S
TH1	160		0.0201	50	2.49
Velocity Sub Totals					

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa

Remarks: NOT REQUIRED - DIRECT BALOMETER VOLUMES USED.

Instrument Used: -

Date: 7/10/15	Engineer: Ian McKenzie & Daniel Kane	Sheet 5 of 9

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16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
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FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

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GRILLE TEST SHEET

SYSTEM: 31 – AHU 63 EXTRACT (4TH FLOOR HAEMOTOLOGY)

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
514-TEG003	30	24	31	*	*	*
514-TEG002	30	34	30	*	*	*
514-TEG001	30	31	30	*	*	*
513-TEG008	30	26	31	*	*	*
513-TEG006	30	40	30	*	*	*
513-TEG007	30	40	31	*	*	*
513-TEG005	30	53	30	*	*	*
513-TEG004	30	53	30	*	*	*
513-TEG001	70	64	57	1.18	67.26	96
513-TEG003	50	28	40	1.18	47.20	94
513-TEG002	50	44	40	1.18	47.20	94
513-TEG011	40	75	32	1.18	37.76	94
513-TEG009	62	150	50	1.18	59.00	95
513-TEG010	59	173	48	1.18	56.64	96

Remarks: *Pressurised room, therefore direct Balometer readings recorded and used as final reading. Room volumes set to control room differential pressures.

Instrument Used: HV05/15

Date: 7/10/15	Engineer: Ian McKenzie & Daniel Kane	Sheet 6 of 9

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16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL Nº. 01563 821991
FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

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GRILLE TEST SHEET

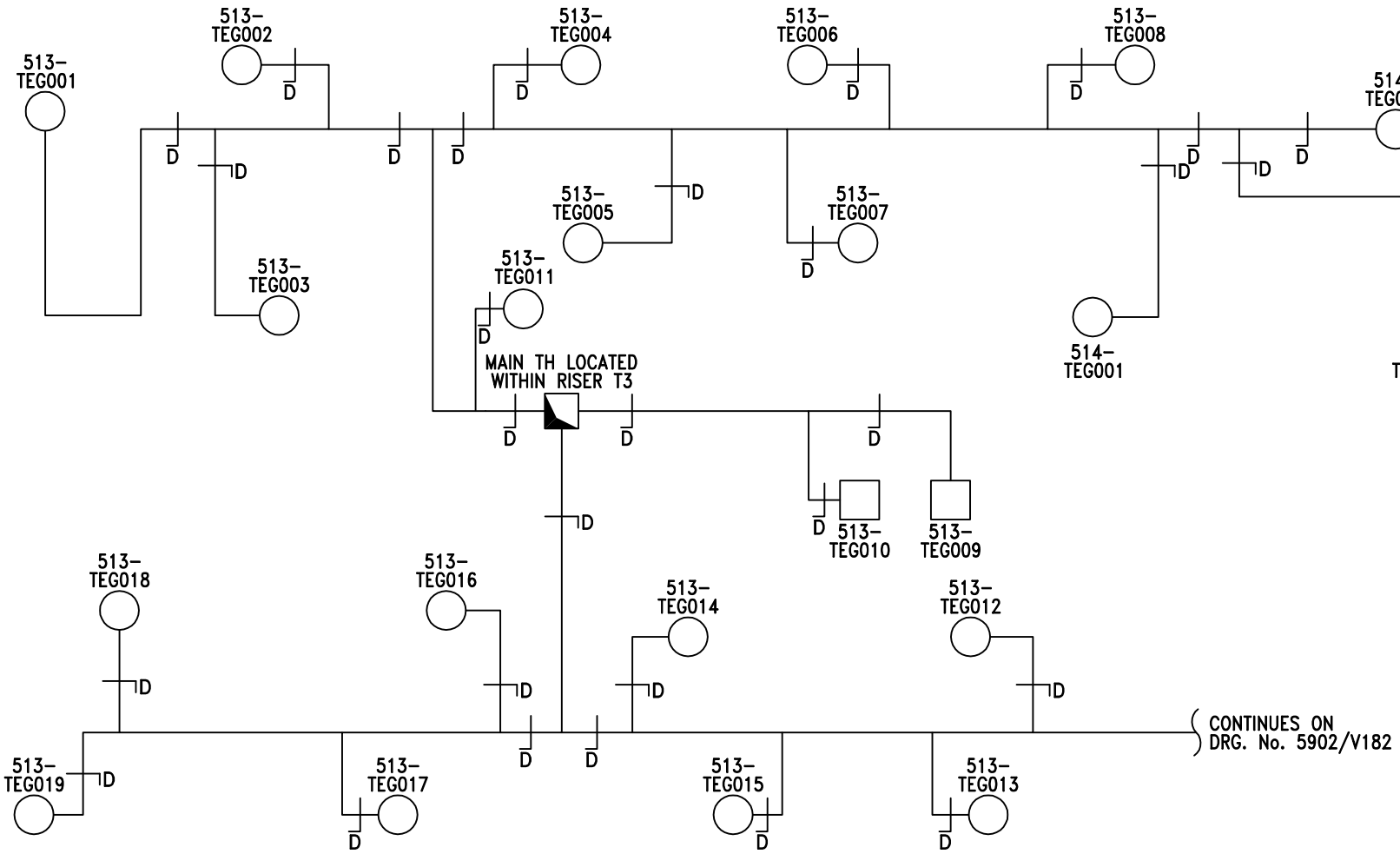
SYSTEM: 31 – AHU 63 EXTRACT (4TH FLOOR HAEMOTOLOGY)

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
512-TEG006	30	24	30	*	*	*
512-TEG005	30	23	30	*	*	*
512-TEG002	30	26	31	*	*	*
512-TEG003	30	29	30	*	*	*
512-TEG004	30	24	30	*	*	*
512-TEG001	30	29	29	*	*	*
513-TEG012	30	40	30	*	*	*
513-TEG013	30	42	32	*	*	*
513-TEG015	30	42	28	*	*	*
513-TEG014	30	46	30	*	*	*
513-TEG019	30	32	30	*	*	*
513-TEG018	30	44	30	*	*	*
513-TEG017	30	53	31	*	*	*
513-TEG016	30	44	30	*	*	*

Remarks: *Pressurised room, therefore direct Balometer readings recorded and used as final reading. Room volumes set to control room differential pressures.

Instrument Used: HV05/15

Date: 7/10/15	Engineer: Ian McKenzie & Daniel Kane	Sheet 7 of 9



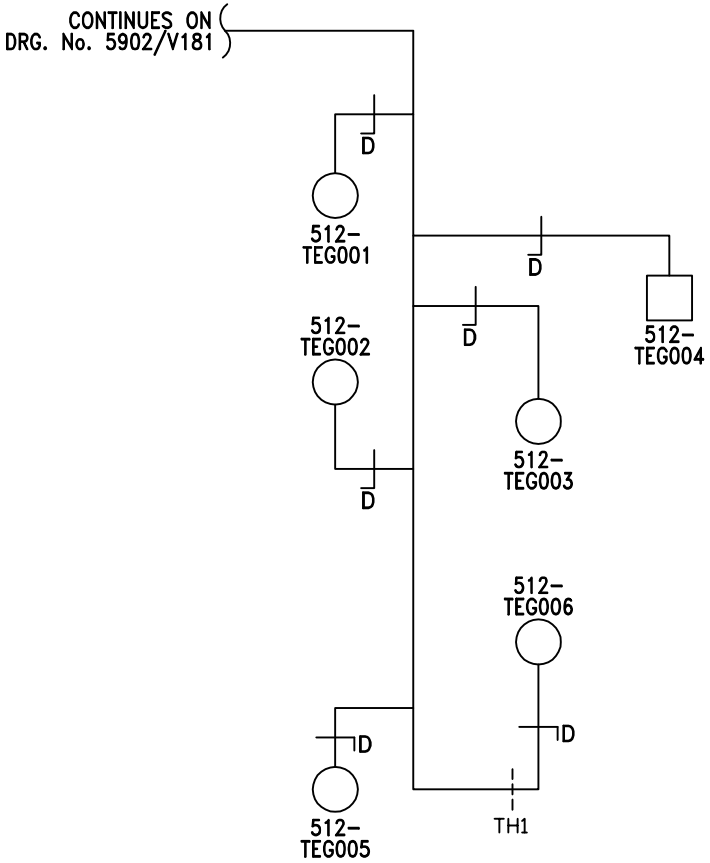
FOURTH FLOOR

SHEET: 8 OF 9

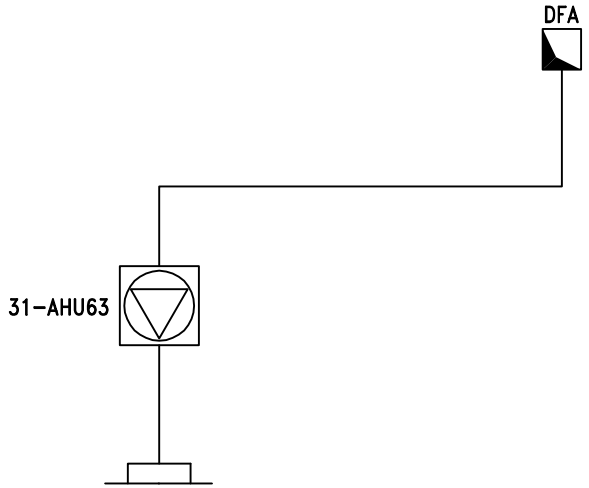
H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220 email: talk2us@handv.co.uk

A47/089198

CONTRACT:	NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 31
CLIENT:	MERCURY ENGINEERING UK
TITLE:	SCHEMATIC LAYOUT OF 31-AHU 63 EXTRACT 4TH FLOOR HAEMATOLOGY
DRAWN:	KL/SM
DATE:	01/07/15
DRG. No.:	5902/V181



FOURTH FLOOR



PLANTROOM 31

SHEET: 9 OF 9

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
A47/089198
Fax: 01563 822220 email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 31

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

31-AHU 63 EXTRACT
4TH FLOOR HAEMATOLOGY

DRAWN: KL/SM

DATE: 01/07/15

DRG. No.: 5902/V182

QEUH – WARD 4B

VENTILATION REPORT

31-63/EF01 (4TH FLOOR HAEMATOLOGY)

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EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL Nº. 01563 821991
FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 31

SYSTEM: 31 – 63/EF01 (4TH FLOOR HAEMATOLOGY)

	AIR SYSTEMS PRE COMMISSIONING SHEET	✓	X	N/A
1.	Check Fan for damage and that all the components are secure	✓		
2.	Check the transit straps have been removed, if applicable	✓		
3.	Check pulleys are secure, tight, aligned and belts are correctly tensioned, if applicable			✓
4.	Check with the controls engineer that the system is available to run and that plant rotation is correct	✓		
5.	Check all ductwork/air terminals are fitted and that air regulating dampers are open	✓		
6.	Check louvres are fitted and clear from obstructions, if applicable	✓		
7.	Check fire dampers are open, if applicable	✓		
8.	Check the motor overloads are suitable and set			✓
9.	Check VAV or CAV boxes are installed correctly and ready for use.			✓
10.	Check the floor plenums are complete, if applicable			✓
11.	Complete commissioning test sheets.	✓		

COMMENTS

ENGINEER: IAN MCKENZIE **DATE: 7/10/15** **SHEET 2 OF 7**

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16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL Nº. 01563 821991
FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

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DIRECT DRIVE FAN TEST SHEET **SYSTEM: 31 – 63/EF01 (4TH FLOOR HAEMATOLOGY)**

FAN									
AHU Manufacturer		Not Applicable		Fan Size		Not Stated			
Fan Manufacturer		Sandometal		Fan Serial No		1304370-313			
Fan Type		Plug		Fan Model Nº.		ESDM1/1			
		Design		**Test**				**% Design**	
Air Volume (L/S)		699		1011				145	
External Static Pressure (Pa)		325		Inlet	241	Outlet	68	Total	309
Filter Test Data	Pre Filter (Pa)	Inlet	N/A	Outlet	N/A			ΔP	N/A
	Sec Filter (Pa)	Inlet	N/A	Outlet	N/A			ΔP	N/A

MOTOR				
Manufacturer	Ziehl-Abegg	Output kW	1.1	
Serial Nº	13010169	Motor Full Load Current	2.53	Amps
Voltage	230	Motor Running Current	1.66	Amps
	Design	**Test**		
Rotational Speed R.P.M	1430	1158		

DRIVE DETAILS			
Variable Speed Drive	Yes	Set Point	70 Hz (Max 86 Hz)

Comments: N/A – Not Applicable

System volume set to control corridor pressure from pressurised rooms.

Instrument Used (Ref Nº.) HV05/1, HV05/4 & HV05/5

Date: 7/10/15	Engineer: Ian McKenzie & Daniel Kane	Sheet 3 of 7

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL Nº. 01563 821991
FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

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DUCT VOLUME TEST SHEET **SYSTEM: 31 – 63/EF01 (4TH FLOOR HAEMATOLOGY)**

VELOCITY PROFILE (taken facing air flow)

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
Main TH				500	350	0.1750		699		3.99	
5.90	6.00	5.60									
5.80	5.70	5.80									
5.70	5.70	5.70									
5.80	5.80	5.80									

Velocity Sub Totals

23.20	23.20	22.90									

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
69.3	12	5.78	1011	145	196

Remarks:

Instrument Used: HV12/1

Date: 7/10/15 | Engineer: Ian McKenzie & Daniel Kane | Sheet 4 of 7

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
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FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

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DUCT VOLUME TEST SHEET **SYSTEM: 31 – 63/EF01 (4TH FLOOR HAEMATOLOGY)**

VELOCITY PROFILE (taken facing air flow)

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
TH1		250				0.0491		90		1.83	
1.70	1.70										
1.90	1.90										
1.90	2.00										
1.90	1.90										
Velocity Sub Totals											
7.40	7.50										

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
14.9	8	1.86	91	102	11

Remarks: Test Volume 91l/s ÷ Balometer Volume 79l/s = 1.15 Factor.

Instrument Used: HV05/1

Date: 7/10/15 | Engineer: Ian McKenzie & Daniel Kane | Sheet 5 of 7

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL Nº. 01563 821991
FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 31

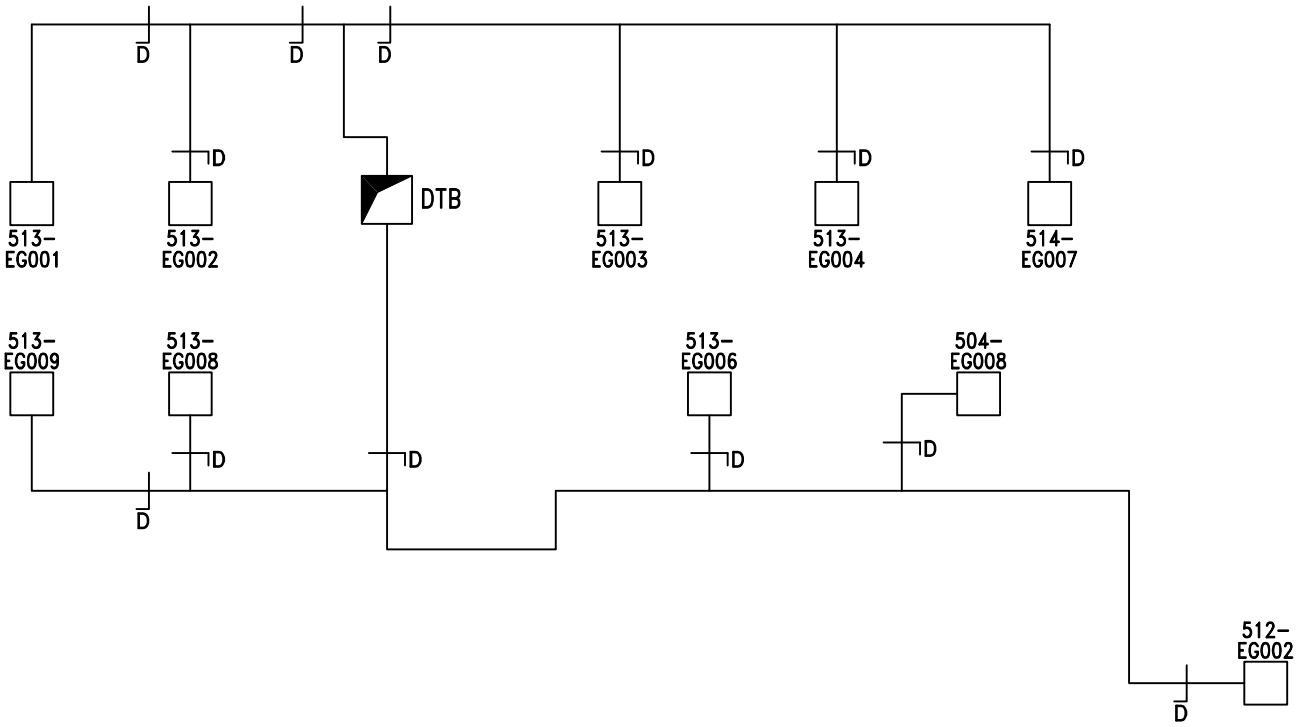
GRILLE TEST SHEET **SYSTEM: 31 – 63/EF01 (4TH FLOOR HAEMATOLOGY)**

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
512-EG002	90	94	79	1.15	90.85	101
514-EG008	75	93	68	1.15	78.20	104
513-EG006	75	86	70	1.15	80.50	107
513-EG008	75	136	81	1.15	93.15	124
513-EG009	75	120	100	1.15	115.00	153
514-EG007	77	24	88	1.15	101.20	131
513-EG004	63	24	92	1.15	105.80	168
513-EG003	55	33	91	1.15	104.65	190
513-EG002	54	53	91	1.15	104.65	194
513-EG001	60	33	106	1.15	121.90	203

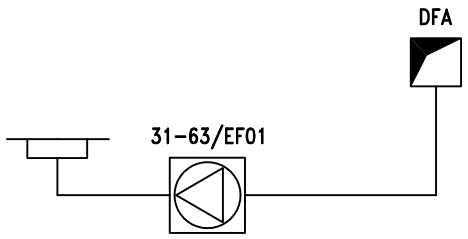
Remarks:

Instrument Used: HV05/15

Date: 7/10/15	Engineer: Ian McKenzie & Daniel Kane	Sheet 6 of 7



4TH FLOOR



3RD FLOOR PLANTROOM 31

SHEET: 7 OF 7

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220 email: talk2us@handv.co.uk

A4 7869198

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 31

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

31-63/EF01 4TH FLOOR HAEMATOLOGY

DRAWN: KL/SM

DATE: 18/12/14

DRG. No.: 5902/V149

QEUH – WARD 4B

VENTILATION REPORT

AHU 63 ROOM PRESSURES, SUPPLY & EXTRACT VOLUMES

31AHU63 - Level 4 - 4B Wards – Room Pressures, Supply & Extract Air Volumes

Room Bed Ref.:	Room Door Ref.:	Room to Corridor Pressure Set Pa		Minimum Supply Design Volume l/s	Supply Grille Volume l/s	Extract Grille Volumes l/s
		Micro-manometer Reading Pa	Room Digital Display Pa			
76	HOW190	7.0	7.0	80	91	30
77	HOW193	7.0	7.0	80	97	30
78	HOW195	7.1	7.0	80	92	31
79	HOW198	7.7	7.1	80	95	30
80 XL	HOW202	6.9	7.1	100	105	30
81	HOW050	6.9	7.0	80	84	29
82	HOW053	6.8	6.8	80	83	30
83	HOW055	7.1	6.6	80	87	32
84	HOW058	7.8	7.7	80	83	28
85	HOW059	7.7	7.1	80	84	30
86	HOW062	7.1	7.2	80	106	31
87	HOW064	7.4	7.6	80	100	30
88	HOW067	7.9	7.8	80	91	30
89 XL	HOW031	7.0	7.1	100	103	33
90	HOW029	7.6	7.8	80	96	30
91	HOW026	7.5	7.6	80	98	33
92	HOW024	7.8	7.9	80	99	30
93	HOW021	7.1	7.2	80	83	30
94	HOW020	7.7	7.6	80	82	31
95	HOW017	7.5	7.8	80	82	30
96	HOW015	7.1	7.2	80	99	31
97	HOW012	6.2	6.7	80	90	30
98	HOW011	6.9	7.2	80	98	30
99 XL	HOW099	6.3	6.4	100	100	31

Room Pressures to be set between 5Pa and 10Pa target pressure 7Pa ± 1Pa

Comments:

Above readings were finalised and witnessed by BM's Julie Miller 6th October 2015.

NB: Door seals have been trimmed to achieve room to corridor differential pressures and the required minimum air change rate (standard size rooms air volume design minimum 80l/s and the 3 larger rooms at a minimum air volume 100l/s.

31AHU63 Supply set at 44Hz
31AHU63 Extract set at 30Hz
31-63EF01 Corridor extract set at 70Hz (Set to control room corridor pressure)

Ward 4B corridor pressure is set to external corridors at approximately +10Pa.

Room pressure alarms/information;

1) High room pressure set at 15Pa
2) Low room pressure alarm set at 5Pa
3) Door open or out of specification alarm is set for a 2 minute period before alarming.
4) Room pressure alarms can be silenced from the button on the digital display set at each room door entry (on the stainless steel plate).

Report compiled and finalised by Ian McKenzie (H&V)
8th October 2015

QEUH – WARD 4B

VENTILATION REPORT

AHU 63 SUPPLY FILTER INTEGRITY TEST

Room Bed Ref.:	*Room Door Ref.:*	*HEPA Filter S/N:*	*Upstream Aerosol Concentration Pre Scan*	*Maximum Ratio % Penetration*	*Recorded Downstream Concentration Ratio %*	*% Upstream Aerosol Concentration Post Scan*	*Pass/Fail*
76	HOW190	007000-35157	62mg/m³	≤0.01%	0.0011%	109%	Pass
77	HOW193	006997-35157	59mg/m³	≤0.01%	0.0004%	111%	Pass
78	HOW195	006991-35157	71mg/m³	≤0.01%	0.0014%	97%	Pass
79	HOW198	007002-35157	76mg/m³	≤0.01%	0.0006%	102%	Pass
80	HOW202	007012-35157	63mg/m³	≤0.01%	0.0034%	92%	Pass
81	HOW050	007009-35157	62mg/m³	≤0.01%	0.0054%	98%	Pass
82	HOW053	007014-35157	51mg/m³	≤0.01%	0.0014%	108%	Pass
83	HOW055	006996-35157	35mg/m³	≤0.01%	0.0042%	105%	Pass
84	HOW058	007001-35157	53mg/m³	≤0.01%	0.0006%	101%	Pass
85	HOW059	007007-35157	66mg/m³	≤0.01%	0.0014%	103%	Pass
86	HOW062	006995-35157	67mg/m³	≤0.01%	0.0002%	104%	Pass
87	HOW064	006998-35157	55mg/m³	≤0.01%	0.0006%	104%	Pass
88	HOW067	006993-35157	60mg/m³	≤0.01%	0.0010%	100%	Pass
89	HOW031	007003-35157	75mg/m³	≤0.01%	0.0011%	102%	Pass
90	HOW029	006999-35157	70mg/m³	≤0.01%	0.0009%	101%	Pass
91	HOW026	007006-35157	72mg/m³	≤0.01%	0.0007%	98%	Pass
92	HOW024	007013-35157	57mg/m³	≤0.01%	0.0002%	111%	Pass
93	HOW021	006992-35157	17mg/m³	≤0.01%	0.0012%	96%	Pass
94	HOW020	007011-35157	52mg/m³	≤0.01%	0.0008%	110%	Pass
95	HOW017	007008-35157	75mg/m³	≤0.01%	0.0005%	106%	Pass
96	HOW015	007010-35157	47mg/m³	≤0.01%	0.0009%	96%	Pass
97	HOW012	007004-35157	42mg/m³	≤0.01%	0.0021%	104%	Pass
98	HOW011	007005-35157	44mg/m³	≤0.01%	0.0023%	98%	Pass
99	HOW099	006944-35157	43mg/m³	≤0.01%	0.0007%	109%	Pass

31AHU63 Supply – Level 4 - 4B Wards – HEPA Filter Integrity Test Report

Test Instruments Used	*Serial No.*	*Calibration Due*
Photometer	TDA-2G	March 2016
Aerosol Generator	ATI Aerosol Generator	March 2016

RESULTS (Enter Pass / Fail) *Results and test conditions are compliant with BS EN ISO 14644-3*	*PASS*

	COMPLETED BY:	*WITNESSED BY*
PRINT:	Ian McKenzie	
SIGNATURE:	[redacted]	
DATE:	8th October 2015	

QEUH – WARD 4B

VENTILATION REPORT

CALIBRATION CERTIFICATES

OptiCal Sciences

CERTIFICATE OF COMPLIANCE AEROSOL GENERATOR

No G/26262

The Standards used have been calibrated by internal and external procedures traceable to National Standards.
This Aerosol Generator has been tested with Shell Ondina EL Oil.

Date of Calibration: 16-Mar-15		Model	Serial No
Customer	H & V Commissioning Services	Vicount 1300	1025732
Address	Kilknowe Office		
	16 Barrmill Road		
	Galston, Ayrshire		
	KA4 8HH		
Service Report No 26262			

STANDARDS USED

INSTRUMENT DESCRIPTION	MANUFACTURER	SERIAL No	LAST RECAL	CERT NO
Photometer	Air Techniques	12076	23-Jan-15	26127
Airflow Meter	Kanomax Climomaster	440952	4-Jul-14	640820
Airflow HLF Bench	Gelman Sciences	9436-89	18-Sep-14	25629
Electrical Safety Tester	MicroPAT+	78491386	20-Mar-14	337772
Aerosol Diluter	Air Techniques	11645	3-Dec-14	25929

AEROSOL OUTPUT CONCENTRATION RESULTS

Inlet Bottle Pressure (PSI)	Oil Flow Valve	Heater Block Temperature (°C)	HLF Bench Airflow (L/min)	Upstream Concentration (µg/L)
10	-	316	14,375.9	45
20	-	316	14,375.9	130
30	-	316	14,375.9	200
40	-	316	14,375.9	280
50	-	316	14,375.9	350

ELECTRICAL SAFETY TEST RESULTS

Test No: 213	
Test Mode: Class one	
Visual: Pass	
Earth Test: 0.06 Ω	
Insulation Test: ^19.9 MΩ	
Load Test: 0.00 KVA	
Leakage Test: 00.1 mA	
FLOW RATE	
ATI TDA-5B	N/A LPM

CALCULATED RESULTS

Generator Output (g/min) = Upstream Concentration (µg/L) x HLF Bench Airflow (L/min) / 1,000,000

Pressure	Output (g/min)	Pressure	Output (g/min)
10 psi	0.65	50 psi	5.03
20 psi	1.87		
30 psi	2.88		
40 psi	4.03		

Out Of Limit Errors As Found. Comments: None

[redacted]

Next Calibration Due 16-Mar-16 | Engineer A.KERR

OptiCal Sciences Limited
Envirotest House
Anglia Way, Moulton Park Industrial Estate, Northampton NN3 6JA
[redacted]
Visit our Website at www.optical-sciences.co.uk

DATE: 16-Mar-15

OptiCal Sciences

SERVICE REPORT

CUSTOMER H & V Commissioning Services
ADDRESS Kilknowe Office
16 Barrmill Road
Galston, Ayrshire
KA4 8HH
CONTACT Angela Daly
PURCHASE ORDER NO 4778/IS/AC
OSL ORDER REF 23048

ENGINEER Adam Kerr
HOURS as per quote
TRAVELLING TIME
OTHER EXPENSES

WORK REQUIRED Repair / Service / output
CALIBRATION CERT. ISSUED 26262
MODEL LV1300
SERIAL NO 1025732

☐ CONTRACT ☐ WARRANTY ☒ CUSTOMER A/C OTHER

On inspection of instrument blowing fuses and failing portable appliance test

Fault traced to heater elements failing

Replaced 2 x heater elements - OK

Portable appliances test carried out, See electrical safety results

Using LAF Bench, 1000:1 diluter and Ref Photometer, recorded output concentration

Calculate output g/min

Checked normal working functions of instrument - OK

PART NO.	QTY.	DESCRIPTION	ELECTRICAL SAFETY TEST RESULTS
	2	Heater elements	Visual: pass
			E. Continuity: 0.06Ω
			Fuse Rating: -
			Insulation: >19.9 MΩ
			Run Test: 0.00 KVA
			Flash: N/A
FOR OFFICE USE ONLY:	T =	L =	Test No: 213

ENGINEER SIGNATURE [redacted]

SERVICE REPORT No 26262

MOODY INTERNATIONAL CERTIFICATION UKAS QUALITY MANAGEMENT 014
ISO 9001

OptiCal Sciences Limited
Envirotest House
Anglia Way, Moulton Park Industrial Estate, Northampton NN3 6JA
[redacted]
Visit our Website at www.optical-sciences.co.uk

safecontractor APPROVED

CERTIFICATE OF CALIBRATION

Issued By IRC Ltd

Date of Issue 27 August 2015

Certificate Number
205772

Instrument Repairs & Calibration
7 Howard Court Industrial Estate
East Kilbride, G74 4QZ
Tel: 01355 264120 Fax: 01355 264150
www.instrument-repairs.com

Approved Signatory

[redacted]

☐ F. Sillo ☐ N. Anderson ☐ K. Low ☑ C. Moore ☐ A. Rae

Customer : H&V Commissioning Services Ltd
Kilknowe Offices, 16 Barrmill Road
Galston KA4 8HY

Date Received : 20 August 2015

Instrument -

System ID :	IRC02093	Job Number :	R70380-1
Description :	Micromanometer	Ref. Number :	HV5-01
Manufacturer :	DPM	Site :	
Model Number :	TT470S	Location :	
Serial Number :	7471		
Procedure Version :	774		

Environmental Conditions

Temperature :	23°C +/- 2°C	Mains Voltage :	230V +/- 10V
Relative Humidity :	50% +/- 20%	Mains Frequency :	50Hz +/- 1Hz

Comments

The instrument stabilised in the laboratory for 4 hours prior to calibration.
Results at the time of test carry no long term stability of the instrument.
This certificate records the ON RECEIPT calibration status.
Recalibration period 52 weeks by customer request.

Traceability Information

Instrument description	*Serial number*	*Certificate number*	*Cal. Date*	*Cal. Period*
Mensor CP6000	610020	N18686&7 N18673	19/04/2013	156

Calibrated By : C. Moore **Date of Calibration :** 27 August 2015

This is to certify that the above instrument was fully calibrated. Work carried out was in accordance with procedures laid down in BS EN ISO/IEC 17025:2005.
The accuracies of the standards used are traceable to National Standards,via UKAS approved laboratories.
The copyright of this certificate is owned by IRC Ltd and may not be reproduced except with the prior written approval of the issuing laboratory.
The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%.

CERTIFICATE OF CALIBRATION

Certificate Number
205772

Test Title	Tolerance	Applied Value	Reading	Pass/Fail
Pascal				
	100fa	0.00pa	0.0pa	Pass
	200fa	20.00pa	20.1pa	Pass
	400fa	40.00pa	40.1pa	Pass
	600fa	60.00pa	59.9pa	Pass
Kilopascals				
0.500kpa	5pa	0.5kpa	0.50kpa	Pass
1.00kpa	20pa	1.000kpa	1.00kpa	Pass
2.00kpa	30pa	2.000kpa	2.00kpa	Pass
3.00kpa	40pa	3.000kpa	3.00kpa	Pass
4.00kpa	50pa	4.000kpa	4.00kpa	Pass
5.00kpa	60pa	5.000kpa	5.00kpa	Pass
6.00kpa	70pa	6.000kpa	6.00kpa	Pass

End of results

Uncertainties

Pressure TE69	15 - 1000mBar +/- 0.04% of reading

CERTIFICATE OF CALIBRATION

Issued By IRC Ltd

Date of Issue 22 September 2015

Certificate Number
206411

Instrument Repairs & Calibration
7 Howard Court Industrial Estate
East Kilbride, G74 4QZ
Tel: 01355 264120 Fax: 01355 264150
www.instrument-repairs.com

Approved Signatory

[redacted]

☐ N. Anderson ☐ K. Low ☑ C. Moore ☐ A.Rae

Customer : H&V Commissioning Services Ltd
Kilknowe Offices, 16 Barrmill Road
Galston KA4 8HY

Date Received : 15 September 2015

Instrument -

System ID :	IRC02515	Job Number :	R70680-2
Description :	Clamp Meter	Ref. Number :	HV5-4
Manufacturer :	Ideal	Site :	
Model Number :	61-768	Location :	
Serial Number :	051102797	Last Certificate Number :	192495
Procedure Version :	1.01	Last Calibration Date :	09/05/2014

Environmental Conditions

Temperature :	23°C +/- 2°C	Mains Voltage :	230V +/- 10V
Relative Humidity :	50% +/- 20%	Mains Frequency :	50Hz +/- 1Hz

Comments

The instrument stabilised in the laboratory for 4 hours prior to calibration.
Results at the time of test carry no long term stability of the instrument.
This certificate records the ON RECEIPT calibration status.
Recalibration period 52 weeks by customer request.

Traceability Information

Instrument description	*Serial number*	*Certificate number*	*Cal. Date*	*Cal. Period*
5500 Multifunction Calibrator	6305020	048278	05/11/2014	52

Calibrated By : C. Moore **Date of Calibration :** 22 September 2015

This is to certify that the above instrument was fully calibrated. Work carried out was in accordance with procedures laid down in BS EN ISO/IEC 17025:2005.
The accuracies of the standards used are traceable to National Standards,via UKAS approved laboratories.
The copyright of this certificate is owned by IRC Ltd and may not be reproduced except with the prior written approval of the issuing laboratory.
The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%.

CERTIFICATE OF CALIBRATION

Certificate Number
206411

Test Title	Tolerance	Applied Value	Reading	Pass/Fail
DC Voltage				
4V D.C. Range	21.5mV	3.900 0V	3.900V	Pass
40V D.C. Range	215mV	39.000V	38.98V	Pass
400V D.C. Range	2.2V	390.00V	389.8V	Pass
1000V D.C. Range	7V	1 000.00V	1 000V	Pass
AC Voltage				
4V A.C. @ 50Hz	54.8mV	3.900 0V	3.905V	Pass
40V A.C. @ 50Hz	548mV	39.000V	39.02V	Pass
400V A.C. @ 50Hz	5.5V	390.00V	390.2V	Pass
750V A.C. @ 50Hz	19.3V	750.00V	750V	Pass
DC Current				
400.0A D.C. Range	1.5A	100.00A	99.6A	Pass
400.0A D.C. Range	3.5A	200.00A	199.7A	Pass
400.0A D.C. Range	5A	300.00A	298.7A	Pass
400.0A D.C. Range	6.4A	390.00A	388.8A	Pass
600A D.C. Range	7.3A	450.00A	448A	Pass
600A D.C. Range	13.3A	550.00A	547A	Pass
AC Current				
400.0A A.C. @ 50Hz	2.7A	100.00A	99.6A	Pass
400.0A A.C. @ 50Hz	4.4A	200.00A	200.0A	Pass
400.0A A.C. @ 50Hz	6.1A	300.00A	300.2A	Pass
400.0A A.C. @ 50Hz	7.6A	390.00A	390.2A	Pass
600A A.C. @ 50Hz	23.5A	450.00A	448A	Pass
600A A.C. @ 50Hz	26.5A	550.00A	548A	Pass
Resistance				
400Ω Range	1.4Ω	100.00Ω	100.0Ω	Pass
4kΩ Range	14Ω	1.000 0kΩ	1.000kΩ	Pass
40kΩ Range	140Ω	10.000kΩ	9.98kΩ	Pass
400kΩ Range	1.4kΩ	100.00kΩ	99.8kΩ	Pass
4MΩ Range	94kΩ	1.000 0MΩ	0.998MΩ	Pass

End of results.

Uncertainties

DC Voltage	+/- 12ppm +1 LSD
AC Voltage	0 to 1000V 0.01% +/- 1digit
DC Current	0 to 10A 0.008% +/- 1 digit
AC Current	0 to 1000A 0.2% +/- 2 Digits
Resistance	0 to 10M 0.005% +/- 1 Digit

CERTIFICATE OF CALIBRATION

Issued By IRC Ltd

Date of Issue 22 September 2015

Certificate Number
206403

Instrument Repairs & Calibration
7 Howard Court Industrial Estate
East Kilbride, G74 4QZ
Tel: 01355 264120 Fax: 01355 264150
www.instrument-repairs.com

Approved Signatory

[redacted]

☐ N. Anderson ☐ K. Low ☑ C. Moore ☐ A.Rae

Customer : H&V Commissioning Services Ltd
Kilknowe Offices, 16 Barrmill Road
Galston KA4 8HY

Date Received : 15 September 2015

Instrument -

System ID :	IRC02517	Job Number :	R70680-3
Description :	Digital Tachometer	Ref. Number :	HV5-5
Manufacturer :	Standard	Site :	
Model Number :	ST-6236B	Location :	
Serial Number :	06111857	Last Certificate Number :	192491
Procedure Version :	688	Last Calibration Date :	09/05/2014

Environmental Conditions

Temperature :	23°C +/- 2°C	Mains Voltage :	230V +/- 10V
Relative Humidity :	50% +/- 20%	Mains Frequency :	50Hz +/- 1Hz

Comments

The instrument stabilised in the laboratory for 4 hours prior to calibration.
Results at the time of test carry no long term stability of the instrument.
This certificate records the ON RECEIPT calibration status.
Recalibration period 52 weeks by customer request.

Traceability Information

Instrument description	*Serial number*	*Certificate number*	*Cal. Date*	*Cal. Period*
5500 Multifunction Calibrator	6305020	048278	05/11/2014	52

Calibrated By : C. Moore **Date of Calibration :** 22 September 2015

This is to certify that the above instrument was fully calibrated. Work carried out was in accordance with procedures laid down in BS EN ISO/IEC 17025:2005.
The accuracies of the standards used are traceable to National Standards,via UKAS approved laboratories.
The copyright of this certificate is owned by IRC Ltd and may not be reproduced except with the prior written approval of the issuing laboratory.
The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%.

CERTIFICATE OF CALIBRATION

Certificate Number
206403

Test Title	Tolerance	Applied Value	Reading	Pass/Fail
RPM Measured				
	1.5RPM	1 000.0RPM	1 000RPM	Pass
	2RPM	2 000.0RPM	2 000RPM	Pass
	2.5RPM	3 000.0RPM	3 000RPM	Pass
	3RPM	4 000.0RPM	3 999RPM	Pass
	3.5RPM	5 000.0RPM	4 999RPM	Pass
	6RPM	10 000.0RPM	10 000RPM	Pass

End of results

Uncertainties

AC Voltage	0 to 1000V 0.01% +/- 1digit
Frequency	0.1ppm ± 1digit

OptiCal Sciences

CERTIFICATE OF CALIBRATION

CALIBRATION SUMMARY

UK01-26273

The instrument under test was calibrated against standards which are either traceable to National Standards or are derived by approved ratio techniques. Any number of factors may cause the instrument to drift out of calibration before the calibration interval has expired.

Prepared For:	H & V Commissioning Services Limited Kilknowe Office 16 Barrmill Road Galston Ayrshire, KA4 8HH
Service Report No.:	UK01- 26273
Make:	ATI
Model:	TDA-2G
Serial No.:	14086
Date of Calibration:	17-Mar-15
Calibration Due Date:	17-Mar-16
Calibration Procedure:	OSL-10015

The instrument complies with the specification at the measured points.

Comments:
None

Calibration Performed By: S. Wakefield

Date:

Signature: [redacted]

OptiCal Sciences

CERTIFICATE OF CALIBRATION

UK01-26273

STANDARDS TRACEABILITY

Statement of Traceability
The Instrument Standards used have been calibrated by an external laboratory, and are traceable to National Standards. The calibration below has been performed to meet the requirements of ISO-10012:2003. The photometer has been calibrated for use with ISO 14644-3

Instrument Standards				
Description	**Manufacturer**	**Serial No.**	**Last Recal.**	**Cert. No.**
Digital Voltmeter	Robin	910000537	13-Feb-15	351759
Airflow Meter	TSI	40450819003	20-May-14	N/A
Pico-Ampere Source	Keithley	80964	14-Oct-14	TERISO_633508
Reference Photometer	ATI	13487	19-Nov-14	25908
Aerosol Dilutor 1000:1	ATI	13940	4-Mar-15	26275

CALIBRATION TEST DATA

System Voltages			
Location	**As Found**	**As Left**	**Tolerance**
J9-1	5.09 V	5.09 V	+5.0 ± 0.1 V
J9-5	15.0 V	15.0 V	+15.0 ± 0.45V
J9-6	-15.03 V	-15.03 V	-15.0 ± 0.45V

Flow Rate Verification/Calibration			
Expected	**As Found**	**As Left**	**Tolerance**
28.3 LPM	29.1 LPM	28.3 LPM	28.3 ±2.8 LPM

Calibration Results				
Test	**Expected**	**As Found**	**As Left**	**Tolerance**
Straylight	<0.007	0.0019	0.0013	N/A
100% Setting	100 µg/L	90 µg/L	100 µg/L	±10%
Internal Reference Settings	DOP = (Total Finevestan A80B)			

Calibration Performed By: S. Wakefield

Date: 17-Mar-15

Signature: [redacted]

OptiCal Sciences

CERTIFICATE OF CALIBRATION

UK01-26273

Amplifier Linearity			
Photometer Reading	**As Found**	**As Left**	**Tolerance**
0.001%	0.80	0.80	$0.80 \pm 0.04 \times 10^{-10}$
0.01%	0.80	0.80	$0.80 \pm 0.04 \times 10^{-9}$
0.10%	0.80	0.80	$0.80 \pm 0.04 \times 10^{-8}$
1.0%	0.80	0.80	$0.80 \pm 0.04 \times 10^{-7}$
10%	0.76	0.76	$0.80 \pm 0.04 \times 10^{-6}$
100%	0.80	0.80	$0.80 \pm 0.04 \times 10^{-5}$

Comparison Results	
Reference Reading (µg/L)	**U.U.T. Reading (µg/L)**
100	100
10	10
1	1
0.1	0.1
0.01	0.01
0.001	0.001

Temperature & Humidity During Calibration	
Temperature	**Humidity**
24 °C	32 %RH

Condition of Calibration, As Found:			**Condition, As Left:**
☒ In Tolerance	☐ Out of Tolerance	☐ Inoperable	☒ In Tolerance

Maintenance Performed			
☒ Rework Scattering Chamber	☒ Align Optics	☐ Replace Absolute Filter	☒ Leak Test
☐ Replace Smoke Chamber	☒ Test Scanning Probe	☐ Replace Exhaust Filter	☐ Hours Hours Run
☐ Replace/Clean Tubing	☒ Test Electrical Connections	☐ Replace Gaskets	☐ X.XX Firmware Version
☐ Clean Valve	☒ Perform Voltage Measurements	☒ Tighten Loose Hardware	☒ Final Test

Calibration Performed By: S. Wakefield

Date: [redacted]

Signature: [redacted]

DATE: 17-Mar-15

OptiCal Sciences

SERVICE REPORT

CUSTOMER H & V Commissioning Services Limited
ADDRESS Kilknowe Office
16 Barrmill Road
Galston
Ayrshire, KA4 8HH
CONTACT Angela Daly
PURCHASE ORDER NO 4787/IS/AC
OSL ORDER REF 23042

ENGINEER S.Wakefield
HOURS As Quote
TRAVELLING TIME N/A
OTHER EXPENSES N/A

WORK REQUIRED Repair and Recalibration
CALIBRATION CERT. ISSUED 26273
MODEL ATI TDA-2G
SERIAL NO 14086

☐ CONTRACT ☐ WARRANTY ☒ CUSTOMER A/C OTHER

Replaced Selector valve knob. Checked Power supplies and reset flow to 1.0 CFM

Stripped, cleaned and realigned optics.

Calibrated using Lab Standard Photometer, Picoamp Source and 1000:1 Diluter.

Reset internal reference to 100%. Checked response at various concentrations.

Checked Straylight, Op Amp null point, leak test, operation, and clean down.

PART NO.	QTY.	DESCRIPTION	ELECTRICAL SAFETY TEST RESULTS
10409	1	Selector valve knob	Visual:
			E. Continuity:
			Fuse Rating:
			Insulation:
			Run Test:
			Flash: N/A
FOR OFFICE USE ONLY:	T =	L =	Test No:

ENGINEER SIGNATURE [redacted]

SERVICE REPORT No 26273

MOODY INTERNATIONAL CERTIFICATION UKAS QUALITY MANAGEMENT 014 ISO 9001

OptiCal Sciences Limited
Envirotest House
Anglia Way, Moulton Park Industrial Estate, Northampton NN3 6JA
[redacted]
Visit our Website at www.optical-sciences.co.uk

safecontractor APPROVED

From: Julie Miller [redacted] on behalf of Julie Miller
Sent: 10 October 2015 09:08
To: Powrie, Ian
Cc: David Wilson
Subject: RE: dripping chilled beams in Critical Care - Wednesday 7/

Hello Ian,

I will need to speak to Kenny about which valve it was. I did not note at the time.

It is also my understanding that there is no dew point control. This would have been something discussed early doors with the control strategy presumably.

Best regards
Julie

From: Powrie, Ian [redacted]
Sent: 10 October 2015 09:02
To: Julie Miller
Cc: David Wilson
Subject: Re: dripping chilled beams in Critical Care - Wednesday 7/

Hi Julie,

Thanks for this, can you identify which valve was forced, I will alert my team to ensure that this does not reoccur, I suspect this may have been forced open as part of the recent recharging of the cooling system inhibitor by via following a pipe work failure? And not returned to normal.

Can you advise me on the dew point control arrangement for the A&C? Schneider are indicating that there is not BMS control?

Thanks again

Regards

Ian

I.Powrie
Sector Estates Manager (NSGH)
Project Team, New South Glasgow Hospitals,
Southern General Hospitals Construction Site,
2nd Floor, Modular Building, Off Hardgate Road, Glasgow,G51 4SX
[redacted]

On 9 Oct 2015, at 15:16, Julie Miller [redacted] wrote:

> Hello Ian,

Just to update you on the condensation forming on the chilled beams in critical care that we reviewed on Wednesday this week.
We found that there was a valve 'forced' on the BMS which meant that the chilled water system serving the chilled beams (out of PR21) was too low thereby causing the condensation. We unforced the valve and the temperature rectified.
Presumed it was FM who had done this?

However, I did revisit the area yesterday and checked that the condensation issue had gone away which it had.

Best regards
Julie

Julie Miller
M & E Manager

Brookfield Multiplex Europe
Site Office
Institute of Neurological Science
Queen Elizabeth University Hospital
1345 Govan Road
Glasgow, G51 4TF, United Kingdom

[redacted]
W www.brookfieldmultiplex.com

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****

From: Moir, Peter [redacted] on behalf of Moir, Peter
Sent: 13 October 2015 13:56
To: Kane, Mary Anne
Cc: Powrie, Ian; Loudon, David; Williams, Craig; Gillon Armstrong
Subject: RE: ITU isolation rooms

Mary Anne

I attended a walkround of the 10 rooms in CCW this morning following Ian's recent survey and our discussion yesterday.

In attendance were myself, Ian Powrie, Gillon Armstrong (BM) and Julie Miller (BM)

After a brief discussion on the issues raised by Ian and a review of his tabulated findings we looked at each room to review the following;

- Lobby pressures
- Door operation
- Pressure relief damper operation
- Pressures with doors open and closed.

All the lobbies inspected were operating at a positive pressure between 9 and 16 pascals the recommended range is 8-12 pascals. Most rooms seemed to be operating in range 12-15 pascals and we think this has resulted from the additional sealing works to the rooms and a rebalance of the supply to the lobby is required. All gauges responded quickly on the operation of the doors both pressure drop and return to pressure. WE noted a number of rooms where the gauge need reset to zero with the doors open, this was always on the positive side and may also add the readings being over 10pa.

The doors between the lobby and the room were reviewed and there are around 4 that are not meeting the frame properly. Brookfield will return and adjust the door closers. I am checking that Brookfield have installed what we asked them to. If staff continue to find difficulty with door closing I will arrange for Brookfield to fit stainless steel D handles to these doors on the lobby side.

Two rooms have the pressure relief dampers in the wrong way 44 and 40 and will require to have them rotated 180 deg. The lobbies are pressurised and air will be moving into the room and corridor under doors. This work needs to be completed as soon as possible, and I will contact Iain Thomson to identify when Brookfield can get access.

The airflow to all the lobbies needs to be checked and balanced to a static 10pa.

Links to BMS/ Nurses Station are being checked by Brookfield today.

I am in process of updating Ian's spreadsheet to include the above in more detail and will circulate later today.

All the CCW isolation rooms have completed their air permeability tests and passed based on results supplied by RSK, Brookfield's sub. A formal report confirming same will be provided by Brookfield/RSK as soon as possible next week.

Regards

Peter

From: Kane, Mary Anne
Sent: 13 October 2015 08:40

To: Moir, Peter; Powrie, Ian
Subject: RE: ITU isolation rooms

Can on eof you update me after meeting this am please ?

From: Moir, Peter
Sent: 12 October 2015 16:53
To: Kane, Mary Anne
Cc: Powrie, Ian; Alasdair Fernie; Loudon, David; Hunter, William; David Wilson; 'Gillon Armstrong'; Julie Miller
Subject: RE: ITU isolation rooms

Mary Anne

I have agreed to meet Brookfield at 8am and visit the CCW ward to inspect the issues you have highlighted below. It would be useful if a representative from Estates could be present who is aware of the specific issues. It may be that in the case of door ironmongery the Board will need to instruct additional door handles.

We are meeting in QEUH reception at 8am.

I will report later in the morning.

Regards

Peter

From: Kane, Mary Anne
Sent: 12 October 2015 15:36
To: 'Gillon Armstrong'; Julie Miller
Cc: Powrie, Ian; Alasdair Fernie; Loudon, David; Moir, Peter; Hunter, William; David Wilson
Subject: RE: ITU isolation rooms

Thanks for this Gillon
I find it somewhat strange that you would feel confident of the suitability of the rooms when we have had an admission from Brookfoeld they knew the dampers were fitted wrongly when they conducted the testing and that the instruction of the Boards observing officer was clearly not adhered to in the other rooms or this would have been picked up . This is also not the view of the Infection Control Doctors or Ian Powrie who wintnessed the first air permeability test .Ian advises that the first air permeability test was to include the opening of the damper which is a requirement of the SHPN .
By Brookfields own admission they meant to resolve the blades being mounted the wrong way round when they were completing the air permeability tests but did not These blades impact on the movement of air around the room and could be part of the reason for the increase in pressure in the isolation lobby
In addition some rooms have latch handles to assist in the closing of the door due to the direction which the door opens (which is in the same direction as the air pressure)
There is only one room available for use within the appropriate level of air pressure ,latch handles and so on (Room 31) from a total of 10 in CCW .
The Board is requesting that you arrange to take immediate corrective action to adress the issues raised ,particularily around rectification of the blades where 8 rooms have visibly identifiable problems with these, the latch handles where a number of rooms do not have these fitted and correct the alarm system to identify that the pressures are out of sync .
This is an extremely serious issue for the Board given recent media attention on a range of transmissable conditions which the Board has had to adress in recent days and weeks
Regards
Mary Anne Kane
Associate Director of Facilities

From: Gillon Armstrong [redacted]
Sent: 12 October 2015 15:01
To: Kane, Mary Anne; Julie Miller
Cc: Powrie, Ian; Alasdair Fernie; Loudon, David; Moir, Peter; Hunter, William; David Wilson
Subject: RE: ITU isolation rooms

Mary Anne,

We can confirm that in Brookfield's opinion the rooms that have passed the air permeability testing are fit for purpose.

Regards

Gillon Armstrong
Section Manager - Construction

Brookfield Multiplex Europe
Site Office
Institute of Neurological Science
Queen Elizabeth University Hospital
1345 Govan Road
Glasgow, G51 4TF, United Kingdom
[redacted]
Web www.brookfieldmultiplex.com

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From: Kane, Mary Anne [redacted]
Sent: 12 October 2015 14:55
To: Julie Miller
Cc: Powrie, Ian; Alasdair Fernie; Loudon, David; Moir, Peter; Hunter, William; Gillon Armstrong; David Wilson; Kane, Mary Anne
Subject: Re: ITU isolation rooms

Thanks Julie for responding Can you confirm that in Brookfields opinion therefore the rooms are fit for purpose as they currently stand ?

Sent from my iPhone

On 12 Oct 2015, at 13:52, Julie Miller [redacted] wrote:

> Hello Ian,
>
> Please see the attached test results from RSK – this is the only document that we have issued by RSK to date.
>
> I understand from Stuart at RKS that one room / PRD was tested with someone from the Board in attendance at the start of the air permeability testing and that this was accepted. I am however not able to validate this statement as to who this was. The rooms do pass the air permeability tests but this would be without the specific test on the PRD's.
>
> Please bear in mind, the lobby to corridor pascal readings have been operating at 10pa or above – the lobby is the protected zone (whether or not the pressure relief damper is opening or not) – we

are still achieving the pressures in the lobbies. We and the NHS have checked these on an on-going basis and I am not aware that we have fallen below these parameters on a consistent basis.

If the pressure relief damper does not fully open, this does not affect the protected lobby, the adverse effect (whilst still getting some air bleed under the doors) is that the room environmental conditions e.g. heating and cooling is not as controlled simply because you would not get full air flow into the bedroom– this does not affect lobby and the pressures.

There is not a lack of commissioning data for the ventilation elements of the isolation rooms.

Controls - The separation of the extract from the supply fan gives a more stable environment – when the extract did track the supply, this can affect the pressure as increased extract will lower the pressures, therefore having separated the supply from this tracking, the supply will maintain the pressures.

Hope that this answers your questions.

Best regards
Julie

From: Powrie, Ian [redacted]
Sent: 12 October 2015 11:14
To: Julie Miller; Alasdair Fernie
Cc: Loudon, David; Moir, Peter; Hunter, William; Gillon Armstrong; David Wilson; Kane, Mary Anne
Subject: RE: ITU isolation rooms

Julie/Alasdair

I know David is on A\L and therefore would be grateful for your input support on these issues further to David's response below.

CCW-140/Bed 44 & CCW-157/Bed 40: Balanced transfer unit Frame & blades mounted wrong way around, blades closed. The NHS team Estates\ICT where unaware of this issue until last week when the rooms where need for ID patient placement, Obviously this has a critical bearing on the safe use of both these rooms for effective Isolation. did you advise anyone of your knowledge of these issues?
I have a review meeting today on the isolation rooms and will raise this with the group regarding access to expedite this re-installation as a matter of urgency.

The response on the following question does on provide a complete answer

Question:

- "Are the balanced transfer grilles being tested as part of the permeability testing as described in SHPN 04:1 ?" This still needs to be answered, given the incorrect fitting of the transfer grilles detailed above this confirmation is crucial. The submitted schedule of test result stated that both rooms CCW-140 & CCW-157 had passed the air permeability tests?

- When will we receive copies of the formal air permeability validation reports? These are essential to reassure our clinical colleagues that the systems are safe fit for use?

Following the issues identified on the table above last week, our Consultant Microbiologist & head of Infection Control has stated "The attached spreadsheet lists a number of problems with the isolation rooms, this seems to contradict an earlier e mail saying that all of the critical care rooms had passed. I think it is important that given the current situation we have absolute clarity as to whether these rooms are functioning to the standards laid down in SHPN 04-01"

As such I would be grateful if you would provide level of clarity by providing the commissioning documentation and verifying the modifications made to controls, dampers etc have not adversely affected these results? I also understand that there has been a modification to the control philosophy, involving the separation of the extract fan speed control from the supply fan speed control, could this potentially result in room pressure variations?

8 out of the 10 rooms where found to be out with the recommended operating parameters 8 – 12pa. – **All rooms have been checked previously and were operating at 10Pa – has your team investigated this, are the filters dirty and need replacing. I have asked our team to also review.**

I can confirm that all isolation room AHU plant filters where checked\Replaced at the end of Aug, beginning of September.
Given the number of problems identified before the air permeability tests and lack of commissioning documentation I don't feel it is reasonable to take the stance that "**All rooms have been checked previously and were operating at 10Pa**"? I would therefore would appreciated you support in establishing the reason for these rooms operating out with the defined parameters?

There is a high degree of uncertainty and concern over the status of these rooms and we need a final set of commissioning result that confirm the actual status of these isolation rooms.

Regards

Ian

[redacted]
Sector Estates Manager (South & Clyde)
Queen Elizabeth University Hospital Campus,
1345 Govan Rd,
Glasgow,
G51 4TF,
[redacted]

From: David Wilson [redacted]
Sent: 09 October 2015 10:13
To: Powrie, Ian
Cc: Loudon, David; Moir, Peter; Hunter, William; Julie Miller; Alasdair Fernie; Gillon Armstrong
Subject: RE: ITU isolation rooms

Ian,

I have asked our team to review the Isolation Room issues and would comment as follows:

- BMS Alarms – The magnahelic pressure gauge is linked to the BMS and should alarm if the lobby pressure drops below 8Pa – I have asked Schneider to investigate why this is now not operational and rectify.
- CCW-140/Bed 44 & CCW-157/Bed 40: Balanced transfer unit Frame & blades mounted wrong way around, blades closed. – We were aware of this and the blades were supposed to be turned round when the air permeability test was carried out – through some mis-communication this did not happen – we will liaise with the clinical staff to arrange access to rectify asap.
- 8 out of the 10 rooms where found to be out with the recommended operating parameters 8 – 12pa. – All rooms have been checked previously and were operating at 10Pa – has your team investigated this, are the filters dirty and need replacing. I have asked our team to also review.

- 8 out of the 10 rooms with Balanced transfer unit not operating – These pressure stabilisers and are installed to ensure that there is no over pressurisation of the lobby. However I will get the stabilisers checked again.
- 5 out of 10 bed room doors without latched handle, making it difficult to close the doors. – These will be checked and adjusted if required.

Regarding the queries from the microbiologist:

- Pressure Stabilisers – See above
- Extract HEPAs – Extract HEPAs were only fitted where the discharge stack could not rise 3m above the roof (as per SHPN recommendations) – These are generally from the Plantroom 21 systems as per design. There was no requirement to fit safe change housings on other systems
- All Isolation rooms were designed for the facility to fit HEPA filters on the supply. Im not aware of any other requirement that Extract fans should be fitted with safe change units?

Julie will update you on our reviews.

Regards
David

David Wilson
Commissioning Manager - Construction

<image001.jpg>

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Fairfield - Suite 12
1048 Govan Road
Glasgow, G51 4XS, United Kingdom
[redacted]
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Please note we have now moved office!

From: Powrie, Ian [redacted]
Sent: 08 October 2015 19:29
To: David Wilson
Cc: Loudon, David; Moir, Peter; Hunter, William
Subject: FW: ITU isolation rooms

Hi David,

Further to our conversation earlier today, please see attached review of the Adult ITU Isolation suite parameters found as a result of pre-checks prior to the placement of potential Infectious Disease patients on Wednesday 7th Oct 2015.

- CCW-245/Bed23: The fire damper was closed on the supply duct removing positive pressure protection, with no local alarm to draw attention to the fact and no remote alarm to the BMS. The reason for the damper closure is still being investigated. The damper as now been reset and the pressure has been restored to 10pa.

- CCW-140/Bed 44: Balanced transfer unit Frame & blades mounted wrong way around, blades closed.

- CCW-157/Bed 40: Balanced transfer unit Frame & blades mounted wrong way around, blades closed.

- 8 out of the 10 rooms where found to be out with the recommended operating parameters 8 – 12pa.

- 8 out of the 10 rooms with Balanced transfer unit not operating correctly, these are .

- 5 out of 10 bed room doors without latched handle, making it difficult to close the doors.

I would be grateful if you could have these issues addressed as a matter of urgency, these facilities are required to allow safe and effective placement of ID patients, under the conditions found our ICT colleague are not assured that ID patients can be effectively isolated.

Our Infection control micro biologist has also raised a enquired:

1. Are the balanced transfer grilles being tested as part of the permeability testing as described in SHPN 04 ? If so the ones that have passed still have issues with the baffles. In order to verify this we require copies of the formal air permeability validation reports, can you please provide these for the rooms tested and passed so far?

2. 50% of isolation rooms identified on the status report do not have extract heap filters fitted, therefore they cannot be used for ID isolation
   - what is the reason for this?
   - Are safe change filter housing fitted for future addition of HEPA filters?
   - Does SHTM 03-01 Pt A permit isolation rooms to be designed without extract HEPA provision?

Would it be possible to answer these questions tomorrow to allow these responses to be considered at a group review meeting on Monday.

Regards

Ian

[redacted]
Sector Estates Manager (South & Clyde)
Queen Elizabeth University Hospital Campus,
1345 Govan Rd,
Glasgow,
G51 4TF,
[redacted]

****
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From: David Wilson [redacted] on behalf of David Wilson
Sent: 19 October 2015 11:29
To: David Hall
Cc: Julie Miller
Subject: RE: dripping chilled beams in Critical Care - Wednesday 7/

David,

Yes there is no dew point control. I wasn't involved in the design discussions on this but my understanding is that it was felt that adding the dew point control would cause more issues with rooms overheating in summer than it would solve condensation as the risk was low due to the higher chilled water temp to the chilled beams and FCUs.

The issue that was experienced recently with condensation dripping from beams was that the estates team had forced a chilled water blending valve to 100% open resulting in the Chilled beam chilled water circuit being at a lower temperature (6^{O}C) hence the condensation forming.

David

David Wilson
Commissioning Manager - Construction

Brookfield MULTIPLEX BM

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Fairfield - Suite 12
1048 Govan Road
Glasgow, G51 4XS, United Kingdom
[redacted]
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Please note we have now moved office!

From: David Hall [redacted]
Sent: 13 October 2015 13:27
To: David Wilson; Julie Miller
Subject: FW: dripping chilled beams in Critical Care - Wednesday 7/

David,

Is it correct that there is no dew point control, even in clinical areas?

David

David Hall
FCIOB/MAPM
Director
Currie & Brown
[redacted]

Building 3, 2 Parklands Avenue, Maxim Office Park, Eurocentral
Lanarkshire ML1 4WQ
United Kingdom

[redacted]

Website: www.curriebrown.com

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Registered Number 1300409
Registered Office: Dashwood House, 69 Old Broad Street, London, EC2M 1QS

From: Powrie, Ian [redacted]
Sent: 10 October 2015 09:20
To: David Hall [redacted]
Subject: Fwd: dripping chilled beams in Critical Care - Wednesday 7/

Hi David,

Can you please advise on design strategy for dew point control in the A&C chilled beams?
You may recall that we suffer loss of cooling under dew point control in the labs and requested a different strategy for the A&C as this condition would nog bs acceptable in patient Areas.

However I was not in the loop for the final design solution and as you can see below Julie is suggesting that there is now dew point control on the BMS?

Can you help me out with this?

Regards

Ian

I.Powrie
Sector Estates Manager (NSGH)
Project Team, New South Glasgow Hospitals,
Southern General Hospitals Construction Site,
2nd Floor, Modular Building, Off Hardgate Road, Glasgow,G51 4SX
[redacted]

Begin forwarded message:

> **From:** Julie Miller [redacted]
> **Date:** 10 October 2015 09:07:54 BST
> **To:** "Powrie, Ian" [redacted]
> **Cc:** David Wilson [redacted]
> **Subject: RE: dripping chilled beams in Critical Care - Wednesday 7/**
>
> Hello Ian,
>
> I will need to speak to Kenny about which valve it was. I did not note at the time.
>
> It is also my understanding that there is no dew point control. This would have been something discussed early doors with the control strategy presumably.
>
> Best regards
> Julie

From: Powrie, Ian [redacted]
Sent: 10 October 2015 09:02
To: Julie Miller
Cc: David Wilson
Subject: Re: dripping chilled beams in Critical Care - Wednesday 7/

Hi Julie,

Thanks for this, can you identify which valve was forced, I will alert my team to ensure that this does not reoccur, I suspect this may have been forced open as part of the recent recharging of the cooling system inhibitor by via following a pipe work failure? And not returned to normal.

Can you advise me on the dew point control arrangement for the A&C? Schneider are indicating that there is not BMS control?

Thanks again

Regards

Ian

I.Powrie
Sector Estates Manager (NSGH)
Project Team, New South Glasgow Hospitals,
Southern General Hospitals Construction Site,
2nd Floor, Modular Building, Off Hardgate Road, Glasgow,G51 4SX
[redacted]

On 9 Oct 2015, at 15:16, Julie Miller [redacted] wrote:

> Hello Ian,
>
> Just to update you on the condensation forming on the chilled beams in critical care that we reviewed on Wednesday this week.
> We found that there was a valve 'forced' on the BMS which meant that the chilled water system serving the chilled beams (out of PR21) was too low thereby causing the condensation. We unforced the valve and the temperature rectified.
> Presumed it was FM who had done this?
>
> However, I did revisit the area yesterday and checked that the condensation issue had gone away which it had.
>
> Best regards
> Julie
>
> **Julie Miller**
> M & E Manager
>
> **Brookfield Multiplex Europe**
> Site Office
> Institute of Neurological Science
> Queen Elizabeth University Hospital

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From: David Wilson [redacted] on behalf of David Wilson
Sent: 22 October 2015 07:52
To: ian.powrie [redacted] Peter.Moir [redacted]
Cc: Craig.Williams [redacted] david.loudon [redacted]
Subject: Re: WARD 4B - HAEMATO ONCOLOGY

Ian,

Just let either myself or Julie know when you would like to have a look at the alarm system.

On the negative pressure on the en-suite we have not measured this as there was no requirement to do so. All room to corridor pressures have been set, measured as required.

We are currently compiling the test certificates and will forward on early next week.

David

David Wilson
Commissioning Manager - Construction

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1048 Govan Road
Glasgow, G51 4XS, United Kingdom
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From: Powrie, Ian [redacted]
Sent: Thursday, October 22, 2015 06:17 AM
To: Moir, Peter [redacted]
Cc: Williams, Craig [redacted]; Loudon, David [redacted]; David Wilson
Subject: Re: WARD 4B - HAEMATO ONCOLOGY

Peter,

Sorry I have just picked up on you e-mail following my return from A/L, and did not attend the familiarisation session. I will tie in with David for a run through of the alarms system.

The only issues that I can think off would be,

1. Confirmation of the air flow patterns i.e. negative pressure in the en-suite compared with the bed room.

2. Confirmation that any door, partition & window blind defects have been fully resolved, as once patients a have moved back into the ward access will be limited.
3. Confirmation that the water supplies installed for the aroma therapy room have been sanitised and are ready for use on reoccupation.

Regards

Ian

I.Powrie
Sector Estates Manager (NSGH)
Project Team, New South Glasgow Hospitals,
Southern General Hospitals Construction Site,
2nd Floor, Modular Building, Off Hardgate Road, Glasgow,G51 4SX
[redacted]

On 20 Oct 2015, at 11:00, Moir, Peter [redacted] wrote:

> Ian
>
> I am meeting Brookfield at 4pm today to witness their staff awareness training on the operation of the digital gauges and their alarms in Ward 4B.
>
> I know your staff are attending at 3pm for a more detailed run through.
>
> Brookfield plan to handover the ward on 29th October and I want to confirm what information you will want to be provided by Brookfield to support the commissioning and validation of the M&E services etc. I am also aware Infection Control will require figures as commissioned.
>
> I have asked David Wilson to prepare a folder for review and handover on 29th October to contain the following;
>
> a) Commissioning figures for air handling system e.g. to confirm airflow or air change rates.
> b) DOP test results for the HEPA filters.
> c) RSK report and results for the air permeability tests undertaken on the single bedrooms.
> d) O&M information on the digital gauges and the alarm function.
> e) A summary of the changes made to the main supply plant and any impact to the information currently uploaded to ZUTEC for the operation and maintenance of air handling supplies to Ward 4B.
>
> Can you confirm any other information it would be useful/essential to have at handover so we don't have any last minute panics. Craig would you mind passing any requirements from IC to Ian, you are more than welcome to attend the demonstrations today, Estates at 3pm or clinical staff at 4pm both in Ward 4B.
>
> Regards
>
> Peter Moir
> Deputy Project Director
>
> South Glasgow Hospitals Project Office
> NHS Greater Glasgow & Clyde

Room L1/25
Management Building
1345 Govan Road
Glasgow G51 4TF

[redacted]

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From: Powrie, Ian [redacted] on behalf of Powrie, Ian
Sent: 23 October 2015 17:14
To: David Wilson; Loudon, David; Julie Miller; Alasdair Fernie; Kane, Mary Anne; Moir, Peter; Brattey, David; Hunter, William
Subject: RE: Critical care rooms

All,

I have arrange for the estates team to monitor the isolation room pressures as well as the 5 affected supply & extract AHU 's every 2 hours with an escalation to me if there are any deviations of concern.
The ward management team and paediatrician have been consulted and agreed to remain on hand control over the weekend as a stable platform until Monday when the system can be switched to a new controller offering reassurance of stability and trained technician supervision during the stabilisation period. This will allow BMT patient to go into strict isolation in Room [redacted] tonight as planned.

My concern is that this type of failure could reoccur in the future as a result of a controller failure or network failure, I have discussed this with David Wilson and we have agreed to carry out some simulations in conjunction with Schneider on ward 4b's plant while the ward is unoccupied. I will advise of the outcome of these tests next week.

Regards

Ian

[redacted]
Sector Estates Manager (South & Clyde)
Queen Elizabeth University Hospital Campus,
1345 Govan Rd,
Glasgow,
G51 4TF,
[redacted]

From: David Wilson [redacted]
Sent: 23 October 2015 16:42
To: Loudon, David; Powrie, Ian; Julie Miller; Alasdair Fernie; Kane, Mary Anne; Moir, Peter; Brattey, David; Hunter, William
Subject: Re: Critical care rooms

All,

Schneider have been unable to rectify the fault with the controller so will replace with a new controller with pre loaded software on Monday. All the ahus affected have been set to run in hand and are providing the correct pressures in the associated isolation rooms.

There should be no problems running the ahus in hand but it would be worthwhile if the estates team keep their eye on them over the weekend.

Once the controller has been replaced it will be sent to Schneiders technical dept. To try and establish the cause of the fault.

Regards
David
David Wilson
Commissioning Manager - Construction

Brookfield Multiplex Construction Europe Ltd
Fairfield - Suite 12
1048 Govan Road
Glasgow, G51 4XS, United Kingdom
[redacted]
W www.brookfieldmultiplex.com

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Please note we have now moved office!

From: David Wilson
Sent: Friday, October 23, 2015 12:46 PM
To: 'david.loudon[redacted] 'Ian.Powrie[redacted] Julie Miller; Alasdair Fernie; 'MaryAnne.Kane[redacted] 'peter.moir[redacted] 'David.Brattey[redacted] 'William.Hunter[redacted]
Subject: Re: Critical care rooms

David,

The current problem has not been one we have experienced before in the isolation rooms. The issue is with a BMS controller serving a group of units and not something specific to isolation rooms so I see no inherent issue with the installation.

David
David Wilson
Commissioning Manager - Construction

Brookfield Multiplex Construction Europe Ltd
Fairfield - Suite 12
1048 Govan Road
Glasgow, G51 4XS, United Kingdom
[redacted]
W www.brookfieldmultiplex.com

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Please note we have now moved office!

From: Loudon, David [redacted]
Sent: Friday, October 23, 2015 12:15 PM
To: David Wilson; Powrie, Ian [redacted]; Julie Miller; Alasdair Fernie; Kane, Mary Anne [redacted]; Moir, Peter [redacted]; Brattey, David [redacted]; Hunter, William [redacted]
Subject: RE: Critical care rooms

David

This problem is causing considerable concern for my clinical colleagues and having a significant effect on their confidence of the operating environment. I appreciate your efforts but the Board must have confidence in the systems within critical clinical spaces.

Are you confident that the repairs will provide us with longer term confidence and that we don't have an inherent or latent defect within the installation?

David

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHSGreater Glasgow & Clyde
Corporate Headquarters
JB Russell House
Gartvavel Royal Hospital
Glasgow
G12 0XH

[redacted]

From: David Wilson [redacted]
Sent: 23 October 2015 11:05
To: Powrie, Ian; Julie Miller; Alasdair Fernie; Loudon, David; Kane, Mary Anne; Moir, Peter; Brattey, David; Hunter, William
Subject: Re: Critical care rooms

Ian,

Julie is liaising with Schneider this morning to review and rectify the faults and will keep you updated on progress

David
David Wilson
Commissioning Manager - Construction

Brookfield Multiplex Construction Europe Ltd
Fairfield - Suite 12
1048 Govan Road
Glasgow, G51 4XS, United Kingdom
[redacted]
W www.brookfieldmultiplex.com

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Please note we have now moved office!

From: Powrie, Ian [redacted]
Sent: Friday, October 23, 2015 08:28 AM
To: David Wilson; Julie Miller; Alasdair Fernie; Loudon, David [redacted]; Kane, Mary Anne [redacted]; Moir, Peter [redacted]; Brattey, David [redacted]; Hunter, William [redacted]
Subject: FW: Critical care rooms

David/Julie

As you are aware we had some issues last night with the availability of ventilation plant supporting ward 2a isolation rooms, which was initially related to isolation bed 18, then isolation bed 19, which both lost lobby positive pressure, Bed room 18 had filters changed and was reset and returned to normal however room 19 could not be reset, Julie had been working on this earlier in an attempt to reset?
There is a transplant patient in room 18 and a 2nd transplant patient scheduled for room 19 this morning.

Julie returned to site when I called to enquire on the status of this plant and advise that it would not respond to ether control or manual intervention.
I mobilised Schneider via the service support contract emergency call out procedure for controls support, the engineer returned to site by 21:00 hours, followed later by his service manager, during their investigations a further 4 ventilation AHU's supplying ward 2A also failed in the same manner, this is believed to be a controls network problem but could not be confirmed with the resources available last night. The 5 affected units where place in manual and the pressures set by hand for each isolation suite(at between 10 – 15pa) in order to maintain an isolation capability in these suites.

The isolation suites affected by this common fault are:

Isolation Bed No 22. (41A AHU 19)
Isolation Bed No 23. (41A AHU 23)
Isolation Bed No 25. (41A AHU 29)
Isolation Bed No 19. (41A AHU 31)
Isolation Bed No 18. (41A AHU
32)

The Schneider engineer completed these works at 03:30 this morning, I would be grateful if you could as a matter of urgency mobiles the appropriate Schneider engineers to investigate and rectify the common fault causing this issue?
Please note given the current patient placement any works that may impact on loss of pressure to isolation room 18 & 19 must be approved by the ward manager & ICT.
Please contact me ASAP with a plan of action to expedite this matter, as I will need to keep the RHC's director up to date with arrangements and progress.

Regards

ian

[redacted]

Sector Estates Manager (South & Clyde)
Queen Elizabeth University Hospital Campus,
1345 Govan Rd,
Glasgow,
G51 4TF,
[redacted]
m

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From: Loudon, David [redacted] on behalf of Loudon, David
Sent: 23 October 2015 12:36
To: Julie Miller; David Wilson; Powrie, Ian; Alasdair Fernie; Kane, Mary Anne; Moir, Peter; Brattey, David; Hunter, William
Subject: RE: Critical care rooms

Ian Powrie

Are we confident that the manual mode with local monitoring will suffice for the time being until the controller if fixed ?

David

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHSGreater Glasgow & Clyde
Corporate Headquarters
JB Russell House
Gartvavel Royal Hospital
Glasgow
G12 0XH

[redacted]

From: Julie Miller [redacted]
Sent: 23 October 2015 12:25
To: Loudon, David; David Wilson; Powrie, Ian; Alasdair Fernie; Kane, Mary Anne; Moir, Peter; Brattey, David; Hunter, William
Subject: RE: Critical care rooms

Hello David,

Peter Moir has just come to our site cabin and I have updated him on progress.

I have been with Kenny (from Schneider) this morning and he is currently in Plant Room 41a linked up to the controller for this area.
The issue is with the controller itself and the sending out of signals to control the supply fan speeds. He has been there for the last 3 hours.
We do not have a resolution. He has another Schneider colleague on standby.
The Air Handling Plants for the 5 rooms currently affected are all still running steady in a manual mode.
Dependent on findings from Kenny, we will then know what needs to be done to provide stability of controls. He has said he will keep me informed.

Best regards
Julie

From: Loudon, David [redacted]
Sent: 23 October 2015 12:16
To: David Wilson; Powrie, Ian; Julie Miller; Alasdair Fernie; Kane, Mary Anne; Moir, Peter; Brattey, David; Hunter,

William
Subject: RE: Critical care rooms

David

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David

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHSGreater Glasgow & Clyde
Corporate Headquarters
JB Russell House
Gartvavel Royal Hospital
Glasgow
G12 0XH

[redacted]

From: David Wilson [redacted]
Sent: 23 October 2015 11:05
To: Powrie, Ian; Julie Miller; Alasdair Fernie; Loudon, David; Kane, Mary Anne; Moir, Peter; Brattey, David; Hunter, William
Subject: Re: Critical care rooms

Ian,

Julie is liaising with Schneider this morning to review and rectify the faults and will keep you updated on progress

David
David Wilson
Commissioning Manager - Construction

Brookfield Multiplex Construction Europe Ltd
Fairfield - Suite 12
1048 Govan Road
Glasgow, G51 4XS, United Kingdom
[redacted]
W www.brookfieldmultiplex.com

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Please note we have now moved office!

From: Powrie, Ian [redacted]
Sent: Friday, October 23, 2015 08:28 AM
To: David Wilson; Julie Miller; Alasdair Fernie; Loudon, David [redacted]; Kane, Mary Anne [redacted]; Moir, Peter [redacted]; Brattey, David [redacted]; Hunter, William [redacted]
Subject: FW: Critical care rooms

David/Julie

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Please contact me ASAP with a plan of action to expedite this matter, as I will need to keep the RHC's director up to date with arrangements and progress.

Regards

ian

[redacted]
Sector Estates Manager (South & Clyde)
Queen Elizabeth University Hospital Campus,
1345 Govan Rd,
Glasgow,

G51 4TF,
[redacted]
m

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Abbey Park
Humber Road
COVENTRY
CV3 4AQ
UK

[redacted]
www.rsk.co.uk

Our ref: SBB/524395

FAO: Gillon Armstrong
Brookfield Multiplex Europe
Site Office
Institute of Neurological Science
Queen Elizabeth University Hospital
1345 Govan Road
Glasgow
G51 4TF

Email only: [redacted]

27th October 2015

Dear Mr Armstrong

New South Glasgow Hospital –Isolation Room Testing
Adult's Hospital Ward Bed 4B

I write to confirm the results of the air permeability testing which we have undertaken on the isolation rooms within Ward 4B.

Testing was undertaken to prove compliance with the requirement of HBN 04 Supplement 1 – Isolation Facilities in Acute Settings. This requires that the enclosure have 'an average leakage rate of no more than 1 l/s of air per m^3 of envelope volume' at a positive and negative pressure differential of 20Pa. Further, the measured positive and negative leakage rates should be within 5% of each other.

Each test included the entrance lobby and main room. The ceiling mounted air supply and extract grilles were temporarily sealed with tape during the tests. No further temporary sealing was present at the time of the tests. A 'Minneapolis' door fan system was utilised to undertake each test. The fan was installed within the lobby access door to the corridor to each enclosure. A multipoint test in accordance with CIBSE TM23; 2000 was undertaken to ensure maximum accuracy.

Cont'd

Test Results

Bed 76 (HOW-190)	
Positive pressure test result;	**0.680 l/s per m³ at 20Pa**
Negative pressure test result;	**0.647 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**4.85%**
Average result;	**0.664 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 77 (HOW-193)	
Positive pressure test result;	**0.856 l/s per m3 at 20Pa**
Negative pressure test result;	**0.844l/s per m3 at 20Pa**
Variation between +ve and –ve results;	**1.40%**
Average result;	**0.850 l/s per m3 at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 78 (HOW-195)	
Positive pressure test result;	**0.858 l/s per m³ at 20Pa**
Negative pressure test result;	**0.886 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**3.16%**
Average result;	**0.872 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 79 (HOW-198)	
Positive pressure test result;	**0.953 l/s per m³ at 20Pa**
Negative pressure test result;	**0.986 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**3.35%**
Average result;	**0.970 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 80 (HOW-202)	
Positive pressure test result;	**0.580 l/s per m³ at 20Pa**
Negative pressure test result;	**0.589 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**1.52%**
Average result;	**0.0.584 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	

Test Results Continued

Bed 81 (HOW-050)	
Positive pressure test result;	**0.742 l/s per m³ at 20Pa**
Negative pressure test result;	**0.744 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**0.27%**
Average result;	**0.743 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 82 (HOW-053)	
Positive pressure test result;	**0.897 l/s per m3 at 20Pa**
Negative pressure test result;	**0.917 l/s per m3 at 20Pa**
Variation between +ve and –ve results;	**2.18%**
Average result;	**0.907 l/s per m3 at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 83 (HOW-055)	
Positive pressure test result;	**0.997 l/s per m³ at 20Pa**
Negative pressure test result;	**0.967 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**3.01%**
Average result;	**0.957 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 84 (HOW-058)	
Positive pressure test result;	**0.808 l/s per m³ at 20Pa**
Negative pressure test result;	**0.842 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**4.04%**
Average result;	**0.825 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 85 (HOW-059)	
Positive pressure test result;	**0.847 l/s per m³ at 20Pa**
Negative pressure test result;	**0.842 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**0.59%**
Average result;	**0.844 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	

Test Results Continued

Bed 86 (HOW-062)	
Positive pressure test result;	**0.889 l/s per m³ at 20Pa**
Negative pressure test result;	**0.914 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**2.74%**
Average result;	**0.902 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 87 (HOW-064)	
Positive pressure test result;	**0.947 l/s per m³ at 20Pa**
Negative pressure test result;	**0.919 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**2.96%**
Average result;	**0.933 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 88 (HOW-067)	
Positive pressure test result;	**0.725 l/s per m³ at 20Pa**
Negative pressure test result;	**0.744 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**2.55%**
Average result;	**0.716 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 89 (HOW-031)	
Positive pressure test result;	**0.786 l/s per m³ at 20Pa**
Negative pressure test result;	**0.753 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**4.20%**
Average result;	**0.770 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 90 (HOW-029)	
Positive pressure test result;	**0.856 l/s per m³ at 20Pa**
Negative pressure test result;	**0.828 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**3.27%**
Average result;	**0.842 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	

Test Results Continued

Bed 91 (HOW-026)	
Positive pressure test result;	**0.994 l/s per m³ at 20Pa**
Negative pressure test result;	**0.994 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**0%**
Average result;	**0.994 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 92 (HOW-024)	
Positive pressure test result;	**0.947 l/s per m³ at 20Pa**
Negative pressure test result;	**0.903 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**4.64%**
Average result;	**0.925 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 93 (HOW-021)	
Positive pressure test result;	**0.750 l/s per m3 at 20Pa**
Negative pressure test result;	**0.739 l/s per m3 at 20Pa**
Variation between +ve and –ve results;	**1.47%**
Average result;	**0.744 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 94 (HOW-020)	
Positive pressure test result;	**0.750 l/s per m³ at 20Pa**
Negative pressure test result;	**0.742 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**1.07%**
Average result;	**0.746 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 95 (HOW-017)	
Positive pressure test result;	**0.756 l/s per m3 at 20Pa**
Negative pressure test result;	**0.783 l/s per m3 at 20Pa**
Variation between +ve and –ve results;	**3.45%**
Average result;	**0.770 l/s per m3 at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	

Test Results Continued

Bed 96 (HOW-015)	
Positive pressure test result;	**0.961 l/s per m³ at 20Pa**
Negative pressure test result;	**0.919 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**4.37%**
Average result;	**0.940 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 97 (HOW-012)	
Positive pressure test result;	**0.939 l/s per m³ at 20Pa**
Negative pressure test result;	**0.947 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**0.84%**
Average result;	**0.943 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 98 (HOW-011)	
Positive pressure test result;	**0.930 l/s per m3 at 20Pa**
Negative pressure test result;	**0.956 l/s per m3 at 20Pa**
Variation between +ve and –ve results;	**2.72%**
Average result;	**0.943 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 99 (HOW-009)	
Positive pressure test result;	**0.792 l/s per m³ at 20Pa**
Negative pressure test result;	**0.806 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**1.61%**
Average result;	**0.799 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	

I trust that the above results are self explanatory, but please do not hesitate to contact me if you should have any queries.

Yours sincerely

Stuart B Borland BSc BArch RIAS
Director
Building Science Division
RSK Environment Limited

From: Loudon, David [redacted] on behalf of Loudon, David
Sent: 28 October 2015 12:07
To: David Wilson; Moir, Peter
Cc: Julie Miller; Jerry Sullivan; Powrie, Ian
Subject: RE: ISOLATION ROOMS

All

For clarity, the Board will not be taking handover of the rooms until we are confident that they are fully compliant and we can demonstrate this through the test certificates.

David

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHSGreater Glasgow & Clyde
Corporate Headquarters
JB Russell House
Gartvavel Royal Hospital
Glasgow
G12 0XH

[redacted]

From: David Wilson [redacted]
Sent: 28 October 2015 12:01
To: Moir, Peter
Cc: Julie Miller; Jerry Sullivan; Powrie, Ian; Loudon, David
Subject: RE: ISOLATION ROOMS

Peter,

Jerry has responded to you on the air permeability testing (4 rooms on Friday 30th October) on the other items noted:

a) The 5 door closers have not yet been tightened, this will be completed by Friday 30th Oct (dependent on any access restrictions). We are currently speaking to the Door Manufacturers for costs for the five D handles.
b) As Jerrys email
c) As Jerrys email
d) All Ward 4b test certs are on Zutec and an electronic copy has been issued to Ian Powrie and yourself this morning. I will bring a hard copy of the handover information this afternoon.
e) We have been carrying out an exercise with Schneider (which we are now nearing the end of) checking all the Isolation Room lobby pressures to ensure that they are within the design parameters. Once fully complete I will issue confirmation.

Regards
David

David Wilson
Commissioning Manager - Construction

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1048 Govan Road
Glasgow, G51 4XS, United Kingdom
[redacted]
W www.brookfieldmultiplex.com

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Please note we have now moved office!

From: Moir, Peter [redacted]
Sent: 28 October 2015 10:19
To: David Wilson
Cc: Julie Miller; Jerry Sullivan; Powrie, Ian; Loudon, David
Subject: ISOLATION ROOMS

David

Can you provide me with an update on works in the following areas;

a) 10 rooms adult CCW ward per the attached schedule, Julie has advised that the two PRD?s were rotated on 20th Oct, have the 5 door closers been tightened with final balancing of rooms to 10pa. I have issued the PMI for the 5 D handles, no doubt this will be undertaken in due course.
b) I believe the two renal rooms in Ward 4A are being tested on Friday 30th Oct. Can you confirm.
c) Schiehallion ? I believe rooms SCH-064 and SCH-019 were sealed on 21st October and are due to be tested on 30th October, please confirm this still plan.
This would leave two rooms outstanding in this ward to be sealed and tested namely SCH-075 and SCH-013.
d) We are meeting today for a final inspection of Ward 4B at 2.30pm. Confirm it would be useful to have all test data assembled as previously discussed in hard copy, electronic files can be uploaded to Zutec in due course.
e) When Gillon, Ian, Julie and I reviewed the rooms in adult CCW some weeks ago, we agreed that a walkround of the remaining rooms in the Childrens Hospital would be useful to check all is okay. Suggest we need a chat re this today with Ian.

Regards

Peter

Peter Moir
ARIAS

Deputy Project Director

South Glasgow Hospitals Project Office

NHS Greater Glasgow & Clyde
Room L1/25
Management Building
1345 Govan Road
Glasgow G51 4TF

[redacted]

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From: Moir, Peter [redacted] on behalf of Moir, Peter
Sent: 29 October 2015 12:37
To: Loudon, David
Cc: Powrie, Ian; David Wilson; Redmond, John (Capita
Subject: QEUH WARD 4B HAEMATO ONCOLOGY UPGRADE WORKS
Attachments: QEUH Ward 4B Upgrade Works Report Oct 2015.pdf

David

I attended a pre-handover walkround yesterday afternoon of Ward 4B and write to confirm that subject to Estates sign off of the detailed figures in the BM report the ward is ready for handover.

The attached report summarises the building works over the period and tests undertaken over the last 2-3 weeks, and these meet the general parameters that were set and agreed with the Oncology service in July 2015. The report has been loaded onto the Zutec system.

BUILDING WORKS TO SINGLE BEDROOMS & EN-SUITES
To provide a sealed room, the suspended ceilings have been replaced with Gyproc MF plasterboard ceilings, taped and filled and decorated. All junctions have been sealed with anti-bacterial silicone sealant, the paint finish is also anti-bacterial. All fittings in the ceilings have been sealed with silicone as have any new access hatches. Light fitments have been fitted with IP44 covers and sealed with silicone. The rooms were then fully sealed with silicone prior to air permeability tests. In the en-suites the ceiling tiles were sealed into the grid, around the perimeter, and any service outlet sealed to the tiles. Rooms have been redecorated where required and given a sparkle clean.

AIR PERMEABILITY TESTS
Tests have been undertaken by an accredited sub-contractor ? RSK Environment Ltd. The single bedrooms were tested to +/- 20 pascals in compliance with SHPN 04 Supplement 1 ? Isolation Facilities in Acute Settings. In addition the leakage rates were checked to be within 5% of each other. The RSK test data in Section 3 of the report confirms that all twenty four rooms have passed.

VENTILATION SYSTEM
The ventilation system has been enhanced to meet the additional supply requirements with the up-rating of the supply fans, motors and inverters. The system in Ward 4B has been re-balanced to achieve the agreed room differential pressures between 5-10 pascals. The AHU filters have been replaced.

CLEANING OF DUCTWORK
Due to dust created during the works, the ventilation ductwork system has been cleaned, supporting data and before and after photographs are included in Section 5 of the report.

HEPA FILTERS
All the HEPA filters have been replaced and DOP tests undertaken. Details are included in Section 4 noting all passing DOP test.

DIGITAL GAUGES
Digital gauges have been fitted outside all single bedrooms on the most adjacent section of corridor wall, and each gauge is engraved with the room to which it corresponds. The gauges are all linked back to a central console at the main staff base. The system has an alarm mode that is activated once the pressure in the room drops below 5 pascals for more than 120 seconds. Details of the system are included in section 7 of the report. I have visited the ward on a number of occasions since 20th October and note all the rooms are operating within the 5-10 pascal range, tests to alarms through leaving doors open have all activated after 120 sec and returned back to operating pressure on closing door to room, thus cancelling alarm.

CLIENT TRAINING
The functionality of this system was demonstrated to twelve Estates staff and eight clinical staff on 20th October. Names of those attending are included in the report.

CLEAN UTILITY
The work to alter the swing of the door to this room are complete, this includes fitting a hold open stay linked to the fire alarm system.

The pre-handover inspection on 28th October 2015 was attended by BM reps, Capita, Ian Powrie and myself. Apart from a couple of snagging items, the re-connection of one whb that is being completed today and reconnection of the nurse call monitor, the works in my opinion are complete and ready for the Board the undertake a deep clean prior to the IC team undertaking their particle tests.

Regards

Peter Moir
ARIAS

Deputy Project Director

South Glasgow Hospitals Project Office
NHS Greater Glasgow & Clyde
Room L1/25
Management Building
1345 Govan Road
Glasgow G51 4TF

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Brookfield MULTIPLEX | BM

NHS Greater Glasgow and Clyde

QUEEN ELIZABETH UNIVERSITY HOSPITAL

WARD 4B UPGRADE WORKS

A47069198

Contents

1. Description of works carried out
2. Summary of Testing & Commissioning
3. Room Air Permeability Results
4. Ventilation Commissioning and HEPA Filter Testing
5. Ventilation Duct Work cleaning report
6. Room Pressure Monitoring System Commissioning Report
7. Room Pressure Monitoring System O&M Information & Drawings
8. Client Training Register

QEUH – Ward 4b Upgrade Works

Introduction

This documents sets out the works carried out to upgrade the 24 bedrooms in the Haemato-oncology Ward (4b) on Level 4 of the Queen Elizabeth University Hospital to achieve between 5 and 10 pascals differential pressure between the bedrooms and the corridors.

Works carried out

In order to provide a sealed room, an MF plasterboard ceiling has been installed within the 24 bedrooms. The ceiling has been taped and painted and sealed at all interfaces with adjoining walls and services. The en-suite grid and tile ceiling has been retailed but with the services and tiles silicon sealed .

To ensure that the rooms were sufficiently sealed we have carried out room air permeability testing to the parameters set out in SHPN 04-01 Supplement 1.

The recessed down lighters within the room have all been fitted with a diffuser to provide an IP44 rating.

The ventilation (Supply and extract) to the ward bedrooms is provided by Air handling unit 31 AHU63 and the corridor is provided with extract ventilation from extract fan 31-63 EF01 (both the fan and AHU are located within Plantroom 31 on Level 3). In order to provide a more robust ventilation system and to assist in achieving the desired room pressures the AHU supply fans, motors and frequency inverters (duty and standby) were uprated. The ventilation systems have been re-balanced to achieve the room differential pressures (between 5-10Pa) and the pressure from the corridor to the rest of the hospital (positive pressure). The AHU filters were replaced.

The 24 bedrooms are fitted with HEPA filtration in the supply diffusers. A new HEPA filter has been fitted and validated in each room as part of the works. DoP test ports are provided within the ductwork above the ceiling in each room to allow each room HEPA to be tested.

A digital differential pressure monitoring system has been installed within the ward. Sensors have been located above the corridor ceilings linked to air tubes in the rooms and corridor which measure the differential pressure from the room to the corridor with a read out of the pressure displayed on an panel next to the room door. The pressures of all the rooms are displayed on a central panel located at the nurses station. If the pressure in the room drops below 5Pa or above 15pa for more than 2 minutes then an alarm will sound at the room display and at the central display at the nurses station, the audible alarm can be silenced at both the room display and the central display. When the rooms return to within the parameters then the alarms will automatically reset.

Maintenance Access

There are mechanical and electrical services running above the ceiling of the rooms, this is generally, ventilation ductwork, Smoke dampers, heating pipework, duct mounted heating coil, heating controls, domestic water pipework, medical gas pipework, electrical containment, WIFI data point, fire alarm void detector, Nurse call input / output unit. In order to gain access to the maintainable items and items that may need access for fault finding (fire alarm void detector, smoke dampers, heating controls, electrical trunking, duct mounted heating coil, data point) hatches have been provided in the ceiling. These hatches have been sealed using silicon sealant and would need to be re-sealed after they have been opened for access.

QEUH – Ward 4b Upgrade Works

Commissioning & Validation

On completion of the installation works the following commissioning and validation has been carried out:

1. The Air handling Unit and Supply ductwork were cleaned and swab samples taken for analysis.
2. The AHU filters were changed
3. The ventilation systems (supply and extract) were re-commissioned
4. Air Permeability tests were carried out in the 24 rooms.
5. The room to corridor pressures were set and measured
6. The corridor to hospital pressures were measured
7. The room supply HEPA filters have been changed and challenge tests completed (DOP)
8. The new Room differential pressure monitoring system has been commissioned and validated

AHU Ref:	Room Ref	HEPA Filter Fitted	Design Air Change	Design Room Pressure	Vent Commissioned	Room Pressure Measured	HEPA Tested	Air Perm Test
31 AHU 63 Supply & Extract	HOW-031	Yes	6	5-10Pa	Yes	Yes	Yes	Yes
31 AHU 63 Supply & Extract	HOW-029	Yes	6	5-10Pa	Yes	Yes	Yes	Yes
31 AHU 63 Supply & Extract	HOW-026	Yes	6	5-10Pa	Yes	Yes	Yes	Yes
31 AHU 63 Supply & Extract	HOW-024	Yes	6	5-10Pa	Yes	Yes	Yes	Yes
31 AHU 63 Supply & Extract	HOW-021	Yes	6	5-10Pa	Yes	Yes	Yes	Yes
31 AHU 63 Supply & Extract	HOW-020	Yes	6	5-10Pa	Yes	Yes	Yes	Yes
31 AHU 63 Supply & Extract	HOW-017	Yes	6	5-10Pa	Yes	Yes	Yes	Yes
31 AHU 63 Supply & Extract	HOW-015	Yes	6	5-10Pa	Yes	Yes	Yes	Yes
31 AHU 63 Supply & Extract	HOW-012	Yes	6	5-10Pa	Yes	Yes	Yes	Yes
31 AHU 63 Supply & Extract	HOW-011	Yes	6	5-10Pa	Yes	Yes	Yes	Yes
31 AHU 63 Supply & Extract	HOW-009	Yes	6	5-10Pa	Yes	Yes	Yes	Yes
31 AHU 63 Supply & Extract	HOW-067	Yes	6	5-10Pa	Yes	Yes	Yes	Yes
31 AHU 63 Supply & Extract	HOW-064	Yes	6	5-10Pa	Yes	Yes	Yes	Yes
31 AHU 63 Supply & Extract	HOW-062	Yes	6	5-10Pa	Yes	Yes	Yes	Yes
31 AHU 63 Supply & Extract	HOW-059	Yes	6	5-10Pa	Yes	Yes	Yes	Yes
31 AHU 63 Supply & Extract	HOW-058	Yes	6	5-10Pa	Yes	Yes	Yes	Yes
31 AHU 63 Supply & Extract	HOW-055	Yes	6	5-10Pa	Yes	Yes	Yes	Yes
31 AHU 63 Supply & Extract	HOW-053	Yes	6	5-10Pa	Yes	Yes	Yes	Yes
31 AHU 63 Supply & Extract	HOW-050	Yes	6	5-10Pa	Yes	Yes	Yes	Yes
31 AHU 63 Supply & Extract	HOW-202	Yes	6	5-10Pa	Yes	Yes	Yes	Yes
31 AHU 63 Supply & Extract	HOW-198	Yes	6	5-10Pa	Yes	Yes	Yes	Yes
31 AHU 63 Supply & Extract	HOW-195	Yes	6	5-10Pa	Yes	Yes	Yes	Yes
31 AHU 63 Supply & Extract	HOW-193	Yes	6	5-10Pa	Yes	Yes	Yes	Yes
31 AHU 63 Supply & Extract	HOW-190	Yes	6	5-10Pa	Yes	Yes	Yes	Yes

Abbey Park
Humber Road
COVENTRY
CV3 4AQ
UK

[redacted]
www.rsk.co.uk

Our ref: SBB/524395

FAO: Gillon Armstrong
Brookfield Multiplex Europe
Site Office
Institute of Neurological Science
Queen Elizabeth University Hospital
1345 Govan Road
Glasgow
G51 4TF

[redacted]

27th October 2015

Dear Mr Armstrong

New South Glasgow Hospital –Isolation Room Testing
Adult's Hospital Ward Bed 4B

I write to confirm the results of the air permeability testing which we have undertaken on the isolation rooms within Ward 4B.

Testing was undertaken to prove compliance with the requirement of HBN 04 Supplement 1 – Isolation Facilities in Acute Settings. This requires that the enclosure have 'an average leakage rate of no more than 1 l/s of air per m^3 of envelope volume' at a positive and negative pressure differential of 20Pa. Further, the measured positive and negative leakage rates should be within 5% of each other.

Each test included the entrance lobby and main room. The ceiling mounted air supply and extract grilles were temporarily sealed with tape during the tests. No further temporary sealing was present at the time of the tests. A 'Minneapolis' door fan system was utilised to undertake each test. The fan was installed within the lobby access door to the corridor to each enclosure. A multipoint test in accordance with CIBSE TM23; 2000 was undertaken to ensure maximum accuracy.

Cont'd

Test Results

Bed 76 (HOW-190)	
Positive pressure test result;	0.680 l/s per m² at 20Pa
Negative pressure test result;	0.647 l/s per m² at 20Pa
Variation between +ve and –ve results;	4.85%
Average result;	0.664 l/s per m² at 20Pa
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 77 (HOW-193)	
Positive pressure test result;	0.856 l/s per m3 at 20Pa
Negative pressure test result;	0.844l/s per m3 at 20Pa
Variation between +ve and –ve results;	1.40%
Average result;	0.850 l/s per m3 at 20Pa
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 78 (HOW-195)	
Positive pressure test result;	0.858 l/s per m² at 20Pa
Negative pressure test result;	0.886 l/s per m² at 20Pa
Variation between +ve and –ve results;	3.16%
Average result;	0.872 l/s per m² at 20Pa
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 79 (HOW-198)	
Positive pressure test result;	0.953 l/s per m² at 20Pa
Negative pressure test result;	0.986 l/s per m² at 20Pa
Variation between +ve and –ve results;	3.35%
Average result;	0.970 l/s per m² at 20Pa
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 80 (HOW-202)	
Positive pressure test result;	0.580 l/s per m² at 20Pa
Negative pressure test result;	0.589 l/s per m² at 20Pa
Variation between +ve and –ve results;	1.52%
Average result;	0.0.584 l/s per m² at 20Pa
Test results comply with the required criteria laid down in HBN 04 Supplement 1	

Test Results Continued

Bed 81 (HOW-050)	
Positive pressure test result;	0.742 l/s per m³ at 20Pa
Negative pressure test result;	0.744 l/s per m³ at 20Pa
Variation between +ve and –ve results;	0.27%
Average result;	0.743 l/s per m³ at 20Pa
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 82 (HOW-053)	
Positive pressure test result;	0.897 l/s per m3 at 20Pa
Negative pressure test result;	0.917 l/s per m3 at 20Pa
Variation between +ve and –ve results;	2.18%
Average result;	0.907 l/s per m3 at 20Pa
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 83 (HOW-055)	
Positive pressure test result;	0.997 l/s per m³ at 20Pa
Negative pressure test result;	0.967 l/s per m³ at 20Pa
Variation between +ve and –ve results;	3.01%
Average result;	0.957 l/s per m³ at 20Pa
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 84 (HOW-058)	
Positive pressure test result;	0.808 l/s per m³ at 20Pa
Negative pressure test result;	0.842 l/s per m³ at 20Pa
Variation between +ve and –ve results;	4.04%
Average result;	0.825 l/s per m³ at 20Pa
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 85 (HOW-059)	
Positive pressure test result;	0.847 l/s per m³ at 20Pa
Negative pressure test result;	0.842 l/s per m³ at 20Pa
Variation between +ve and –ve results;	0.59%
Average result;	0.844 l/s per m³ at 20Pa
Test results comply with the required criteria laid down in HBN 04 Supplement 1	

Test Results Continued

Bed 86 (HOW-062)	
Positive pressure test result;	0.889 l/s per m² at 20Pa
Negative pressure test result;	0.914 l/s per m² at 20Pa
Variation between +ve and –ve results;	2.74%
Average result;	0.902 l/s per m² at 20Pa
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 87 (HOW-064)	
Positive pressure test result;	0.947 l/s per m² at 20Pa
Negative pressure test result;	0.919 l/s per m² at 20Pa
Variation between +ve and –ve results;	2.96%
Average result;	0.933 l/s per m² at 20Pa
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 88 (HOW-067)	
Positive pressure test result;	0.725 l/s per m² at 20Pa
Negative pressure test result;	0.744 l/s per m² at 20Pa
Variation between +ve and –ve results;	2.55%
Average result;	0.716 l/s per m² at 20Pa
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 89 (HOW-031)	
Positive pressure test result;	0.786 l/s per m² at 20Pa
Negative pressure test result;	0.753 l/s per m² at 20Pa
Variation between +ve and –ve results;	4.20%
Average result;	0.770 l/s per m² at 20Pa
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 90 (HOW-029)	
Positive pressure test result;	0.856 l/s per m² at 20Pa
Negative pressure test result;	0.828 l/s per m² at 20Pa
Variation between +ve and –ve results;	3.27%
Average result;	0.842 l/s per m² at 20Pa
Test results comply with the required criteria laid down in HBN 04 Supplement 1	

Test Results Continued

Bed 91 (HOW-026)	
Positive pressure test result;	0.994 l/s per m² at 20Pa
Negative pressure test result;	0.994 l/s per m² at 20Pa
Variation between +ve and –ve results;	0%
Average result;	0.994 l/s per m² at 20Pa
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 92 (HOW-024)	
Positive pressure test result;	0.947 l/s per m² at 20Pa
Negative pressure test result;	0.903 l/s per m² at 20Pa
Variation between +ve and –ve results;	4.64%
Average result;	0.925 l/s per m² at 20Pa
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 93 (HOW-021)	
Positive pressure test result;	0.750 l/s per m3 at 20Pa
Negative pressure test result;	0.739 l/s per m3 at 20Pa
Variation between +ve and –ve results;	1.47%
Average result;	0.744 l/s per m² at 20Pa
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 94 (HOW-020)	
Positive pressure test result;	0.750 l/s per m² at 20Pa
Negative pressure test result;	0.742 l/s per m² at 20Pa
Variation between +ve and –ve results;	1.07%
Average result;	0.746 l/s per m² at 20Pa
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 95 (HOW-017)	
Positive pressure test result;	0.756 l/s per m3 at 20Pa
Negative pressure test result;	0.783 l/s per m3 at 20Pa
Variation between +ve and –ve results;	3.45%
Average result;	0.770 l/s per m3 at 20Pa
Test results comply with the required criteria laid down in HBN 04 Supplement 1	

Test Results Continued

Bed 96 (HOW-015)	
Positive pressure test result;	**0.961 l/s per m² at 20Pa**
Negative pressure test result;	**0.919 l/s per m² at 20Pa**
Variation between +ve and –ve results;	**4.37%**
Average result;	**0.940 l/s per m² at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 97 (HOW-012)	
Positive pressure test result;	**0.939 l/s per m² at 20Pa**
Negative pressure test result;	**0.947 l/s per m² at 20Pa**
Variation between +ve and –ve results;	**0.84%**
Average result;	**0.943 l/s per m² at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 98 (HOW-011)	
Positive pressure test result;	**0.930 l/s per m3 at 20Pa**
Negative pressure test result;	**0.956 l/s per m3 at 20Pa**
Variation between +ve and –ve results;	**2.72%**
Average result;	**0.943 l/s per m² at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Bed 99 (HOW-009)	
Positive pressure test result;	**0.792 l/s per m² at 20Pa**
Negative pressure test result;	**0.806 l/s per m² at 20Pa**
Variation between +ve and –ve results;	**1.61%**
Average result;	**0.799 l/s per m² at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	

I trust that the above results are self explanatory, but please do not hesitate to contact me if you should have any queries.

Yours sincerely

[redacted]

Stuart B Borland BSc BArch RIAS
Director
Building Science Division
RSK Environment Limited

H & V COMMISSIONING SERVICES LTD Est 1975
H & V
H & V

KILKNOWE OFFICE
16 BARRMILL ROAD
GALSTON
AYRSHIRE
KA4 8HH
TEL – 01563 821991
FAX – 01563822220
e-mail - talk2us@handv.co.uk

ISSUED BY: IAN MCKENZIE

DATE: 7TH OCTOBER 2015

PRESENTATION BY: AD

APPROVED BY: KAREN GAVIN

DATE: 19TH OCTOBER 2015

QEUH – WARD 4B

VENTILATION REPORT

JOB No. 5902 OCTOBER 2015

MERCURY ENGINEERING & BUILDING SERVICES LTD.
MERCURY HOUSE
PAVILION 3
FINNIESTON BUSINESS PARK
MINERVA WAY
GLASGOW
G3 8AU

QEUH – WARD 4B

VENTILATION REPORT

INDEX

AHU 63 Supply (4th Floor Haematology)

AHU 63 Extract (4th Floor Haematology)

31-63/EF01 (4th Floor Haematology)

AHU 63 Room Pressures, Supply & Extract Volumes

AHU 63 Supply Filter Integrity Test

Calibration Certificates

QEUH – WARD 4B

VENTILATION REPORT

AHU 63 SUPPLY (4TH FLOOR HAEMATOLOGY)

H & V
H & V
H & V

Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 31

SYSTEM: 31 – AHU 63 SUPPLY (4TH FLOOR HAEMATOLOGY)

	AIR SYSTEMS PRE COMMISSIONING SHEET	✓	X	N/A
1.	Check AHU for damage and that all the components are secure	✓		
2.	Check the transit straps have been removed, if applicable	✓		
3.	Check pulleys are secure, tight, aligned and belts are correctly tensioned, if applicable	✓		
4.	Check with the controls engineer that the system is available to run and that plant rotation is correct	✓		
5.	Check all ductwork/air terminals are fitted and that air regulating dampers are open	✓		
6.	Check louvres are fitted and clear from obstructions, if applicable	✓		
7.	Check fire dampers are open, if applicable	✓		
8.	Check the motor overloads are suitable and set			✓
9.	Check VAV or CAV boxes are installed correctly and ready for use.			✓
10.	Check the floor plenums are complete, if applicable			✓
11.	Complete commissioning test sheets.	✓		

COMMENTS:

ENGINEER: IAN MCKENZIE **DATE: 7/10/15** **SHEET 2 OF 10**

H & V
H & V
H & V

Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 31

AHU TEST SHEET

SYSTEM: 31 – AHU 63 SUPPLY (4TH FLOOR HAEMATOLOGY)

AHU									
AHU Manufacturer		Barkell		Fan Size		355			
Fan Manufacturer		Comefri		AHU Serial No		OP1B3043173			
Fan Type		Centrifugal		AHU Model N°.		NTHZ 355 R			
		Design		**Test**				**% Design**	
Air Volume (L/S)		2800		2426				87	
External Static Pressure (Pa)		2616		Inlet	356	Outlet	663	Total	1019
Fan Rotational Speed (R.P.M)		3850		3089					
Filter Test Data	Pre Filter (Pa)	Inlet	*	Outlet	*			ΔP	55
	Sec Filter (Pa)	Inlet	*	Outlet	*			ΔP	120

MOTOR			
Manufacturer	TEC	Output kW	11.0
Serial N°	1411-0923253	Motor Full Load Current	19.8 Amps
Voltage	400	Motor Running Current	15.0 Amps
	Design	**Test**	
Rotational Speed.	2930	2574	

DRIVE DETAILS				
Motor Pulley/Shaft Size (mmØ)	180 X 2	38	Motor Pulley Taper Lock Size	2012
Fan Pulley/Shaft Size (mmØ)	150 X 4	50	Fan Pulley Taper Lock Size	2517
Belt Type/Size	XPZ	975	N°. Of Belts	4
Shaft Centres mm	270		Adjustment	- 30 + 20 mm
Variable Speed Drive	Yes		Set Point	44 Hz

STANDBY PLANT							
Test Air Volume	2426	Inlet Pressure	*	Motor Rotational Speed	2574	Motor Running Current	
% Design	87	Outlet Pressure	*	Fan Rotational Speed	3089	15.0	Amps
Variable Speed Drive			Yes	Set Point		44 Hz	

Comments.

Motor 2 Serial No. 1411-0923253

Motor & Fan Pulley = SPZ

Control static pressure set point = 663 Pa

* Filter pressures taken from magnehelic gauges.

Main Volume = TH1 - 1348 l/s + TH2 – 1078 l/s = 2426 l/s

Instrument Used (Ref N°.) HV05/1, HV05/4 & HV05/5

Date: 7/10/15	Engineer: Ian McKenzie & Daniel Kane	Sheet 3 of 10

H & V
H & V
H & V

Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 31

DUCT VOLUME TEST SHEET

SYSTEM: 31 – AHU 63 SUPPLY (4TH FLOOR HAEMATOLOGY)

VELOCITY PROFILE (taken facing air flow) TEST HOLE LOCATION: LEVEL 4 RISER T3

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
TH1				500	500	0.2500		1040		4.16	
5.90	5.80	5.10									
5.50	5.70	5.10									
5.30	5.50	5.20									
5.10	5.50	5.00									
Velocity Sub Totals											
21.80	22.50	20.40									

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
64.7	12	5.39	1348	130	365

Remarks: Test hole serves Branch A

Instrument Used: HV05/1

Date: 7/10/15	Engineer: Ian McKenzie & Daniel Kane	Sheet 4 of 10

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FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

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DUCT VOLUME TEST SHEET

SYSTEM: 31 – AHU 63 SUPPLY (4TH FLOOR HAEMATOLOGY)

VELOCITY PROFILE (taken facing air flow) — TEST HOLE LOCATION: LEVEL 4 RISER T3

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width	Height	M2		L/S		M/S	
TH2				700	350	0.2450		900		3.67	
6.00	4.80	4.50	7.10								
6.00	3.70	3.00	5.90								
5.50	3.50	2.90	4.50								
Velocity Sub Totals											
17.50	12.00	10.20	13.10								

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
52.8	12	4.40	1078	120	376

Remarks: Test Hole serves Branch B

Instrument Used: HV05/1

Date: 7/10/15	Engineer: Ian McKenzie & Daniel Kane	Sheet 5 of 10

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16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
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FAX Nº. 01563 822220
E-Mail: talk2us@haudv.co.uk

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GRILLE TEST SHEET

SYSTEM: 31 – AHU 63 SUPPLY (4TH FLOOR HAEMATOLOGY)

VELOCITY PROFILE (taken facing air flow) TEST HOLE LOCATION: CEILING VOID

Test Hole Ref	Duct Dia (mm)	Duct Size (mm)	Duct Area	Design Air Volume	Design Air Velocity
		Width x Height	M2	L/S	M/S
TH3	200		0.0314	80	2.55
Velocity Sub Totals					

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa

Remarks: NOT REQUIRED - DIRECT BALOMETER VOLUMES USED.

Instrument Used: -

Date: 7/10/15	Engineer: Ian McKenzie & Daniel Kane	Sheet 6 of 10

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16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
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FAX N°. 01563 822220
E-Mail: talk2us@haudv.co.uk

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GRILLE TEST SHEET

SYSTEM: 31 – AHU 63 SUPPLY (4TH FLOOR HAEMATOLOGY)

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
BRANCH A						
512-HG005	80	57	91	*	*	*
512-HG004	80	53	97	*	*	*
512-HG003	80	47	92	*	*	*
512-HG002	80	56	95	*	*	*
512-HG001	80	61	105	*	*	*
513-HG009	80	82	84	*	*	*
513-HG010	80	95	83	*	*	*
513-HG011	80	94	87	*	*	*
513-HG016	80	81	83	*	*	*
513-HG015	80	86	84	*	*	*
513-HG014	80	77	106	*	*	*
513-HG013	80	93	100	*	*	*
513-HG012	80	105	91	*	*	*

Remarks: *Pressurised room, therefore direct Balometer readings recorded and used as final reading. Room volumes set to control room differential pressures.

Instrument Used: HV03/15

Date: 7/10/15	Engineer: Ian McKenzie & Daniel Kane	Sheet 7 of 10

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16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL Nº. 01563 821991
FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

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GRILLE TEST SHEET

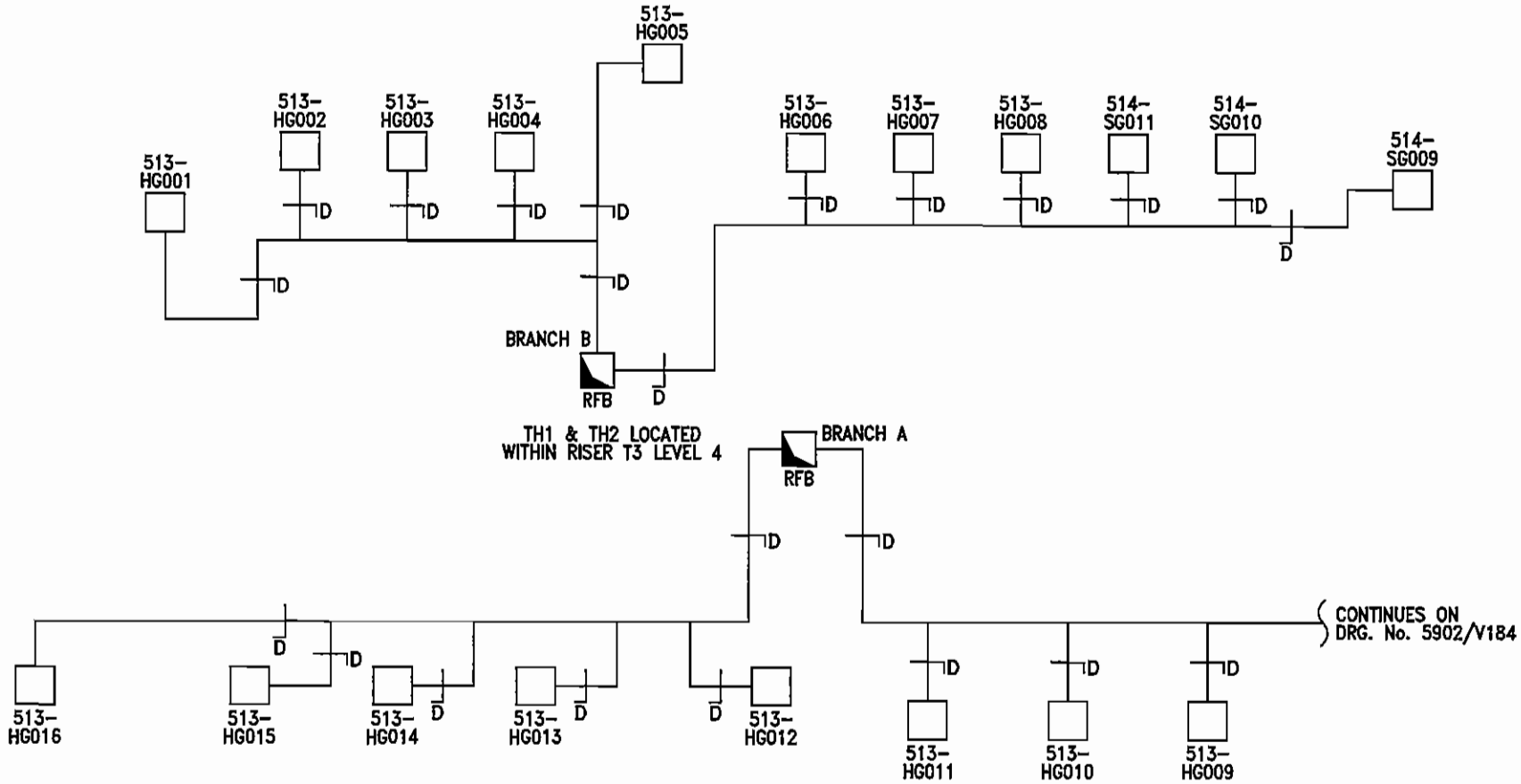
SYSTEM: 31 – AHU 63 SUPPLY (4TH FLOOR HAEMATOLOGY)

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
BRANCH B						
513-HG001	100	127	103	*	*	*
513-HG002	80	68	96	*	*	*
513-HG003	80	79	98	*	*	*
513-HG004	80	72	99	*	*	*
513-HG005	80	120	83	*	*	*
514-SG009	80	84	82	*	*	*
514-SG010	80	68	82	*	*	*
514-SG011	80	72	99	*	*	*
513-HG008	80	70	90	*	*	*
513-HG007	80	80	98	*	*	*
513-HG006	80	92	100	*	*	*

Remarks: Pressurised room, therefore direct Balometer readings recorded and used as final reading. Room volumes set to control room differential pressures.

Instrument Used: HV03/15

Date: 7/10/15	Engineer: Ian McKenzie & Daniel Kane	Sheet 8 of 10



FOURTH FLOOR

SHEET: 9 OF 10

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822209 email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 31

CLIENT:
MERCURY ENGINEERING UK

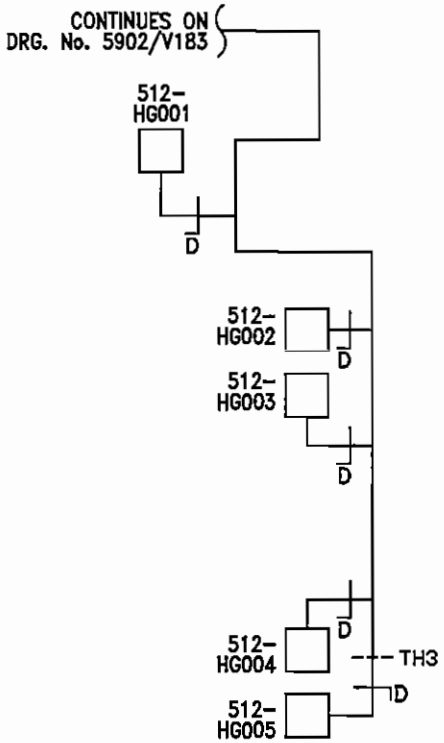
TITLE:
SCHEMATIC LAYOUT OF

31-AHU 63 SUPPLY
4TH FLOOR HAEMATOLOGY

DRAWN: KL/SM

DATE: 01/07/15

DRG. No.: 5902/V183



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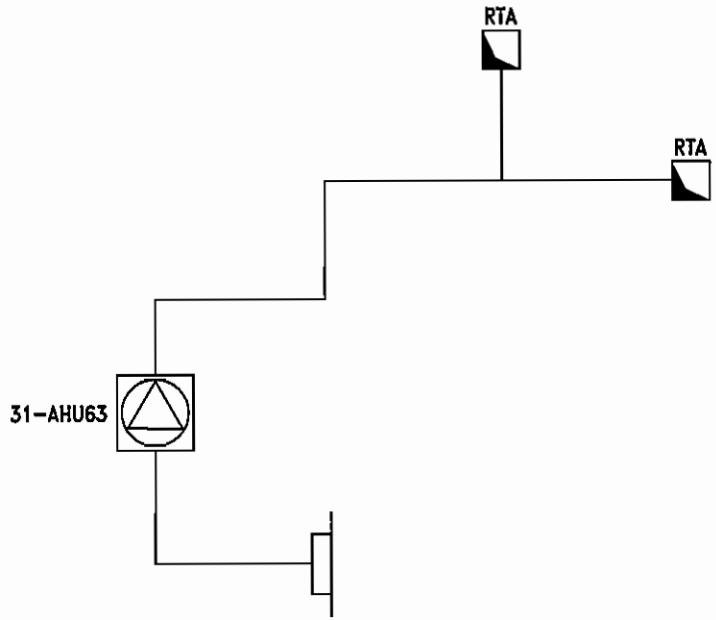

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Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 821991 email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 31

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MERCURY ENGINEERING UK

TITLE:
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31-AHU 63 SUPPLY
4TH FLOOR HAEMATOLOGY

DRAWN:
KL/SM

DATE:
01/07/15

DRG. No.:
5902/V184

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VENTILATION REPORT

AHU 63 EXTRACT (4TH FLOOR HAEMATOLOGY)

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

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SYSTEM: 31 – AHU 63 EXTRACT (4TH FLOOR HAEMOTOLOGY)

	AIR SYSTEMS PRE COMMISSIONING SHEET	✓	X	N/A
1.	Check AHU for damage and that all the components are secure	✓		
2.	Check the transit straps have been removed, if applicable	✓		
3.	Check pulleys are secure, tight, aligned and belts are correctly tensioned, if applicable	✓		
4.	Check with the controls engineer that the system is available to run and that plant rotation is correct	✓		
5.	Check all ductwork/air terminals are fitted and that air regulating dampers are open	✓		
6.	Check louvres are fitted and clear from obstructions, if applicable	✓		
7.	Check fire dampers are open, if applicable	✓		
8.	Check the motor overloads are suitable and set			✓
9.	Check VAV or CAV boxes are installed correctly and ready for use.			✓
10.	Check the floor plenums are complete, if applicable			✓
11.	Complete commissioning test sheets.	✓		

COMMENTS:

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AHU TEST SHEET

SYSTEM: 31 – AHU 63 EXTRACT (4TH FLOOR HAEMOTOLOGY)

AHU											
AHU Manufacturer			Barkell		Fan Size			355			
Fan Manufacturer			Comefri		AHU Serial No			OP1B3043173			
Fan Type			Centrifugal		AHU Model N°.			NTHZ 355 R			
			Design		Test					% Design	
Air Volume		(L/S)	1391		965					69	
External Static Pressure		(Pa)	535		Inlet	170	Outlet	28	Total	198	
Fan Rotational Speed		(R.P.M)	1900		1907						
Filter Test Data	Pre Filter	(Pa)	Inlet	*	Outlet	*			ΔP	15	
	Sec Filter	(Pa)	Inlet	N/A	Outlet	N/A			ΔP	N/A	
MOTOR											
Manufacturer			TEC		Output kW			2.2			
Serial N°			1305-0984906		Motor Full Load Current			8.51	Amps		
Voltage			400		Motor Running Current			2.5	Amps		
			Design		Test						
Rotational Speed.			1445		1445						
DRIVE DETAILS											
Motor Pulley/Shaft Size		(mmØ)	132 x 1	28	Motor Pulley Taper Lock Size			1610			
Fan Pulley/Shaft Size		(mmØ)	100 x 2	40	Fan Pulley Taper Lock Size			1610			
Belt Type/Size			XPA	932	N°. Of Belts			2			
Shaft Centres mm			280		Adjustment			- 40	+ 20	mm	
Variable Speed Drive			Yes		Set Point			30 Hz			
STANDBY PLANT											
Test Air Volume	965	Inlet Pressure	*		Motor Rotational Speed	1445	Motor Running Current				
% Design	69	Outlet Pressure	*		Fan Rotational Speed	1907	2.5		Amps		
Variable Speed Drive			Yes		Set Point	30 Hz					

Comments.

Motor 2 Serial No. 1305-098491

Motor & Fan Pulley = SPA

* Filter pressures taken from magnehelic gauges.

Instrument Used (Ref N°.) HV05/1, HV05/4 & HV05/5

Date: 7/10/15	Engineer: Ian McKenzie & Daniel Kane	Sheet 3 of 9

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16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
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FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

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DUCT VOLUME TEST SHEET

SYSTEM: 31 – AHU 63 EXTRACT (4TH FLOOR HAEMOTOLOGY)

VELOCITY PROFILE (taken facing air flow) — TEST HOLE LOCATION: LEVEL 4 RISER T4

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
Main TH				700	450	0.3150		1391		4.42	
3.70	3.40	3.60	3.80								
3.40	3.20	3.20	3.30								
3.50	2.70	2.40	2.80								
3.40	2.40	2.10	2.10								
Velocity Sub Totals											
14.00	11.70	11.30	12.00								

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
49	16	3.06	965	69	114

Remarks:

Instrument Used: HV05/1

Date: 7/10/15	Engineer: Ian McKenzie & Daniel Kane	Sheet 4 of 9

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16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
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FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

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DUCT VOLUME TEST SHEET

SYSTEM: 31 – AHU 63 EXTRACT (4TH FLOOR HAEMOTOLOGY)

VELOCITY PROFILE (taken facing air flow) TEST HOLE LOCATION: CEILING VOID

Test Hole Ref	Duct Dia (mm)	Duct Size (mm)	Duct Area	Design Air Volume	Design Air Velocity
		Width x Height	M2	L/S	M/S
TH1	160		0.0201	50	2.49
Velocity Sub Totals					

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa

Remarks: NOT REQUIRED - DIRECT BALOMETER VOLUMES USED.

Instrument Used: -

Date: 7/10/15	Engineer: Ian McKenzie & Daniel Kane	Sheet 5 of 9

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16 Barrmill Road,
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Ayrshire, KA48HH.
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FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

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GRILLE TEST SHEET

SYSTEM: 31 – AHU 63 EXTRACT (4TH FLOOR HAEMOTOLOGY)

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
514-TEG003	30	24	31	*	*	*
514-TEG002	30	34	30	*	*	*
514-TEG001	30	31	30	*	*	*
513-TEG008	30	26	31	*	*	*
513-TEG006	30	40	30	*	*	*
513-TEG007	30	40	31	*	*	*
513-TEG005	30	53	30	*	*	*
513-TEG004	30	53	30	*	*	*
513-TEG001	70	64	57	1.18	67.26	96
513-TEG003	50	28	40	1.18	47.20	94
513-TEG002	50	44	40	1.18	47.20	94
513-TEG011	40	75	32	1.18	37.76	94
513-TEG009	62	150	50	1.18	59.00	95
513-TEG010	59	173	48	1.18	56.64	96

Remarks: *Pressurised room, therefore direct Balometer readings recorded and used as final reading. Room volumes set to control room differential pressures.

Instrument Used: HV05/15

Date: 7/10/15	Engineer: Ian McKenzie & Daniel Kane	Sheet 6 of 9

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16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

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GRILLE TEST SHEET

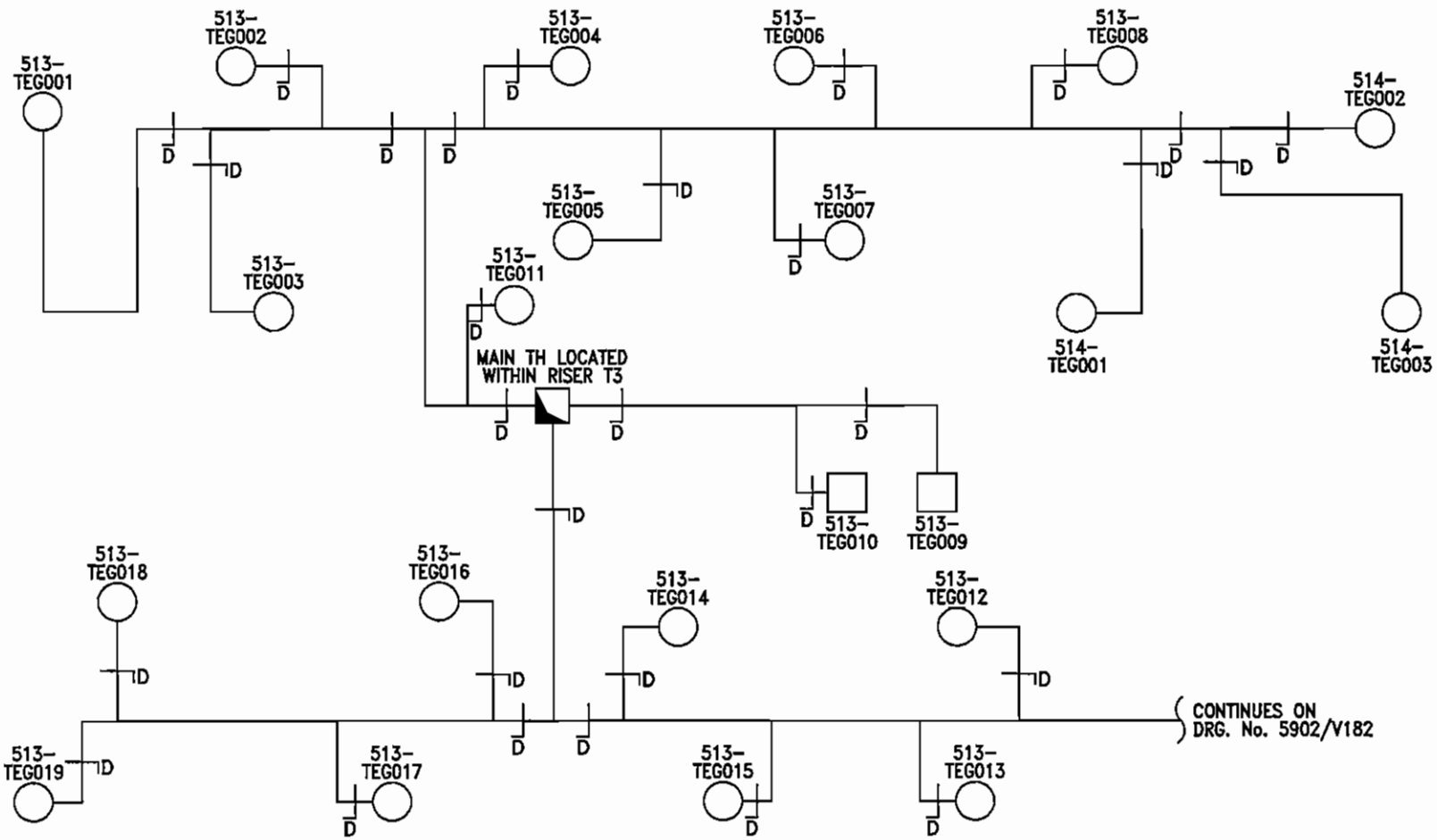
SYSTEM: 31 – AHU 63 EXTRACT (4TH FLOOR HAEMOTOLOGY)

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
512-TEG006	30	24	30	*	*	*
512-TEG005	30	23	30	*	*	*
512-TEG002	30	26	31	*	*	*
512-TEG003	30	29	30	*	*	*
512-TEG004	30	24	30	*	*	*
512-TEG001	30	29	29	*	*	*
513-TEG012	30	40	30	*	*	*
513-TEG013	30	42	32	*	*	*
513-TEG015	30	42	28	*	*	*
513-TEG014	30	46	30	*	*	*
513-TEG019	30	32	30	*	*	*
513-TEG018	30	44	30	*	*	*
513-TEG017	30	53	31	*	*	*
513-TEG016	30	44	30	*	*	*

Remarks: *Pressurised room, therefore direct Balometer readings recorded and used as final reading. Room volumes set to control room differential pressures.

Instrument Used: HV05/15

Date: 7/10/15	Engineer: Ian McKenzie & Daniel Kane	Sheet 7 of 9



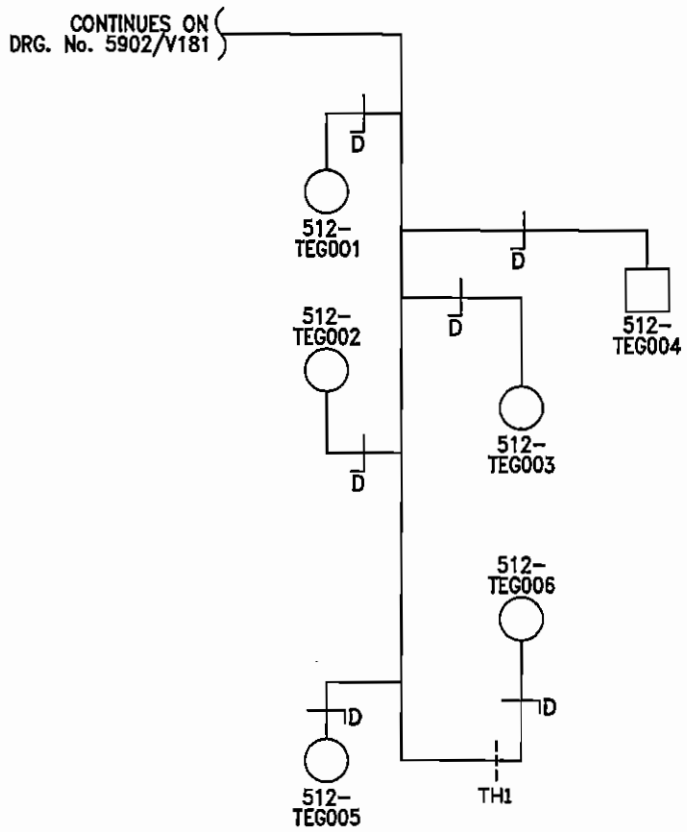
FOURTH FLOOR

SHEET: 8 OF 9

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220 email: talk2us@handv.co.uk

CONTRACT:	NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 31
CLIENT:	MERCURY ENGINEERING UK
TITLE:	SCHEMATIC LAYOUT OF 31-AHU 63 EXTRACT 4TH FLOOR HAEMATOLOGY
DRAWN:	KL/SM
DATE:	01/07/15
DRG. No.:	5902/V181

A47069198



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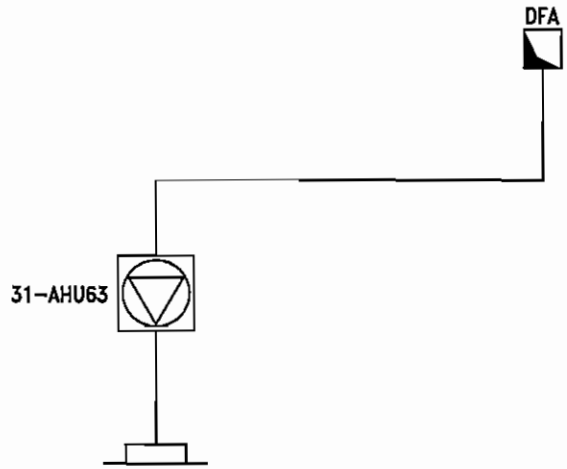

PLANTROOM 31

SHEET: 9 OF 9

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822230 email: talk2us@handv.co.uk

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CONTRACT:	NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 31
CLIENT:	MERCURY ENGINEERING UK
TITLE:	SCHEMATIC LAYOUT OF 31-AHU 63 EXTRACT 4TH FLOOR HAEMATOLOGY
DRAWN:	KL/SM
DATE:	01/07/15
DRG. No.:	5902/V182

QEUH – WARD 4B

VENTILATION REPORT

31-63/EF01 (4TH FLOOR HAEMATOLOGY)

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Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 31

SYSTEM: 31 – 63/EF01 (4TH FLOOR HAEMATOLOGY)

	AIR SYSTEMS PRE COMMISSIONING SHEET	✓	X	N/A
1.	Check Fan for damage and that all the components are secure	✓		
2.	Check the transit straps have been removed, if applicable	✓		
3.	Check pulleys are secure, tight, aligned and belts are correctly tensioned, if applicable			✓
4.	Check with the controls engineer that the system is available to run and that plant rotation is correct	✓		
5.	Check all ductwork/air terminals are fitted and that air regulating dampers are open	✓		
6.	Check louvres are fitted and clear from obstructions, if applicable	✓		
7.	Check fire dampers are open, if applicable	✓		
8.	Check the motor overloads are suitable and set			✓
9.	Check VAV or CAV boxes are installed correctly and ready for use.			✓
10.	Check the floor plenums are complete, if applicable			✓
11.	Complete commissioning test sheets.	✓		

COMMENTS

ENGINEER: IAN MCKENZIE **DATE: 7/10/15** **SHEET 2 OF 7**

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

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DIRECT DRIVE FAN TEST SHEET — SYSTEM: 31 – 63/EF01 (4TH FLOOR HAEMATOLOGY)

FAN									
AHU Manufacturer		Not Applicable		Fan Size		Not Stated			
Fan Manufacturer		Sandometal		Fan Serial No		1304370-313			
Fan Type		Plug		Fan Model N°.		ESDM1/1			
		Design		Test				% Design	
Air Volume	(L/S)	699		1011				145	
External Static Pressure	(Pa)	325		Inlet	241	Outlet	68	Total	309
Filter Test Data	Pre Filter (Pa)	Inlet	N/A	Outlet	N/A			ΔP	N/A
	Sec Filter (Pa)	Inlet	N/A	Outlet	N/A			ΔP	N/A

MOTOR				
Manufacturer	Ziehl-Abegg	Output kW	1.1	
Serial N°	13010169	Motor Full Load Current	2.53	Amps
Voltage	230	Motor Running Current	1.66	Amps
	Design	Test		
Rotational Speed R.P.M	1430	1158		

DRIVE DETAILS			
Variable Speed Drive	Yes	Set Point	70 Hz (Max 86 Hz)

Comments: N/A – Not Applicable

System volume set to control corridor pressure from pressurised rooms.

Instrument Used (Ref N°.) HV05/1, HV05/4 & HV05/5

Date: 7/10/15	Engineer: Ian McKenzie & Daniel Kane	Sheet 3 of 7

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 31

DUCT VOLUME TEST SHEET **SYSTEM: 31 – 63/EF01 (4TH FLOOR HAEMATOLOGY)**

VELOCITY PROFILE (taken facing air flow)

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
Main TH				500	350	0.1750		699		3.99	
5.90	6.00	5.60									
5.80	5.70	5.80									
5.70	5.70	5.70									
5.80	5.80	5.80									
Velocity Sub Totals											
23.20	23.20	22.90									

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
69.3	12	5.78	1011	145	196

Remarks:

Instrument Used: HV12/1

Date: 7/10/15 | Engineer: Ian McKenzie & Daniel Kane | Sheet 4 of 7

H & V
H & V
H & V

Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL Nº. 01563 821991
FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 31

DUCT VOLUME TEST SHEET **SYSTEM: 31 – 63/EF01 (4TH FLOOR HAEMATOLOGY)**

VELOCITY PROFILE (taken facing air flow)

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
TH1		250				0.0491		90		1.83	
1.70	1.70										
1.90	1.90										
1.90	2.00										
1.90	1.90										
Velocity Sub Totals											
7.40	7.50										

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
14.9	8	1.86	91	102	11

Remarks: Test Volume 91l/s ÷ Balometer Volume 79l/s = 1.15 Factor.

Instrument Used: HV05/1

Date: 7/10/15 | Engineer: Ian McKenzie & Daniel Kane | Sheet 5 of 7

H & V
H & V
H & V

Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 31

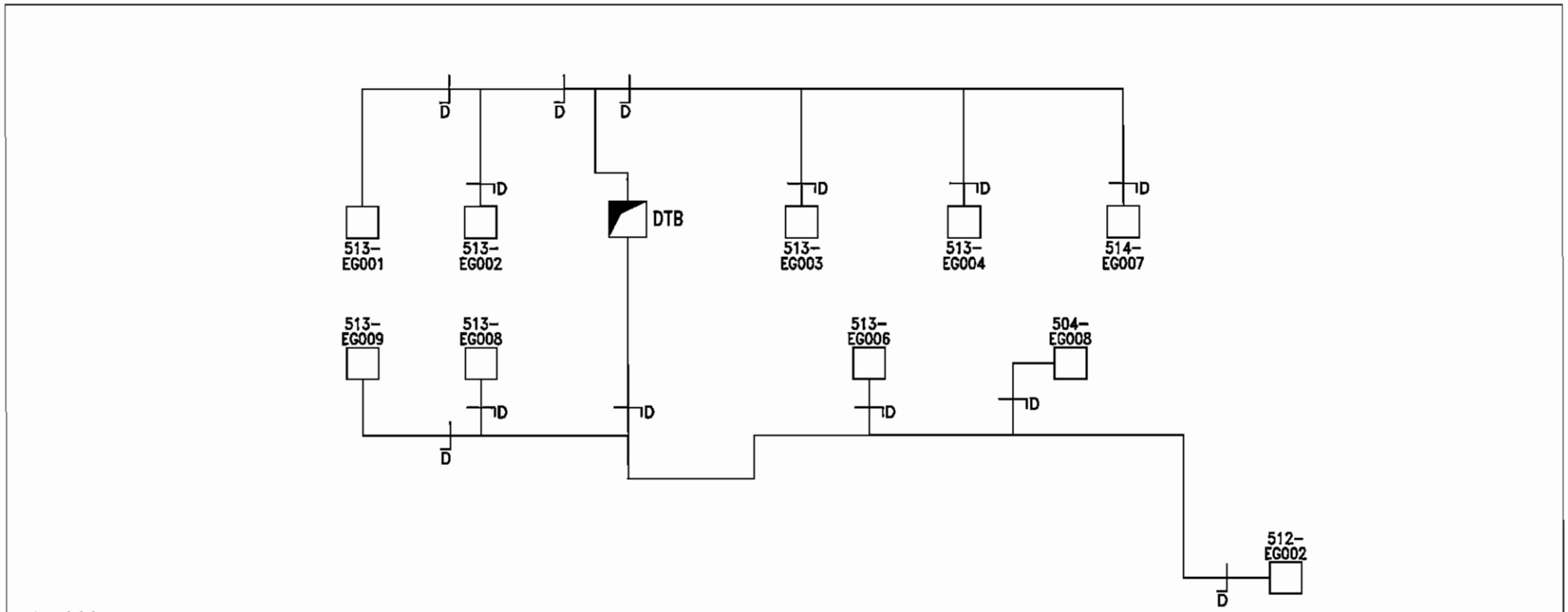
GRILLE TEST SHEET **SYSTEM: 31 – 63/EF01 (4TH FLOOR HAEMATOLOGY)**

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
512-EG002	90	94	79	1.15	90.85	101
514-EG008	75	93	68	1.15	78.20	104
513-EG006	75	86	70	1.15	80.50	107
513-EG008	75	136	81	1.15	93.15	124
513-EG009	75	120	100	1.15	115.00	153
514-EG007	77	24	88	1.15	101.20	131
513-EG004	63	24	92	1.15	105.80	168
513-EG003	55	33	91	1.15	104.65	190
513-EG002	54	53	91	1.15	104.65	194
513-EG001	60	33	106	1.15	121.90	203

Remarks:

Instrument Used: HV05/15

Date: 7/10/15	Engineer: Ian McKenzie & Daniel Kane	Sheet 6 of 7



SHEET: 7 OF 7

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220 email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 31

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

31-63/EF01 4TH FLOOR HAEMATOLOGY

DRAWN: KL/SM

DATE: 18/12/14

DRG. No.: 5902/V[illegible]9

A47069198

QEUH – WARD 4B

VENTILATION REPORT

AHU 63 ROOM PRESSURES, SUPPLY & EXTRACT VOLUMES

New South Glasgow Hospital

31AHU63 - Level 4 - 4B Wards – Room Pressures, Supply & Extract Air Volumes

Room Bed Ref.:	Room Door Ref.:	Room to Corridor Pressure Set Pa		Minimum Supply Design Volume l/s	Supply Grille Volume l/s	Extract Grille Volumes l/s
		Micro-manometer Reading Pa	Room Digital Display Pa			
76	HOW190	7.0	7.0	80	91	30
77	HOW193	7.0	7.0	80	97	30
78	HOW195	7.1	7.0	80	92	31
79	HOW198	7.7	7.1	80	95	30
80 XL	HOW202	6.9	7.1	100	105	30
81	HOW050	6.9	7.0	80	84	29
82	HOW053	6.8	6.8	80	83	30
83	HOW055	7.1	6.6	80	87	32
84	HOW058	7.8	7.7	80	83	28
85	HOW059	7.7	7.1	80	84	30
86	HOW062	7.1	7.2	80	106	31
87	HOW064	7.4	7.6	80	100	30
88	HOW067	7.9	7.8	80	91	30
89 XL	HOW031	7.0	7.1	100	103	33
90	HOW029	7.6	7.8	80	96	30
91	HOW026	7.5	7.6	80	98	33
92	HOW024	7.8	7.9	80	99	30
93	HOW021	7.1	7.2	80	83	30
94	HOW020	7.7	7.6	80	82	31
95	HOW017	7.5	7.8	80	82	30
96	HOW015	7.1	7.2	80	99	31
97	HOW012	6.2	6.7	80	90	30
98	HOW011	6.9	7.2	80	98	30
99 XL	HOW099	6.3	6.4	100	100	31

Room Pressures to be set between 5Pa and 10Pa target pressure 7Pa ± 1Pa

Comments:

Above readings were finalised and witnessed by BM's Julie Miller 6th October 2015.

NB: Door seals have been trimmed to achieve room to corridor differential pressures and the required minimum air change rate (standard size rooms air volume design minimum 80l/s and the 3 larger rooms at a minimum air volume 100l/s.

31AHU63 Supply set at 44Hz
31AHU63 Extract set at 30Hz
31-63EF01 Corridor extract set at 70Hz (Set to control room corridor pressure)

Ward 4B corridor pressure is set to external corridors at approximately +10Pa.

Room pressure alarms/information;

1) High room pressure set at 15Pa
2) Low room pressure alarm set at 5Pa
3) Door open or out of specification alarm is set for a 2 minute period before alarming.
4) Room pressure alarms can be silenced from the button on the digital display set at each room door entry (on the stainless steel plate).

Report compiled and finalised by Ian McKenzie (H&V)
8th October 2015

QEUH – WARD 4B

VENTILATION REPORT

AHU 63 SUPPLY FILTER INTEGRITY TEST

31AHU63 Supply – Level 4 - 4B Wards – HEPA Filter Integrity Test Report

Room Bed Ref.:	*Room Door Ref.:*	*HEPA Filter S/N:*	*Upstream Aerosol Concentration Pre Scan*	*Maximum Ratio % Penetration*	*Recorded Downstream Concentration Ratio %*	*% Upstream Aerosol Concentration Post Scan*	*Pass/Fail*
76	HOW190	007000-35157	62mg/m³	≤0.01%	0.0011%	109%	Pass
77	HOW193	006997-35157	59mg/m³	≤0.01%	0.0004%	111%	Pass
78	HOW195	006991-35157	71mg/m³	≤0.01%	0.0014%	97%	Pass
79	HOW198	007002-35157	76mg/m³	≤0.01%	0.0006%	102%	Pass
80	HOW202	007012-35157	63mg/m³	≤0.01%	0.0034%	92%	Pass
81	HOW050	007009-35157	62mg/m³	≤0.01%	0.0054%	98%	Pass
82	HOW053	007014-35157	51mg/m³	≤0.01%	0.0014%	108%	Pass
83	HOW055	006996-35157	35mg/m³	≤0.01%	0.0042%	105%	Pass
84	HOW058	007001-35157	53mg/m³	≤0.01%	0.0006%	101%	Pass
85	HOW059	007007-35157	66mg/m³	≤0.01%	0.0014%	103%	Pass
86	HOW062	006995-35157	67mg/m³	≤0.01%	0.0002%	104%	Pass
87	HOW064	006998-35157	55mg/m³	≤0.01%	0.0006%	104%	Pass
88	HOW067	006993-35157	60mg/m³	≤0.01%	0.0010%	100%	Pass
89	HOW031	007003-35157	75mg/m³	≤0.01%	0.0011%	102%	Pass
90	HOW029	006999-35157	70mg/m³	≤0.01%	0.0009%	101%	Pass
91	HOW026	007006-35157	72mg/m³	≤0.01%	0.0007%	98%	Pass
92	HOW024	007013-35157	57mg/m³	≤0.01%	0.0002%	111%	Pass
93	HOW021	006992-35157	17mg/m³	≤0.01%	0.0012%	96%	Pass
94	HOW020	007011-35157	52mg/m³	≤0.01%	0.0008%	110%	Pass
95	HOW017	007008-35157	75mg/m³	≤0.01%	0.0005%	106%	Pass
96	HOW015	007010-35157	47mg/m³	≤0.01%	0.0009%	96%	Pass
97	HOW012	007004-35157	42mg/m³	≤0.01%	0.0021%	104%	Pass
98	HOW011	007005-35157	44mg/m³	≤0.01%	0.0023%	98%	Pass
99	HOW099	006944-35157	43mg/m³	≤0.01%	0.0007%	109%	Pass

New South Glasgow Hospital

31AHU63 Supply – Level 4 - 4B Wards – HEPA Filter Integrity Test Report

Test Instruments Used	*Serial No.*	*Calibration Due*
Photometer	TDA-2G	March 2016
Aerosol Generator	ATI Aerosol Generator	March 2016

RESULTS (Enter Pass / Fail) *Results and test conditions are compliant with BS EN ISO 14644-3*	*PASS*

	COMPLETED BY:	*WITNESSED BY*
PRINT:	Ian McKenzie	
SIGNATURE:	[redacted]	
DATE:	8th October 2015	

QEUH – WARD 4B

VENTILATION REPORT

CALIBRATION CERTIFICATES

OptiCal Sciences

CERTIFICATE OF COMPLIANCE AEROSOL GENERATOR

No G/26262

The Standards used have been calibrated by internal and external procedures traceable to National Standards.
This Aerosol Generator has been tested with Shell Ondina EL Oil.

Date of Calibration: 16-Mar-15		Model	Serial No
Customer	H & V Commissioning Services	Vicount 1300	1025732
Address	Kilknowe Office		
	16 Barrmill Road		
	Galston, Ayrshire		
	KA4 8HH		
Service Report No 26262			

STANDARDS USED

INSTRUMENT DESCRIPTION	MANUFACTURER	SERIAL No	LAST RECAL	CERT NO
Photometer	Air Techniques	12076	23-Jan-15	26127
Airflow Meter	Kanomax Climomaster	440952	4-Jul-14	640820
Airflow HLF Bench	Gelman Sciences	9436-89	18-Sep-14	25629
Electrical Safety Tester	MicroPAT+	78491386	20-Mar-14	337772
Aerosol Diluter	Air Techniques	11645	3-Dec-14	25929

AEROSOL OUTPUT CONCENTRATION RESULTS

Inlet Bottle Pressure (PSI)	Oil Flow Valve	Heater Block Temperature (ºC)	HLF Bench Airflow (L/min)	Upstream Concentration (µg/L)
10	-	316	14,375.9	45
20	-	316	14,375.9	130
30	-	316	14,375.9	200
40	-	316	14,375.9	280
50	-	316	14,375.9	350

ELECTRICAL SAFETY TEST RESULTS

Test No: 213
Test Mode: Class one
Visual: Pass
Earth Test: 0.06 Ω
Insulation Test: ^19.9 MΩ
Load Test: 0.00 KVA
Leakage Test: 00.1 mA

FLOW RATE

ATI TDA-5B — N/A LPM

CALCULATED RESULTS

Generator Output (g/min) = Upstream Concentration (µg/L) x HLF Bench Airflow (L/min) / 1,000,000

Pressure	Output (g/min)	Pressure	Output (g/min)
10 psi	0.65	50 psi	5.03
20 psi	1.87		
30 psi	2.88		
40 psi	4.03		

Out Of Limit Errors As Found. Comments: None

Next Calibration Due 16-Mar-16 | Engineer A.KERR [redacted]

OptiCal Sciences Limited
Envirotest House
Anglia Way, Moulton Park Industrial Estate, Northampton NN3 6JA
[redacted]
Visit our Website at www.optical-sciences.co.uk

QSF13 30/06/2010

DATE: 16-Mar-15

OptiCal Sciences

SERVICE REPORT

CUSTOMER H & V Commissioning Services
ADDRESS Kilknowe Office
16 Barrmill Road
Galston, Ayrshire
KA4 8HH
CONTACT Angela Daly
PURCHASE ORDER NO 4778/IS/AC
OSL ORDER REF 23048

ENGINEER Adam Kerr
HOURS as per quote
TRAVELLING TIME
OTHER EXPENSES

WORK REQUIRED Repair / Service / output
CALIBRATION CERT. ISSUED 26262
MODEL LV1300
SERIAL NO 1025732

☐ CONTRACT ☐ WARRANTY ☒ CUSTOMER A/C OTHER

On inspection of instrument blowing fuses and failing portable appliance test

Fault traced to heater elements failing

Replaced 2 x heater elements - OK

Portable appliances test carried out, See electrical safety results

Using LAF Bench, 1000:1 diluter and Ref Photometer, recorded output concentration

Calculate output g/min

Checked normal working functions of instrument - OK

PART NO.	QTY.	DESCRIPTION	ELECTRICAL SAFETY TEST RESULTS
	2	Heater elements	Visual: pass
			E. Continuity: 0.06Ω
			Fuse Rating: -
			Insulation: >19.9 MΩ
			Run Test: 0.00 KVA
			Flash: N/A
FOR OFFICE USE ONLY:	T =	L =	Test No: 213

ENGINEER SIGNATURE [redacted]

SERVICE REPORT No 26262

OptiCal Sciences Limited
Envirotest House
Anglia Way, Moulton Park Industrial Estate, Northampton NN3 6JA
[redacted]
Visit our Website at www.optical-sciences.co.uk

CERTIFICATE OF CALIBRATION

Issued By IRC Ltd

Date of Issue 27 August 2015

Certificate Number 205772

Page 1 of 2 Pages

Instrument Repairs & Calibration
7 Howard Court Industrial Estate
East Kilbride, G74 4QZ
Tel: 01355 264120 Fax: 01355 264150
www.instrument-repairs.com

Approved Signatory

[redacted]

☐ F. Sllo ☐ N. Anderson ☐ K. Low ☑ C. Moore ☐ A. Rae

Customer : H&V Commissioning Services Ltd
Kilknowe Offices, 16 Barrmill Road
Galston KA4 8HY

Date Received : 20 August 2015

Instrument -

System ID :	IRC02093	Job Number :	R70380-1
Description :	Micromanometer	Ref. Number :	HV5-01
Manufacturer :	DPM	Site :	
Model Number :	TT470S	Location :	
Serial Number :	7471		
Procedure Version :	774		

Environmental Conditions

Temperature :	23°C +/- 2°C	Mains Voltage :	230V +/- 10V
Relative Humidity :	50% +/- 20%	Mains Frequency :	50Hz +/- 1Hz

Comments

The instrument stabilised in the laboratory for 4 hours prior to calibration.
Results at the time of test carry no long term stability of the instrument.
This certificate records the ON RECEIPT calibration status.
Recalibration period 52 weeks by customer request.

Traceability Information

Instrument description	*Serial number*	*Certificate number*	*Cal. Date*	*Cal. Period*
Mensor CP6000	610020	N18686&7 N18673	19/04/2013	156

Calibrated By : C. Moore **Date of Calibration :** 27 August 2015

This is to certify that the above instrument was fully calibrated. Work carried out was in accordance with procedures laid down in BS EN ISO/IEC 17025:2005.
The accuracies of the standards used are traceable to National Standards,via UKAS approved laboratories.
The copyright of this certificate is owned by IRC Ltd and may not be reproduced except with the prior written approval of the issuing laboratory.
The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%.

CERTIFICATE OF CALIBRATION

Certificate Number
205772

Test Title	Tolerance	Applied Value	Reading	Pass/Fail
Pascal				
	100fa	0.00pa	0.0pa	Pass
	200fa	20.00pa	20.1pa	Pass
	400fa	40.00pa	40.1pa	Pass
	600fa	60.00pa	59.9pa	Pass
Kilopascals				
0.500kpa	5pa	0.5kpa	0.50kpa	Pass
1.00kpa	20pa	1.000kpa	1.00kpa	Pass
2.00kpa	30pa	2.000kpa	2.00kpa	Pass
3.00kpa	40pa	3.000kpa	3.00kpa	Pass
4.00kpa	50pa	4.000kpa	4.00kpa	Pass
5.00kpa	60pa	5.000kpa	5.00kpa	Pass
)0kpa	70pa	6.000kpa	6.00kpa	Pass

End of results

Uncertainties

Pressure TE69	15 - 1000mBar +/- 0.04% of reading

CERTIFICATE OF CALIBRATION

Issued By IRC Ltd

Date of Issue 22 September 2015

Certificate Number
206411

Page 1 of 2 Pages

Instrument Repairs & Calibration
7 Howard Court Industrial Estate
East Kilbride, G74 4QZ
Tel: 01355 264120 Fax: 01355 264150
www.instrument-repairs.com

Approved Signatory

[redacted]

☐ N. Anderson ☐ K. Low ☑ C. Moore ☐ A.Rae

Customer : H&V Commissioning Services Ltd
Kilknowe Offices, 16 Barrmill Road
Galston KA4 8HY

Date Received : 15 September 2015

Instrument -

System ID :	IRC02515	Job Number :	R70680-2
Description :	Clamp Meter	Ref. Number :	HV5-4
Manufacturer :	Ideal	Site :	
Model Number :	61-768	Location :	
Serial Number :	051102797	Last Certificate Number :	192495
Procedure Version :	1.01	Last Calibration Date :	09/05/2014

Environmental Conditions

Temperature :	23°C +/- 2°C	Mains Voltage :	230V +/- 10V
Relative Humidity :	50% +/- 20%	Mains Frequency :	50Hz +/- 1Hz

Comments

The instrument stabilised in the laboratory for 4 hours prior to calibration.
Results at the time of test carry no long term stability of the instrument.
This certificate records the ON RECEIPT calibration status.
Recalibration period 52 weeks by customer request.

Traceability Information

Instrument description	*Serial number*	*Certificate number*	*Cal. Date*	*Cal. Period*
5500 Multifunction Calibrator	6305020	048278	05/11/2014	52

Calibrated By : C. Moore **Date of Calibration :** 22 September 2015

This is to certify that the above instrument was fully calibrated. Work carried out was in accordance with procedures laid down in BS EN ISO/IEC 17025:2005.
The accuracies of the standards used are traceable to National Standards,via UKAS approved laboratories.
The copyright of this certificate is owned by IRC Ltd and may not be reproduced except with the prior written approval of the issuing laboratory.
The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%.

CERTIFICATE OF CALIBRATION

Certificate Number
206411

Test Title	Tolerance	Applied Value	Reading	Pass/Fail
DC Voltage				
4V D.C. Range	21.5mV	3.900 0V	3.900V	Pass
40V D.C. Range	215mV	39.000V	38.98V	Pass
400V D.C. Range	2.2V	390.00V	389.8V	Pass
1000V D.C. Range	7V	1 000.00V	1 000V	Pass
AC Voltage				
4V A.C. @ 50Hz	54.8mV	3.900 0V	3.905V	Pass
40V A.C. @ 50Hz	548mV	39.000V	39.02V	Pass
400V A.C. @ 50Hz	5.5V	390.00V	390.2V	Pass
750V A.C. @ 50Hz	19.3V	750.00V	750V	Pass
DC Current				
400.0A D.C. Range	1.5A	100.00A	99.6A	Pass
400.0A D.C. Range	3.5A	200.00A	199.7A	Pass
400.0A D.C. Range	5A	300.00A	298.7A	Pass
400.0A D.C. Range	6.4A	390.00A	388.8A	Pass
600A D.C. Range	7.3A	450.00A	448A	Pass
600A D.C. Range	13.3A	550.00A	547A	Pass
AC Current				
400.0A A.C. @ 50Hz	2.7A	100.00A	99.6A	Pass
400.0A A.C. @ 50Hz	4.4A	200.00A	200.0A	Pass
400.0A A.C. @ 50Hz	6.1A	300.00A	300.2A	Pass
400.0A A.C. @ 50Hz	7.6A	390.00A	390.2A	Pass
600A A.C. @ 50Hz	23.5A	450.00A	448A	Pass
600A A.C. @ 50Hz	26.5A	550.00A	548A	Pass
Resistance				
400Ω Range	1.4Ω	100.00Ω	100.0Ω	Pass
4kΩ Range	14Ω	1.000 0kΩ	1.000kΩ	Pass
40kΩ Range	140Ω	10.000kΩ	9.98kΩ	Pass
400kΩ Range	1.4kΩ	100.00kΩ	99.8kΩ	Pass
4MΩ Range	94kΩ	1.000 0MΩ	0.998MΩ	Pass

End of results.

Uncertainties

DC Voltage	+/- 12ppm +1 LSD
AC Voltage	0 to 1000V 0.01% +/- 1digit
DC Current	0 to 10A 0.008% +/- 1 digit
AC Current	0 to 1000A 0.2% +/- 2 Digits
Resistance	0 to 10M 0.005% +/- 1 Digit

CERTIFICATE OF CALIBRATION

Issued By IRC Ltd

Date of Issue 22 September 2015

Certificate Number
206403

Page 1 of 2 Pages

Instrument Repairs & Calibration
7 Howard Court Industrial Estate
East Kilbride, G74 4QZ
Tel: 01355 264120 Fax: 01355 264150
www.instrument-repairs.com

Approved Signatory

[redacted]

☐ N. Anderson ☐ K. Low ☑ C. Moore ☐ A.Rae

Customer : H&V Commissioning Services Ltd
Kilknowe Offices, 16 Barrmill Road
Galston KA4 8HY

Date Received : 15 September 2015

Instrument -

System ID :	IRC02517	Job Number :	R70680-3
Description :	Digital Tachometer	Ref. Number :	HV5-5
Manufacturer :	Standard	Site :	
Model Number :	ST-6236B	Location :	
Serial Number :	06111857	Last Certificate Number :	192491
Procedure Version :	688	Last Calibration Date :	09/05/2014

Environmental Conditions

Temperature :	23°C +/- 2°C	Mains Voltage :	230V +/- 10V
Relative Humidity :	50% +/- 20%	Mains Frequency :	50Hz +/- 1Hz

Comments

The instrument stabilised in the laboratory for 4 hours prior to calibration.
Results at the time of test carry no long term stability of the instrument.
This certificate records the ON RECEIPT calibration status.
Recalibration period 52 weeks by customer request.

Traceability Information

Instrument description	*Serial number*	*Certificate number*	*Cal. Date*	*Cal. Period*
5500 Multifunction Calibrator	6305020	048278	05/11/2014	52

Calibrated By : C. Moore **Date of Calibration :** 22 September 2015

This is to certify that the above instrument was fully calibrated. Work carried out was in accordance with procedures laid down in BS EN ISO/IEC 17025:2005.
The accuracies of the standards used are traceable to National Standards,via UKAS approved laboratories.
The copyright of this certificate is owned by IRC Ltd and may not be reproduced except with the prior written approval of the issuing laboratory.
The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%.

CERTIFICATE OF CALIBRATION

Certificate Number
206403

Test Title	Tolerance	Applied Value	Reading	Pass/Fail
RPM Measured				
	1.5RPM	1 000.0RPM	1 000RPM	Pass
	2RPM	2 000.0RPM	2 000RPM	Pass
	2.5RPM	3 000.0RPM	3 000RPM	Pass
	3RPM	4 000.0RPM	3 999RPM	Pass
	3.5RPM	5 000.0RPM	4 999RPM	Pass
	6RPM	10 000.0RPM	10 000RPM	Pass

End of results

Uncertainties

AC Voltage	0 to 1000V 0.01% +/- 1digit
Frequency	0.1ppm ± 1digit

OptiCal Sciences

CERTIFICATE OF CALIBRATION

CALIBRATION SUMMARY

UK01-26273

The instrument under test was calibrated against standards which are either traceable to National Standards or are derived by approved ratio techniques. Any number of factors may cause the instrument to drift out of calibration before the calibration interval has expired.

Prepared For:	H & V Commissioning Services Limited Kilknowe Office 16 Barrmill Road Galston Ayrshire, KA4 8HH
Service Report No.:	UK01- 26273
Make:	ATI
Model:	TDA-2G
Serial No.:	14086
Date of Calibration:	17-Mar-15
Calibration Due Date:	17-Mar-16
Calibration Procedure:	OSL-10015

The instrument complies with the specification at the measured points.

Comments:
None

Calibration Performed By: S. Wakefield

Date:

Signature: [redacted]

OptiCal Sciences

CERTIFICATE OF CALIBRATION

UK01-26273

STANDARDS TRACEABILITY

Statement of Traceability
The Instrument Standards used have been calibrated by an external laboratory, and are traceable to National Standards. The calibration below has been performed to meet the requirements of ISO-10012:2003. The photometer has been calibrated for use with ISO 14644-3

Instrument Standards				
Description	Manufacturer	Serial No.	Last Recal.	Cert. No.
Digital Voltmeter	Robin	910000537	13-Feb-15	351759
Airflow Meter	TSI	40450819003	20-May-14	N/A
Pico-Ampere Source	Keithley	80964	14-Oct-14	TERISO_633508
Reference Photometer	ATI	13487	19-Nov-14	25908
Aerosol Dilutor 1000:1	ATI	13940	4-Mar-15	26275

CALIBRATION TEST DATA

System Voltages			
Location	As Found	As Left	Tolerance
J9-1	5.09 V	5.09 V	+5.0 ± 0.1 V
J9-5	15.0 V	15.0 V	+15.0 ± 0.45V
J9-6	-15.03 V	-15.03 V	-15.0 ± 0.45V

Flow Rate Verification/Calibration			
Expected	As Found	As Left	Tolerance
28.3 LPM	29.1 LPM	28.3 LPM	28.3 ±2.8 LPM

Calibration Results				
Test	Expected	As Found	As Left	Tolerance
Straylight	<0.007	0.0019	0.0013	N/A
100% Setting	100 µg/L	90 µg/L	100 µg/L	±10%
Internal Reference Settings	DOP = (Total Finevestan A80B)			

Calibration Performed By: S. Wakefield

Date: 17-Mar-15

Signature: [redacted]

OptiCal Sciences

CERTIFICATE OF CALIBRATION

UK01-26273

Amplifier Linearity			
Photometer Reading	As Found	As Left	Tolerance
0.001%	0.80	0.80	$0.80 \pm 0.04 \times 10^{-10}$
0.01%	0.80	0.80	$0.80 \pm 0.04 \times 10^{-9}$
0.10%	0.80	0.80	$0.80 \pm 0.04 \times 10^{-8}$
1.0%	0.80	0.80	$0.80 \pm 0.04 \times 10^{-7}$
10%	0.76	0.76	$0.80 \pm 0.04 \times 10^{-6}$
100%	0.80	0.80	$0.80 \pm 0.04 \times 10^{-5}$

Comparison Results	
Reference Reading (µg/L)	U.U.T. Reading (µg/L)
100	100
10	10
1	1
0.1	0.1
0.01	0.01
0.001	0.001

Temperature & Humidity During Calibration	
Temperature	Humidity
24 °C	32 %RH

Condition of Calibration, As Found:			Condition, As Left:
☒ In Tolerance	☐ Out of Tolerance	☐ Inoperable	☒ In Tolerance

Maintenance Performed			
☒ Rework Scattering Chamber	☒ Align Optics	☐ Replace Absolute Filter	☒ Leak Test
☐ Replace Smoke Chamber	☒ Test Scanning Probe	☐ Replace Exhaust Filter	☐ Hours Hours Run
☐ Replace/Clean Tubing	☒ Test Electrical Connections	☐ Replace Gaskets	☐ X.XX Firmware Version
☐ Clean Valve	☒ Perform Voltage Measurements	☒ Tighten Loose Hardware	☒ Final Test

Calibration Performed By: S. Wakefield

Date: 17 Mar 15

Signature: [redacted]

DATE: 17-Mar-15

OptiCal Sciences

SERVICE REPORT

CUSTOMER H & V Commissioning Services Limited
ADDRESS Kilknowe Office
16 Barrmill Road
Galston
Ayrshire, KA4 8HH
CONTACT Angela Daly
PURCHASE ORDER NO 4787/IS/AC
OSL ORDER REF 23042

ENGINEER S.Wakefield
HOURS As Quote
TRAVELLING TIME N/A
OTHER EXPENSES N/A

WORK REQUIRED Repair and Recalibration
CALIBRATION CERT. ISSUED 26273
MODEL ATI TDA-2G
SERIAL NO 14086

☐ CONTRACT ☐ WARRANTY ☒ CUSTOMER A/C OTHER

Replaced Selector valve knob. Checked Power supplies and reset flow to 1.0 CFM

Stripped, cleaned and realigned optics.

Calibrated using Lab Standard Photometer, Picoamp Source and 1000:1 Diluter.

Reset internal reference to 100%. Checked response at various concentrations.

Checked Straylight, Op Amp null point, leak test, operation, and clean down.

PART NO.	QTY.	DESCRIPTION	ELECTRICAL SAFETY TEST RESULTS
10409	1	Selector valve knob	Visual:
			E. Continuity:
			Fuse Rating:
			Insulation:
			Run Test:
			Flash: N/A
FOR OFFICE USE ONLY:	T =	L =	Test No:

ENGINEER SIGNATURE [redacted]

SERVICE REPORT No 26273

MOODY INTERNATIONAL CERTIFICATION UKAS QUALITY MANAGEMENT 014 ISO 9001

OptiCal Sciences Limited
Envirotest House
Anglia Way, Moulton Park Industrial Estate, Northampton NN3 6JA
[redacted]
Visit our Website at www.optical-sciences.co.uk

safecontractor APPROVED

SYSTEM HYGIENICS

SOUTHERN GENERAL HOSPITAL GLASGOW

POST CLEAN REPORT

7th September 2015

SYSTEM HYGIENICS
Chaucer Industrial Estate, Dittons Road, Polegate East Sussex, BN26 6JF
Tel: 01323 481170 Fax: 01323 483061

INDEX

	Page No.
Introduction	2
Photo log	3
Before and After Photographs	4
Certificate of Analysis	14
Certificate of Cleanliness	15

INTRODUCTION

The ventilation ductwork systems have been thoroughly internally cleaned as detailed in this report.

All cleaning has been carried out to B&ES Guide to Good Practice TR19 (2nd Edition) cleanliness verification standards whereby no more than 0.3g dust / m² duct surface may be found using the 15 litre/min Preferred Vacuum Test Method.

We have taken photographs from various locations before and after our works have taken place to demonstrate the hygiene condition of ventilation ductwork systems.

[redacted]

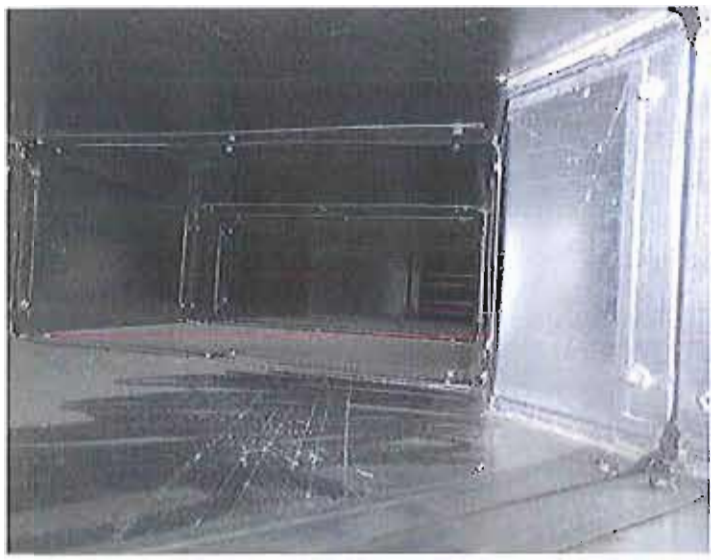
Signed
Date 15th September 2015

Mr. Jeff Gardner
SALES ENGINEER

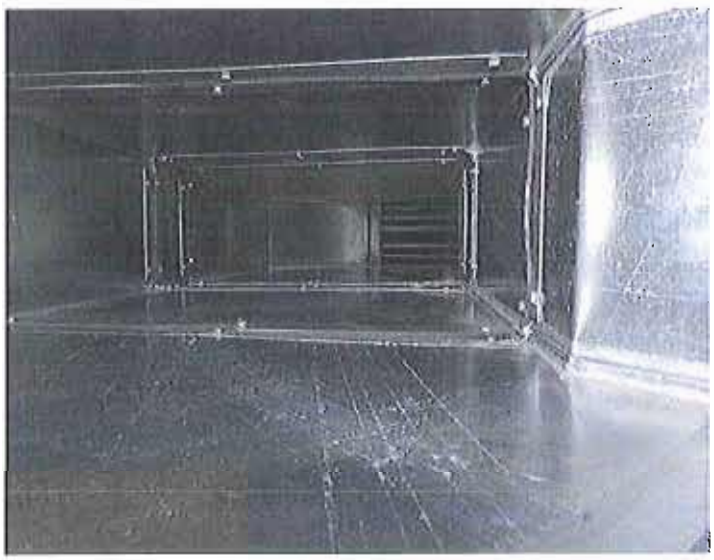
[redacted]

[redacted]

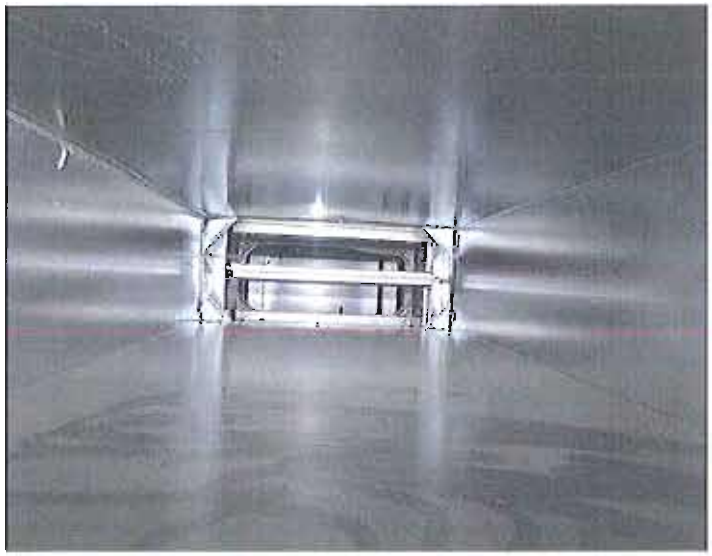
PHOTO LOG		
Locations: Location	**Before Clean**	**After Clean**
Level 4 – Supply duct	1	2
Level 4 – Supply duct	3	4
Level 4 – Supply duct	5	6
Level 4 – Supply duct	7	8
Level 4 – Supply duct	9	10
Level 4 – Supply duct	11	12
Level 4 – Supply duct	13	14
AHU 63 – Fresh air intake	15	16
AHU 64 – Filter chamber	17	18
AHU 63 – Fan chamber	19	20



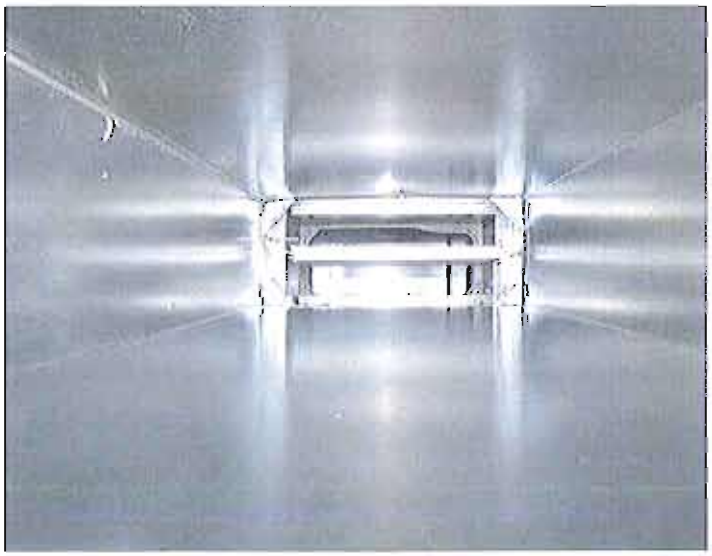
1. Level 4 – Supply duct – Before clean.



2. Level 4 – Supply duct – After clean.



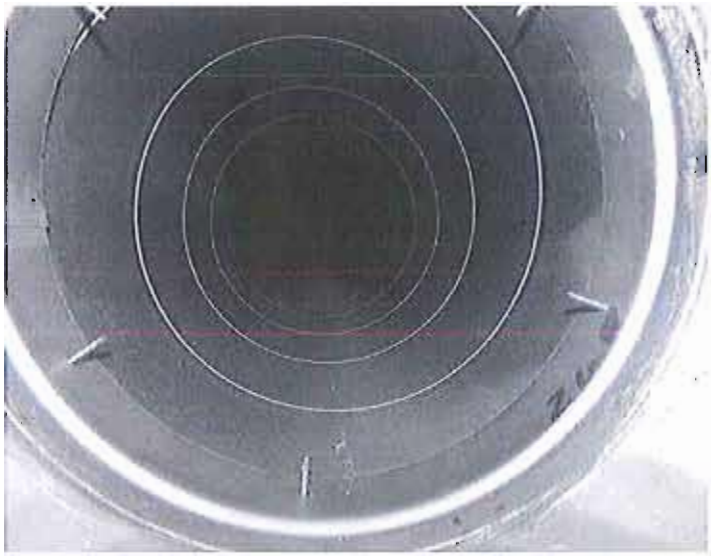
3. Level 4 – Supply duct – Before clean.



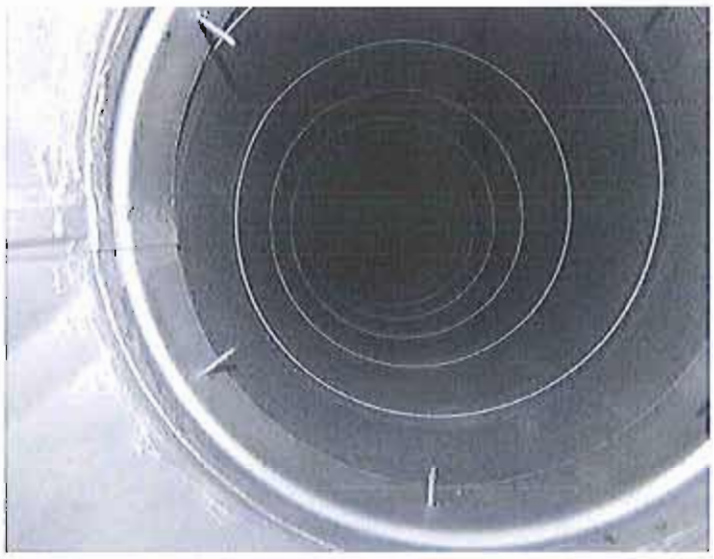
4. Level 4 – Supply duct – After clean.

5. Level 4 – Supply duct – Before clean.

6. Level 4 – Supply duct – After clean.

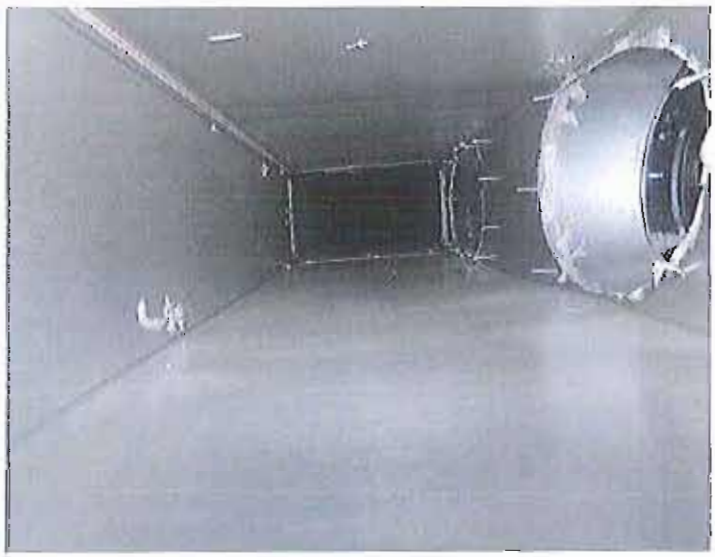


7. Level 4 – Supply duct – Before clean.

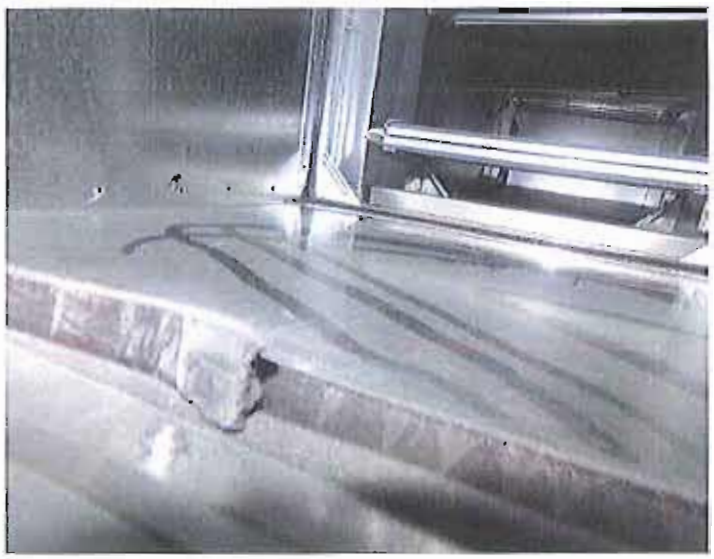


8. Level 4 – Supply duct – After clean.

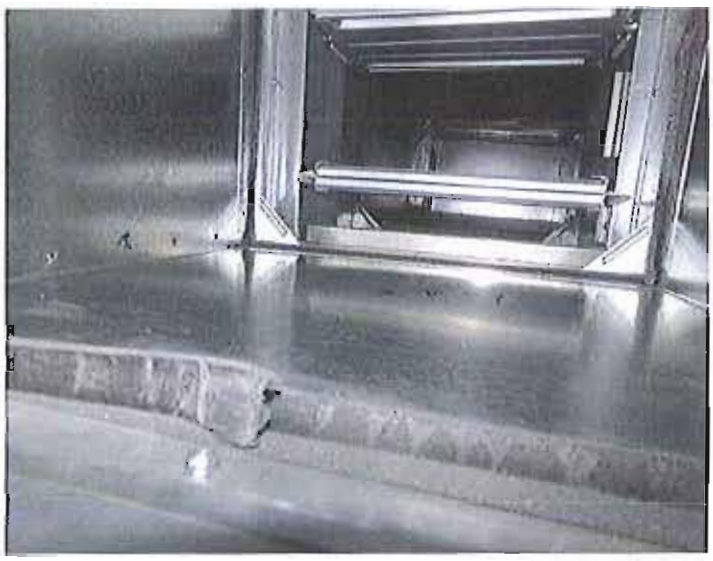
9. Level 4 – Supply duct – Before Clean.



10. Level 4 – Supply duct – After Clean.

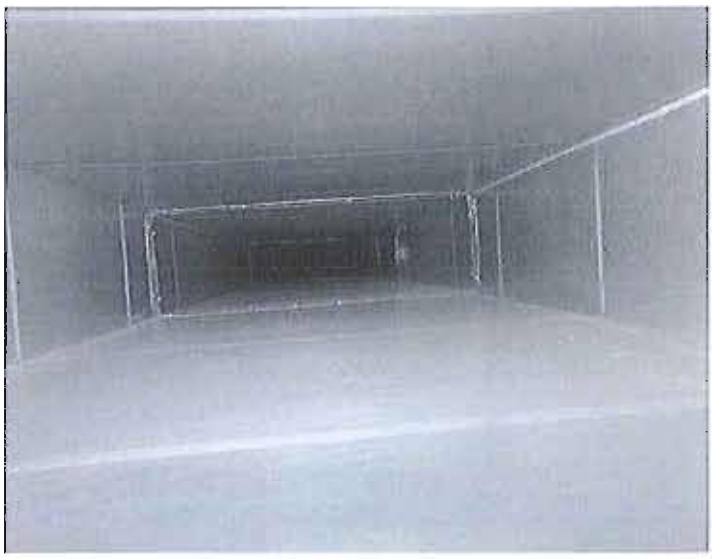


11. Level 4 – Supply duct – Before Clean.



12. Level 4 – Supply duct – After Clean.

13. Level 4 – Supply duct – Before Clean.



14. Level 4 – Supply duct – After Clean.

15. AHU 63 – Fresh air intake – Before Clean.

16. AHU 63 – Fresh air intake – After Clean.

17. AHU 63 – Filter chamber – Before Clean.

18. AHU 63 – Filter chamber – After Clean.

19. AHU 63 – Fan chamber – Before Clean.

20. AHU 63 – Fan chamber – After Clean.

SYS/15/133
Issue no.1

University of Hertfordshire
Hatfield Herts
AL10 9AB

Biodet
Laboratory
Email [redacted]

System Hygienics Ltd
Chaucer Industrial Estate
Dittons Road, Polegate
East Sussex BN26 6JF

Ref: SYS/15/133
Date: 21st September 2015
Log No. 1761

CERTIFICATE OF ANALYSIS

Job No.:
Operator: M. Hickenbottom
Date Sampled: 09-Sep-2015
Date Received: 16-Sep-2015

Filters were weighed to determine the amount of particulate contamination.

Results:

Sample N°	Location	Filter Difference (mg)
1	4th floor Supply Duct	0.0
2	4th floor Supply Duct	0.0
3	4th floor Supply Duct	0.0
4	4th floor Supply Duct	0.1
5	4th floor Supply Duct	0.2
6	4th floor Supply Duct	0.0

[redacted]

I.MOSS 21st September 2015
TECHNICAL MANAGER

CERTIFICATE OF CLEANLINESS

We hereby certify that the Extract & Supply Systems (referred to in the photo log) serving:-

Southern General Hospital
75 Hardgate Road
Glasgow

have been cleaned and completed on 07 September 2015 In accordance with B&ES Guide to Good Practice TR/19 (2nd Edition) standard, whereby no more than 0.3g dust per 1m² internal surfaces did remain. Please refer to legislation set out overleaf and attached laboratory analysis results reference SYS/15/133 dated 21 September 2015

System examined by our representative Mr Mark Hickenbottom.

presented by

SYSTEM HYGIENICS LIMITED
Chaucer Industrial Estate
Dittons Road, Polegate
East Sussex BN26 6JF

Signed [redacted]

24 September 2015

Date

STD78

A47069198

EXCERPTS FROM WORKPLACE (HEALTH, SAFETY AND WELFARE) REGULATIONS 1992

MAINTENANCE OF WORKPLACE, AND OF EQUIPMENT, DEVICES AND SYSTEMS
Regulation 5

(1) The workplace and the equipment, devices and systems to which this regulation applies shall be maintained (including cleaned as appropriate) in an efficient state, in efficient working order and in good repair.

(2) Where appropriate, the equipment, devices and systems to which this regulation applies shall be subject to a suitable system of maintenance.

(3) The equipment, devices and systems to which this regulation applies are:-

(a) Equipment and devices a fault in which is liable to result in a failure to comply with any of these Regulations; and

(b) Mechanical ventilation systems provided pursuant to regulation 6 (whether or not they include equipment or devices within sub-paragraph (a) of this paragraph).

Approved Code of Practice (Regulation 5)

20. The workplace, and the equipment and devices mentioned in these Regulations, should be maintained in an efficient state, in efficient working order and in good repair. 'Efficient' in this context means efficient from the view of health, safety and welfare (not productivity or economy). If a potentially dangerous defect is discovered, the defect should be rectified immediately or steps should be taken to protect anyone who might be put at risk, for example by preventing access until the work can be carried out or the equipment replaced. Where the defect does not pose a danger but makes the equipment unsuitable for use, for example a sanitary convenience with a defective flushing mechanism, it may be taken out of service until it is repaired or replaced, but if this would result in the number of facilities being less than that required by the Regulations, the defect should be rectified without delay.

21. Steps should be taken to ensure that repair and maintenance work is carried out properly.

22. Regulation 5(2) requires a system of maintenance where appropriate, for certain equipment and devices and for ventilation systems. A suitable system of maintenance involves ensuring that:

(a) regular maintenance (including, as necessary, inspections, testing, adjustment, lubrication and cleaning) is carried out at suitable intervals;

(b) any potentially dangerous defects are remedied, and that access to defective equipment is prevented in the meantime;

(c) regular maintenance and remedial work is carried out properly; and

(d) a suitable record is kept to ensure that the system is properly implemented and to assist in validating maintenance programmes.

VENTILATION
Regulation 6

(1) Effective and suitable provision shall be made to ensure that every enclosed workplace is ventilated by a sufficient quantity of fresh or purified air.

(2) Any plant used for the purpose of complying with paragraph (1) shall include an effective device to give visible or audible warning of any failure of the plant where necessary for reasons of health or safety.

(3) This Regulation shall not apply to any enclosed workplace or part of a workplace which is subject to the provision of:-

(a) section 30 of the Factories Act 1961;

(b) regulations 49 to 52 of the Shipbuilding and Ship-Repairing Regulations 1960;

(c) regulation 21 of the Construction (General Provisions) Regulations 1961;

(d) regulation 18 of the Docks Regulations 1988.

Approved Code of Practice (Regulation 6)

32. In the case of mechanical ventilation systems which recirculate air, including air-conditioning systems, recirculated air should be adequately filtered to remove impurities. To avoid air becoming unhealthy, purified air should have some fresh air added to it before being recirculated. Systems should therefore be designed with fresh air inlets which should be kept open.

33. Mechanical ventilation systems (including air-conditioning systems) should be regularly and properly cleaned, tested and maintained to ensure that they are kept clean and free from anything which may contaminate the air.

34. The requirement of regulation 6(2) for a device to give warning of breakdown applies only 'where necessary for reasons of health or safety'. It will not apply in most workplaces. It will, however, apply to 'dilution ventilation' systems used to reduce concentration of dust or fumes in the atmosphere, and to any other situation where a breakdown in the ventilation system would be likely to result in harm to workers.

35. Regulation 6 covers general workplace ventilation, not local exhaust ventilation for controlling employees' exposure to asbestos, lead, ionising radiations or other substances hazardous to health. There are other health and safety regulations and approved codes of practice on the control of such substances.

EXCERPTS FROM HVCA GUIDE TO GOOD PRACTICE TR19 'Cleanliness of Ventilation Systems'

Section 9 - Verification of Cleanliness

9.1 The primary method of assessment is visual. For cleaned system verification the surface should be visibly clean and capable of meeting the level of cleanliness specified.

9.2 Verification where specified on general ventilation systems, should be by means of a vacuum test (VT), as described in Appendix D, based on the recommendations of the US National Air Duct Cleaners Association (NADCA) ACR 2005. A system will be considered acceptably cleaned if, following a VT, a result of not more than 0.75g/m² is achieved. This is equivalent to 0.75mg/100cm² as per ACR 2005.

9.3 It should be noted that verification should take place immediately after cleaning to avoid any possibility of post-clean interference. The client should be given the opportunity to witness testing of ductwork surfaces.

Section 5.2
A testing procedure is defined in this guide which may be used to establish whether or not it would be appropriate to clean a mechanical ventilation system. This provides one reasonable practicable way of satisfying the Regulation and ACOPs relevant to the cleanliness of ventilation systems.

Section 5.5
The owner or operator should select the type(s) of test(s) and frequency to be included within their testing regime to suit the particular requirements of the building served by the ventilation system. The regime should be reviewed regularly (eg. annually), to take into account any changes in the building use, legislation and/or health and safety guidance.

Section A8
The specification should include a definition of the method of verifying the effectiveness of the treatment including the number and type of microbiological samples to be taken and their analysis eg. in-house or third-party laboratory.

System Hygienics Ltd recommends that the systems mentioned in our Certificate of Cleanliness be cleaned on at least an annual basis in accordance with the above Loss Prevention Council recommendations.

A specific Risk Assessment, taking account of the likely rate of grease accumulation and other factors, should be carried out to establish the required inspection and cleaning frequency.

Schneider Electric

Commissioning Site Report

Project Title:	New South Glasgow Hospital
Project No:	N1.00566
Client:	MEL
Location:	Ward 4B
Panel Ref:	N/A
Snag List Ref:	1
System Name:	StruxureWare
Engineer:	Gary Palmieri
Date:	06/10/2015

WORK CARRIED OUT

The 24 rooms, numbered 76 to 99, each have a CMR V-Sensors installed in the ceiling outside the room with a wall mounted pressure display in the corridor. There is also a HMI (Touchscreen) display at the Nurse Station.

Each of the 24 no. sensors and displays had their wiring checked. They were then powered up and then the pressure readings checked to the corridor displays and the HMI at the Nurse Station. All units were confirmed as operating and reading correctly.

The operation of the Pressure Alarms, on each room, were checked and the Alarms confirmed at the corridor displays and the HMI at the Nurse Station. Each Alarm was acknowledged/silenced from the corridor display or the HMI.

The pressure readings displayed were confirmed by the H&V Engineers on site during the commissioning.

Signature: [redacted]

A47069198

Functional Design Specification

New South Glasgow Hospital – Adult & Childrens

Ward 4B Nurse Station Pressure Monitoring

(See Appendix for Associated Systems)

Control Panel Type:	Ward 4B Nurse Station Pressure Monitoring Panel
Document No:	ME-XX-04-DC-S660-134
Document Revision:	R01
Revision Date:	13/10/2015

Associated Plant Ref:	**Associated Plant Description:**
31AHU63	AHU Type 41 Functional Design Specification

For Commissioning Use Only:	
Plantroom Zones	
Commissioning Date:	
Engineers Name:	
Engineers Signature:	

Revision History

Revision	Date	Author	Checked by	Comments
R01	13/10/2015	CR		Record

A47069198

CMR AIR MANAGEMENT

ISSUE No: R01

DATE: 13th October 2015

PROJECT: Ward 4b Hospital Ward Pressure Monitoring

Prepared for: Schneider Electric

AIRFLOW AND PRESSURE CONTROLS

INDEX

1. System Description Page 2
2. System Schematics Page 3

Prepared by: Justin Congrave

Mobile: [redacted]

E-mail: [redacted]

System Description

The area consists of 24No. Rooms which require pressure monitoring.

A V-Sensor Air Pressure Monitor will be mounted in the ceiling local to each room. A Blue PVC Tube will be connected to an Air Probe Plate on the ceiling/wall of the reference area, and a Red PVC Tube will be connected to an Air Probe Plate on the ceiling/wall of the room. A local DIS-125 Alarm Display Plate will be mounted on the wall to provide a pressure readout and audible / visual alarm, and be connected to the V-Sensor using Lapp DeviceNET Thin Cable. The V-Sensor will be wired to a Modbus Tap (Power / Communication Junction Box) using the same Lapp DeviceNET Thin Cable. The 24No. Modbus Taps will be connected together using DeviceNET Thick Cable, which will be taken back to the Nurse Station Panel.

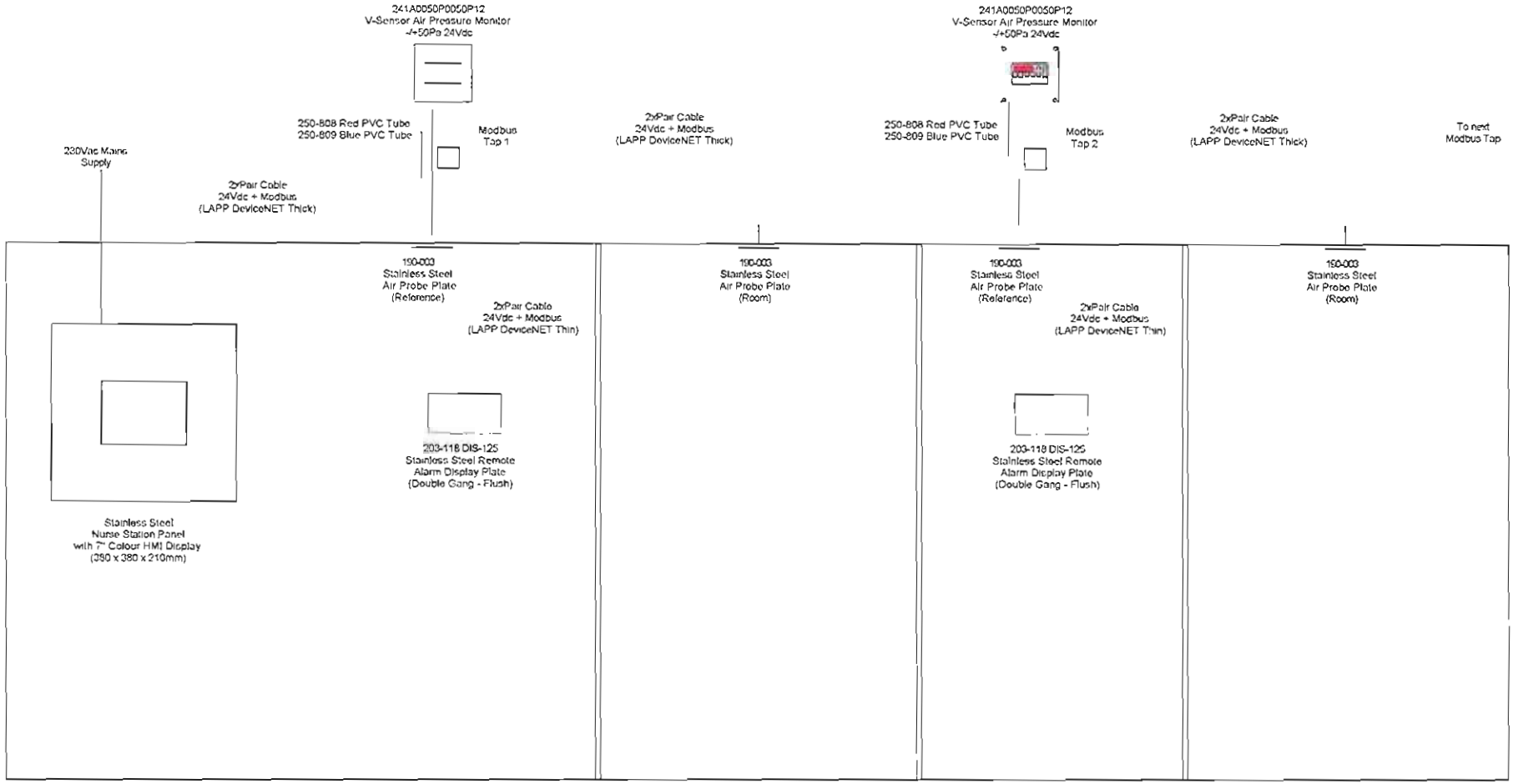
The Nurse Station Panel will be a Stainless Steel surface mount box housing a 230Vac - 24Vdc power supply, which will feed the V-Sensors and a 7" Colour HMI. The Modbus RTU from the V-Sensors shall be read in and provide a display of the measured Room Pressures. Each differential pressure value will be displayed in Pa (Pascals) and sit within a Box which shall be Green when Healthy, changing to Flashing Red if in Alarm. When in Alarm the HMI will have a common Audible Alarm Sounder which may be silenced by pressing the Mute Button on the touch screen. When muted the Red Box will cease flashing and become static, before returning to static Green when the fault is rectified. This functionality essentially replicates that of the V-Sensor / DIS-125 Alarm Display Plate, so that any alarm can be acknowledged locally or at the Nurse Station.

The V-Sensor has integral adjustments to allow the setting of both high and low pressure alarms, along with delay timers to prevent nuisance alarms when the areas are being accessed during normal activities.

The proposed system is an instantaneous display only, and does not offer any data retention.

CMR CONTROLS Ltd.
AIR MANAGEMENT SYSTEMS
22 Repton Court Repton Close
Basildon Essex SS13 1LN GB
Web : www.cmr.co.uk
Tel : +44 (0) 1268 287222
Fax : +44 (0) 1268 287099
E-mail : sales@cmr.co.uk
CMR
Since 1978

HOSPITAL PRESSURE MONITORING SCHEMATIC



CMR CONTROLS Ltd.
AIR MANAGEMENT SYSTEMS
22 Repton Court Repton Close
Basildon Essex SS13 1LN GB
Web : www.cmr.co.uk
Tel : +44 (0) 1268 287222
Fax : +44 (0) 1268 287099
E-mail : sales@cmr.co.uk

Functional Design Specification

New South Glasgow Hospital – Adult & Childrens

Ward 4B Nurse Station Pressure Monitoring Instructions

(See Appendix for Associated Systems)

Control Panel Type:	Ward 4B Nurse Station Pressure Monitoring
Document No:	ME-XX-04-DC-S660-135
Document Revision:	R01
Revision Date:	14/10/2015

Associated Plant Ref:	**Associated Plant Description:**
31AHU63	AHU Type 41 Functional Design Specification

For Commissioning Use Only:	
Plantroom Zones	
Commissioning Date:	
Engineers Name:	
Engineers Signature:	

Revision History

Revision	Date	Author	Checked by	Comments
R01	14/10/2015	CR		Record

QEUH Ward 4b Room Pressure Monitoring Panel Operating Instructions

NORMAL OPERATION

The main screen on the HMI shows 24 boxes which display the pressures for each room. If the condition of the room is healthy, the border of the box will be green.

If a room goes into alarm, the border for the pressure display for that room will flash red and the HMI alarm will sound. The alarm can be muted by pressing the box which is flashing. The border will then stop flashing and will show steady red until the room comes out of alarm. Pressing the button in the lower left corner of the screen will mute all alarms. The alarm sounder in the display plate outside the room will be muted when the alarm is muted from the panel.

The main screen is the only screen used for normal operation. It is possible to swipe the display left or right to show other screens but these will be locked unless a higher level user is logged in. If a user swipes to a different screen then they will need to swipe back to the normal screen.

ADVANCED OPERATION

Normally there is no user logged in and muting of alarms is the only function available. To access higher level functions, an Engineer or Administrator will need to be logged in. In practice it is unlikely that access to higher level functions will ever be needed.

Users

Engineers can mute alarms, change alarm settings and exit or restart the application. An Engineer "cmreng" with a password 287099 was configured at the factory.

Administrators can, in addition, create other users. An Administrator "cmradmin" with a password 287222 was configured at the factory.

To login, press the Login button and then enter the password. The username is not entered and is determined from the password. If the login was successful, the name of the user will be displayed briefly. Automatic logout will occur after a few minutes.

Alarm Settings

The alarm thresholds and timer may be changed by an Engineer or Administrator. These settings are stored in the sensors but can be modified using the HMI. On the main screen, touching a pressure box to the left or right of its central point will open a window showing the alarm thresholds in Pa and the alarm time in seconds. The settings can be changed on this screen. It is recommended to close the alarm settings screen then open it again to make sure the sensor has been updated with the changes.

Restarting the HMI

The HMI can be restarted by pressing the CMR logo. Open and close Control Panel and then press the Launch Application button.

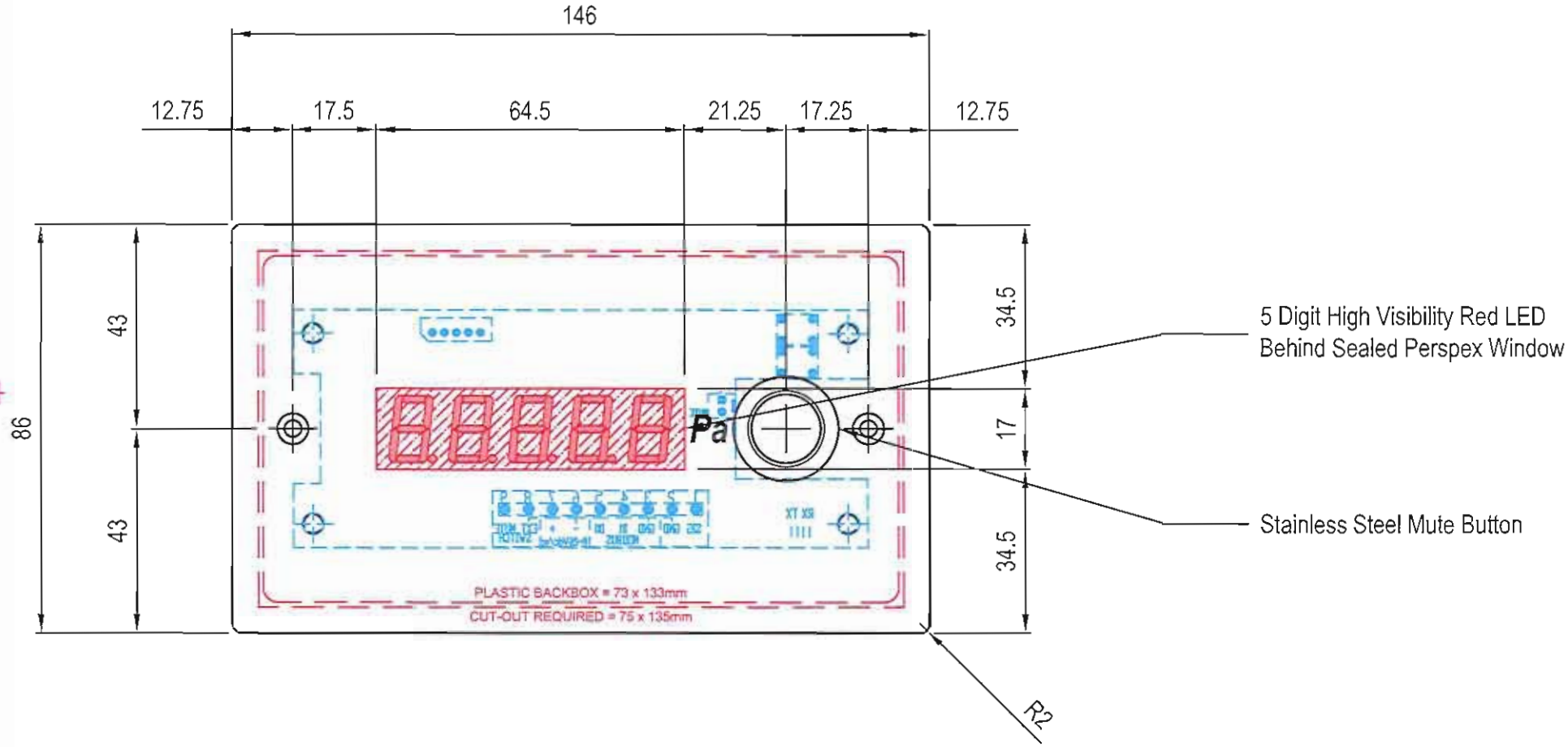
User Administration

Administrators can create, modify and delete users by pressing the Admin button. This opens the Administration screen. Operation is self explanatory. **It is important not to delete the only administrator.** If there are no administrators left then it will be impossible to do any further user administration.

Rev No	...sion Note	Date	Signature	Checked

CMR CONTROLS
22 Repton Court, Repton Close
Basildon, Essex, SS13 1LN, UK.
Website: www.cmr.co.uk
Tel: +44 (0) 1268 287 222
Fax: +44 (0) 1268 287 099
Email: sales@cmr.co.uk

IF IN DOUBT - ASK



DRG TITLE:			PROJECT:	MATERIAL:			FINISH:			DIMENSIONS:
Remote Digital LED Alarm Indicator			DIGITAL SENSORS	2.0mm THK 316L STAINLESS STEEL			STAIN BRUSHED - 320G OPTISHEEN			mm
DRG No:	REV:	PART No:	ORIGINAL REF:	SCALE:	SHEET:	SIZE:	Designed by:	Checked by:	Drawn by:	Date:
M-359_1	A	203-045	203-040 / 203-116	NTS	1 of 1	A4	J.C.	-	J.C.	20/12/06

V-SENSOR AIR PRESSURE AIR VOLUME

- Ultra low pressure and volume measurement
- Traceable Calibration Certificate Is Included
- High accuracy and repeatability
- Linear pressure or air volume output
- Both measurement and PID control output
- Two modbus for monitoring and remote display
- One alarm relay, buzzer and LED Indicators
- Auto Zero and overload protection is standard
- Operator keyboard display for all functions
- Two Modbus rtu, 0..10V and 4..20mA outputs
- IP65 enclosure with easy mount wall bracket
- 24 month warranty
- 30 Years field application experience

V-SENSOR Wall Mount with Keyboard and LED display

GENERAL

The V-Sensor is a wall mount ultra low pressure transmitter which provides 0..10V and 4..20mA as well as Modbus communication over the selected range . The display can be adjusted via the keyboard to show the measured value in Pa, hPa, kPa, m/s, l/s, m3/s, m3/h and ACR (air change rate).

A PID control output can be selected, but still having one output for monitoring the pressure or volume.

The pressure ranges can be adjusted via the keyboard, but the base range is factory calibrated and certified i.e. 10, 25, 50, 100, 250 and going up to 7500 Pa. All ranges can be adjusted to +/- ie. -/+25Pa.

Power supply 24Vdc/ac non-Isolated or 24,110 and 230Vac Isolated are available as standard.

CMR TRANSDUCER

The transducer is manufactured by CMR with high precision engineered components. The principle is the measurement of the displacement of the diaphragm by means of a push and pull variable reluctance circuit which is not effected by humidity and hence it can be used in any Industrial or commercial environment. There are no mechanical connections to any of the sensing coils and the diaphregm.

CMR Transducer

Extremely low pressures can be measured with excellent repeatability and minimal hysteresis. The diaphragm displacement is so small that no air volume is required to measure the air pressure which means measurement tubing can be connected in excess of 200m throughout the building without losing accuracy or measurement speed.

Tha zero drift is minimized by the measuring copper coils which are matched to provide excellent self compensation. One coil measures positive and the other negative drift and therefore balances any excessive drift between two tolerance limits in its life cycle. The CMR Transducer hes e proven field track record of over 30 years. All CMR Sensors ere temperature compensated in a computerised climate chamber.

CMR Climate Chamber

KEYBOARD DISPLAY

A combined keyboard and LED Display is fitted into the lid and is connected to the V-Sensor board with a plug-in ribbon cable. All parameters can be accessed via the key pad. The display can also be programmed to switch off after a time and by touching a key to light up again. Normally it is always on.

PARAMETER CONFIGURATION

The duct width and height can be entered as well as the density and (mf) magnification (K) factors to scale Fan Inlet Rings, Flowgrids, Veloprobes, Oval Flowprobes, Venturis or any other velocity pressure producing probes. The volume can be linearized over 8 points to provide extremely high accuracy in measurement.

The range can be changed from -10 Pa to 30 Pa or -20 to 120 Pa. The output signals can be changed to i.e. 2..10V, 1..5V or 5..19mA. The V-Sensor has a configurable Volt Free alarm output relay.

The auto zero function is built in, which is of great advantage at very low velocity pressure measurement i.e. 0.3 Pa to have an accurate base point at all times. The auto zero can be turned off where it is not required.

The overload protection can be switched on and is ideal to protect the low pressure diaphragm. It is active whenever the sensor is powered up.

One of the outputs can be configured to be a PID control to drive fan inverters or modulating dampers and the other can be used for the actual pressure or air volume measurement for the BMS or PLC system. The set point can be sent from the BMS via modbus.

The signals can be individually smoothed. The control output can be fast but the measurement output can be dampened.

A calibration mode can be selected so that all of the parameters remain the same as commissioned and only the base sensor shall be calibrated and displayed in Pa.

MODBUS rtu COMMUNICATION

The modbus communication can be used to read and write all parameters by the remote Host which can be the BMS , PLC or PC.

REMOTE ALARM DISPLAY

A remote display DIS110 without alarm or DIS125 with alarm and mute button can be connected via Modbus if the modbus is not used for the BMS. The alarm button has green and red Led light rings to show healthy or alarm status. A buzzer is also fitted. A separate power supply can be wired to the display.

Remote Display Plate

CMR CONTROLS Ltd
Precision Air Pressure and Volume Sensors
22 Repton Court Repton Close
Basildon Essex SS13 1LN GB
web www.cmr-controls.com
Phone +44 (0) 1268 287222
Fax +44 (0) 1268 287099
mail sales@cmr-controls.com

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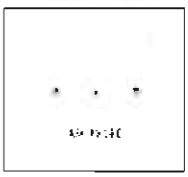
V-SENSOR PRESSURE APPLICATIONS

ROOM PRESSURE MEASUREMENT WITH CMR V-SENSORS

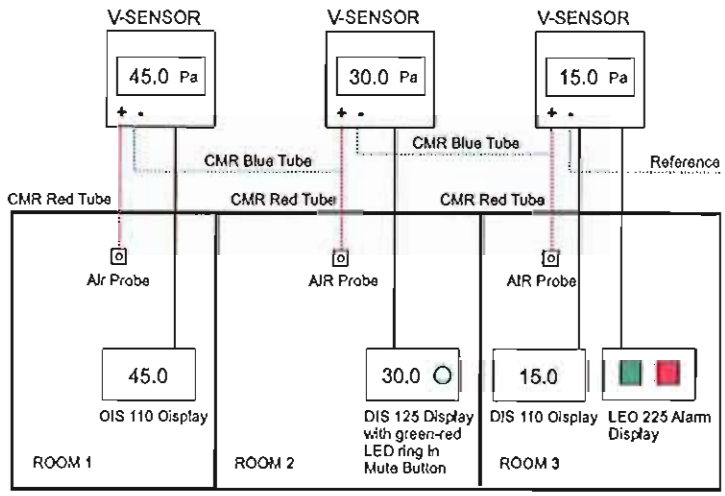
Tubes + Fittings

Ceiling Air Probe



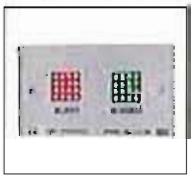
Air Probe Plate

Typical Clean Room Pressure Monitoring and Alarming



DIS 110 Display

DIS 125 Display



LED 225 Display

The above schematic shows a typical clean room. The room pressures are measured in cascades starting in Room 3 from e reference such as a plant room or eny other stable location, then measuring across to room 2 end finally across to Room 1.

Eech room has an air probe plate fitted to the ceiling. The air probes are connected to the V-Sensors with red end blue CMR PVC Tubing.

The CMR PVC tubing can be run up to 200m from the room to the P-Sensor without losing accuracy of the measurement.

Remote LED display plates are fitted for the operators to see the actual room pressure in Room 1 and 2. Room 2 has elso a local illuminated alarm green and red led built as ring into the mute button end a buzzer. Room 3 has only a modbus alarm led indicator plate.

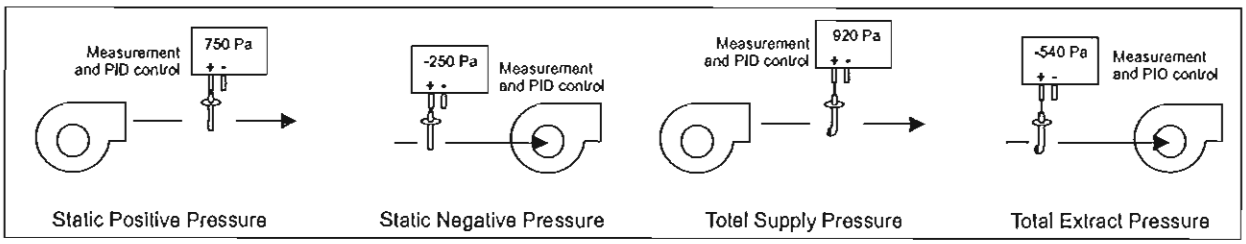
The V-Sensor is a true Low Differential Air Pressure Transmitter and can be used for static pressure, vacuum pressure end differential pressure measurements in positive or negative areas.

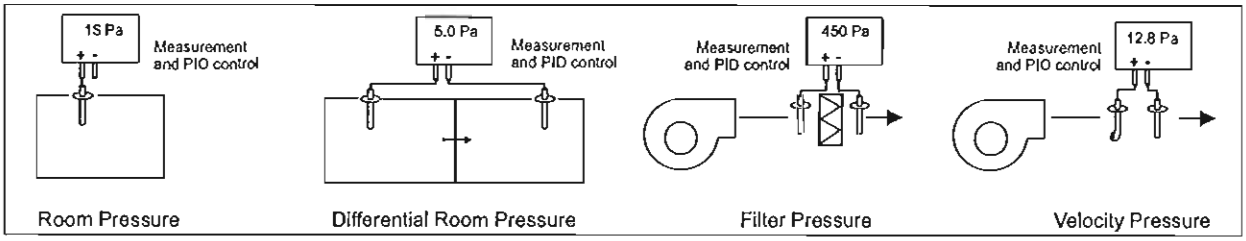
The operator keyboard with LED display is fitted into the lid as standard and shall display the actual pressure. All parameters can be adjusted without opening the lid.

The Pressure measurement can be transmitted via modbus rtu or analogue signels 0..10V or 4..20mA to the SCADA, BMS or Industrial PLC systems for long term monitoring.

All future calibretion can be done using the calibration mode. Celibration Certificates traceable to National and Internetional Standards (UKAS) are supplied as standard with all V- Sensors.

TYPICAL PRESSURE APPLICATIONS





CMR CONTROLS Ltd
Precision Air Pressure and Volume Sensors
22 Repton Court Repton Close
Basildon Essex SS13 1LN GB
web www.cmr-controls.com
Phone +44 (0) 1268 287222
Fax +44 (0) 1268 287099
mail sales@cmr-controls.com

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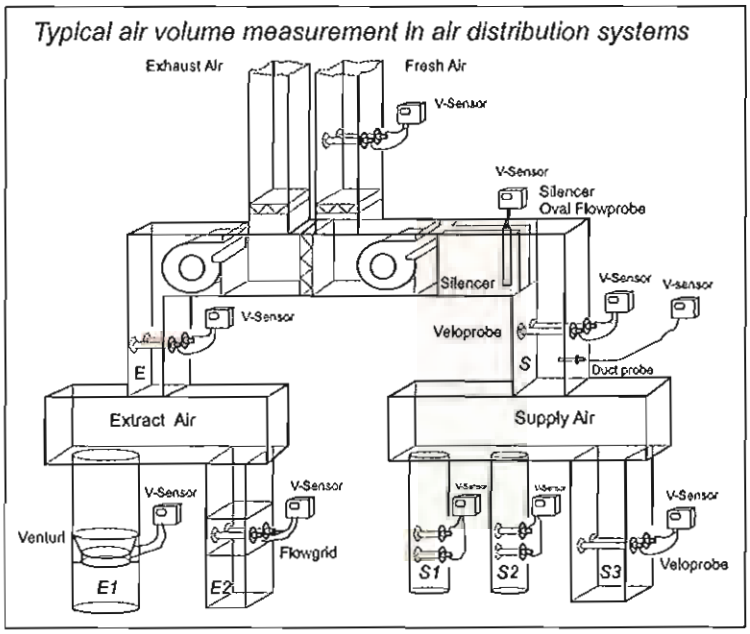
V-SENSOR AIR VOLUME APPLICATIONS

VELOCITY PRESSURE AND AIR VOLUME MEASUREMENT WITH CMR V-SENSORS

FGG Flowgrid

VVM Venturi

PVC Tube Fittings



CMR Veloprobes

Duct Probes

Oval Flowprobe

The CMR V-Sensor is an ultra low high precision Velocity Pressure Transmitter which has been designed to accurately measure air volumes in Ventilation Ducts . The built in Square Root Extraction and Magnification Factor Scaling makes the V-Sensor an extremely versatile measurement instrument.

It can display the actual volume in m3/s. Other Units such as m3/h, litres/s or ACR (Air change rate) can be selected via the keyboard. Any Imperial measurement units i.e. CFM are available on request .

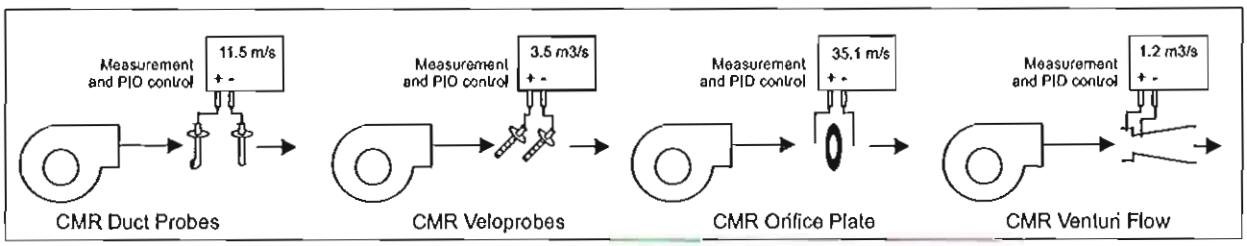
The CMR PVC tubing can be run up to 200m from the sensing station to the V-Sensor without losing the accuracy of the measurement.

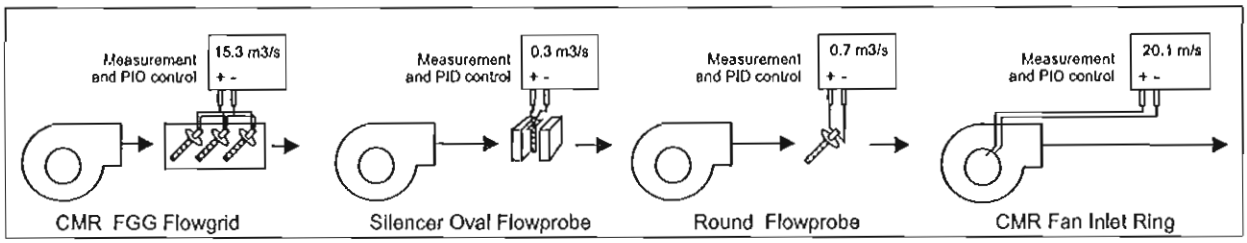
The V-Sensor is used for monitoring and also controlling Volume Flow in Commercial or Process Applications and is designed to be connected to any CMR Veloprobes, Duct Probes, Flowgrids, Venturis and Fan Inlet Rings. It can also be used with any existing or custom made duct Flow Measurement Device.

The measured values can be transmitted to remote display plates, SCADA, BMS control systems or Industrial PLCs through the output signals of 0..10V, 4...20mA, modbus 1 and 2.

Calibration Certificates traceable to National and International Standards (UKAS) are supplied with all V-Sensors.

TYPICAL CMR AIR VOLUME MEASUREMENT APPLICATIONS





CMR CONTROLS Ltd
Precision Air Pressure and Volume Sensors
22 Repton Court Repton Close
Basildon Essex SS13 1LN GB
web www.cmr-controls.com
Phone +44 (0) 1268 287222
Fax +44 (0) 1268 287099
mail sales@cmr-controls.com

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V-SENSOR VELOPROBE MEASUREMENT

GENERAL
The drawing shows a typical application for CMR Veloprobes and V-Sensors.

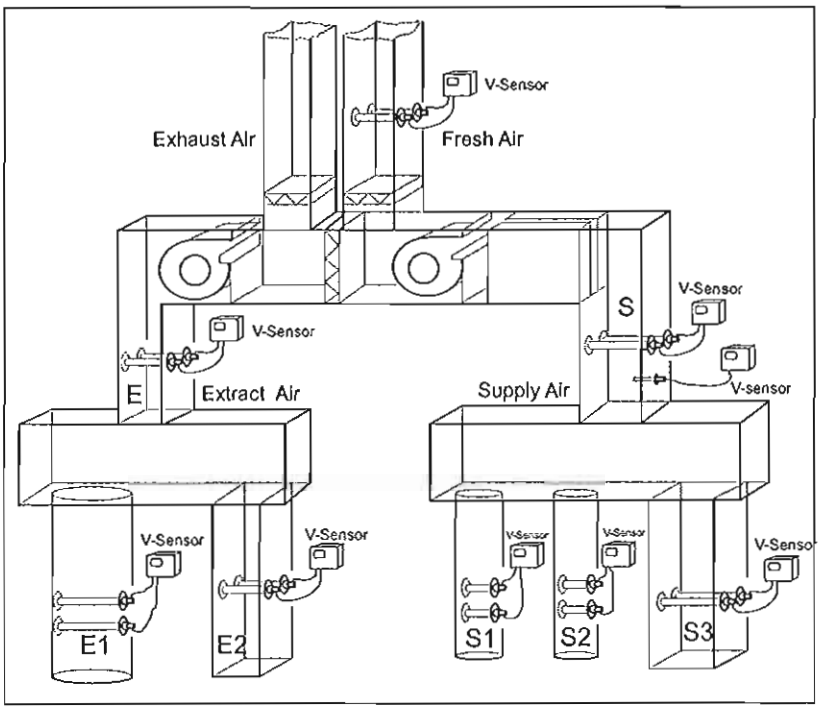
The supply air duct can either be fitted with one central Veloprobe or individual Veloprobes on each of its branches.

In many cases, the positions of the Veloprobes are very much dictated by the design of the building. The CMR Veloprobe can be fitted in almost any position in order to provide accurate measurements.

In a single supply and extract duct application, the V-Sensor measures the building's actual total supply and return volumes. As both V-Sensors are calibrated to provide a linear air volume signal, tracking of supply and extract air is now made easy.

The duct height, width or diameter, density and magnification ('K' factors) can be entered in the V-Sensor via the keyboard very easily and only the measurement range for 0..10V or 4..20mA must be given to the BMS at final commissioning.

For multiple duct applications, the total supply and extract air volume is derived by adding all air volumes from the individual ducts.



Example of Volume adding: S = E ± an offset for positive or negative building pressure
S1 + S2 + S3 = E1 + E2 ± offset or S = E1 + E2 ± offset - etc

V -Sensor - scaling in m/s only.

Adjust the Impact Veloprobe (red) to face the Airflow and end adjust the Static Veloprobe (blue) to approx. 180° away from the airflow.

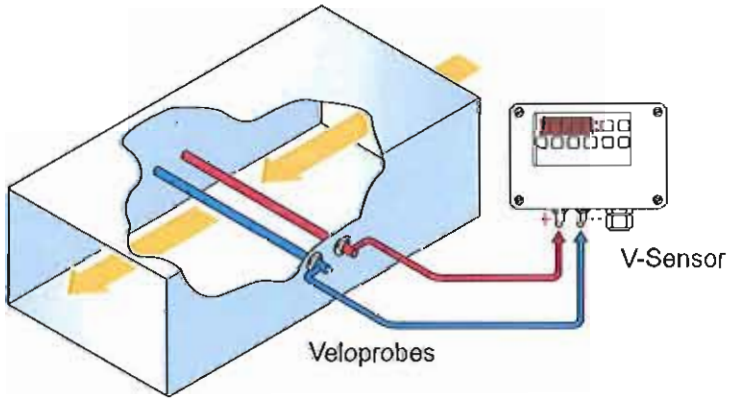
Scaling of the duct height and width is done in the BMS
Use the keyboard and adjust the display to m/s. Adjust the height and width to 1 and adjust the (mf) to 2.000. Press the very left hand key briefly and the sensor range is displayed for a short time, which is the renge at 10V in m/s. If the range of tha sensor is 100Pa then it should display 9.128 m/s.
Take a Pitot Tube reading in the duct and if the velocity is not equal to the display then adjust the magnification factor until it is equal then press the range key again to get the new range in m/s.

V-Sensor - scaling in m3/s - m3/h - l/s - ACR air change rate

Adjust the Impact Veloprobe (red) to faca the Airflow and and adjust the Static Veloprobe (blue) to approx. 180° away from the airflow.

Scaling the range for the BMS
Use the keyboard end anter the duct height and width or simply enter the width of a round duct and keep the height at 0. Adjust the magnification factor (mf) to 2.000. Use the display key and select m3/s, m3/h, l/s or ACR (Air Change Rete) and adjust the decimal places. When pressing the left hand key the sensor range shall be displayed in the selected units at 10V. Take a Pitot Tube reading in the duct and if the volume is not equal to the display then adjust the magnification factor until it is equal then press the range key again to get the new range.

V-Sensor air volume measurement with Veloprobes in Duct



CMR CONTROLS Ltd
Precision Air Pressure and Volume Sensors
22 Repton Court Repton Close
Basildon Essex SS13 1LN GB
web www.cmr-controls.com
Phone +44 (0) 1268 287222
Fax +44 (0) 1268 287099
mail sales@cmr-controls.com

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V-SENSOR KEYBOARD FUNCTIONS

FUNCTIONS (Use Operator Manual for full Instructions)

The V-Sensor LED-Keyboard has been designed to simplify installation and commissioning. The only time the lid must be opened is for wiring during installation. Thereafter every control function can be accessed via the keyboard, even the calibration can be carried out utilising this functionality.

ZERO KEY

When pressing the zero key for 1 seconds, the V-Sensor shall perform a zero which means the pressure is taken off the sensor internally and the diaphragm is relaxed to zero.

PASSWORD

The keyboard can be password protected so that only the display can be operated, but no adjustments can be made.

RANGE KEY

Pressing the range key very quickly once will display the sensor range i.e. if it shows 100, this means the range of the sensor has been configured to 0-100Pa for 10V/20mA output. By pressing the range key for 1 seconds it enters the configuration menu:

S	Software Version	1.5
Ad	Network Address	1-254 (0 Denotes Modbus Display)
AZ	Auto Zero	on - off
P	Positive Range	i.e. + 25
n	Negative Range	i.e. - 25
Opp	Over Pressure	1(on) 0(off)
F	Zero Offset	
t	Set Point	
Sn	Modbus smoothing	d or o
Adj	Internal / External	I or E
Azt	Auto Zero time interval	1-99 h
FF	Modbus float format	0-3

OUTPUT KEY

Pressing the output key very quickly once will display the sensor output configuration i.e. lin or root, which means the sensor measures pressure or airflow. By pressing the output key for 1 seconds the configuration menu can be reached:

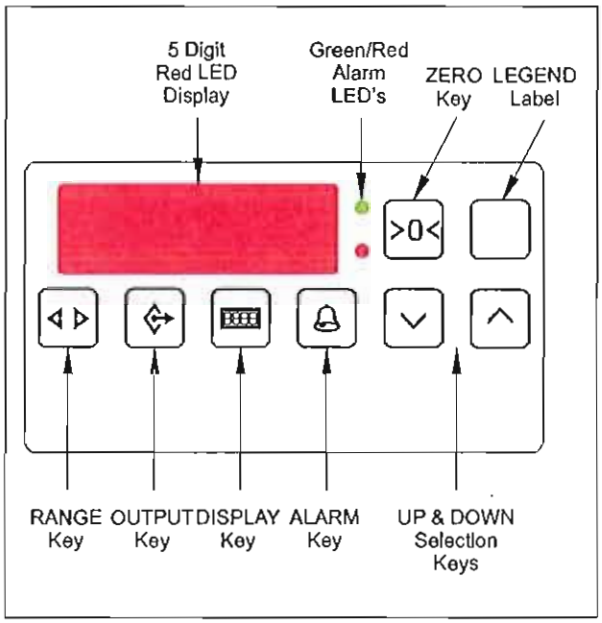
So	Output Smoothing	0-99
Lin	Output mode	linear pressure
root	Output mode	square root
e	Output scaling	F, L or Fac
F	Mag Factor	0-99.99
_	Duct width	0-9999mm
I	Duct height	0-9999mm
d	Air Density Factor	0-9.99kg/m3
r	Room Size	0-9999m3
s	Small Value Shut off	0-99.99%
o	Output Re-Scaling	
bFl	Bi-Directional Flow	0 or 1

DISPLAY KEY

Pressing the display key very quickly once will display the measurement units. i.e. Pa, hPa, kPa etc, and is the units the sensor has been configured to i.e. Pa. By pressing the display key for 1 seconds it enters the configuration menu:

Sd	Display Smoothing	0-99
Pa	Pascals	
hpa	hecta Pascals	
3pa	kPa	
nnps	metres per second	
lps	litres per second	
nn3s	cubic metres per second	
nn3h	cubic metres per hour	
acr	Air Change Rate per hour	
dp	Decimal Place	0-4
pos	Display polarity (+)	
neg	Display polarity (-)	
Led	Display Activation	1 or t
L2b	Leading Zero Blanking	1-4

V-SENSOR STANDARD LED KEYBOARD



ALARM KEY

Pressing the alarm key quickly shall mute the alarm as the V-Sensor has an alarm buzzer built in.

By pressing the alarm key for 1 seconds it enters the configuration menu:

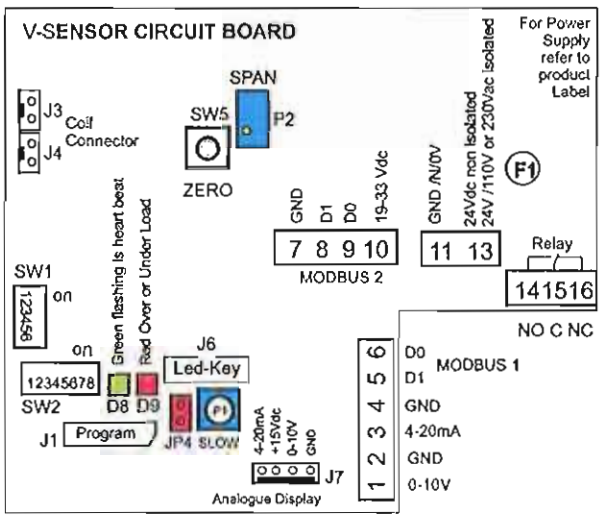
L	Low Alarm	
H	High Alarm	
t	Alarm timer 1	0-999
t.	Alarm timer 2	0-999
u.	Units	dU (Display Units) or Per (%)
af	Alarm Function	0-2
Sr	Self Reset	0-1
rb	Remote Buzzer	-, 0, 1 or P
rA	Remote Alarm Indication	-, 0, F or LH
rt	Re-alarm timer	0-999 minutes
tU	Alarm timer units	s or h

UP - DOWN KEY

The up and down keys are used to select the various parameters

OUTPUT SIGNAL

0-10V and 4-20mA are also available on J7.



CMR CONTROLS Ltd
Precision Air Pressure and Volume Sensors
22 Repton Court Repton Close
Basildon Essex SS13 1LN GB
web www.cmr-controls.com
Phone +44 (0) 1268 287222
Fax +44 (0) 1268 287099
mail sales@cmr-controls.com

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V-SENSOR ORDER DESCRIPTION

GENERAL
CMR manufactures the V-Sensors to suit many low pressure and volume measurement applications. Because of the variety of pressure ranges, output signals and power supplies it has been necessary to design an easy to use selection table for anybody to make up a V-Sensor specification to satisfy a requirement. On the V-Sensor Selection Table you will find all specifications available with the associated ordering code.

V- SENSOR BASE PART NUMBER
The V-Sensor Part Number starts with a base part number of the type of sensor. Code '24' which is a V-Sensor in a standard ABS enclosure.
The Part Number therefore starts with '24'.

V-SENSOR ISSUE No
The V-Sensor will have a version number to identify the model.
The Code is '1 for version 1'.
The Part Number extends to '241'

TUBE CONNECTORS
6 mm barbed nipples to fit CMR PVC Tube are fitted as standard into the ABS box. They have the Code 'A'.
4 mm barbed nipples to suit the CMR SiliconeTube are also available as Code 'B'.
The example has 6 mm barbed nipples which is standard.
The Part Number therefore extends to '241A'.

NEGATIVE PRESSURE RANGE
The Negative Range is specified as (-). If the application requires to measure a negative pressure against a reference, i.e. a room has to be at negative pressure compared with the corridor then the room has to be connected to the Red or (+) nipple. The blue (-) nipple shall be connected to the reference in this case the corridor.

The negative room pressure shall suck on the red (+) nipple and the V-Sensor produces an output signal equivalent of the negative pressure measured.
In the Example we have chosen - 25 which has the Code '0025'.
The Part Number extends to '241A0025'.

If the V-Sensor must only measure in the positive Range i.e 0-25 then the Negative Range will always be selected as 0 and the Code is always '0000'.

PRESSURE UNITS
The negative pressure and the positive pressure range must be expressed in units i.e. Pa or kPa. The CMR transducers are in Pascals (Pa) as standard.
In the example Pa was selected with Code 'P'.
The Part Number extends '241A0025P'

POSITIVE PRESSURE RANGE
To measure Positive Pressure against a reference it is necessary to select a positive range i.e. +25. The Code is '0025' This means the V-Sensor selected above can measure from - 25 Pa to 0 and from 0 to +25 Pa. The output Voltage would therefore be 5V or 12mA at 0 Pa.
The Part Number extends to '241A0025P0025'

LABEL UNITS
As the V-Sensor has a fixed label next to the LED display, i.e. Pa, kPe, hPa, mB etc. It is necessary to specify the label when selecting the part number as this is all part of the validation of the instrument.
In the example Code'P' for Pa was selected.
The Part Number extends to '241A0025P0025P'

OUTPUT SIGNAL
The Industry Standards for Output Signals are 0-10V or 4-20mA, but other signals can be adjusted via the keyboard by the operator.

If 0-10V is the Output Signal for -25 Pa to + 25 Pa then 5 V is 0 Pa. From 5V to 0V the V-Sensor measures from 0 Pa to - 25 Pa i.e.(-)12.5 Pa would be 2.5V.
From 5V to 10V the V-Sensor would measure positive Pressure from 0 Pa to + 25 Pa i.e. +12.5 Pa would be 7.5V.
It is standard to use equal ranges -25 Pa to +25 Pa rather then -25 Pa to + 50 Pa but the V-Sensor can be adjusted via the keyboard to provide this off-set.

In the Example, we have selected Dual (0-10V & 4-20mA) which has the Code '1'.
The Part Number extends to '241A0025P0025P1'

POWER SUPPLY
CMR can supply 24Vdc/24Vac Non-Isolated which does not have an isolation transformer, and is also suitable for 3-Wire connection. Most common is the 24Vac Isolated. 110Vac and 230Vac are less used, but also selectable. In the example we have selected 24Vac Isolated which has the Code '3'.
The Part Number extends to '241A0025P0025P13'.

FINAL PART NUMBER
The Part Number to order is '241A0025P0025P13'

Now try and select your own V-Sensor using the V-Sensor Order Selection Table.

CMR CONTROLS Ltd
Precision Air Pressure and Volume Sensors
22 Repton Court Repton Close
Basildon Essex SS13 1LN GB
web www.cmr-controls.com
Phone +44 (0) 1268 287222
Fax +44 (0) 1268 287099
mail sales@cmr-controls.com

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V-SENSOR ORDER SELECTION TABLE

The Selection Table has been prepared to make ordering easy. Each column contains a number of different options which are available and a Part Number can be established by you depending on a specific requirement.

The Example Part Number 241A0025P0025P13 which is printed above the Selection Table and identified as being a V-Sensor with ABS enclosure, having an LED Display and Keyboard, with an Issue No 1, with 6mm barbed tube connectors, a Negative Pressure Range of -25, Range Units In Pa (Pascals) and a Positive Range of +25, labelled In Pa (Pascals) with Dual Output Signals of 0-10V & 4-20mA,which would mean in this case
0 Pa is 5V & 12mA. The Power Supply is 24Vac.

The V-Sensor would be supplied with a 5 digit LED-Keyboard / Display mounted internally into the Lid and the Measured Units are Pa (Pescals). The Decimal Point is user adjusted to 1 on the keyboard which indicates from -25.0 Pa to +25.0 Pa It comes with a traceable Calibration Certificate to national and international Standards (UKAS).

24	1	A	0025	P	0025	P	1	3
V-Sensor	Issue	Nipple	Negative	Range	Positive	Label	Output	Power
Part No.	No	Size	Range	Units	Range	Units	Signal	Supply
Base = 24	Issue = 1	6mm = A	0000	Pa = P	0000	Pa = P	Dual = 1	24Vdc = 2
		4mm = B	0010		0010	kPa = K		24 Vac = 3
			0025		0025	mB = B		110 Vac = 4
			0030		0030	hPA = H		230 Vac = 5
			0050		0050	m/s = V		
			0060		0060	m3/s = Q		
			0100		0100	m3/h = M		
			0120		0120	l/s = L		
			0125		0125	ACR = A		
			0150		0150			
			0200		0200			
			0250		0250			
			0500		0500			
			0750		0750			
			1000		1000			
			1250		1250			
			1500		1500			
			2000		2000			
			2500		2500			
			5000		5000			
			7500		7500			

HOW TO ORDER

EXAMPLE
A wall mount pressure transmitter is required of the Type V-Sensor
An LED complete with Keyboard is required as standard with an Issue No 1.
The tube connections must be 6mm for CMR PVC Tube
The negative pressure range must be -100 Pa
The measured units must be In Pascals (Pa)
The positive pressure range must be +100Pa
The units on the LED display must In Pa as well as on the Product label.
The output signal must be Dual (0-10V & 4-20mA)
The power supply must be 24Vdc non-Isolated

Call CMR for assistance at any time

The part Number for this V-Sensor is 24 1 A 0100 P 0100 P 1 2

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Basildon Essex SS13 1LN GB
web www.cmr-controls.com
Phone +44 (0) 1268 287222
Fax +44 (0) 1268 287099
mail sales@cmr-controls.com

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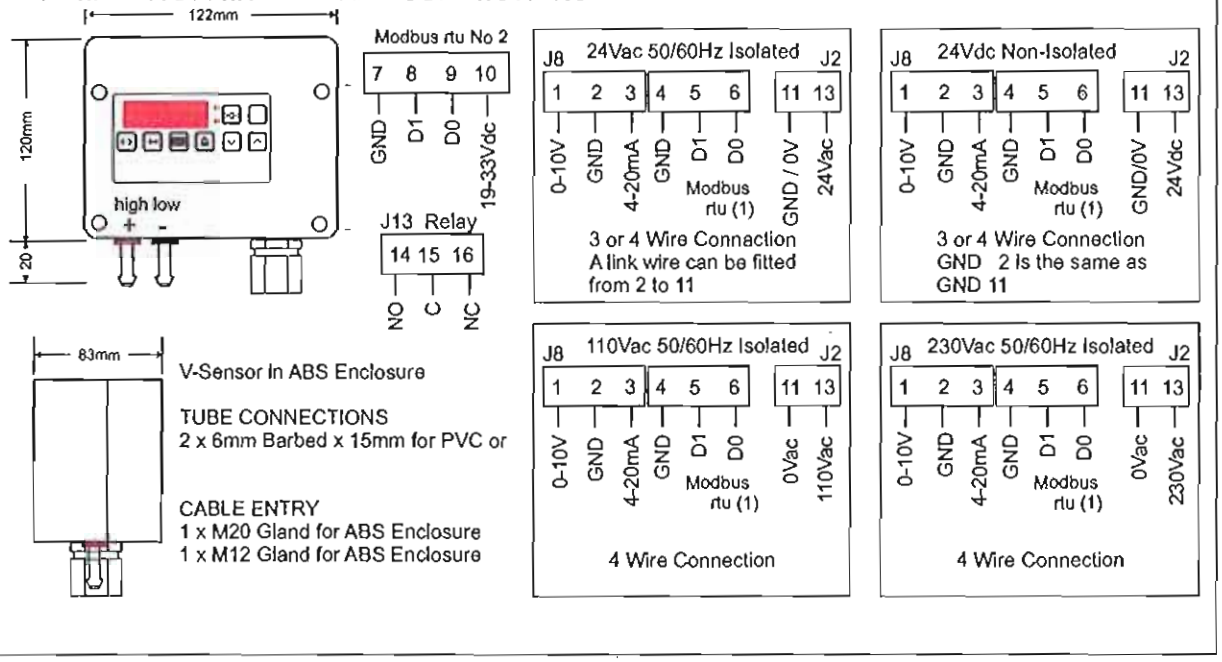
V-SENSOR TECHNICAL SPECIFICATION

Measurement Range	Any Range from 0-25Pa or -/+25Pa up to 0-7500Pa or -/+7500Pa
Overload Capacity	Ranges 25Pa - 150Pa up to max 1200Pa if over pressure protection is off.
	Ranges from 200Pa - 7500Pa up to max 10 times of range if over pressure protection is off.
Media	Non corrosive gases such as Air, N2, O2, Co2, N2O and Inert gases
Diaphragm Unit	Beryllium Copper suitable for high concentration of Formaldehyde - Stainless Steel on request.
AC Power Supplies	24 Vac 50/60Hz 198mA. Internal Fuse 300mA Auto-Reset.
Transformer Isolated	110Vac 50/60Hz 40mA. Fuse 315mA Wickmann.
	230Vac 50/60Hz 20mA. Fuse 315mA Wickmann.
DC Power Supplies	24 Vdc (19 to 31Vdc) smoothed 118mA Internal Fuse 300mA Auto-Reset.
Voltage Output Signal	0-10V (0 to100% of Range) RL = 5kOhm min. Other output signals (e.g. 2-10V) or PID loop control is programmable via the keyboard.
Current Output Signal	4-20mA (0 to100% of Range) RL = 500 Ohm max. (0-20mA) or PID control is programmable via keyboard
Relay Output 1A 24Vdc	One Alarm changer over volt free contact is user programmable
2 x Modbus rtu Connection	2 x Output Signal, Alarm Status, Alarm Thresholds and Alarm Timers are all readable as Modbus rtu Commands. Modbus register assignments to read and write are available in user manual.
Hysteresis/Repeatability	0.1% Typical of Full Scale.
Linearity (Accuracy)	+/- 0.25% of Full scale = > 100 Pa and 0.25Pa < 100Pa.
Zero Drift	0.05%K (+10°C to +50°C) - Automatically corrected to 0.0 if Auto-Zero function is enabled.
Operating Temperature	-10°C to +70°C.
Mounting Position	Vertical.
Weight	0.6 kg in ABS Housing.
Electrical Connections	ABS Housing: 1 x M20 Gland and 1 x M12 Gland and internal removable Screw Terminals.
Air Tube Connections	ABS Housing: Positive and Negative Pressure Barbed Nipple 6mm OD x 15mm long for CMR PVC Tube
	Alternatively Barbed Nipple 4mm OD x 15mm long for silicone tube on special request.
Enclosure	Plastic (ABS) Light Grey (RAL7035) - Protection IP65.
	EN61326-1 EMC - EN61010-1 SAFETY.
Calibration Certificate	Supplied with Certificate traceable to national and International Standards (UKAS).

V-SENSOR DIMENSIONS AND CONNECTIONS



CMR CONTROLS Ltd
Precision Air Pressure and Volume Sensors
22 Repton Court Repton Close
Basildon Essex SS13 1LN GB
web www.cmr-controls.com
Phone +44 (0) 1268 287222
Fax +44 (0) 1268 287099
mail sales@cmr-controls.com

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Issue V-GB-04-2
A47069198

BED 81
BED 80
BED 79
BED 78
BED 77
BED 76
ATRIUM VOID

NOTES

-Room Pressure Panel
-Pressure Sensor
RPD-XX -Room Pressure Display

AS BUILT DRAWING

NHS
Brookfield MULTIPLEX BM

NEW SOUTH GLASGOW HOSPITALS (NSGH) PROJECT

FOURTH FLOOR PLAN
NSGH RENAL INPATIENTS & DAY UNIT
LIGHTING LAYOUT
ZONE E

Job No. GB1.0008	Drawn AM	Checked JF	Approved BR
Status AS BUILT		Date 22.10.15	Scale @ A3 1:50

Originator	Zone	Level	Type	Role	Number	Suitability	Rev.
ME	ZE	04	PL	600	512		Z1

A47069198

NOTES

-Room Pressure Panel

-Pressure Sensor

RPD-XX -Room Pressure Display

AS BUILT DRAWING

NEW SOUTH GLASGOW HOSPITALS
(NSGH) PROJECT

FOURTH FLOOR PLAN
NSGH HAEMO-ONCOLOGY
LAYOUT OF PRESSURE INDICATORS
ZONE E

5361/0008	NM	JF	BR
AS BUILT		22.10.15	1:50

XE	ZE	04	PL	660	513	Z1

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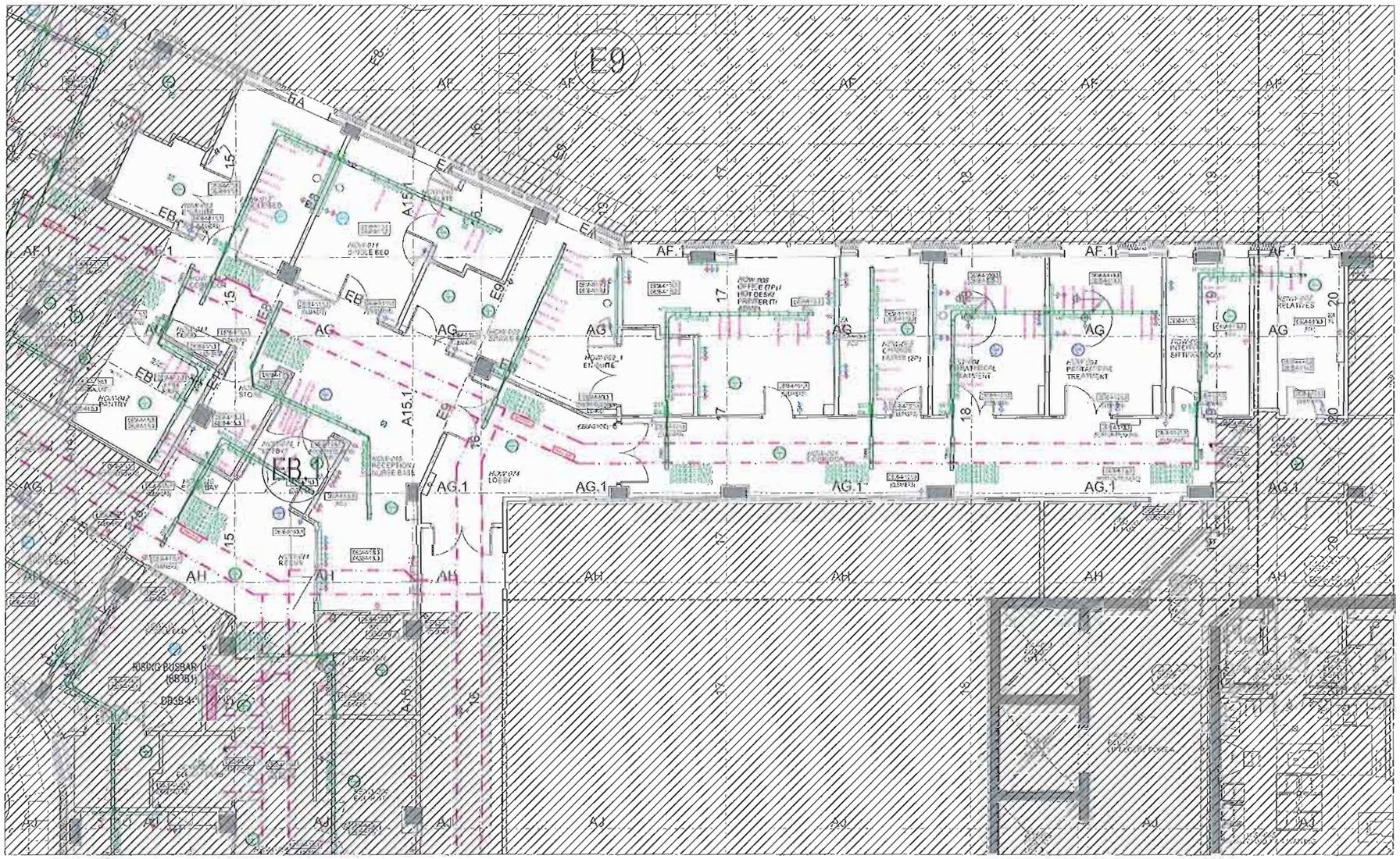
NOTES
-Room Pressure Panel
-Pressure Sensor
RPD-XX
-Room Pressure Display
AS BUILT DRAWING
NHS
Brookfield MULTIPLEX
NEW SOUTH GLASGOW HOSPITALS
NSGHJ PROJECT
FOURTH FLOOR PLAN
NSGH HAEMO-ONCOLOGY
LAYOUT OF ROOM PRESSURE INDICATORS
ZONE E
GB1.6008
AS BUILT
22.10.15
1:50
ME ZE 04 PL 650 514 Z1
A47069198



AS BUILT DRAWING

NHS

Brookfield MultiPLEX

NEW SOUTH GLASGOW HOSPITALS (NSGH) PROJECT

FOURTH FLOOR PLAN
NSGH HAEMOLONCOLOGY
AS BUILT MODULAR SMALL POWER LAYOUT
ZONE E

GBH 0008	AM	BR	04
AS BUILT		20/10/15	1:50

XE	ZE	04	PL	W531	514		Z1

A47069198

Brookfield MULTIPLEX BM

Client Training & Familiarisation Register

System Description	Ward 4b Room Differential Pressure Monitoring System
Nature of Training	Detailed training – Estates Team
Date	20th October 2015 @ 3pm

I hereby confirm that I have received training on the aforementioned systems

NAME:	SIGNATURE:	Site
WILLIAM BLACK	[redacted]	
BILL MURRAY		
THOMAS FEENEY		
STEPHEN CORRIE		QUEH
M WARD		" "
G. HARVEY		"
D BRATTEY		"
A GOODS		"
J. MURRIL		"
C. MCGECHNIE		"
S Thomson		" "
R. FREEL		"

Topics: Room Differential Pressure Monitoring System
Handout: Functional Description Documents – System Description & Operational Instructions

Brookfield MULTIPLEX | BM

Client Training & Familiarisation Register

System Description	Ward 4b Room Differential Pressure Monitoring System
Nature of Training	Detailed training – Users
Date	20th October 2015 @ 4pm

I hereby confirm that I have received training on the aforementioned systems

NAME:	SIGNATURE:	Site
Alyson McArdle	[redacted]	
HELEN HUNTER		
Terri Brand		
FRANCES ADIE		WOSCC DS/139
MARY McAULEY		BEWSLOW WOSCC HHEM.
Marie McLAUGHLIN		
Grant McQuade		
Mhera Campbell		
PETER MOIR		

Topics: Room Differential Pressure Monitoring System
Handout: Functional Description Documents – System Description & Operational Instructions

Introduction

This documents sets out the works carried out to upgrade the 24 bedrooms in the Haemato-oncology Ward (4b) on Level 4 of the Queen Elizabeth University Hospital to achieve between 5 and 10 pascals differential pressure between the bedrooms and the corridors.

Works carried out

In order to provide a sealed room, an MF plasterboard ceiling has been installed within the 24 bedrooms. The ceiling has been taped and painted and sealed at all interfaces with adjoining walls and services. The en-suite grid and tile ceiling has been retailed but with the services and tiles silicon sealed .

To ensure that the rooms were sufficiently sealed we have carried out room air permeability testing to the parameters set out in SHPN 04-01 Supplement 1.

The recessed down lighters within the room have all been fitted with a diffuser to provide an IP44 rating.

The ventilation (Supply and extract) to the ward bedrooms is provided by Air handling unit 31 AHU63 and the corridor is provided with extract ventilation from extract fan 31-63 EF01 (both the fan and AHU are located within Plantroom 31 on Level 3). In order to provide a more robust ventilation system and to assist in achieving the desired room pressures the AHU supply fans, motors and frequency inverters (duty and standby) were uprated. The ventilation systems have been re-balanced to achieve the room differential pressure (between 5-10Pa) and the pressure from the corridor to the rest of the hospital (positive pressure). The AHU filters were replaced.

The 24 bedrooms are fitted with HEPA filtration in the supply diffusers. A new HEPA filter has been fitted and validated in each room as part of the works. DoP test ports are provided within the ductwork above the ceiling in each room to allow each room HEPA to be tested.

A digital differential pressure monitoring system has been installed within the ward. Sensors have been located above the corridor ceilings linked to air tubes in the rooms and corridor which measure the differential pressure from the room to the corridor with a read out of the pressure displayed on an panel next to the room door. The pressures of all the rooms are displayed on a central panel located at the nurses station. If the pressure in the room drops below 5Pa or above 15pa for more than 2 minutes then an alarm will sound at the room display and at the central display at the nurses station, the audible alarm can be silenced at both the room display and the central display. When the rooms return to within the parameters then the alarms will automatically reset.

Maintenance Access

There are mechanical and electrical services running above the ceiling of the rooms, this is generally, ventilation ductwork, Smoke dampers, heating pipework, duct mounted heating coil, heating controls, domestic water pipework, medical gas pipework, electrical containment, WIFI data point, fire alarm void detector, Nurse call input / output unit. In order to gain access to the maintainable items and items that may need access for fault finding (fire alarm void detector, smoke dampers, heating controls, electrical trunking, duct mounted heating coil, data point) hatches have been provided in the ceiling. These hatches have been sealed using silicon sealant and would need to be re-sealed after they have been opened for access.

Commissioning & Validation

On completion of the installation works the following commissioning and validation has been carried out:

1. The Air handling Unit and Supply ductwork were cleaned and swab samples taken for analysis.
2. The AHU filters were changed
3. The ventilation systems (supply and extract) were re-commissioned
4. Air Permeability tests were carried out in the 24 rooms.
5. The room to corridor pressures were set and measured
6. The corridor to hospital pressures were measured
7. The room supply HEPA filters have been changed and challenge tests completed (DOP)
8. The room differential pressure monitoring system has been commissioned and validated

CAPITA

NEW SOUTH GLASGOW HOSPITAL

ADULT AND CHILDREN'S HOSPITAL AND ENERGY CENTRE

NEC 3 SUPERVISORS REPORT NO. 54

OCTOBER 2015

NEW SOUTH GLASGOW HOSPITAL ADULT AND CHILDREN'S HOSPITAL AND ENERGY CENTRE

SUPERVISOR'S REPORT NO. 54 OCTOBER 2015

CONTENTS

NEW SOUTH GLASGOW HOSPITAL ADULT AND CHILDREN'S HOSPITAL AND ENERGY CENTRE

PAGE	CONTENTS	
1.0	EXECUTIVE SUMMARY: THE NEW ADULT AND CHILDREN'S HOSPITAL	3
2.0	DESIGN COMPLIANCE CHECK	4
3.0	PROCEDURES REVIEW	4
4.0	CONSTRUCTION REVIEW	6
5.0	INFORMATION REQUIRED	12
6.0	SUPERVISOR'S TESTS AND INSPECTIONS	14
7.0	DEFECT NOTIFICATIONS ISSUED	15

1.0 EXECUTIVE SUMMARY: ADULT & CHILDREN'S HOSPITAL

In accordance with our NEC3 Contract, this is the monthly report for October on the activities carried out and responsibilities undertaken by the NEC3 Supervisors. We continue to review the progress to remedy the defects outstanding at Stage 3 completion. We have also been reviewing the post completion defects reported in the FM Summary

We have inspected the works in relation to the air permeability testing to 36 isolation rooms.

Brookfield is working through the list of defects identified prior to the car park being handed over to the Client. We await confirmation when these will be complete to carry out a further inspection.

External snagging works are continuing but with some ponding areas still to be addressed, notably on the footpath near the 24 hour maternity entrance and in the walkway to the northwest of the Children's hospital entrance.

This month we attended a General Progress and Catch up Meeting with the Board and the Brookfield. We reported that Brookfield were dealing effectively with the post completion defects reported by the Board and residual defects which we raised.

We carried out an inspection of the Ward 4B with the Board and Brookfield following the works to ensure the rooms had an air flow between 5 and 10 pascals. Brookfield presented the Board with a handover file which contained all the test certificates in relation to the works.

During October we were in attendance during the successful air permeability test carried out in rooms A4 RENW-043 and A4 RENW-044

Supervisor's Notification of Defect No 141 was issued during October.

- Seeking the cards/key numbers for the Bristol maid drugs cupboards.

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2.0 DESIGN COMPLIANCE CHECK

Currently nothing to report.

3.0 PROCEDURES REVIEW

3.1 Contractor's QA Procedures / Compliance Inspections

This month we attended a General Progress and Catch up Meeting with the Board and the Brookfield. We reported that Brookfield were dealing effectively with the post completion defects reported by the Board and the residual defects which we raised.

General Inspections

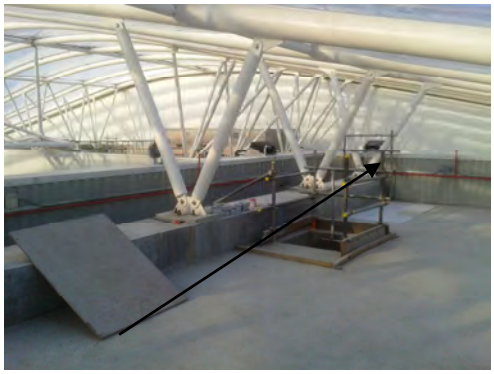
We inspected Level 4 Ward 4B and noted a variation to the paint colour in areas which have been touched up. Brookfield has confirmed that they will be painting out entire walls where this occurs. Brookfield intend to refit ceiling tiles when the work is complete.

A further inspection was carried out in Ward 4B with the Board and Brookfield following the works. This was to ensure that the rooms had an air flow between 5 and 10 pascals. Brookfield presented the Board with a handover file which contained all the test certificates in relation to the works.

During an inspection of the Children's Roof adjacent to Plantroom 41A we noted that there were no bulkhead lights fitted above the doors. There were also no lights fitted in the room on the roof providing access and egress via the cat ladder in Core L. These were not taken in the approved drawings. Brookfield has issued a communication to BMCE M&E Managers for action / response. See Supervisor's Communication General Matters / Other Instructions (CI 13.1) No 246

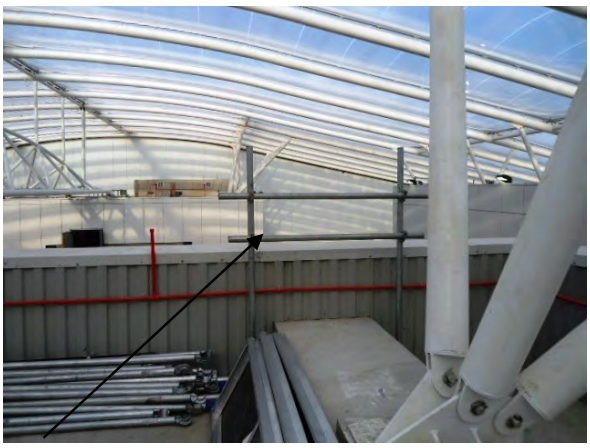
Post Completion Inspections / Issues

There is temporary scaffolding providing perimeter protection at concrete floor beams above the cores accessed from Level 12. The client intimated that protection is required. Brookfield has confirmed that M&S Engineering has taken site measurements and we await a date when the work will commence. See Supervisor's Communication General Matters / Other Instructions (CI 13.1) No 242.



Temporary scaffolding providing perimeter protection.

SUPERVISOR'S REPORT NO. 54 **OCTOBER 2015**



Temporary scaffolding providing perimeter protection.

Post Completion Defects

Below is the current status with Defects.

Final Sweep – 8 (18 Structal)

FM First Summary – 196 Open, 196 In Progress, 1517 Closed.
There are numerous report of defects in relation to the operation of the blinds. Brookfield confirmed that their sub-contractor TDSL is currently carrying out remedial works to broken blinds and is repairing not only those reported through the FM Schedule but also other defects that they discover.

3.2 Witness Testing and Commissioning.

Following the discovery that Air Permeability Tests were not carried out within 36 isolation rooms in accordance with the Employer's Requirements NHS Guidance Documentations, document HBN 04-01. Brookfield is undertaken tests and remedial work to ensure the rooms are compliant.

During October we were in attendance during the successful air permeability test carried out in rooms A4 RENW-043 and A4 RENW-044. There are currently 2 in Schiehallion still to be tested. See Supervisor's Notification of Defect (C 42.2) No 139.

3.2 Witness Testing and Commissioning,

Currently nothing to report.

3.3 Board Equipment Installation,

Currently nothing to report.

3.4 Non Conformance Reports

Currently nothing to report.
An NCR has also been raised in relation to manholes which are below the level of the surrounding tar. (See photo opposite.)

4.0 CONSTRUCTION REVIEW

4.1 Visits to the Works

Site inspections were carried out by the NEC3 Supervisor's on the 7th, 15th, 20th, and 28th October 2015.

4.2 Elements of the Works available for inspection

Snagging work to externals

4.3 Current Observations

The visual inspections of the work carried out to date indicate that the works are generally being carried out to a satisfactory standard. We continue to be assisted by the site teams and the NHS Project Team in resolving various construction, mechanical, electrical, and quality issues. We continue to close out our Supervisor's Notification and Defects when we have received satisfactory responses.

4.3.1 Structural and Civil Works

Car Park 1.

Brookfield is still working through the list of defects. They have informed us that CLAD UK are no longer trading consequently there is unfinished work. Brookfield is awaiting Dunnes getting back to them about the outstanding items.

Maternity VIE.

We have received drawings from Brookfield showing the piles, slab and walls. We will continue to monitor this work.

4.3.2 Children's Area

Nothing to report.

4.3.3 External Works

Govan Road/Renfrew Road & ACH Entrance Road.

Road surfacing work has been completed on the dual carriageway leading to Govan Road, and at the south of the main building, with a generally good quality finish. Local ponding on the north side of Govan Road remains outstanding. The footpath ponding at the extended footpath area on the east side of the maternity unit remains outstanding.

We advised the Brookfield team on 16th December that ponding on the new extended footpath to the east side of the maternity unit has the potential to be a significant slip hazard in cold weather. We asked them to confirm their action to address this hazard. Brookfield has confirmed that Land Engineering have been instructed to lift the full width of tar and re-lay with a fall from the ramp to the new road kerb.

Brookfield had confirmed that work would commence week beginning 13th April. However they are awaiting an asphalt squad. (See Supervisor's Communication General Matters / Other Instructions (CI 13.1) No 237).

Footpath to the east side of the maternity unit.

Ponding is also apparent locally on the granite hardstanding in places around the main Children's entrance canopy. Wind-blown surface water on the canopy is not being collected at canopy level in many places. Brookfield are aware of this and are in liaison with their subcontractor to try to resolve.

4.3.4 Mechanical Services

We received copies of the water test results and these were satisfactory.

4.3.5 Electrical Services

Nothing to report.

4.3.6 Doors

Nothing to report.

4.3.7 Windows

Nothing to report.

4.3.8 Ducting

Nothing to report.

4.3.9 Floors

Nothing to report.

4.3.10 Blockwork

Nothing to report.

4.3.11 Heating

4.4 Current Defects.

Some of the outlets taking the rainwater from the top level of the Car park are too high consequently water is ponding in the recessed channels. The client has agreed that any remedial work would exacerbate the problem.

The capping piece on the north facing elevation of the Children's Hospital has two discoloured areas. We asked Brookfield to confirm their remedial action to address this and confirm when complete. They have confirmed that work is being planned to be carried out. See outstanding works list. See Supervisor's Notification of Defect (Cl 42.2) No 88.

The NHS Fire Risk Assessor has been on site and noted that the air sampling unit within General Theatre One on the second floor has been painted over. We also noted that another unit in Theatre 4 has been partially painted over. These should be paint free. There is also an air sampling unit in the main Atrium north facing wall which we asked Brookfield to confirm when these are addressed. They have confirmed that the painted over sampling paint has been rectified. Brookfield intimated that the point on the North wall has been pulled back on Level 5 but would need to look specifically. Gary Kimmins from Mercury is aware of it but requires rope access. We await confirmation that this has been addressed. See Supervisor's Notification of Defect (Cl 42.2) No 93.

SUPERVISOR'S REPORT NO. 54 **OCTOBER 2015**

The joints at window cills are opening up. We asked Brookfield to confirm their remedial action to resolve this problem. They have filled and painted the joints but they have opened up again. They have sealed a joint with sealant to determine if this is a better solution. They intend to fill these cracks at the end of the defect liability period. See Supervisor's Notification of Defect (Cl 42.2) No 99

Following a joint inspection of the theatres and adjoining rooms on Level 2 we identified cracks in the following rooms:
THE-124 General Theatre 6 ENT: Crack below the window.
THE-232 Interventional 1 Vasco/Urology: Horizontal crack right hand side of the touch screen. Brookfield confirmed that this is complete.

Following a joint inspection of Car Park 1 we identified various defects / snags which were issued to Brookfield. We asked them to confirm when these have been addressed. We have recently undertaken a joint inspection with Brookfield and noted that some of the Defects have been rectified. They are attending to the remaining outstanding Defect. See Supervisor's Notification of Defect (Cl 42.2) No 116.

The Board have employed Competent Body Zurich Engineering to undertake an inspection of the pressure systems associated with the new buildings and systems handed over on 26th January 2015. This was done in order produce the statutory written scheme required under the Pressure Systems Safety Regulations (PSSR) 2000 for the safe operation and inspection of relevant systems.

During their review, a number of defects have been found within the installed plant. Brookfield responded as follows. All of the relevant documentation is with Zurich and Brookfield await the Assembly Declaration of Conformity.

1) Configuration of boiler safety valves.
   Brookfield response: Design drawings were discussed with NHS and Zurich and this is now complete.
2) A safe method of discharge of medium pressure/temperature water and steam blow off from boilers (120 degC / 5.7bar).
   Brookfield response Design drawings were discussed with NHS and Zurich and this is now complete.
3) Certificate of Conformity for boilers.
   Brookfield response: Issued to NHS Zurich.
4) Certificate of Conformity for economisers.
   Brookfield response: Issued to NHS Zurich.
5) Certificate of conformity for all pressure systems pipework.
   Brookfield response: Issued to NHS Zurich.
6) CE marking of pressure vessels and heat exchangers.
   Brookfield response: Complete.
7) Pressurisation Units – safety vales rating and fixing requirements.
   Brookfield response: Complete.

8) Boiler drain points.
Brookfield response: Complete.

All of the relevant documentation is with Zurich and Brookfield await the Assembly Declaration of Conformity. Supervisor's Notification of Defect (Cl 42.2) No 124.

Following recent excavations around the buildings to expose and repair collapsed main drains, the Board request video surveys to be undertaken and reports provided of the repaired drain runs and also other neighbouring runs that may have been affected by proximity to the 200t crane. Brookfield has confirmed that the survey is complete and will issue to the Board. See Supervisor's Notification of Defect (Cl 42.2) No 125.

The Bicycle Shelter roof does not drain rainwater to the two corner outlets, consequently the rainwater is ponding. We asked Brookfield to confirm their proposed remedial action to resolve this defect. They have confirmed that following a meeting with the designer a level survey is required. The plan is to introduce a further outlet. See Supervisor's Notification of Defect (Cl 42.2) No 129.

The concrete joint between the 6th floor and the down ramp is breaking up. We asked Brookfield to confirm the remedial measures to address this defect. They have instructed Dunne to carry out remedial works but await details from WSP. See Supervisor's Notification of Defect (Cl 42.2) No 132.

The remaining defects as listed below have been amalgamated under Supervisor's Notification of Defect (Cl 42.2) No 134.
Below is the current status of the outstanding Defects.

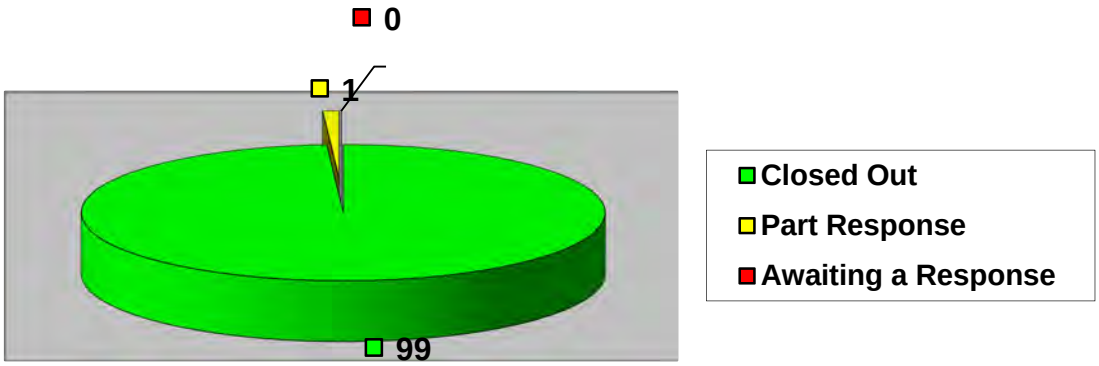
Level 00 – Level 01 – Level 02 – Level 03 – Level 05 – Level 08 – Level 09 – Level 10 – Level 11 –	60 12 39 01 01 03 01 09 06		Level 00 – Level 01 – Level 02 – Level 03 – Level 05 – Level 08 – Level 09 – Level 10 – Level 11 –	04 01 03
Total Defects at inspection 132			Total Defects remaining to be complete 08	

It appears that the cladding on the west facing elevation has been damaged and an unsuccessful attempt has been made to repair the damage. We asked Brookfield to confirm when this defect has been rectified. They have confirmed that this has been passed onto the sub-contractor Prater to rectify the unsuccessful attempt at the repair. See Supervisor's Notification of Defect (Cl 42.2) No 137.

There are Defective spindles to privacy visicom panels within timber doors and screens throughout the hospital. This is due to the nylon washer being reshaped by the spindle under the weight of the glass. This has led to the spindle being unable to move the washer as their shapes are incompatible. We asked Brookfield to confirm when this defect will be addressed throughout the hospital. They have confirmed that the defect has been issued to their sub-contractor for action. All units will have new modified lifter installed; this is being reviewed by their sub-contractor. Once they have all relevant details from their sub-contractor they will issue us with a programme for rectification. See Supervisor's Notification of Defect (Cl 42.2) No 140.

The Board did not receive the cards/key numbers for the Bristol maid drugs cupboards at completion. We asked Brookfield to provide these without delay. Brookfield confirmed that they are aware of the current situation and an Early Warning Notice has been issued to JTC the sub-contractor who supplied the keys. They will update us once they have a response from JTC. See Supervisor's Notification of Defect (Cl 42.2) No 141.

5.0 INFORMATION REQUIRED



NEW SOUTH GLASGOW HOSPITAL ADULT AND CHILDREN'S HOSPITAL AND ENERGY CENTRE

SUPERVISOR'S REPORT NO. 54 **OCTOBER 2015**

Item No.	Description	Date Requested	Comment	
Items 1 to 236 have been closed out				
237	Seeking confirmation on Brookfield's action to address the ponding to the footpath to the east side of the maternity unit.	08.01.15	Response received.	
Items 240 to 241 have been closed out				
242	Seeking confirmation if permanent perimeter protection will be fitted above cores accessed from Level 12.	25.02.15	Response received.	
Items 243 to 245 have been closed out				
246	No lights fitted to above the doors leading from the room to plantroom 41A	30.03.15	Response received.	
Items 247 to 251have been closed out				

NEW SOUTH GLASGOW HOSPITAL ADULT AND CHILDREN'S HOSPITAL AND ENERGY CENTRE

SUPERVISOR'S REPORT NO. 54 **OCTOBER 2015**

6.0 SUPERVISORS TESTS AND INSPECTIONS

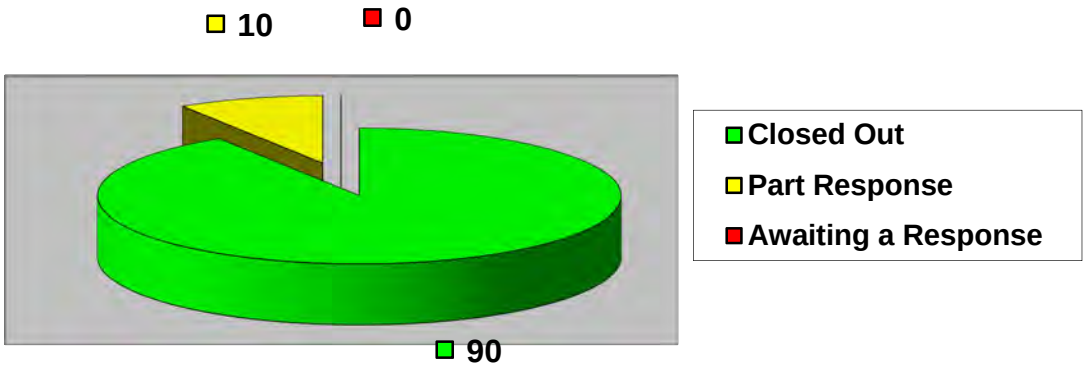
Tests not required	N/A
Tests required but not tested	Fail
Tests required which has passed tests	Pass

Tests				
Ref	Title	To be Notified by	Status	Test Date
01-377	Various tests undertaken and passed from the 09. 07.2012 To the 22.01 2015.			
378	Fire shut down test of AHU's during fire activity. PR21 AHU 19 did not shut down.	Brookfield	Retested successfully but not present. See Supervisor's Report No 50	23.01.2015
379-381	Various tests undertaken and passed from the 23. 01.2015 to the 02.04 2015.			

NEW SOUTH GLASGOW HOSPITAL ADULT AND CHILDREN'S HOSPITAL AND ENERGY CENTRE

SUPERVISOR'S REPORT NO. 54 **OCTOBER 2015**

7.0 DEFECTS NOTIFICATIONS ISSUED



NEW SOUTH GLASGOW HOSPITAL ADULT AND CHILDREN'S HOSPITAL AND ENERGY CENTRE

SUPERVISOR'S REPORT NO. 54 **OCTOBER 2015**

	Description	Date Requested	Comment	
Items 1 to 82 have been closed out.				
83	Seeking confirmation of remedial action to resolve ponding.	13.11.14	Response received.	
Items 84 to 87 have been closed out.				
88	Seeking confirmation of remedial measures to address the discolouration of the capping pieces.	20.11.14	Response received.	
Items 89 to 92 have been closed out.				
93	Confirm when the air sampling unit within General Theatre One and Theatre 4 are paint free and the unit in the Atrium has been fitted properly.	05.02.15	Response received.	
Items 94 to 98 have been closed out.				
99	Confirm to open window cill joints.	24.02.15	Response received.	
Items 100 to 115 have been closed out.				
116	Various defects car Park 1.	08.04.15	Response received.	
Items 117 to 123 have been closed out.				
124	Defects in relation to the Zurich Engineers inspection.	16.04.15	Response received.	
125	Seeking video surveys with reject to drain repairs.	16.04.15	Response received.	
Items 126 to 128 have been closed out.				
129	Ponding to Bicycle Shelter.	11.05.15	Response received.	
130	Various external fabric defects.	11.05.15	Response received.	
131	PIR not functioning in room STW-041.	11.05.15	Closed out.	
132	6th floor down ramp is break up.	13.05.15	Response received.	
133	Ponding to main pedestrian entrance to Car Park 1.	13.05.15	Closed out.	
134	The defects identified in Supervisor's Notifications of Defects No 106, 107, 112, 113, 115, 117, 118, 121, 126 and 128 have been either competed or substantially completed. These have been closed out and the remaining defects amalgamated under this Defect Notification.	03.06.15	Response received.	
135	The door selector to the entrances adjacent to Hardgate Road does not allow the doors to close over properly. The primary opening door at the entrance to the main stair intermittently does not close over and remains in the open position.	16.06.15	Closed out.	
136	Incomplete decoration and marks on walls.	18.06.15	Closed out.	
137	Seeking confirmation when the damaged cladding has been rectified.	01.07.15	Response received.	
138	4th floor door in the Car Park does not close over properly.	18.08.15	Closed out.	
139	Confirm when Air Permeability Tests and associated remedial works are complete and provide test results.	02.09.15	Response received.	
140	Defective spindles to privacy visicom panels to timber doors and screens.	29.09.15	Awaiting a response	
141	The Board did not receive the cards/key numbers for the Bristol maid drugs cupboards at completion. Please provide these without delay.	13.10.2015	Response received.	

NEW SOUTH GLASGOW HOSPITAL ADULT AND CHILDREN'S HOSPITAL AND ENERGY CENTRE

SUPERVISOR'S REPORT NO. 54 **OCTOBER 2015**

John Redmond, Technical Advisory Services

Property and infrastructure
Capita, 4th Floor, 7 West Nile Street, Glasgow G1 2PR

	Signed	Date
Originated by	John Redmond	5th November 2015
Completed by	David Ramsay	5th November 2015

NSGH- Isolation Rooms

Brookfield Multiplex Europe Limited

Air Permeability Testing

Date	Rooms Tested	Room Ref	Positive Test	Negative Test	% Variation
19th July 2015	Ch Ward 2A Bed 19	SCH-071	0.81	0.9	10
	Ward 4A Bed 20	RENW-044	0.93	1.25	
23rd July 2015	Ward 3B Room	GW2-020	0.86	0.97	11.3
	Ward 3B Bed 5	GW2-055	0.62	0.78	20.5
	Ch Ward 2A Bed 18	SCH-068	0.89	0.96	7.3
	Ch Ward 2A Bed 20	SCH-075	0.77	0.86	9
27th July 2015	Critical Care Bed 31	CCW-077	1.40	1.38	
6th Aug 2015	Ward 1D Bed 18	CCW-104	1.18	1.63	
	Ch CDU Bed 17	OBW-048	0.97	1.19	
	Ch CDU Bed 18	OBW-053	0.77	0.83	7.2
	Critical Care Bed 24	CCW-112	1.62	1.89	
11th Aug 2015	ARU Ward Bed 6	ARU-111	0.87	1.45	
	Ward 3C Bed 9	GW1-053	0.77	0.89	13.5
	Ward 3C Bed 10	GW1-058	0.94	0.94	0
12th Aug 2015	Ch CDU Bed 17	OBW-048	0.88	0.86	2.3
	Ch CDU Bed 18	OBW-053	0.88	0.91	3.3
19th Aug 2015	Ch Cardiac Bed 13	CAR-014	1.07	1.17	
21st Aug 2015	Ch Ward 2A Bed 18	SCH-104	0.76	0.79	3.8
	Ward 4B Bed 76	HOW-190	0.77	0.72	6.5

NSGH- Isolation Rooms

Brookfield Multiplex Europe Limited

Air Permeability Testing

Date	Rooms Tested	Room Ref	Positive Test	Negative Test	% Variation
26th Aug 2015	Ch Ward 2a Bed 19	SCH-071	0.86	0.84	2.3
	Ward 4B Bed 77	HOW-193	0.86	0.84	2.3
	Ward 4B Bed 78	HOW-195	0.86	0.89	3.4
	Ward 4B Bed 79	HOW-198	0.95	0.99	4
2nd Sept 2015	Critical Care Bed 40	CCW-092	0.844	0.846	4.5
	Critical Care Bed 31	CCW-077	0.699	0.623	6.88
	Ward 3B (CH) Bed 5	GW-052	0.575	0.672	14.4
	Ward 3C (CH) Bed 9	GW1-053	0.819	0.833	1.68
	Ward 4B Bed 80	HOW-202	0.580	0.589	1.52
9th Sept 2015	Critical Care Bed 31	CCW-077	0.633	0.611	3.48
	Critical Care Bed 24	CCW-112	0.758	0.792	4.29
	Critical Care Bed 50	CCW-163	1.10	1.04	
	Ward 4B Bed 81	HOW-050	0.867	0.958	9.50
	Ward 4B Bed 82	HOW-053	1.042	1.086	
11th Sept 2015	Ward 1B Bed 13	CAR-014	0.872	0.917	4.91
	Ward 1B Bed 14	CAR-013	0.767	0.769	0.26
	Critical Care Bed 50	CCW-163	0.944	0.900	0.47
	Ward 3A Bed 16	GW3-051	0.889	0.853	4.05
	Ward 4B Bed 83	HOW-055	0.997	0.967	3.01

NSGH- Isolation Rooms

Brookfield Multiplex Europe Limited

Air Permeability Testing

Date	Rooms Tested	Room Ref	Positive Test	Negative Test	% Variation
16th Sept 2015	Ch Ward 1D Bed 17	CCW 100	0.717	0.686	4.32
	Ch Ward 1D Bed 18	CCW 104	0.714	0.717	0.42
	Ch Ward 2A Bed 6	ARU 111	0.744	0.750	0.80
	Ch Ward 2A Bed 5	ARU 105	0.828	0.789	4.71
	AD CCU Bed 23	CCW 121	0.817	0.797	2.45
18th Sept 2015	Ch Ward 1D Bed 5	CCW-084	0.728	0.730	0.27
	Ward 3A Bed 15	GW3-055	0.511	0.514	0.58
	AD CCU Bed 4	CCW-027	0.538	0.592	1.52
	AD CCU Bed 44	CCW-027	0.919	0.878	4.46
	Ch Ward 1D Bed 12	CCW-067	0.694	0.692	0.29
23rd Sept 2015	CH Ward 2A Bed 22	SCH-009	0.689	0.706	2.40
	CH Ward 2A Bed 24	SCH-016	0.758	0.739	2.50
	AD CCU Bed 3	CCW 042	0.703	0.719	2.22
25th Sept 2015	CCU Bed 11	CCW-049	0.864	0.880	1.82
	Ward 3B Bed 5	GW2-055	0.389	0.383	1.54
	Ward 4B Bed 81	HOW-050	0.742	0.744	0.27
	Ward 4B Bed 82	HOW-053	0.997	1.014	
	Ward 4B Bed 76	HOW-190	0.680	0.647	4.85

NSGH- Isolation Rooms

Brookfield Multiplex Europe Limited

Air Permeability Testing

Date	Rooms Tested	Room Ref	Positive Test	Negative Test	% Variation
30th Sept 2015	Ward 3B Bed 19	GW2-025	0.789	0.772	2.15
	CCU Bed 43	CCW-158	0.65	0.653	0.46
	Ward 4B Bed 82	HOW-053	0.897	0.917	2.18
	Ward 4B Bed 84	HOW-058	0.808	0.842	4.04
	Ward 4B Bed 85	HOW-059	0.847	0.842	0.59
	Ward 4B Bed 86	HOW-062	0.889	0.914	2.74
	Ward 4B Bed 87	HOW-064	0.947	0.919	2.96
	Ward 4B Bed 88	HOW-067	0.725	0.744	2.55
2nd Oct 2015	Ward 4B Bed 89	HOW-031	0.786	0.753	4.20
	Ward 4B Bed 90	HOW-029	0.856	0.828	3.27
	Ward 4B Bed 91	HOW-026	0.994	0.994	0
	Ward 4B Bed 92	HOW-024	0.947	0.903	4.64
	Ward 4B Bed 93	HOW-021	0.750	0.739	1.47
	Ward 4B Bed 94	HOW-020	0.750	0.742	1.07
	Ward 4B Bed 95	HOW-017	0.756	0.783	3.45
	Ward 4B Bed 96	HOW-015	0.961	0.919	4.37
	Ward 4B Bed 97	HOW-012	0.939	0.947	0.84
	Ward 4B Bed 98	HOW-011	0.930	0.956	2.72
	Ward 4B Bed 99	HOW-009	0.792	0.806	1.61

NSGH- Isolation Rooms

Brookfield Multiplex Europe Limited

Air Permeability Testing

Date	Rooms Tested	Room Ref	Positive Test	Negative Test	% Variation
30th Oct 2015	Ward 4A Bed 19	RENW-043	0.964	0.953	1.14
	Ward 4A Bed 20	RENW-044	0953	0.930	2.41
	Ch Ward 2A Bed 17	SCH-019	0.994	0.986	0.80
	Ch Ward 2A Bed 25	SCH-064	0.792	0.806	1.74

Abbey Park
Humber Road
COVENTRY
CV3 4AQ
UK

[redacted]
www.rsk.co.uk

Our ref: SBB/524395

FAO: Gillon Armstrong
Brookfield Multiplex Europe
Site Office
Institute of Neurological Science
Queen Elizabeth University Hospital
1345 Govan Road
Glasgow
G51 4TF

[redacted]

23rd November 2015

Dear Mr Armstrong

New South Glasgow Hospital – Isolation Room Testing

I write to confirm the results of the air permeability testing which we have undertaken on the isolation rooms within both the Adult and Children's Hospitals. ~~The results of the tests to Ward 4B are not included as these have been reported separately.~~

Testing was undertaken to prove compliance with the requirement of HBN 04 Supplement 1 – Isolation Facilities in Acute Settings. This requires that the enclosure have 'an average leakage rate of no more than 1 l/s of air per m^3 of envelope volume' at a positive and negative pressure differential of 20Pa. Further, the measured positive and negative leakage rates should be within 5% of each other.

Each test included the entrance lobby and main room + ENSUITE IF APPLICABLE. The ceiling mounted air supply and extract grilles were temporarily sealed with tape during the tests. No further temporary sealing was present at the time of the tests. A 'Minneapolis' door fan system was utilised to undertake each test. The fan was installed within the lobby access door to the corridor to each enclosure. A multipoint test in accordance with CIBSE TM23; 2000 was undertaken to ensure maximum accuracy.

Cont'd

Test Results Children's Hospital

CDU Bed 17 (OBW-048)	
Positive pressure test result;	**0.875 l/s per m² at 20Pa**
Negative pressure test result;	**0.856 l/s per m² at 20Pa**
Variation between +ve and –ve results;	**2.17%**
Average result;	**0.866 l/s per m² at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
CDU Bed 18 (OBW-053)	
Positive pressure test result;	**0.875 l/s per m3 at 20Pa**
Negative pressure test result;	**0.914/s per m3 at 20Pa**
Variation between +ve and –ve results;	**0.43%** ← 4.26% ?
Average result;	**0.894 l/s per m3 at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 1D Bed 5 (CCW-084)	
Positive pressure test result;	**0.728 l/s per m² at 20Pa**
Negative pressure test result;	**0.730 l/s per m² at 20Pa**
Variation between +ve and –ve results;	**0.27%**
Average result;	**0.729 l/s per m² at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 1D Bed 12 (CCW-067)	
Positive pressure test result;	**0.694 l/s per m² at 20Pa**
Negative pressure test result;	**0.692 l/s per m² at 20Pa**
Variation between +ve and –ve results;	**0.29%**
Average result;	**0.693 l/s per m² at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 1D Bed 17 (CCW-100)	
Positive pressure test result;	**0.717 l/s per m² at 20Pa**
Negative pressure test result;	**0.686 l/s per m² at 20Pa**
Variation between +ve and –ve results;	**4.32%**
Average result;	**0.702 l/s per m² at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	

Test Results Children's Hospital – Continued

Ward 1D Bed 18 (CCW-104)	
Positive pressure test result;	**0.714 l/s per m³ at 20Pa**
Negative pressure test result;	**0.717 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**0.42%**
Average result;	**0.716 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 2A Bed 5 (ARU-105)	
Positive pressure test result;	**0.828 l/s per m3 at 20Pa**
Negative pressure test result;	**0.789 l/s per m3 at 20Pa**
Variation between +ve and –ve results;	**4.71%**
Average result;	**0.808 l/s per m3 at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 2A Bed 6 (ARU-111)	
Positive pressure test result;	**0.744 l/s per m³ at 20Pa**
Negative pressure test result;	**0.750 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**0.80%**
Average result;	**0.747 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 2A Bed 17 (SCH-019)	
Positive pressure test result;	**0.994 l/s per m³ at 20Pa**
Negative pressure test result;	**0.986 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**0.80%**
Average result;	**0.990 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 2A Bed 18 (SCH-104)	
Positive pressure test result;	**0.764 l/s per m³ at 20Pa**
Negative pressure test result;	**0.794 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**3.78%**
Average result;	**0.779 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	

Test Results Children's Hospital – Continued

Ward 2A Bed 19 (SCH-071)	
Positive pressure test result;	**0.856 l/s per m² at 20Pa**
Negative pressure test result;	**0.833 l/s per m² at 20Pa**
Variation between +ve and –ve results;	**2.67%** 2.69%
Average result;	**0.844 l/s per m² at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 2A Bed 20 (SCH-075)	
Positive pressure test result;	**0.758 l/s per m² at 20Pa**
Negative pressure test result;	**0.789 l/s per m² at 20Pa**
Variation between +ve and –ve results;	**3.93%**
Average result;	**0.774 l/s per m² at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 2A Bed 22 (SCH-009)	
Positive pressure test result;	**0.689 l/s per m² at 20Pa**
Negative pressure test result;	**0.706 l/s per m² at 20Pa**
Variation between +ve and –ve results;	**2.40%**
Average result;	**0.698 l/s per m² at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 2A Bed 23 (SCH-013)	
Positive pressure test result;	**0.823 l/s per m² at 20Pa**
Negative pressure test result;	**0.861 l/s per m² at 20Pa**
Variation between +ve and –ve results;	**4.41%**
Average result;	**0.842 l/s per m² at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 2A Bed 24 (SCH-016)	
Positive pressure test result;	**0.758 l/s per m² at 20Pa**
Negative pressure test result;	**0.739 l/s per m² at 20Pa**
Variation between +ve and –ve results;	**2.50%**
Average result;	**0.749 l/s per m² at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	

Test Results Children's Hospital – Continued

Ward 2A Bed 25 (SCH-064)	
Positive pressure test result;	**0.792 l/s per m³ at 20Pa**
Negative pressure test result;	**0.806 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**1.74%**
Average result;	**0.799 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 3A Bed 15 (GW3-055)	
Positive pressure test result;	**0.511 l/s per m³ at 20Pa**
Negative pressure test result;	**0.514 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**0.58%**
Average result;	**0.512 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 3A Bed 16 (GW3-051)	
Positive pressure test result;	**0.889 l/s per m3 at 20Pa**
Negative pressure test result;	**0.853 l/s per m3 at 20Pa**
Variation between +ve and –ve results;	**4.05%**
Average result;	**0.871 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	

Test Results Adults Hospital

CCU Bed 3 (CCW-042)	
Positive pressure test result;	**0.703 l/s per m³ at 20Pa**
Negative pressure test result;	**0.719 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**2.22%**
Average result;	**0.711 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
CCU Bed 4 (CCW-027)	
Positive pressure test result;	**0.538 l/s per m³ at 20Pa**
Negative pressure test result;	**0.592 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**1.52%**
Average result;	**0.565 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
CCU Bed 4 (CCW-027)	
Positive pressure test result;	**0.864 l/s per m3 at 20Pa**
Negative pressure test result;	**0.880 l/s per m3 at 20Pa**
Variation between +ve and –ve results;	**1.82%**
Average result;	**0.872 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
CCU Bed 23 (CCW-121)	
Positive pressure test result;	**0.817 l/s per m³ at 20Pa**
Negative pressure test result;	**0.797 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**2.45%**
Average result;	**0.807 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
CCU Bed 24 (CCW-112)	
Positive pressure test result;	**0.758 l/s per m³ at 20Pa**
Negative pressure test result;	**0.792 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**4.29%**
Average result;	**0.775 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	

Test Results Adults Hospital – Continued

CCU Bed 31 (CCW-077)	
Positive pressure test result;	**0.633 l/s per m² at 20Pa**
Negative pressure test result;	**0.611 l/s per m² at 20Pa**
Variation between +ve and –ve results;	**3.48%**
Average result;	**0.622 l/s per m² at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
CCU Bed 40 (CCW-092)	
Positive pressure test result;	**0.844 l/s per m² at 20Pa**
Negative pressure test result;	**0.806 l/s per m² at 20Pa**
Variation between +ve and –ve results;	**4.50 %**
Average result;	**0.825 l/s per m² at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
CCU Bed 43 (CCW-158)	
Positive pressure test result;	**0.650 l/s per m3 at 20Pa**
Negative pressure test result;	**0.653 l/s per m3 at 20Pa**
Variation between +ve and –ve results;	**0.46%**
Average result;	**0.652 l/s per m² at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
CCU Bed 44 (CCW-027)	
Positive pressure test result;	**0.919 l/s per m² at 20Pa**
Negative pressure test result;	**0.878 l/s per m² at 20Pa**
Variation between +ve and –ve results;	**4.46%**
Average result;	**0.898 l/s per m² at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
CCU Bed 50 (CCW-163)	
Positive pressure test result;	**0.944 l/s per m² at 20Pa**
Negative pressure test result;	**0.900 l/s per m² at 20Pa**
Variation between +ve and –ve results;	**0.47%**
Average result;	**0.922 l/s per m² at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	

Test Results Adults Hospital - Continued

Ward 1B Bed 13 (CAR-014)	
Positive pressure test result;	**0.872 l/s per m³ at 20Pa**
Negative pressure test result;	**0.917 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**4.91%**
Average result;	**0.894 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 1B Bed 14 (CAR-013)	
Positive pressure test result;	**0.767 l/s per m³ at 20Pa**
Negative pressure test result;	**0.769 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**0.26%**
Average result;	**0.768 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 3B Bed 5 (GW2-055)	
Positive pressure test result;	**0.389 l/s per m3 at 20Pa**
Negative pressure test result;	**0.383 l/s per m3 at 20Pa**
Variation between +ve and –ve results;	**1.54%**
Average result;	**0.386 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 3B Bed 19 (GW2-025)	
Positive pressure test result;	**0.789 l/s per m³ at 20Pa**
Negative pressure test result;	**0.772 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**2.15%**
Average result;	**0.780 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 3C Bed 9 (GW1-053)	
Positive pressure test result;	**0.819 l/s per m³ at 20Pa**
Negative pressure test result;	**0.833 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**1.68%**
Average result;	**0.826 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	

Test Results Adults Hospital

Ward 3C Bed 10 (GW1-058)	
Positive pressure test result;	**0.942 l/s per m² at 20Pa**
Negative pressure test result;	**0.936 l/s per m² at 20Pa**
Variation between +ve and –ve results;	**2.22%**
Average result;	**0.939 l/s per m² at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 4A Bed 19 (RENW-043)	
Positive pressure test result;	**0.964 l/s per m² at 20Pa**
Negative pressure test result;	**0.953 l/s per m² at 20Pa**
Variation between +ve and –ve results;	**1.14%**
Average result;	**0.958 l/s per m² at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 4A Bed 20 (RENW-044)	
Positive pressure test result;	**0.953 l/s per m3 at 20Pa**
Negative pressure test result;	**0.930 l/s per m3 at 20Pa**
Variation between +ve and –ve results;	**2.41%**
Average result;	**0.942 l/s per m² at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	

I trust that the above results are self explanatory, but please do not hesitate to contact me if you should have any queries.

Yours sincerely

[redacted]

Stuart B Borland BSc BArch RIAS
Director
Building Science Division
RSK Environment Limited

From: David Wilson [redacted] on behalf of David Wilson
Sent: 24 November 2015 11:16
To: Moir, Peter [redacted]
Cc: Frew, Shiona [redacted]
Subject: QEUE&RHC - Ward 4b and Ward 2a
Attachments: Ward 2A Commissioning Results (Childrens isolation rooms).zip; Ward 4b Commissioning Results.zip

Peter,

I have attached two Zip folders one for Ward 2a and one for Ward 4b which includes the commissioning results. I have included the Air permeability results for Ward 4b but left out Ward 2a as they were included in the final report Gillon issued yesterday where some corrections are required.

If you need anything else then let me know.

David

David Wilson
Commissioning Manager - Construction

Brookfield MULTIPLEX BM

Brookfield Multiplex Construction Europe Ltd
Fairfield - Suite 12
1048 Govan Road
Glasgow, G51 4XS, United Kingdom

[redacted]
W www.brookfieldmultiplex.com

Please consider the environment before printing this email.

From: Moir, Peter [redacted]
Sent: 25 November 2015 10:05
To: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20)
Cc: Loudon David (NHS GREATER GLASGOW & CLYDE - SGA20); Williams Craig (NHS GREATER GLASGOW & CLYDE - SGA20); Walsh Thomas (NHS GREATER GLASGOW & CLYDE - SGA20); Rankin Annette (NATIONAL SERVICES SCOTLAND)
Subject: 20151125 (10.05) Peter Moir QEUH WARD 4B - AIR PERMEABILITY TEST RESULTS - attached
Attachments: 524395 South Glasgow Hospital Isolation Room Test Results (01) 24.11.20....pdf

Dear Teresa

I attach report from Brookfield Multiplex summarising the positive outcome of the air permeability tests undertaken by RSK. This report deals with all 36 rooms within the new complex (QEUH + RHC).

The results for the 8 rooms in RHC Ward 2A appear on pages 3 to 5; rooms SCH-019 to SCH-064. I note the results confirm rooms meet the requirements of test in SHPN 04: Supp 1; App 2 and are under the 5% variance for +/- 20pa test.

Regards

Peter

From: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20) [redacted]
Sent: 24 November 2015 15:54
To: Rankin Annette (NATIONAL SERVICES SCOTLAND)
Cc: Moir, Peter; Loudon, David; Williams, Craig; Walsh, Tom
Subject: FW: QEUH WARD 4B HAEMATO-ONCOLOGY INFORMATION REQUEST

Annette - please find documents attached as requested
Kind Regards
Teresa

Dr Teresa Inkster
Consultant Microbiologist and Infection Control Doctor
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Moir, Peter [redacted]
Sent: 24 November 2015 15:10
To: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20)
Cc: Walsh Thomas (NHS GREATER GLASGOW & CLYDE - SGA20); Williams Craig (NHS GREATER GLASGOW & CLYDE - SGA20); Powrie Ian (NHS GREATER GLASGOW & CLYDE - SGA20); Loudon David (NHS GREATER GLASGOW & CLYDE - SGA20)
Subject: QEUH WARD 4B HAEMATO-ONCOLOGY INFORMATION REQUEST

Dear Teresa

Response to questions below;

1. **What was the original specification for ventilation in the adult BMT unit?**

QEUH Ward 4B - The specification for the 14 in-patient bed Haemato-oncology ward was issued as part of the Board's Invitation to Participate in Competitive Dialogue (2009) and comprised three documents. These were either issued as part of the document pack or referred to in text as follows;

a) The Board's clinical output specification (COS). (Refer attached document – Haemato oncology Ward 4B Brief 2009 & 2013).
   This document includes the original COS from 2009 and the COS for the Compensation Event issued to Brookfield Multiplex in 2013 to increase the number of in-patient beds in this ward to 24.
b) SHPN 054 – Facilities for Cancer Centres (Available HFS website-2009 relevant copy).
c) SHTM 03-01 Ventilation for Healthcare Premises (Available HFS website – 2009 relevant copy).

2. What was the original specification for ventilation in the paediatric BMT unit?

RHC Ward 2A - The specification for the 8 isolation rooms in Schiehallion Ward was issued as part of the Board's Invitation to Participate in Competitive Dialogue (2009) and comprised three key documents. These were either issued as part of the document pack or referred to in text as follows;

a) The Board's clinical output specification. (Refer attached document – NSGACL Haemat-Oncology NCH).
b) SHPN 054 – Facilities for Cancer Centres (Available HFS website -2009 relevant copy).
c) SHPN 04: Supplement 1: Isolation Facilities in Acute Settings (Available HFS website – 2009 relevant copy).

3. What evidence was presented to NHSGGC that the BMT units (adult and paediatric) met the agreed specification prior to handover?

RHC Ward 2A – I attach a zip file for the test data provided by Brookfield Multiplex during the commission period prior to handover in January 2015. (Refer attached file Ward 2A Commissioning Results (Children's isolation rooms).

Ward 4B – As the ward has been fully upgraded the supply of a large amount of now redundant commissioning information does not seem sensible.

4. What is the revised specification in the adult BMT unit?

The revised specification for the upgrade of Ward 4B is attached in the Word document - Ward 4b Upgrade Description of Works rev1.

5. What changes have been made in the adult BMT unit since the patients were relocated from ward 4B back to the Beatson.

The works listed in item 4 have been fully implemented and inspected by the Board's Supervisor (Capita) and undergone commissioning and validation tests as noted in item 6 below.

6. What evidence was presented to NHSGGC that the adult BMT unit now meets the agreed specification since the changes have been made?

Brookfield Multiplex has provided a full commissioning and validation report, please refer attached document - QEUH Ward 4B Upgrade Works Report Oct 2015. This report summarises the works undertaken, the install of digital pressure gauges, the balancing and testing of the air supply system by H&V, the DOP test to HEPA filters and the air permeability tests undertaken by RSK to meet the requirements of SHPN 04: Appendix 2. I believe a deep clean by NHS Estates and microbiological tests remain outstanding.

7. What is the current specification in the existing BMT unit in the Beatson?

I don't have access to the original design or 'as fitted' information for the BMT Unit at the Beatson, I suggest the Estates Department at Gartnavel General are contacted to supply.

I have visited the unit and can describe **my own** understanding of how the unit is configured as follows, note this is only for information and should be verified with the Estates Dept.

The BMT bedrooms are single rooms opening directly onto the main circulation corridor. The rooms each have an adjoining shower/wc/whb compartment. There is no pressure lobby between the room and corridor. The rooms are fitted with digital pressure gauges that measure the pressure between the room and the ward corridor. During my visit I sampled three rooms where the doors had remained closed, they displayed pressures of 3.9pa; 4.1pa and 9.9pa, I have a photo record. The rooms were understood to work in the 5-10pa range with extract through the en-suite and some minor leakage to corridor under doors. When doors were opened I noted the pressure drop to around 0pa, quickly rising to original pressure once closed. The ceilings in the bedrooms are imperforate with sealed light fittings and hatches where fitted. At each end of the ward there are two sets of double doors.

8. **What was the commissioning process for the adult and paediatric BMT?**
The commissioning process for QEUH Ward 4B is set out in the documentation provided by Brookfield Multiplex, as referred above.
The commissioning results for RHC Ward 2A were supplied by Brookfield Multiplex at handover and should be located on the Zutec building management system held by our Estates Department; this will include airflows, pressure tests and DOP tests for HEPA filters. Brookfield Multiplex is about to issue air permeability test results to meet requirements of SHPN 04 Supp. 2, for the eight rooms in Schiehallion Ward and I will copy this information to you when received. We have verbal confirmation that the eight rooms in Ward 2A have passed air permeability tests. For noting this report will record the results from air permeability tests to all the thirty-six isolation rooms throughout the QEUH and RHC, I'm advised all have passed.

9. **Was there an ICT/microbiology sign off on handover for these areas?**
There was no requirement in the Board's contract with Brookfield Multiplex to undertake microbiological testing at completion of the works, due to the length of time between handover and service migration. The planning and timing of such tests were to be part of the migration and arranged by the Service to suit move in date and time scales for results etc,.

If you require any further information please make contact by email.

Regards

Peter Moir
Deputy Project Director

South Glasgow Hospitals Project Office
NHS Greater Glasgow & Clyde
Room L1/25
Management Building
1345 Govan Road
Glasgow G51 4TF

[redacted]

From: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20) [redacted]
Sent: 24 November 2015 10:02
To: Loudon, David; Walsh, Tom; Williams, Craig; Moir, Peter; Powrie, Ian
Cc: McColgan, Melanie; Rankin Annette (NATIONAL SERVICES SCOTLAND); O'Brien Geraldine (NATIONAL SERVICES SCOTLAND); McNamee, Sandra
Subject: RE: BMT QEUH

Dear David,

I have been asked to lead on the BMT move back to QEUH. Up until this time I have had no involvement in the project and I have been supplied with minimal information to date. It is imperative expert opinion is sought and this would be my normal practice for a specialised ventilated area, in the interest of patient safety.

I appreciate that the BMT unit in QEUH is not built to the same spec as the unit at Gartnavel, even more reason why it would be useful to have an expert on ventilation comment on the spec and validation reports.

As I explained I am following up on correspondence with Peter Hoffman initiated by a colleague in July - see attached email for more info. Peter himself has suggested the involvement of HPS.

Environmental sampling policies are attached.

Kind Regards
Teresa

Dr Teresa Inkster
Consultant Microbiologist and Infection Control Doctor
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Loudon, David [redacted]
Sent: 23 November 2015 16:14
To: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20); Walsh Thomas (NHS GREATER GLASGOW & CLYDE - SGA20); Williams Craig (NHS GREATER GLASGOW & CLYDE - SGA20); Moir Peter (NHS GREATER GLASGOW & CLYDE - SGA20); Powrie Ian (NHS GREATER GLASGOW & CLYDE - SGA20)
Cc: Mccolgan Melanie (NHS GREATER GLASGOW & CLYDE - SGA20); Rankin Annette (NATIONAL SERVICES SCOTLAND); O'Brien Geraldine (NATIONAL SERVICES SCOTLAND); Mcnamee Sandra (NHS GREATER GLASGOW & CLYDE - SGA20)
Subject: RE: BMT QEUH

Dear Dr Inkster,

Thank you for your message but it doesn't quite answer the questions I asked.

Can you please confirm the nature of your discussions with HPS and advise on your concerns regarding the BMT rooms. I think it is reasonable to ask for a copy of the briefing document and scope of services that may be requested from Peter Hoffman.

Can you please provide a copy of the local guideline which is based on expert opinion. This would be helpful.

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHS Greater Glasgow & Clyde
Corporate Headquarters
JB Russell House
Gartnavel Royal Hospital
Glasgow
G12 0XH
[redacted]

[redacted]

From: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20) [redacted]
Sent: 23 November 2015 10:25
To: Loudon, David; Walsh, Tom; Williams, Craig; Moir, Peter; Powrie, Ian
Cc: McColgan, Melanie; Rankin Annette (NATIONAL SERVICES SCOTLAND); O'Brien Geraldine (NATIONAL SERVICES SCOTLAND); McNamee, Sandra
Subject: RE: BMT QEUH

Dear David,

I am the ICD for Regional services and have been asked to lead on this. I am simply following up on correspondence between my colleague Prof Williams and Peter Hoffman.

With regards to air sampling I am following a local guideline based on expert opinion.

Teresa

Dr Teresa Inkster
Consultant Microbiologist and Infection Control Doctor
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Loudon, David [redacted]
Sent: 20 November 2015 16:13
To: Inkster Teresa (NHS GREATER GLASGOW & CLYDE); Walsh Thomas (NHS GREATER GLASGOW & CLYDE); Williams Craig (NHS GREATER GLASGOW & CLYDE); Moir Peter (NHS GREATER GLASGOW & CLYDE); Powrie Ian (NHS GREATER GLASGOW & CLYDE)
Cc: Mccolgan Melanie (NHS GREATER GLASGOW & CLYDE); Rankin Annette (NATIONAL SERVICES SCOTLAND); O'Brien Geraldine (NATIONAL SERVICES SCOTLAND); Mcnamee Sandra (NHS GREATER GLASGOW & CLYDE)
Subject: RE: BMT QEUH

Dear Dr Inkster,

Thank you for copying me in to your reply.

It would be helpful to know the nature of your discussions with HPS and to outline your issues with the BMT. Presently, this is not clear.

I would anticipate that any involvement by Peter Hoffman will be in accordance with a scoping document or brief. Can you please provide a copy of the intended scope / brief.

I also understand that you are to conduct or are currently conducting an infection control testing regime in the rooms. Can you please advise on the nature of the testing and to which accredited guidance documentation that you are using to assess the results.

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHS Greater Glasgow & Clyde
Corporate Headquarters
JB Russell House
Gartnavel Royal Hospital
Glasgow

G12 0XH

[redacted]

From: Inkster Teresa (NHS GREATER GLASGOW & CLYDE) [redacted]
Sent: 20 November 2015 15:14
To: Walsh, Tom; Williams, Craig; Moir, Peter; Loudon, David; Powrie, Ian
Cc: McColgan, Melanie; Rankin Annette (NATIONAL SERVICES SCOTLAND); O'Brien Geraldine (NATIONAL SERVICES SCOTLAND); McNamee, Sandra
Subject: RE: BMT QEUH

Dear Tom ,

The meeting was a fact finding exercise for HPS. Annette has taken notes of the meeting and the actions are the questions listed in the email Annette sent yesterday afternoon.

HPS have already involved HFS in discussions and will be taking the lead coordinating role. Once the information requested has been provided HPS will liaise with and distribute the documents to both HFS and Peter Hoffman.

It would be useful if we could give HPS a timescale for document submission.

Kind Regards
Teresa

Dr Teresa Inkster
Consultant Microbiologist and Infection Control Doctor
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Walsh, Tom [redacted]
Sent: 20 November 2015 14:39
To: Inkster Teresa (NHS GREATER GLASGOW & CLYDE); Williams Craig (NHS GREATER GLASGOW & CLYDE); Moir Peter (NHS GREATER GLASGOW & CLYDE); Loudon David (NHS GREATER GLASGOW & CLYDE); Powrie Ian (NHS GREATER GLASGOW & CLYDE)
Cc: Mccolgan Melanie (NHS GREATER GLASGOW & CLYDE); Rankin Annette (NATIONAL SERVICES SCOTLAND); O'Brien Geraldine (NATIONAL SERVICES SCOTLAND); Mcnamee Sandra (NHS GREATER GLASGOW & CLYDE)
Subject: RE: BMT QEUH

Dear Teresa

It would be very helpful for us to have the minutes, or as a minimum further detail and action notes, from your meeting with HPS please.

We have, as you know, already initiated contact with colleagues in HFS on this matter and I am keen to continue with this helpful input. To this end I have copied Geraldine O'Brien at HFS into this email. My own understanding is that HFS would normally lead on matters relating to ventilation and associated engineering works, this is however a matter for HFS and HPS to decide and I am pleased to note that all agencies are to be involved.

Could I also ask for confirmation that Peter Hoffman has been (or will be) provided with all the relevant Scottish Building and Technical notes so that his advice can be provided in the context of our extant guidance?

Many thanks

Tom

From: Inkster Teresa (NHS GREATER GLASGOW & CLYDE) [redacted]
Sent: 19 November 2015 16:10
To: Williams, Craig; Walsh, Tom; Moir, Peter; Loudon, David; Powrie, Ian
Cc: McColgan, Melanie
Subject: FW: BMT QEUH
Importance: High

Dear all - please see below info requested from HPS in relation to the BMT unit. I have forwarded the revised specification and validation reports, however I do not have the other documents/information they have requested . Can you forward to me and I will send on.
Kind Regards
Teresa

Dr Teresa Inkster
Consultant Microbiologist and Infection Control Doctor
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Rankin Annette (NATIONAL SERVICES SCOTLAND)
Sent: 19 November 2015 15:34
To: Inkster Teresa (NHS GREATER GLASGOW & CLYDE)
Cc: Lockhart Michael (NATIONAL SERVICES SCOTLAND); Brown Claire (NATIONAL SERVICES SCOTLAND); HPSInfectionControl (NATIONAL SERVICES SCOTLAND)
Subject: BMT QEUH

Dear Teresa

Many thanks for meeting with us today to talk through the issues relating to ventilation in the Adult bone marrow transplant (BMT) units at QEUH. I understand the paediatric BMT unit remains unchanged however there have been some changes made to the adult BMT unit since the hospital was originally handed over from the contractors.
To allow us to provide the support requested relating to the BMT unit at Queen Elizabeth University Hospital are you able to provide information on the following?:

- What was the original specification for ventilation in the adult BMT unit?
- What was the original specification for ventilation in the paediatric BMT unit?
- What evidence was presented to NHSGGC that the BMT units (adult and paediatric) met the agreed specification prior to handover?
- What is the revised specification in the adult BMT unit?
- What changes have been made in the adult BMT unit since the patients were relocated from ward 4B back to the Beatson
- What evidence was presented to NHSGGC that the adult BMT unit now meets the agreed specification since the changes have been made?
- What is the current specification in the existing BMT unit in the Beatson?
- What was the commissioning process for the adult and paediatric BMT?
- Was there an ICT/microbiology sign off on handover for these areas?

HPS are happy to support NHSGGC. Once I am in receipt of the above information I will set up a meeting with HPS, NHSGGC, HFS and Peter Hoffman from PHE.

Annette

Annette Rankin
Nurse Consultant Infection Control

NHS National Services Scotland

Health Protection Scotland
4th Floor
Meridian Court
5 Cadogan Street
Glasgow
G2 6QE
[redacted]
www.hps.scot.nhs.uk/
Pease consider the environment before printing this email.
NHS National Services Scotland is the common name for the Common Services Agency for the Scottish Health Service. www.nhsnss.org

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Abbey Park
Humber Road
COVENTRY
CV3 4AQ
UK

[redacted]
www.rsk.co.uk

Our ref: SBB/524395/1

FAO: Gillon Armstrong
Brookfield Multiplex Europe
Site Office
Institute of Neurological Science
Queen Elizabeth University Hospital
1345 Govan Road
Glasgow
G51 4TF

[redacted]

24th November 2015

Dear Mr Armstrong

New South Glasgow Hospital – Isolation Room Testing

I write to confirm the results of the air permeability testing which we have undertaken on the isolation rooms within both the Adult and Children's Hospitals.

Testing was undertaken to prove compliance with the requirement of HBN 04 Supplement 1 – Isolation Facilities in Acute Settings. This requires that the enclosure have 'an average leakage rate of no more than 1 l/s of air per m^3 of envelope volume' at a positive and negative pressure differential of 20Pa. Further, the measured positive and negative leakage rates should be within 5% of each other.

Each test included the entrance lobby, main room and en-suite facility where applicable. The ceiling mounted air supply and extract grilles were temporarily sealed with tape during the tests. No further temporary sealing was present at the time of the tests. A 'Minneapolis' door fan system was utilised to undertake each test. The fan was installed within the lobby access door to the corridor to each enclosure. A multipoint test in accordance with CIBSE TM23; 2000 was undertaken to ensure maximum accuracy.

Cont'd

RSK Environment Ltd
Registered office
34 Albyn Place • Aberdeen • Aberdeenshire • AB10 1FW • UK
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www.rsk.co.uk

Test Results Children's Hospital

CDU Bed 17 (OBW-048)	
Positive pressure test result;	**0.875 l/s per m³ at 20Pa**
Negative pressure test result;	**0.856 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**2.17%**
Average result;	**0.866 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
CDU Bed 18 (OBW-053)	
Positive pressure test result;	**0.875 l/s per m3 at 20Pa**
Negative pressure test result;	**0.914/s per m3 at 20Pa**
Variation between +ve and –ve results;	**4.27%**
Average result;	**0.894 l/s per m3 at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 1D Bed 5 (CCW-084)	
Positive pressure test result;	**0.728 l/s per m³ at 20Pa**
Negative pressure test result;	**0.730 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**0.27%**
Average result;	**0.729 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 1D Bed 12 (CCW-067)	
Positive pressure test result;	**0.694 l/s per m³ at 20Pa**
Negative pressure test result;	**0.692 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**0.29%**
Average result;	**0.693 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 1D Bed 17 (CCW-100)	
Positive pressure test result;	**0.717 l/s per m³ at 20Pa**
Negative pressure test result;	**0.686 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**4.32%**
Average result;	**0.702 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	

Test Results Children's Hospital – Continued

Ward 1D Bed 18 (CCW-104)	
Positive pressure test result;	**0.714 l/s per m³ at 20Pa**
Negative pressure test result;	**0.717 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**0.42%**
Average result;	**0.716 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 2A Bed 5 (ARU-105)	
Positive pressure test result;	**0.828 l/s per m3 at 20Pa**
Negative pressure test result;	**0.789 l/s per m3 at 20Pa**
Variation between +ve and –ve results;	**4.71%**
Average result;	**0.808 l/s per m3 at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 2A Bed 6 (ARU-111)	
Positive pressure test result;	**0.744 l/s per m³ at 20Pa**
Negative pressure test result;	**0.750 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**0.80%**
Average result;	**0.747 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 2A Bed 17 (SCH-019)	
Positive pressure test result;	**0.994 l/s per m³ at 20Pa**
Negative pressure test result;	**0.986 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**0.80%**
Average result;	**0.990 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 2A Bed 18 (SCH-104)	
Positive pressure test result;	**0.764 l/s per m³ at 20Pa**
Negative pressure test result;	**0.794 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**3.78%**
Average result;	**0.779 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	

Test Results Children's Hospital – Continued

Ward 2A Bed 19 (SCH-071)	
Positive pressure test result;	**0.856 l/s per m³ at 20Pa**
Negative pressure test result;	**0.833 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**2.69%**
Average result;	**0.844 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 2A Bed 20 (SCH-075)	
Positive pressure test result;	**0.758 l/s per m³ at 20Pa**
Negative pressure test result;	**0.789 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**3.93%**
Average result;	**0.774 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 2A Bed 22 (SCH-009)	
Positive pressure test result;	**0.689 l/s per m³ at 20Pa**
Negative pressure test result;	**0.706 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**2.40%**
Average result;	**0.698 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 2A Bed 23 (SCH-013)	
Positive pressure test result;	**0.823 l/s per m³ at 20Pa**
Negative pressure test result;	**0.861 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**4.41%**
Average result;	**0.842 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 2A Bed 24 (SCH-016)	
Positive pressure test result;	**0.758 l/s per m³ at 20Pa**
Negative pressure test result;	**0.739 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**2.50%**
Average result;	**0.749 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	

Test Results Children's Hospital – Continued

Ward 2A Bed 25 (SCH-064)	
Positive pressure test result;	**0.792 l/s per m³ at 20Pa**
Negative pressure test result;	**0.806 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**1.74%**
Average result;	**0.799 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 3A Bed 15 (GW3-055)	
Positive pressure test result;	**0.511 l/s per m³ at 20Pa**
Negative pressure test result;	**0.514 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**0.58%**
Average result;	**0.512 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 3A Bed 16 (GW3-051)	
Positive pressure test result;	**0.889 l/s per m3 at 20Pa**
Negative pressure test result;	**0.853 l/s per m3 at 20Pa**
Variation between +ve and –ve results;	**4.05%**
Average result;	**0.871 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	

Test Results Adults Hospital

CCU Bed 3 (CCW-042)	
Positive pressure test result;	**0.703 l/s per m³ at 20Pa**
Negative pressure test result;	**0.719 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**2.22%**
Average result;	**0.711 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
CCU Bed 4 (CCW-027)	
Positive pressure test result;	**0.586 l/s per m³ at 20Pa**
Negative pressure test result;	**0.592 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**1.01%**
Average result;	**0.565 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
CCU Bed 11 (CCW-049)	
Positive pressure test result;	**0.864 l/s per m3 at 20Pa**
Negative pressure test result;	**0.880 l/s per m3 at 20Pa**
Variation between +ve and –ve results;	**1.82%**
Average result;	**0.872 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
CCU Bed 23 (CCW-121)	
Positive pressure test result;	**0.817 l/s per m³ at 20Pa**
Negative pressure test result;	**0.797 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**2.45%**
Average result;	**0.807 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
CCU Bed 24 (CCW-112)	
Positive pressure test result;	**0.758 l/s per m³ at 20Pa**
Negative pressure test result;	**0.792 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**4.29%**
Average result;	**0.775 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	

Test Results Adults Hospital – Continued

CCU Bed 31 (CCW-077)	
Positive pressure test result;	**0.633 l/s per m³ at 20Pa**
Negative pressure test result;	**0.611 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**3.48%**
Average result;	**0.622 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
CCU Bed 40 (CCW-092)	
Positive pressure test result;	**0.844 l/s per m³ at 20Pa**
Negative pressure test result;	**0.806 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**4.50 %**
Average result;	**0.825 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
CCU Bed 43 (CCW-158)	
Positive pressure test result;	**0.650 l/s per m3 at 20Pa**
Negative pressure test result;	**0.653 l/s per m3 at 20Pa**
Variation between +ve and –ve results;	**0.46%**
Average result;	**0.652 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
CCU Bed 44 (CCW-027)	
Positive pressure test result;	**0.919 l/s per m³ at 20Pa**
Negative pressure test result;	**0.878 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**4.46%**
Average result;	**0.898 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
CCU Bed 50 (CCW-163)	
Positive pressure test result;	**0.944 l/s per m³ at 20Pa**
Negative pressure test result;	**0.900 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**4.66%**
Average result;	**0.922 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	

Test Results Adults Hospital - Continued

Ward 1B Bed 13 (CAR-014)	
Positive pressure test result;	**0.872 l/s per m³ at 20Pa**
Negative pressure test result;	**0.917 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**4.91%**
Average result;	**0.894 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 1B Bed 14 (CAR-013)	
Positive pressure test result;	**0.767 l/s per m³ at 20Pa**
Negative pressure test result;	**0.769 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**0.26%**
Average result;	**0.768 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 3B Bed 5 (GW2-055)	
Positive pressure test result;	**0.389 l/s per m3 at 20Pa**
Negative pressure test result;	**0.383 l/s per m3 at 20Pa**
Variation between +ve and –ve results;	**1.54%**
Average result;	**0.386 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 3B Bed 19 (GW2-025)	
Positive pressure test result;	**0.789 l/s per m³ at 20Pa**
Negative pressure test result;	**0.772 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**2.15%**
Average result;	**0.780 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 3C Bed 9 (GW1-053)	
Positive pressure test result;	**0.819 l/s per m³ at 20Pa**
Negative pressure test result;	**0.833 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**1.68%**
Average result;	**0.826 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	

Test Results Adults Hospital

Ward 3C Bed 10 (GW1-058)	
Positive pressure test result;	**0.942 l/s per m³ at 20Pa**
Negative pressure test result;	**0.936 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**0.64%**
Average result;	**0.939 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 4A Bed 19 (RENW-043)	
Positive pressure test result;	**0.964 l/s per m³ at 20Pa**
Negative pressure test result;	**0.953 l/s per m³ at 20Pa**
Variation between +ve and –ve results;	**1.14%**
Average result;	**0.958 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	
Ward 4A Bed 20 (RENW-044)	
Positive pressure test result;	**0.953 l/s per m3 at 20Pa**
Negative pressure test result;	**0.930 l/s per m3 at 20Pa**
Variation between +ve and –ve results;	**2.41%**
Average result;	**0.942 l/s per m³ at 20Pa**
Test results comply with the required criteria laid down in HBN 04 Supplement 1	

I trust that the above results are self explanatory, but please do not hesitate to contact me if you should have any queries.

Yours sincerely

[redacted]

Stuart B Borland BSc BArch RIAS
Director
Building Science Division
RSK Environment Limited

From: David Wilson [redacted] on behalf of David Wilson
Sent: 27 November 2015 11:15
To: Peter.Moir[redacted]
Subject: RE: QEUH WARD 4B HAEMATO-ONCOLOGY INFORMATION REQUEST - AIR PERMEABILITY TEST RESULTS

Peter,

The room number was HOW-004.

If you want me to re-check the pressure then let me know, It would ne Tuesday as I'm on holiday on Monday.

David

David Wilson
Commissioning Manager - Construction

Brookfield Multiplex Construction Europe Ltd
Fairfield - Suite 12
1048 Govan Road
Glasgow, G51 4XS, United Kingdom

[redacted]
W www.brookfieldmultiplex.com

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From: David Wilson
Sent: 26 November 2015 06:26
To: 'peter.moir[redacted]
Subject: Re: QEUH WARD 4B HAEMATO-ONCOLOGY INFORMATION REQUEST - AIR PERMEABILITY TEST RESULTS

Peter,

The room tested was not the room on the drawing but the room next to it that was identified by the nurses and had a pentamidine sign on the door. I'm not in the office this morning to get the exact number but will check number when I can get a look at the drawings.

David
David Wilson
Commissioning Manager - Construction

Brookfield Multiplex Construction Europe Ltd
Fairfield - Suite 12
1048 Govan Road
Glasgow, G51 4XS, United Kingdom

[redacted]
W www.brookfieldmultiplex.com

P Please consider the environment before printing this email.

Please note we have now moved office!

From: Moir, Peter [redacted]
Sent: Wednesday, November 25, 2015 05:40 PM
To: David Wilson
Subject: FW: QEUH WARD 4B HAEMATO-ONCOLOGY INFORMATION REQUEST - AIR PERMEABILITY TEST RESULTS

David

Way back in July you checked the Pentamidine Room and I believe you said it was working at a slight negative pressure to the corridor can you confirm which room you tested.

Regards

Peter

From: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20) [redacted]
Sent: 25 November 2015 14:19
To: Moir, Peter
Cc: Walsh, Tom; Williams, Craig; Powrie, Ian
Subject: RE: QEUH WARD 4B HAEMATO-ONCOLOGY INFORMATION REQUEST - AIR PERMEABILITY TEST RESULTS

Thanks Peter.

Can I check which room on the unit is the designated Pentamidine room. The one labelled as such is currently sitting with a positive pressure of 4.5 PA - it should be at a negative pressure for health and safety reasons. It has been checked a couple of times this morning with a microamanometer .
Kind Regards
Teresa

Dr Teresa Inkster
Consultant Microbiologist and Infection Control Doctor
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Moir, Peter [redacted]
Sent: 25 November 2015 10:04
To: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20)
Cc: Loudon David (NHS GREATER GLASGOW & CLYDE - SGA20); Williams Craig (NHS GREATER GLASGOW & CLYDE - SGA20); Walsh Thomas (NHS GREATER GLASGOW & CLYDE - SGA20); Rankin Annette (NATIONAL SERVICES SCOTLAND)
Subject: RE: QEUH WARD 4B HAEMATO-ONCOLOGY INFORMATION REQUEST - AIR PERMEABILITY TEST RESULTS

Dear Teresa

I attach report from Brookfield Multiplex summarising the positive outcome of the air permeability tests undertaken by RSK. This report deals with all 36 rooms within the new complex (QEUH + RHC).

The results for the 8 rooms in RHC Ward 2A appear on pages 3 to 5; rooms SCH-019 to SCH-064. I note the results confirm rooms meet the requirements of test in SHPN 04: Supp 1; App 2 and are under the 5% variance for +/- 20pa test.

Regards

Peter

From: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20) [redacted]
Sent: 24 November 2015 15:54
To: Rankin Annette (NATIONAL SERVICES SCOTLAND)
Cc: Moir, Peter; Loudon, David; Williams, Craig; Walsh, Tom
Subject: FW: QEUH WARD 4B HAEMATO-ONCOLOGY INFORMATION REQUEST

Annette - please find documents attached as requested
Kind Regards
Teresa

Dr Teresa Inkster
Consultant Microbiologist and Infection Control Doctor
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Moir, Peter [redacted]
Sent: 24 November 2015 15:10
To: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20)
Cc: Walsh Thomas (NHS GREATER GLASGOW & CLYDE - SGA20); Williams Craig (NHS GREATER GLASGOW & CLYDE - SGA20); Powrie Ian (NHS GREATER GLASGOW & CLYDE - SGA20); Loudon David (NHS GREATER GLASGOW & CLYDE - SGA20)
Subject: QEUH WARD 4B HAEMATO-ONCOLOGY INFORMATION REQUEST

Dear Teresa

Response to questions below;

1. **What was the original specification for ventilation in the adult BMT unit?**
   QEUH Ward 4B - The specification for the 14 in-patient bed Haemato-oncology ward was issued as part of the Board's Invitation to Participate in Competitive Dialogue (2009) and comprised three documents. These were either issued as part of the document pack or referred to in text as follows;

   a) The Board's clinical output specification (COS). (Refer attached document – Haemato oncology Ward 4B Brief 2009 & 2013).
   This document includes the original COS from 2009 and the COS for the Compensation Event issued to Brookfield Multiplex in 2013 to increase the number of in-patient beds in this ward to 24.
   b) SHPN 054 – Facilities for Cancer Centres (Available HFS website-2009 relevant copy).
   c) SHTM 03-01 Ventilation for Healthcare Premises (Available HFS website – 2009 relevant copy).

2. **What was the original specification for ventilation in the paediatric BMT unit?**
   RHC Ward 2A - The specification for the 8 isolation rooms in Schiehallion Ward was issued as part of the Board's Invitation to Participate in Competitive Dialogue (2009) and comprised three key documents. These were either issued as part of the document pack or referred to in text as follows;

   a) The Board's clinical output specification. (Refer attached document – NSGACL Haemat-Oncology NCH).
   b) SHPN 054 – Facilities for Cancer Centres (Available HFS website -2009 relevant copy).

c) SHPN 04: Supplement 1: Isolation Facilities in Acute Settings (Available HFS website – 2009 relevant copy).

3. What evidence was presented to NHSGGC that the BMT units (adult and paediatric) met the agreed specification prior to handover?

RHC Ward 2A – I attach a zip file for the test data provided by Brookfield Multiplex during the commission period prior to handover in January 2015. (Refer attached file Ward 2A Commissioning Results (Children's isolation rooms).

Ward 4B – As the ward has been fully upgraded the supply of a large amount of now redundant commissioning information does not seem sensible.

4. What is the revised specification in the adult BMT unit?

The revised specification for the upgrade of Ward 4B is attached in the Word document - Ward 4b Upgrade Description of Works rev1.

5. What changes have been made in the adult BMT unit since the patients were relocated from ward 4B back to the Beatson.

The works listed in item 4 have been fully implemented and inspected by the Board's Supervisor (Capita) and undergone commissioning and validation tests as noted in item 6 below.

6. What evidence was presented to NHSGGC that the adult BMT unit now meets the agreed specification since the changes have been made?

Brookfield Multiplex has provided a full commissioning and validation report, please refer attached document - QEUH Ward 4B Upgrade Works Report Oct 2015. This report summarises the works undertaken, the install of digital pressure gauges, the balancing and testing of the air supply system by H&V, the DOP test to HEPA filters and the air permeability tests undertaken by RSK to meet the requirements of SHPN 04: Appendix 2. I believe a deep clean by NHS Estates and microbiological tests remain outstanding.

7. What is the current specification in the existing BMT unit in the Beatson?

I don't have access to the original design or 'as fitted' information for the BMT Unit at the Beatson, I suggest the Estates Department at Gartnavel General are contacted to supply.

I have visited the unit and can describe **my own** understanding of how the unit is configured as follows, note this is only for information and should be verified with the Estates Dept.

The BMT bedrooms are single rooms opening directly onto the main circulation corridor. The rooms each have an adjoining shower/wc/whb compartment. There is no pressure lobby between the room and corridor. The rooms are fitted with digital pressure gauges that measure the pressure between the room and the ward corridor. During my visit I sampled three rooms where the doors had remained closed, they displayed pressures of 3.9pa; 4.1pa and 9.9pa, I have a photo record. The rooms were understood to work in the 5-10pa range with extract through the en-suite and some minor leakage to corridor under doors. When doors were opened I noted the pressure drop to around 0pa, quickly rising to original pressure once closed. The ceilings in the bedrooms are imperforate with sealed light fittings and hatches where fitted. At each end of the ward there are two sets of double doors.

8. What was the commissioning process for the adult and paediatric BMT?

The commissioning process for QEUH Ward 4B is set out in the documentation provided by Brookfield Multiplex, as referred above.

The commissioning results for RHC Ward 2A were supplied by Brookfield Multiplex at handover and should be located on the Zutec building management system held by our Estates Department; this will include airflows, pressure tests and DOP tests for HEPA filters. Brookfield Multiplex is about to issue air permeability test results to meet requirements of SHPN 04 Supp. 2, for the eight rooms in Schiehallion Ward and I will copy this information to you when received. We have verbal confirmation that the eight

rooms in Ward 2A have passed air permeability tests. For noting this report will record the results from air permeability tests to all the thirty-six isolation rooms throughout the QEUH and RHC, I'm advised all have passed.

9. **Was there an ICT/microbiology sign off on handover for these areas?**
There was no requirement in the Board's contract with Brookfield Multiplex to undertake microbiological testing at completion of the works, due to the length of time between handover and service migration. The planning and timing of such tests were to be part of the migration and arranged by the Service to suit move in date and time scales for results etc,.

If you require any further information please make contact by email.

Regards

Peter Moir
Deputy Project Director

South Glasgow Hospitals Project Office
NHS Greater Glasgow & Clyde
Room L1/25
Management Building
1345 Govan Road
Glasgow G51 4TF

[redacted]

From: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20) [redacted]
Sent: 24 November 2015 10:02
To: Loudon, David; Walsh, Tom; Williams, Craig; Moir, Peter; Powrie, Ian
Cc: McColgan, Melanie; Rankin Annette (NATIONAL SERVICES SCOTLAND); O'Brien Geraldine (NATIONAL SERVICES SCOTLAND); McNamee, Sandra
Subject: RE: BMT QEUH

Dear David,

I have been asked to lead on the BMT move back to QEUH. Up until this time I have had no involvement in the project and I have been supplied with minimal information to date. It is imperative expert opinion is sought and this would be my normal practice for a specialised ventilated area, in the interest of patient safety.

I appreciate that the BMT unit in QEUH is not built to the same spec as the unit at Gartnavel, even more reason why it would be useful to have an expert on ventilation comment on the spec and validation reports.

As I explained I am following up on correspondence with Peter Hoffman initiated by a colleague in July - see attached email for more info. Peter himself has suggested the involvement of HPS.

Environmental sampling policies are attached.

Kind Regards
Teresa

Dr Teresa Inkster

Consultant Microbiologist and Infection Control Doctor
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Loudon, David [redacted]
Sent: 23 November 2015 16:14
To: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20); Walsh Thomas (NHS GREATER GLASGOW & CLYDE - SGA20); Williams Craig (NHS GREATER GLASGOW & CLYDE - SGA20); Moir Peter (NHS GREATER GLASGOW & CLYDE - SGA20); Powrie Ian (NHS GREATER GLASGOW & CLYDE - SGA20)
Cc: Mccolgan Melanie (NHS GREATER GLASGOW & CLYDE - SGA20); Rankin Annette (NATIONAL SERVICES SCOTLAND); O'Brien Geraldine (NATIONAL SERVICES SCOTLAND); Mcnamee Sandra (NHS GREATER GLASGOW & CLYDE - SGA20)
Subject: RE: BMT QEUH

Dear Dr Inkster,

Thank you for your message but it doesn't quite answer the questions I asked.

Can you please confirm the nature of your discussions with HPS and advise on your concerns regarding the BMT rooms. I think it is reasonable to ask for a copy of the briefing document and scope of services that may be requested from Peter Hoffman.

Can you please provide a copy of the local guideline which is based on expert opinion. This would be helpful.

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHS Greater Glasgow & Clyde
Corporate Headquarters
JB Russell House
Gartnavel Royal Hospital
Glasgow
G12 0XH

[redacted]

From: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20) [redacted]
Sent: 23 November 2015 10:25
To: Loudon, David; Walsh, Tom; Williams, Craig; Moir, Peter; Powrie, Ian
Cc: McColgan, Melanie; Rankin Annette (NATIONAL SERVICES SCOTLAND); O'Brien Geraldine (NATIONAL SERVICES SCOTLAND); McNamee, Sandra
Subject: RE: BMT QEUH

Dear David,

I am the ICD for Regional services and have been asked to lead on this. I am simply following up on correspondence between my colleague Prof Williams and Peter Hoffman.

With regards to air sampling I am following a local guideline based on expert opinion.

Teresa

Dr Teresa Inkster
Consultant Microbiologist and Infection Control Doctor
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Loudon, David [redacted]
Sent: 20 November 2015 16:13
To: Inkster Teresa (NHS GREATER GLASGOW & CLYDE); Walsh Thomas (NHS GREATER GLASGOW & CLYDE); Williams Craig (NHS GREATER GLASGOW & CLYDE); Moir Peter (NHS GREATER GLASGOW & CLYDE); Powrie Ian (NHS GREATER GLASGOW & CLYDE)
Cc: Mccolgan Melanie (NHS GREATER GLASGOW & CLYDE); Rankin Annette (NATIONAL SERVICES SCOTLAND); O'Brien Geraldine (NATIONAL SERVICES SCOTLAND); Mcnamee Sandra (NHS GREATER GLASGOW & CLYDE)
Subject: RE: BMT QEUH

Dear Dr Inkster,

Thank you for copying me in to your reply.

It would be helpful to know the nature of your discussions with HPS and to outline your issues with the BMT. Presently, this is not clear.

I would anticipate that any involvement by Peter Hoffman will be in accordance with a scoping document or brief. Can you please provide a copy of the intended scope / brief.

I also understand that you are to conduct or are currently conducting an infection control testing regime in the rooms. Can you please advise on the nature of the testing and to which accredited guidance documentation that you are using to assess the results.

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHS Greater Glasgow & Clyde
Corporate Headquarters
JB Russell House
Gartnavel Royal Hospital
Glasgow
G12 0XH

[redacted]

From: Inkster Teresa (NHS GREATER GLASGOW & CLYDE) [redacted]
Sent: 20 November 2015 15:14
To: Walsh, Tom; Williams, Craig; Moir, Peter; Loudon, David; Powrie, Ian
Cc: McColgan, Melanie; Rankin Annette (NATIONAL SERVICES SCOTLAND); O'Brien Geraldine (NATIONAL SERVICES SCOTLAND); McNamee, Sandra
Subject: RE: BMT QEUH

Dear Tom ,

The meeting was a fact finding exercise for HPS. Annette has taken notes of the meeting and the actions are the questions listed in the email Annette sent yesterday afternoon.

HPS have already involved HFS in discussions and will be taking the lead coordinating role. Once the information requested has been provided HPS will liaise with and distribute the documents to both HFS and Peter Hoffman.

It would be useful if we could give HPS a timescale for document submission.

Kind Regards
Teresa

Dr Teresa Inkster
Consultant Microbiologist and Infection Control Doctor
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Walsh, Tom [redacted]
Sent: 20 November 2015 14:39
To: Inkster Teresa (NHS GREATER GLASGOW & CLYDE); Williams Craig (NHS GREATER GLASGOW & CLYDE); Moir Peter (NHS GREATER GLASGOW & CLYDE); Loudon David (NHS GREATER GLASGOW & CLYDE); Powrie Ian (NHS GREATER GLASGOW & CLYDE)
Cc: Mccolgan Melanie (NHS GREATER GLASGOW & CLYDE); Rankin Annette (NATIONAL SERVICES SCOTLAND); O'Brien Geraldine (NATIONAL SERVICES SCOTLAND); Mcnamee Sandra (NHS GREATER GLASGOW & CLYDE)
Subject: RE: BMT QEUH

Dear Teresa

It would be very helpful for us to have the minutes, or as a minimum further detail and action notes, from your meeting with HPS please.

We have, as you know, already initiated contact with colleagues in HFS on this matter and I am keen to continue with this helpful input. To this end I have copied Geraldine O'Brien at HFS into this email. My own understanding is that HFS would normally lead on matters relating to ventilation and associated engineering works, this is however a matter for HFS and HPS to decide and I am pleased to note that all agencies are to be involved.

Could I also ask for confirmation that Peter Hoffman has been (or will be) provided with all the relevant Scottish Building and Technical notes so that his advice can be provided in the context of our extant guidance?

Many thanks

Tom

From: Inkster Teresa (NHS GREATER GLASGOW & CLYDE) [redacted]
Sent: 19 November 2015 16:10
To: Williams, Craig; Walsh, Tom; Moir, Peter; Loudon, David; Powrie, Ian
Cc: McColgan, Melanie
Subject: FW: BMT QEUH
Importance: High

Dear all - please see below info requested from HPS in relation to the BMT unit. I have forwarded the revised specification and validation reports, however I do not have the other documents/information they have requested . Can you forward to me and I will send on.
Kind Regards
Teresa

Dr Teresa Inkster
Consultant Microbiologist and Infection Control Doctor
Dept of Microbiology

Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Rankin Annette (NATIONAL SERVICES SCOTLAND)
Sent: 19 November 2015 15:34
To: Inkster Teresa (NHS GREATER GLASGOW & CLYDE)
Cc: Lockhart Michael (NATIONAL SERVICES SCOTLAND); Brown Claire (NATIONAL SERVICES SCOTLAND); HPSInfectionControl (NATIONAL SERVICES SCOTLAND)
Subject: BMT QEUH

Dear Teresa

Many thanks for meeting with us today to talk through the issues relating to ventilation in the Adult bone marrow transplant (BMT) units at QEUH. I understand the paediatric BMT unit remains unchanged however there have been some changes made to the adult BMT unit since the hospital was originally handed over from the contractors.
To allow us to provide the support requested relating to the BMT unit at Queen Elizabeth University Hospital are you able to provide information on the following?:

- What was the original specification for ventilation in the adult BMT unit?
- What was the original specification for ventilation in the paediatric BMT unit?
- What evidence was presented to NHSGGC that the BMT units (adult and paediatric) met the agreed specification prior to handover?
- What is the revised specification in the adult BMT unit?
- What changes have been made in the adult BMT unit since the patients were relocated from ward 4B back to the Beatson
- What evidence was presented to NHSGGC that the adult BMT unit now meets the agreed specification since the changes have been made?
- What is the current specification in the existing BMT unit in the Beatson?
- What was the commissioning process for the adult and paediatric BMT?
- Was there an ICT/microbiology sign off on handover for these areas?

HPS are happy to support NHSGGC. Once I am in receipt of the above information I will set up a meeting with HPS, NHSGGC, HFS and Peter Hoffman from PHE.

Annette

Annette Rankin
Nurse Consultant Infection Control

NHS National Services Scotland
Health Protection Scotland
4th Floor
Meridian Court
5 Cadogan Street
Glasgow
G2 6QE
[redacted]
www.hps.scot.nhs.uk/
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NHS National Services Scotland is the common name for the Common Services Agency for the Scottish Health Service. www.nhsnss.org

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From: Loudon, David [redacted]
Sent: 30 November 2015 12:52
To: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20); Moir Peter (NHS GREATER GLASGOW & CLYDE - SGA20); Walsh Thomas (NHS GREATER GLASGOW & CLYDE - SGA20); Williams Craig (NHS GREATER GLASGOW & CLYDE - SGA20)
Cc: Mccolgan Melanie (NHS GREATER GLASGOW & CLYDE - SGA20); Rankin Annette (NATIONAL SERVICES SCOTLAND)
Subject: 20151130 (12.52) David Loudoun RE: BMT

Sensitivity: Confidential

Dear Dr Inkster,

Thank you for your response.

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHS Greater Glasgow & Clyde
Corporate Headquarters
JB Russell House
Gartnavel Royal Hospital
Glasgow
G12 0XH

[redacted]

From: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20) [redacted]
Sent: 30 November 2015 12:43
To: Loudon, David; Moir, Peter; Walsh, Tom; Williams, Craig
Cc: McColgan, Melanie; Rankin Annette (NATIONAL SERVICES SCOTLAND)
Subject: RE: BMT
Sensitivity: Confidential

Dear David,

I believe I sent you the GGC air sampling SOPs last week .

Kind Regards
Teresa

Dr Teresa Inkster
Consultant Microbiologist and Infection Control Doctor
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Loudon, David [redacted]
Sent: 30 November 2015 12:39
To: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20); Moir Peter (NHS GREATER GLASGOW & CLYDE - SGA20); Walsh Thomas (NHS GREATER GLASGOW & CLYDE - SGA20); Williams Craig (NHS GREATER GLASGOW &

CLYDE - SGA20)
Cc: Mccolgan Melanie (NHS GREATER GLASGOW & CLYDE - SGA20)
Subject: RE: BMT

Dear Dr Inkster

Thank you for your message.

Can you please send a copy of the air sampling data that you submit to HPS to all included in this message.

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHS Greater Glasgow & Clyde
Corporate Headquarters
JB Russell House
Gartnavel Royal Hospital
Glasgow
G12 0XH

[redacted]

From: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20) [redacted]
Sent: 27 November 2015 15:58
To: Moir, Peter; Loudon, David; Walsh, Tom; Williams, Craig
Cc: McColgan, Melanie
Subject: FW: BMT
Sensitivity: Confidential

Dear all ,

HPS have come back to me with some questions - see email below. I can send in the info regarding the air sampling . Can anyone send me the remaining info ?
Kind Regards
Teresa

Dr Teresa Inkster
Consultant Microbiologist and Infection Control Doctor
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Rankin Annette (NATIONAL SERVICES SCOTLAND)
Sent: 27 November 2015 15:20
To: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20)
Subject: RE: BMT

Hi Teresa

How are you? We are working our way through all of tis but have a few more questions.. if that's okay?

- When was the decision made to move the BMT from Beatson to QEUH?
- Is there a written record of the assessment of the requirements for ventilation?
- Do you have any updated figures on air change rates and how these figures were calculated

- What is your sampling protocol : does this cover rooms only or corridors?

Annette

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New South Glasgow Hospital
Adult and Children's Hospital and Energy Centre

NEC 3 Supervisors Report No. 55

November 2015

CAPITA

A47069198

CONTENTS

1.0 EXECUTIVE SUMMARY

2.0 DESIGN COMPLIANCE CHECK

3.0 PROCEDURES REVIEW

4.0 CONSTRUCTION REVIEW

5.0 INFORMATION REQUIRED

6.0 SUPERVISOR's TESTS and INSPECTIONS

7.0 DEFECT NOTIFICATIONS ISSUED

	Signed	**Date**
Originated by	Dave Ramsay	3rd December 2015
Checked by	John Kilbane	3rd December 2015

1.0 EXECUTIVE SUMMARY

In accordance with our NEC3 Contract, this is the monthly report for November 2015 on the activities carried out and responsibilities undertaken by the NEC3 Supervisors.

We continue to review the progress to remedy the defects outstanding at Stage 3 completion. Brookfield is dealing effectively with the post completion defects reported by the Board and residual defects which we raised. We have also been reviewing the post completion defects reported in the FM Summary.

We have inspected the works and witnessed the final tests to two rooms in relation to the air permeability testing. Brookfield has provided a summary report detailing the works that was carried out to 36 rooms along with the test certification (refer item 3.2).

Brookfield is working through the list of defects identified prior to the car park being handed over to the Client. We await confirmation when these will be complete to carry out a further inspection (refer item 4.3.1).

We carried out an inspection of the assisted changing rooms with the Board and Brookfield and confirmed that all the incomplete works had been addressed.

Supervisor's Notification of Defect No 142 was issued during November.

- Seeking confirmation when the incomplete cladding on the underside of the Link Bridge between Royal Hospital for Children and the Neonatal Unit will be carried out.

Brookfield has confirmed that this has been inspected and passed to their Sub-contractor who will rectify this defect early December 2015 (refer item 4.4.13).

Supervisor's Communication General Matters / Other Instructions No 252 was issued during November.

- Seeking confirmation as to the cause of the damage to the sandstone rain screen wall at the corner of the Royal Hospital for Children adjacent to the Children's Park and proposed remedial measures.

Brookfield consequently investigated the damage and do not believe that this was caused by their works at the Children's play area (refer item 3.1.1)

2.0 DESIGN COMPLIANCE CHECK

Currently nothing to report

3.0 PROCEDURES REVIEW

3.1 CONTRACTOR'S QA PROCEDURES and COMPLIANCE INSPECTIONS

Brookfield is dealing effectively with the post completion defects reported by the Board and the residual defects which we have raised.

3.1.1 General Inspections

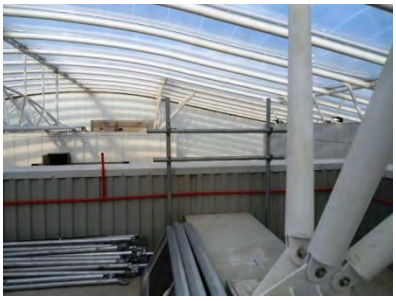
Following a joint inspection of the theatres and adjoining rooms on Level 2 we identified cracks in the following rooms:
THE-124 General Theatre 6 ENT: Crack below the window.
THE-232 Interventional 1 Vasco/Urology: Horizontal crack right hand side of the touch screen. Brookfield confirmed that this is complete.

A further inspection was carried out in Ward 4B with the Board and Brookfield following the works. This was to ensure that the rooms had an air flow between 5 and 10 pascals. Brookfield presented the Board with a handover file which contained all the test certificates in relation to the works.

During an inspection of the Children's Roof adjacent to Plantroom 41A we noted that there were no bulkhead lights fitted above the doors. There were also no lights fitted in the room on the roof providing access and egress via the cat ladder in Core L. These were not taken in the approved drawings. Brookfield has issued a communication to BMCE M&E Managers for action / response. See Supervisor's Communication General Matters / Other Instructions (CI 13.1) No 246.
As this is a potential health and safety issue we presumed that this would have been either addressed or raised at another forum but it has not been addressed. Brookfield has advised that lights were never a consideration and are not part of the signed of drawings.

We noted that there is damage to the rain screen wall at the corner of the Royal Hospital for Children adjacent to the Children's Park. The rain screen sandstone cladding has sustained impact damage at ground floor level just below the windows. This may have been as a result of the adjacent works. We requested Brookfield to investigate the cause of the damage and advise on the proposed remedial action. We also asked them to confirm their proposals to prevent further incidents. Brookfield consequently investigated the damage and do not believe that this was caused by their works at the Children's play area. The type of plant that is working at that corner would have caused damage at a different height / location if it had come into contact with the building.
The only other activity within the area is the erection of the 20ft Christmas tree at the entrance of the Children's hospital. It is mounted in a concrete base which seems to have been sat in position by a forklift / Hiab, with the only access being round that corner. Following Brookfield's response, Supervisor's Communication General Matters / Other Instructions (CI 13.1) No 252 is now closed out.

3.1.2 Post Completion Inspections / Issues



There is temporary scaffolding providing perimeter protection at concrete floor beams above the cores accessed from Level 12. The client intimated that protection is required. Brookfield has confirmed that M&S Engineering has taken site measurements and we await a date when the work will commence. See Supervisor's Communication General Matters / Other Instructions (CI 13.1) No 242.

3.1.3 Post Completion Defects

Below is the current status with Defects.
Final Sweep – 8 (18 Structal)
FM First Summary – 212 Open, 205 In Progress, 1660 Closed.
There are numerous reports of defects in relation to the operation of the blinds. Brookfield confirmed that their sub-contractor TDSL is currently carrying out remedial works to broken blinds and is repairing not only those reported through the FM Schedule but also other defects that they discover.

3.2 WITNESS TESTING AND COMMISSIONING

Following the discovery that Air Permeability Tests were not carried out within 36 isolation rooms in accordance with the Employer's Requirements NHS Guidance Documentations, document HBN 04-01. Brookfield has completed tests and remedial work to ensure the rooms are compliant.

During November we were in attendance during the successful air permeability test of the two remaining rooms to be tested in the Schiehallion Ward A2 Rooms 20 and 23. Brookfield has provided a summary report detailing the works that was carried out to 36 rooms along with the test certification. Consequently Supervisor's Notification of Defect (C 42.2) No 139 is closed out.

3.3 BOARD EQUIPMENT INSTALLATION

Currently nothing to report

3.4 NON CONFORMANCE REPORTS

Brookfield has carried out the remedial measures in relation to manholes which are below the level of the surrounding roads. Brookfield has closed out their NCR

4.0 CONSTRUCTION REVIEW

4.1 VISITS TO THE WORKS

Site inspections were carried out by the NEC3 Supervisor's on the 4th, 11h, 18th, and 25th November 2015.

4.2 ELEMENTS OF THE WORKS AVAILABLE FOR INSPECTION

Snagging works to externals

4.3 CURRENT OBSERVATIONS

4.3.1 Structural and Civil Works

Reference Car Park 1, Brookfield is still working through the list of defects. They have informed us that CLAD UK are no longer trading consequently there is unfinished work. Brookfield is awaiting Dunnes getting back to them about the outstanding items.

Maternity VIE
We have received drawings from Brookfield showing the piles, slab and walls. We will continue to monitor this work.

4.3.2 Children's Area

Nothing to report

4.3.3 External Works

Govan Road/Renfrew Road & ACH Entrance Road.
Road surfacing work has been completed on the dual carriageway leading to Govan Road, and at the south of the main building, with a generally good quality finish. Local ponding on the north side of Govan Road remains outstanding. The footpath ponding at the extended footpath area on the east side of the maternity unit remains outstanding.

We inspected the remedial work to the address the ponding on the new extended footpath to the east side of the maternity unit. We can confirm that this has been carried out satisfactorily. Consequently Supervisor's Communication General Matters / Other Instructions (CI 13.1) No 237 is closed out.

Levels were taken to determine if the ponding to the granite hardstanding around the main Children's entrance canopy were compliant. The levels were within the required tolerances. Adjustments were made to the canopy Children's entrance to resolve windblown water.

4.3.4 Mechanical Services

We received copies of the water test results and these were satisfactory.

4.3.5 Electrical Services

Nothing to report

4.3.6 Doors

Nothing to report

4.3.7 Windows

Nothing to report

4.3.8 Ducting

Nothing to report

4.3.9 Floors

Nothing to report

4.3.10 Blockwork

Nothing to report

4.3.11 Heating

Nothing to report

4.4 CURRENT DEFECTS

4.4.1 Supervisor's Notification of Defect (Cl 42.2) No 88.

The capping piece on the north facing elevation of the Children's Hospital has two discoloured areas. We asked Brookfield to confirm their remedial action to address this and confirm when complete. They have confirmed that work is being planned to be carried out. See outstanding works list.

4.4.2 Supervisor's Notification of Defect (Cl 42.2) No 93

The NHS Fire Risk Assessor has been on site and noted that the air sampling unit within General Theatre One on the second floor has been painted over. We also noted that another unit in Theatre 4 has been partially painted over. These should be paint free. Brookfield has confirmed that the air sampling unit in the main Atrium north facing wall has been rectified and confirmed by J Miller. Consequently Supervisor's Notification of Defect (Cl 42.2) No 93 is closed out.

4.4.3 Supervisor's Notification of Defect (Cl 42.2) No 99

The joints at window cills are opening up. We asked Brookfield to confirm their remedial action to resolve this problem. They have filled and painted the joints but they have opened up again. They have sealed a joint with sealant to determine if this is a better solution. They intend to fill these cracks at the end of the defect liability period.

4.4.4 Supervisor's Notification of Defect (Cl 42.2) No 116

Following a joint inspection of Car Park 1 we identified various defects / snags which were issued to Brookfield. We asked them to confirm when these have been addressed. We have recently undertaken a joint inspection with Brookfield and noted that some of the Defects have been rectified. They are attending to the remaining outstanding Defects and anticipate that these will be completed by the 9th December.

4.4.5 **Supervisor's Notification of Defect (Cl 42.2) No 124**

The Board have employed Competent Body Zurich Engineering to undertake an inspection of the pressure systems associated with the new buildings and systems handed over on 26th January 2015. This was done in order produce the statutory written scheme required under the Pressure Systems Safety Regulations (PSSR) 2000 for the safe operation and inspection of relevant systems.

During their review, a number of defects have been found within the installed plant. Brookfield responded as follows. All of the relevant documentation is with Zurich and Brookfield awaits the Assembly Declaration of Conformity.

1) Configuration of boiler safety valves.
   Brookfield response: Design drawings were discussed with NHS and Zurich and this is now complete.
2) A safe method of discharge of medium pressure/temperature water and steam blow off from boilers (120 degC / 5.7bar).
   Brookfield response Design drawings were discussed with NHS and Zurich and this is now complete.
3) Certificate of Conformity for boilers.
   Brookfield response: Issued to NHS Zurich.
4) Certificate of Conformity for economisers.
   Brookfield response: Issued to NHS Zurich.
5) Certificate of conformity for all pressure systems pipework.
   Brookfield response: Issued to NHS Zurich.
6) CE marking of pressure vessels and heat exchangers.
   Brookfield response: Complete.
7) Pressurisation Units – safety vales rating and fixing requirements.
   Brookfield response: Complete.
8) Boiler drain points.
   Brookfield response: Complete.

All of the relevant documentation is with Zurich and Brookfield awaits the Assembly Declaration of Conformity.

4.4.6 **Supervisor's Notification of Defect (Cl 42.2) No 125.**

Following recent excavations around the buildings to expose and repair collapsed main drains, the Board request video surveys to be undertaken and reports provided of the repaired drain runs and also other neighbouring runs that may have been affected by proximity to the 200t crane. Brookfield has confirmed that the survey is complete and will issue to the Board. Dunnes are uploading information onto Zutec.

4.4.7 **Supervisor's Notification of Defect (Cl 42.2) No 129.**

The Bicycle Shelter roof does not drain rainwater to the two corner outlets, consequently the rainwater is ponding. We asked Brookfield to confirm their proposed remedial action to resolve this defect. They have confirmed that following a meeting with the designer a level survey is required. The plan is to introduce a further outlet and be complete by the end of December.

4.4.8 **Supervisor's Notification of Defect (Cl 42.2) No 132**

The concrete joint between the 6th floor and the down ramp is breaking up. We asked Brookfield to confirm the remedial measures to address this defect. They have instructed Dunne to carry out remedial works but await details from WSP.

4.4.9 **Supervisor's Notification of Defect (Cl 42.2) No 134**

The remaining defects as listed below have been amalgamated under Supervisor's Notification of Defect (Cl 42.2) No 134 and Brookfield is currently reviewing the status of the items.
Below is the current status of the outstanding Defects.

Level 00 –	60	Level 00 –	04
Level 01 –	12	Level 01 –	01
Level 02 –	39	Level 02 –	03
Level 03 –	01	Level 03 –	
Level 05 –	01	Level 05 –	
Level 08 –	03	Level 08 –	
Level 09 –	01	Level 09 –	
Level 10 –	09	Level 10 –	
Level 11 –	06	Level 11 –	
Total Defects at inspection 132		Total Defects remaining to be complete 08	

4.4.10 **Supervisor's Notification of Defect (Cl 42.2) No 137.**

It appears that the cladding on the west facing elevation has been damaged and an unsuccessful attempt has been made to repair the damage. We asked Brookfield to confirm when this defect has been rectified. They have confirmed that this has been passed onto the sub-contractor Prater to rectify the unsuccessful attempt at the repair.

4.4.11 **Supervisor's Notification of Defect (Cl 42.2) No 140.**

There are Defective spindles to privacy visicom panels within timber doors and screens throughout the hospital. This is due to the nylon washer being reshaped by the spindle under the weight of the glass. This has led to the spindle being unable to move the washer as their shapes are incompatible. We asked Brookfield to confirm when this defect will be addressed throughout the hospital. They have confirmed that the defect has been issued to their sub-contractor for action. All units will have new modified lifter installed; this is being reviewed by their sub-contractor. Once they have all relevant details from their sub-contractor they will issue us with a programme for rectification.

4.4.12 **Supervisor's Notification of Defect (Cl 42.2) No 141**

The Board did not receive the cards/key numbers for the Bristol maid drugs cupboards at completion. We asked Brookfield to provide these without delay. Brookfield confirmed that 3No cards have been provided to the client with one still to be provided.

4.4.13 **Supervisor's Notification of Defect (Cl 42.2) No 142**

There is incomplete cladding on the underside of the Link Bridge between Royal Hospital for Children and the Neonatal Unit. As a result of the opening Pigeons are now nesting. We asked Brookfield to confirm when this will be covered over with a metal panel to match the cladding. They have confirmed that this has been inspected and passed to their Sub-contractor Townhill who will rectify this defect early December 2015.

5.0 INFORMATION REQUIRED
(Supervisor's Communication General Matters / Other Instructions - Clause 13.1)

Shading indicates item closed, clear indicates current item.

Item	Description	Date Requested	Comment
The following items are not closed out.			
237	Seeking confirmation on Brookfield's action to address the ponding to the footpath to the east side of the maternity unit.	08.01.15	Closed out
242	Seeking confirmation if permanent perimeter protection will be fitted above cores accessed from Level 12.	25.02.15	Response received.
246	No lights fitted to above the doors leading from the room to plantroom 41A	30.03.15	Response received.
252	Seeking confirmation as to the cause of the damage to the sandstone rain screen wall at the corner of the Royal Hospital for Children adjacent to the Children's Park and proposed remedial measures.	25.11.15	Closed out
The following items have previously been closed out.			
Item No's 1 to 236; 240; 241; 243 to 245; 247 to 251 have been closed-out but are not listed.			

6.0 SUPERVISOR'S TESTS and INSPECTIONS

Shading indicates item closed, clear indicates current item.

Ref	Title	Notified by	Status	Test Date
The following items are not closed out.				
01-377	Various tests undertaken and passed from the 09. 07.2012 To the 22.01 2015.			
378	Fire shut down test of AHU's during fire activity. PR21 AHU 19 did not shut down.	Brookfield	Retested successfully but not present. Refer Supervisor's Report No 50	23.01.2015
379-381	Various tests undertaken and passed from 23. 01.2015 to 02.04 2015.			

7.0 DEFECTS NOTIFICATIONS ISSUED

Shading indicates item closed, clear indicates current item.

Item	Description	Date Requested	Comment
The following items are not closed out.			
83	Seeking confirmation of remedial action to resolve ponding.	13.11.14	Response received.
88	Seeking confirmation of remedial measures to address the discolouration of the capping pieces.	20.11.14	Response received.
93	Confirm when the air sampling unit within General Theatre One and Theatre 4 are paint free and the unit in the Atrium has been fitted properly.	05.02.15	Closed out
99	Confirm to open window cill joints.	24.02.15	Response received.
116	Various defects car Park 1.	08.04.15	Response received.
124	Defects in relation to the Zurich Engineers inspection.	16.04.15	Response received.
125	Seeking video surveys with reject to drain repairs.	16.04.15	Response received.
129	Ponding to Bicycle Shelter.	11.05.15	Response received.
130	Various external fabric defects.	11.05.15	Response received.
131	PIR not functioning in room STW-041.	11.05.15	Closed out.
132	6th floor down ramp is break up.	13.05.15	Response received.
133	Ponding to main pedestrian entrance to Car Park 1.	13.05.15	Closed out.
134	The defects identified in Supervisor's Notifications of Defects No 106, 107, 112, 113, 115, 117, 118, 121, 126 and 128 have been either competed or substantially completed. These have been closed out and the remaining defects amalgamated under this Defect Notification.	03.06.15	Response received.
135	The door selector to the entrances adjacent to Hardgate Road does not allow the doors to close over properly. The primary opening door at the entrance to the main stair intermittently does not close over and remains in the open position.	16.06.15	Closed out.
136	Incomplete decoration and marks on walls.	18.06.15	Closed out.
137	Seeking confirmation when the damaged cladding has been rectified.	01.07.15	Response received.
138	4th floor door in the Car Park does not close over properly.	18.08.15	Closed out.
139	Confirm when Air Permeability Tests and associated remedial works are complete and provide test results.	02.09.15	Closed out.
140	Defective spindles to privacy visicom panels to timber doors and screens.	29.09.15	Awaiting a response
141	The Board did not receive the cards/key numbers for the Bristol maid drugs cupboards at completion. Please provide these without delay.	13.10.15	Response received.
142	Seeking confirmation when the incomplete cladding on the underside of the Link Bridge between Royal Hospital for Children and the Neonatal Unit will be carried out.	09.11.15	Response received.
All other Defects raised have been closed out.			

New South Glasgow Hospital
Adult and Children's Hospital and Energy Centre

NEC 3 Supervisors Report No. 56

December 2015

CAPITA

A47069198

CONTENTS

1.0 EXECUTIVE SUMMARY

2.0 DESIGN COMPLIANCE CHECK

3.0 PROCEDURES REVIEW

4.0 CONSTRUCTION REVIEW

5.0 INFORMATION REQUIRED

6.0 SUPERVISOR's TESTS and INSPECTIONS

7.0 DEFECT NOTIFICATIONS ISSUED

	Signed	**Date**
Originated by	Dave Ramsay	8th January 2015
Checked by	John Kilbane	8th January 2015

1.0 EXECUTIVE SUMMARY

In accordance with our NEC3 Contract, this is the monthly report for December 2015 on the activities carried out and responsibilities undertaken by the NEC3 Supervisors in connection with New South Glasgow Hospital Adult and Children's Hospital and Energy Centre.

In addition to this report, we also provide project specific monthly Supervisor Reports for NSGH Stage 3A (Phase 3 - Demolitions, Landscaping works including Children's Play Park, Car Park) and INS Entrance (including Overcladding Works).

During December 2015, we maintained our regular weekly meetings on site with Brookfield and information regarding drawings, quality issues and other technical matters has been supplied when requested.

Over the reporting period, we continued to access "Sypro" to monitor notifications raised and acknowledge that PMI's No's 453 to 460 and CE's No's 160 and 161 were raised during December 2015.
In conjunction, we continued to access "Aconex" to review construction approved drawings and specifications.

We continue to review the progress to remedy the defects outstanding at Stage 3 completion. Brookfield is dealing effectively with the post completion defects reported by the Board and those residual defects which we raised. We have also been reviewing the post completion defects reported in the FM Summary (refer item 3.1.3).
Regarding the current status of the FM First Defects Schedule there are: - 295 open defect items; 89 defect items in progress and 1914 defect items closed. In the Open Defects category, it is acknowledged that there are numerous defect items in relation to the operation of the blinds.

Brookfield is working through the list of defects identified prior to the car park being handed over to the Client. We await confirmation when these will be complete to carry out a further inspection (refer item 4.3.1).

Over the reporting period, we have not raised any formal Supervisor's Communication General Matters / Other Instructions - Clause 13.1

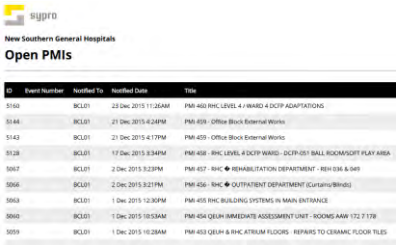
We did not raise any Supervisor's Notification of Defect - Clause 42.2 in December 2015. Section 4.4 of the report lists those Supervisor's Notification of Defects still to be closed out.

There are currently no outstanding matters in connection with Supervisor's Tests and Inspections. The Supervisor's Tests and Inspections listed in Section 6 have all been cleared and closed and as a formality we await confirmation from Brookfield's Commissioning Manager.

2.0 DESIGN COMPLIANCE CHECK

2.1 SYPRO and ACONEX

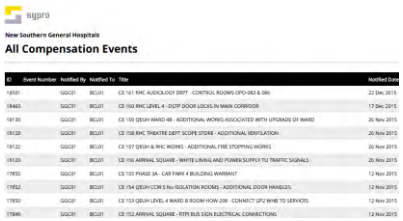
We continue to access "Sypro" to monitor notifications raised during the reporting period. We acknowledge that PMI's No's 453 to 460 and CE's No's 160 and 161 (extracts right) have been raised during December 2015. We continue to access "Aconex" to review construction approved drawings and specifications .


sypro

New Southern General Hospitals

Open PMIs

ID	Event Number	Notified To	Notified Date	Title
5160		BCL01	23 Dec 2015 11:26AM	PMI-460 RHC LEVEL 4 / WARD 4 DCTP ADAPTATIONS
5144		BCL01	21 Dec 2015 4:24PM	PMI-459 - Office Block External Works
5143		BCL01	21 Dec 2015 4:17PM	PMI-459 - Office Block External Works
5128		BCL01	17 Dec 2015 8:34PM	PMI-458 - RHC LEVEL 4 DCTP WARD - DCTP-051 BALL ROOM/SOFT PLAY AREA
5067		BCL01	2 Dec 2015 3:23PM	PMI-457 - RHC ◆ REHABILITATION DEPARTMENT - REH 036 & 049
5066		BCL01	2 Dec 2015 3:21PM	PMI-456 - RHC ◆ OUTPATIENT DEPARTMENT (Curtains/Blinds)
5063		BCL01	1 Dec 2015 12:30PM	PMI-455 RHC BUILDING SYSTEMS IN MAIN ENTRANCE
5060		BCL01	1 Dec 2015 10:53AM	PMI-454 QEUH IMMEDIATE ASSESSMENT UNIT - ROOMS AAW 172 F178
5059		BCL01	1 Dec 2015 10:28AM	PMI-453 QEUH & RHC ATRIUM FLOORS - REPAIRS TO CERAMIC FLOOR TILES


sypro

New Southern General Hospitals

All Compensation Events

ID	Event Number	Notified By	Notified To	Title	Notified Date
18181		GGC01	BCL01	CE 161 RHC AUDIOLOGY DEPT - CONTROL ROOMS OPD-063 & 066	22 Dec 2015
18403		GGC01	BCL01	CE 160 RHC LEVEL 4 - DCTP DOOR LOCKS IN MAIN CORRIDOR	17 Dec 2015
18133		GGC01	BCL01	CE 159 QEUH WARD 4B - ADDITIONAL WORKS ASSOCIATED WITH UPGRADE OF WARD	26 Nov 2015
18122		GGC01	BCL01	CE 158 RHC THEATRE DEPT SCOPE STORE - ADDITIONAL VENTILATION	26 Nov 2015
18122		GGC01	BCL01	CE 157 QEUH & RHC WORKS - ADDITIONAL FIRE STOPPING WORKS	26 Nov 2015
18123		GGC01	BCL01	CE 156 ARRIVAL SQUARE - WHITE LINING AND POWER SUPPLY TO TRAFFIC SIGNALS	26 Nov 2015
17855		GGC01	BCL01	CE 155 PHASE 3A - CAR PARK 4 BUILDING WARRANT	12 Nov 2015
17852		GGC01	BCL01	CE 154 QEUH CCN 5 No ISOLATION ROOMS - ADDITIONAL DOOR HANDLES	12 Nov 2015
17850		GGC01	BCL01	CE 153 QEUH LEVEL 4 WARD B ROOM HOW 208 - CONNECT GP2 WHB TO SERVICES	12 Nov 2015
17846		GGC01	BCL01	CE 152 ARRIVAL SQUARE - RTPI BUS SIGN ELECTRICAL CONNECTIONS	12 Nov 2015

3.0 PROCEDURES REVIEW

3.1 CONTRACTOR'S QA PROCEDURES

Brookfield is dealing effectively with the post completion defects reported by the Board and the residual defects which we have raised.

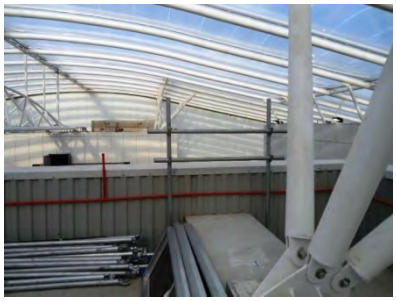
3.1.1 General Inspections

During an inspection of the Children's Roof adjacent to Plantroom 41A we noted that there were no bulkhead lights fitted above the doors. There were also no lights fitted in the room on the roof providing access and egress via the cat ladder in Core L. These were not taken in the approved drawings. Brookfield has issued a communication to BMCE M&E Managers for action / response. See Supervisor's Communication General Matters / Other Instructions (CI 13.1) No 246.

As this is a potential health and safety issue we presumed that this would have been either addressed or raised at another forum but it has not been addressed. Brookfield has advised that lights were never a consideration and are not part of the signed-off drawings.

3.1.2 Post Completion Inspections / Issues

There is temporary scaffolding providing perimeter protection at concrete floor beams above the cores accessed from Level 12. The client intimated that protection is required. Brookfield has confirmed that M&S Engineering has taken site measurements and we await a date when the work will commence. See Supervisor's Communication General Matters / Other Instructions (CI 13.1) No 242.



3.1.3 Post Completion Defects

FM First Defects Summary (File ref. 20160108 FM First Summary.xlsx)

Open Defects – 295; Defects in progress – 89; Closed - 1914

In the Open Defects category, it is acknowledged that there are numerous defect items in relation to the operation of the blinds and that there is also a number of defect items requiring further information.

3.2 WITNESS TESTING AND COMMISSIONING

Currently nothing to report

3.3 BOARD EQUIPMENT INSTALLATION

Currently nothing to report

3.4 NON CONFORMANCE REPORTS

Currently nothing to report

4.0 CONSTRUCTION REVIEW

4.1 VISITS TO THE WORKS

Site inspections were carried out by the NEC3 Supervisor Team on 2nd, 9th, 10th, 16th, 17th and 21st December 2015. Personnel undertaking inspections were: - Dave Ramsay (Lead and Architect Supervisor) and Willie Roxburgh (Civil/Structural Engineer Supervisor).

4.2 ELEMENTS OF THE WORKS AVAILABLE FOR INSPECTION

Snagging works to externals

4.3 CURRENT OBSERVATIONS

4.3.1 Structural and Civil Works

Reference Car Park 1, Brookfield is still working through the list of defects and informed us that CLAD UK are no longer trading consequently there exists unfinished work. Brookfield is awaiting Dunnes getting back to them about the outstanding items.

Maternity VIE
We have received drawings from Brookfield showing the piles, slab and walls. We will continue to monitor this work.

4.3.2 Children's Area

Nothing to report

4.3.3 External Works

Govan Road/Renfrew Road & ACH Entrance Road.
Road surfacing work has been completed on the dual carriageway leading to Govan Road, and at the south of the main building, with a generally good quality finish. Local ponding on the north side of Govan Road remains outstanding. The footpath ponding at the extended footpath area on the east side of the maternity unit remains outstanding.

4.3.4 Mechanical Services

We received copies of the water test results and these were satisfactory.

4.3.5 Electrical Services

Nothing to report

4.3.6 Doors

Nothing to report

4.3.7 Windows

Nothing to report

4.3.8 Ducting

Nothing to report

4.3.9 Floors

Nothing to report

4.3.10 Blockwork

Nothing to report

4.3.11 Heating

Nothing to report

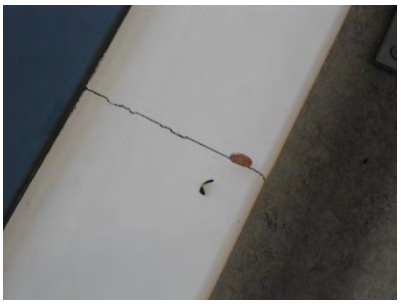
4.4 OPEN SUPERVISOR'S NOTIFICATION OF DEFECTS

4.4.1 Supervisor's Notification of Defect (Cl 42.2) No 88.

The capping piece on the north facing elevation of the Children's Hospital has two discoloured areas. We requested Brookfield to confirm the remedial action to address this and advise when complete. Brookfield has advised that work is being planned to be carried out and we await confirmation.

4.4.2 Supervisor's Notification of Defect (Cl 42.2) No 99

The joints at window cills are opening up. We requested Brookfield to confirm the remedial action to resolve this problem. Brookfield has filled and painted the joints but they have opened up again. Thereafter Brookfield sealed a joint with sealant to determine if this resolved the defect. Accordingly, Brookfield intends to fill these cracks at the end of the defect liability period. We shall therefore retain this defect notification open.



4.4.3 Supervisor's Notification of Defect (Cl 42.2) No 116

Following a joint inspection of Car Park 1 we identified various defects / snags which we issued to Brookfield and requested confirmation when these have been made good. We have recently undertaken a joint inspection with Brookfield and noted that some of the Defects have been rectified. Brookfield is attending to the remaining outstanding defects and anticipate that these will be completed by December 2015. We await confirmation.

4.4.4 Supervisor's Notification of Defect (Cl 42.2) No 124

The Board has employed Competent Body Zurich Engineering to undertake an inspection of the pressure systems associated with the new buildings and systems handed over on 26th January 2015. This was done in order to produce the statutory written scheme required under the Pressure Systems Safety Regulations (PSSR) 2000 for the safe operation and inspection of relevant systems.

During their review, a number of defects have been found within the installed plant. Brookfield responded as follows. All of the relevant documentation is with Zurich and Brookfield awaits the Assembly Declaration of Conformity.

1) Configuration of boiler safety valves.
   Brookfield response: Design drawings were discussed with NHS and Zurich and this is now complete.
2) A safe method of discharge of medium pressure/temperature water and steam blow off from boilers (120 degC / 5.7bar).
   Brookfield response Design drawings were discussed with NHS and Zurich and this is now complete.
3) Certificate of Conformity for boilers.
   Brookfield response: Issued to NHS Zurich.
4) Certificate of Conformity for economisers.
   Brookfield response: Issued to NHS Zurich.
5) Certificate of conformity for all pressure systems pipework.
   Brookfield response: Issued to NHS Zurich.
6) CE marking of pressure vessels and heat exchangers.
   Brookfield response: Complete.
7) Pressurisation Units – safety vales rating and fixing requirements.
   Brookfield response: Complete.
8) Boiler drain points.
   Brookfield response: Complete.

All of the relevant documentation is with Zurich and Brookfield awaits the Assembly Declaration of Conformity.

4.4.5 Supervisor's Notification of Defect (Cl 42.2) No 125.

Following recent excavations around the buildings to expose and repair collapsed main drains, the Board request video surveys to be undertaken and reports provided of the repaired drain runs and also other neighbouring runs that may have been affected by proximity to the 200t crane. Brookfield has confirmed that the survey is complete and will issue to the Board. Dunnes are uploading information onto Zutec. We request confirmation from Brookfield that this has been uploaded.

4.4.6 **Supervisor's Notification of Defect (Cl 42.2) No 129.**

The Bicycle Shelter roof does not drain rainwater to the two corner outlets, consequently the rainwater is ponding. We requested Brookfield to confirm their proposed remedial action to resolve this defect. They have confirmed that following a meeting with the designer a level survey is required. The plan is to introduce a further outlet and be complete by the end of December. We request current status of resolution of this defect from Brookfield.

4.4.7 **Supervisor's Notification of Defect (Cl 42.2) No 132**

The concrete joint between the 6th floor and the down ramp is breaking up. We asked Brookfield to confirm the remedial measures to address this defect. They have instructed Dunne to carry out remedial works but await details from WSP.

4.4.8 **Supervisor's Notification of Defect (Cl 42.2) No 134**

The remaining defects as listed below have been amalgamated under Supervisor's Notification of Defect (Cl 42.2) No 134 and Brookfield is currently reviewing the status of the items.
Below is the current status of the outstanding Defects.

Level 00 –	60	Level 00 –	04
Level 01 –	12	Level 01 –	01
Level 02 –	39	Level 02 –	03
Level 03 –	01	Level 03 –	
Level 05 –	01	Level 05 –	
Level 08 –	03	Level 08 –	
Level 09 –	01	Level 09 –	
Level 10 –	09	Level 10 –	
Level 11 –	06	Level 11 –	
Total Defects at inspection 132		Total Defects remaining to be complete 08	

4.4.9 **Supervisor's Notification of Defect (Cl 42.2) No 137.**

The cladding on the west facing elevation has been damaged and an unsuccessful attempt has been made to repair the damage. We requested Brookfield to advise when this defect is to be rectified. Brookfield has confirmed that this has been passed onto the relevant sub-contractor Prater to rectify the unsuccessful attempt at the repair.

4.4.10 **Supervisor's Notification of Defect (Cl 42.2) No 140.**

There are defective spindles to privacy visicom panels within timber doors and screens throughout the hospital. This is due to the nylon washer being reshaped by the spindle under the weight of the glass. This has led to the spindle being unable to move the washer as their shapes are incompatible. We requested Brookfield to advise when this defect will be addressed throughout the hospital and they have confirmed that the defect has been issued to their sub-contractor for action. All units will have new modified lifter installed; this is being reviewed by their sub-contractor. Once Brookfield has all relevant details from their sub-contractor they will issue us with a programme for rectification.

4.4.12 **Supervisor's Notification of Defect (Cl 42.2) No 141**

The Board did not receive the cards/key numbers for the Bristol maid drugs cupboards at completion. We asked Brookfield to provide these without delay. Brookfield confirmed that 3 no. cards have been provided to the Client with one still to be provided.

4.4.13 **Supervisor's Notification of Defect (Cl 42.2) No 142**

There is incomplete cladding on the underside of the Link Bridge between Royal Hospital for Children and the Neonatal Unit. As a result of the opening Pigeons are now nesting. We requested Brookfield to advise when this will be covered over with a metal panel to match the cladding. Brookfield has advised that this has been inspected and passed to their Sub-contractor Townhill who will rectify this defect early December 2015. We request current status of resolution of this defect from Brookfield.

5.0 INFORMATION REQUIRED
(Supervisor's Communication General Matters / Other Instructions - Clause 13.1)

Shading indicates item closed, clear indicates current item.

Item	Description	Date Requested	Comment
The following items are not closed out.			
242	Seeking confirmation if permanent perimeter protection will be fitted above cores accessed from Level 12.	25.02.15	Response received.
246	No lights fitted to above the doors leading from the room to plantroom 41A	30.03.15	Response received.
All other Supervisor's Communication General Matters / Other Instructions raised have been closed out. A total of 252 Supervisor's Communication General Matters / Other Instructions have been issued to date.			

6.0 SUPERVISOR'S TESTS and INSPECTIONS

Shading indicates item closed, clear indicates current item.

Ref	Title	Notified by	Status	Test Date
The following items are not closed out.				
01-377	Various tests undertaken and passed from the 09. 07.2012 To the 22.01 2015.			
378	Fire shut down test of AHU's during fire activity. PR21 AHU 19 did not shut down.	Brookfield	Retested successfully but not present. Refer Supervisor's Report No 50	23.01.2015
379-381	Various tests undertaken and passed from 23. 01.2015 to 02.04 2015.			

7.0 DEFECTS NOTIFICATIONS ISSUED

Shading indicates item closed, clear indicates current item.

Item	Description	Date Requested	Comment
The following items are not closed out.			
83	Seeking confirmation of remedial action to resolve ponding.	13.11.14	Response received.
88	Seeking confirmation of remedial measures to address the discolouration of the capping pieces.	20.11.14	Response received.
99	Confirm to open window cill joints.	24.02.15	Response received.
116	Various defects car Park 1.	08.04.15	Response received.
124	Defects in relation to the Zurich Engineers inspection.	16.04.15	Response received.
125	Seeking video surveys with reject to drain repairs.	16.04.15	Response received.
129	Ponding to Bicycle Shelter.	11.05.15	Response received.
130	Various external fabric defects.	11.05.15	Response received.
132	6th floor down ramp is break up.	13.05.15	Response received.
134	The defects identified in Supervisor's Notifications of Defects No 106, 107, 112, 113, 115, 117, 118, 121, 126 and 128 have been either completed or substantially completed. These have been closed out and the remaining defects amalgamated under this Defect Notification.	03.06.15	Response received.
137	Seeking confirmation when the damaged cladding has been rectified.	01.07.15	Response received.
140	Defective spindles to privacy visicom panels to timber doors and screens.	29.09.15	Awaiting a rectification programme
141	The Board did not receive the cards/key numbers for the Bristol maid drugs cupboards at completion. Please provide these without delay.	13.10.15	Response received.
142	Seeking confirmation when the incomplete cladding on the underside of the Link Bridge between Royal Hospital for Children and the Neonatal Unit will be carried out.	09.11.15	Response received.
All other Defects Notifications raised have been closed out. A total of 142 defects notices have been issued to date.			

From: Moir, Peter [redacted] on behalf of Moir, Peter
Sent: 02 December 2015 13:28
To: David Wilson
Subject: FW: PENTAMIDINE ROOM

David

Can you proceed as per below and make HOW 003 negative to corridor

Let me know when you are doing and I may drop by.

Thanks

Peter

From: Campbell, Myra
Sent: 02 December 2015 12:35
To: Moir, Peter; Inkster, Teresa (NHSmail)
Cc: McColgan, Melanie; David Wilson; Loudon, David
Subject: RE: PENTAMIDINE ROOM

Peter

I can confirm that HOW-003 will be the Pentamidine Room .

Regards
Myra

From: Moir, Peter
Sent: 02 December 2015 11:12
To: Inkster, Teresa (NHSmail)
Cc: McColgan, Melanie; Campbell, Myra; David Wilson; Loudon, David
Subject: RE: PENTAMIDINE ROOM

Teresa

Looking back to July 15, when the BMT situation arose, Brookfield was asked to check the airflows in Ward 4B and also the Pentamidine Room. At that time they were able to adjust the airflow in Room 004 and to achieve a negative pressure to the corridor of around -1.5pa. I have double checked with Brookfield this morning, they have confirmed that it was room 004 that was set up for the service as this was the room they were using, evidenced by an encapsulated A4 sign on the door noting Pentamidine etc and do not enter. Room 004 is the Intrathecal Treatment room and is fitted with a fixed ceiling pendant. Hence the reason for my question from Monday.

I propose**, unless any tells me otherwise**, to have the rooms returned to their designed use, the Pentamidine Room will be HOW-003 and Intrathecal Room HOW-004. On this basis HOW-003 will be reconfigured by Brookfield to operate with its 10 a/c hr and at a negative pressure to the corridor at around -1.5-2pa.
Note the Intrathecal room also operates at 10 ac/hr and should have balanced pressure to corridor.

The requirement for a room pressure gauge (analogue or digital) for the Pentamidine Room is not noted within the standard NHS ADB specification nor as far as I can see in any of the briefing information issued to Brookfield, as such none has been fitted. A gauge was not requested when the upgrade specification was discussed. If a gauge is desirable for this room the service will require to raise a change request and I can have it priced by Brookfield. What

I can confirm is that the gauges are not off the shelf and dependant on whether it is to be connected to the main Ward 4B panel in the staff base, or standalone on the BMS system will be a period of 6-8 weeks from placing an order till it will be in operation.

Myra ? Can you please confirm that HOW-003 will be the Pentamidine Room, I want Brookfield to return and check the room pressures and make any adjustments asap.

Teresa, if want to meet and discuss let me know.

Regards

Peter

From: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20) [redacted]
Sent: 01 December 2015 12:23
To: Moir, Peter; Campbell, Myra
Cc: McColgan, Melanie
Subject: RE: PENTAMIDINE ROOM

Peter - when we checked the pressures in these rooms both were positive - 003 was a bit lower than 004 at around 2.5pa. We should have an electronic gauge on this room similar to the ones on the BMT patient rooms - can one be fitted?

Kind Regards
Teresa

Dr Teresa Inkster
Consultant Microbiologist and Infection Control Doctor
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Moir, Peter [redacted]
Sent: 01 December 2015 12:15
To: Campbell Myra (NHS GREATER GLASGOW & CLYDE - SGA20)
Cc: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20); Mccolgan Melanie (NHS GREATER GLASGOW & CLYDE - SGA20)
Subject: PENTAMIDINE ROOM

Myra

There is some confusion as to which room is being used for Pentamidine Treatment, Brookfield belief it is room HOW-004; I believe it is HOW-003 as per the attached drawing and as per the Board?s instruction in 2013 to alter the room air pressure from balanced to negative (to corridor) with high air change rate.

To confirm I believe HOW-003 is the Pentamidine Treatment Room, can you confirm.

Thanks

Peter

From: Peter.Moir [redacted]
Sent: 01 December 2015 12:38

To: Moir, Peter
Subject:

****
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From: David Wilson [redacted] on behalf of David Wilson
Sent: 08 December 2015 11:24
To: Powrie, Ian
Subject: RE: Ward 2A: Isolation rooms Ventilation control failure

Ian,

Schneider are still working on this. They are now dealing with their tech team in the USA as the UK team could not get the cause of the problem. The Tech Team are currently analyzing a 20 minute data capture. Kenny was up again at the controllers this morning and we should get a further update tomorrow morning.

At the moment I can't give you a timescale – I would not have thought that this would have taken so long, but hopefully the next report will give us more information and inform a permanent solution.

Regards
David

David Wilson
Commissioning Manager - Construction

Brookfield Multiplex Construction Europe Ltd
Fairfield - Suite 12
1048 Govan Road
Glasgow, G51 4XS, United Kingdom

[redacted]
W www.brookfieldmultiplex.com

Please consider the environment before printing this email.

From: Powrie, Ian [redacted]
Sent: 07 December 2015 18:16
To: David Wilson
Subject: Ward 2A: Isolation rooms Ventilation control failure

David,

As you are aware the isolation rooms have been switched to manual control for about 6-8 weeks now as a result of a controls issue which resulted in the loss of positive pressure in the isolation rooms presenting an unacceptable risk to the vulnerable patients within these protective environments.

I would be grateful if you could provide me with an update on the status of this issue and the progress made by the Schneider technical division?
It is important that I have sufficient detail on the solution to this problem and the expected time scale for resolution for the RCH Director before by tomorrow afternoon.

Regards

Ian

[redacted]
Sector Estates Manager (South & Clyde)
Queen Elizabeth University Hospital Campus,
1345 Govan Rd,
Glasgow,
G51 4TF,
[redacted]

****
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From: Gillon Armstrong [redacted] on behalf of Gillon Armstrong
Sent: 15 December 2015 14:32
To: Moir, Peter
Subject: RE: BMTU Rooms

Peter,

These mastic works have been complete.

Thanks

Gillon Armstrong
Section Manager - Construction

Brookfield Multiplex Europe
Site Office
Institute of Neurological Science
Queen Elizabeth University Hospital
1345 Govan Road
Glasgow, G51 4TF, United Kingdom
[redacted]
Web www.brookfieldmultiplex.com

Please consider the environment before printing this email.

From: Moir, Peter [redacted]
Sent: 03 December 2015 10:47
To: Gillon Armstrong
Subject: FW: BMTU Rooms

Gillon

Would you mind sorting out the 6 or so silicone items, if you need a PMI let me know.

Regards

Peter

From: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20) [redacted]
Sent: 03 December 2015 10:10
To: Moir, Peter; Powrie, Ian
Cc: Cruickshank, Anne; Hunter, William
Subject: RE: BMTU Rooms

Thanks Peter - I have attached John's report so you can see what still needs to be sealed
Kind Regards
Teresa

Dr Teresa Inkster
Consultant Microbiologist and Infection Control Doctor

Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Moir, Peter [redacted]
Sent: 03 December 2015 10:05
To: Powrie Ian (NHS GREATER GLASGOW & CLYDE - SGA20)
Cc: Cruickshank Anne (NHS GREATER GLASGOW & CLYDE - SGA20); Hunter William (NHS GREATER GLASGOW & CLYDE - SGA20); Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20)
Subject: RE: BMTU Rooms

Ian

Following an email from Myra Campbell confirming HOW-003 will be the Pentamidine Room I have asked David Wilson of Brookfield to return early next week and set this room to operate at negative pressure to corridor while maintaining the 10a/c. As this remains their contractual responsibility they have agreed to do this, should I ask David to discuss plans with you beforehand?? I understand the Pentamidine Room is on a separate AHU from the Ward 4B unit.

Teresa – Ian forwarded me an email noting some actions for Brookfield in Ward 4B, I could not see what these were do you have an understanding suspect follows on from John Hood's inspection.

Regards
peter

From: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20) [redacted]
Sent: 03 December 2015 09:53
To: Powrie, Ian; Moir, Peter
Cc: Cruickshank, Anne; Hunter, William
Subject: RE: BMTU Rooms

Thanks Ian

With regards to the Pentamidine room , both rooms 003 and 004 were at positive pressure when we checked them last week . I agree there should be a pressure alarm in this room and as I have mentioned to Peter it would be desirable to have an electronic guage outside so that staff have a visual of the pressure. I will forward you the relevant email trail . There is some confusion over which of the 2 rooms is the designated one so we will need to have that clearly identifiable for staff.

Do we know the likely timescale for rectifying the Pentamidine room ? Can changes to the ventilation in this room be made without affecting the main unit?

Thanks for the water testing results. Can you forward me the results for Legionella and Pseudomonas when you get them . A separate system for renal dialysis is a good thing as it means we could dose the rest of the unit with silver hydrogen peroxide in the future if we need to (dangerous for dialyisis patients) . Chlorine dioxide would be the other option.

Peter Hoffman is less concerned about the air con units than I am but it would still be preferable to have these Hepa filtered if possible.

Happy with your plans for filter replacement and vent cleaning.

Annual verification is going to be problematic and will require close liaision with the clinical team. How long will the plant need to be shut down for ?

Finally does anyone have information on the rooms in the renal unit which are the two lobbied side rooms designated for 'infected' BMT patients - it would be useful for me to see validation reports for these . Do we know whether these rooms have been adequately sealed and have the Hepa filters now been fitted?

One final question ! - are 6 ACH the maximum we can achieve in the patients rooms . This is acceptable but the desirable ACHs are 10 (as per HTM 0301)

Kind Regards
Teresa

Dr Teresa Inkster
Consultant Microbiologist and Infection Control Doctor
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Powrie, Ian [redacted]
Sent: 02 December 2015 17:50
To: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20); Moir Peter (NHS GREATER GLASGOW & CLYDE - SGA20)
Cc: Cruickshank Anne (NHS GREATER GLASGOW & CLYDE - SGA20); Hood John (NHS GREATER GLASGOW & CLYDE - SGA20); Hunter William (NHS GREATER GLASGOW & CLYDE - SGA20)
Subject: RE: BMTU Rooms

Hi Teresa,

Brookfield's position is that the rooms have passed the prescribed air permeability test within SHPN 04 supplement 1 and therefore meet the criteria set under the contract, a Project Managers Instruction is required for Brookfield to address this points, Peter Moir can you please issue an instruction to ensure that this is completed before the last set of microbiological tests are carried out?

In addition there are 7 rooms where hatches have been opened since Johns review to allow for replacements of heating valve replacements where the temperatures were found to be excessive, the hatches were resealed on completion.

The rooms concerned are:

Bed	Disc No
90	HOW-029
89	HOW-031
92	HOW-024
93	HOW-021
94	HOW-020
96	HOW-015
97	HOW-012

With regards to the Pentamidene room, I understand that the room that was specified for this function was HOW-003, however room HOW-004 has been used for this function, can you please confirm which of the 2 rooms John tested? Question was raised about possibility of adding a pressure alarm to this room, Peter could this be raised as a PMI?

I have attached the results of 2 sets of water tests of the sentinel points carried out since the unit was handed over to verify that the water control programme had been maintained during refurbishment?

The results are clear although you will see that the water temperatures on the first set of results were out with the control limits, we have since been flushing the outlets for 10 minutes daily which has brought the temperatures with in control limits.

Further to your instruction at last week's BMT Unit Transfer meeting of the 23rd Nov 2015, that Pseudomonas sampling was required due the use of water outlets containing flow control roses, I have initiated the sapling of all isolation & en-suite rooms, clean and dirty utilities as well as the DSR mop sink, pentamadine room aroma therapy rooms for both Legionella and Pseudomonas today, if there are negative results from these tests this will allow sufficient to sanities and retest in time for the proposed transfer for the week end of 19th Dec 2015.

The system can be can be chemically sanitised if required.

Renal dialysis points in the unit - Unfortunately I take it this is a separate system?

Additional questions coming out of last week's meeting:

1. Nurses Station Air Conditioning units: following your recommendation that these units should not be deployed in the BMT unit due to the potential to circulate particulate, I am still investigating the option to replace these units with HEPA filtered versions?
2. Estates Program for HEPA filter replacement and vent cleaning:
    a. HEPA replacement, Brookfield recommendations are that the terminal HEPA filters in the rooms be replaced on a 6 monthly programme, however I do not agree with this, standard specification from HEPA filter manufactures these filters should have a 3-5year life expectancy, I would therefore propose that they be verified once per year on the special ventilation system verification programme. The secondary check will be if the room pressure falls below 5pa this would be a potential indicator that the filter is dirty and requires to be replaced.
    b. Vent Cleaning: as the rooms are ultra clean standard complete with HEPA filter the supply vent should not be subject to dirt collection and the extract will not be subjected to the usual regenerated dust of a standard environment, therefore I would again propose that the vent cleaning be carried during the annual verification of each room.

With regards to annual verification of the central ventilation plant, this would normally require a plant shutdown for maintenance and testing, consideration will be required form a clinical\ICT perspective as to how this will be facilitated, can you please advise.

Regards

Ian

[redacted]
Sector Estates Manager (South & Clyde)
Queen Elizabeth University Hospital Campus,
1345 Govan Rd,
Glasgow,
G51 4TF,
[redacted]

From: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20) [redacted]
Sent: 02 December 2015 15:02
To: Powrie, Ian
Cc: Cruickshank, Anne; Hood, John
Subject: FW: BMTU Rooms
Importance: High

Dear Ian - please see attached report from John Hood in relation to the adult BMT. I had asked him to verify the pressures and undertake smoke testing last week.

As you will see there are some issues with sealing around hatches in some of the bedrooms and a couple of toilets - can this be actioned ASAP.

Peter Moir is dealing with the pentamidine room pressure issue - Brookfield need to rectify this.

I am still waiting for the results of water testing and HPS are now asking about water control - can you forward me any information you have . Do we have the ability to dose the water supply with Chlorine dioxide if we need to ? I note there are a couple of renal dialysis points in the unit - I take it this is a separate system?

Kind Regards
Teresa

Dr Teresa Inkster
Consultant Microbiologist and Infection Control Doctor
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Hood, John [redacted]
Sent: 02 December 2015 14:13
To: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20)
Subject: BMTU Rooms

Dear Teresa,

Sorry I have added the following sentence to the attached document:
*** All pressure readings taken by me tallied (pretty well exactly) with the digital readings appearing on the readouts for each room.**
Otherwise it does not really make sense!

KR
John

****
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From: Inkster Teresa (NHS GREATER GLASGOW & CLYDE)
Sent: 08 December 2015 16:33
To: Marshall Julie (NHS GREATER GLASGOW & CLYDE); Campbell Myra (NHS GREATER GLASGOW & CLYDE); Leighton Sheenagh (NHS GREATER GLASGOW & CLYDE); Parker, Anne; Mclaughlin Mary (NHS GREATER GLASGOW & CLYDE); McArdle, Alyson; brian.jones[redacted]; Freel Joanne (NHS GREATER GLASGOW & CLYDE); Mccolgan Melanie (NHS GREATER GLASGOW & CLYDE); McQuaker, Grant; Boyd Robert (NATIONAL SERVICES SCOTLAND); Powrie Ian (NHS GREATER GLASGOW & CLYDE); Williams Craig (NHS GREATER GLASGOW & CLYDE); Walsh Thomas (NHS GREATER GLASGOW & CLYDE); Cruickshank Anne (NHS GREATER GLASGOW & CLYDE); Rankin Annette (NATIONAL SERVICES SCOTLAND)
Subject: 20151209 (16.33) T Inkster Air sampling results - attached
Attachments: Air testing 4B Adult BMT.doc

Dear all

As requested at yesterdays meeting I have attached tables of air sampling results in ward 4B to date.

Kind Regards
Teresa

Dr Teresa Inkster
Consultant Microbiologist and Infection Control Doctor
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Marshall, Julie [redacted]
Sent: 03 December 2015 10:28
To: Campbell Myra (NHS GREATER GLASGOW & CLYDE - SGA20); Leighton Sheenagh (NHS GREATER GLASGOW & CLYDE - SGA20); Hood John (NHS GREATER GLASGOW & CLYDE - SGA20); Parker, Anne; Mclaughlin Mary (NHS GREATER GLASGOW & CLYDE - SGA20); McArdle, Alyson; brian.jones[redacted]; Freel Joanne (NHS GREATER GLASGOW & CLYDE - SGA20); Mccolgan Melanie (NHS GREATER GLASGOW & CLYDE - SGA20); McQuaker, Grant; Boyd Robert (NATIONAL SERVICES SCOTLAND); Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20)
Subject: Notes of BMTU meeting 30.11.15 / Details on next meeting 07.12.15

Dear all

Please see meeting notes attached.

The next meeting is on Monday 07.12.15 at 1pm in Level 1, Stroke Ward Seminar room, STW-011, QEUH**.**

Regards

Julie

Julie Marshall
PA to Myra Campbell, Clinical Service Manager - Clinical Haematology
Room 2, ward B8, L4
Beatson Oncology Centre
1053 Great Western Road
Glasgow G12 0YN

[redacted]

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Air testing 4B Adult BMT

Particle counts

	20/11/15	**27/11/15**	**4/12/15**	**11/12/15**	
Location		People in unit – estates	Furniture in unit		
Room 76	726				
Room 77	181	364			
Room 78	268		641		
Room 79	407	187			
Room 80	196				
Room 81	203				
Room 82	282				
Room 83	589	236			
Room 84	352		975		
Room 85	143		603		
Room 86	286	**1019**			
Room 87	247		751		
Room 88	169				
Room 89	119	**1109**			
Room 90	139				
Room 91	154		951		
Room 92	113	**3972**			
Room 93	189		776		
Room 94	243	**2131**			
Room 95	246		831		
Room 96	226	**4187**			
Room 97	310		**1290**		
Room 98	465				
Room 99	565	424			
Nurses station	3619	3614	1988		
Corridor	603	3064	3619		
Prep room		**8733**	**17551**		
Outside air	51038	79090	248344		

Air sampling for fungi

20/11/15		**27/11/15**	**4/12/15**	**11/12/15**
		People in unit Further ID awaited	Furnishings in unit	
Room 76	NG (no growth)		Results outstanding	
Room 77	NG			
Room 78	NG			
Room 79	NG			
Room 80	NG			
Room 81	NG			
Room 82	NG			
Room 83	NG			
Room 84	NG			
Room 85	NG			
Room 86	NG	**7 colonies 30°C** **2 colonies 22°C**		
Room 87	NG			
Room 88	NG			
Room 89	NG	**1 colony 30°C** **1 colony 22°C**		
Room 90	NG			
Room 91	NG			
Room 92	NG			
Room 93	NG			
Room 94	NG			
Room 95	NG			
Room 96	NG			
Room 97	NG			
Room 98	NG			
Room 99	NG			
Nurses station	NG	**2 colonies 22°C**		
Corridor	NG	**1 colony 30°C** **2 colonies 22°C**		
Prep room	Not tested	**1 colony 30°C**		
Outside air	Not tested	Not tested		

27c. email

[redacted]

From: Peters, Christine
Sent: 18 December 2015 12:18
To: Powrie, Ian
Cc: Peters, Erica
Subject: 5C - Infectious Diseases Unit

Hi Ian,

I have had discussions with Dr Peters, ID Consultant, regarding the accommodation on 5c.

Please could you clarify what the ACH s are in the single rooms, any pressure differentials and the flow of air through the ward as per design.

Kind regards,

[redacted]
Dr Christine Peters
Consultant Microbiologist
Southern General Hospital
GGC
[redacted]
[redacted]

From: David Wilson [redacted] on behalf of David Wilson
Sent: 13 January 2016 17:02
To: Moir, Peter
Subject: RE: QEUH Ward 4B - Services Drawings

Peter,

I will look out the info and pass it on.

David

David Wilson
Commissioning Manager - Construction

Brookfield Multiplex Construction Europe Ltd
Fairfield – Suite 12
1048 Govan Road
Glasgow, G51 4XS, United Kingdom

[redacted]
W www.brookfieldmultiplex.com

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From: Moir, Peter [redacted]
Sent: 13 January 2016 14:15
To: David Wilson
Subject: FW: QEUH Ward 4B - Services Drawings

David

Can you provide me with the detail of the new motors, inverters etc to respond to the question below.

If a problem give me a phone.

Thanks

Peter

From: Clarke Colin (NATIONAL SERVICES SCOTLAND) [redacted]
Sent: 13 January 2016 13:54
To: Moir, Peter
Cc: Storrar Ian (NATIONAL SERVICES SCOTLAND); O'Brien Geraldine (NATIONAL SERVICES SCOTLAND)
Subject: FW: QEUH Ward 4B - Services Drawings

Hallo Peter,

Further to our visit to ward 4b:-

Thank you for the zipped files - QEUH Ward 4B - Services Drawings

Part 2:-

According to info received end of last year (ex. Brookfield Matrix 4b upgrade)

The current ventilation system (Air handling unit 31 AHU63 located within Plantroom 31 on Level 3) serving Ward 4b is currently at its maximum performance and achieving approximately 6 air changes per hour. To ensure that there is some additional capacity within the supply unit, the motors, inverter drives (run and standby) and associated electrical supply will be upgraded. This will assist in achieving the desired room differential pressure (5-10pa) and allow for additional resistance as filters degrade. All filters within the AHU will be changed prior to re-commissioning and the AHU and supply duct work re-cleaned.

Can you obtain and provide me with full specification details of the upgraded AHU ?

Or let me know who might be technically best placed to provide this information, and I'll ask.

Thanks,

Colin

Colin Clarke
Energy Manager
Health Facilities Scotland
Procurement, Commissioning and Facilities
NHS National Services Scotland
Meridian Court
5 Cadogan Street
Glasgow
G2 6QE
[redacted]
www.hfs.scot.nhs.uk

_____

From: Frew, Shiona [redacted]
Sent: 24 December 2015 12:20
To: McLaughlan Edward (NATIONAL SERVICES SCOTLAND)
Subject: QEUH Ward 4B - Services Drawings

Dear Eddie

Further to you meeting yesterday with Peter Moir (Deputy Project Director) I have been asked to email you copies of the as-built ventilation drawings for ward 4b of the QEUH.
I have attached them as a zip file so I don't fill your mailbox up too much.
Peter is now on leave returning on 12th January 2016. If you require any further information prior to Peter returning back from leave then I suggest you contact David Loudon, Director of Facilities & Capital Planning. David's email address is [redacted] and his office number is [redacted].

kind regards

Shiona

Shiona Frew
NSGH Project Team
NHS Greater Glasgow & Clyde
Queen Elizabeth University Hospital Campus
New Office Building
Level 2, Zone 3, Room C2.13
1345 Govan Road
Glasgow G51 4TF
[redacted]

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From: David Wilson [redacted] on behalf of David Wilson
Sent: 13 January 2016 17:22
To: Moir, Peter [redacted]
Subject: QEUH - Ward 4b air changes

Peter,

We generally have between 6 and 7 ac/h as commissioned.

David

David Wilson
Commissioning Manager - Construction

Brookfield Multiplex Construction Europe Ltd
Fairfield - Suite 12
1048 Govan Road
Glasgow, G51 4XS, United Kingdom

[redacted]
W www.brookfieldmultiplex.com

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From: David Wilson [redacted] on behalf of David Wilson
Sent: 21 January 2016 12:32
To: Moir, Peter
Subject: RE: QEUH - Ward 4b

Peter,

The CVG are veiling void grilles (or transfer grilles) these are installed to allow the natural ventilation of the ceiling void in particular where gases are run through (natural gas or medical gas) so that in the event of a leak the gas does not build up in a void.

HEPAs could be fitted to the other supply grilles, by changing the grille housing and then re-balancing the system (the system will serve other areas on upper floors of the tower so we would also need access to these areas when re-balancing). We would also need to check if the AHU is capable of overcoming the additional resistance of the HEPAs.

David

David Wilson
Commissioning Manager - Construction

Brookfield Multiplex Construction Europe Ltd
Fairfield – Suite 12
1048 Govan Road
Glasgow, G51 4XS, United Kingdom

[redacted]
W www.brookfieldmultiplex.com

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From: Moir, Peter [redacted]
Sent: 21 January 2016 12:08
To: David Wilson
Subject: RE: QEUH - Ward 4b

David

Many thanks for confirming.

Quick question.....there are grilles in the corridor called CVG, what are they and what do they do, they don't seem to be connected to ductwork.

One other. In rooms with non heap filtered air, would it be possible to retrofit hepas to ensure all supply air in ward has been through hepa. This would be on basis ICT may allow reduction in variance between room and corridor pressure to around 5pa.

Thanks

P

From: David Wilson [redacted]
Sent: 21 January 2016 11:55
To: Moir, Peter
Subject: QEUH - Ward 4b

Peter,

The corridor is all extract ventilation and transfer grilles. There is supply air into the ancillary areas that I have identified on the attached drawings that are not HEPA filtered.

I hope this helps, let me know if you need any further information.

David

David Wilson
Commissioning Manager - Construction

Brookfield Multiplex Construction Europe Ltd
Fairfield - Suite 12
1048 Govan Road
Glasgow, G51 4XS, United Kingdom

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Open
Not Mercury

Wallace Whittle Site Observations

Inspection Date	Item No	WW Observation Details	Mercury Response	WW Comments	Mercury Confirmed Date for Completion
24.02.15	1	Ductwork offset angle at GF main entrance area to be reviewed.	All sets now changed throughout.		
	2	BMCE to review on site steelwork at 'through-through' lift – does this impact on the lower side lift entrance door ?	**BMCE- Steel now removed**	Noted	
17.03.2015	3	Issues with ductwork offsets. Refer to appended photographs.	All sets now changed throughout.	Noted	
31.03.2015	4	MEL to review trunking mounted tight to steel, suggest trunking should be set back off steel by approx 50mm	Space constraint, did not allow 50mm gap		
	5	Review heights of installed services, ensuring all at or above 2200mm AFGL (finish to be applied?)	Confirmed.	Noted	
	6	Ductwork installations progressing refer to previous reports for comments in ductwork offsets. Some appear to be installed quite low.	All sets now changed throughout.	Noted	
	7	MEL to review duct locations to rear of fan coil units. Some do not appear to have supply installed to date, with some supply ductworks installed to wrong side of fan coil unit (fan coil units to flip?) (typical photo appended	All now reviewed and closed out.	Noted	
	8	MEL to confirm fire barrier locations have been accounted for.	Confirmed.	Noted	
	9	Works to decked car park commenced, BMCE to advise if ducts to rear of remote car park area have been installed to date	BMCE - Ducts running parrallel with the retaining wall have been installed but not to the rear	Please advise when as builT info will be available for review	
	10	Circulate underground services as fitted drawings for review	BMCE- This is being done by Careys. BMCE will advise when complete	Confirmed date available?	
	11	Suspension fixings (Gripple): MEL to confirm all workforce/sub-contractors have been trained in the use of suspension fixings.	confirmed	Noted	
28.04.2015	12	Ramp luminaire fixings not very robust. Check seal also. (photos 1 and 2)	This is to be reviewed and changed. Possible change of fitting required due to fixing type.	Await delivery of replacement lights from Thorn.	
	13	Confirm tape for trace heating installations is provided by heat tape manufacturer (photos 3 and 4)	Confirmed	Noted	
	14	Mechanical installations advanced stage. Supports to be reviewed with mechanical engineer at next inspection.	Ready to review when required.		
	15	Ductwork installations commenced. Supports to be reviewed with mechanical engineer at next inspection.	Ready to review when required.		
	16	Check supports to WC ductwork (is there sufficient supports installed?) (photo 5)	Sufficient supports installed for length/size of duct. Please advise if you want additional supports here.	BMCE confirm that they have installed supports as per manufacturers requirements	
	17	Suspension wires cutting into insulation to be made good. (photos 6 and 7)	This has been resolved	Noted	
	18	MEL to review and make good insulation installation to ducts.	This has been resolved	Noted	
	19	Some FCU's appear low and restricted by steelwork, MEL to review locations onsite and move where necessary. (photos 11 and 12)	FCU shown is in print hub with ceiling at 2400mm. Filter does not require a lot of space to remove from unit and can be demonstrated on site when required.	BMCE to arrange demonstration	
	20	Duct offsets to be reviewed (photo 8)	All sets now changed throughout.	Noted	
12.05.2015	21	Contractor to confirm that ductwork fittings have been manufactured in accordance with DW144.	Confirmed	Noted	
	22	Contractor to confirm what type of seam has been used on the straight seamed ducts i.e. is it a grooved seam, continuous butt lap weld seam or spot/stitch weld and sealed lap joint (at 30mm centres).	The seam used for straight seamed ductwork is a lap seam (sealed).	BMCE confirm that ductwork is in accordance to DW144. Also reviewed on site	

	23	Contractor to confirm sealant has been used for the cross joints i.e. have they used sealant and is it in accordance with Section 8 of DW144.	MEL can confirm that a high pressure mastic has been used to seal all ductwork joints in accordance with section 8 of DW144.	Noted	
	24	Confirm the type of connections that have been used on the circular ducts i.e. socket and spigot or socket and spigot with adaptor.	MER to advise	MEL to provide details for WW to review. This was reviewed on site	
	25	All fittings on circular ductwork should be in accordance with Figures 125 – 152 of DW144. In particular offsets should be in accordance with Figure 134. Figure 125 gives a maximum offset of 30° to the horizontal and if it is more than that 45° bends should be used to create the offset. Furthermore there should be a length of straight then the offset. The Contractor appears to have cut the offset straight into the duct thus creating a greater resistance than we have allowed for. Refer to Photos 1 to 6. Acceptable refer to Photo 7.	All sets now changed throughout.	Noted	
	26	Contractor to check ductwork markings, some appear to be missing.	Resolved	Noted	
	27	There are a number of locations where ducts have been offset for no apparent reason, and some double offsets have been installed using 2 straight seamed offsets and a coupler. Review these areas and rectify where required. Refer to Photos 8 and 9.	Ductwork from the fan coil units have been installed to suit the co-ordination between the steelwork and other services. Excessive runs were avoided where possible	Noted	
	28	There are a number of instances where there are excessive duct runs from A/C units and this may affect the air flow due to high static pressure. There appears to be a number of A/C units that could have been installed in a better location to avoid the use of long lengths of ductwork from the A/C units to the terminal. Refer to Photos 10 and 11.	Ductwork from the fan coil units have been installed to suit the co-ordination between the steelwork and other services. Excessive runs were avoided where possible	Noted	
	29	Volume Control Dampers – there is inconsistency in the approach to access hatches i.e. in some instances they are provided in others they are not and in some locations they are not positioned appropriately. Our specification requires hatches to be positioned next to each VCD.	Most access doors have been installed at volume control damper location. However, if some have been missed we will rectify this and install.	Noted	
	30	The termination of the fresh air supply duct to the back of the A/C units does not appear to be in line with our detail in some locations. Ducts have also been installed to near the rear of the units making removal of the filter difficult. Contractor to review and rectify where required. Refer to Photos 12 to 17.	MER to advise	MEL to provide details for WW to review. Filter removal demo'd on site	
	31	Refrigeration pipework insulation – contractor to provide data sheet for the insulation being used and check the conductivity. If this insulation is proposed for the roof level pipework ensure that the insulation is sunlight I.E. UV resistant. We have also specified for the roof level pipework to be protected via aluminium cladding. Refer to Photo 18.	This was issued to Mark Dickson 27.05.15	Noted. This was issued to WW	
	32	Ductwork hangers/wires – a number of support wires appear to have excessive spacing or some not carrying the full load of the ductwork. Contractor to confirm that these have been installed as per the manufacturer's requirements. Refer to Photo 19 and 20.	Ductwork hangers will be installed at a maximum of 3m centres on horizontal ductwork as per DW144 and manufacturers requirements.	Noted	
	33	A/C units installed too close to building fabric not allowing access to rear. Contractor to review and rectify. Refer to photos 21 to 23.	Access to filter is ok, can be demonstrated on site where required.	BMCE to arrange demonstration	
	34	Fire alarm wiring commenced. Confirm cable clips are fire rated (metal). Refer to Photo 24.	Confirmed	Noted	
26.05.2015	35	Levels of trench on site to be reviewed by BMCE, does this step up towards service yard?	n/a		
	36	Line of linear heat detection tape appears to be missing between grids 1 and -1, MEL to review and advise.	This was left out due to installation of metal frame to this side of the basement. Now installed.	Noted. To be reviewed at next site visit. This is now installed and commissioned.	
	37	Fan coil units look to be installed very high (various heights throughout?). MEL to review heights against future maintenance access. (Photo 1 and 2)	FCUs positioned as per co-ordinated layouts. Access to FCU can be demonstrated on site if required.	BMCE to arrange demonstration. Demo'd on site	

	38	Review arrow directions on supply attenuators, do not all appear correct?	Reviewed and now OK.	Noted.	
	39	MEL to review close proximity of WAGO to rear of fan coil unit, possible access restriction. Please advise.	Access to filter is ok, can be demonstrated on site where required.	Noted.	
	40	Watch height of ceiling void baskets local to SCR area. Does this drop within lighting/ceiling zone?	Height ok.	Noted.	
	41	MEL to watch close proximity of WAGO to rear of fan coil unit, possible access restriction. (Photo 5)	Access to filter is ok, can be demonstrated on site where required.	Noted.	
	42	Lightning protection noted as not yet installed on gridline 3, please advise when remaining LPS is to be installed ?	Tapes now installed here.	Noted.	
	43	WAGO installations tight to ductwork insulation to be reviewed by MEL, access for cable installations etc ok? Any Impact on insulation? (Photo 3)	Confirm access ok, no impact to insulation	Noted.	
	44	Open ended pipe-work to be sealed between fixes (Photo 6)	Noted.	Still continue to see this on site.	
30.06.2015	45	Fan coil units look to be installed very high (various heights throughout?). MEL to review heights against future maintenance access.	FCUs positioned as per co-ordinated layouts. Access to FCU can be demonstrated on site if required.	BMCE to arrange demonstration. Demo'd on site	
	46	Review arrow directions on supply attenuators, do not all appear correct.	Reviewed and now OK.	Noted.	
	47	Confirm if ducts to speedgates have been installed? Not visible onsite.	**BMCE - Duct will be cut into a chanel in the screed. Setting out not know at time of screed installation**	Refer to MLA setting out layouts.Speedgates installed	
	48	Check cleat positions on ductwork. One cleat every 300mm.	Noted and confirmed.	Noted.	
	49	Check cable ties on trays covering the VRF pipe-work. Some loose areas that need to be checked.	This is temporary and will be clipped. Now resolved and tray covered with permanent solution.	Noted. BMCE to provide details.	
	50	Some rusting visible internally on roof AHU's where side panels not installed. To be made good. (Photo 4)	Available for inspection upon request.	Confirm when complete for inspection.	
	51	Open ended pipe-work to be sealed between fixes.	Noted.	Still continue to see this on site.	
	52	Stairwell cabling to Fire alarm to be relocated to come out into stair void in steelwork zone as discussed and agreed onsite. (Photo1)	Noted.	Confirm when complete for inspection.	
14.07.2015	53	Fire Hydrant pipework has been laid out around the site. Pipework is currently at risk of damage as site works continue and the pipe is unprotected. Measures are to be taken to protect the pipework to reduce risk of damage. (Pic 1)	Pipe now buried, tested and flushed through.	Observation will be recorded for future reference and warranty on installation.	
	54	Fan coil units look to be installed very high (various heights throughout?). MEL to review heights against future maintenance access. We require a response on this.	FCUs positioned as per co-ordinated layouts. Access to FCU can be demonstrated on site if required.	BMCE to arrange demonstration. Demo'd on site	
	55	Extract duct near core 1 clashing with syphonic drainage pipework. Ductwork incomplete. MEL to review.	Resolved	Noted.	
	56	Large valve installed on water services pipework near core 1. MEL to confirm that the valve is as per TUV SUD approved manufacturer, is the material suitable for installation to copper pipework, confirm that valve is WRAS approved, suitable for potable water installation and to confirm non-dezincifiable (Pic 2)	All confirmed and WRAS certificated supplied	Noted.	
	57	Did not see solenoid shut off valves installed on RWHS pipework serving toilets. Area had no lighting when inspected. MEL to confirm if these have been installed.	Solenoid valves normally closed, will be fited after testing of pipework and when power is available.	Further testing will be required after installation of valves.	
	58	WC walls appear sheeted without all handrier backboxes installed. Are they installed in line with MLA elevations?	1 handryer located at front and 1 at back due to space constraints. As per MLA elevations.	Noted.	
	59	Check the plaster board detail around ductwork entering cellular rooms. Is this in compliance with the acoustic requirements? (Pic 3)	BMCE-Noted and being addressed	Noted.	

	60	Note unnecessary offsets to some of the ductwork. MEL to review.	Ductwork offsets as per coordinated services drawings.	We await BMCE report on ductwork.	
	61	Check detail of fire dampers installed on ductwork at cavity barriers. (Pic 4)	Checked and confirm this is as per manufacturers guidelines. Reviewed with MD on site.	Noted.	
	62	Check ductwork supports. Are there sufficient supports and are they installed as per manufactures requirements?	Confirmed	Noted.	
	63	Note pegler valves used on water services pipework and al valve handles blue. This is not on TUV SUD approved list of manufacturers and we have no experience on the performance of these valves. (Pic 5)	Understand this is now agreed.	Observation stands as record of fact.	
	64	VCDs on core 1 toilet extract ducts not installed in location where they can be accessed from the removable tiles. MEL to review. (Pic 6)	Hatches installed in toilets. See MLA RCPs	VCD's to be installed as per WW location.- Access hatches have been installed as per architect layour and VCDs accessible	
	65	Fire dampers to be finished off around fire barriers.	Noted.	BMCE to provide further details.- Dampers have been reviewed and signed off by BC	
	66	VCDs on core 1 toilet extract ducts not installed in location where they can be accessed from the removable tiles. MEL to review. (Pic 6)	Hatches installed in toilets. See MLA RCPs	WW location.- Access hatches have been installed as per	
	67	Note level of light fittings installed above tank areas. MLE to review and check if there is sufficient space for access above tanks.	Confirmed	Noted.	
	68	MEL to confirm that trace heating has been installed to RWHS pipework.	Confirmed	Noted.	
	69	Dirt/scuffs on AHUs. MEL to clean and check that the protective paint work is not damaged. (Pic 7)	To be repaired/cleaned when further building works have been completed..	Noted.	
	70	Note damage to AHU roof. MEL to review. (Pic 8)	Will be resolved. Await VES reply/return for site visit. Roof now made good.	Noted.	
	71	Check cable ties on trays covering the VRF pipe-work. Some loose areas that need to be checked. Also need to add more ties to ensure that the tray is properly secured. (Pic 9)	This is temporary and will be clipped. Now resolved and tray covered with permanent solution.	Noted. MEL to provide details on clipping method.	
	72	Cable ties are currently plastic. These need to be changed to galvanised steel ties as they shall be more robust and suitable for the environment.	This is temporary and will be clipped. Now resolved and tray covered with permanent solution.	Noted. MEL to provide details on clipping method.	
	73	Ductwork g-clamps missing on main duct runs off the AHUs. (Pic 10)	Cleats installed prior to insulating	Noted.	
	74	Damage to packaged plant room. This damage needs to be rectified. (Pic 11)	Shroud will be changed.	Noted.	
	75	Please confirm that the ductwork green foam gaskets are suitable for the environment and is as per our specification i.e. will not support microbiological growth. (Pic 12)	Gasket data sheet supplied.	?	
	76	Please confirm that the turning vanes on the main duct are as per DW/144. (Pic 13)	This is confirmed.	Noted.	
	77	Some rusting visible internally on roof AHU's where side panels not installed. To be made good. Note all access points should be closed and locked when not being worked on. Various areas where AHU left exposed to elements where doors/panels left open with no site operatives in the area.	Noted. AHUs cleaned out and locked.	Noted. To be reviewed on site.	
	78	Debris within AHUs to be cleaned out.	Noted and completed.	Noted. To be reviewed on site.	
	79	Confirm when elec tray to stair 2 riser will be installed	Riser not available for M&E fit out at time of this inspection. Now ongoing.	Noted. Now installed	
	80	Open ended pipe-work to be sealed between fixes.	Noted.	–	
28.07.2015	81	Exposed HV cabling at substations following tarring of service yard to be reviewed. Levels to be reviewed and closing of of sub trench to be completed (Pics 7, 8)	BMCE- ongoing.		
	82	Lids on large service chamber to be reviewed further onsite with BMCE following discussions with Mark Dickson (Pic 13). Concern about water entry.	BMCE- Lid installation to be finished off to the standard detail.		

	83	Scuff marks on transformers to be made good (Pic 9)	noted.	Confirm when complete.	
	84	Padlock to be provided to each transformers tap changers before made live (Pic 10)	noted	Confirm when complete.	
	85	Confirm detail for busbar link to back of transformers, does the top of the LV chamber require to be cut onsite?	This has been resolved. Chamber turned.	Noted. To be reviewed on site.	
	86	Lighting point at top of stair 1A not visible, confirm if cabling installed and cable penetration on partition yet to be formed?	Confirm cable is installed but buried in wall. To be exposed.	Noted	
	87	Water ingress from RW pipe from roof leaking onto electrical services trunking, 3rd floor. Penetration sealing to be made good (Pic 11)	n/a	now resolved	
	88	Watch heights of Wago installations, looks low in some areas (pic 12 from 3rd floor)	Height ok.	Noted	
	89	Large duct cross over outside plant enclosure. Our drawings show cross over within the plant enclosure and we also commented to this effect on MEL drawings. This needs to be reviewed with BMCE with view to have duct within the enclosure. (Pic 1)	Check on site. Cant be done due to attenuator.	TSWW should have been notified earlier that there was an issue prior to installation. Reviewed on site-	
	90	Main duct from AHU not lining up and damage to covering. Open ended ducts should be sealed during construction to prevent water and dirt ingress. (Pic 2)	Duct made good and cleaned before final connection.	Noted.	
	91	Damage to AHU roof to be made good (Pic 3)	Noted and corrected	Confirm when completed.	
	92	AHU roof frame shows corrosion. Specification requires AHU material to be suitable for marine environment. This needs to be reviewed by BMCE and we require response on material used and whether it is suitable for a marine environment (Pics 4, 5, 6)	This is noted and we are ongoing in discussions with VES to resolve. This is now closed out and was signed off with clerk of works	This has been reviewed on site by COW and monitored closely by BM. Pictures of the remedial work to follow along with the manufacturers data sheet for the sealer and paint. Also- letter to be issued confirming the renewed warranty period that VES have offered	
	93	Fixings on RW pipework to be made good (Pic 14)	Temporary pipe. Now removed.	Noted.	
	94	Damaged cable tray to be made good (Pic 15)	noted	Confirm when resolved.	
11.08.2015	95	Basement – RWH steel work support not level. (Pic 1)	BMCE- steel now level and tanks being installed.	Noted.	
	96	Basement – damage to water services pipework insulation (Pic 2)	noted. To be caught with final visit to lag plant room pipework. Now made good.	Noted.	
	97	Basement – incoming water main pipe unsupported and unprotected (Pic 3)	now cut back and supported.	Observation will be recorded for future reference and warranty on installation.	
	98	Roof – damage to VRF pipework insulation. BMCE to replace (Pic 4)	Noted. To be repaired/replaced on final visit. Now completed and tray to be covered to prevent further damage	Confirm when resolved for review.	Noted that areas still had damage. BMCE to confirmthat insulation will be fixed.
	99	Roof – no tray enclosing VRF pipework within the plant enclosure. All external VRF pipework to be enclosed with tray as per TUV SUD specification. BMCE to rectify.	This is left off until after testing. Will be covered by tray/transit plate. Installed outwith plant area for mechanical protection from birds etc.. To be completed by 19.1.16	Noted.	ONGOING
	100	All levels – water services pipework not capped off correctly (Pic 5). BMCE to rectify		Outstanding.	
	101	All levels – no solenoid shut off valves installed on pipework serving toilets. BMCE to review and rectify.	Solenoid valves normally closed, will be fited after testing of pipework and when power is available.	Further testing will be required after installation of valves.	

	102	All levels – central core male & female toilets. Water services not piped as per TUV SUD construction drawings (Pic 6). Current arrangement requires to be amended. BMCE to review and rectify.	The pipework arrangement has been installed in the only possible way. The depths of the IPS frames allows the pipework to run only on 1 side at low level because of crossover with drainage stacks etc.	Needs rectified to eliminate risk of air capture and allow ease of maintenance.- reviewed on site an no other alternative possible. Agreed that there was no risk of air capture	
25.08.2015	103	Some general damage to remote car park trunking to be made good (Pic 1&2)			
	104	Submains cabling lying in water, raise off floor.(pic 3)			
	105	VRF pipework connections from branch selector box not valved. Spare tails capped, should be valved. (Pic 6)	This is now closed. Was discussed on site. Not specified and not uncommon.	Needs to be discussed.	
	106	Socket in print hub clashing with fitted furniture, relocate as per MLA elevations.(Pic 4)		Socket now not clashing with furniture. May need altered if current positon causes an issue with user	
	107	First floor landing (core 2) stairwell luminaire out of line with others? To be re-aligned (Pic 5, view taken with back to opposite luminaire location		Setting out to be reviewed on site. Lux levels to be checked by MER	
	108	Fire alarm cabling routes into stairwells not yet reconfigured as agreed onsite (noted in earlier site			
	109	Ventilation units not protected during installation. Open to dust and dirt entering the system.(Pic 7)	NOTED		
15.09.2015	110	Open ended pipework needs to be capped off. (Pic 1)			
	111	Refrigerant pipework insulation damaged. MEL to replace. (Pic 2)			
09.11.15	1	General	VRF Pipework within riser not supported at cable tray. (Pic 1)	Fishers have advised that this is standard detail that they use within risers. They have used a Hydro Clip which provides a better support for vertical pipes and is specially design for refrigeration installations. The Hyrdo clip is not compatible with cable tray , therefore uni-strut was used.	
	2	General	Query fixing method to riser ductwork appears to be 2 no bolt fixings. (Pic 2 & 3)		
	3	Basement	Copper tube not capped. (Pic 4)	This is now connected	
	4	Basement	BMCE to confirm location of water meter for BREEAM leak detection.	Meter is now installed in location shown on WW drawing.	
	5	Basement	Pipe support missing on incoming PE MWS. BMCE to review (Pic 5)	Additional bracket will be installed. Will be complete by 13/1/16	
	6	Roof	Refrigerant pipework penetrate through roof covering. BMCE to review detail (Pic 6)	Agreed with BMCE prior to install.	
	7	Roof	Incoming gas to packaged plant room. Insulation exposed and could be subject to weather damage. BMCE to review (Pic 7)	Opening will be covered by flange plate. To be complete by 15/1/16	
	8	Roof	Evidence of rust and paintwork damage to gas meters. Meters should be protected from corrosion. BMCE to review. (Pic 8)		
	9	Roof	Evidence of rust to gas pipework valves. BMCE to review. (Pic 9)		
	10	Roof	Ductwork exposed to weather. Internal surfaces at risk of corrosion. (Pic 10)	All ducts cleaned before being sealed.	

	11	Roof	Screws used to secure fire sheet to ductwork causing internal roughness. Refer to Clause 2.2.2 in the Mechanical Specification document. Ductwork installation should use alternative means of fixing that keeps internal roughness to a minimum. (Pic 11 & 12)	MJV TO COMMENT	
	12	Roof	Note that kitchen cold room external condensers have not been positioned at original agreed location shown on TSWW drawings. (Pic 13)	NOT MERCURY	
	13	Third	Water ingress, possibly through roof. Has this caused damage to floor void services? BMCE to review. (Pic 14)	Void services were checked prior to the RAF being laid. A couple of sections of busbar were replaced.	
	14	Second	Convulating flexible duct connection to plenum box. BMCE to ensure that flexible duct follow the TSWW standard detail (Pic 15)	In general we have installed as per the WW details but in some instances where space was tight we have been unable to achieve this. Would confirm all flow rates have been achieved and no noise issues brought up throughout commissioning.	
	15	First	Armaflex insulation used on water services pipework. Insulation should follow TSWW specification and same insulation type should be used throughout the installation. (Pic 16)	Insulation specified is too big to install in wall. Mercury installed armaflex to ensure some level of insulation to pipework within wall.	
	16	Ground	FCU serving open plan office has ductwork that crosses through to adjacent room. Ductwork should be reconfigured. BMCE to review. (Pic 17)	Ductwork installed as per WW drawings. Wall was moved on ADH drawings and WW never updated o suit.	BMCE to confirm if there has been any works carried out.
	17	Ground	Extract bellmouth clashes with electrical containment. BMCE to review. (Pic 18)		
	18	Ground	Bellmouth missing on ductwork. (Pic 19 & 20)	Confirm installed	
	19	Ground	Incorrect ductwork fittings used for cross over. BMCE to confirm that all ducts have been replaced. (Pic 21 & 22)	Will be replaced by COB 25/11/2015 and confirm all others have been replaced.	
	20	Ground	Cafe A/C units do not reflect current construction drawings. BMCE to review. (Pic 23)	MER to provide response on this	
	21	Ground	ERR Rooms FCU ductwork touching filter. BMCE to review (Pic 24)	This will be cut back	

Inspection Date	Item No	Area/Floor	WW Observation Details	Mercury Response	
11.11.15	1	Landlord Switch Room	No access, further review to be carried out at next visit.	Access available on request	
	2	Remote Car Park	Lighting columns yet to be installed, progress made on cabling to these areas.	Commenced, works ongoing	
	3	Externals	Landscaping now advanced.	Not Applicable	
	4	Externals	External CCTV columns installed, lighting columns yet to be progressed.		
	5	Externals	Exposed ductwork to be sealed against water/vermin ingress (Pic 1).	BMCE	
	6	Externals	Generator installation advanced, final cable connections to be made prior to duct installations being tidied up (Pic 2)	Complete	
	7	Externals	LED uplights at main entrance area to be installed.		
	8	Externals	Penetrations for external main entrance down lights formed, lighting to follow.	Works ongoing	
	9	Basement	Generator switchboard now installed. General DB's and ATS final wiring in progress (Pics 3 and 4).	Noted	
	10	Basement	Incoming duct seal not appropriate for making water tight (Pic 5).	BMCE	
	11	Basement	Trunking /conduit detail at bottom of stair 3 doesn't look correct, to be reviewed further by MEL (Pic 6)	BMCE to review design	
	12	Basement	Access control installations progressing.	Noted	
	13	Roof	Final labelling to power supplies yet to be completed (Pic 7)	Planned compeletion 23/11/15	
	14	Roof	Final labelling to all mechanical equipment to be completed.		
	15	Roof	Lighting installations yet to be installed.	Commence- Planned compleetion date 30/11/15	

	16	Roof	Not all power supplies made yet made live. Metering to be set up and taken back to BMS.	On-Going	
	17	Roof	Taping to ductwork installations yet to be completed in areas (Pic 8)		Damage to roof roof ductwork insulation AHU 6
	18	Roof	Ductwork installations yet to be completed in areas (Pics 9)		
	19	Roof	Some rust staining within outdoor units evident, these are to be cleaned out (Pic 10)	This is now rectified	
	20	Roof	Cable and fridge trays damaged in various areas to be made good. (Pics 11 and 12)	On-Going	
	21	Roof	Boiler plant room not yet ready for final inspection due to workers equipment etc in the area.	Ongoing	Complete DB installation
	22	Roof	Cabling installation is generally very tidy, (some flex at final connections to be tidied up). Trunking at metering however needs to be finished off. Looks rough and unsecure. Are there end caps yet to be fitted? Would also suggest some hazard tape be installed to make more visible to maintenance personnel walking around the plant area (Pic 13 and 14)	Danger Signage put on front of the Trunking however trunking edges to be made safe as the stick out.	
	23	Roof	Where cabling moves from one tray to another, take care of rough edges. Some form of protection required where tray cuts could pose a risk to of damage to cable armours.	Noted	
	24	Roof	Fridge pipe insulation damaged in various areas to be made good (Pics 15)	This has been made good.	
	25	Roof	Services penetration into package plant room to be weatherproofed when services installations complete (Pic 16)	Shroud to be installed. Date TBC	
	26	Roof	Damage to package plant room local to door requires remedial works (Pic 17)	This will be rectified. Date TBC	
	27	Roof	Kitchen roof plant installations to be completed.	Complete	
	28	Roof	Open ductwork at fan units exposed to elements. These need better weather protection prior to works being completed. Rusting evident internally to these ducts to be cleaned out (Pics 18-19)	Weather detail now installed. All ducts cleaned out prior to being closed up.	
	29	Roof	Gas pipes entering VES units to be sealed at penetrations (Pic 20)	noted	
	30	Roof	Rusting on gas pipe flanges to be rectified. Confirm materials used are suitable for the external saline environment. Adequate rust protection to be provided where necessary. (Pic 21)	Will be painted	
	31	Roof	No access to lift GRP, further review required. Cable penetration to be made weatherproof.	Inspection complete- penetration to be weatherproofed	
	32	Roof	No access to roof goods lift lobby, requires further visit when complete.	N/A	
	33	Roof	Lightning protection installations to be completed. Some final links to be completed to various items of plant. Some tape twisting to be made good also (Pics 22-23)	Now complete	
	34	Roof	Riser penetrations yet to be sealed over.	N/A	
	35	Roof	Evidence of remedial works to AHU roofs making good the rusting issues to be made available for review.	Pictures to be issued by memory stick, file too large to send. Signed off by clark of works on site along the way.	We don't have the memory stick to review.
	36	Roof	Temporary tray cover over fridge pipes yet to be replaced with permanent covering.	Internal tray still to be completed. This will be complete by 20.01.2015	COMMENCED
	37	Roof	General debris to be cleared from roof	BMCE	
	38	Third	Lighting installations advanced.	Note	
	39	Third	Leak from roof into 3rd floor is very local to some luminaires, confirm this has had no adverse impact on the luminaires and associated cabling/control gear etc (i.e. no water damage)	There has been no water damage caused by the leak	
	40	Third	Refer to general comments	Noted	
	41	Second	Lighting installations advanced.	Note	
	42	Second	Floor voids being cleaned out restricting access to some parts of the floor.	BMCE	
	43	Second	Refer to general comments	Noted	
	44	First	Services fairly advanced, small meeting rooms close to completion.	Note	
	45	First	Floor voids being cleaned prior to completion of floor tile installations.	BMCE	
	46	First	Store Area PIR coverage to be reviewed, not detection occupants until 1m or so into store (store local to central core)	Prolojik reviewed on site. Now complete	
	47	First	Some meeting room downlights yet to be installed.	Installed	
	48	First	Print hub ceiling tiles cut for downlights, but design is modules and these are installed?	Installed	

	49	First	Refer to general comments	Noted	
	50	Ground	Ceiling installation progressed, lighting only installed in some areas(North wing)	South side complete (Excluding Cafe Area)	
	51	Ground	Clash with duct and downlight location (Pic 24)	Resolved	
	52	Ground	Containment to speedgates progressed	Noted	
	53	Ground	Fire panel installations progressed.	Noted	
	54	Ground	Access control and security wiring advanced.	Noted	
	55	General	Systems on floorplates yet to be proven, lighting currently under commission on first floor.	Small Power & Lighting demonstration completed in Dec'15	
	56	General	Stair core services yet to be completed.	Completed	
	57	General	No lighting to WCs (those accessed) as yet.	Levels 0 & 1. Lights Installed	
	58	General	Damaged luminaire diffusers to be made good	All made good	
	59	General	Installation of accessories progressing on all floors, ground floor further behind than the upper levels.	Note	
	60	General	Lift installation works progressing.	Note	
	61	General	MEL/BN to review comms rack installations to ensure they are installed level.		
	62	General	MCR/SCRs to be cleared out of all boxes/debris etc	All materials now tidied up.	
	63	General	Penetrations through SCR walls yet to be fire stopped (Pic 25)		
	64	General	Rising busbar installations well advanced and final connections made.	Complete	
	65	General	Risers to be cleared of all debris throughout (Pic 26)	To be reviewed again when all trunking lid etc installed	
	66	General	Integral emergency LEDs in meeting room modules to be tidied up. Some are not quite fitted correctly and others have the cabling very visible when illuminated. (Pic 27)	MEL doing a sweep up exercise , this will be tidied up on final sweep up.	
	67	General	Services should not be visible through return air ceiling tiles, cables etc to be relocated out of view (Pic 28).	Final sweep to be done but confirm majority if these issues have been resolved.	As previously requested need mark up of MLA (35) drawings to show grilles that have been rectified.
	68	General	Lighting diffusers to be cleaned out where required.		
	69	General	Riser general extract ductwork uninsulated. (Pic 29). TSWW Mechanical Specification required insulation.	Now Insulated	
	70	General	VRF pipework requires cable tray support. Refer to Clause 2.59.6 of the TSWW Mechanical Specification (Pic 30).	Check this. Tray to be installed if not already	
	71	General	Roof level water services pipework yet to be insulated.	Insulated and cladded	
	72	General	First floor duct clash with ceiling (Pic 31).	Resolved	
	73	General	Dry riser outlet damage at basement stair core 3 (Pic 32).	To be changed.	
	74	General	Core 2 water heaters installed within ceiling void. These should be moved to this level (Pic 33).	Mercury believe space between toilet and wall is inadequate to install water heater and associated pipework while maintaining suitable maintenance access. We would confirm that access is easily available within ceiling void	
	75	General	Note that new cafe ductwork is yet to be installed from riser (Pic 34).	Will reply seperately on this issue.	
	76	General	BMCE to provide details on the sleeve and flexible mastic product used for the incoming gas pipework.	Sleeve is a larger piece piece of pipework. Sealed by others.	
16.12.15 & 17.12.15	1	Externals	Schematics to be installed in feeder pillars.	Noted	
	2	Externals	Feeder pillar installed is sitting on metal frame; this should be removed with pillar fixed atop the concrete foundation so cables/pillar cannot be accessed from below.		
	3	Externals	Power supplies for decked car park FAP and CCTV cameras should be key switch accessories.		

	4	Externals	Columns to upper deck and to rear of decked car park yet to be installed.	Commenced, works ongoing	
	5	Externals	Luminaires not operational local to remote car park DB.		
	6	Externals	Main entrance uplighters installation to be completed.		
	7	Externals	Works to Intercom bollard for basement car park ramp has commenced		
	8	Externals	External lighting to landlord switch room to be completed.		
	9	Externals	Main entrance external downloghts yet to be installed. Fire alarm sounder to be relocated per MLA setting out detail.		
	10	Externals	Exposed building earth ring to be made good.	Architectural detail required to side of stairs	
	11	Externals	Dry riser inlet/outlet installations to be completed.	Core 1 & 3 install complete. Await clad panels to be fixed to allow completion of core 2	
	12	Externals	Standing water local to comms chambers to be reviewed, suitable drained?	Not Mercury	
	13	Externals	Note work ongoing to Dry Riser. Inlet valve box removed to assist with the ongoing works.	Now fixed	
	14	Ground	Works to ground floor less advanced than the upper levels.		
	15	Ground	ERR suite works yet to be finalised. All support room lighting to move by one tile to more evenly distribute lighting in this room.		
	16	Ground	Lighting controls not yet up and running in ground floor.		
	17	Ground	Core 2 dis WC ceiling services not installed.	Now installed	
	18	Ground	Core 2 riser light not yet complete.	Now installed	
	19	Ground	UPS was not operational when onsite, please advise when fully operational for review?	All Mercury works complete. Tenant fitout incomplete	
	20	Ground	Main comms room to be cleared out of all tools/boxes etc. and given a final clean.		
	21	Ground	Reprographics area lighting not as per current requirements.		
	22	Ground	Not all lighting has been installed to loading bay, incl. no lighting yet installed to loading bay store.	Now installed	ONGOING
	23	Ground	Mail room accessories are noted as white plastic, there is currently a mix of white plastic and stainless steel, and this should be rectified so consistent throughout the room.	Data plates to be changed to white plastic	
	24	Ground	Down lighters in reception area (before speed gates adjacent reception desk) are installed in the wrong tiles and should be relocated as per RCP.		
	25	Ground	Attachments missing from the downlight installations throughout.	Now rectified	
	26	Ground	Appears to be some water ingress at GF in core 3 mech riser to be investigated.	Not Mercury	
	27	Ground	No power to corridor lighting leading to loading bay/FM office.		
	28	Ground	Reception desk services to be completed.	Now complete	
	29	Ground	Works ongoing to main reception and café area. Commissioning of ventilation system being undertaken.	Now complete	
	30	Ground	No over door heater and panel heater installed in loading bay and store room.	To be powered up and commssioned	
	31	Ground	Only one electric heater installed in main reception desk. Awaiting installation of low level unit to complete second installation.	Now complete	
	32	Ground	Main entrance over door heaters not powered.	Now complete	
	33	Ground	Refer to Level 1 mechanical comments.		
	34	Roof	Outdoor unit fins to be combed out.		
	35	Roof	Previous roof inspection comments not all yet completed, confirm when these will be finalised for final inspection?		
	36	Roof	Cable penetrations from core areas for wall mounted services to be sealed.		
	37	Roof	Damaged containment in roof area to be made good.		
	38	Roof	Duct obstructing access to cold store external condenser.	Ductwork as per co-ordinated services layout. Condensors not installed in correct position.	
	39	Roof	No trays installed on top of VRF pipework. Refer to TSWW detail for requirements.	To be installed. Date TBC	Commenced
	40	Roof	VRF pipework insulation damaged and missing in areas. Complete review required and areas rectified.	All rectified before covering tray. Same will be done where required inside plantroom	
	41	Roof	AHUs insulation compromised due to addition of control sensors. Areas need to be rectified and patched where required.	Noted	Damage to AHU 6 insulation

	42	Roof	Kitchen extract duct missing discharge fitting.		
	43	Level 3	Attachments missing from open plan and focus room downlights.	Now installed	
	44	Level 3	Lighting to top stair 1C not operating. Stairwell lighting control not yet available for complete review.	Now working	
	45	Level 3	Luminaire missing from store off stair 1C.	Now installed	
	46	Level 3	Lighting setting out incorrect in faith room.	Tempoarry fitting installaed in lieu of faulty 2 no x J fittings	
	47	Level 3	Core 1 riser lighting not powered up.	Now working	
	48	Level 3	Lighting controls to large meeting room not operating correctly.	Now working	
	49	Level 3	Lighting controls in open plan and general areas not operating correctly to date. MEL/Prolojik to advise when available for final inspection.		
	50	Level 3	Emergency light in core 2 lobby flashing?	Now working	
	51	Level 3	Various luminaires are still illuminated when surrounding fittings have times out?		
	52	Level 3	Luminaire diffusers need cleaned out and properly clipped into place.		
	53	Level 3	Switching in rolling rack store room not working.	Will be available for final inspection on the 19.01.2016	
	54	Level 3	Floor boxes need hoovered out. (ALL FLOORS)	BMCE	
	55	Level 3	Floor boxes loose in floor, need locked into position. (ALL FLOORS)	BMCE	
	56	Level 3	AV floor boxes don't look to be installed in correct locations (see large meeting room for example, floor box not located below credenza locations).	review larger meeting rooms to confirm correct location	
	57	Level 3	Wrong lighting installed to store near training room (R.03.8.71).	Tempoarry fitting installaed in lieu of faulty 3 no x J fittings	
	58	Level 3	No lighting installed in training room store. Training room lighting controls also not yet installed.	TBC	
	59	Level 3	Lighting installation progressing in kitchen.	Now complete	
	60	Level 3	No lighting in dis WV, core 2.		
	61	Level 3	Skirting trunking to be installed in training room.	completed by 20.01.2016	
	62	Level 3	Restaurant TV sockets to be completed.		
	63	Level 3	Cables visible within kitchen lighting modules to be rectified.		
	64	Level 3	Kitchen accessories to be labelled.		
	65	Level 3	Kitchen wiring to be completed and tested.	Will be completed by 19.01.2016	
	66	Level 3	Switched spurs for all hand driers not visible, advise where installed for local isolation. Hand driers not yet powered up.	Spur is located behind removable panel under sinks	
	67	Level 3	Vanity downlights not installed in WC, core 1B.		
	68	Level 3	Damaged luminaire over sinks in 1B WC where the above have been fitted.		
	69	Level 3	PIR missing from rolling store.		
	70	Level 2	Some socket outlets in tea prep areas yet to be swapped out for stainless steel faceplates.		
	71	Level 2	12p meeting room with downlights at door area...downlights currently remain on when all lighting switched off, these should switch off also.		
	72	Level 2	No power available to some stores/meeting rooms (North wing) when completing walk round.		
	73	Level 2	Various luminaires not operating properly in some meeting rooms and open plan areas. These require further investigation to ensure operating as required.		
	74	Level 2	No lighting installed to print hub adjacent hospitality store.	lighting is installed - controls to be reviewed	
	75	Level 2	Switch points missing from some meeting rooms. All rooms to be reviewed as part of check on lighting control operation.		
	76	Level 2	Illuminated emergency signage should stay illuminated. These currently switch off when the locate lighting is switched off (ALL FLOORS).		
	77	Level 2	No 600x600modules should be park of the 'corridor' zone on the lighting control system, these should be grouped with the adjacent modules (generally groups of 6 or 9 fittings).		
	78	Level 1	Lighting controls needs visited to ensure lighting control points are operating correctly. Various areas appear slow to react and in some instances the switching is not operational.		
	79	Level 1	12p meeting room with downlights at door area...downlights currently remain on when all lighting switched off, these should switch off also.		

	80	Level 1	Cabling etc. still visible through some return air grilles (ALL FLOORS). These should be reviewed and rectified throughout.		
	81	Level 1	Luminaire not working in stair 3 lobby.		
	82	Level 1	Attachments missing from some downlights.	Now fitted	
	83	Level 1	No lighting installed to core 3 dis WC.		
	84	Level 1	PIR not installed in rolling store.		
	85	Level 1	Riser 1A - VRF zone control panel not locked.		
	86	Level 1	Riser 1A - Gas pipe should be identified with tape marked "Gas" at each floor level.	This will be rectified. Date TBC	
	87	Level 1	No access to Riser 1B, C & E.		
	88	Level 1	Riser 1A - damage to ductwork insulation.	This will be rectified. Date TBC	
	89	Level 1	Riser 1D - VRF leak detection control panel not live.	Now live	
	90	Level 1	Riser 1D - toilet extract duct branch does not have shoe fitting. Appears noisy, possible air leakage. MEL to investigate and rectify.		
	91	Level 1	Circulation area in from of central core - noisy ductwork. MEL to investigate to ensure no leakage or damper issues causing noise.	Would note all volumes achieved. Not noisy now that ceiling tiles are installed	
	92	Level 1	Riser 3A - insulation damage to main ductwork.		
	93	Level 1	Riser 3A - test holes to ductwork not plugged and insulation damaged.		
	94	Level 1	All risers - refrigerant pipework missing insulation where pipe clamps are installed.	This will be rectified. Date TBC	
	95	Level 1	Riser 3B - damage to ductwork insulation.		
	96	Level 1	Ventilation grilles - issues with ventilation supply and extract grilles. Number of missing grilles, non vision plates missing and grilles in wrong location in the open plan and cellular office areas. Separate mark up available that highlights the issues. BMCE/MEL to review and carry out a full review for level 0, 2 & 3 using the MLA reflected ceiling plan layouts and produce a similar mark up using the MLA drawings that checks every grille on the floor level.	We have swept the floors again and fitted several missing vision plates and additional extract grilles where previously missing. Can review on site.	Awaiting mark up
	97	Level 1	All mechanical items highlighted on Level 1 was observed on Level 0, 2 & 3. BMCE/MEL to review these for all floor levels.		
	98	Basement	Legend to be installed on emergency exit bulkheads outside and within core 2.		
	99	Basement	Containment below DB CP2 loose, needs better fixing.		
	100	Basement	Life safety services on gen switchboard to be labelled accordingly.		
	101	General	Not all DB's have locks installed as yet.	To be reviewed on site	
	102	General	Blank plates issuing from DB's to be installed.	To be reviewed on site	
	103	General	EPO reset not working properly on main switchboard. To be investigated further and re-demonstrated to show fully operational.	Complete .Will be available for final inspection on the 19.01.2016	
	104	General	Luminaires missing above showers in shower rooms.	Now installed	
	105	General	Blank plates yet to be installed in future data point backboxes.		
	106	General	Core 2 smoke vent flashing in alarm, confirm all are operating correctly and any faults cleared.	Will be resolved 21.1.16	
	107	General	Maglocks that are not quite linking up at access control doors to be adjusted so they make in the locked position.		
	108	General	Labelling of DB's and cabling yet to be completed.	Works ongoing	
	109	General	Cabling within lift shafts only appeared to be temporarily fixed, have OTIS yet to install final cable fixings?	Not Mercury	
	110	General	Ensure downlights are all flush fixed in ceiling and attachments are installed. Some fittings in plasterboard areas in particular appear to have slipped out ceiling slightly.	To be reviewed	
	111	General	BMS is not picking up all electrical monitoring requirements. This is to be reviewed by BMCE and confirm when available for further demonstration.	Needs to be discussed.	
	112	General	Works to tea prep areas to be completed.	Now complete with exepction of newly instructed works for zip taps	
	113	General	Review orientation of open plan modules for consistency. EG Level 2 south open plan one no. luminaire is rotated opposite way from all other lights in the same area.	To be rectified.	
	114	General	Refer to all site inspection lists issued to date and confirm when items are complete for re-inspection.	Now complete with exepction of newly instructed works	
	115	General	Accessories missing from various meeting rooms.		
	116	General	Final testing and commissioning certification to be issued for final review when 100% complete, partial reviews only completed to date.		

	117	General	General tidy to riser areas required.	Complete	
19.1.16	118	Lift Switchboard	Electric metering to lift 5 and 6 supplies not working		
	119	Level 4 goods lift entrance	1no light not working at goods lift entrance		
	120	Café	Kitchen extract fan speed controller to fit.		
	121	Core 3 Disabled WC's	Extract grille not as per RCP and too close to door.		
	122	Basement	Chain with padlock to be fitted on gas bypass valve		
	123	External CCTV	Samples of external CCTV to be issued for day and nightime recording		
	124	Basement	Car park smoke extract fans going into fault after 2no power outages- to be reviewed by MER		
	125	Goods Lift	Key switch to be installed in basement by Otis		
	126	Roller Shutter Door	interface with door to be completed. Fire Alarm interface to be proven.	Await timeclock/pir install also	
	128	general	Mer to confirm date when the revised as built drawings will be made available for review.		
	129	AV Contaiment	2x25mm conduits installed in lieu of 2x50mm conduits designed. BMCE to advise on resoltution.		
	130	Level 3	Light missing from training room		
	131	General	Clean of stairwell lighting required. Diffusers throughout all areas should be reviewed for clean also.		
	132	Boiler Plant Room	Close off containment to roof area DB, exoposed cabling.		
	133	General	Missing accessories to be instaled or fixed to wall where loose.		
	134	General	Review downlights for missing atatvchments and install.		
	135	Level 3	buzzing noise in core 2 riser tro be investigated and made good.		
	136	General	Some faulty light fittings throughout being investigated by Thorn. Confirm when resolved.		
	137	Level 2	General floorboc and AV floor box in meeting room outrside core 1 WCs to swap locations		
	138	Rolling stores	Presence detection to be installed		
	139	Ground	Check sensor for hand drier in female WC, operating occasionaly when no-one close by		
	140	Roof	MCP located within packaged plantroom - EF1 and KEF2 did not have either of the run and fault lights on. Suggest that no power to fans.		
	141	Roof	Main kitchen extract discharge cone missing.		
	142	Roof	Some surface rust on vent units.		
	143	Roof	VRF system - ODU-L01-Z4 rattle noise.		
	144	Roof	High level gas riser vent to be done.		
	145	Level 3	Review wall mounted electric radiators control settings - set all to auto and minimum fabric protection 12oC.		
	146	Level 3	Prayer Room - noise from the A/C or vent system.		
	147	Level 3	Prayer Room - whb has no TMV and IV's on water services pipework.		
	148	Level 3	Core 2 & 3 exposed pipework serving toilet and whb. Exposed copper pipework should be chromed or boxed in.		
	149	Level 1	Return air grilles missing in lobby area in front of central core. Mark up for all levels confirming grilles are as per MLA reflected ceiling plans and to TSWW specification to be issued for review.		
	150	Level 0	Damage to ceiling heater within the accessible toilet central core area.		
	151	Level 0	Cafe extract boost switch missing.		
	152	Level 0	Delivery bay appears to still have the external louvre open to ceiling void. BMCE to confirm when this will be complete.		
	153	Level 0	Delivery bay overdoor heater to be complete.		
	154	Level 0	No heater panelo installed in delivery bay store.		
	155	Level 0	Check location of supply grille in cafe seating area. Grille too close to the dividing partition and above suspended light fittings.		

	156	All levels	Core 2 & 3 accessible toilets extract grilles in the wrong location. Should be as per MLA reflected ceiling plans.		
	157	Basement	Cold water storage tank needs a sweep down.		
	158	Basement	A number of meters on the cold and rainwater system is not linked to the BMS.		
	159	Basement	Cold water tank warning pipe is not installed as per TSWW drawings.		
	160	Basement	Check 2 no. valves installed on the RW tank. These should be blanked off.		
	161	Roof	Damage to AHU cowl		
	162	Roof	AHU 5 review insulation detail where duct crosses plant enclosure.		
	163	Level 3	Restaurant return grille no blanking plate		
	164	Level 0	Central core toilet extract access hatches covered over by fire batt. No access to dampers.		
	165	Roof	Bare ductwork on roof level not insulated.		
	166	General	shower downlights to be made good and installed above showers in core 1		

Closed
Open
Not Mercury

Wallace Whittle Site Observations

Inspection Date	Item No	WW Observation Details	Mercury Response	WW Comments	MER Advising Can be checked at 24.2.16	BM Comments at 25.2.16
28.04.2015	12	Ramp luminaire fixings not very robust. Check seal also. (photos 1 and 2)	This is to be reviewed and changed. Possible change of fitting required due to fixing type.	Await delivery of replacement lights from Thorn.		
	69	Dirt/scuffs on AHUs. MEL to clean and check that the protective paint work is not damaged. (Pic 7)	To be repaired/cleaned when further building works have been completed..	Noted.	Y	Ok to check
	74	Damage to packaged plant room. This damage needs to be rectified. (Pic 11)	Shroud will be changed.	Noted.	Y	Ok to check
	82	Lids on large service chamber to be reviewed further onsite with BMCE following discussions with Mark Dickson (Pic 13). Concern about water entry.	BMCE- Lid installation to be finished off to the standard detail.			
	83	Scuff marks on transformers to be made good (Pic 9)	noted.	Confirm when complete.		
	94	Damaged cable tray to be made good (Pic 15)	noted	Confirm when resolved.		
	99	Roof – no tray enclosing VRF pipework within the plant enclosure. All external VRF pipework to be enclosed with tray as per TUV SUD specification. BMCE to rectify.	This is left off until after testing. Will be covered by tray/transit plate. Installed outwith plant area for mechanical protection from birds etc.. To be completed by 19.1.16	Noted.	Y	This was checked and rejected by WW
	107	First floor landing (core 2) stairwell luminaire out of line with others? To be re-aligned (Pic 5, view taken with back to opposite luminaire location		Setting out to be reviewed on site. Lux levels to be checked by MER	MER confirm Lux levels acceptable	
	7	Roof	Incoming gas to packaged plant room. Insulation exposed and could be subject to weather damage. BMCE to review (Pic 7)	Opening will be covered by flange plate. To be complete by 15/1/16		
	8	Roof	Evidence of rust and paintwork damage to gas meters. Meters should be protected from corrosion. BMCE to review. (Pic 8)		Y	this was checked and rejected by WW
	9	Roof	Evidence of rust to gas pipework valves. BMCE to review. (Pic 9)		Y	this was checked and rejected by WW
	11	Roof	Screws used to secure fire sheet to ductwork causing internal roughness. Refer to Clause 2.2.2 in the Mechanical Specification document. Ductwork installation should use alternative means of fixing that keeps internal roughness to a minimum. (Pic 11 & 12)	MJV TO COMMENT	Y- would confirm this fixing method is as per the suppliers installation guidelines	
	16	Ground	FCU serving open plan office has ductwork that crosses through to adjacent room. Ductwork should be reconfigured. BMCE to review. (Pic 17)	Ductwork installed as per WW drawings. Wall was moved on ADH drawings and WW never updated o suit.	Y	ductwork serving office has been blanked off. 1no grille now serves the open plan office. We consider this closed.
	20	Ground	Cafe A/C units do not reflect current construction drawings. BMCE to review. (Pic 23)	MER to provide response on this		

Inspection Date	Item No	Area/Floor	WW Observation Details	Mercury Response		
	2	Remote Car Park	Lighting columns yet to be installed, progress made on cabling to these areas.	Commenced, works ongoing	Y	Ok to Check
	5	Externals	Exposed ductwork to be sealed against water/vermin ingress (Pic 1).	BMCE		
	10	Basement	Incoming duct seal not appropriate for making water tight (Pic 5).	BMCE		
	20	Roof	Cable and fridge trays damaged in various areas to be made good. (Pics 11 and 12)	On-Going	Y	this was checked and rejected by WW
	21	Roof	Boiler plant room not yet ready for final inspection due to workers equipment etc in the area	Ongoing	Y	Ok to Check- ongoing works are instructed works and shouldn't prevent an inspection
	22	Roof	Cabling installation is generally very tidy, (some flex at final connections to be tidied up). Trunking at metering however needs to be finished off. Looks rough and unsecure. Are there end caps yet to be fitted? Would also suggest some hazard tape be installed to make more visible to maintenance personnel walking around the plant area (Pic 13 and 14)	Danger Signage put on front of the Trunking however trunking edges to be made safe as the stick out.		
	25	Roof	Services penetration into package plant room to be weatherproofed when services installations complete (Pic 16)	Shroud to be installed. Date TBC	Y	Ok to check
	26	Roof	Damage to package plant room local to door requires remedial works (Pic 17)	This will be rectified. Date TBC	Y	Ok to check

	30	Roof	Rusting on gas pipe flanges to be rectified. Confirm materials used are suitable for the external saline environment. Adequate rust protection to be provided where necessary. (Pic 21)	Will be painted	Y- this snag refers to the gas pipe flanges which were all painted. There are several other snags on this same subject. Can one of them be removed?	this was checked and rejected by WW
	31	Roof	No access to lift GRP, further review required. Cable penetration to be made weatherproof.	Inspection complete- penetration to be weatherproofed	Y	Ok to check
	34	Roof	Riser penetrations yet to be sealed over.	N/A	not mercury	
	35	Roof	Evidence of remedial works to AHU roofs making good the rusting issues to be made available for review.	Pictures to be issued by memory stick, file too large to send. Signed off by clark of works on site along the way.		
	66	General	Integral emergency LEDs in meeting room modules to be tidied up. Some are not quite fitted correctly and others have the cabling very visible when illuminated. (Pic 27)	MEL doing a sweep up exercise , this will be tidied up on final sweep up.		
	67	General	Services should not be visible through return air ceiling tiles, cables etc to be relocated out of view (Pic 28).	Final sweep to be done but confirm majority if these issues have been resolved.		
	68	General	Lighting diffusers to be cleaned out where required.			
	70	General	VRF pipework requires cable tray support. Refer to Clause 2.59.6 of the TSWW Mechanical Specification (Pic 30).	Check this. Tray to be installed if not already		
	74	General	Core 2 water heaters installed within ceiling void. These should be moved to this level (Pic 33	Mercury believe space between toilet and wall is inadequate to install water heater and associated pipework while maintaining suitable maintenance access. We would confirm that access is easily available within ceiling void		
16.12.15 & 17.12.15	1	Externals	Schematics to be installed in feeder pillars.	Noted		
	2	Externals	Feeder pillar installed is sitting on metal frame; this should be removed with pillar fixed atop the concrete foundation so cables/pillar cannot be accessed from below.			
	3	Externals	Power supplies for decked car park FAP and CCTV cameras should be key switch accessories.		Y	Ok to check
	4	Externals	Columns to upper deck and to rear of decked car park yet to be installed.	Commenced, works ongoing	Y	Ok to check
	10	Externals	Exposed building earth ring to be made good.	Architectural detail required to side of stairs	not mercury	
	15	Ground	ERR suite works yet to be finalised. All support room lighting to move by one tile to more evenly distribute lighting in this room.		Y	Ok to check
	16	Ground	Lighting controls not yet up and running in ground floor.			
	19	Ground	UPS was not operational when onsite, please advise when fully operational for review?	All Mercury works complete. Tenant fitout incomplete		
	21	Ground	Reprographics area lighting not as per current requirements.		Y - agreed on site	
	22	Ground	Not all lighting has been installed to loading bay, incl. no lighting yet installed to loading bay store.	Now installed	Y	
	34	Roof	Outdoor unit fins to be combed out.			
	36	Roof	Cable penetrations from core areas for wall mounted services to be sealed.			
	38	Roof	Duct obstructing access to cold store external condenser.	Ductwork as per co-ordinated services layout. Condensors not installed in correct position.		
	42	Roof	Kitchen extract duct missing discharge fitting.			
	49	Level 3	Lighting controls in open plan and general areas not operating correctly to date. MEL/Prolojik to advise when available for final inspection.		Y	MD checked with MER and still some lights not operating as they should
	51	Level 3	Various luminaires are still illuminated when surrounding fittings have times out?			
	52	Level 3	Luminaire diffusers need cleaned out and properly clipped into place.			
	54	Level 3	Floor boxes need hoovered out. (ALL FLOORS)	BMCE	Y	Ok to check
	55	Level 3	Floor boxes loose in floor, need locked into position. (ALL FLOORS)	BMCE	Y	Ok to check
	56	Level 3	AV floor boxes don't look to be installed in correct locations (see large meeting room for example, floor box not located below credenza locations).	review larger meeting rooms to confirm correct location		
	58	Level 3	No lighting installed in training room store. Training room lighting controls also not yet installed.	TBC	Y	Ok to check
	62	Level 3	Restaurant TV sockets to be completed.		Y	Ok to check
	63	Level 3	Cables visible within kitchen lighting modules to be rectified.			

	64	Level 3	Kitchen accessories to be labelled.		Y	Ok to check
	67	Level 3	Vanity downlights not installed in WC, core 1B.		to be reviewed on site	
	68	Level 3	Damaged luminaire over sinks in 1B WC where the above have been fitted.		Y	
	70	Level 2	Some socket outlets in tea prep areas yet to be swapped out for stainless steel faceplates.		Y	
	71	Level 2	12p meeting room with downlights at door area...downlights currently remain on when all lighting switched off, these should switch off also.			
	73	Level 2	Various luminaires not operating properly in some meeting rooms and open plan areas. These require further investigation to ensure operating as required.			
	74	Level 2	No lighting installed to print hub adjacent hospitality store.	lighting is installed - controls to be reviewed	Y	Ok to check
	75	Level 2	Switch points missing from some meeting rooms. All rooms to be reviewed as part of check on lighting control operation.		Y	Ok to check
	76	Level 2	Illuminated emergency signage should stay illuminated. These currently switch off when the locate lighting is switched off (ALL FLOORS).		Y	Ok to check
	77	Level 2	No 600x600modules should be park of the 'corridor' zone on the lighting control system, these should be grouped with the adjacent modules (generally groups of 6 or 9 fittings).		Y	
	78	Level 1	Lighting controls needs visited to ensure lighting control points are operating correctly. Various areas appear slow to react and in some instances the switching is not operational.			
	79	Level 1	12p meeting room with downlights at door area...downlights currently remain on when all lighting switched off, these should switch off also.		Y	Ok to check
	80	Level 1	Cabling etc. still visible through some return air grilles (ALL FLOORS). These should be reviewed and rectified throughout.			
	85	Level 1	Riser 1A - VRF zone control panel not locked.			
	88	Level 1	Riser 1A - damage to ductwork insulation.	This will be rectified. Date TBC	Y	Ok to check
	89	Level 1	Riser 1D - VRF leak detection control panel not live.	Now live		
	90	Level 1	Riser 1D - toilet extract duct branch does not have shoe fitting. Appears noisy, possible air leakage. MEL to investigate and rectify.			
	92	Level 1	Riser 3A - insulation damage to main ductwork.		Y	Ok to check
	93	Level 1	Riser 3A - test holes to ductwork not plugged and insulation damaged.		Y	Ok to check
	94	Level 1	All risers - refrigerant pipework missing insulation where pipe clamps are installed.	This will be rectified. Date TBC	Y	Ok to check
	95	Level 1	Riser 3B - damage to ductwork insulation.		Y	Ok to check
	96	Level 1	Ventilation grilles - issues with ventilation supply and extract grilles. Number of missing grilles, non vision plates missing and grilles in wrong location in the open plan and cellular office areas. Separate mark up available that highlights the issues. BMCE/MEL to review and carry out a full review for level 0, 2 & 3 using the MLA reflected ceiling plan layouts and produce a similar mark up using the MLA drawings that checks every grille on the floor level.	We have swept the floors again and fitted several missing vision plates and additional extract grilles where previously missing. Can review on site.		
	99	Basement	Containment below DB CP2 loose, needs better fixing.		Y	Ok to check
	100	Basement	Life safety services on gen switchboard to be labelled accordingly.			
	101	General	Not all DB's have locks installed as yet.	To be reviewed on site		
	102	General	Blank plates issuing from DB's to be installed.	To be reviewed on site	Y	
	105	General	Blank plates yet to be installed in future data point backboxes.			
	108	General	Labelling of DB's and cabling yet to be completed.	Works ongoing	Y	Ok to check
	109	General	Cabling within lift shafts only appeared to be temporarily fixed, have OTIS yet to install final cable fixings?	Not Mercury		
	110	General	Ensure downlights are all flush fixed in ceiling and attachments are installed. Some fittings in plasterboard areas in particular appear to have slipped out ceiling slightly.	To be reviewed	Y	Ok to check
	111	General	BMS is not picking up all electrical monitoring requirements. This is to be reviewed by BMCE and confirm when available for further demonstration.	Needs to be discussed.	Y	
	112	General	Works to tea prep areas to be completed.	Now complete with exepction of newly instructed works for zip taps	Y	Ok to check
	113	General	Review orientation of open plan modules for consistency. EG Level 2 south open plan one no. luminaire is rotated opposite way from all other lights in the same area.	To be rectified.	Y	Ok to check
	114	General	Refer to all site inspection lists issued to date and confirm when items are complete for re-inspection.	Now complete with exepction of newly instructed works		
	115	General	Accessories missing from various meeting rooms.		Y	Ok to check
	116	General	Final testing and commissioning certification to be issued for final review when 100% complete, partial reviews only completed to date.			
19.1.16	118	Lift Switchboard	Electric metering to lift 5 and 6 supplies not working			
	119	Level 4 goods lift entrance	1no light not working at goods lift entrance		y	
	120	Café	Kitchen extract fan speed controller to fit.		y	Ok to check

	121	Core 3 Disabled WC's	Extract grille not as per RCP and too close to door.		The grille cannot move due to a clash with other services. We believe its position will not have any detremental effect on the system performance.	
	123	External CCTV	Samples of external CCTV to be issued for day and nightime recording		Y	
	125	Goods Lift	Key switch to be installed in basement by Otis		Y	Ok to check
	126	Roller Shutter Door	interface with door to be completed. Fire Alarm interface to be proven.	Await timeclock/pir install also		
	128	general	Mer to confirm date when the revised as built drawings will be made available for review.			
29.01.16	129	AV Contaiment	2x25mm conduits installed in lieu of 2x50mm conduits designed. BMCE to advise on resoltution.		We believe this can now be closed as there has been a solution on site.	
	130	Level 3	Light missing from training room		Y	
	131	General	Clean of stairwell lighting required. Diffusers throughout all areas should be reviewed for clean also.		Y	
	132	Boiler Plant Room	Close off containment to roof area DB, exoposed cabling.		Y	Ok to check
	133	General	Missing accessories to be instaled or fixed to wall where loose.		Y	Ok to check
	134	General	Review downlights for missing atatvchments and install.		Y	
	135	Level 3	buzzing noise in core 2 riser tro be investigated and made good.			
	136	General	Some faulty light fittings throughout being investigated by Thorn. Confirm when resolved.			
	137	Level 2	General floorboc and AV floor box in meeting room outrside core 1 WCs to swap locations		Y	Ok to check
	138	Rolling stores	Presence detection to be installed		Y	Ok to check
	139	Ground	Check sensor for hand drier in female WC, operating occasionaly when no-one close by		Y	Ok to check
	140	Roof	MCP located within packaged plantroom - EF1 and KEF2 did not have either of the run and fault lights on. Suggest that no power to fans.		Y	Ok to check
	141	Roof	Main kitchen extract discharge cone missing.		duplication - can this be closed	
	143	Roof	VRF system - ODU-L01-Z4 rattle noise.			
	144	Roof	High level gas riser vent to be done.		not mercury - BMCE to comment	
	145	Level 3	Review wall mounted electric radiators control settings - set all to auto and minimum fabric protection 12oC.			
	146	Level 3	Prayer Room - noise from the A/C or vent system.			
	147	Level 3	Prayer Room - whb has no TMV and IV's on water services pipework.			
	148	Level 3	Core 2 & 3 exposed pipework serving toilet and whb. Exposed copper pipework should be chromed or boxed in.			
	149	Level 1	Return air grilles missing in lobby area in front of central core. Mark up for all levels confirming grilles are as per MLA reflected ceiling plans and to TSWW specification to be issued for review.			
	150	Level 0	Damage to ceiling heater within the accessible toilet central core area.			
	153	Level 0	Delivery bay overdoor heater to be complete.		Y	Ok to check - to be powered up
	154	Level 0	No heater panelo installed in delivery bay store.		Y	
	155	Level 0	Check location of supply grille in cafe seating area. Grille too close to the dividing partition and above suspended light fittings.			
	156	All levels	Core 2 & 3 accessible toilets extract grilles in the wrong location. Should be as per MLA reflected ceiling plans.		Cant be as per ADH drawing because of service clash	
	157	Basement	Cold water storage tank needs a sweep down.		Y	Ok to check
	158	Basement	A number of meters on the cold and rainwater system is not linked to the BMS.			Mer advising these are not on the BMS schedule
	159	Basement	Cold water tank warning pipe is not installed as per TSWW drawings.			
	160	Basement	Check 2 no. valves installed on the RW tank. These should be blanked off.			
	161	Roof	Damage to AHU cowl		Y	
	162	Roof	AHU 5 review insulation detail where duct crosses plant enclosure.			
	163	Level 3	Restaurant return grille no blanking plate			
	164	Level 0	Central core toilet extract access hatches covered over by fire batt. No access to dampers.			
	165	Roof	Bare ductwork on roof level not insulated.		Y	
	166	General	shower downlights to be made good and installed above showers in core 1		Y	Ok to check
	167	Externals	Location appears to be closer to the building than stated Building Regulations.			

	168	Externals	Confirm installed location of "Core 3" Fire Hydrant is compliant with Building Regulations. Location appears to be closer to the building than stated Building Regulations.			
	169	Externals	Fire Hydrant indicator boxes to be installed.		not mercury BMCE to comment	The hydrants have been installed to the original MLA services setting out drawings. We will comment that the positions of these hydrants changed on the drawings after they were installed. We would request that you liaise with MLA prior to confirming that they should be moved if not in an acceptable position.
			Additional pipe support required on incoming main water supply to the building to prevent the plastic pipe section from sagging. This will require continuous support.		Would suggest this is not required, reason pipe sags slightly is because of material of incomming pipe, to install additional support and try to level now woud put stress on the flange between the external and internal pipe.	
	170	Basement	Tank access ladders to be installed.		Y	WW rejected this as the ladders are not as per spec
	171	Basement	All exposed pipework fittings to be insulated.			
	172	Basement	Confirm all Domestic Water and Rainwater Harvesting pipework installations within the Basement areas have been trace heated.			
	173	Basement	Pipework arrangement at the leaf filters in the RWH plantroom to be reconfiguredmed to ensure balanced flow to collection tank.			
	174	Basement	All fittings to be insulated.		Duplication of 171 above	
	175	Basement	All fittings to be insulated.		Duplication of 171 above	
	176	Basement	Pipework to be reconfigured to remove "dip" in pipe run.		Y- the dip is acting as the trap	Ok to check
	177	Basement	All open ends to be blanked off.		Y	Ok to check
	178	Roof Level	Damage pipework insulation both inside the plantroom and external to be plantroom to be repaired.			
	180	Roof Level	HWR/HWS pipework incorrectly labelled at Plantroom location.			
	181	Roof Level	Weathering collar detail does not appear to be a proprietary or approved arrangement. Please rectify or confirm approved by roofing specialist.			
	182	Level 3	Access door on SWP to be relocated to allow access – currently behind wall units.		Y	
	183	Level 3	Open waste pipe connection in corner of room to be trapped/ sealed.			
	184	Level 3	Hose discharge from zip heaters to be installed with gradient to trapped connection. Looping of the hose could lead to collection of stagnant water in the hose.			
	185	Level 3	All hose discharge must be trapped before connecting to the waste pipe installations if not using the kitchen trap installation.			
	186	Level 3	(Note these points apply to all Tea Prep areas)			
	187	Level 3	Control boxes for taps to be secured. Currently not secured and relying on self support.		Y	
	188	Level 3	Location of isolating valves for shower installations to be confirmed via "As Fitted" drawings. Currently not evident from site inspection.		Locations are above doors inside the shower room.	
	190	Level 3	No apparent access to access doors on SVP's serving the core toilet WHB's. Please demonstrate access.			
	191	Level 3	Confirmation required of maximum hot water dead leg lengths as most of pipework covered over and hot water returns not visible in ceiling spaces for pipework to showers.		Y	Mer to confirm via email to close off
	192	Level 3	Foul odours present at time of visit on Level 0. Confirmation required that no Automatic Air Admittance valves have been installed on the drainage installation.		Y	Mer to confirm via email to close off

	193	Level 3	Confirm all flow limiters have been fitted.		Y	Mer to confirm via email to close off
	194	Level 3	Confirm zip heaters are fitted with check valves.		Y	Mer to confirm via email to close off
	195	Level 3	Confirm strainers fitted at MSV's.		Y	Mer to confirm via email to close off
	196	Various Areas	Zip heater Installations appear to be incomplete in various areas. Hose connection disconnected.		Y	Ok to check
	197	Various Areas	Connection for Future Use to be valved off at connection to main distrubtion to avoid deed leg.		More info required, previously this may have been for coffee machines which are now installed??	
	198	Various Areas	Blanking cap to be fitted at end of line.		Y	Ok to check
	199	Various Areas	All access doors on SVP's need to be turned to ensure physical access can be achieved for future maintenance.		Y	
	200	Various Areas	Isolating valves required on all supplies to appliances, local to appliance.		Y In general, Ballofix valves have been installed to all appliances including taps, water boilers, washing machines, dishwashers and vending machines etc.	Ok to check
	201	Various Areas	Confirm all hose are WRAS approved for potable water supply use.		Y	
	202	Various Areas	TMV required.		Y	
	203	Various Areas	Blanking cap to be fitted at end of line.		Y	
	204	Various Areas	Pipework to be reconfirmed to ensure no upward loop to taps.			
	205	Various Areas	Pipework to be fitted with identification banding.			

JB Russell House
Gartnavel Royal Hospital Campus
1055 Great Western Road
Glasgow
G12 0XH

[redacted]

NHS
Greater Glasgow and Clyde

Currie & Brown
Building 3, 2 Parklands Avenue, Maxim Office Park,
Eurocentral
Lanarkshire
ML1 4WQ

FAO Mr Douglas Ross - Director

Date 1st March 2016
Your Ref
Our Ref DWL/AH

Enquiries to David W Loudon
[redacted]

Dear Sirs

Royal Hospital for Children – Schiehallion Ward – Isolation Rooms

I enclose a copy of the Boards letter to Brookfield Multiplex dated 1st March 2016 concerning the design of the extract ventilation within the isolation rooms.

You will note from my letter that it is the Boards opinion that the design and construction of the isolation rooms is not in compliance with SHPN04 – supplement 1.

For your information, I have enclosed a copy of the email sent to David Hall on 4th June 2015 from Mark Harris of TUVSUD Limited to David Wilson and then from David Wilson onto yourselves. As the Boards Technical Advisor, I would request that you review the enclosed correspondence, attachments and enclosures and provide an opinion on whether you are satisfied with the decisions taken by Brookfield Multiplex.

[redacted]
David W Loudon
Project Director

Enc

Queen Elizabeth and Royal Hospital for Children

Action Plan for BMT and Theatre Operations at 21 January 2016

Response to question 9 of the action plan:

Question: *Establish if the proposed increase of extract in the en-suite rooms in the Schiehallion ward is betterment over the original specification for the rooms.*

Response: *The points of concern raised by Infection Control Doctors (ICD) over the isolation facilities provided for Neutropenic patients supported in the Royal Children's Hospital(RCH), ward 2b (schiehallion), are:*

The isolation rooms are designed and constructed to meet the requirements of:

Scottish Health Planning Note 04 (SHPN 04) In-patient Accommodation: Options for Choice Supplement 1: Isolation Facilities in Acute Settings.

The purpose of this guidance is to provide guidance on the facilities required for isolating patients on **acute general wards** *and explains*

"How an enhanced single room with en-suite facilities and a ventilated lobby can provide an isolation suite for patients who have airborne infections or who need to be protected from them;"

However this guidance states under Exclusions, Para 1.10 (page 4):

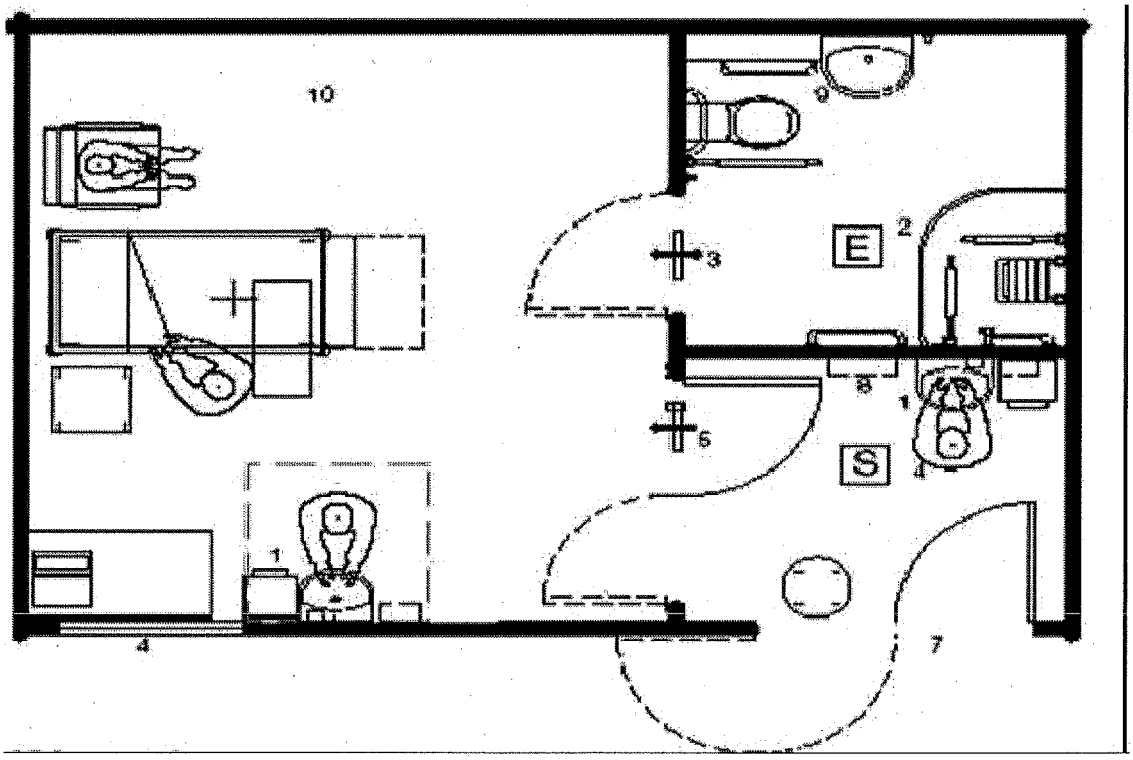
"This Supplement does not describe the specialist facilities required in infectious disease units or on wards where severely immune-compromised patients are nursed. Guidance for these facilities will follow in a further Supplement to SHPN 04."

The guidance advises that Enhanced single room with en-suite facilities and ventilated lobby (isolation suite)

Para 2.9 An enhanced single room with a positive pressure ventilated bed access lobby an en-suite facilities **with extract ventilation** *provides both source and protective isolation.*

Para 2.10 The positive pressure lobby ensures that air from the corridor does not enter the isolation room, and that air from the room does not escape into the corridor. This simple design enables the suite to be used for both **source** *and* **protective** *isolation without the need for switchable ventilation or special training for staff. It also provides safe isolation for patients whose exact condition is unknown.*

Example Room Layout: New build single room with en-suite facilities and bed-access lobby (isolation suite)



It should be noted that the recommended ventilation layout illustrates the supply air grill in the pressurised access lobby, full extract within the en-suite facility and transfer grilles on or above the doors from the isolated room to the positive pressure access lobby and to the en-suite, there is no extract from the isolation room itself which should always be held at positive pressure..

This is supported by the Minimum requirements detailed in the general specification for ventilation within a single room with en-suite facilities and bed-access lobby (isolation suite) detailed in Para 3.7. Namely:

In the bed access lobby:

- *A suitable air supply;*

In the isolation room;

- *A pressure stabiliser above bedroom door. (To pressurised lobby)*

In the en-suite bathroom:

- *Suitable extract system to the en-suite bathroom;*
- *transfer grille in the en-suite door;*

I raised the question of design compliance via David Hall in June 2015, where a response was provided by Mark Harris (Associate Engineer) of Wallace Whittle (copy attached), stating that

"We understand that the solution we have provided is compliant."

I believe that this statement is based on the excerpt from Table 1 highlighted below

Room	Parameter	Nominal Design Values
Lobby	Room volumes Bed access lobby (5m2 x 2·7m) Personnel access lobby (4m2 x 2·7m)	 13·5 m^3 10·8 m^3
	Pressure differential to corridor	Nominally 10 Pascals
	Supply air flow (for a room of this size)	Bed access lobby - 238 l/s Personnel access lobby - 208 l/s
	Air change rate	Bed access lobby – 63 per hour Personnel access lobby – 69 per hour
Isolation Room	Room volume (19m2 x 2.7m)	51.3m^3
	Pressure differential to corridor	Nominally zero
	Room air flow (for a room of this size)	158 l/s
	Air changes rate	10 per hour
En-suite	Room volume (6m2 x 2·7m)	16·2m^3
	Pressure differential to isolation room	Negative
	Extract air flow (for a room of this size)	158 l/s (If extract is fitted in the isolation room this reduces to 45 l/s in the en-suite with 113 l/s extract in the isolation room)
	Air change rate	At least 10 per hour

Table 1: Isolation Suite – Ventilation Parameters

Where immuno-compromised patients are to be accommodated, such as in transplant units or specialist cancer units, there could be a need for positive pressure isolation rooms.

In my view this statement is intended for situations where the room is being modified to meet these requirements not a new build situation.

My position is supported by both Para 4.3 which states:

"The ventilation system is designed on the basis that all its constituent parts, as described in Table 1, work together to form an integrated system. For example, air to the suite is supplied at high level in the lobby, with extract in the en-suite bathroom. This ensures good airflow through the entire isolation suite. Similarly, the volumetric airflow rate in the lobby is determined by the number of air changes required in the patient's bedroom. Modifying or failing to provide one element of the system will jeopardise the performance of the system as a whole."

As well as the statement following directly behind table 1 in the guidance:

"Where immuno-compromised patients are to be accommodated, such as in transplant units or specialist cancer units, there could be a need for positive pressure isolation rooms."

In addition empirical data collected between estates and the site ICD: currently indicates that when the en-suite door is left opened to the isolation room under the above ventilation arrangements, then the high extract rate in the isolation room results in the isolation room becoming negative compared to the en-suite room increasing the risk of contaminant ingress from the en-suite, particularly as the WC's are designed without the toilet seat lids to contain the resultant plume when flushing.

Conclusion:

Reviewing the evidence in this report it is quite clear regardless of the disclaimer in Para 1.10, that the current design arrangements do not meet the design intent OF SHPN 04 supplement 1 and therefore the proposed modification to bring these rooms in line with this guidance is not betterment over the original ER's which state that Brookfield have requirement to design all facilities in line with the appropriate guidance (Check statement provided to MAK in previous email.

Ian Powrie

Sector Estates Manager (South)

21st February 2016

Hirst, Allyson

From: Loudon, David
Sent: 02 February 2016 18:14
To: Hirst, Allyson
Subject: FW: Childrens L2 Isolation Rooms
Attachments: SHPN 4 Supplement 1.pdf

From: David Hall [redacted]
Sent: 28 January 2016 21:25
To: Moir, Peter
Cc: Loudon, David
Subject: Fw: Childrens L2 Isolation Rooms

Peter,

Trail received previously on the isolation room design. Refer to clause highlighted yellow, which reflects the design.

David

David Hall
FCIOB/MAPM
Director
Currie & Brown
[redacted]
Building 3, 2 Parklands Avenue, Maxim Office Park, Eurocentral
Lanarkshire ML1 4WQ
United Kingdom
[redacted]
Website: www.curriebrown.com

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Registered in England and Wales
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Registered Office: Dashwood House, 69 Old Broad Street, London, EC2M 1QS

From: David Wilson [redacted]
Sent: 10 June 2015 12:48
To: David Hall; Powrie, Ian [redacted]
Subject: FW: Childrens L2 Isolation Rooms

David / Ian

I'm not sure if a I previously sent this response from Wallace Whittle on the design of the childrens isolation rooms and compliance with regulations. As noted below we believe the design is compliant.

Regards
David

David Wilson
Commissioning Manager - Construction

Brookfield Multiplex Europe
New South Glasgow Hospitals Project
Hardgate Road
Glasgow, G51 4SX, United Kingdom
[redacted]
W www.brookfieldmultiplex.com

From: Harris, Mark [redacted]
Sent: Thursday, June 04, 2015 5:29 PM
To: David Wilson
Cc: Julie Miller; London Filing
Subject: RE: Childrens L2 Isolation Rooms

David,

Guidance is given in the HBN on the volumes required if extract is also provided from within the isolation room (see attached). As such, we understand that the solution we have provided is compliant.

Regards

Mark Harris
Associate Engineer
BEng (Hons) MCIBSE

TUV SUD Limited
18 Buckingham Gate
London
SW1E 6LB
United Kingdom

[redacted]

[redacted]
www.tuv-sud.co.uk/wallacewhittle

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From: David Wilson [redacted]
Sent: 03 June 2015 10:14
To: Harris, Mark
Cc: Julie Miller
Subject: Childrens L2 Isolation Rooms

Mark,

We have had a query on the design of the ventilation within the childrens Isolation rooms on L2. They have queried the extract from the room that this is not compliant with HBN04-0 as it recommends that all extract is from the En suite with a low level transfer grille? Can you comment.

Thanks
David

David Wilson
Commissioning Manager - Construction

Brookfield Multiplex Europe
New South Glasgow Hospitals Project
Hardgate Road
Glasgow, G51 4SX, United Kingdom
[redacted]
W www.brookfieldmultiplex.com

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1055 Great Western Road
Glasgow
G12 0XH

[redacted]

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Brookfield Multiplex Construction Europe Ltd
Fairfield - Suite 12
1048 Govan Road
Glasgow
G51 4XS

FAO Alasdair Fernie – Project Director

Date 1st March 2016
Your Ref
Our Ref DWL/AH

Enquiries to David W Loudon
[redacted]

Dear Alasdair

Royal Hospital for Children – Schiehallion Ward – Isolation Rooms

I am writing to advise you that colleagues within the Boards Infection Control Team and Estates Department have raised concerns that in their opinion, the design of the extract ventilation within the isolation rooms is not compliant with SHPN04-supplement 1.

The Board received an email from Brookfield Multiplex on 4th July 2015 confirming that TUVSUD Ltd understand that the solution provided in the isolation rooms is compliant with the guidance in SHPN04. I have enclosed a copy of the email dated 4th June 2015 from Mark Harris of TUVSUD Ltd to David Wilson.

I have also enclosed a copy of a report dated 21st February 2016 prepared by the Boards Estates Department which would suggest that the rooms are non compliant with the SHPN04.

I would request that consideration is given to the opinions of both parties and Brookfield Multiplex advise the Board of their position.

[redacted]
David W Loudon
Project Director

Enc

cc: Ian Powrie – Sector Estates Managers
Graham Forsyth – Senior Project Manager
Douglas Ross – Currie & Brown

From: David Wilson [redacted] on behalf of David Wilson
Sent: 03 March 2016 11:22
To: McKechnie, Stewart
Cc: Glasgow Filing; Glasgow Filing
Subject: RE: Letter from David Loudon

Stewart,

Can you amend slightly and remove the section relating to the ensuite / negative pressure. I want to keep this quite high level on the design compliance for the moment. Can you also reply on a fresh email without my trail below it, as I don't want the Aconex bit I've written to start clouding the issue. I will reply to David Loudon with an email addressing the issue of compliance and the signed off drawings and attach your mail.

Cheers
David

David Wilson
Commissioning Manager - Construction

Brookfield MULTIPLEX BM [redacted]

Brookfield Multiplex Construction Europe Ltd
Fairfield - Suite 12
1048 Govan Road
Glasgow, G51 4XS, United Kingdom

[redacted]
W www.brookfieldmultiplex.com

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From: McKechnie, Stewart [redacted]
Sent: 03 March 2016 10:27
To: David Wilson
Cc: Glasgow Filing; Glasgow Filing
Subject: RE: Letter from David Loudon

David ,
As per telecom this morning we have now had a look through the drawings and Ian Powrie's note and as far as I can see Mark's original response still stands .I cannot explain how the En suite could go into a negative pressure situation in relation to the Isolation Room when the en suite door is opened , looking at the system drawings I would have expected the opposite as the air to the En Suite should have a easier path with the door open and if anything the extract from it would increase.
Let me know if I can assist with anything further on this
Regards

Stewart McKechnie
Director
IEng ACIBSE MIHEEM

TUV SUD Limited
The Venlaw Building
349 Bath Street
Glasgow
G2 4AA
United Kingdom

[redacted]
www.tuv-sud.co.uk/wallacewhittle

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From: David Wilson [redacted]
Sent: 01 March 2016 16:15
To: McKechnie, Stewart
Subject: {Disarmed} FW: Letter from David Loudon

Stewart as discussed.

I've attached some of the isolation room schematics. Rev 01 has extract in en-suite only and from Rev 04it has extract in both the room and the en-suite?? Rev 3 was never uploaded to Aconex for some reason?

Let me know your thoughts

David

David Wilson
Commissioning Manager - Construction

Brookfield MULTIPLEX BM

Brookfield Multiplex Construction Europe Ltd
Fairfield - Suite 12
1048 Govan Road

Glasgow, G51 4XS, United Kingdom

[redacted]

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From: Alasdair Fernie
Sent: 01 March 2016 14:45
To: David Wilson; Grant Wallace
Subject: FW: Letter from David Loudon

Alasdair Fernie BSc (Hons) MRICS FCIOB
Project Director

Brookfield Multiplex Europe
[redacted]
W www.brookfieldmultiplex.com

Please note that my email address has changed to [redacted] kindly update your address book accordingly.

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From: Hirst, Allyson [redacted]
Sent: 01 March 2016 14:41
To: Alasdair Fernie
Cc: Sophie Rainey
Subject: Letter from David Loudon

Alasdair

Attached is a letter from David Loudon on the Schiehallion Ward Isolation Rooms

Kind regards

Allyson Hirst | PA to Director of Facilities & Capital Planning, and Associate Director of Facilities |
NHS Greater Glasgow and Clyde | JB Russell House | Gartnavel Royal Hospital | 1055 Great Western Road | Glasgow | G12 0XH
[redacted]

****

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From: Alasdair Fernie [redacted] on behalf of Alasdair Fernie
Sent: 03 March 2016 15:31
To: Hirst, Allyson; David Loudon
Cc: Sophie Rainey; David Wilson; Grant Wallace
Subject: Re: Letter from David Loudon

David

We have reviewed both the SHPN 04 Supplement 1 and also the report issued from from yourself to us, and would still confirm that the guidance does not exclude ventilation extract from both the en-suite and isolation room as previously advised by TUV-Sud / Wallace Whittle.

We would note that at no point in the guidance (SHPN 04 Supplement 1) does it state that this type of solution is for modified rooms and not new build as stated in the report by Ian Powrie.

We would note that SHPN04 Supplement 1 is a guidance document and, as is highlighted in Ian?s report, excludes specialist facilities such as ?infectious disease units or on wards where severely immune-compromised patients are nursed? (Paragraph 1.10) which now appears to be the criteria that the Isolation rooms particularly in in the Schiehallion ward are being scrutinized.

In addition to this we have looked back at the drawing approval process for the Isolation room ventilation and noted that the first drawings that were issued to the NHS Project team as part of the RDD process did represent what is now being asked for ? en-suite extract only (Rev 1 drawing attached) but during the RDD process / meetings the solution was changed to what was then constructed and commissioned ? extract in the ensuite and isolation room (Rev 4 drawing attached). This solution was signed off Status A by the board and their advisors Capita. It's worth noting that at no point

during the construction and commissioning / witnessing process was it highlighted that the signed off solution was incorrect or not what was required.

I hope this allows you to discuss internally, however, if you require any further or additional support please let me know.

Alasdair Fernie **BSc(Hons) MRICS FCIOB**
Project Director

On 1 Mar 2016, at 14:41, Hirst, Allyson [redacted] wrote:

> Alasdair
>
> Attached is a letter from David Loudon on the Schiehallion Ward Isolation Rooms
>
> Kind regards
>
> Allyson Hirst | PA to Director of Facilities & Capital Planning, and Associate Director of Facilities | NHS Greater Glasgow and Clyde | JB Russell House | Gartnavel Royal Hospital | 1055 Great Western Road | Glasgow | G12 0XH
> [redacted]
>
> **********
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<letter enclosures.pdf>

From: David Wilson [redacted] on behalf of David Wilson
Sent: 15 March 2016 12:34
To: david.loudon[redacted]
Subject: Re: QEUH & RHC - PMI 471 Ward 4b

That's fine David
David Wilson
Commissioning Manager - Construction

Brookfield Multiplex Construction Europe Ltd
Fairfield - Suite 12
1048 Govan Road
Glasgow, G51 4XS, United Kingdom
[redacted]
W www.brookfieldmultiplex.com

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Please note we have now moved office!

From: Loudon, David [redacted]
Sent: Tuesday, March 15, 2016 11:50 AM
To: David Wilson
Subject: RE: QEUH & RHC - PMI 471 Ward 4b

Can't do then. How about 830 tomorrow am?

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHS Greater Glasgow & Clyde
Corporate Headquarters
JB Russell House
Gartnavel Royal Hospital
Glasgow
G12 0XH

[redacted]

From: David Wilson [redacted]
Sent: 15 March 2016 11:33
To: Loudon, David
Subject: Re: QEUH & RHC - PMI 471 Ward 4b

David,

No problem, I'm on a first course today so I should be finished about 4.30pm

David
David Wilson
Commissioning Manager - Construction

Brookfield Multiplex Construction Europe Ltd
Fairfield - Suite 12
1048 Govan Road
Glasgow, G51 4XS, United Kingdom
[redacted]
W www.brookfieldmultiplex.com

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From: Loudon, David [redacted]
Sent: Tuesday, March 15, 2016 10:32 AM
To: David Wilson
Cc: Alasdair Fernie; Hirst, Allyson [redacted]
Subject: RE: QEUH & RHC - PMI 471 Ward 4b

David,

I'll call you this afternoon to discuss.

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHS Greater Glasgow & Clyde
Corporate Headquarters
JB Russell House
Gartnavel Royal Hospital
Glasgow
G12 0XH

[redacted]

From: David Wilson [redacted]
Sent: 14 March 2016 20:08
To: Loudon, David
Cc: Alasdair Fernie; Hirst, Allyson
Subject: QEUH & RHC - PMI 471 Ward 4b

David

I have reviewed PMI 471 requesting a feasibility study to establish cost and programme for fabric and services changes to the ward 4b (BMT). The information issued does not match up to the various conversations we have had on the clinical requirements. A lot of the items requested were already provided when we upgraded the ward last year (2.5Pa – 8Pa room pressure, 6ac/h etc.) and other items requested such as HEPA filter on the corridor supply are confusing as there is no supply ventilation within the corridor. Given the confusion and how critical this matter

is to the board I think it is worthwhile meeting with the Graham Forsyth / users / infection control to get a clearer understanding of the requirements so that we can carry out a meaningful feasibility study.

Let me know how you want to move forward with this.

Thanks
David

David Wilson
Commissioning Manager - Construction

Brookfield Multiplex Construction Europe Ltd
Fairfield - Suite 12
1048 Govan Road
Glasgow, G51 4XS, United Kingdom

[redacted]
W www.brookfieldmultiplex.com

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From: Loudon, David [redacted] on behalf of Loudon, David
Sent: 17 March 2016 16:27
To: Frew, Shiona
Cc: Russell, Steve; McColgan, Melanie; David Wilson
Subject: RE: QEUH & RHC - Ward 4b BMT

Shiona

Please note that the TQ sheet I issued today supersedes the discussions at the EW meeting.

Thanks

David

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHS Greater Glasgow & Clyde
Corporate Headquarters
JB Russell House
Gartnavel Royal Hospital
Glasgow
G12 0XH

[redacted]

From: Frew, Shiona
Sent: 17 March 2016 15:45
To: Loudon, David
Cc: Russell, Steve; McColgan, Melanie; 'David.Wilson[redacted]
Subject: RE: QEUH & RHC - Ward 4b BMT

Hi David

At the Early Warning meeting Gillon raised a few queries regarding the revised spec that was provided from Melanie via yourself and from my dodgy memory it was something along the lines of:

Revised Spec	**BMCL comment**
Corridor should be HEPA filtered -	where is this to be hepa filtered as there is currently no ventilation in the corridor
Bathrooms should be fully sealed (HPS, CDC)	This can be done - what spec does this need to be done to
Room pressures **2.5 -8 PA** (CDC)	currently achieving this
ACH **6/hr** (Peter Hoffman, PHE)	currently achieving this

BMCL asked for a meeting so that they can work up what works need to be carried out so can check feasibility, cost and provide programme.

Hazel advised that Steve Russell is taking over this element so I am in the process of organising the meeting of BMCL, Steve Russell and the BMT reps put forward by Melanie.

Trust this helps fill in any blanks

kind regards

Shiona

Shiona Frew
NSGH Project Team
NHS Greater Glasgow & Clyde
Queen Elizabeth University Hospital Campus
New Office Building
Level 2, Zone 3, Room C2.13
1345 Govan Road
Glasgow G51 4TF

[redacted]

From: Loudon, David
Sent: 17 March 2016 15:30
To: McColgan, Melanie
Cc: Frew, Shiona; David Wilson; Russell, Steve
Subject: RE: QEUH & RHC - Ward 4b BMT

I was not aware of a meeting arranged for next week. Either way, the query sheet needs to be answered before BM progress any further design considerations and I request that it comes through me.

David

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHS Greater Glasgow & Clyde
Corporate Headquarters
JB Russell House
Gartnavel Royal Hospital
Glasgow
G12 0XH

[redacted]

From: McColgan, Melanie
Sent: 17 March 2016 15:25
To: Loudon, David
Subject: RE: QEUH & RHC - Ward 4b BMT

I have sent you on the email ? It came from Shona Frew and you were included in the original emails
Melanie

From: Loudon, David
Sent: 17 March 2016 15:23
To: McColgan, Melanie
Subject: RE: QEUH & RHC - Ward 4b BMT

Melanie

I am not aware of a meeting next week.

The query sheet is in relation the Adults Hospital Ward 4B specification that you issued to me.

David

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHS Greater Glasgow & Clyde
Corporate Headquarters
JB Russell House
Gartnavel Royal Hospital
Glasgow
G12 0XH

[redacted]

From: McColgan, Melanie
Sent: 17 March 2016 15:21
To: Loudon, David
Subject: FW: QEUH & RHC - Ward 4b BMT

David
Is this the purpose of next week?s meeting or is this in addition to it?
Melanie

From: Loudon, David
Sent: 17 March 2016 15:15
To: McColgan, Melanie
Subject: FW: QEUH & RHC - Ward 4b BMT

Melanie

I have attached a technical query sheet for your consideration and response in the relevant box.

David

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHS Greater Glasgow & Clyde
Corporate Headquarters
JB Russell House
Gartnavel Royal Hospital
Glasgow
G12 0XH

[redacted]

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QEUH Glasgow

Ward Ventilation Strategy

Wallace Whittle

1.0 Introduction

This brief report has been prepared to confirm the current ventilation design strategy for general ward areas of QEUH. This is applicable to general wards only an alternative solution is installed for Isolation Rooms etc.

The information used to compile this review has been the current 'As Installed' drawings and commissioning records provided by BMCE copies of which can be made available if required.

2.0 Ventilation Description

We have considered one wing of a typical floor in the instance the South wing of the 5th floor.

This wing contains some 15 bedrooms and a number of ancillary areas.

In general terms the bedroom ventilation consists of a supply into the patient area with extract via the en-suite, supply air only is provided to the corridors and ancillary areas generally have both supply and extract to each room.

3.0 Ventilation Duties

Generally all bedrooms have an extraction duty of 45l/s with 40l/s being supplied to the room the patient area should be marginally positive from the en-suite. In addition with supply air only being provided to the corridor which roughly equates to the balance between deficit of en-suite extract to room supply.

4.0 Air Pattern

If we consider that the en-suite extract is achieving a slightly higher air volume than the airflow to the bedroom it follows that the air to the corridor is required to give an air balance.

5.0 Summary

From the foregoing study we can conclude that bedrooms are designed to be marginally negative to the corridors however the magnitude of difference in the airflows is so small that we would expect it the be very difficult to measure.

6.0 Attachment

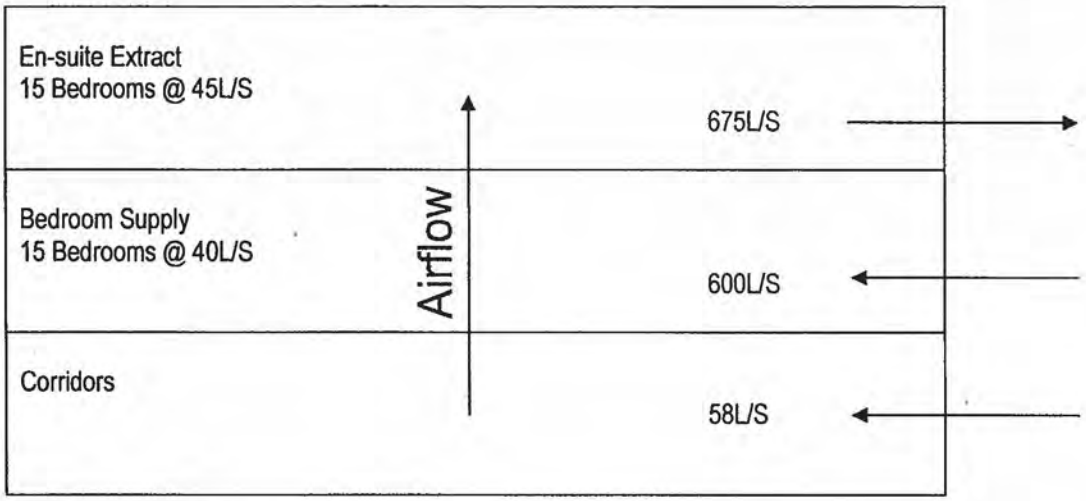
We have attached a sketch to demonstrate the air balance currently achieved on this quadrant with actual commissioning figures noted.

QEUH Glasgow

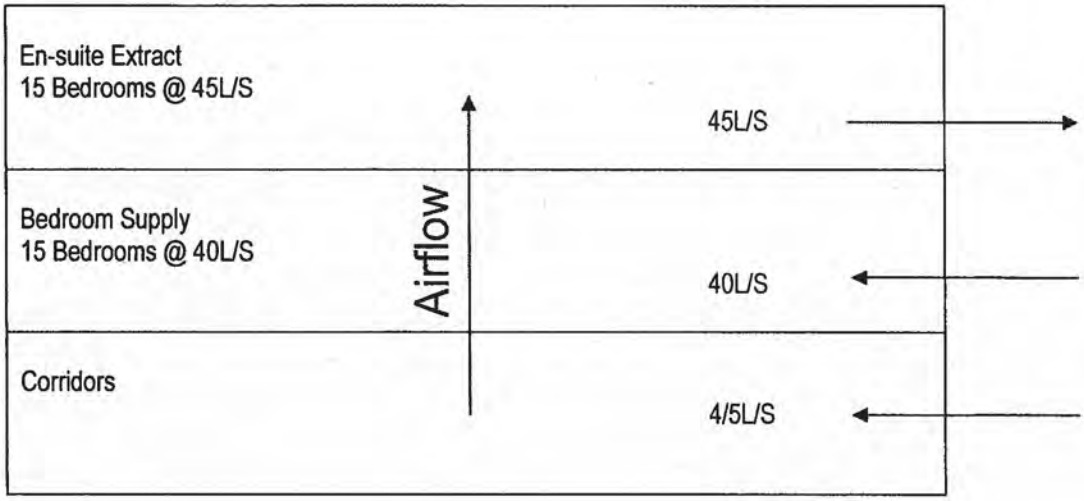
Ward Ventilation Strategy

Wallace Whittle

Current Ward Airflow diagram:-



Current Bedroom Airflow diagram:-



Total supply volume to Quadrant corridor – 58L/S
Supply volume to bedrooms – 600
Total En-suite extract – 675

From: David Wilson [redacted] on behalf of David Wilson
Sent: 24 March 2016 16:43
To: Loudon, David
Cc: Alasdair Fernie; Russell, Steve; McIntyre, Hazel
Subject: Re: QEUH & RHC - Ward 4b PMI 471

David,

I will progress this with the design team straight away. I will push to get a cost returned by next Friday but this may be tight given the Easter weekend.

David

David Wilson
Commissioning Manager - Construction

Brookfield Multiplex Construction Europe Ltd
Fairfield - Suite 12
1048 Govan Road
Glasgow, G51 4XS, United Kingdom

[redacted]
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On 24 Mar 2016, at 16:24, Loudon, David [redacted] wrote:

> David,
>
> Further to the Board?s PMI 471, I have attached a full response to your TQ sheet dated 23 March 2016. The Board requests that you progress the following:
>
> - Provide a fully inclusive cost to progress the design feasibility of the proposed alterations and related timescale. Subject to the Board?s approval of the cost, BM will be instructed to proceed with the options appraisal. Can you confirm if the cost can be provided by the end of next week?
> - The options appraisal will include a technical appraisal on the feasibility of achieving the Board?s requirements, the fully inclusive costs of the required works and a construction programme including commissioning.
> - On receipt of the information requested in the above bullet point, the Board will then consider next steps.

Should you require any further information regarding the above, please contact me.

Regards

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHS Greater Glasgow & Clyde
Corporate Headquarters
JB Russell House
Gartnavel Royal Hospital
Glasgow
G12 0XH

[redacted]

From: Russell, Steve
Sent: 24 March 2016 16:03
To: David Wilson
Cc: Alasdair Fernie; Loudon, David; McColgan, Melanie; Inkster, Teresa (NHSmail)
Subject: RE: QEUH & RHC - Ward 4b PMI 471

David,

Please find attached the latest updated responses the above TQ now incorporating the testing requirements for the HEPA filtration validation within the Prep Rm (Item 7).

Regards

Steve Russell
Senior Project Manager

[redacted]

****
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<BMT Upgrade Queries Post Meeting 23 03 16 _2_.pdf>

From: Alasdair Fernie [redacted] on behalf of Alasdair Fernie
Sent: 12 April 2016 17:14
To: Loudon, David
Cc: Grant Wallace; David Wilson; Gillon Armstrong
Subject: Re: Adults Hospital - Ward 4B

David

I've asked Gillon for an update on this as follows:-

With regards the costs and programme details for the works to ward 4B cannot be finalized until the full requirements / options that the NHS require have been confirmed. At the BMT upgrade meeting held 2 weeks ago the majority of queries were addressed sufficiently to allow the feasibility study to progress.

There are 2 decisions that the NHS are still required to make following a review of the study to allow the costs and programme to be finalized. These are as follows;

1. Confirmation of the location of the interlock lobby – this item will have relatively minor impact on cost and programme.
2. Confirmation if current air change rate in corridors is sufficient (the NHS requested that the corridors be supplied with 6 air changes per hour via HEPA filters. At the moment there is no supply air direct into the corridor as the current design is for the HEPA filtered air to cascade from the bedrooms into the corridor and then into the rest of the hospital.) If it is deemed that the current air change rate is not sufficient then the works associated with providing this additional ventilation will be considerable, if indeed possible at all. Also the knock on effect that this would have on the differential pressure between the corridor and the bedrooms would need to be reviewed as providing that level of ventilation into the corridor may require all the bedroom ductwork to be upgraded also.

Regards

Alasdair Fernie BSc (Hons) MRICS FCIOB
Project Director

On 12 Apr 2016, at 15:38, Loudon, David [redacted] wrote:

Alasdair

Thanks for the update. Can I safely assume that the feasibility study due back at the end of next week will include costs and programme?

Regards

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHS Greater Glasgow & Clyde
Corporate Headquarters
JB Russell House
Gartnavel Royal Hospital
Glasgow
G12 0XH

[redacted]

From: Alasdair Fernie [redacted]
Sent: 12 April 2016 15:33
To: Loudon, David
Cc: Grant Wallace; David Wilson; Gillon Armstrong
Subject: Re: Adults Hospital - Ward 4B

David

Current position on the above is as follows:-

- Architectural layouts are due back from Nightingales by the end of tomorrow showing options for the interlocking lobby.
- We met with WW on Friday following their review of the plantrooms and service route logistics. They are now compiling a brief detailing the options that the NHS have requested. This will be finalized on receipt of NA details later this week.
- Mercury are working in the background pricing the items of plant that will be required regardless of which options the NHS choose.

We have another meeting scheduled for Tuesday next week once David Wilson is back from holiday we will pull all the information together. We should be in a position to issue the feasibility study by the end of next week.

I hope that is enough information at the moment.

If you need anything else in the interim let me know.

Regards

Alasdair Fernie BSc (Hons) MRICS FCIOB
Project Director

On 11 Apr 2016, at 13:40, Loudon, David [redacted] wrote:

Alasdair

In David's absence, are you able to provide an update?

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHS Greater Glasgow & Clyde
Corporate Headquarters
JB Russell House
Gartnavel Royal Hospital
Glasgow
G12 0XH

[redacted]

From: David Wilson [redacted]
Sent: 11 April 2016 13:19
To: Loudon, David
Subject: Automatic reply: Adults Hospital - Ward 4B

I am on annual leave from Monday 11th April and return to work on Monday 18th April. If you require assistance prior to my return then please contactthe Glasgow office on [redacted]

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From: Alasdair Fernie [redacted] on behalf of Alasdair Fernie
Sent: 15 April 2016 08:08
To: David Loudon; Ian Powrie
Cc: David Wilson; Gillon Armstrong
Subject: Fwd: Energy Centre (EC) incident

Ian

See below for information.

Can you let me know if you require any further action at present.

Regards

Alasdair Fernie BSc (Hons) MRICS FCIOB
Project Director

Begin forwarded message:

> **From:** "Ciaran J. Kellegher" [redacted]
> **Date:** 14 April 2016 at 19:25:14 BST
> **To:** Alasdair Fernie [redacted]
> **Cc:** "Ed H. McIntyre" [redacted], "Ciaran J. Kellegher" [redacted], David Wilson [redacted], Gillon Armstrong [redacted]
> **Subject: Re: Energy Centre (EC) incident**
>
> Alasdair
>
> We reviewed this incident this morning with Schneider and the NHS (Cyril Dobson & Ian Powrie).
>
> After talking through the sequence of events with those involved it would seem that the 2 port valve after the pumps did not open properly but the controls got a signal to say it was fully open and therefore initiated the pumps to run. This was further compounded by the fact that during the changeover from the A side to the B side the building demand was high and 2 pumps quickly ramped up to 40hz.
>
> Schneider also stated that the flow meter after the 2 port valve had not being reading flow and they had suspected a faulty flow meter. This would further suggest that the 2-port valve didn't open as opposed to a faulty flow meter.
>
> The damage to the pipework seems minimal on the face of it. It's out of alignment, the brackets are bent and the pump anti-vibration mounts are strained. Zurich are going to do a di-pen test on the welds tomorrow to confirm no cracking.
>
> We will have a pipe fitter on site tomorrow to organise what is required to repair the damage to the pipework with a view to making the repairs early next week. Schneider are also going to carry out checks on the 2 port valve to confirm that the actuator is operational and that the communication to it is operating correctly. I expect that they will find an issue and that this is the reason for the excess pressure on the pump flexis.

We will also get an analysis carried out on the treaded bar to see why it failed. It should not be under any pressure in normal circumstances regardless. We would also confirm that the flexible connections were all inspected and signed off as ok by Zurich as part of the PED certification.

Please be assured that we will threat this matter as urgent so that it does not have any affect on the statutory examinations due in May.

We will keep you updated on the progress

Regards
Ciaran

Sent from my iPad

On 13 Apr 2016, at 18:11, "Alasdair Fernie" [redacted] wrote:

> Gents
>
> This looks like a sizeable issue.
>
> Ed. need to discuss this with you. Will call you shortly
>
> Alasdair Fernie BSc (Hons) MRICS FCIOB
> Project Director
>
> On 13 Apr 2016, at 17:40, Powrie, Ian [redacted] wrote:
>
> > David,
> >
> > Schneider have been working in A side of the EC over the past week to address the problems that have been prohibiting switching the A side boilers on line (this problem has been in place since commissioning, as per my previous e-mail) today they attempted to transfer the load from B side to A side.
> > During this transfer and before the side B boilers where fired, the discharge line was pressurised by the distribution pump PU21, this during this pressurisation the tie bolts on the expansion bellows on this pump sprung, stripping the threads and causing the nuts to fly off resulting a H&S near miss incident, involving Schneider engineers.
> >
> > Schneider engineers are reporting this on their incident reporting system as are we via out DATIX system.
> > In light of this incident along with previous concerns raised by our competent person (pressure systems) over fittings with reduced bolt penetration I have reported this to our competent person (Pressure systems), from Zurich engineering, who will be carrying out an examination of the affected fittings tomorrow morning and preparing an investigation report.

I would therefore request as a matter of urgency that you confirm the status of:

1. The PED CE compliance marking of the pipe work system?
2. The expected time scale to repair the damaged Bellows and pipe work resulting from this incident?
3. The time scale expected to restore side A to full operation?

These issues are critical as we have our Statutory thorough examinations booked for the B side from 9th May which requires the A side boilers available to pick up the site load.
With the A side due by the 18th June, any delay in resolving the impact of this incident will lead us failing to meet the requirements of our written scheme where NHS GG&C would be in breach of PSSR Regulation 9, if we do not shut down the affected plant (i.e. all boilers)

I would be grateful for a prompt response to this matter.

Regards

Ian

[redacted]
Sector Estates Manager (South & Clyde)
Queen Elizabeth University Hospital Campus,
1345 Govan Rd,
Glasgow,
G51 4TF,
[redacted]

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CAPITA

Minutes QEUH – Isolation Rooms

Project: **QEHB & RHC**

Date & Time: Tuesday 31st May 2016 at 2:00pm

Venue: Meeting Room 5, New FM & Lab Medicine Building, QEUH

Invitees:	**Ian Powrie** (IP)	NHSGGC Sector Estates Manager
	Douglas Ross (DRo)	Currie & Brown
	David Wilson (DW)	Brookfield Multiplex
	John McEwan (JMcE)	Hulley Sfm
	Stewart McKechnie (SM)	TUV-SUD
	Dave Ramsay (DRa)	Capita
Apologies:	**David Loudon** (DL)	NHSGGC Director of Facilities and Capital Planning

Purpose Of Meeting:

Due to recent formal concerns raised by ID Physicians & ICD colleagues at QEUH, NHSGGC wish to seek confirmation from Health Facilities Scotland (HFS) on certain matters relevant to SHPN 04 Supplement 1.
These are contained in Questions 1 and 2 of "HFS Isolation Room Status" document with Question 1 having been submitted to HFS. In advance of Question 2 submission, DL requested Supervisor to comment on Question 2 which highlights variations to SHPN 04 Supplement 1. The Team therefore requires to be unified in support of the submission and supporting information. Question 2 forms Part 1 of the agenda. IP and JMcE met on site on 25th May 2016 to view Isolation Rooms and Supervisor's (JMcE) Notes from that inspection forms Parts 2 and 3 of the agenda which includes relevant design and technical matters pertaining to the proposed submission.

Item	Minute	Action
1.0	**PROPOSED SUBMISSION PACK TO HFS**	
1.1	**HFS Isolation Room Status**	

In this document NHSGGC has prepared 2 Questions to be raised with HFS for confirmation. IP confirmed that the following Question 1 has now been forwarded to HFS. IP advised that HFS at this stage does not require detailed information of what has been provided in the Isolation Rooms at QEUH, but the likelihood is that HFS will be aware of Isolation Room layout.

Question 1:

Is the ventilation design criteria set out in SHPN 04 supplement 1: Isolation Facilities in Acute Settings As detailed in Table 1: Isolation Suite – Ventilation Parameters and Sheet 2: New build single room with en-suite facilities and bed-access lobby (isolation suite), suitable for safe nursing of patients with the one of the following conditions?

1. *Multi Drug Resistant TB (MDRTB)?*
2. *MERS?*
3. *H1N1?*

In advance of NHSGGC issuing the following Question 2 to HFS, the Team requires to be unified in support of the submission of Question 2 and the supporting information for the main variations from SHPN 04 supplement 1.

Question 2:

If the above design criterion is suitable for safe nursing of patients with any one of these conditions please advise if the following design variant is equally suitable?

See attached schematic ref: ZBP-XX-XX-SC-524-871, along with a set of commissioning documents for a representative Critical Care Ward (CCW), isolation room ventilation arrangement within the QEUH.

The following variations should be noted:

1. *The main extract is located in the isolation room.*
2. *The alarm system to the nurse's base was deleted, including:*
   - *Room Lobby pressure gauge alarm.*
   - *The extract air flow switch; alarm to the nurses' base.*
   - *The supply air flow switch; alarm to the nurses' base.*
3. *The transfer grille between the isolation room and the en-suite was deleted.*

Discussion centred on the design development process for the isolation room layout and ventilation design. DW explained that the original ventilation schematic design Drawing No ZBP-XX-XX-SC-524-707 dated 2010 for the Isolation Room Suite showed the extract located only in the En-Suite ceiling. In 2012 the ventilation schematic design submitted by Brookfield (Dwg No ZBP-XX-XX-SC-524-871) showed extract located in both the Isolation Room ceiling and the En-Suite ceiling. SM pointed out that there would have been several iterations of the drawing schematic during that period indicating that there presumably would have been discussions among the parties and reasons for developing the design. DW agreed that Brookfield would research into the process of the design development of the schematic design for the ventilation of the isolation Room Suites (Refer Action 4.1).

Brookfield to track the Design Development of the Isolation Room Layouts to inform how the following were decided: - extract grille located within Isolation Room ceiling and En-Suite ceiling; no transfer grill on the En-Suite door; the location of the bed. **DW**

2.0 IP/JMcE INITIAL REVIEW OF SOME ISOLATION ROOMS ON 25TH MAY 2016 AND MATTERS DISCUSSED

2.1 CCW-163 Bed 50 would be used as an exemplar to understand installed standard v Compliance (Also taking into consideration any PMIs or Derogations).

JMcE advised that Isolation Room Suite CCW-163 Bed 50 should be used as the exemplar for understanding the installed layout and ventilation design in comparison with SHPN 04 Supplement 1:- CCW -163 (Lobby); CCW-164 (En Suite); CCW-165 (Single Isolation). **Note**

2.2 Provision of "all" available validation documentation provided under the construction contract for Bed 50-

DW to collate all validation documentation for the Isolation Room Suite as Item 2.1. **DW**

2.3 Provision of "all" available verification documentation provided under the FM contract for Bed 50

IP explained that Estates are currently verifying the Theatres and will shortly be commencing verification of the Isolation Rooms. IP confirmed that H&V Commissioning Services Ltd were doing verification. JMcE requested the standard pro- forma that is being used for verification so that he can review. **IP/JMcE**

2.4 Confirmation on what design standards the rooms are built & validated to

Discussions centred on the requirements of SHPN 04 supplement 1. **Note**

3.0 SUPERVISOR (JMcE) INITIAL OBSERVATIONS (where access was gained) USING SHPN 04: SUPPLEMENT 1 AS REFERENCE

3.1 Room pressure was sitting at 8pa. This was at the magnehelic and no true readings were taken to verify. Range should be between 10 and 12 pa. (Appendix 2 Acceptance Testing)

DW confirmed that tests undertaken proved that a positive pressure of 10 Pascals between entry lobby and door had been achieved. JMcE requested confirmation of pressure readings taken between Isolation Room and Lobby and taken between Isolation Room and En-Suite. DW confirmed he would provide. DW to issue test results to Supervisor for review. **DW/JMcE**

3.2 No Alarms installed to indicate to clinical team of potential ventilation issues or remote alarm at nurses stations. Also demonstrated by low pressures having no indication (4.22)

SHPN 04 Supplement 1 Section 4.22 states: - "*Audio and visual alarms must be located at the entrance to the lobby and bedroom to warn nursing and maintenance staff of potential unsafe conditions. Continuous monitoring should be provided with remote indication at nurses stations, interlinked to the Building Management System with time delay (adjustable by Estates personnel) to take account of running-up of standby motors or damper operations or other plant items that may take time to open or close."*

DRo explained that no alarms are provided to nurses' station as these were omitted by the Board in PMI 169 Nurse Call Interface which confirmed requirements of Nurse Base Panel and stated *"monitoring bedroom pressure, not required"*. This was issued following a visit by Lead Nurse on the project and other project team members visiting example hospital in London. DW confirmed that pressure monitoring is linked to the BMS and alarms display on the main BMS control panel in accordance with the BMS specification. **Note**

PMI 169 states: - ***"Description*** *The Board confirm their nurse call interface requirements for the Adult & Childrens Hospitals as per the attached document.* ***Instruction*** *Incorporate the attached interface requirement into your design development process for the nurse call system."*

Attached interface requirement states:-

"NURSE CALL INTERFACE REQUIREMENTS

Following static workshop and visit to Royal London Hospital we have agreed that we need the following items integrated with Static system: - Nurse call, Door access, Fire alarm, Medical gas alarm, PTS notification, Bedroom temperature notification, Control of 3rd party TV from patient handset i.e. static handset capable of operating as TV remote with infrared on static bedhead.

We have discarded the following systems which they have used in RLH

Bedroom pressure

We have also discarded the following applications offered by Static systems as part of their presentations

Patient information details, Patient "wandering" system, Voice communication for patient to staff calls"

It was discussed that the PMI concerns the Nurse Call interface requirements and does not appear to specifically instruct the deletion of the Audio and visual alarms. **Note**

Brookfield to track the Design Development process consequent to PMI 169 to inform on the deletion of alarms. **DW**

With DRo agreement DW to obtain a quotation for providing audio and visual alarms and forward to DRo. **DW/DRo**

3.3 The pressure stabiliser was not operating correctly. With corridor door open top blade remained open. Bottom blade appears to have no status change when doors are either open or closed.(4.21)

Brookfield to investigate and also forward pressure stabiliser testing and commissioning information to Supervisor. **DW**

3.4 **Door from lobby opens into room and in instance not closing properly leaving a greater leakage path and closing direction not as per exemplar within SHPN 04: Supplement 1. Sheet 2**

Brookfield to investigate and advise Supervisor. The inconsistency of lobby/room door handle provision was discussed with handles on some doors and pushplates on other doors. **DW**

3.5 **Extract grille located within room ceiling and toilet. All air should be extracted via the toilet with low level transfer grille within door (4.12)**

SHPN 04 Supplement 1 Section 4.12 states: - *An extract terminal should be fitted at high level in the en-suite room. An additional terminal may be fitted in certain circumstances at low level adjacent to the bedhead in the bedroom. The clinical requirement for this should be verified and such requirements would probably relate to highly infectious patients.* Refer Actions in 1.1 and 4.2. **Note**

3.6 **Bed location not as per exemplar within SHPN 04: Supplement 1. Sheet 2**

JMcE identified that the location of the bed was not in the position shown in SHPN 04: Supplement 1. Sheet 2. DRo advised that this would have been a clinical decision. **Note**

3.7 **Supply AHU (We used AHU 16 as example) is not identified with what room it serves and neither is the ductwork. (4.19 & SHTM03-01)**

DW advised that this matter is tracked as a Defect in FM First Summary Schedule and will be corrected. **Ongoing**

3.8 **Air Permeability (Leakage): We were advised this was carried out using the room volumes and not the envelope volumes. This will be checked on receipt of information noted within 2.2 above.**

Brookfield to issue Air Permeability results to JMcE for Supervisor review. **DW/JMcE**

4.0 Agreed Actions

4.1 **As-Built and Commissioned Information Pack for Isolation Room Suite CCW-163 Bed 50**

With reference to Minute Item 2.1, Brookfield to pull together a pack of information for Isolation Room Suite CCW-163 Bed 50 comprising: - CCW -163 (Lobby); CCW-164 (En- Suite); CCW-165 (Single Isolation). This should comprise the as-built layouts and the ventilation strategy together with "all" available validation documentation. **DW**

4.2 **Specialist Ventilation Advice**

With NHSGGC consent JMcE offered to obtain an initial independent view on the extract grille located in the Isolation Room ceiling. **DL/JMcE**

5.0 Next Meeting

A follow-up meeting to track the actions TBA. **ALL**

Douglas Ross

From: ALAN SEABOURNE [redacted]
Sent: 23 June 2016 10:14
To: Douglas Ross; Loudon, David; Ramsay, David (Capita); Griffin, Heather; Frew, Shiona; Peter Moir [redacted]
Cc: Hirst, Allyson
Subject: Re: QEUH - SBAR Rooms Airchanges
Attachments: Copy of Evaluation Tasks and Programme - final (1).xls; Copy of NSGH - CD programme - draft 13 - current (1).xls

David,

I would be happy to participate in any meeting regarding the new hospital. With regard to the current ventilation issues in general single rooms I fully agree with Douglas that statements in the SBAR are inaccurate. Also, no matter what the infection control people say, they were involved in every aspect of the design and the member of my team responsible for infection control, Annette Rankin was the person responsible at design, dialogue and evaluation for ensuring that appropriate liaison and communication with the Infection Control Department and Microbiology was carried out effectively. To this end infection control and Microbiology along with Annette were party to the sign off of all design matters that had an impact on patients including the environment. There was no instance during the whole project time line that I can remember when I was informed this did not occur. Also, I would confirm that Facilities Management were involved in every aspect of the design including the final sign off of the contract documents after Dialogue and Evaluation had been completed.

Douglas's timeline is correct in that the decision on ventilation regarding the general single rooms was made at design/dialogue stage and confirmed at evaluation stage. I have attached a list of the names who participated in both the design/dialogue and evaluation stages of the project and as you can see infection control and facilities were represented. My recollection is that they both did not miss any of the meetings and, in fact at the evaluation stage we were all grouped together in one area carrying out the assessment of the bids and the final selection of the wining bid and no one was left out of these discussions and decisions as it was a completely integrated process.

There was no reason for the decision on ventilation to be made without the input and approval of those responsible for infection control and facilities. For example, during the design process the initial design proposal was for the theatres not to have a dirty corridor. At first this wasn't accepted by infection control or facilities, however, after discussion with both the design was accepted. This and other issues like this occurred on many occasions and dealt with appropriately through our normal collaborative process. I would also say that you probably cant find specific piece of paper detailing this exactly and specifying who was there but it will be captured in the log.

One of the key issues we faced from the outset of the project was that Facilities specified that the building could not rise in temperature above 26 degrees in the summer months (not usual) as this had been problematic with previous new buildings such as the ACH's. As you all have seen from previous correspondence (design strategy) this issue drove the change in ventilation design in order to achieve appropriate comfort levels and infection control as well as achieving this maximum temperature. This was agreed by all parties.

Your email states that the general single rooms are not at negative pressure, although Douglas states this is not required. From my recollection, Brookfield are contracted to provide negative pressure rooms along with the agreed change in air changes. I would like to know how Brookfield tested this at commissioning and who signed it off and also, what tests the Board have done to

enable them to now state the rooms are not at negative. This must have had its difficulties as the rooms were never required to be sealed with doors that do not have automatic closing devices (as greed by all parties at the mock-up single rooms we had built) and hence can be left open, clearly removing any form of environmental control.

We had a discussion during design process about natural ventilation which is acceptable in the guidelines but we asked infection control for their view and approval through Annette and they advised against it, I think I'm correct in stating the infection control person who gave the advice was Penelope Reading. This was typical of the normal approval process we adhered to at all times.

We are where we planned to be and if its not acceptable now then there needs to be a revised risk assessment that instructs what protocols are required to be put in place. The SBAR informs that this has been done and sets out recommendations to address the changed risk rating.

Sorry about the typing but bit rusty. Look forward to meeting up and discussing further.

Alan

On Wednesday, 22 June 2016, 8:23, Douglas Ross [redacted] wrote:

David

David H is willing to attend, but from review of documentation at the time either Mark or myself should be able to cover the technical review process, in the event we are unable to co-ordinate diaries with David H.

A meeting would definitely be useful as there are statements in the SBAR on the background that are inaccurate.

The decisions to change from 6 to 3 air changes was not made in renal dialysis unit and extrapolated to the whole hospital. The decisions accepting change was made in 2009 during bid evaluation / preferred bidder discussions. The testing of suitability for renal unit as per John Hood email you issued was in 2010 and notes proposed change was accepted, as air changes in non-specialised ventilation areas (bedrooms are non-specialised areas as per HTM) is related to temperature control, not infection control.

The HTM also confirms that for single bedrooms, netural or –ve pressure is acceptable.

Douglas Ross
MRICS
Director

Currie & Brown

[redacted]
Building 3, 2 Parklands Avenue, Maxim Office Park, Eurocentral
Lanarkshire
ML1 4WQ
United Kingdom

[redacted]
Website: www.curriebrown.com

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Douglas Ross

From: Loudon, David [redacted]
Sent: 28 June 2016 08:09
To: Douglas Ross
Subject: RE: QEUH - SBAR Rooms Airchanges

Sensitivity: Confidential

Douglas

Can you send me the log that you had yesterday to me for lunchtime today.

Regards

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHS Greater Glasgow & Clyde
Corporate Headquarters
JB Russell House
Gartnavel Royal Hospital
Glasgow
G12 0XH

[redacted]

From: Douglas Ross [redacted]
Sent: 22 June 2016 08:23
To: Loudon, David; Ramsay, David (Capita); Alan Seabourne; Griffin, Heather; Frew, Shiona; Peter Moir [redacted]
Cc: Hirst, Allyson
Subject: RE: QEUH - SBAR Rooms Airchanges
Sensitivity: Confidential

David

David H is willing to attend, but from review of documentation at the time either Mark or myself should be able to cover the technical review process, in the event we are unable to co-ordinate diaries with David H.

A meeting would definitely be useful as there are statements in the SBAR on the background that are inaccurate.

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The HTM also confirms that for single bedrooms, netural or –ve pressure is acceptable.

Douglas Ross
MRICS
Director

Currie & Brown

[redacted]
Building 3, 2 Parklands Avenue, Maxim Office Park, Eurocentral
Lanarkshire
ML1 4WQ
United Kingdom

[redacted]
Website: www.curriebrown.com

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From: Loudon, David [redacted]
Sent: 21 June 2016 13:22
To: Douglas Ross [redacted]; Ramsay, David (Capita) [redacted]; Alan Seabourne [redacted]; Griffin, Heather [redacted]; Frew, Shiona [redacted]; Peter Moir [redacted]
Cc: Hirst, Allyson [redacted]
Subject: QEUH - SBAR Rooms Airchanges
Importance: High
Sensitivity: Confidential

All,

I have attached a copy of an SBAR prepared by the lead infection control consultant which as you will see challenges the Board's previous acceptance of 3 air changes per hour in the noted areas which I understand was based on the introduction of the chilled beam specification. The implications of the SBAR are potentially serious and therefore, Robert Calderwood has instructed me to establish why there was an agreed variation to recommended air changes for a single room on a ward are 6 air changes / hour as per HTM 03-01 (Specialised ventilation for healthcare premises) and from a governance perspective the process for sign off of the specification as delivered.

The ventilation strategy for the building would appears to have been concluded as part of the competitive dialogue process and I via Shiona am having a challenging in finding the audit trail and am therefore writing to seek your assistance in finding the background and governance process associated with this issue.

I have also attached an e mail dated 2th October 2010 which seems to suggest that 3 air changes per hour and chilled beams are acceptable for renal dialysis and perhaps, this principle was applied elsewhere? However, I can't find an audit trail for this.

Douglas: Can you contact David Hall and establish if he is willing to participate in a meeting.

Alan / Peter: Can you please advise if you are both willing to assist

Heather / Shiona: Can you please meet a matter of priority to revisit the audit trail

I have been tasked to progress this matter without delay by the CEO and Ally will be in contact to arrange a meeting as early as possible.

David

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHS Greater Glasgow & Clyde
Corporate Headquarters
JB Russell House
Gartnavel Royal Hospital
Glasgow

G12 0XH

[redacted]

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30. email

[redacted]

From: Peters, Christine
Sent: 22 July 2016 09:09
To: Powrie, Ian; Redfern, Jamie; Joannidis, Pamela
Cc: Kirkwood, Jean; Hutton, Melanie; Brattey, David; Rodgers, Jennifer; Inkster, Teresa (NHSmail); Hunter, William; Kane, Mary Anne; Loudon, David; Brattey, David; Inkster, Teresa (NHSmail)
Subject: RE: Ward 2a cubicles 8-11

Thanks Ian for the details and reassurance regarding the cooling methods in the isolation rooms.

Kind regards,

Christine

Dr Christine Peters
Consultant Microbiologist
Southern General Hospital
GGC
[redacted]

From: Powrie, Ian
Sent: 21 July 2016 18:24
To: Peters, Christine; Redfern, Jamie; Joannidis, Pamela
Cc: Kirkwood, Jean; Hutton, Melanie; Brattey, David; Rodgers, Jennifer; Inkster, Teresa (NHSmail); Hunter, William; Kane, Mary Anne; Loudon, David; Brattey, David; Inkster, Teresa (NHSmail)
Subject: RE: Ward 2a cubicles 8-11

Hi Christine,

The re-generated fibres\dust is collecting on the coil fins inside the ceiling mounted chilled beams (supply air is provided via these beams), there is no indication that the positive air supply pressure is not being maintained. With respect to the isolation rooms, these do not have chilled beams as the air is supplied directly from the Air Handling unit (where the cooling function takes place remotely from the room) and then passes through the HEPA filter housing in the lobby. There will be no condensation generated at the lobby air supply point and therefore no resulting damp within these facilities.

Hope this helps.

Regards

Ian

[redacted]
Sector Estates Manager (South & Clyde)
Queen Elizabeth University Hospital Campus,

1345 Govan Rd,
Glasgow,
G51 4TF,
PA Elaine McNeil: [redacted]
[redacted]
[redacted]

From: Peters, Christine
Sent: 21 July 2016 14:58
To: Redfern, Jamie; Powrie, Ian; Joannidis, Pamela
Cc: Kirkwood, Jean; Hutton, Melanie; Brattey, David; Rodgers, Jennifer; Inkster, Teresa (NHSmail); Hunter, William; Kane, Mary Anne; Loudon, David; Brattey, David; Inkster, Teresa (NHSmail)
Subject: RE: Ward 2a cubicles 8-11

Thanks Ian,

For clarity – is the dust particulate matter collecting on the supply grilles? Have there been any indications that the positive pressure is not being achieved ?

With specific reference to the isolation rooms – is the same cooling system in place?

My concern is the collection of damp within accommodation for immune compromised patients.

Regards,

[redacted]

Dr Christine Peters
Consultant Microbiologist
Southern General Hospital
GGC
[redacted]
[redacted]

From: Redfern, Jamie
Sent: 21 July 2016 14:49
To: Powrie, Ian; Joannidis, Pamela
Cc: Kirkwood, Jean; Hutton, Melanie; Brattey, David; Rodgers, Jennifer; Inkster, Teresa (NHSmail); Hunter, William; Kane, Mary Anne; Loudon, David; Brattey, David; Peters, Christine
Subject: Re: Ward 2a cubicles 8-11

Thanks Ian

Sent from my BlackBerry 10 smartphone on the EE network.

From: Powrie, Ian
Sent: Thursday, 21 July 2016 12:45
To: Redfern, Jamie; Joannidis, Pamela
Cc: Kirkwood, Jean; Hutton, Melanie; Brattey, David; Rodgers, Jennifer; Inkster, Teresa (NHSmail); Hunter, William; Kane, Mary Anne; Loudon, David; Brattey, David; Peters, Christine
Subject: RE: Ward 2a cubicles 8-11

Jamie\Pamela,

By way of an update and for clarification, I would advise that the issue currently being experienced with regards to condensation from chilled beams across many clinical areas which has been compounded in some cases by regenerated fibres\dust (generated by normal room activities) collecting on the chilled beam vent fins causing the condensation to turn black, we recognise the infection control issues with this and as such David and the estates team have worked tirelessly to address this across all areas. However as I am sure that you are aware while the is high humidity persists condensation will continue to be produced.

There are two issues to be considered with respect to this incident:

1. Condensation: Condensation should be controlled under the chilled water control philosophy, however I have investigated this and this level of control strategy is missing.
2. Regenerated fibres\dust: This was not anticipated to require a routine PPM for the chilled beams to be cleaned as these are under positive pressure and therefore fibres\dust should not be entrained in to the chilled beam finned surfaces, normally regenerated fibres\dust would collect on the extract grilles. Manufactures recommendations are that "The interval between cleaning varies depending on the type of product, where the product is located and the nature of the operations conducted in the premises. Smoking, particle emitting materials, wall-to-wall carpeting and printers are typical factors that affect the interval between cleaning. Under normal operating conditions, schedule the cleaning to be carried out every fifth year.." Given that we are operating in a clinically clean environment, this would be classed as an improvement on normal and therefore the 5 year cleaning frequency was included in the PPM schedule.

I have raised these concerns over the infection risk arising from both these issues with Brookfield and requested that they review the design criteria, control strategy applied and investigate the unexpected entrainment of regenerated fibres\dust on the chilled beams. Once this has been reviewed I will update you on the outcome.

In the mean time, I will arrange for a systematic cleaning programme for all chilled beam to assess and record the condition in all locations and allow us to monitor the status at key locations at monthly intervals to establish a suitable cleaning PPM frequency.

Best regards

Ian

[redacted]
Sector Estates Manager (South & Clyde)
Queen Elizabeth University Hospital Campus,
1345 Govan Rd,
Glasgow,
G51 4TF,
PA Elaine McNeil: [redacted]
[redacted]
[redacted]

From: Redfern, Jamie
Sent: 19 July 2016 19:18
To: Joannidis, Pamela
Cc: Kirkwood, Jean; Hutton, Melanie; Powrie, Ian; Brattey, David; Rodgers, Jennifer; Inkster, Teresa (NHSmail)
Subject: RE: Ward 2a cubicles 8-11

Thanks Pamela

Can I just confirm there are no actions to be taken for now in respect of this linked to picu or any other wards in hospital?

Jamie Redfern
General Manager, Hospital Paediatrics & Neonates

Patient safety starts and ends with the person we serve.

From: Joannidis, Pamela
Sent: 19 July 2016 19:11
To: Redfern, Jamie; Rodgers, Jennifer; Inkster, Teresa (NHSmail)
Cc: Kirkwood, Jean; Hutton, Melanie; Powrie, Ian; Brattey, David
Subject: Ward 2a cubicles 8-11

Hi
Just updating you on decisions made following incident:
Jean Kirkwood had reported to estates last night that discoloured water had dripped down from the ventilation onto the floor next to a patient's bed. Estates met with us (Jean, Melanie and I) in Ward 2a to review the issue. In Ward 2a, 4 single rooms (not BMT) are affected but not all to same degree.
Each non-BMT room in Ward 2a has a chill beam in the ceiling and in front of it a ventilation grille. Due to excessive heat, air condensed on the beam and dripped onto the grille, then on to the floor. Unfortunately the grilles have not been subject to PPM and some are thick with stour. This turned the water black as it dripped down.
Estates plan is :
Seal up room from inside. Remove grille, vacuum (HEPA filtered) and wash (Actichlor Plus). Clean chill beam (Actichlor Plus). Clean materials and remove seals. Deep clean.
Ward 2a are keen to get these rooms in to action asap. They need all 4 rooms cleaned over next two days. After that they need a PPM for all the grilles. Not all grilles seem to have the same level of stour / dust in RHC, but it will be worth doing a review of which rooms have them in which wards so that they can be part of the PPM.
I have agreed this with the acting Lead ICD, SCN and estates (David Brattey) and will write it up.
We need to work with Estates to undertake a further SCRIBE for routine PPM for grille cleaning in all affected rooms.
While in Ward 2a, Jean enquired about BMT room 24. Estates have described what needs to be undertaken with respect to fixing a torn piece of duct in the ceiling space in the lobby of this room. I will help estates to write up and agree the HAI SCRIBE for this work and share with Jean in the first instance.

kind regards

Pamela Joannidis
Nurse Consultant
Infection Prevention and Control

[redacted]

From: Russell, Steve [redacted] on behalf of Russell, Steve
Sent: 01 August 2016 09:56
To: Fergus Shaw
Cc: leigh jamieson; Jerry Sullivan; David Wilson; Forsyth, Graham; Grant Wallace; Boyd, Michelle; Loudon, David
Subject: RE: QEUH - AAU
Attachments: print.pdf

Fergus,

Sorry but I need something more tangible than that, the Board need to be aware of the planned time line for getting the costs and programme. Could you confirm as a matter of urgency please? You?ll be aware that the Board issued the instruction with the relevant information to Sypro on the 24th June (over 5 weeks ago).

Regards

Steve Russell
Senior Project Manager

[redacted]

From: Fergus Shaw [redacted]
Sent: 29 July 2016 13:49
To: Russell, Steve
Cc: Leigh Jamieson; Jerry Sullivan; David Wilson; Forsyth, Graham; Grant Wallace; Boyd, Michelle
Subject: RE: QEUH - AAU

Steve,

The architect is finalising the drawing to be passed to the M&E designer.

I will let you know when we have the drawings.

Regards

Fergus

From: Russell, Steve [redacted]
Sent: 29 July 2016 13:17
To: Fergus Shaw
Cc: Leigh Jamieson; Gillon Armstrong; Jerry Sullivan; David Wilson; Forsyth, Graham; Grant Wallace; Boyd, Michelle
Subject: RE: QEUH - AAU

Fergus,

Further to my email on Tuesday I can find no record of a response. As we?re under significant pressure to get this scheme underway can you offer an update on where we are with costs and programme as a matter of urgency please?

Regards

Steve Russell
Senior Project Manager

[redacted]

From: Russell, Steve
Sent: 26 July 2016 12:07
To: 'Fergus Shaw'
Cc: Leigh Jamieson; Gillon Armstrong; Jerry Sullivan; David Wilson; Forsyth, Graham; Grant Wallace
Subject: RE: QEUH - AAU

Afternoon Fergus,

Are you able to offer an update on where we currently are with this one please? Do we have any indicative costs yet?

Regards

Steve Russell
Senior Project Manager

[redacted]

From: Fergus Shaw [redacted]
Sent: 01 July 2016 12:13
To: Russell, Steve
Cc: Leigh Jamieson; Gillon Armstrong; Jerry Sullivan; David Wilson; Forsyth, Graham; Grant Wallace
Subject: RE: QEUH - AAU

Steve,

Leigh will upload design fees this afternoon.

Regards

Fergus

From: Grant Wallace
Sent: 01 July 2016 12:00
To: Fergus Shaw; Russell, Steve
Cc: Leigh Jamieson; Gillon Armstrong; Jerry Sullivan; David Wilson; Forsyth, Graham
Subject: RE: QEUH - AAU

Fergus

We received the PMI on the 28th June.

Regards

Grant

Grant Wallace
Project Commercial Director - Construction

Brookfield Multiplex Construction Europe Ltd
Fairfield ? Suite 12
1048 Govan Road
Glasgow, G51 4XS, United Kingdom
[redacted]
W www.brookfieldmultiplex.com

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From: Fergus Shaw
Sent: 01 July 2016 11:55
To: Russell, Steve
Cc: Leigh Jamieson; Gillon Armstrong; Jerry Sullivan; David Wilson; Forsyth, Graham; Grant Wallace
Subject: RE: QEUH - AAU

Steve,

Not as of yesterday afternoon. (I will ask LJ to check)

I am on leave from this evening, and will not respond further prior to my return.

Regards

Fergus

From: Russell, Steve [redacted]
Sent: 01 July 2016 11:53
To: Fergus Shaw
Cc: Leigh Jamieson; Gillon Armstrong; Jerry Sullivan; David Wilson; Forsyth, Graham; Grant Wallace
Subject: RE: QEUH - AAU

Fergus,

You should have by now received our PMI for the above? Can you confirm please and advise on the revised time scales for getting costs to me?

You should include costs for both normal working hours and out of hours. The area works 24/7 but there are quieter times.

Regards

Steve Russell
Senior Project Manager

[redacted]

From: Fergus Shaw [redacted]
Sent: 09 June 2016 13:53
To: Russell, Steve
Cc: Leigh Jamieson; Gillon Armstrong; Jerry Sullivan; David Wilson; Forsyth, Graham; Grant Wallace
Subject: RE: QEUH - AAU

Steve,

We require PMI (including drawing), to progress with pricing exercise. Also, confirmation of day shift work.

Regards

Fergus

From: Fergus Shaw
Sent: 07 June 2016 09:29
To: 'Russell, Steve'
Cc: Leigh Jamieson; Gillon Armstrong; Jerry Sullivan; David Wilson; Forsyth, Graham
Subject: RE: QEUH - AAU

Steve,

Please provide PMI (including drawing), and we will progress with *pricing* exercise.

Can you confirm if works are during the day or out of hours?

Regards

Fergus

From: Russell, Steve [redacted]
Sent: 07 June 2016 09:24
To: Fergus Shaw
Cc: Leigh Jamieson; Gillon Armstrong; Jerry Sullivan; David Wilson; Forsyth, Graham
Subject: RE: QEUH - AAU

Fergus,

Please proceed on this basis.

Regards

Steve Russell
Senior Project Manager

[redacted]

From: Fergus Shaw [redacted]
Sent: 07 June 2016 09:20
To: Russell, Steve
Cc: Leigh Jamieson; Gillon Armstrong; Jerry Sullivan; David Wilson; Forsyth, Graham
Subject: FW: QEUH - AAU

Steve,

We have reviewed your requirements, and can confirm the following ***indicative*** timescales for costs, programme and fees.

Costing ? LJ will secure costs by Monday 27th June.

Programme ? the works will take approximately 5 weeks, though there will be a long lead on the nurses station (including sub contract drawing and manufacture)

Fees ? Arch and M&E fees will be circa ?3k each as before.

Please confirm how you wish to progress.

Regards

Fergus

From: Russell, Steve [redacted]
Sent: 06 June 2016 15:31
To: David Wilson
Cc: Gillon Armstrong; Leigh Jamieson
Subject: RE: QEUH - AAU

David,

Further to my previous email and after a further review with the users, please find attached our annotated drawing with the amended requirements for the above, let me know if there are any clarifications required?

I need an indication on the time frame for costing, proposed programme, fees etc. Can you advise please?

Regards

Steve Russell
Senior Project Manager

[redacted]

From: David Wilson [redacted]
Sent: 26 May 2016 12:05
To: Russell, Steve
Cc: Gillon Armstrong; Leigh Jamieson
Subject: RE: QEUH - AAU

Thanks Steve

David Wilson
Commissioning Manager - Construction

Brookfield MULTIPLEX | BM [redacted]

Brookfield Multiplex Construction Europe Ltd
Fairfield - Suite 12
1048 Govan Road
Glasgow, G51 4XS, United Kingdom

[redacted]
W www.brookfieldmultiplex.com

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From: Russell, Steve [redacted]
Sent: 26 May 2016 10:31
To: David Wilson
Cc: Gillon Armstrong; Leigh Jamieson
Subject: RE: QEUH - AAU

David,

Following some discussions on our side the service have decided that the current proposed layout amendments won?t function for them. I met yesterday with both their General Manager and Clinical Service Manager and have some adjustments that I?ll mark up and forward to you.

Regards

Steve Russell
Senior Project Manager

[redacted]

From: David Wilson [redacted]
Sent: 26 May 2016 10:21
To: Russell, Steve
Cc: Gillon Armstrong; Leigh Jamieson
Subject: RE: QEUH - Ward 4b

Steve,

Barkell (The AHU manufacturer) are currently trying to come up with a solution that meets the new energy regulations for air moving plant. I was hoping this would be complete and a price returned at the beginning of the week but this has not yet happened and Mercury are chasing them daily. I will get an update today and let you know.

On another subject, dis you manage to have a look at the drawings for the acute assessment? Just wondering if you want us to proceed and price on the basis of the drawings.

Thanks
David

David Wilson
Commissioning Manager - Construction

Brookfield MULTIPLEX BM [redacted]

Brookfield Multiplex Construction Europe Ltd
Fairfield - Suite 12
1048 Govan Road
Glasgow, G51 4XS, United Kingdom

[redacted]
W www.brookfieldmultiplex.com

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From: Russell, Steve [redacted]
Sent: 26 May 2016 10:01
To: David Wilson
Cc: Gillon Armstrong; Leigh Jamieson
Subject: RE: QEUH - Ward 4b
Importance: High

David,

Are we any further forward with the ventilation costs missing from the feasibility report? It looks like we could be in a position to instruct these works, however, cost certainty on this element is now urgently required in order to get an approval.

Regards

Steve Russell
Senior Project Manager

[redacted]

From: Russell, Steve
Sent: 18 May 2016 09:07
To: 'David Wilson'
Cc: Gillon Armstrong; Leigh Jamieson
Subject: RE: QEUH - Ward 4b

David,

On a similar vein, we?ve been asked to provide indicative costs if we were to introduce positive pressure ventilation into the corridors. It?s extremely unlikely this would proceed due to the difficulties and cost involved and was previously rejected, but I believe indicative costs would facilitate that being permanently ruled out.

Can you coble something together quickly please? High level ballpark is all we need, I?m not expecting any sort of design but you may want to consider any impact on the relocation of existing services, disruption to other clinical spaces, increased plant size etc.

Regards

Steve Russell
Senior Project Manager

[redacted]

From: David Wilson [redacted]
Sent: 18 May 2016 08:12
To: Russell, Steve
Cc: Gillon Armstrong; Leigh Jamieson
Subject: QEUH - Ward 4b

Steve,

As was noted in the costs report that were issued on Friday, one of the prices we are still waiting on is for the AHU works. The manufacturer, Barkell, has noted that our proposal which does not incorporate heat recovery (due to logistics of the four units and cost) and as such does not comply with the new European Eco Design Directive efficiencies that came into effect in January 2016. Given this, they will not provide a cost for the proposed Air Handling Unit works.

We are currently reviewing the information they have provided to try and get a solution.

I will update you when I have more information.

David

David Wilson
Commissioning Manager - Construction

Brookfield MULTIPLEX | BM [redacted]

Brookfield Multiplex Construction Europe Ltd
Fairfield - Suite 12
1048 Govan Road
Glasgow, G51 4XS, United Kingdom

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New Southern General Hospitals

Project Manager Instruction #5944

Status: Open

Notification

Raised By

GGC01.NSGLP.sfrew on 24 Jun 2016 4:18PM

Raised To

BCL01

Response Required By

8 Jul 2016 12:00AM

Title

PMI 479 - Alterations to QEUH Acute Assessment Ward

Description

The Board requests that Brookfield provide a cost for alterations within the QEUH Acute Assessment Ward as detailed on the attached sketch.

Instruction

As above

A47069198

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From: Michael Haveron [redacted] on behalf of Michael Haveron
Sent: 15 August 2016 14:25
To: Madden, William
Subject: RE: ward 2a NCH

William,

No? All works completed at handover, only have defect remaining for the building now.

I am assuming this is poor pressure on the differential gauge?

Michael Haveron
M&E Project Engineer - Construction

Brookfield MULTIPLEX BM [redacted]

Brookfield Multiplex Europe
Site Office
Institute of Neurological Science
Queen Elizabeth University Hospital
1345 Govan Road
Glasgow, G51 4TF, United Kingdom
[redacted]
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From: Madden, William [redacted]
Sent: 15 August 2016 14:22
To: Michael Haveron
Subject: ward 2a NCH

MICHAEL
Do you have any outstanding works on the isolation rooms in the ward 2a NCH ,AHUs/ventilation.

Thanks

wm

****
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From: Powrie, Ian
Sent: 22 September 2016 19:09
To: Loudon, David
Cc: Hunter, William
Subject: Ward 2A BMT Isolation rooms

David,

Billy has asked me to make you aware of a meeting called today by Jamie Redfern to review the suitability of the above isolation rooms for accommodation of Neutropenic BMT patients.
This meeting was arranged at the behest of Jennifer Armstrong for the group to advise on the current status of the isolation rooms and if these rooms where adequate or not for the BMT patient group. the meeting was attended by:

Jamie Redfern (General Manager)
Teresa Inkster (Lead ICD)
Tom Walsh (Infection Control Manager)
Dr Allan Mathers (Clinical Director W&C)
Jean Kirkwood (Ward Manager SCN)
Brenda Gibson (Consultant Haematologist)
Billy Hunter (Facilities GM)
Ian Powrie (Sector Estates Manager)

The following was confirmed:

- All 8 rooms where currently available for use and operating within design parameters.
- 6 of the 8 rooms had recently undergone re-verification.
- Maintenance PPM is in place
- Log books have been developed but still to be deployed by Estates.
- Routine air sampling & reporting protocol yet to be established by Labs.

Jamie set the scene from Jenifer Armstrong over concerns raised that the room spec is not suitable for BMT patients and that a view on this was sought from the group with recommendations on the clinical requirements, with a view to converting 1 or 2 rooms to the higher spec at a cost to per room of circa £35k. I had asked where this budget figure had come from but this was not known?

Teresa advised that the rooms where built to SHPN 04-01 standard but that this guidance has a disclaimer that PPVL design is not suitable for use with Neutropenic patients and that further guidance for this patient group would follow? Which has yet to be published.

Teresa advised that under these circumstances SHTM 03-01 guidance should have been used for the Isolation room design to ensure that the patient room was positively pressured. Therefore the preference would be to accommodate these patients in a positive pressure protective environment.

This position was agreed by the clinical representatives, I had asked what would be the difference in patient category using the positive pressured isolation room to the PPVL room currently in place if there was only to be 2 from 8 rooms modified to SHTM 03-01 design standard?

The conclusion was that there should be no difference and all 8 rooms should meet this standard, however as the expected max number of BMT patients currently requiring simultaneous accommodation is 4, the modifications could be implemented in 2 stages 4 rooms at a time (with respect to available funding).

Jamie Redfern will write-up the notes of this meeting for return to Jenifer Armstrong.

Regards

Ian

[redacted]
Sector Estates Manager (South & Clyde)
Queen Elizabeth University Hospital Campus,
1345 Govan Rd,
Glasgow,
G51 4TF,
PA Elaine McNeil: [redacted]

[redacted]

From: Peters, Christine
Sent: 10 October 2016 18:19
To: Deshpande, Ashutosh (NHSmail)
Cc: Inkster, Teresa (NHSmail); Powrie, Ian; Loudon, David; Walsh, Tom
Subject: QEUH new building handover
Attachments: New Build; RE: Transplant ventilation; Positive Pressure Lobbied Rooms: gap analysis DRAFT; RE: SBARs

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ash,

As discussed this is a quick resume of the infection Control related issues with the new build :

1. Isolation rooms : Since June 2015 I have been raising concerns regarding the design and commissioning of the isolation suites within the Critical Care Unit as is summarised in the first email attached . This eventually led to HPS and HFS inspecting the rooms this year . As far as I am aware a report is awaited from them regarding the suitability of the design and build of these rooms for highly pathogenic and infectious patients. An urgent update is required regarding this as our ability to isolate MERS, open TB and MDR TB cases , as well as varicella zoster and measles would be compromised if these PPVL rooms are confirmed as being unsuitable for these cases. For example last week we had two proven cases of infective TB , a query MERS and a possible VHF patient , all of which need respiratory isolation which we can reassure our clinical colleagues are compliant with Health and Safety guidance.

2. Ventilation throughout the building: all single room patient accommodation and outpatient departments are designed to have 3 air exchanges per hour (6 is the recommendation in SHTM) and the design is such that clean supplied air is cooled/heated at point of supply through coils, the air sinks and "induced air" goes back into the supply duct through a grill. Problems that arise with this design are that the dust in the room is taken back into the supply grill , with collection of thick dust occurring on the grills and coils. Furthermore condensation occurs when humidity levels are high and have caused dripping of dirty water into the bedrooms. A programme of cleaning is being put in place to mitigate this risk. The frequency and methodology is not finalised. Again an update will be required.

   Furthermore the ventilation design is that the patient bedroom accommodation is about neutral pressure to the corridors. This means that there is no clear flow of air from room to toilet, away from corridor. Doors remaining closed at all times is therefore very important to avoid spread of airborne pathogens.

3. I have not yet seen the design and commissioning parameters for the Endoscopy suite, treatment rooms, interventional radiology and Pacing wire cardiology room which needs to be followed up to ensure IC considerations have been taken into account.

4. Theatres – these are designed to have shared prep rooms, however do not have interlocking doors or door closing mechanisms in the prep room. This has been requested to be in line with HTM guidance , but has not been put in place to date and our surgical colleagues have repeatedly raised this as an issue that needs to be rectified.

5. Dialysis water supply – I understand that some dialysis points come off the domestic supply route, however these are all within the renal service area as far as I am aware which comes under Teresa's area .

6. Decontamination in the respiratory clinic: there is no decontamination room for the respiratory clinic – I am going to assess this as part of the CF work and make recommendations for remedial work.

7. BMT: I raised the issues regarding the fact that 4B was not built to a suitable spec for BMT patients in the severely immunocompromised state in June 2015, and currently the unit is being used as a general medical ward – with the ventilation altered to drop pressures to just about neutral. The gauges on the door are irrelevant to these rooms at present. Teresa is dealing with the future planning for BMT specific accommodation.

I have further details of all these issues if anyone requires,

Regards,

[redacted]
Dr Christine Peters
Consultant Microbiologist
Southern General Hospital
GGC
[redacted]
[redacted]

From: McDerment, Hugh [redacted] on behalf of McDerment, Hugh
Sent: 03 November 2016 11:52
To: Purdon, Colin; Jamie Philip
Cc: Forsyth, Graham; Fergus Shaw
Subject: RE: Queen Elizabeth University Hospital : Office Block & Ward 61

Thanks Colin.

Hugh.

From: Purdon, Colin
Sent: 03 November 2016 11:43
To: McDerment, Hugh; 'Jamie Philip'
Cc: Forsyth, Graham; Fergus Shaw
Subject: RE: Queen Elizabeth University Hospital : Office Block & Ward 61

Hugh

It wasn?t a quote. It was the actual costs for the Vactor and CCTV work carried out on 20th and 21st Oct.
Now attached.

Regards
[redacted]

Colin Purdon
Senior Estates Manager (Retained)
Queen Elizabeth University Hospital Campus,
Laboratory Medicine and Facilities Management Bldg.
1345 Govan Rd
Glasgow
G51 4TF

[redacted]

From: McDerment, Hugh
Sent: 03 November 2016 11:23
To: 'Jamie Philip'
Cc: Forsyth, Graham; Purdon, Colin; Fergus Shaw
Subject: RE: Queen Elizabeth University Hospital : Office Block & Ward 61

Colin,

Hi!

Can you please send Jamie a copy of the Luddon?s quote.

...break...

Jamie.

The main line that was blocked was not surveyed at handover as the New Office development drains did not connect directly into the this line and the new drains were signed off by building control and there have been no issue?s in 18 months operation previous to the LE work .

Regards,

Hugh.

Hugh McDerment
Senior Project Manager,
NSGH Project Team
NHS Greater Glasgow & Clyde
Queen Elizabeth University Hospital Campus
New Office Building
Level 2, Zone 3, Room C2.13
1345 Govan Road
Glasgow G51 4TF

[redacted]

From: Jamie Philip [redacted]
Sent: 25 October 2016 17:17
To: McDerment, Hugh
Cc: Forsyth, Graham; Purdon, Colin; Fergus Shaw
Subject: RE: Queen Elizabeth University Hospital : Office Block & Ward 61

Hi Hugh,

The Luddon quote wasn?t attached ? can you resend that please?

I agree that it does look like Land Eng are the likely cause but just to take away any doubt can you get me the CCTV from the BAM handover to confirm the line was clear when complete if available? I just want to have all the information to hand before I issue the EWN to LE is all.

And just to update you the line is now unblocked and I?m waiting on LE returning to survey as confirmation.

Regards,

Jamie Philip

From: McDerment, Hugh [redacted]
Sent: Tuesday, October 25, 2016 4:14 PM
To: Fergus Shaw
Cc: Forsyth, Graham; Purdon, Colin; Jamie Philip
Subject: RE: Queen Elizabeth University Hospital : Office Block & Ward 61

Fergus,

Please see Colin?s e-mail below . It looks very much like the main drain was blocked by excavation debris from the Land Engineering works to the new fire road at the office.

Can you please respond and as Colin mentions we have CCTV if you wish to take to Land Engineering.

We are looking for the Luddon costs to unblock to be paid by Land Engineering or by your goodselves and then deduct from Land Eng.

Regards,

Hugh.

Hugh McDerment
Senior Project Manager,
NSGH Project Team
NHS Greater Glasgow & Clyde
Queen Elizabeth University Hospital Campus
New Office Building
Level 2, Zone 3, Room C2.13
1345 Govan Road
Glasgow G51 4TF

[redacted]

From: Purdon, Colin
Sent: 25 October 2016 13:23
To: McDerment, Hugh
Subject: FW: Queen Elizabeth University Hospital : Office Block & Ward 61

Hi Hugh,

I?m looking for your advice.
The blocked drain outside Office Building was caused by debris entering the sewer pipe during the ongoing construction of the pedestrian zone.
We have CCTV video and images to prove that large chunks of tar road surface and concrete have got into the pipe via open inspection chambers/manholes.

The costs we incurred so far are attached. I would like to pursue Multiplex for the costs.
How do we go about this?
We have not as yet raised a PO to cover this, so I suppose the easiest way would be to pass along to Multiplex and ask them to raise a PO?

Can you advise?

Thanks

[redacted]

Colin Purdon

Senior Estates Manager (Retained)
Queen Elizabeth University Hospital Campus,
Laboratory Medicine and Facilities Management Bldg.
1345 Govan Rd
Glasgow
G51 4TF

[redacted]

From: Jackson, Angela
Sent: 24 October 2016 14:41
To: Purdon, Colin
Subject: FW: Queen Elizabeth University Hospital : Office Block & Ward 61

Hi Colin

See attached, shall I raise?

Angela

Angela Jackson
Estates Department
Laboratory Medicine Building
Queen Elizabeth University Hospital
1345 Govan Road
Glasgow
G51 4TF

[redacted]

From: Derek Shaker [redacted]
Sent: 24 October 2016 09:55
To: Jackson, Angela
Subject: RE: Queen Elizabeth University Hospital : Office Block & Ward 61

Hi Angela ,

Please find attached costs for call out works to Office block and Plant room at Ward 61 on the 18th /20th & 21st October 2016 as requested Colin Purdon.

Regards
Derek Shaker
[redacted]
Drainage Manager
Luddon Construction Ltd

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From: John.mcewan [redacted]

Sent: 22 January 2017 20:33
To: Graham.Forsyth [redacted]
Cc: dave.ramsay [redacted] Jerry Sullivan [redacted]; Michael Haveron [redacted]
Subject: INS Domestic Water Compliance (Existing Systems)

Project: INS Entrance
Our Ref: 70507/GLA/OEML/0007

Graham,

Further to promt removal of the existing electrical power supplies from the link corridor to the existing building it is also evident that the existing domestic water services have various dead legs. This would be a good opportunity to remove them so they don't end up within the overall building water hygiene risk assessment which will require updated to include all the ongoing works.

Just a heads up as it will be a lot easier now.

Regards

John

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SUPERVISOR'S FINAL DEFECTS CERTIFICATE (CI 43.3)

CAPITA

FRAMEWORKS SCOTLAND
EXCELLENCE IN HEALTHCARE CONSTRUCTION

Short Description Stage 3 Adult and Children's Hospital and Energy Centre *Date:* **26th January 2017**

Notification Nr: A/C/002

To: *Contractor's* Agent

Contractor – (Name) Multiplex Construction Europe Ltd

Project Office Address Fairfield - Suite 12,
1048 Govan Road
Glasgow, G51 4XS, United Kingdom

1. Dear Sir

SUPERVISOR'S FINAL DEFECTS CERTIFICATE AT COMPLETION OF WHOLE OF WORKS

☐ [illegible]

Alternatively

☑ Following an inspection of the works on (Date) 26th January 2017 I certify that the following Defects have not been corrected

Location of Defect	Description of Defect
VARIOUS	ATTACHED LIST 1 - FM First Summary Schedule (reference "QEUH FM First Summary_170126")
VARIOUS	ATTACHED LIST 2 - Supervisor Defects Notifications (refer status in red)
VARIOUS	ATTACHED LIST 3 - PM Schedule of Incomplete Works 26/01/2015 (refer status in red)

Signed [redacted] ***Supervisor (NHS) or delegate*** **Date:** 15th February 2017

Distribution:

The Employer	David Loudon
Project Manager (NHS)	Graham Forsyth
Other	Douglas Ross (Cost Advisor)

STAGE 3 FINAL DEFECTS CERTIFICATE
ATTACHED LIST 1 — QEUH FM FIRST SUMMARY_ 170126.

First FM	Location	Room	Issue	Received	S/C	BMCE	Comments	Closed	O	IP	C
1602447401			FIN LIGHT INSTALLATION - ZONE F (PR122) - NOT INSTALLED, ZONE J (PR123) - 1 SET DISCONNECTED/ DAMAGED, ZONE H (PR124) - INSTALLED	08-Mar-16	MER	CG	NHS to advise when BMU will be available			1	
1607502650	Energy Centre		ENMS HEAD END ISSUES. ENMS DOES NOT DISPLAY TOTAL SITE LOAD WHEN SUPPLIED FROM THE GRID. THERE ARE VARIOUS OTHER ISSUES WITH	11-Jul-16	MER	MH	Further ENMS works carried out with 4 remaining breaker issues to resolve. Further work carried out and			1	
1608517998	A-03-FM3-051	FM Support	Children's Theatre 7 sockets on UCV have not wired up since they moved in. Require power supply to be run in to feed these sockets.	13-Oct-16	MER	MH	Install work complete but due to isolation restrictions testing to be complete by 18/20/17.			1	
1609528661	A-02-THE-003	Office	S/VIDEO OUTPUT FROM STARKSTROM CAMERA UNIT FAULTY- PICTURE EITHER DOES NOT DISPLAY OR CONSTANTLY SCROLLING AND FLASHING.	20-Dec-16	MER	MH	Starkstrom returning to site Tuesday 07/02/17 for further investigation. No access. Await access			1	
1610540507	A-00-CCB-032		Labelling of fire dampers throughout site is found not to be robust. Labelling already detaching from damper mechanisms.Please investigate and provide programme for replacement	17-Oct-16	MER	MH	Require location of failed labelling for review			1	
1610541786	Energy Centre		Lateral expansions joints appear to be fitted correctly however in several locations the joints are fitted in the opposite plane and often restricted by	17-Oct-16	MER	MH	The 4 bellows (1 in B side and 3 in A side) will be altered as per Specialist advice. Full pack of information (RAMS			1	
1610541805	Energy Centre		The majority of lateral expansions joints appear to be fitted correctly	17-Oct-16	MER	MH	The 4 bellows (1 in B side and 3 in A side) will be altered			1	
1611549537	A-03-FM3-051	FM Support	LED strip lighting running externally down Tower D has came unattached	22-Nov-16	MER	MH	Brackets now rectified. Rope lights being fitted			1	
1611559026	A-02-THE-167	Theatre	UCV THEATRES.WHEN UCV SYSTEMS ARE RUNNING THE PRESSURE	06-Dec-16	MER	MH	MER arranging investigation by H&V. Date to be			1	

First FM	Location	Room	Issue	Received	S/C	BMCE	Comments	Closed	O	IP	C
1509393372	A-01-CCU-056	Office	Medical HDU UNIT 4 ISOLATION ROOM 43 blind faulty in window (not closing for patient dignity) can this please be sorted as soon as possible). Note added by ROBERT GEDDES (12/10/2015 14:57:52) ROOM No CCW-158 OBSERVATION WINDOW. Note added by ROBERT GEDDES (07/10/2016 15:35:38) ROOM No CCW-158 OBSERVATION WINDOWS x2	01-Nov-16	TDSL	JM	Access restricted by IC and users. Awaiting IC sign off and access arrangement.		1		
1602446208	C-01-CCW-054	Bed Area	Exterior blind faulty Ward 1D CCW-054. Actual room CCW-105	18-Oct-16	TDSL	JM	Users have not given access to address snag.		1		
1604473405	C-02-SCH-026	Staff Base	ROOM SCH-044 EXTERNAL WINDOW BLINDS NOT WORKING	18-Oct-16	TDSL	JM	Awaiting dates from NHS for access to room.		1		
1604477748	A-01-CCU-056	Office	No CCW disk at bed space 22 so it means this area doesnt have a reference	20-Dec-16		JM	Due to the delayed receipt of these notifications MPX will review and respond from w/c 09/01/17.		1		
1605484889	A-03-FM3-051	FM Support	Channel in drain manhole at ARU entrance has edges and constantly traps waste and blocks lines. Brookfield has attended before but still not finished off properly.	20-May-16		JM			1		
1606500267	A-01-CCU-056	Office	ITU 2 Unit 4 Room 31 CCW-007 observation window blind not working	29-Jun-16	TDSL	JM	Access restricted by IC and users. Awaiting IC sign off and access arrangement.		1		
1607506712	C-00-ENT-006	Security	PART OF SEATING AREA ON CYCLE SHED BETWEEN CAR PARK 1 AND CHILDRENS HOSPITAL HAS SWOLLEN AND IS LIFTING AWAY FROM FIXINGS	18-Oct-16		JM	Not a BM issue - this lies with Genko. COMPLETION OF TASK DISPUTED BY NHS.Brookfield as main contractor to contact Genko under contract		1		
1607511668	C-00-ENT-006	Security	HANDRAILS ON EXTERNAL PLAYPARK CAROUSEL COMING LOOSE	03-Aug-16	LE	JM			1		
1607512150	A-00-ENT-006	Concourse	Manhole loose and breaking up. Possibility of collapse. Main road opposite Bus stand shown as position 06 on layout forwarded to P.McGuiness 28/07/16	03-Aug-16	LE	JM	Tar team back Wednesday 25/01/17.		1		
1608514221	A-B1-KIT-003	Kitchen	Hi can we chase up steamer getting replaced! Badly needed in diet kitchen Thanks Location KIT-014	20-Dec-16			Due to the delayed receipt of these notifications MPX will review and respond from w/c 09/01/17.		1		
1608514504	A-01-STW-083	Nurse Base	Window blinds broken in Room 9 ROOM No STW-033 EXTERNAL WINDOW. SAME OPERATOR MECHANISM AS ADULT TOWER WARD OBSERVATION	20-Dec-16	TDSL	JM	Users have not given access to address snag.		1		
1609527386	C-00-OPD-037	Sub-reception	Roof in out-patient leaking - near Clinic 9 (Respiratory Function Lab) entrance door.	13-Oct-16	VEC	JM			1		
1609532274			Primary sub-station HV sections A & B, cable ducts in both location are full of water, ingressed from underground cable penetrations? This requires urgent attention, HV cable should not be submerged in water (this is a non compliance issue) potential risk of electrical HV cable fault & potential corrosion of HV switch gear due to condensation from high humidity environment within both of these Switch Rooms.	13-Oct-16	MER	MH	Duct sealing to be completed on Monday 13/02/17 and Monday 20/02/17.		1		
1610536423	A-B1-FMB-006	Plant Room	Fastenings undersize, unidentified threaded rod use, expansion joints stretched beyond manufacturers limit (350mm) & not CE marked.	13-Oct-16	MER	MH	Works commencing 13/20/17 and to be complete 17/02/17.		1		
1610536574	A-B1-FMB-006	Plant Room	Localised cracks appearing around hanging support anchor points (water ingress also present).	13-Oct-16		JM			1		
1610537021	A-01-CCU-056	Office	Blind closed and unable to open as level is spinning and appears loose. BED 17 CCW-060 EXTERNAL BLIND (DYNAMO OPERATED TYPE AS PER OBSERVATION WINDOWS)	17-Oct-16	TDSL	JM	Access restricted by IC and users. Awaiting IC sign off and access arrangement.		1		
1610537698	A-01-CCW-051	Bed Area	BLIND FAULTY OBSERVATION WINDOW ROOM No CCW-051	13-Oct-16	TDSL	JM	Access restricted by IC and users. Awaiting IC sign off and access arrangement.		1		
1610540406	A-00-CCB-032		AGV are not returning to auto charge when required, this is resulting in each unit battery totally discharging and failing in operation, which stops the whole system. AGV's then need manual recovery and boost charge. Swisslog have been investigating fault but todate have no solution. Suspect this will lead to a position that will require complete battery replacement on all units? (Warranty issue) Can you please raise a formal defect report with Swisslog and accellerate efforts to conclude this route cause of this issue.	17-Oct-16	MER	MH	Remaining batteries being delivered w/c 30/01/17 and installed thereafter		1		

First FM	Location	Room	Issue	Received	S/C	BMCE	Comments	Closed	O	IP	C
1610540509	A-00-CCB-032		Identification of ventilation plant & associated ductwork to be carried out as per HTM03-01B Clause 3.60. Brookfield have agreed this will be carried out. Please supply timescale & programme of works.	17-Oct-16	MER	MH	Labelling of the Isolation room ventilation plant and ductwork cas SHPN 04 Supplement 1 completed. Other Vent plant being reviewed - ongoing.		1		
1610542978	A-00-AAW-078	Single Bed	BLIND FAULTY ARU BED 90 ROOM No AAW-078 EXTERNAL BLIND(SAME MECHANISM AS ADULT TOWER OBSERVATION WINDOWS)	21-Oct-16	TDSL	JM	Users have not given access to address snag.		1		
1610546056			CHP control is still set back at 80% heat output, based on higher than expected return temperatures, despite recently adding the laboratory medicine demand being introduced, this is combine with the heat dump valve being set at 50% minimum setting, therefore the CHP is continuously rejecting 50% of 1CHP heat output (600KW rejection). as a result this system cannot be operating at optimum design efficiency. the issue over the dump valve has been reported previously, this job was closed advising that the valve control was rectified. However advise from Schneider installation team is that they were instructed by H&V commissioning to set the vale at a minimum 50% (5V) in order to achieve the required flow rates to balance the system. this cannot be correct? please provide commission detail to justify the current configuration against the design control philosophy? detailed review of CHP control philosophy and performance is urgently required.	28-Oct-16	MER	MH	Boiler flow temperature now reduced and system being monitored. Edina to be arranged w/c 06/02/17 to put CHPS back into 100% performance and 3-port valve to be re-set.		1		
1610547245	A-02-THE-003	Office	The camera system in theatre is showing up black and white. Also, intermittent interference with SDI scope system so not able to use. Note added by ROBERT GEDDES (09/12/2016 08:42:24) Pictures from overhead cameras are only showing in black and white rather than colour. Interference also showing on visual.This appears to be a cabling problem in Adult Theatre 1 THE-085, Theatre 9 THE-137, Theatre 11 THE-150 and Theatre 15 THE-232. Similar to previous resolved problem in Childrens Theatres	20-Dec-16	MER	MH	Starkstrom returning to site Tuesday 07/02/17 for further investigation. No access. Await access 17/02/17.		1		
1611549826	A-02-RENO-070	Reception	Blind not working in Room 1. Units not closing shut. ROOM No RENO-013 EXTERNAL WINDOW BLIND. (SAME TYPE OPERATOR AS TOWER WARD OBSERVATION WINDOWS)	22-Nov-16	TDSL	JM	Users have not given access to address snag.		1		
1611550482	C-02-SCH-026	Staff Base	SCH-057 external window blind non-operational. Same mechanism as adult tower wards observation window.	06-Dec-16	TDSL	JM	Awaiting dates from NHS for access to room.		1		
1611550482	C-02-SCH-026	Staff Base	SCH-054 external window blind non-operational. Same mechanism as adult tower wards observation window.	06-Dec-16	TDSL	JM	Awaiting dates from NHS for access to room.		1		
1611550482	C-02-SCH-026	Staff Base	SCH-053 external window blind non-operational. Same mechanism as adult tower wards observation window.	06-Dec-16	TDSL	JM	Awaiting dates from NHS for access to room.		1		
1611550560	A-00-AAW-385	Office	Window blind not closing in Room 98 ARU5 ROOM No AAW-129 EXTERNAL WINDOW (SAME TYPE OPERATOR AS OBSERVATION WINDOWS IN TOWER WARDS)	22-Nov-16	TDSL	JM	Users have not given access to address snag.		1		
1611553153	A-00-ENT-006	Concourse	Numerous external walkway uplighters on paving outside main entrance are failing due to water ingress. Rusting now apparent on internals of fittings	22-Nov-16	MER	MH	MER to order and install new fittings - fitings due 03/03/17.		1		

First FM	Location	Room	Issue	Received	S/C	BMCE	Comments	Closed	O	IP	C
1611554655	A-03-FM3-007	Radiological Support	DIVERTOR No 303 QEUH OUTSIDE WARD 1C STW-081. SERVICES RESTRICTING ACCESS DIVERTOR No 304 QEUH OUTSIDE MDU MDU-002. SERVICES RESTRICTING ACCESS DIVERTOR No 402 QEUH FM3-007.FIXED COMPUTER DESK UNDER DEVICE REQUIRES TO BE MOVED DIVERTOR No 504 QEUH DMW-083. SERVICES INCLUDING CONDUIT REQUIRE MOVING FOR ACCESS DIVERTOR No 803 QEUH A&E RESUS AT CENTURION GAS PANEL. EMC-105.SERVICES RESTRICTING ACCESS DIVERTOR No 902 QEUH RAF-079.SOLID CEILING WHERE DEVICE IS LOCATED DIVERTOR No 905 RCH ACROSS FROM RCF-020. SERVICES RESTRICTING ACCESS DIVERTOR No 906 RHC RCI-011. SERVICES RESTRICTING ACCESS DIVERTOR No 1603 LABORATORY BLOCK L1/B/015. ONLY ACCESS IS TO CLIMB INTO CEILING SPACE AND WALK ON TOP OF SAMPLE FRIDGE	22-Nov-16	MER	MH	Divertor 303 checked and access available. Divertor 304 - no diverter in room? Divertor 402 checked and access available with stepladder (platform) next to desk. Divertor 504 checked and access available via ceiling tile removal (PIR on sprinkler tile). Divertor 803 checked and access availablle Divertor 902 hatch to be installed in solid ceiling by MPX. Divertor 906 access to room unavailable. To be re-surveyed w/c 23/01/17. Divertor 1603 (lab) Checked and access available Walked with Mark McKaig (NHS). 1 MPX action - access hatch in QRUH RAF-079 Diverter 902. To be installed by 17/02/17.		1		
1611556227	A-B1-KIT-025	Frozen Food Storage	LARGE FREEZER/COLD ROOM IN BASEMENT CATERING AREA OF ADULT HOSPITAL LEAKING INSIDE ROOM FREEZING ONTO FLOOR AND CAUSING SLIP HAZARD. ROOM No KIT-025	22-Nov-16	MER	MH	Reviewed by Fosters. Repair/re-routing of drain line to be completed 23/02/17.		1		
1611557236	C-02-ASU-010	Main Office	Spot welds failed on Safety Cabinet 4 causing H&S issue for staff. Note added by ROBERT GEDDES (25/11/2016 07:48:58) This is a failure of window stainless steel edge finish within safety cabinet. Safety check required on all cabinets with same edge finish. Note added by ROBERT GEDDES (25/11/2016 07:50:37) Room No ASU-019 Note added by SHIRLEY QUINN (20/12/2016 09:06:04) Nuaire cabinet Serial No 162241031814 (Dept Cabinet No 4). Spot welds failed and edge dropped from cabinet across operatives working area.	06-Dec-16	MPX	JM			1		
1612561205	A-03-FM3-051	FM Support	Childrens outpatients clinics drainage inspection hatches have been covered by vinyl see screws are covered	06-Dec-16	ACF	JM			1		
1612563316	A-05-GENWC-073	Nurse Base	Small and large cracks on corridor walls - Above windows Room 65, 68, 70, 72, 75. Above doors 63, 81. Windows between room 62 and 63 and rooms 75 and 76. Below room 70 and below window room 79. Above disposal room door. Above facilities room. Above senior charge nurse room. Side of door rooms 76 and 79. Wall between kitchen and dirty utility room and wall across from dirty utility room.	20-Dec-16	BAG	JM	Only exceesive cracking requires to be revoewed and repaired where appropriate. MPX will review and respond.		1		
1612563608	A-B1-CAB-036	Core C FM Clean Lift Lobby	Cracks evident around pipework hanging supports. Level -1 At fire doors main corridor before room FMB-007. Defect 27 on Zurich report	20-Dec-16		JM			1		
1612565091	C-00-CC0-031	Core K Lift	LIFT CC0-031 K Core. Flooring is carpet in this lift was supposed to be changed to safety flooring	20-Dec-16	MER	MH	Due to the delayed receipt of these notifications MPX will review and respond from w/c 09/01/17.		1		

First FM	Location	Room	Issue	Received	S/C	BMCE	Comments	Closed	O	IP	C
1612566281	C-00-OPD-014	Observation Room	USERS SAYING THEY CAN STILL SEE PEOPLE EITHER SIDE OF ONE WAY GLASS PANEL - OBS-301	20-Dec-16		JM			1		
1612566541	Car Park 1		Main Stair Core Entrance Doors - Door leaf does not open 90 degrees (LHS viewed from outside). Please note this is for the new part of the carpark,as per CAPITA A01 29/11/2016	20-Dec-16	MPX	JP	Prima door have been contacted. Awaiting response to confirm action.		1		
1612566541	Car Park 1		Main Stair Core Entrance Doors - Door selector missing. Please note this is for the new part of the carpark,as per CAPITA A01 29/11/2016	20-Dec-16	MPX	JP	Prima door have been contacted. Awaiting response to confirm action.		1		
1612566541	Car Park 1		Main Stair Core Entrance Doors - Bottom channel to LHS door leaf coming loose, door finish coming off and rusting apparent. Please note this is for the new part of the carpark,as per CAPITA A01 29/11/2016	20-Dec-16	MPX	JP	Prima door have been contacted. Awaiting response to confirm action.		1		
1612566541	Car Park 1		Main Stair Core Entrance Doors - Bottom channel to RHS door missing and rusting apparent. Please note this is for the new part of the carpark,as per CAPITA A01 29/11/2016	20-Dec-16	MPX	JP	Prima door have been contacted. Awaiting response to confirm action.		1		
1612566541	Car Park 1		Main Stair Core Entrance Doors - Door coating peeling off doors at top, bottom and door edges (both doors). Please note this is for the new part of the carpark,as per CAPITA A01 29/11/2016	20-Dec-16	MPX	JP	Prima door have been contacted. Awaiting response to confirm action.		1		
1612566541	Car Park 1		Main Stair Core Entrance Doors - Threshold plate starting to come loose. Please note this is for the new part of the carpark,as per CAPITA A01 29/11/2016	20-Dec-16	MPX	JP	Prima door have been contacted. Awaiting response to confirm action.		1		
1612566541	Car Park 1		Main Stair Core Entrance Doors - Bolt keeper in threshold plate blocked. Please note this is for the new part of the carpark,as per CAPITA A01 29/11/2016	20-Dec-16	MPX	JP	Prima door have been contacted. Awaiting response to confirm action.		1		
1612566593	Car Park 1		Other Stair Core Entrance Doors - Door selector not functioning. As per CAPITA A01 29/11/2016	20-Dec-16	MPX	JP	Prima door have been contacted. Awaiting response to confirm action.		1		
1612566593	Car Park 1		Other Stair Core Entrance Doors - Door coating peeling off doors at top, bottom and door edges (both doors). As per CAPITA A01 29/11/2016	20-Dec-16	MPX	JP	Prima door have been contacted. Awaiting response to confirm action.		1		
1612566593	Car Park 1		Other Stair Core Entrance Doors - Gravel worn away adjacent entrance doors. As per CAPITA A01 29/11/2016	20-Dec-16	MPX	JP	Prima door have been contacted. Awaiting response to confirm action.		1		
1612566609	Car Park 1		Other Areas - Edge kerb to gravel perimeter strip is raised and could be a trip hazard (corner of main stair core). All as per CAPITA A01 29/11/2016	20-Dec-16	MPX	JP			1		
1612566609	Car Park 1		Other Areas - Edge kerb to gravel perimeter strip not visible (Hospital Boulevard side of main stair core). All as per CAPITA A01 29/11/2016	20-Dec-16	MPX	JP			1		
1612566609	Car Park 1		Other Areas - Concrete hardstanding surface worn away on Hardgate Road side towards Hospital Boulevard. All as per CAPITA A01 29/11/2016	20-Dec-16	MPX	JP			1		
1612566609	Car Park 1		Other Areas - Cracking in concrete central kerb area around central column at car park entrance. All as per CAPITA A01 29/11/2016	20-Dec-16	MPX	JP			1		
1612568068	A-10-GENW20-073	Nurse Base	Large window in Room 98 leaking rainwater. Please fix urgently. Note added by THOMAS ROMEO (25/12/2016 18:57:00) Window leaking at bottom can this be passed back to Brookfield. T Baxter attended this job, there is also a picture of the Rm ID attached. Note added by ROBERT GEDDES (28/12/2016 11:04:20) GENW20-033 WATER LEAKING THROUGH WINDOW. SILL NOW SWELLING DUE TO WATER INGRESS	05-Jan-17	STR	JM	Structal have been contacted. Date still to be confirmed.		1		
1612568081	A-B1-KIT-003	Kitchen	On the left hand side of the main entrance (Behind the barrier erected to deter smoking behind the pillar) a metal panel has blown down. THE PANEL IS LYING NEXT TO THE CONDENSERS FOR M&S, NEXT TO CORE N STAIRWELL - P MCALLISTER	05-Jan-17	MPX	JM			1		

First FM	Location	Room	Issue	Received	S/C	BMCE	Comments	Closed	O	IP	C
1612569384			Suspended ceiling has collapsed in Adults Level 3 corridor outside lift lobby. Fixings have dislodged from ceiling. I think this section has collapsed previously. Note added by PAUL MCALLISTER (02/01/2017 13:20:12) CORE A	05-Jan-17	MPX	JM	PFP have been contacted. MPX await response.		1		
1701569990			BMS CONTROL/ FAULTY PUMP ISSUES. THERE ARE VARIOUS CONTROL/ MECHANICAL ISSUES WITH PUMPS ACROSS A&C. PR 21 - LTHW LVT Pump 1 is running but not communicating with BMS - not allowing switchover to standby pump. PR 22 - LTHW CT Pump 1 E054 fault on VFD - loss of comms, LTHW VT Pumps 1 & 2 - both in manual control, not working via BMS, LTHW LVT Pump 2 failing when switched on duty via BMS. PR 31 - LTHW CT1 not working via BMS (OK on hand), LTHW VT Pump 1 is locked off - looks like a mercury padlock, CHW CT Pump 4 isolator has been taped off since handover. PR 33 - CHW 'A' CB Pump 2 running but not communicating with the BMS - not allowing switchover to standby pump, CHW 'B' Pump 2 running but not communicating with the BMS - not allowing switchover to standby pump. PR 41 - LTHW 'A' VT Pump 2 not communicating with BMS - not switching over to standby pump, LTHW 'A' LVT Pump 1 not communicating with BMS - not switching over to standby pump, LTHW 'B' VT Pump 2 not communicating with BMS - not switching over to standby pump.	05-Jan-17	MER	MH	Both Schneider and WILO have investigated the fault and will return to site with replacement batchnet cards to rectify communication issues. Date TBC. Note the following cleared actions: - 1. P31 LTHW CT - issue resolved. 2. P31 VT Pumps - NHS issue. 3. P31 NHW Pump 4 - NHS issue. 4. P33 CHW Plant 2 - issue resolved.		1		

STAGE 3 FINAL DEFECTS CERTIFICATE
ATTACHED LIST 2 - SUPERVISOR DEFECTS LIST

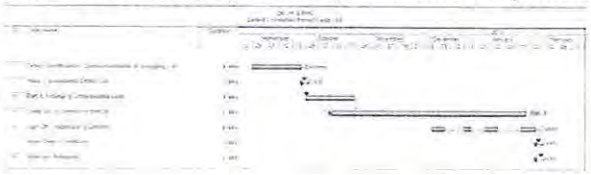
3.1.3 **Supervisor's Notifications of Defects under Clause 42.2**

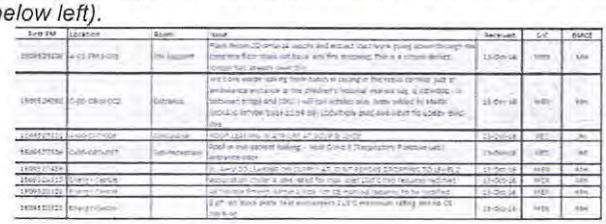
The parties to ensure correction of defects raised by Supervisor's Notifications of Defects under Clause 42.2 prior to 26th January 2017.

3.2 **SUPERVISOR MEETINGS WITH ESTATES**

The following in italics is retained from Supervisor Report No 63

John McEwan and Dave Ramsay met with Ian Powrie and the FM/Estates Team (Cyril Dowson, Bob Geddes, David Brattey, Mark McKaig) on 11th October 2016 to discuss the FM First Summary Schedule (extract below right) as the consolidated list for defect matters raised by NHS GGC FM and Estates inclusive of any defects matters consequent to PPM. This meeting was consequent to NHS GGC liaison with Estates on Defects Close Out and the issue of the Defects Close Out programme by NHS GGC PM (extract below left).





3.3 **DEFECTS MEETINGS (POST COMPLETION WORKS MEETINGS)**

We attended regular monthly Defects Meeting (Post Completion Works Meeting) for the New South Glasgow Hospital Stage 3 Adult and Children's Hospitals on 28th November and 12th December 2016 at which the relevant FM First Summary Schedules (Consolidated Defects List) were discussed and tracked.
It has been previously agreed with the parties that going forward until the Defects Date for Stage 3 of 26th January 2017 that the Supervisor would only issue formal Supervisor's Notifications of Defect (Cl 42.2) "Stage 3 A&C Energy Centre" as and when instructed to do so by the NHS GGC Project Team.

3.4 **FM FIRST DEFECTS SUMMARY (File Ref: *20161223 FM First Summary.xlsx*)**

The FM First Summary spreadsheet with **File Ref: *20161223 FM First Summary.xlsx*** lists information received to 21/12/16 which was the final issue of FM First Summary from Multiplex until w/c 09/01/17.
Green – Advised Complete or Duplicate
Amber – Returned to NHS Estates due to Insufficient Detail
Red – Outstanding
Open Defects – 126; Defects in progress – 11; Closed – 3,051

The FM First Summary spreadsheet with **File Ref: *20170106 FM First Summary.xlsx*** lists information received up to 6th January 2017.
Open Defects – 167; Defects in progress – 12; Closed – 3,063

4.0 CONSTRUCTION REVIEW

4.1 **VISITS TO THE WORKS**

Site visits were carried out by the NEC3 Supervisor Team: - Dave Ramsay (Lead & Architect Supervisor); Willie Roxburgh (Civil/Structural Engineer Supervisor); John McEwan (M&E Supervisor).

4.2 **POST COMPLETION ISSUES**

4.2.1 **Visual Shrinkage Cracks**

The interpretation of the appearance of shrinkage cracking to completed building elements in general and in particular in connection with finished internal partitions in a clinical environment requires to be agreed between the parties.

4.2.2 **Fire Doors**

We attended an initial site inspection on 22nd August 2016 of fire doors in the QEUH & the RHC to agree grading standards for the proposed survey of doors by Multiplex. PMI 486 refers.

4.3 **SUPERVISOR'S NOTIFICATION OF DEFECTS - ACH**

4.3.1 **Supervisor's Notification of Defect (Cl 42.2) No 147**

We issued No 147 on 12th May 2016. Confirm that the Oil Delivery point and filling process is compliant and if not advise corrective action to be undertaken. We await formal response from Multiplex.

EDINA TO SUPPLY & INSTALL PARTS WHERE REQUIRED
NOT MPX (DW)

4.3.2 **Supervisor's Notification of Defect (Cl 42.2) No 146**

COMPLETE

We issued No 146 on 12th May 2016 Bellows Tie Rod Failures. Confirm the corrective procedures, actions, relevant parties and timescales required to resolve the bellows tie rod failures.
Multiplex (D Wilson) responded on Aconex on 13th May 2016 and corrective action is being tracked at the Energy Centre Meetings. We will retain this defect open until formally closed out.

4.3.3 **Supervisor's Notification of Defect (Cl 42.2) No 145**

COMPLETE

We issued No 145 on 25th April 2016 Water Leak – Mild Steel Tail In Domestic Cold Water Pipe. Although discussed at Energy Centre meetings, and although tracked in separate e-mail correspondence, we await formal response. We will retain this defect open until formally closed out.

4.3.4 **Supervisor's Notification of Defect (Cl 42.2) No 140.**

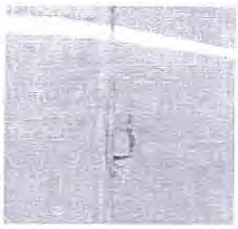
Corrective work to spindles nearly complete. Refer to Supervisor Report No 59 for background to this matter. Multiplex issued us with the proposed "Visicom Highline blind programme". The closure of this is being tracked at the Post Completion Works Meetings and once completed we shall close out this defect.

COMPLETE EXCEPT RESTRICTED ACCESS AREAS (CCU, CCLU, SCH etc.)

4.3.5 **Supervisor's Notification of Defect (Cl 42.2) No 137.**

COMPLETE

The cladding on the west facing elevation has been damaged and an unsuccessful attempt has been made to repair the damage. We requested Multiplex to advise when this defect is to be rectified. Multiplex has confirmed that this has been passed onto the relevant sub-contractor Prater to rectify the unsuccessful attempt at the repair.



4.3.6 **Supervisor's Notification of Defect (Cl 42.2) No 129.**

The Bicycle Shelter roof does not drain rainwater to the two corner outlets, consequently the rainwater is ponding. We requested Multiplex to confirm their proposed remedial action to resolve this defect. They have confirmed that following a meeting with the designer a level survey is required. The plan is to introduce a further outlet. Multiplex to advise when remedial works will be undertaken.

WEATHER DEPENDENT.

4.3.7 **Supervisor's Notification of Defect (Cl 42.2) No 125.**

Following recent excavations around the buildings to expose and repair collapsed main drains, the Board request video surveys to be undertaken and reports provided of the repaired drain runs and also other neighbouring runs that may have been affected by proximity to the 200t crane. Multiplex has confirmed that the survey is complete and will issue to the Board. Dunnes are uploading information onto Zutec. We request confirmation from Multiplex that this has been uploaded and once received, we shall close out this Defect.

SPEAK TO JAMIE

4.3.8 **Supervisor's Notification of Defect (Cl 42.2) No 124**

This matter is being discussed and tracked to resolution at Energy Centre meetings background as follows:-

MTHW Global Conformity Assessment - Zurich assessment. This matter has been discussed at Energy Centre meetings. Await declaration of conformity which has not yet been received. The closure of this is being tracked at the Post Completion Works Meetings and once completed we shall close out this defect.

MPX NOT CARRYING OUT THIS ITEM (DW)

4.3.9 **Supervisor's Notification of Defect (Cl 42.2) No 99**

The joints at window cills are opening up. We requested Multiplex to confirm the remedial action to resolve this problem. Multiplex has filled and painted the joints but they have opened up again. Thereafter Multiplex sealed a joint with sealant to determine if this resolved the defect.
Multiplex has advised that in general excessive shrinkage cracking in building elements of completed work will be addressed immediately prior to the end of defects period and that this defect falls into this category.
We shall therefore retain this defect notification open.

B&G TO COMPLETE THURSDAY 26th

4.3.10 **Supervisor's Notification of Defect (Cl 42.2) No 88.**

The capping piece on the north facing elevation of the Children's Hospital has two discoloured areas. We requested Multiplex to confirm the remedial action to address this and advise when complete. Multiplex has advised that work is being planned to be carried out and we await confirmation.

D&B TO COMPLETE WED 25th.

4.4 OPEN SUPERVISOR'S NOTIFICATION OF DEFECTS - LABORATORY

4.4.1 **Supervisor's Notification of Defect (Cl 42.2) No 501 - Laboratory Medicine Reception Disabled Door**

The actuator for Laboratory Medicine Reception Disabled Door has a ground mounted drive unit which the manufacturer (Record Ltd) has advised that their installation drawings and instructions require that the ground mounted actuator housing drain spigot is connected to the drainage system to ensure that the actuator is not submerged in rain water.
At the time of installation Multiplex did not install underground drainage to support this and instructed the Record installation team to drill a sink hole from the actuator housing as an alternative. This arrangement was queried at the time under one of the original failures covered during the warranty as a defect however Multiplex advised that this was Multiplex's call, as the Contractor and that in their opinion this solution was suitable for this installation.
This disabled access door has been out of service for over a year as the integrity of the actuator housing cannot be maintained and therefore it is evident that the Multiplex solution is not suitable.
It is understood that the Board has installed 3 new actuators with unsuccessful attempts to protect against flooding, the last of which failed within 2 days of installation.
The Board has decided to take an alternative approach and install an overhead actuator solution which will be installed in early January 2015.
Although the warranty has expired, the Board is seeking to recover costs from Multiplex as a latent defect.

Multiplex has responded on 25th January 2016 and requested details of NHS costs to rectify the defect as follows:-
The issue raised is understood however we require details of the costs associated with;-
"To date the Board have committed approximately £10 - 12k in unsuccessful repair/replacement parts via the installer/manufacturer of this equipment."

4.4.1 **Supervisor's Notification of Defect (Cl 42.2) No 502 - Partially Collapsed Manhole**

Matter raised by Ian Powrie (NHS Estates) on 9th June 2016 as follows:-
"Recently discovered a broken\partially collapsed manhole just before the traffic lights on the east side of the laboratory medicine.

On seeking support from Multiplex on this matter we were advised by Paul McGuiness that this is no longer covered under warranty as this road was handed over with the Labs building (circa 4 years ago). The full dual carriage way was not handed over until Jan 2015, up until this point there was little traffic using this road. This issue has only now materialised since full traffic volumes have been introduced, suggesting that this and possible the other man holes are not suitable for the heavy traffic flow experience on this road.

I would like have this issued repaired urgently to avoid risk of incident as a result of the failure."
Although the partial collapse of the manhole has occurred after the issue of the Final Defects Certificate (9th April 2014), Multiplex to correct the defect as a latent defect. Multiplex to investigate and advise remedial work/timescales for correction.

4.5 INSPECTION OF EXTERNAL AREAS ADJACENT TO MULTIPLEX MULTI STOREY CAR PARK

We visually inspected the External Areas adjacent to Multiplex Multi Storey Car Park on 29th November 2016 and consequently issued our Observation Sheet A01 also dated 29th November 2016. We acknowledge that some of the observations may be as a result of damage, however these are worth recording to bring to the attention of the parties.

5.0 INFORMATION REQUIRED
(Supervisor's Communication General Matters / Other Instructions - Clause 13.1)

Shading indicates item closed, clear indicates current item.

Item	Description	Date Requested	Comment
The following items are not closed out.			
All other Supervisor's Communication General Matters / Other Instructions raised have been closed out. A total of 253 Supervisor's Communication General Matters / Other Instructions have been issued to date.			

6.0 SUPERVISOR'S TESTS and INSPECTIONS

Shading indicates item closed, clear indicates current item.

Ref	Title	Notified by	Status	Test Date
The following items are not closed out.				

7.0 DEFECTS NOTIFICATIONS ISSUED

Shading indicates item closed, clear indicates current item.

Item	Description	Date Requested	Comment
The following items are not closed out.			
147	Confirm that the Oil Delivery point and filling process is compliant and if not advise corrective action to be undertaken.	12.05.19	Await formal response.
146	Confirm the corrective procedures, actions, relevant parties and timescales required to resolve the bellows tie rod failures.	12.05.19	Initial response rec'd 13.05.16 Await formal response.
145	Water Leak – Mild Steel Tail In Domestic Cold Water Pipe	25.04.16	Await formal response.
140	Defective spindles to privacy visicom panels to timber doors and screens.	29.09.15	Rectification programme rec'd. Corrective work ongoing. Once resolved we shall close out this defect.
137	Seeking confirmation when the damaged cladding has been rectified.	01.07.15	Initial response received.
129	Ponding to Bicycle Shelter.	11.05.15	Response received.
125	Seeking video surveys with reject to drain repairs.	16.04.15	Response received. Await confirmation that CCTV survey uploaded to Zutec
124	Defects in relation to the Zurich Engineers inspection.	16.04.15	Closure is being tracked at the Post Completion Works Meetings. Once resolved we shall close out this defect.
99	Confirm to open window cill joints.	24.02.15	Response received.
88	Seeking confirmation of remedial measures to address the discolouration of the capping pieces.	20.11.14	Response received. Multiplex advised will be towards the end of Defects Period.
All other Defects Notifications raised have been closed out. A total of 147 defects notices have been issued to date.			

8.0 LATENT DEFECTS NOTIFICATIONS ISSUED - LABORATORY

Shading indicates item closed, clear indicates current item.

Item	Description	Date Requested	Comment
The following items are not closed out.			
501	Drain system for Laboratory Medicine Reception Disabled Door actuator.	20.11.14	Response received. NHS to provide Multiplex with details of costs incurred.
502	Partially Collapsed Manhole	09.06.16	Await formal response from Multiplex to enable closure

STAGE 3 FINAL DEFECTS CERTIFICATE
ATTACHED LIST 3 — PM SCHEDULE OF INCOMPLETE WORKS 26/01/2015 (1)

Ramsay, David (Capita)

From: Fergus Shaw [redacted]
Sent: 23 January 2017 16:45
To: Graham.Forsyth[redacted]
Cc: Ramsay, David (Capita); Grant Wallace; Jordan Munro
Subject: FW: NEC3 & Project Manager List
Attachments: CCF23012017.pdf; RE: Supervisors Report NEC3 QEUH

Graham,

Please find an electronic version of document from earlier, highlighting status of items.

We will address the Capita Notification of Defect on Aconex for your review. (*JM*)

The "Incomplete Works" list has comments with following no noted as complete

6 – Art Strategy - this requires the two shelters externally be complete (which we are installing the roofs of, but require good weather for the resin. These can sit in 3A)
7 – Incomplete Landscaping - this is what can be seen around SUDS pond, orchard etc., and effectively sits in 3A.
22 – Street Lighting and Landscaping to boulevard - this is planned to be completed in February 2017.
31 – External LED is now a repair, and requires BMU
44 – Energy Model is ongoing
45-47 – see attached mail confirming completion.
48 – we believe this is cleared as it does not appear on Capita Notification of Defects (discussed with DR earlier)

I trust this covers

Regards

Fergus

Fergus Shaw FCIOB
Project Manager - Construction

MULTIPLEX

Multiplex Construction Europe Ltd
Fairfield - Suite 12,
1048 Govan Road
Glasgow, G51 4XS, United Kingdom
[redacted]
W: www.multiplex.global

NEW SOUTH GLASGOW HOSPITALS - STAGE 3 ADULT & CHILDRENS HOSPITALS
PROJECT MANAGER'S SCHEDULE OF INCOMPLETE WORKS - 26th January 2015

No	Description of Defect	Location	Defects Completion Date
1	VIE Slab and associated works	Maternity Unit	30.06.2015
2	Neuro Link Bridge - connection to T&LC	Adult / INS	17.04.2015
3	Neuro Link Bridge - oxygen connection	Adult / INS	31.03.2015
4	Neuro Link Bridge - connection to INS	Adult / INS	30.06.2015
5	Separation Tank	Adult ED Dept.	13.03.2015
6	Art Strategy installation - complete	All areas	28.02.2015
7	Land Eng: incomplete landscape works	All areas 16th FEB	31.03.2015
8	Cores A&B & Main Entrance - meet and greet panels glass cabinets	Adult Hospital	28.02.2015
9	Lead lined units and associated worktops - ADB codes STF1021, 1024 & 1025.	Adult Hospital / Nuclear Medicine	28.02.2015
10	DCFP Room 024 - ROMPA wall padding by BM	DCFP	31.03.2015
11	Additional divider screens and fabric boards	MIL009, RAG082, DOPD022	28.02.2015
12	Group 5 areas - where Board subs are working	Both	15.04.2015
13	Adult sanctuary - roof access hatch	Adult Hospital	28.02.2015
14	Interventional theatre - PMI works	Adult L2	03.02.2015
15	Adult sanctuary - install Gustav's panels	Adult Hospital	28.02.2015
16	Decontamination Room - complete	ED Department	28.02.2015
17	MRI Rooms - knock out panels	Various	28.02.2015
18	New VIE turning circle	Adult	28.02.2015
19	New VIE - pavement works south of road (bus stop not required).	Adult	11.02.2015
20	Main entrance walls and signage	Campus	15.04.2015
21	Neuro steel bridge works	INS	15.04.2015
22	Street lights to boulevard, complete landscaping to boulevard	Campus 16th FEB	15.04.2015
23	BREEAM Report application	Both	31.03.2015
24	AGV - performance tests and trials	Adult's Hospital	28.02.2015
25	Structal - replacement of panels, complete install and review BMU protection	Adult's Hospital	31.03.2015
26	Sanctuary - sun pipes	Children's Hospital	28.02.2015
27	Sanctuary - stained glass install	Children's Hospital	28.02.2015
28	Schiehallion radio nuclide room doors	Children's Hospital	13.03.2015
29	DCFP anti-ligature works	Children's Hospital	27.03.2015
30	Telecoms 600 pair lines install plus additional 600 lines req. by Board	Both	28.02.2015
31	External LED lighting	Adult Hospital	31.03.2015
32	Patient entertainment - screens	Children's Hospital	30.04.2015
33	External facade - BM drawings	Both	31.03.2015
34	LTHW - PMI works	Laboratory	28.02.2015
35	Isolation Rooms - HEPA filters		
36	Internal signage, wayfinding, door signage	Both	23.02.2015

No	Description of Defect	Location	Defects Completion Date
✓ 37	Neo-natal link bridge - internals and ext. Cladding panels	Children's Hospital	31.03.2015
✓ 38	Neo-natal link bridge - knock out panel replacement	Children's Hospital	31.07.2015
✓ 39	Lifts - works to beneficial lifts	Both	31.03.2015
✓ 40	Pneumatic tube gantry - removal	Laboratory	10.04.2015
✓ 41	Core G L13 - complete helipad ramp, install bird sounder and clean area	Adult Hospital	28.02.2015
✓ 42	Theatres - complete Starkstrom install incl. DVI/SDI sockets and accessories on arms	Both	21.02.2015
✓ 43	Hardgate Road - white lining		15.04.2015
? 44	Energy model - evidence of compliance with energy target	Both	28.02.2017
? 45	NEC Supervisors Communication No.236		06.02.2015
? 46	NEC Supervisors Communication No.237		06.02.2015
? 47	NEC Supervisors Communication No.238		06.02.2015
? 48	NEC Supervisors Defect No.081		13.02.2015
X 49	NEC Supervisors Defect No.088	26th JAN	13.02.2015
✓ 50	Completion of sweep up programme and inspections with Supervisor	Both	17.04.2015
✓ 51	Medical Gas System - testing & witnessing of med gas system by CSO.	Both	28.02.2015
✓ 52	Completion of Children's Park SUDS	Children's Hospital	30.06.2015
✓ 53	Completion of Children's Park	Children's Hospital	30.08.2015
✓ 54	Completion of Car Park 1		10.04.2015

[redacted]

From: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE) [redacted]
Sent: 11 May 2017 13:10
To: Powrie, Ian; John.McEwar[redacted]
Cc: Peters, Christine
Subject: Fw: RHC Ward 2a Draft Tender Document

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Ian and John - I sent this document to my colleague Christine for comment and 2nd opinion. Are you able to answer the queries

KR
Teresa

Dr Teresa Inkster
Lead Infection Control Doctor NHSGGC
Training Programme Director Medical Microbiology
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Peters, Christine [redacted]
Sent: 11 May 2017 11:58
To: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE)
Subject: RE: RHC Ward 2a Draft Tender Document

Interesting –some issues on brief read through

1. There is no mention of an alarm system should there be a drop in pressure or airflow into the room.
2. I don't think it is analogous to a theatre suite – although I can see the logic. There may be excessive air flow in terms of draft over patient within the bedroom. I do not understand why there would be a cascade of pressure as all air going through the lobby would now go out to the corridor. Unless there was an extract in the lobby also. if the room is 20 pa to the corridor, the lobby will also be 20 pa to the corridor and the baffles should be set accordingly.
3. There is no calculation of Air exchange rate which is required for both bedroom and en-suite. I think it will be a large number with the volume coming in – but would need to have the calculations stipulating what the expected number is as that a key parameter
4. Good idea to put HEPA in supply to room – would need proper commissioning
5. It is unclear if there is to be an extract in the lobby at all
6. The location of the supply in bedroom will need to ensure proper air mixing and no short circuit to the pressure stabilisers on top of the room lobby door which may occur if they use the current location of the supply and may be different in each room. I am not as familiar with these rooms as the adult rooms.

That's it for now. It would be good to chat through with Ian if he has designed this .
C

From: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE) [redacted]
Sent: 11 May 2017 11:01
To: Peters, Christine
Subject: Fw: RHC Ward 2a Draft Tender Document

Would you mind reading section 3.0 of this document for me
T

Dr Teresa Inkster
Lead Infection Control Doctor NHSGGC
Training Programme Director Medical Microbiology
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Inkster, Teresa [redacted]
Sent: 05 May 2017 15:35
To: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE)
Subject: FW: RHC Ward 2a Draft Tender Document

From: Powrie, Ian
Sent: 05 May 2017 14:27
To: Inkster, Teresa; Redfern, Jamie; Dawes, Heather; Gibson, Brenda; Hunter, William
Cc: 'John.McEwan[redacted]
Subject: FW: RHC Ward 2a Draft Tender Document

Dear all,

I would be grateful if you could review the attached tender specification for the conversion of 4 isolation rooms within ward 2A to positive pressure rooms from the current PPVL.
In order to allow me to progress to tender stage next week I would be grateful if you would formally sign of on this tender specification confirming that it meets with you clinical and HAI requirements?
The tenders are scheduled for issue to the market next week, i would therefore be grateful if you could copy your acceptance of this specification to John McEwan of Hulley & Kirkwood to allow him to progress the tender in my absence next week(as I am on A\L) .

Please advise if there are any relevant amendments or changes that you feel should be incorporated in this specification?

Regards

ian
.

[redacted]
Deputy General Manager (Estates)

Queen Elizabeth University Hospital Campus
Property, Procurement & Facilities Management Directorate
Facilities Corporate Services Dept
CMB Building
Glasgow
G51 4TF

hulley & kirkwood
consulting engineers

Royal Hospital for Children
Ward 2a Isolation Rooms
Tender
Draft for Comment

May 2017

Hulley & Kirkwood Consulting Engineers Ltd
Head Office
Watermark Business Park
305 Govan Road
Glasgow
G51 2SE

[redacted]

(w): www.hulley.co.uk

Prepared By:	Colin Peacock
Authorised By:	John McEwan
Revision:	Draft
Date:	May 2017
File Location:	K:\70520

Royal Hospital for Children

Ward 2a Isolation Rooms

Tender

Draft for Comment

April 2017

REV	DESCRIPTION	PREPARED BY	DATE
Issue No. 1	First issue - Draft	C.Peacock	May 2017

Index:

1.0 Introduction 5

2.0 Existing Systems Overview 6

3.0 Modification from PPVL to Positive Pressure Isolation within Ward 2A 7

4.0 Description of Works 8

5.0 Summary Bill 12

APPENDICES 13

Appendix A – Positive Pressure Isolation Schematic 13
Appendix B – HAI-SCRIBE 14

A47069198

1.0 Introduction

Patient isolation facilities are required in healthcare premises to prevent Healthcare Associated Infection (HAI). There are two main types of patient isolation:

(a) Isolation to protect other patients and staff from a patient with an infection.

(b) Isolation to protect patients from exposure to infection.

Ward 2a of the children's hospital has currently isolation rooms constructed as Positive Pressure Ventilated Lobby.

Hulley & Kirkwood have been asked by Greater Glasgow & Clyde NHS Estates to review the requirements for changing of 4No. PPVL isolation rooms (17,18,19 & 20) within Ward 2A to positive pressure isolation rooms for the continued use for transplant and severely immune-compromised patients. This tender details the requirement to carry out this works.

It is important to note that the works will be carried out in a live ward environment and management of cleanliness is a critical factor to ensure no cross contamination within the live ward environment. Contractor will be required to demonstrate experience within similar environments using previous project references.

The project is to be priced based on the following 2no potential scenarios:

(a) All 4no rooms are available to work in (17,18,19 & 20)
(b) 2no rooms are available (17 & 18) and on successful validation and acceptance by clinical team rooms (19 & 20) will be made available.

A47069198

2.0 Existing Systems Overview

The existing 4no isolation rooms are single bed rooms with PPVL and en-suite. These are located within Ward 2a (Schiehallion). Refer to drawing 70520(57)01 Proposed Isolation Rooms Ventilation Modifications within appendix A.

Each room has its own dedicated supply & extract systems:

Room 17 – Supply AHU 41/33 & Extract 41-33-EF01

Room 18 – Supply AHU 41/32 & Extract 41-32-EF01

Room 19 – Supply AHU 41/31 & Extract 41-31-EF01

Room 120 – Supply AHU 41/30 & Extract 41-30-EF01

ME-ZC-02-PL-524-508_Z1.pdf

The as-built ductwork layout ME-ZC-02-PL-524-508 Rev Z1 Identifies the current ventilation distribution within the 4no isolation rooms. Contractor will be responsible for verifying arrangements prior to going into manufacture for new ventilation installations.

3.0 Modification from PPVL to Positive Pressure Isolation within Ward 2A

As noted in the introduction there would not appear to be any published UK NHS guidance on the design of Positive Pressure (PP) Isolation rooms. However it is reasonable to take guidance from SHTM 03-01 and in particular the guidance pertaining to operating theatre ventilation system design.

SHTM 03-01 Part A Table A4 offers advice on air volume flows through doorways between rooms of different cleanliness in order to control cross-contamination. The table advises that an air flow of 0.28m3/s is adequate to offer protection to a single doorway between a room and another one level lower in the hierarchy of cleanliness. With reference to SHTM 03-01 Part A Table A2, if one assumes the patient bedroom to be 'Sterile', the lobby as 'Clean' and the ward corridor as 'Transitional' then it can be concluded that a cascading air flow from the isolation room to the ward corridor at a rate of 0.28m3/s is adequate to prevent cross-contamination. This is based on the premise that when the rooms are in use there will be a management procedure in place such that the 'corridor to lobby' and the 'lobby to bedroom' doors are not opened coincidentally. Furthermore it is assumed that the half door of the 'pair and a half' door sets is only used for bed transport and when the room is in use only the single door is opened.

Since the supply air plants appear to be capable of delivering at least 0.3m3/s to the rooms it is reasonable to allocate 0.28m3/s of this volume to the door protection leaving 0.02m3/s to the en-suite extract. While the 'en-suite' may be classed as 'dirty' in the hierarchy of cleanliness and hence requiring an air flow of 0.47m3/s for 'sterile' to 'dirty' protection, according to SHTM 03-01 Part A Table A4, it is assumed that because the en-suite is only used by the patient it does not present a risk to the patient. The extract rate of 0.02m3/s from the en-suite will maintain the room at a negative pressure with respect to the bedroom and will significantly exceed the air change rate stated in SHTM 03-01 Part A Table A1 for a single room en-suite.

As the rooms have been identified as accommodating severely immune-compromised patients and in order to create the cascade of door protection it is proposed that the existing supply system be modified to re-locate the HEPA filtered supply terminal to the bedroom. (Refer to Drg:70520(57)01 within Appendix A).The existing pressure stabiliser damper installed over the 'lobby to bedroom' door shall be reversed to allow air flow from the room to the lobby at a 10Pa pressure differential. A new pressure stabiliser damper sized for 10Pa differential pressure shall be installed in the wall between the lobby and corridor. The lobby will have a positive pressure differential from lobby to corridor. This provision will create a continuous air flow from the bedroom to the corridor with a target 20Pa positive pressure differential between the bedroom and the ward corridor.

The extract system shall be altered to divert the extract duct currently extracting air from the bedroom to instead extract from the corridor. This will balance the supply air flow and ensure that the other ventilation systems serving the ward are not adversely affected. The extract terminals shall be replaced with terminals with integrated volume control dampers that can be accessed from below through the grilles such that the existing duct mounted volume control dampers can be removed along with any associated ceiling access hatches.

The existing dial pressure gages shall be replaced with gauges with a - 30/0/30Pa scale and shall have the room side impulse tube replaced from the lobby to the patient bedroom to give visual indication of the maintained positive pressure within the bedroom to corridor.

4.0 Description of Works

4.1 Site Accommodation

Space shall be made available externally for a single container to facilitate site office / storage. Refer to the Hai-scribe document.

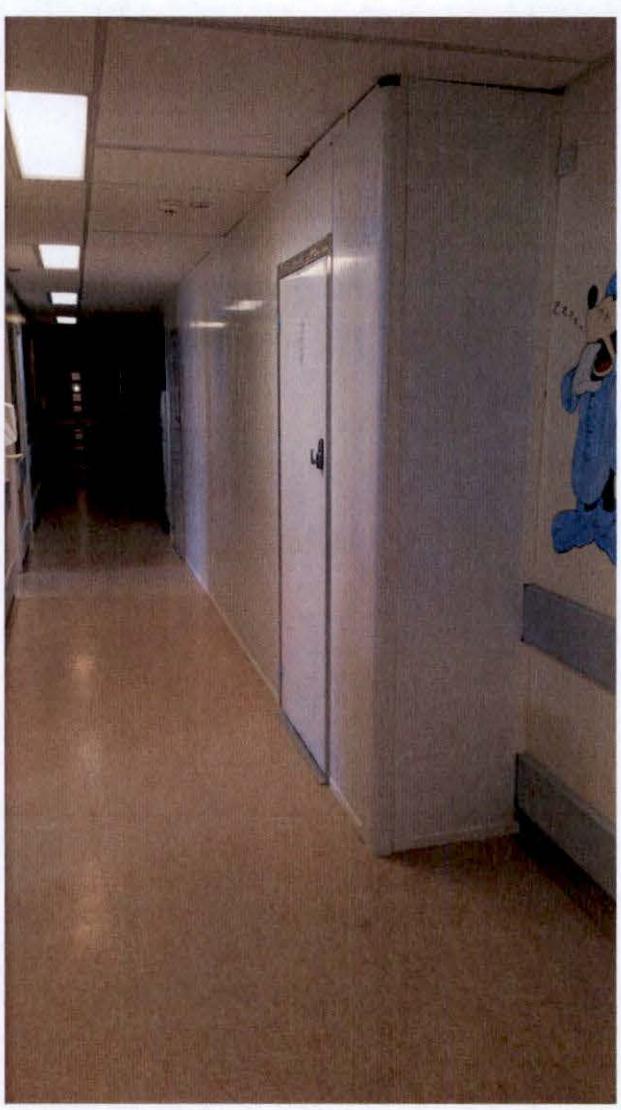
The contractor may use the 'on site' facilities for toilets and catering provided that works clothing is removed before using any catering facilities.

No materials or equipment to be stored out with the site accommodation or the works area.
Works area to be secure at all times.

Working hours shall be 8am to 6pm 7 days per week.

4.2 Isolate Works Area

The contractor shall provide a supply / install and seal a solid partition HAI containment to the site that shall be effectively air tight to prevent migration of dust. Expectations of this hoarding are as indicated in the following photograph. This installation shall be by Messrs Kwik Klik (www.kwik-klik.co.uk) or equal and approved.



Example of expectation for isolating construction from Operational

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Suitable signage shall be provided to indicate works area / no entry & contact details.

A magnahelic gauge shall be taken from one of the existing rooms and shall be instated in the temporary partition to offer indication of maintained negative pressure.

4.3 Create Safe Area

The existing room supply AHU plant shall be shut down and the associated dampers closed. The existing extract systems shall be maintained in operation to negatively pressurise the works area with visible indication via the magnahelic gauge installed within the works area temporary partition. The extract fan speed shall be adjusted on the existing frequency converter drives to maintain a negative pressure with the entrance door from lobby to corridor closed.

4.4 Builderswork Elements

All builderswork shall form part of the contract and shall comprise all alterations to ceilings, forming of holes in partitions, fire sealing, sealing perimeter to achieve air permeability test, making good, decoration and final clean.

Potentially supporting Multiplex access to repair / replace damaged window blinds, while rooms are out of service.

For the purposes of tender it shall be assumed that the existing solid ceilings to the bedroom, ensuite and lobby are to be down taken and reinstated in their entirety. This will be reviewed once ductwork routes are coordinated.

A hole shall be formed in the wall between the lobby and corridor for each room for the installation of a new pressure stabiliser.

Form new holes in walls above ceilings for diverted ductwork.

Installation of a new termination for the magnahelic impulse tube within the bedroom ceiling.

Installation of the supply diffuser within the bedroom ceiling.

Installation of the extract grille in the existing tiled corridor ceiling.

Works associated with dropping a new electrical conduit down the existing partition between bedroom and corridor.

Installation of the new alarm panel at the nurses station. For the purposes of tender it shall be assumed that the existing partition shall require reinforcement for mounting the alarm panel.

Re-install all existing ceiling mounted services including but not limited to light fittings and smoke detectors.

Carry out room air leakage testing ***(Provide name – JM Action)***

On completion of works the contractor shall provide a clinical clean of the complete works area. On acceptance of cleanliness (Visual) rooms will be handed over to the Hotel Services team for sparkling clean and Board sampling.

4.5 Ductwork and Grille Modifications

Take down existing supply diffuser from the bedroom lobbies and relocate to the bedroom in a central location above bed.

Divert existing 315mm diameter galvanised spiral wound supply duct from bedroom lobby into bedroom and connect to supply diffuser. No flexible connections to be utilised.

Supply and install new HEPA filter in supply diffuser housing. Provide challenge port at AHU discharge.

Modify ensuite 160mm diameter galvanised spiral wound duct to remove volume control damper.
Supply and install a new ensuite extract grille suitable of 20 l/s extract and with face adjustable integral VCD and removable core.

Take down existing extract grille from the bedroom with associated VCD and relocate grille and VCD to the corridor.

Divert existing 315mm diameter galvanised spiral wound extract duct from bedroom into corridor and connect to extract grille.

Take down existing pressure stabiliser damper in bedroom/lobby wall and reinstate with reverse air flow or otherwise reverse blades if damper configuration permits.

Supply and install a new pressure stabiliser damper in wall between corridor and

4.6 Electrical/Controls Installations

Supply and install a new centralised alarm panel at the nurse base. This panel shall be designed, supplied and installed by Schneider Controls or their approved contractor. The panel shall be surface mounted and stove enamel white or equal finish. The panel shall incorporate a sounder and mute for common alarm condition and green (healthy) and red (alarm) lamps for each room. For each room the panel shall monitor terminal HEPA healthy condition, room magnahelic pressure healthy condition (time delay required to allow for open door conditions) and supply AHU and extract fan healthy condition. The panel shall interface with the existing building BMS for receipt of information on the plant status and relay of information for the room status. The panel supplier shall allow for graphics and software update at the head end to accommodate the alterations.

Supply and install a new magnahelic gauge mounted on the corridor wall outside each room with a -30/0/30Pa scale. The gauge shall offer visual indication of the room pressure (+20Pa design) via a dial face or digital readout and a tell tale interface with the alarm/monitoring system for room low pressure.

Supply and install an individual sounder and mute alarm on the corridor wall of each room to provide local individual room specific alarm.
Supply and install all necessary impulse tube, cable, containment, field mounted equipment and power supply from local distribution as required to provide a fully operational installation.

4.7 Test & Commission

Pressure test the supply and extract ductwork installations to DW/143 medium pressure.

Clean supply and extract ductwork systems for all bedrooms to TR/19 PDI Level 3.

Set to work existing supply and extract systems and balance to achieve design air flows as stated on drawing 70520(57)01.

DOP test the HEPA filters.

Adjust pressure stabiliser blades as required for stability under steady state conditions.
Function check all alarm interfaces

4.8 Validation and Demonstration

Validation to be carried out by H&V Commissioning or equal and approved.

All air sampling and microbiological sampling shall be carried out by others. Does not form part of this contract

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4.9 O&M Information

Obtain and modify the existing ventilation installation drawings to reflect the modifications and provide in hard copy, pdf and editable electronic format.

Provide hard copy and pdf all relevant manufacturer's literature, commissioning results and test certificates.
Supply in hard copy and pdf all electrical wiring and panel diagrams.

All hard copy information to be provided in hard backed ring binder folder complete with all contractor and sub-contractor contact details.
Demonstration shall comprise two half day sessions. One session shall be provided for the clinical staff to inform them on the operation of the rooms from a user perspective. One session shall be provided for the NHS Estates staff to inform them on the technical operation of the rooms.

4.10 Client Liaison

Prior to and throughout the works duration the contractor shall allow for daily liaison with the NHS project manager and clinical stall as required.

5.0 Summary Bill

Item	Description	Cost (£)
1	Builderswork including decoration and clinical clean	
2	Ventilation ductwork including grilles, dampers etc.	
3	Alarm panel installation including room alarms, BMS interface, head end software and graphics update, magnahelics, tubing, cable containment and power.	
4	Commissioning	
5	O&M information	
6	Validation	
7	Demonstrations	
8	Prelims/overheads	
9	Forming enclosure around works area	
10	Compliance with hai-scribe	
	Total	

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APPENDICES

Appendix A – Positive Pressure Isolation Schematic

Double click to launch application

70520(57)01-HK_A2.
pdf

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Appendix B – HAI-SCRIBE

Appendix c – 'As built' ventilation ductwork layout drawing number ME-ZC-02-PL-524-508

A47069198

From: Hunter, William
Sent: 04 September 2017 08:33
To: Loudon, David
Cc: Kane, Mary Anne
Subject: RE: Infection Control and the work on 4B for BMT

Thanks – pre-start meeting set for this Wed – it was meant to be last Friday however I was asked by GM colleagues to delay due to changes in patient movement. I also sought advice from Tom Walsh/Sandra McNamee who confirmed that HAI SCRIBE is now approved. Both Dr Peters and Dr Ashpande are not participating in pre-start meeting

From: Loudon, David
Sent: 04 September 2017 08:25
To: Hunter, William
Cc: Kane, Mary Anne
Subject: FW: Infection Control and the work on 4B for BMT

Billy

FYI and action. There is no further reason for the works to be delayed.

Thanks

David

David W Loudon
Director of Property, Procurement & Facilities Management
NHS Greater Glasgow & Clyde
Corporate Headquarters
Gartnavel Royal Hospital
Glasgow
G12 OXH

[redacted]

From: Armstrong, Jennifer
Sent: 03 September 2017 19:23
To: Loudon, David; Jenkins, Gary; Walsh, Tom
Cc: Best, Jonathan
Subject: Infection Control and the work on 4B for BMT

FYI; I have asked that this issue should be clearly recorded on the regional governance group as well as acute IC so the safety issues can be addressed and documented in a transparent way. J

From: McCamley, Pamela **On Behalf Of** Armstrong, Jennifer
Sent: 03 September 2017 19:12
To: Peters, Christine
Cc: Armstrong, Jennifer
Subject: RE: Infection Control and the work on 4B for BMT

Dear Dr Peters

Thank you for your email of 23rd August regarding the planned works in ward 4B at QEUH.

The NHS GGC Board has oversight of the works progressing in ward 4B QEUH. The proposals for the service were developed as a result of a review of options which were evaluated by a multi-speciality team including representatives from the IPCT. A detailed risk assessment formed a key part of this process and this resides on the Regional Services Risk Register. I can assure you that patient safety was the paramount consideration during this process, and that the NHS Board acts upon the recommendations made by the clinical and managerial teams who have primary responsibility for these patients. The future of this clinical service will be fully discussed and monitored through the Regional Services and Acute Clinical Governance Committees and progress reviewed at both Acute and Board Infection Control Committees.

Prof Jones, Tom Walsh, Isobel Neil and Sandra McNamee have been working to ensure the appropriate and sustainable provision of ICD cover across NHSGGC. I note that the service has been under pressure due to the unfortunate absence of Dr Inkster as Lead ICD and I am grateful to those contributing to the work of the IPCT in very trying circumstances. I am advised that the IPCT Senior Team have met with the ICDs to review commitments and provide reassurance around accountability and escalation procedures. Once agreed these arrangements for the IPC Team members will be clearly communicated to all relevant members of the IPC and Microbiology Management and Clinical Teams.

I am aware that Dr Deshpande had been involved in the HAI Scribe process for these works during June and July 2017 and that Prof Jones arranged the urgent meeting to address an aspect of ventilation control which was subsequently identified on Friday 24th August. I am further advised that Prof Jones will lead the ongoing process relating to the building and commissioning works, including environmental testing in ward 4B from a coordinating ICD perspective and that expertise from other GGC colleagues, HPS and HFS will be sought where required.

As the lead microbiologist for the national allograft programme, Prof Jones will continue to liaise with clinical colleagues on the issues of chemoprophylaxis and monitoring of patients for IFD.

With reference to the Estates element of ward commissioning arrangements, I understand you received a full response on 24th August to the questions you posed at the meeting. As part of this response estates colleagues have confirmed that a full validation and verification exercise around air changes and, where required, pressures within Ward 4B will be undertaken in accordance with SHTM03-01. This action will be managed in accordance with the agreed and final plan of work and copies of the validation reports will be made available to the coordinating ICD.

The response also confirms that a survey of QEUH was undertaken where rooms fitted with dialysis points were reviewed. For clarity and assurance Ward 4B was included within that survey and there was no evidence of leakage or mould growth found within the cavity space. They have also indicated that water quality should not be an issue within this area as a robust planned maintenance schedule is in place supporting the water assets in compliance with SHTM04-01.

Finally, we are awaiting a report from Health Protection Scotland regarding the status of the isolation rooms in ITU. A patient pathway for highly infectious respiratory pathogens has been agreed and implemented in the interim.

I hope the above provides the clarification and assurance you are seeking; if you have further concerns I would encourage you raise these through the appropriate clinical and governance systems and committees.

Kind regards

Jennifer

Dr Jennifer L Armstrong
Medical Director
NHS Greater Glasgow and Clyde

From: Peters, Christine
Sent: 23 August 2017 16:24
To: Armstrong, Jennifer
Subject: Infection Control and the work on 4B for BMT
Importance: High

Dear Dr Armstrong,

I am writing to you with regard to the planned works to 4B at the QEUH.

I became aware on Friday that this work was planned to commence on Monday 21/08. I also received a handover from Teresa regarding the project for me to follow up with infection control . The work was put on hold as it transpired that there had not been ICD sign off of the HAISCRIBE and substantial gaps in information were identified. Brian Jones chaired a meeting this morning which I was invited to and I expressed a number of concerns that I have regarding this work which he asked me to put in writing to yourself.

My concerns are:

1. There is currently no clarity regarding the division of ICD responsibilities between the ICDs.

   Ash, Pepi and I have repeatedly requested this in writing from the IC SMT and have not had a response. This is particularly important with regard to the large volume of work that Teresa was undertaking in her lead role. A direct result of this dubiety is the situation we now find ourselves in with regard to 4B works. Ash was expected to sign off a complex piece of work with insufficient information and also had been (verbally) assured repeatedly that Teresa high end jobs would not be his responsibility including “ventilation issues”. Given the history of this building with regard to IC sign off it is astonishing to me that we are once again in a position where pressure is being put on an ICD to sign off without information or the clear and helpful backing of the SMT and without knowing what their level of responsibility is for this work. There is obvious danger in having two ICDS unsure of what areas they cover and from a contractual point of view it is not clear what sessional commitment they have.

2. With regard to the HIASCRIBE itself – there are basic flaws in the planned risk mitigation to a Class III/IV work:

   - Moving immune –compromised patients into an area adjacent to work where a high level of dust generation is expected in an area where negative pressure cannot be achieved – this is in contravention of HAISCRIBE recommendations and is now being addressed.
   - a lack of detailed planning around patient movements and impact of changes to the ventilation throughout the phased work potentially exposing high risk patients

to changes in ventilation parameters that had not been assessed – eg going down to 1 air exchange per hour which would be unacceptable for any patient group, never mind those at high risk of airborne infection.

- No mention of critical issues in the unit with regard to water quality, Dialysis points leaking (as in ITU) and prep room ventilation
- Over all lacked a detailed understanding of the process of the work and impact on patient group.
- There is no clarity about the commissioning process once the work is completed who , what, when , how?

3. The entire premise of the nature of the work that is being carried out is flawed:
    - I have been told repeatedly that this is a Board decision and the work WILL go ahead as, to summarise, a risk assessment has pitted IC risks against clinical risks and the latter outweighs the former. This worries me as I do not believe infection control risk mitigation is mutually exclusive of clinical risk, rather it is inherent in patient care to prevent infection, particularly when there are longstanding standards that ought to be met , especially in a brand new building.

    - As this is a Board decision, it is vital that at this stage that there is a clear process of how the Board anticipate commissioning of the unit is to be carried out - this must (and does not currently) involve looking at water quality, dialysis points, agreed environmental testing baselines, actions to be taken in the event of failures and a very detailed Board risk register entry regarding the sub optimal status of the ventilation parameters and a clear decision regarding the proposed use of Antifungal s and bio markers as a replacement for building/engineering controls.

    - Two years ago I walked into ward 4B which was housing BMT patients and I rapidly identified that the environment was not protective for them and air sampling confirmed this (importantly not the other way round as has been the impression given in many documents since). This was after 1 million pounds was spent on the unit to ensure it was made suitable for this patient cohort. I made a table of recommendations, which frankly is not far from the document produced by HPS after a lot of time, and a second amount of money was spent on the unit which still did not achieve an adequate change in the facility to enable IC sign off. We now have an idea that by changing the ceilings in the bathroom , not altering the ventilation and then doing base line testing we will have achieved a substantive change. We will not.
    - There needs to be concurrent progress with regard to the levels of protective ventilation achieved in the ICU where these patients are also housed, I have not seen any evidence that this has progressed and neither can anyone in the team advise whether this is in hand or not.

    In conclusion Dr Armstrong, I am fully aware that I am no longer an ICD, and that there are documents/decisions that I am not aware of. However the handovers from Teresa, my direct experience over the last 3 days in supporting Ash as his line manager and conversations and lack of information from the ICT, as well my history within this organisation of having raised patient safety concerns related to infection control , mean that I feel that it is my GMC duty to raise my concerns with you as the Medical Director and Lead for HAI within GGC.

Regards,

[redacted]

Dr Christine Peters
Consultant Microbiologist
Head of Department Clinical Microbiology
Queen Elizabeth University Hospital,
GGC
[redacted]

☐Reply
☐Reply all
☐Forward

Minutes of Meeting
Meeting Room L02-001, Teaching & Learning Centre
Queen Elizabeth University Hospital

Wednesday 4th October 2017 at 8:00am

PRESENT

Dr Jennifer Armstrong (**Chair**)	JA	Medical Director
David Loudon	DL	Director of Property, Procurement & FM
Morag Gardner	MG	Chief Nurse
Sandra McNamee	SMcN	Associate Nurse Director IPC
Ian Powrie	IP	Depute General Manager, Estates
Professor Brian Jones	BJ	Head of Service, Microbiology
Tom Walsh	TW	Infection Control Manager
Anne Harkness	AH	Director, South Sector
Jonathan Best	JB	Acting Chief Operating Officer
Gary Jenkins	GJ	Acting Director, North Sector
Dr Penelope Redding	PR	Consultant Microbiologist
Dr Christine Peters	CP	Consultant Microbiology
Dr Ash Deshpande	AD	Consultant Microbiologist/ICD
Dr Rachel Green	RG	Chief of Medicine, Diagnostics

In Attendance

Ann Lang (Minutes) PA, Infection Prevention and Control

Item	Action

1. Welcome & Introductions

Dr Armstrong welcomed everyone to today's meeting to discuss Infection Control and estates issues at QEUH and RHC and round the table introductions were made. The group noted that colleagues from Women's and Children's Directorate were not in attendance but were aware of the issues raised and had helpfully submitted information via email which could inform the relevant areas of the discussion.

2. Purpose, Format and Conduct of Meeting

Dr Armstrong advised that a series of emails have been received from Dr Redding and Dr Peters regarding Infection Control and estates issues on the QEUH and RHC site. Dr Armstrong had requested a document setting out the issues of concern and thanked Drs Redding and Peters for providing the SBAR document which provided a helpful basis for the discussion. Dr Armstrong proposed that the meeting is focused on patient safety and a review and update on the current status of the issues identified.

She asked that if there are any comments during the meeting if these could be addressed through the chair and to adhere to the GMC and Board guidance regarding respect, professionalism and working as part of a team. The group agreed the importance of issues raised being discussed in the context of the appropriate roles, responsibilities and governance structures.

3. Review of SBAR / Concerns

It was agreed to go through the items detailed in the SBAR from Dr Redding and Dr Peters, to look at the points raised and address any outstanding issues.

Item	Action

- Patient Placement

Dr Redding outlined that there are challenges for the microbiologists regarding source isolation of infected patients.

She said the current situation is that the positive pressure ventilated lobby rooms were not built to SHTM standard and she and others were concerned that they do not provide appropriate protection when managing a small number of patients with significant respiratory pathogens of high consequence such as MERS and MDRTB.. Dr Peters advised that Microbiologists and ICDs and ID colleagues feel there is a lack of provision for isolation rooms in A&E. David Loudon replied that this specification was signed off by the board and clinical teams; he also confirmed that remedial work had been carried out due to issues raised at the snagging stage of the build. David also stated that although there were some modifications to the design the rooms did conform to SHTM 04-01 and that it was incorrect to state that this was not the case. Ian Powrie addressed specific points raised in respect of the ventilation specification and agreed to provide the detailed information to support this.

Sandra McNamee commented that the inclusion of the Infectious Diseases service was a late amendment to the QEUH project and therefore not commissioned as an ID unit at the outset. The group noted that the Brownlee Clinical Team put a strong clinical case to the board to be co-located on QEUH site with the Intensive Care Unit and other critical clinical services. The issues identified were discussed with HPS at the time and they agreed to advise the Board on what standard these rooms would need to be to accommodate these patients. When this information has been received, estates colleagues will review the advice to determine if these modifications were feasible. Dr Redding stated she would like to see the evidence relating to this. Sandra advised that a follow up meeting took place with HPS on Monday 2nd October and that the relevant information was expected in the next few weeks, however in the meantime a patient pathway has been in place which routes these patients to appropriate isolation rooms in other hospitals.

Dr Peters reported that these patients with significant airborne pathogens are being sent from A&E to the isolation rooms in ITU before being transferred to other hospitals as reported by ID colleagues. The group noted that this would be the case for other hospitals within NHSGGC and across NHS Scotland. Dr Peters however intimated that there is a risk of exposure to a large number of patients and staff and reiterated that, in her opinion, the ITU isolation rooms are not adequate for these types of patients. Furthermore other hospitals have not been recently built and are not a tertiary ID referral centre such as the QEUH. Dr Redding also recognised that work may be ongoing but the microbiologists are not aware of this.

Anne Harkness advised that as these issues were raised she met with Directors and ID Physicians and they agreed a pathway for these patients to be transferred to other sites. She also commented that based on the external advice, unless the existing rooms can be modified in some way the only alternative was to build a new Infectious Disease Unit which would require a significant resource. David Loudon confirmed that changing the specification to negative pressure would be reviewed to assess technical feasibility.

It was agreed to await the response from HPS and to deal with any further issues via the Acute and Board Infection Control Committees and the relevant Directorate Governance Committees.

Item	Action
• Protective Isolation Currently HEPA filters are not fitted in PICU isolation rooms and in the prep rooms in Ward 2A. Dr Redding also commented that IVs are prepared in the treatment room. She stated that there has been a perceived high rate of infections in immune compromised patients in Ward 2A and air quality has remained an issue in this ward since it opened. She also commented that there was an outbreak of Aspergillus in the unit and that there is still a risk to patients. Dr Peters said there was a public statement made by NHSGGC that BMT services at RHC are separate and unaffected and that both she and an ICD colleague had objected to the wording of the statement at the time and had asked to step down from ICD roles immediately after it was released. Dr Armstrong advised that she will check with the Comms team regarding the wording in the statement as this required some additional clarity around context. With regards to the cases of Aspergillus, Sandra McNamee updated that there were [redacted] associated with a leak in the ceiling space. This was investigated and the tiles were removed and replaced with no further cases of Aspergillus. Ian Powrie advised that the HEPA filters were installed in two of the rooms in adult ITU but there has been no request to add these to isolation rooms throughout the adult or children's hospital. Work in RHC, Ward 2A is scheduled to start this month and with the scribe being signed off he can now contact the contractors to start the work. Sandra McNamee confirmed that this was raised at a meeting she attended yesterday and that she was aware that there is a plan to put HEPA filters in two of the rooms in PICU as contingency. Ian Powrie said that the only reason this had not been done is that there was a requirement for the rooms to be unoccupied for 24 hours whilst this work was done and validation carried out and that up to this time it was not possible because the beds had been fully occupied and that there were ongoing discussions with the team in Ward 2A as to whether these patients could be accommodated in isolation rooms within other wards where HEPA Filters could be fitted to address the overspill contingency. Dr Peters commented that this was necessary in PICU, not just as an overspill for Ward 2A, but for these extremely vulnerable patients if they required intensive care treatment because of their illness. Dr Redding advised that the clinical team in Ward 2A have reported that in their experience there seemed to be an increase in the number of line related infections and Sandra advised that this was investigated by Infection Prevention Control and the clinical team when first raised and work had been ongoing for several months. She also reported that IPCT and the Clinical Team were working with Timothy Bradnock, Consultant Paediatric Surgeon to look at improvement work. Sandra noted that there was no effective benchmark available for this area. Dr Peters noted that rates of line infection were important to determine and that IPCT had stated there was no resource to do this. Jen Rodgers, Chief Nurse has an improvement group looking at PVC and CVC bundles and Sandra said that this should have an impact on the number of infections. Dr Armstrong added that there has been a focused piece of work carried out in Ward 2A and they were on a weekly reporting process to ensure compliance with infection control standards had improved. Dr Redding was concerned that this may not accurately pick up any concerns.	**JA**

Item	Action
In relation to the chemotherapy being prepared in the treatment rooms Gary Jenkins advised the group that chemo was prepared in a designated area and there was an audit process to confirm this. He also commented that this process had been reviewed recently and offered to provide Dr Redding the document that was produced. Dr Armstrong confirmed that chemo is not being made up in these rooms and is carried out in the Aseptic Dispensing unit. Dr Armstrong agreed to confirm this with Pharmacy.	**JA**
With regards to safe placement of immunocompromised patients, Dr Peters asked if there was a list of which rooms were of the standard that would be acceptable for this group of patients. She commented that when she worked in Crosshouse Hospital they had a list of where these particular patients could be placed. She said the microbiologists receive calls asking this question by clinical staff. The group debated the definition and severity of immunocompromised patients and agreed, with input from Sandra McNamee and Prof Jones that this was a decision best considered by the clinical team looking after the individual patients. Dr Armstrong advised that this should be discussed at AICC and Gary Jenkins commented that this has not been raised as an issue via his Regional Clinical Governance Committee. Dr Armstrong recommended that this be addressed through the Regional Clinical Governance Committee. She also said it would be helpful to have a copy of the document that Dr Peters used in Crosshouse. Dr Redding reiterated that Microbiologists need to know which rooms are the most suitable for different categories of patients.	**GJ** **CP**
Dr Redding commented that she feels the infection rates are not being monitored and Dr Armstrong replied that the Board and Acute Directors receive a weekly report of all outbreaks and infection control incidents. Dr Armstrong agreed to ask the Women & Children directorate to take forward the points raised above.	
• Single Side Room Accommodation Dr Redding outlined that air changes per hour for all clinical accommodation in QEUH and RHC are 3 instead of 6 as per guidelines with the inclusion of chilled beam technology. The grills also collect dust as air is entrained over chilled beams which she suggested is not recommended in a healthcare setting. Dr Peters advised this initially came to light when investigating issues regarding CF patients.	
David Loudon advised that Dumfries and Galloway have chilled beam technology and Dr Peters stated that Monklands Hospital is at the commissioning stage of a new build and suggested that we share our learning with them. It was agreed that it was important to share the GGC knowledge around chilled beam technology with colleagues in other Boards and David Loudon agreed to take this forward. Ian Powrie informed the group that all chilled beams on site are being cleaned and maintained and Dr Redding asked if the air changes can be changed from 3 to 6 in some rooms but not in all areas and David Loudon advised this was not realistically possible. Ian Powrie confirmed that cleaning and monitoring is being carried out to determine how quickly dust has built up and once this has been established a cleaning schedule will be organised and this can be shared with other hospitals. Dr Redding suggested involving Microbiologists regarding cleaning to look at the microbiological counts. Dr Jones suggested that rates of infection may also be a useful indicator. In this context Sandra McNamee reported that during the point prevalence survey QEUH was under the national average for infections and that all alert organism/conditions were monitored by the IPCT and that there were no indications that this site had a higher than average infection rates. It was noted that infections occurring post discharge would not be picked up by the point prevalence survey.	**DL**

Item	Action

- Cleaning

  In relation to cleaning Dr Redding stated that cleaning agents were not being used on floors in clinical areas.

  Dr Redding also outlined that dishwashers had not been cleaned, installed or operated according to manufacturing instructions. This was brought to light with the investigation into CF patients with Exophiala. Sandra McNamee updated regarding the occurrence of Exophiala in CF patients and said this was referred to HPS as an amber HIIAT score but they downgraded this to a green HIIAT as this is considered to be a ubiquitous organism and the modes of spread, incubation period and occurrence in the population and environment was largely unknown. Dr Peters stated that she had already discussed the outbreak in her role as CF Microbiologist with mycology experts and given the striking epidemiology of increasing numbers, it is a reasonable hypothesis to assume a link to the dishwashers as a possible source. She had also discussed the HIIAT rating with HPS and agreed with green rating as the intervention with dishwasher was rapidly and appropriately dealt with.

  With reference to the cleaning agents Sandra McNamee responded that Actichlor cleans are used throughout the winter norovirus season which normally runs from November to April. She also stated that Actichlor was used in specific areas at the recommendation of IPCT, for example. Actichlor was used in GGH for a month in the summer due to an increase in CDI across the site. This has also been introduced for general cleaning into the wards with CF patients in QEUH and RHC, PICU, NICU and Ward 2A. At a recent meeting with HPS Sandra said HPS have found no evidence that using Actichlor is effective but further guidance was awaited.

  With regards to dishwashers in the ward area there had been some debate in the ward regarding whose responsibility it was to clean these but Sandra said this has been addressed. The manufacturer has come in to check the dishwashers and Catering Services have confirmed they will commence a cleaning programme for the dishwashers. It was also noted that Environmental Health Officers prefer dishwashers to be used over hand washing in sinks/ basins.

  Dr Peters commented that the audit system did not pick up this problem, and raised concerns about gaps in the environmental audit programmes and this was possibly the same with regards to ward refrigerators or other equipment. Sandra McNamee advised that nursing staff have a requirement to check the temperature in fridges and stated again that the catering department have agreed to take responsibility for the ward dishwashers. The group noted that dishwasher maintenance had been overlooked in the overall system but that this had now been rectified.

- Water Quality and Testing

  In the SBAR it stated that all taps are fitted with TMVs and the cleaning and maintenance policy has not been reported and Dr Redding stated that we need to ensure this is up-to-date. She also commented that the water in Ward 4B has not been tested to a high standard.

  The group was assured that there was a Board Water Safety Policy in place that is approved by the appropriate governance committees. David Loudon reported that we have strict guidance on how to monitor water systems and processes are in place to comply with ECOPs. Ian Powrie also confirmed that water testing is carried out as per protocol and only exceptions are reported to the Infection Control Teams and this was previously agreed with Dr Inkster.

Item	Action

He said testing is mainly carried out in high risk areas. David Loudon stated that we are not required to test all taps but a sample and that this was in accordance with guidance. He also confirmed that if requested by an ICD additional sampling was undertaken. Dr Deshpande said that Dr Inkster was managing the water testing and he perceived there was a problem with the environment. He said that he requested gram negative testing but did not receive the results from Estates. Ian Powrie replied that recent changes in staff in both estates and IPC could have been the reason why he did not receive the information. It was agreed that GGC are compliant with the water testing protocol. Dr Peters stated that the issue was not the overall testing protocols but the ICD role in requesting and receiving the results in a timely manner in exceptional circumstances where a water source of infection needed to be investigated.

In relation to TMVs Ian Powrie advised that these are maintained in all high risk areas and they are working towards carrying this out in all areas. He said the end piece of the taps cannot be removed and an SBAR is in place for this. Estates are finalising the installation of a heat sanitation system and once complete this will be sent to the Board Water Safety Committee for approval.

In terms of serratia Ian said they would test the water for this if requested by a clinician.

- Plumbing in Neuro Surgical Block
  Dr Redding stated that there has been sewage leaking in the theatre suite since before 2015 and is still ongoing and not all incidents have been reported to ICDs.

  Gary Jenkins advised that there is ongoing work in the neuro building that would, because of its complexity, take several years to complete. In the meantime the new operating theatres were due to open in January 2018. He stated that his directorate has a specific focus on IPC and that they had a dedicated group to look at surgical site infection. He said they funded 1.5 WTE surveillance nurses to carry out prospective surgical site surveillance in this area. Dr Armstrong updated that Dr Inkster carried out a detailed inspection of the area previously and she suggested that SSI surveillance was carried out here. Sandra McNamee advised for context that there are 3 surveillance nurses that cover all of GGC so the resource to actively do this in the INS was significant.

  She acknowledged that the ICDs were concerned about infections in EVD and stated that the clinical teams were currently developing an EVD bundle. Ian Powrie reported that remedial work was carried out in this building over the past year but that there had been an incident with sewage last week.

  There has been a delay in the opening of the ICE theatres as GGC were not satisfied with the standard but a programme of work has been agreed with the clinicians. Dr Peters said she requested to know the number of instances from when the theatres closed two years ago due to problems with the pipe work to date and she stated that she was told at the time of the initial problems that the plumbing was to be replaced. Gary Jenkins responded that that the pipes run through multiple floors and a process is in place with IPC and Capital Planning to take this forward in stages. Anne Harkness commented that increases in SSI should be discussed at the Regional Clinical IPC Group which Dr Deshpande is a representative of. Ian Powrie advised that he has arranged to meet with Dr Deshpande and Dr Balfour to discuss the INS theatre issue.

Item	Action

- Decontamination Provision for Respiratory Clinics
  The SBAR also stated that the decontamination facilities in both Paediatric and adult respiratory clinics have been identified as inadequate on a number of occasions. Sandra McNamee informed that remedial actions have been put in place and a list of items has been sent to HPS for advice on how to decontaminate them. Dr Peters stated that QEUH ICD had not been informed of timeline for revision works to decontamination area to take place.

- Infection Control Structure
  Dr Redding advised that the ICDs in the South Sector had stated that the roles within the Infection Control team are unclear and appear to have changed. Dr Armstrong proposed that consideration is given to having a further separate meeting to discuss the issues referred to in this section. Jonathan Best offered to support this discussion.

4. Agreement of Further Actions / Next Steps

- Ian Powrie to provide documents supporting work on PPVL rooms
- David Loudon to liaise with colleagues re GGC experience with chilled beams
- In relation to safe patient placement and availability of isolation rooms, this is to be raised via the Regional Clinical Governance Committee.
- Dr Peters to issue the group a copy of the document listing isolation rooms from Crosshouse Hospital.
- Dr Armstrong to relay issues pertaining to Ward 2A to Women & Children directorate.
- Dr Armstrong to confirm chemotherapy preparation in Aseptic Unit.
- Consideration to be given to a further meeting with a smaller group to discuss the issues contained in the Infection Control Structure section of the SBAR.
- Dr Armstrong to check with the Comms team regarding the wording in the public statement regarding BMT services

5. A.O.C.B.
Nil.

Dr Armstrong thanked everyone for their attendance today.

From: Armstrong, Jennifer
Sent: 12 May 2022 16:49
To: McIntyre, Hazel
Cc: Devine, Sandra
Subject: FW: Updates - QEUH/Ward 4B & RHC/Ward 2A

Update 4B

From: Armstrong, Jennifer
Sent: 02 May 2022 11:23
To: Armstrong, Jennifer [redacted]
Subject: FW: Updates - QEUH/Ward 4B & RHC/Ward 2A

From: Loudon, David
Sent: 09 November 2017 09:07
To: Armstrong, Jennifer [redacted]; Archibald, Grant [redacted]; Best, Jonathan [redacted]; Harkness, Anne [redacted]
Cc: Hunter, William [redacted]; Kane, Mary Anne [redacted]
Subject: FW: Updates - QEUH/Ward 4B & RHC/Ward 2A

Colleagues

Please refer to the progress update below from Billy Hunter.

Thanks

David

David W Loudon
Director of Property, Procurement & Facilities Management
NHS Greater Glasgow & Clyde
Corporate Headquarters
Gartnavel Royal Hospital
Glasgow
G12 OXH

[redacted]

From: Hunter, William
Sent: 08 November 2017 16:32
To: Loudon, David
Cc: McNeil, Elaine; Hirst, Allyson; Powrie, Ian
Subject: FW: Updates - QEUH/Ward 4B & RHC/Ward 2A

David,

Can I please provide the following updates:

1. QEUH 4b

a) Programme of works on target for building works completion by 20th November 2017.
b) Air permeability tests satisfactorily completed last week.
c) Hepa filters being fitted this week within Prep Room.
d) w/c 6th November – for two weeks – air handling units (by room) to be validated and inspected by H&V– followed by reinstatement of ventilation to previous settings.
e) Should no problems be encountered with point d) – the ward will be handed over to nurse colleagues (subject to a deep cleaning programme). This will then lead to a programme of environmental testing by Microbiology colleagues – scheduled for 6 month proving period.

2. RHC 2A
   a) Programme of work has a revised start date of 19th November 2017 - phase 1 relates to rooms 19 & 20.
   b) Building work will take 4 weeks followed by a 2 week programme of testing and commissioning. Handover of phase 1 works will be early January 2018.
   c) Phase 2 works follows same process and timeline – works due to commence early January 2018 with completion towards the end of February

Regards

Billy

56

60. email ExternaltoGGCFw HAI Scribe for additional rooms

[redacted]

From: VALYRAKI, Kalliopi (NHS GREATER GLASGOW & CLYDE) [redacted]
Sent: 30 November 2017 09:01
To: Peters, Christine
Subject: [ExternaltoGGC]Fw: HAI Scribe for additional rooms

FYI

From: Barmanroy, Jackie [redacted]
Sent: 30 November 2017 08:01
To: Devine, Sandra; brian.jones[redacted]; Brattey David (NHS GREATER GLASGOW & CLYDE); Mccolgan Melanie (NHS GREATER GLASGOW & CLYDE); Pritchard Lynn (NHS GREATER GLASGOW & CLYDE); Powrie Ian (NHS GREATER GLASGOW & CLYDE); Loudon David (NHS GREATER GLASGOW & CLYDE); Walsh Thomas (NHS GREATER GLASGOW & CLYDE); VALYRAKI, Kalliopi (NHS GREATER GLASGOW & CLYDE)
Subject: RE: HAI Scribe for additional rooms

Hi Sandra,

I'm happy to meet. We are planning to do the exact same sealing/precautions to protect the patients in the unit and dust control as before but it will be the other side of the ward that will be worked on. So the patients in the unit will be moved to the side of the ward that is currently empty once we know the rooms have passed the validation testing. Then the newly emptied area will be sealed off to allow the work on the other bedrooms and the 4 rooms mentioned earlier.

Kind regards,

Jackie.

Jackie Barmanroy
Senior Nurse Infection Control
New Office Accomodation Block
Queen Elizabeth University Hospital
[redacted]

From: Devine, Sandra
Sent: 29 November 2017 16:51
To: Jones, Brian; Barmanroy, Jackie; Brattey, David; McColgan, Melanie; Pritchard, Lynn; Powrie, Ian; Loudon, David; Walsh, Tom; Valyraki, Kalliopi (NHSmail)
Subject: FW: HAI Scribe for additional rooms
Importance: High

Hi
Can we meet tomorrow and sort out the issues identified by Pepi and ensure the control measures are in place. I was in the ward last week and was happy with the sealing of the area and levels of dust. Perhaps there is more throughput now – not sure but we need to ensure that the HAI scribe controls are in place as signed off by Prof Leanord a couple of weeks ago.
Kind regards
Sandra

Sandra Devine
Associate Nurse Director
Infection Prevention & Control

[redacted]

From: Jones, Brian
Sent: 29 November 2017 16:33
To: Devine, Sandra
Subject: Fw: HAI Scribe for additional rooms
Importance: High

FYI

Sent from my BlackBerry 10 smartphone on the EE network.

From: Ic Doctor, South [redacted]
Sent: Wednesday, 29 November 2017 16:30
To: Jones, Brian; Peters, Christine; Barmanroy, Jackie
Subject: RE: HAI Scribe for additional rooms

Hi Brian,

I have been up to 4B in order to assess the HAISCRIBE with both Jackie and Christien who is on for ICD tomorrow.

I have a number of concerns.

Currently there are Acute Leukaemic patients housed in the rooms in ward 4B. They are in "neutropenic isolataion" as per door sign.

The air in the corridor is very dusty - so much as to cause coughing and eye irritation.

Diappointingly there are visiscreens that are meant to screen off the work areas that are flapping open to patient corridor areas. There is currently work going onwhich is leak testing rooms that is occurring outwith the "sealed off " work area. It is unclear if this particular piece of work has been signed off with an appropriate SCRIBE.

We would not be happy to sign off the requested HAISCRIbe given the current situation as we find it and suggest that Estates stop the work that is ongoing today, and that IC and Estates with clinical staff reconvene a meeting as we are concerned regarding exposure of high risk pateitns oon the ward to work generated dust on the ward.

I suggest that we contact Estates today to stop the work if you are in agreement,

regards,

Pepi

From: Jones, Brian
Sent: 28 November 2017 16:50
To: Ic Doctor, South
Cc: Barmanroy, Jackie; Devine, Sandra
Subject: Re: HAI Scribe for additional rooms

Hi Pepe
Jackie will be able to update/assist you.
Please let me know if any problems.
Thanks

BJ

Sent from my BlackBerry 10 smartphone on the EE network.

From: Ic Doctor, South
Sent: Tuesday, 28 November 2017 16:25
To: Jones, Brian
Subject: RE: HAI Scribe for additional rooms

Dear Brian,

Thank you for your reply.
I understand that there is a high level piece of work at 4B to convert into BMT accomodation under the oversight of SMT. Is this part of this scribe?

Happy to proceed but for me to do it properly I will need to walk around the site and understand what the work entails and what patients are currently at the ward.

Kind Regards,
Pepi

From: Jones, Brian
Sent: 28 November 2017 15:54
To: Ic Doctor, South
Cc: Barmanroy, Jackie; Devine, Sandra
Subject: Re: HAI Scribe for additional rooms

Hi Pepe
Not aware but happy for you to proceed. Is there a problem?
Happy to discuss.
Thanks
BJ

Sent from my BlackBerry 10 smartphone on the EE network.

From: Ic Doctor, South
Sent: Tuesday, 28 November 2017 14:54
To: Jones, Brian
Subject: FW: Re: HAI Scribe for additional rooms

Hi Brian,

I am forwarding you this email just to ask you if you are aware of this.
Is this part of the overall work or do you want me to proceed?

Kind regards,
Pepi

From: Barmanroy, Jackie
Sent: 28 November 2017 14:35
To: Ic Doctor, South

Cc: Pritchard, Lynn
Subject: FW: Re: HAI Scribe for additional rooms

Good afternoon,

Please find attached a SCRIBE document in addition to the 2 SCRIBES Alastair Leonard has already checked (and ok'd) in regard to ward 4B.
These rooms are non-patient rooms that require to have the actuators checked.

Thank you,

Jackie.

Jackie Barmanroy
Senior Nurse Infection Control
New Office Accomodation Block
Queen Elizabeth University Hospital
[redacted]

From: Romeo, Thomas
Sent: 28 November 2017 11:27
To: Barmanroy, Jackie
Cc: Brattey, David
Subject: Re: HAI Scribe for additional rooms

Hi Jackie

I believe D Brattey has spoken to you regarding 4 additional rooms that are not patient related that we require access above the ceil tiles, as a result I have attached the HAI Scribe that will hopefully meet your requirements.

Regards
T Romeo BEng (Engineering Management)
Estates Manager
QEUH Campus
1345 Govan Rd
G51 4TF
[redacted]

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63b. RE Ward 4B

58

[redacted]

From: Peters, Christine
Sent: 04 December 2017 17:15
To: Campbell, Myra; McColgan, Melanie; Devine, Sandra; McQuaker, Grant; Green, Rachel (NHSmail); Pritchard, Lynn; Valyraki, Kalliopi; Brattey, David
Cc: Ic Doctor, South; Powrie, Ian
Subject: RE: Ward 4B
Attachments: Meeting re HIASCRIBE Ward 4b.docx

Hi All,
Please find attached minutes/notes from the meeting held on Friday .

I have not included all the discussion in detail , but I think it is important to note that although it was suggested at the meeting that there was no need to contact HPS/HFS this was a task that is key to understanding the work and the outcomes of that work and I have written to HFS for further clarification regarding the validation parameters.

Further to the meeting I met with Ian Powrie, Lynne and Alyson on the ward this morning .

It became clear that the methodology for testing the room seals has changed and now involves pushing air at 50 pascals into the room being tested. This means that there is potential for air and associated dust/spores from ceiling voids being disturbed and dragged into the ward atmosphere which is a possible explanation for the findings on the ward on Wednesday. We also discussed the fact that negative pressure, although required for Class III work is not achievable due to there being only one AHU for supply to the entire ward including the rooms in which the high risk patients are currently housed. This was pointed out at the meeting in September when the original phased work was discussed. This deviation from the recommendations was not picked up and delineated in the HAISCRIBE for the heating valve work and this requires careful consideration.

We agreed to a work group being set up to discuss the HAISCRIBEs that will now be required in order to bring the planned work to a conclusion in line with HAISCRIBE good practice which Ian will pull together.

Regards,

[redacted]
Dr Christine Peters
Consultant Microbiologist
Queen Elizabeth University Hospital,
GGC
[redacted]
[redacted]

Meeting re HIASCRIBE Ward 4B

1/12/17 4pm Seminar Room 5th Floor QEUH

Attending

Chair : Dr C Peters,

Dr Valyraki ICD

Lynn Pritchard, Lead ICN

Sandra Devine: Associate Nurse Director Infection Control

Myra Campbell ; Clinical Services Manager

Dr Rachel Green : Chief of Medicine Diagnostics

Alyson McArdle : Lead nurse Haematology

David Brattey : Estates

Melanie McColgan: General Manager

Dr G McQuaker : Lead Consultant BMT

1. Introductions

2. No Conflicts of Interest declared

3. Dr Peters stated that she would follow an IMT agenda in the absence of an HAISCRIBE incident agenda and the group would decide whether this would be the appropriate way forward after discussing the details.

Situation update:

Dr Valyraki explained that she had been requested to sign off an HIASCRIBE for work to Heating valves in non-patient rooms on 4B. On visiting the ward on 29/11 it became apparent to her that work was currently ongoing on 4B and that High risk patients as defined by HAISCRIBE were accommodated in rooms on the ward. She described visible dust in the air which was severe enough to cause coughing in parts of the ward that were out with the HAISCRIBE area. Visiscreens were in place at one end of the ward but these were not sealed and were flapping open.

Dr Peters and Dr Valyraki had then visited the ward together and observed that leak testing protocol was being carried out. There was clearly dust suspended in the air and this could be detected immediately outside the rooms where ALL patients were being accommodated. It was unclear at what stage of the work the screens had been discarded.

Dr Peters had requested details regarding the HAISCRIBE for the ceiling and positive pressure s alterations on 4B, as well as SBAR from HPS that delineated the validation and commissioning of the unit in order to understand the work that was being carried out. The SCRIBE was not available but a previous copy from June 2017 was available. The HAISCRIBE for the heating valve fix did not mention air testing and referred to flooring being cut up which would make it a Class IV piece of work.

It was noted that double doors mid corridor could not be sealed as staff required access to the prep room. Dr Peters noted that this meant that the area of the SCRIBE was not therefore sealed off from the rest of the ward.

Dr McQuaker indicated that he was not the appropriate clinician to be at the meeting as he was not caring for the patients on 4B, but was BMT lead.

Dr Peters had been informed by ward doctor that patients were on Posaconazole prophylaxis and Myra indicated that she had spoken to Consultants caring for patients and they were satisfied that they did not consider their patients to be at risk .

Sandra and Melanie informed the group that the movement of patients into the unit was a separate issue to the current situation and that that work had been carried out with full discussion with HPS and HFS.

Dr Peters stated that any local ICD could not sign off further work on the ward with out having full access to the information regarding the validation and commissioning of the rooms as this directly impacted the considerations of pulling together risk mitigation of any work going forward.

There was a concern that work should not be delayed due to urgency of moving Beatson patients to QEUH.

Agreements /Actions

- The group agreed **not** to follow up as an incident based on the fact that the clinicians were happy that patients are covered with antifungal prophylaxis and are not considered to be higher risk than previously – Myra to forward email to Dr Peters regarding this
- Room leak testing procedure was not covered in HAISCRIBE , and details on SCRIBE were incorrect regarding flooring being cut up and negative pressure being put in place – process of SCRIBE sign off to be taken forward as part of discussions re ICDs role by Dr R Green
- Existing HAISCRIBE to be revisited for next stage of work to ensure risk mitigation of dust and spore suspension into the air of ward – Dr Peters to meet with Estates and ICNs at 11am on Monday
- Dr Peters will contact HPS to ask advice regarding the movement of high risk patients into the rooms post remedial work to heating and details of validation and commissioning sought
- No further meetings planned

From: Annette Rankin
Sent: 03 March 2021 16:31
To: nss hpshaiic
Subject: FW: Ward 4B- Results meeting 02.03.18
Attachments: Air Particle + Microbiological Monitoring - Ward 4B, QEUH.PDF; AGENDA Ward 4B Results meeting 02.03.18.doc

Follow Up Flag: Follow up
Flag Status: Completed

bmt

From: Marshall, Julie [redacted]
Sent: 26 February 2018 17:04
To: O'BRIEN, Geraldine (NHS NATIONAL SERVICES SCOTLAND) [redacted]; Bell, Lyndsey [redacted]; Campbell, Myra [redacted]; CLARKE, Colin (NHS NATIONAL SERVICES SCOTLAND) [redacted]; CROAN, Peter (NHS NATIONAL SERVICES SCOTLAND) [redacted]; Devine, Sandra [redacted]; Gallacher, Alan [redacted]; Hart, Alistair [redacted]; Inkster, Teresa [redacted]; INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE) [redacted]; Jones, Brian [redacted]; Kane, Mary Anne [redacted]; McArdle, Alyson [redacted]; McColgan, Melanie [redacted]; MCDONNELL, Laura (NHS NATIONAL SERVICES SCOTLAND) [redacted]; McQuaker, Grant [redacted]; Morrison Anne (NHS GREATER GLASGOW & CLYDE) [redacted]; Powrie Ian (NHS GREATER GLASGOW & CLYDE) [redacted]; RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND) [redacted]; ROEXE, Anke (NHS NATIONAL SERVICES SCOTLAND) [redacted]; STORRAR, Ian (NHS NATIONAL SERVICES SCOTLAND) [redacted]; GRANT, Susan (NHS NATIONAL SERVICES SCOTLAND) [redacted]; WINTER, Mike (NHS NATIONAL SERVICES SCOTLAND) [redacted]
Subject: Ward 4B- Results meeting 02.03.18

Dear all

Please see Agenda and Air Particle + Microbiological Monitoring Summary for Friday's meeting at 3pm in Seminar room 2, Lab building, QEUH. A further paper is to follow.

Apologies have been received from Mary Anne Kane, Geraldine O'Brien, Colin Clarke, Mike Winter.

Many thanks

Julie

Julie Marshall
PA to Myra Campbell , CSM & Alyson McArdle, Lead Nurse
Clinical Haematology
Ward B8, Beatson West of Scotland Cancer Centre
[redacted]

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Clinical Haematology – Ward 4B
Air Particle + Microbiological Monitoring Summary – Validation Data

Date	Room	SAB cfu@22	SAB cfu@30	ID cfu@22	ID cfu@30	Particle counts	Outside count	% Clearance	Room Closed	Comments
25/01/2018	76	1 Fun	0	Cladosporium Sp		672	231741			Validation
01/02/2018	76	0	0			583	55208			Settle Plates - Passive Air Sampling
01/02/2018	76	2 Bact	0							
08/02/2018	76	7 Bact	9 Bact							
08/02/2018	76	0	1 Fun							Settle Plates - Passive Air Sampling
15/02/2018	76	5 Bact	3 Bact			441	193662			
15/02/2018	76	0	0							Settle Plates - Passive Air Sampling
25/01/2018	77	0	0			238	231741			
01/02/2018	77	0	0			164	55208			Settle Plates - Passive Air Sampling
01/02/2018	77	0	1 Bact							
08/02/2018	77	11 Bact	1 Bact							
08/02/2018	77	0	1 Bact							Settle Plates - Passive Air Sampling
15/02/2018	77	2 Bact	2 Bact			249	193662			
15/02/2018	77	0	0							Settle Plates - Passive Air Sampling
25/01/2018	78	0	0			189	231741			
01/02/2018	78	0	0			116	55208			Settle Plates - Passive Air Sampling
01/02/2018	78	1 Bact	0							
08/02/2018	78	7 Bact	5 Bact 1 Fun							
08/02/2018	78	0	0							Settle Plates - Passive Air Sampling
15/02/2018	78	5 Bact	0			225	193662			
15/02/2018	78	1 Bact	1 Bact							Settle Plates - Passive Air Sampling

Clinical Haematology – Ward 4B
Air Particle + Microbiological Monitoring Summary – Validation Data

Date	Room	SAB cfu@22	SAB cfu@30	ID cfu@22	ID cfu@30	Particle counts	Outside count	% Clearance	Room Closed	Comments
25/01/2018	79	0	0			202	231741			
01/02/2018	79	0	1 Bact			98	55208			Settle Plates - Passive Air Sampling
01/02/2018	79	1 Bact 1 Fun	1 Bact	Mycelia sterilia						
08/02/2018	79	11 Bact	7 Bact							
08/02/2018	79	0	0							Settle Plates - Passive Air Sampling
15/02/2018	79	0	0			420	193662			
15/02/2018	79	1 Bact	0							Settle Plates - Passive Air Sampling
25/01/2018	80	0	0			96	231741			
01/02/2018	80	7 Bact 1 Fun	1 Bact	Cladosporium Sp		2797	55208			Settle Plates - Passive Air Sampling 2 visitors in room
01/02/2018	80	1 Bact 2 Fun	0	Cladosporium Sp						
08/02/2018	80	0	0							
08/02/2018	80	1 Bact	1 Bact							Settle Plates - Passive Air Sampling
15/02/2018	80	2 Bact	0			1498753	193662			Door opened twice during air sampling
15/02/2018	80					5084	193662			Repeat test
15/02/2018	80	1 Bact	0							Retest
15/02/2018	80	1 Bact 1 Fun	0							Settle Plates - Passive Air Sampling
25/01/2018	81					242	231741			
01/02/2018	81	0	0			513	55208			
08/02/2018	81	0	0							
08/02/2018	81	0	0							Settle Plates - Passive Air Sampling
15/02/2018	81	0	0			203	193662			
15/02/2018	81	0	0							Settle Plates - Passive Air Sampling

Clinical Haematology – Ward 4B
Air Particle + Microbiological Monitoring Summary – Validation Data

Date	Room	SAB cfu@22	SAB cfu@30	ID cfu@22	ID cfu@30	Particle counts	Outside count	% Clearance	Room Closed	Comments
25/01/2018	82					93	231741			
01/02/2018	82	0	0			530	55208			
08/02/2018	82	0	0							
08/02/2018	82	0	0							Settle Plates - Passive Air Sampling
15/02/2018	82	0	0			182	193662			
15/02/2018	82	0	0							Settle Plates - Passive Air Sampling
25/01/2018	83					176	231741			
01/02/2018	83	2 Fun	0	Aspergillus Sp		5305	55208			5 visitors in room
08/02/2018	83	0	0							
08/02/2018	83	1 Bact 1 Fun	0							Settle Plates - Passive Air Sampling
15/02/2018	83	0	0			282	193662			
15/02/2018	83	0	0							Settle Plates - Passive Air Sampling
25/01/2018	84					262	231741			
01/02/2018	84	1 Bact	1 Bact			155	55208			
08/02/2018	84	0	0							
08/02/2018	84	0	1 Bact							Settle Plates - Passive Air Sampling
15/02/2018	84	14 Bact	6 Bact			970	193662			
15/02/2018	84	1 Bact	2 Bact							Settle Plates - Passive Air Sampling
25/01/2018	85					772	231741			
01/02/2018	85	1 Bact	0			122	55208			
08/02/2018	85	9 Bact	14 Bact							
08/02/2018	85	0	0							Settle Plates - Passive Air Sampling
15/02/2018	85	0	0			197	193662			
15/02/2018	85	0	0							Settle Plates - Passive Air Sampling

Clinical Haematology – Ward 4B
Air Particle + Microbiological Monitoring Summary – Validation Data

Date	Room	SAB cfu@22	SAB cfu@30	ID cfu@22	ID cfu@30	Particle counts	Outside count	% Clearance	Room Closed	Comments
25/01/2018	86					412	231741			
01/02/2018	86					90	55208			
08/02/2018	86	2 Fun 2 Bact	3 Bact							
08/02/2018	86	0	0							Settle Plates - Passive Air Sampling
15/02/2018	86	0	0			145	193662			
15/02/2018	86	0	0							Settle Plates - Passive Air Sampling
25/01/2018	87					443	231741			
01/02/2018	87					20	55208			
08/02/2018	87	11 Bact	6 Bact							
08/02/2018	87	0	0							Settle Plates - Passive Air Sampling
15/02/2018	87	0	0			159	193662			
15/02/2018	87	0	0							Settle Plates - Passive Air Sampling
25/01/2018	88					219	231741			
01/02/2018	88					53	55208			
08/02/2018	88	0	1 Bact							
08/02/2018	88	0	0							Settle Plates - Passive Air Sampling
15/02/2018	88	2 Bact	0			95	193662			
15/02/2018	88	0	0							Settle Plates - Passive Air Sampling
25/01/2018	89					4175	231741			
25/01/2018	89					1163	231741			Retest
01/02/2018	89					69	55208			
08/02/2018	89	0	0							
08/02/2018	89	0	0							Settle Plates - Passive Air Sampling
15/02/2018	89	0	2 Bact			673	193662			
15/02/2018	89	0	0							Settle Plates - Passive Air Sampling

Clinical Haematology – Ward 4B
Air Particle + Microbiological Monitoring Summary – Validation Data

Date	Room	SAB cfu@22	SAB cfu@30	ID cfu@22	ID cfu@30	Particle counts	Outside count	% Clearance	Room Closed	Comments
25/01/2018	90					852	231741			
01/02/2018	90					327	55208			
08/02/2018	90	0	0							
08/02/2018	90	0	1 Fun							Settle Plates - Passive Air Sampling
15/02/2018	90	0	0			125	193662			
15/02/2018	90	0	0							Settle Plates - Passive Air Sampling
25/01/2018	91	0	0			2108	231741			Settle Plates - Passive Air Sampling Visable leak. Watermark on floor
01/02/2018	91	0	0			608	55208			
08/02/2018	91	0	0							
08/02/2018	91	0	0							Settle Plates - Passive Air Sampling
15/02/2018	91	0	0			58	193662			
15/02/2018	91	0	0							Settle Plates - Passive Air Sampling
25/01/2018	92	6 Fun	1 Fun	Aspergillus Sp, Penicillium Sp	Penicillium Sp	2766	231741			Settle Plates - Passive Air Sampling
01/02/2018	92	0	1 Fun		Penicillium Sp	433	55208			
08/02/2018	92	0	0							
08/02/2018	92	0	0							Settle Plates - Passive Air Sampling
15/02/2018	92	1 Bact	1 Fun			153	193662			
15/02/2018	92	0	0							Settle Plates - Passive Air Sampling
25/01/2018	93	0	0			1453	231741			Settle Plates - Passive Air Sampling
01/02/2018	93	2 Bact	1 Bact			1739	55208			
08/02/2018	93	16 Bact	19 Bact							
08/02/2018	93	0	0							Settle Plates - Passive Air Sampling
15/02/2018	93	0	0			91	193662			
15/02/2018	93	0	0							Settle Plates - Passive Air Sampling

Clinical Haematology – Ward 4B
Air Particle + Microbiological Monitoring Summary – Validation Data

Date	Room	SAB cfu@22	SAB cfu@30	ID cfu@22	ID cfu@30	Particle counts	Outside count	% Clearance	Room Closed	Comments
25/01/2018	94	0	0			1060	231741			Settle Plates - Passive Air Sampling
01/02/2018	94	0	0			1082	55208			Rpt 3183 - room empty
08/02/2018	94	0	0							
08/02/2018	94	0	0							Settle Plates - Passive Air Sampling
15/02/2018	94	0	0			189	193662			
15/02/2018	94	0	0							Settle Plates - Passive Air Sampling
25/01/2018	95	0	0			5444	231741			Settle Plates - Passive Air Sampling
25/01/2018	95					2181	231741			Particle Count Retest
01/02/2018	95	6 Bact	2 Bact			216	55208			
08/02/2018	95	9 Bact	11 Bact							
08/02/2018	95	0	0							Settle Plates - Passive Air Sampling
15/02/2018	95	2 Bact	0			1667	193662			2 Visitors in room
15/02/2018	95	0	1 Fun							Settle Plates - Passive Air Sampling
25/01/2018	96	0	0			286	231741			
25/01/2018	96	0	0							Settle Plates - Passive Air Sampling
01/02/2018	96	0	0			199	55208			
08/02/2018	96	0	0							
08/02/2018	96	0	0							Settle Plates - Passive Air Sampling
15/02/2018	96	5 Bact	11 Bact			359	193662			
15/02/2018	96	0	0							Settle Plates - Passive Air Sampling
25/01/2018	97	0	0			1191	231741			
25/01/2018	97	0	0							Settle Plates - Passive Air Sampling
01/02/2018	97	0	1 Bact			949	55208			
08/02/2018	97	4 Bact	5 Bact							
08/02/2018	97	0	1 Bact							Settle Plates - Passive Air Sampling
15/02/2018	97	9 Bact	9 Bact 2 Fun			514	193662			

Clinical Haematology – Ward 4B
Air Particle + Microbiological Monitoring Summary – Validation Data

15/02/2018	97	0	0							Settle Plates - Passive Air Sampling
Date	Room	SAB cfu@22	SAB cfu@30	ID cfu@22	ID cfu@30	Particle counts	Outside count	% Clearance	Room Closed	Comments
25/01/2018	98	0	0			357	231741			
25/01/2018	98	3 Fun	0	Cladosporium Sp H. hyphomycete						Settle Plates - Passive Air Sampling
01/02/2018	98	0	0			118	55208			
08/02/2018	98	1 Fun	0							
08/02/2018	98	2 Bact	1 Bact							Settle Plates - Passive Air Sampling
15/02/2018	98	0	0			290	193662			
15/02/2018	98	0	0							Settle Plates - Passive Air Sampling
25/01/2018	99	0	0			59	231741			
25/01/2018	99	0	0							Settle Plates - Passive Air Sampling
01/02/2018	99	0	0			364	55208			
08/02/2018	99	0	0							
08/02/2018	99	1 Bact	1 Bact							Settle Plates - Passive Air Sampling
15/02/2018	99	0	0			59	193662			
15/02/2018	99	0	0							Settle Plates - Passive Air Sampling
25/01/2018	C78					1871	231741			
01/02/2018	C78	2 Bact 1 Fun	1 Bact 1 Fun	Penicillium Sp	Penicillium Sp	4189	55208			AAS ? Second sample
01/02/2018	C78	0	0							AAS
08/02/2018	C78	4 Bact	7 Bact 1 Fun							
08/02/2018	C78	3 Bact	2 Bact							Settle Plates - Passive Air Sampling
15/02/2018	C78	3 Bact	1 Bact 1 Fun			203561	193662			
15/02/2018	C78	0	1 Bact							Settle Plates - Passive Air Sampling

Clinical Haematology – Ward 4B
Air Particle + Microbiological Monitoring Summary – Validation Data

Date	Room	SAB cfu@22	SAB cfu@30	ID cfu@22	ID cfu@30	Particle counts	Outside count	% Clearance	Room Closed	Comments
25/01/2018	C86					5809	231741			
01/02/2018	C86	2 Bact	0			1976	55208			AAS ? Second sample
01/02/2018	C86	3 Fun	5 Fun	Penicillium Sp	Cladosporium Sp H. hyphomycete					AAS
08/02/2018	C86	13 Bact 1 Fun	10 Bact							
08/02/2018	C86	0	1 Bact							Settle Plates - Passive Air Sampling
15/02/2018	C86	2 Bact	3 Bact			3912	193662			
15/02/2018	C86	0	1 Bact							Settle Plates - Passive Air Sampling
25/01/2018	C93					3860	231741			
01/02/2018	C93	1 Bact	1 Bact			2683	55208			AAS ? Second sample
01/02/2018	C93	2 Fun	0		Aspergillus Sp					AAS
08/02/2018	C93	8 Bact	16 Bact							
08/02/2018	C93	0	0							Settle Plates - Passive Air Sampling
15/02/2018	C93	1 Bact	0			4812	193662			
15/02/2018	C93	0	0							Settle Plates - Passive Air Sampling
25/01/2018	Outside					231741	231741			
01/02/2018	Outside	>100 Fun	90 Fun	Penicillium Sp	Aspergillus niger Penicillium Sp	55208	55208			
08/02/2018	Outside	6 Fun	41 Fun							
15/02/2018	Outside					193662	193662			
25/01/2018	Treat Rm	1 Fun	0	Aspergillus versicolor		1303	231741			
25/01/2018	Treat Rm	0	0							Settle Plates - Passive Air Sampling
01/02/2018	Treat Rm	3 Bact 1 Fun	1 Bact			4095	55208			
08/02/2018	Treat Rm	8 Bact	5 Bact							
08/02/2018	Treat Rm	0	0							Settle Plates - Passive Air Sampling

Clinical Haematology – Ward 4B
Air Particle + Microbiological Monitoring Summary – Validation Data

15/02/2018	Treat Rm	1 Bact	3 Bact			1972	193662			
15/02/2018	Treat Rm	0	0							Settle Plates - Passive Air Sampling

Comment:
e.g. C78 = Corridor outside room 78

NHSGGC REGIONAL SERVICES

WARD 4B RESULTS MEETING

AGENDA

Friday 02.03.18
@ 3 PM
LO/A/010 – Seminar room 2, Laboratory Building, QE

1. Apologies
2. Notes of the Last meeting
3. Results of Monitoring to date
4. Further Actions Required
5. AOB

From: Kane, Mary Anne [redacted]
Sent: 12 March 2018 11:22
To: RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND)
Subject: RE: WATER STRAIGHTENERS QEUH - URGENT

In Directors meeting – will phone you when out

From: RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND) [redacted]
Sent: 12 March 2018 10:59
To: Kane, Mary Anne
Subject: [ExternaltoGGC]RE: WATER STRAIGHTENERS QEUH - URGENT

What number you on?

A

From: Kane, Mary Anne [redacted]
Sent: 12 March 2018 10:07
To: RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND)
Subject: WATER STRAIGHTENERS QEUH - URGENT

Annette
Can you phone me urgently please re the Horne taps /high risk definitions – I have an issue in ward 2A !

From: Marshall, Julie
Sent: 21 March 2018 10:19
To: O'BRIEN, Geraldine (NHS NATIONAL SERVICES SCOTLAND); Bell, Lyndsey; Campbell, Myra; CLARKE, Colin (NHS NATIONAL SERVICES SCOTLAND); CROAN, Peter (NHS NATIONAL SERVICES SCOTLAND); Devine, Sandra; Gallacher, Alan; Hart, Alistair; Inkster, Teresa; INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE); Jones, Brian; Kane, Mary Anne; McArdle, Alyson; McColgan, Melanie; MCDONNELL, Laura (NHS NATIONAL SERVICES SCOTLAND); McQuaker, Grant; Morrison Anne (NHS GREATER GLASGOW & CLYDE); Powrie Ian (NHS GREATER GLASGOW & CLYDE); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); ROEXE, Anke (NHS NATIONAL SERVICES SCOTLAND); STORRAR, Ian (NHS NATIONAL SERVICES SCOTLAND); GRANT, Susan (NHS NATIONAL SERVICES SCOTLAND); WINTER, Mike (NHS NATIONAL SERVICES SCOTLAND)
Subject: BMTU Results meeting minutes 09.03.18
Attachments: BMTU results meeting minutes 09 03 18.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Dear all

Please see minutes from BMTU results meeting on 09.03.18.

Regards

Julie

Julie Marshall
PA to Myra Campbell , CSM & Alyson McArdle, Lead Nurse
Clinical Haematology
Ward B8, Beatson West of Scotland Cancer Centre
[redacted]

BMT Unit Results meeting

9th March 18 at 11am room ED010, Beatson

Attendees:-

McColgan, Melanie (Chair) (MMcC)	General Manager CH & SOS
Myra Campbell (MC)	CH Clinical Service Manager
Teresa Inkster (TI)	Consultant Microbiologist
Peter Croan (PC)	Associate Programme Director, NSD
Colin Clarke (CC)	Health Facilities Scotland
Susan Grant (SG)	Health Facilities Scotland
Lynn Pritchard	Lead Infection Prevention & Control Nurse
Brian Jones (BJ)	Head of Service, Microbiology
Alyson McArdle (AMcA)	CH Lead Nurse
Haley Kane	Infection Control, HPS
Grant McQuaker (GMcQ)	BMTU Consultant
Ian Powrie (IP)	Deputy General Manager, Estates QEUH.
Anke Roexe (AR)	Programme Manager, NSD

Apologies:-

Mike Winter (MW)	Medical Director, Procurement Commissioning and Facilities SBU - NSS.

MMcC thanked everyone for being so flexible with their diaries to rearrange the meeting at such short notice.

Minutes of last meeting – SG made one correction prior to the meeting and minutes amended and circulated.

Background

IP gave a brief report on actions to date:

Recent enabling works completed to include new solid ceilings fitted to the en-suite facilities, heating controls rewired to eliminate control issues and door control devices fitted to improve the pressure differentials of each room to the corridor.

Air Permeability testing was carried out in accordance with HPS recommendations to adopt BSRIA air permeability standards (50 pascals). This probably created a higher air draw volume from the corridor which also pulled air from ceiling vent grills. The introduction of dust through ceiling void requires further HPS guidance for future adoption of BSRIA test methods.

MMCC confirmed that we have been using HPS' updated SBAR as guidance.

SG wanted the group to be mindful that we cannot report at this stage that results according to the SBAR are completely satisfactory. We are currently navigating through the SBAR. The group agreed with MMCC that at present we have clarity on where we are with results monitoring.

Air Particle count

TI gave the following update on the air sampling results to date:

Particle counts are mostly < 1000. Particles include bacteria, fungi, skin, dust etc . The most common reason for elevation is additional people in the room or cleaning in the vicinity, this was noted whilst testing.

Active air sampling has revealed low fungal counts including Aspergillus and Mucor – this is to be expected given the lack of a HEPA filtered corridor.

Settle plates were discontinued following discussion with HPS. This is because we are not operating to a clean room environment and we would expect to see fungus on plates after 5 hours. Continuing with this method is likely to lead to multiple interventions including moving patients in and out of rooms which would not be desirable.

The air sampling results are as expected given the unit specification. It was agreed that sampling would be repeated in 4 weeks time i.e the week commencing 2nd April 2018 and that this would be required for that one week only.

Water testing for Legionella and Pseudomonas is negative. Regular testing will be undertaken. There is a water contamination incident in ward 2A RHC with a Gram negative organism called Cupriavidus. The source has been traced to the taps and showerheads. The same taps/showerheads are in 4B therefore the same control measures will be employed. Shower heads will be changed to disposable and taps will be cleaned, disinfected and have flow straighteners replaced.

Verification reports

Prior to the meeting IP circulated various H&V validation reports from Nov 17 – Jan 18 along with RSK Air permeability reports. It is now confirmed that to complete the AHU Annual Verification report, Estates will need to shut down the plant for approx 12 hours, the patient rooms will then be tested 2 rooms at a time taking approx 1 hour each over a 4 week programme. MC and IP have agreed a programme vacating 2 rooms at a time to allow testing to be carried out.

Mobile Hepa Filtration units (IQ Air) will be brought in during this time. Estates currently own 8 units however the BMT Unit will require 25 dedicated units, one for each patient room plus one for clean prep room. These units have their own test procedures.

Critical ventilation system contingency Plan BMT

IP sent out this draft for consultation prior to the meeting. It details the contingency plan for both planned maintenance and contingency.

SG stated that the Hepa filtration units only clean existing air – they do not provide fresh air. Although in the event of a failure we could monitor CO2 levels she states that as there is no bypass there is a need for a timescale for getting more fresh air in.

IP reported that we cannot put in another air handling unit in. The turnaround for repair to the air handing unit could take in excess of 24 hours dependent on what parts are required. Estates hold critical spares.

It was agreed that the contingency plan was lacking in detail, IP and MC will review and update for circulation to the full group.

Current Situation & Next Steps

4 sets of air monitoring results are available, with the 5th set awaited. As a second cycle four weeks apart is required as per the SBAR, the next air monitoring will be carried out w/c 02.04.18 for one week only.

The group agreed that results to date would enable a recommendation to relocate back to QEUH to be made. Should the results from the week of 02.04.18 be similar, the Service will recommend relocating the BMT Unit back to QEUH.

W/c 16 April a paper including recommendations, timescales and contingencies will be emailed to the group for review and comment before sign off.

MMCC closed the meeting and thanked everyone for the time and effort that they have put into this.

Douglas Ross

From: Douglas Ross
Sent: 15 May 2018 11:17
To: Kane, Mary Anne
Cc: Hirst, Allyson; Gallacher, Alan
Subject: RE: QEUH / RHC - Actions from Meeting 13/03/18

Mary Anne

I will liaise with Ally to get a suitable date. Appreciate it may be too short notice, but I am at JB Russell House today at 2pm for cladding meeting, and could meet after that?

Douglas Ross
Senior Director

Currie & Brown

150 St Vincent Street, Glasgow, G2 5NE, United Kingdom
[redacted]

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From: Kane, Mary Anne [redacted]
Sent: 15 May 2018 11:13
To: Douglas Ross [redacted]
Cc: Hirst, Allyson [redacted]; Gallacher, Alan [redacted]
Subject: RE: QEUH / RHC - Actions from Meeting 13/03/18

Douglas
We need to meet fairly urgently to discuss how this is moved forward as we are in receipt of the independent report and lack of water temp routinely will be implicated in the RHC investigation being reported to Scottish Govt at the end of May/beginning of June
Mary Anne

From: Douglas Ross [redacted]
Sent: 20 March 2018 11:19
To: Kane, Mary Anne
Subject: [BlockedURL][ExternaltoGGC]QEUH / RHC - Actions from Meeting 13/03/18

Mary Anne

Further to our discussions last week noted below is outcome of my actions:-

Taps
I can find no reference to any instruction to Multiplex to change the specification of the taps. The audit of project documents confirms that taps as installed were to remain in place and no instruction to change. There were various meetings held with the Board, HFS, Horne etc. The issue was raised at our weekly early warning meetings and outcomes were recorded as follows. Meeting 19/06/14: noted no change to taps, action was for the Board to implement a management process for maintenance of taps in critical care areas. Meeting 2/7/14: noted taps installed complied with guidance current at time of specification and that new guidance was not to be applied retrospectively. There was no need to apply additional flow control facilities or remove flow straighteners, and any residual perceived or potential risk would form part of routine maintenance process.

Energy Centre
Suggested draft response to Multiplex as holding letter until Independent Review has been finalised / considered. ***We confirm receipt of your letter dated 7 March 2018 and supplementary information provided in response to the issues raised with the Energy Centre performance. We will review the information provided and respond in due course. Our review and response will also be informed by the findings of an independent review of the Energy Centre that the Board has initiated.***

Ventilation
I cannot locate any models that demonstrate air flow, however attached is brief report from TUV SUD Wallace Whittle confirming airflow from corridor to bedroom to ensuite. Also attached is copy of email correspondence quoting HPA on acceptance of chilled beam solution in renal / change to air changes rate.

Douglas Ross
Senior Director

Currie & Brown

150 St Vincent Street, Glasgow, G2 5NE, United Kingdom
[redacted]

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From: Kane, Mary Anne [redacted]
Sent: 26 March 2018 17:50
To: alan.gallacher[redacted]; Purdon Colin (NHS GREATER GLASGOW & CLYDE); Powrie Ian (NHS GREATER GLASGOW & CLYDE)
Cc: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND)
Subject: WATER RAs and WRITTEN SCHEME

Follow Up Flag: Follow up
Flag Status: Flagged

Can you please forward these electronically to myself and the above circulation list by no later than close of play tomorrow.If these documents are too big to send please place on memory sticks
Shiona Frew has given me a couple of memory sticks with the commissioning information she has on them – I will hand over to Annette and Teresa tomorrow .
Another couple of sticks will be dropped off to me tomorrow in case we need these – i haven't had time yet to review the content of these so there may be information that needs drawn down from ZUTEC – Alan can you have John O'Rourke look for this tomorrow and transfer onto memory sticks please by close of play if possible although I understand this is a very difficult system to navigate
I've spoken to Alan regarding this information at the end of last week therefore this should be able to be collated
Mary Anne

From: Kane, Mary Anne [redacted]
Sent: 27 March 2018 08:03
To: teresa.inkster[redacted]; INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND)
Cc: alan.gallacher[redacted]; Purdon Colin (NHS GREATER GLASGOW & CLYDE)
Subject: FW: DRAIN CLEANING QEUH & RHC

Follow Up Flag: Follow up
Flag Status: Flagged

This in a hospital the size of QEUH is nothing and not all will be associated with clinical areas – Colin can someone pull a spreadsheet together from FM First of locations of issue and what was wrong please by tomorrow morning Please share with Dr Inkster ,Annette Rankin and I
Mary Anne

From: Purdon, Colin
Sent: 27 March 2018 07:26
To: Kane, Mary Anne
Cc: Gallacher, Alan
Subject: RE: DRAIN CLEANING QEUH & RHC

Mary Anne,

I've pulled out 56 reports of blocked showers/sinks across all of Ward 2A from the last 12 months. Generally around 5 per month.

Regards

[redacted]

Colin Purdon | BSc (Hons)
Site Manager Operational Estates (*Retained Estate*)

Estates Dept
Queen Elizabeth University Hospital Campus,
Laboratory Medicine and Facilities Management Bldg.
1345 Govan Rd
Glasgow
G51 4TF

[redacted]

[redacted]

From: Kane, Mary Anne
Sent: 26 March 2018 17:10
To: Inkster, Teresa (NHSmail); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); Inkster, Teresa
Cc: Gallacher, Alan; Powrie, Ian; Connelly, Karen; Purdon, Colin
Subject: RE: DRAIN CLEANING QEUH & RHC

No not many- be clearer when Ian Powrie comes back and I can have FM First interegated which I will instruct for tomorrow
Teresa the labs have run out of sample bottles – this will impact on collection from risers in the morning
DMA are going to go to another lab they use to get bottles but this has been an ongoing challenge for us as well as the 100 samples max issue
Mary Anne

From: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE) [redacted]
Sent: 26 March 2018 17:02
To: Kane, Mary Anne; RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); Inkster, Teresa
Cc: Gallacher, Alan; Powrie, Ian; Connelly, Karen; Purdon, Colin
Subject: [ExternaltoGGC]Re: DRAIN CLEANING QEUH & RHC

Great thanks. Have we had many issues with drain blockages?
KR
Teresa

Dr Teresa Inkster
Lead Infection Control Doctor NHSGGC
Training Programme Director Medical Microbiology
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Kane, Mary Anne [redacted]
Sent: 26 March 2018 16:29
To: RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); [redacted]; INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE)
Cc: alan.gallacher[redacted] Powrie Ian (NHS GREATER GLASGOW & CLYDE); Connelly Karen (NHS GREATER GLASGOW & CLYDE); Purdon Colin (NHS GREATER GLASGOW & CLYDE)
Subject: DRAIN CLEANING QEUH & RHC

I can confirm that routine drain cleaning does not occur with the exception of the surface of the drain by domestic services .Titan (HYpochloride) is used to clean all sanitary fittings including shower trays and wash hand basins. Wet rooms neutral detergent is used due to the non slip nature of the surface
If there is a drain blockage/request for drain maintenance then Estates would caryy this out
Mary Anne

Infection Prevention and Control Measures – Water Incident, March 2018

Updated guidance 28/3/18

The Information below applies to all inpatient areas in RHC with the **exception of ward 2A Bone Marrow Transplant (BMT) patients (separate control measures available)**. NICU and SCBU are not required to carry out the control measures below and can use mains outlets as normal.

- Filters have been fitted to all clinical hand wash basins in rooms of immunocompromised patients. Disposable showerheads have also been fitted in these rooms. The clinical hand wash basins and showers can be used for all patients (including those who are immunocompromised), parents and staff.

- Staff can revert to normal hand hygiene practice. Alcohol based hand rub is not required routinely after every hand wash with soap and water.
- For all line care, aseptic technique and surgical scrub staff should continue to carry out hand washing as normal followed by application of alcohol based hand rub.
- ****For 2A patients only (incl those boarding in other wards)**** CVC lines should be covered when showering. Point of entry should be covered in a water resistant dressing. The lumens should be wrapped in sterile gauze swab and secured with a tegaderm dressing.
- Water coolers will remain out of use for patients in inpatient areas until further notice. Parents, staff and patients attending OPD clinics on the ground floor may use the water coolers throughout the hospital.
- Bottled water will be provided for patients for drinking and brushing teeth.
- Twice daily cleans of patient rooms with Actichlor plus (1000ppm) is for source isolation rooms only as per normal practice.

From: Kane, Mary Anne [redacted]
Sent: 03 April 2018 16:56
To: MCLAUGHLAN, Edward (NHS NATIONAL SERVICES SCOTLAND)
Cc: Powrie Ian (NHS GREATER GLASGOW & CLYDE); alan.gallacher[redacted]; STORRAR, Ian (NHS NATIONAL SERVICES SCOTLAND); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); Allyson.Hirst[redacted]; Connelly Karen (NHS GREATER GLASGOW & CLYDE); Purdon Colin (NHS GREATER GLASGOW & CLYDE)
Subject: RE: [BlockedURL][ExternaltoGGC]

Hi Eddie
Ian is back at work from leave – he is clear he will be the main point of contact moving forward on possible solutions with yourself.
If Horne can attend on Friday 2-3 to do this and be appraised of the situation I think that would be helpful
We can arrange to get pictures /taps – Colin Purdon will forward these to you

---

From: MCLAUGHLAN, Edward (NHS NATIONAL SERVICES SCOTLAND) [redacted]
Sent: 03 April 2018 15:31
To: Kane, Mary Anne
Cc: Powrie, Ian; Gallacher, Alan; STORRAR, Ian (NHS NATIONAL SERVICES SCOTLAND); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); Hirst, Allyson; Connelly, Karen
Subject: [BlockedURL][ExternaltoGGC]RE: [BlockedURL][ExternaltoGGC]

Hi Mary Anne

We can have Horne refresh the advice that was given at the time the decision was made to continue with the taps on Friday. They can then help us with what might be done with the taps we have in use. It would be really helpful to have pictures, or actual taps, to show the bio-fouling. We can then continue with the meeting without Horne if that's felt best on the day. We are waiting for confirmation of the availability of LCI, Dennis Kelly and Tom Makin, and I anticipate they will be appended to the team for the full meeting. I propose we invite Horne from 2-3 and we can flex the time as things develop.

I'm not sure if Ian Powrie is off for two weeks, or will be available for Friday but if he's still off, we can catch him up when he's back.

Let me know if you'd like anything different in the arrangements.

[redacted]

Eddie McLaughlan
Assistant Director
Engineering, Environment and Decontamination
Health Facilities Scotland
Procurement, Commissioning and Facilities
NHS National Services Scotland
3rd Floor, Meridian Court
5 Cadogan Street
Glasgow
G2 6QE
[redacted]

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From: Kane, Mary Anne [redacted]
Sent: 03 April 2018 11:35
To: MCLAUGHLAN, Edward (NHS NATIONAL SERVICES SCOTLAND)
Cc: Powrie Ian (NHS GREATER GLASGOW & CLYDE); alan.gallacher[redacted]; STORRAR, Ian (NHS NATIONAL SERVICES SCOTLAND); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); Allyson.Hirst[redacted]; Connelly Karen (NHS GREATER GLASGOW & CLYDE)
Subject: RE: [BlockedURL][ExternaltoGGC]

Hi Eddie
Ally Hirst is arranging formal weekly meetings on a Friday at lunch time which she will minute for us .
A meeting is arranged for Friday .
In addition I can do the following times
Wednesday 330 onwards
Thursday 830 onwards until 11
Please arrange for Horne and our AE to attend on our behalf .
Ian Powrie will be your main point of contact in relation to longer term solutions with Alan and Colin being involved but being focused on keeping the operational issues moving forward e.g monitoring POU Filter sampling weekly,POU Filter changing weekly in BMTs,POU Filter changing schedule ,collation of data on maintenance for HPS/HFS etc
I would like to be at the Horne session please if possible
Mary Anne

From: MCLAUGHLAN, Edward (NHS NATIONAL SERVICES SCOTLAND) [redacted]
Sent: 03 April 2018 11:18
To: Kane, Mary Anne
Cc: Powrie, Ian; Gallacher, Alan; STORRAR, Ian (NHS NATIONAL SERVICES SCOTLAND); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND)
Subject: [BlockedURL][ExternaltoGGC]

Mary Anne

To move forward the issues of taps and water treatment there are a number of people we will need to engage with. I agreed to bring Horne into the discussions about their taps as a follow on from the meeting in June 2014, when they presented on the reasons why their taps, used properly, should resist the formation of biofilm. Your Authorising Engineer also needs to be fully involved in any decisions involving the taps and possible disinfection options. The timescale obviously needs to be as soon as people can be available, in person or by phone, possibly we can arrange this around the meeting we have in the diary for Friday.

I'm presuming I have authority to contact your AE and Horne on your behalf. Please let me know if you'd rather make contact yourselves. Also, who else do we need to have involved?

I've copied Ian Storrar and Annette Rankin into this email.

Let me know what you think.

[redacted]

Eddie McLaughlan
Assistant Director
Engineering, Environment and Decontamination
Health Facilities Scotland
Procurement, Commissioning and Facilities
NHS National Services Scotland
3rd Floor, Meridian Court
5 Cadogan Street
Glasgow
G2 6QE
[redacted]
www.hfs.scot.nhs.uk

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From: Kane, Mary Anne [redacted]
Sent: 09 April 2018 08:55
To: alan.gallacher[redacted]; Connelly Karen (NHS GREATER GLASGOW & CLYDE); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); Powrie Ian (NHS GREATER GLASGOW & CLYDE); Purdon Colin (NHS GREATER GLASGOW & CLYDE)
Cc: Allyson.Hirst[redacted]
Subject: HORNE TAPS

I cant make this meeting this afternoon but would like you to go ahead with it in my absence
Few things I have thought about

- Do Horne have a copper/metal tap outlet – plastic seems unsatisfactory when we know many gram negative organisms “love Plastic” ?
- The potential implementation of the patent seen on Friday – would this really address the ongoing challenges on site? – don’t think hot water disinfection would address biofilm build up
- How do we address heat sterilisation in the risers separate from the taps?
- Do we know if we have biofilm build up in the system ? How do we find out ? Obviously we know its in the taps – that visibly obvious but what about further back in the system?
- How long would we need to keep POU Filters in place for after we have thoroughly chemically and thermally disinfected the system ? Obviously we would be stirring this up so there will be elevated counts until thats “flushed away “

Mary Anne

From: Kane, Mary Anne [redacted]
Sent: 24 April 2018 07:52
To: STORRAR, Ian (NHS NATIONAL SERVICES SCOTLAND); MCLAUGHLAN, Edward (NHS NATIONAL SERVICES SCOTLAND); Powrie Ian (NHS GREATER GLASGOW & CLYDE); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); alan.gallacher[redacted]; teresa.inkster[redacted]
Subject: RE: QEUH & RHC - Water System Test Results

Ian Powrie requested this data be sent to Alan Gallacher – this is why ithas been resent ,Ian can you please send me the list of outstanding data that you are looking for to allow the Board to provide or not what it has please ?

From: STORRAR, Ian (NHS NATIONAL SERVICES SCOTLAND) [redacted]
Sent: 23 April 2018 17:56
To: Kane, Mary Anne; MCLAUGHLAN, Edward (NHS NATIONAL SERVICES SCOTLAND); Powrie, Ian; RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); Gallacher, Alan; Inkster, Teresa
Subject: [BlockedURL][ExternaltoGGC]RE: QEUH & RHC - Water System Test Results

Hi Mary Anne

We already have this information (pen drive and ZUTEC) so I am not clear on why it has been resent.
The information still required for the report is on the marked up sheet I passed to Ian. I have some follow-up information requests as a result of going through the information I have received to date, but I will leave issuing these until I draft the preliminary report.

Regards

Ian

Ian Storrar
Principal Engineer - Health Facilities Scotland
Procurement, Commissioning and Facilities

NHS National Services Scotland
3rd Floor
Meridian Court
5 Cadogan Street
Glasgow
G2 6QE

[redacted]

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From: Kane, Mary Anne [redacted]
Sent: 23 April 2018 13:38
To: MCLAUGHLAN, Edward (NHS NATIONAL SERVICES SCOTLAND); STORRAR, Ian (NHS NATIONAL

SERVICES SCOTLAND); Powrie Ian (NHS GREATER GLASGOW & CLYDE); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); alan.gallacher[redacted]; teresa.inkster[redacted]
Subject: FW: QEUH & RHC - Water System Test Results

The attached information was removed from the pen drive – Shiona collated this from the data she has passed on.
The pen drive in Annette Rankins possession which was passed to Eddie McLaughlin has this on it
This is extremely time consuming to have to do this when the information has already been supplied on the pen drive I personally handed over

---

From: Frew, Shiona
Sent: 23 April 2018 12:14
To: Kane, Mary Anne
Subject: QEUH & RHC - Water System Test Results

Hi Mary Anne

Please find attached the Water test certificates for the QEUH and RHC which should have been on the pen drive I passed across.

Kind regards

Shiona

Shiona Frew
Quality Control Officer - Property & Capital Planning
Property, Procurement and Facilities Management Directorate
NHS Greater Glasgow & Clyde
Queen Elizabeth University Hospital Campus
Clock Tower Building
1345 Govan Road
Glasgow G51 4TF

From: Kane, Mary Anne [redacted]
Sent: 23 April 2018 16:47
To: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND)
Subject: RE: update on water report

I am happy with the two reports
Teresa- Estates cannot answer the questions from last week its IPCT who need to check Craig Williams archives and Jackie Stewarts archives on the subject
I Have provided the last three water groups information on the pen drive as well .
I will find the email and advise what I believe we have already supplied

---

From: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE) [redacted]
Sent: 23 April 2018 16:34
To: RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); Kane, Mary Anne
Subject: [ExternaltoGGC]Re: update on water report

I'm still waiting for estates colleagues to forward responses. Once I get them I will send on
T

Sent from my BlackBerry 10 smartphone on the EE network.

From: RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND)
Sent: Monday, 23 April 2018 3:52 PM
To: Kane Maryanne (NHS GREATER GLASGOW & CLYDE)
Cc: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE)
Subject: Re: update on water report

Hiya
I emailed Teresa last week looking for some info: mainly IC related
Annette

Sent from my iPhone

On 23 Apr 2018, at 15:48, Kane, Mary Anne [redacted] wrote:

> Annette
> What is it you are looking for ?
>
> ---
>
> **From:** RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND) [redacted]
> **Sent:** 23 April 2018 15:01
> **To:** Kane, Mary Anne; Inkster, Teresa (NHSmail)
> **Subject:** [ExternaltoGGC]update on water report
>
> Hi both
>
> Just to update you with my thinking on the report following the invocation of the national framework. My proposal is slightly unusual in that im veering towards the idea of producing two reports. A higher level overarching summary paper and a more detailed secondary paper. The reason behind my thinking is that we are still dealing with a “live” situation with new information emerging on a weekly if not daily basis. The report is due with the Cabinet Secretary in May and needs to go through the internal NSS governance route. In addition

prior to this report going anywhere else I feel it is important to share with you both. The timescale for submission via our internal CG route is May 3/4. So i feel it would be more beneficial to produce a higher level report which will cover all relevant details and include recommendations for GGC and NHS Scotland. If you are in agreement I will focus on meeting delivery timescales with the first report and then we can focus on a more detailed report which will include more technical detail. I would anticipate the timescale for the second report would be around mid June however we can agree this.
Let me know if you are happy for me to proceed as i have proposed as although i have a lot of notes and thoughts i have not as yet started the report and i am keen this is shared with you before any onwards submission.

Can i also ask for an update on the information i requested last week? Would it be possible to have this by Thursday?

Happy to discuss

Annette Rankin
Nurse Consultant Infection Control

NHS National Services Scotland
Health Protection Scotland
4th Floor
Meridian Court
5 Cadogan Street
Glasgow
G2 6QE
[redacted]
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Action plan from Susanne Lee report – Teresa Inkster/Ian Powrie May 2018

Recommendation	Action	Owner	Timescale
Recommendation 1 Water systems should be pressure tested with gas whenever possible and the systems filled with water as late in the build as possible. Once filled they should be disinfected and flushed to remove nutrients such as cutting fluids etc and kept flowing and disinfected as if the building was in full operational use. Records should be kept of when the system is filled; commissioned; handed over and occupied together with all disinfection monitoring and flushing and any remedial works that need to be carried out.	Noted Retrospective action Future learning	HPS/HFS to consider as part of report and for future guidance	
Recommendation 2 It is important that all internal maintenance staff; estates officers and contractors undergo training not just in Legionella awareness but also other potential waterborne pathogens of interest, the site policies; procedures; patient confidentiality; documentation requirements; requirements for bringing equipment safely on site; relevant legislation and guidelines etc	**Training Provision to date:** WHH02: Legionella Awareness Hospital HTM 04-01. WHH02 : Management of Water Systems WHH03: Authorised Person Water systems Training. **Proposed Training to address recommendation:** **WH020: Water Hygiene Training, Learning Outcomes:** • Organizational requirement in relation to water hygiene and	Alan Gallacher	TBC

	safety • Specific local control measures, policies and procedures • Waterborne pathogens and their consequences • How water systems, outlets, components and equipment can become contaminated • Individual responsibilities in ensuring control measures are in place, effective and implemented • Hygiene practices • System design • Disinfection and cleaning of fittings etc • Storage of pipes, fittings and spare parts		
Recommendation 3 To ensure the plumbers / contractors use separate or disinfected tools for working on clean systems and these are kept apart from those used on waste water systems. Only contractors who have successfully completed an approved training programme should be allowed to work on the healthcare water systems.	Consider implementing a permit to work system for potable water systems, whereby competency & Hygiene arrangements would be assessed in line with formal risk assessments and Method statements (consideration should be given adoption of HAI Scribe RA for sign off and approval of control measures?)Would be assessed. Guidance is required on How to clean tools? Can we use a spray process or should there be separate sets of tools?	Ian Powrie\ Alan Gallacher Water safety SLWG	End May Next Meeting 4\5\2018

Recommendation 4 The composition of the water group is reviewed so it has a more holistic multidisciplinary approach to water safety management	See 5		
Recommendation 5 The WSP should include water used in diagnosis and treatment. This needs to be reflected in a greater input from IPCT who should lead the oversight of all uses of water for all types of user within the hospital including representation from special user groups such as renal dialysis, hydrotherapy, augmented care units etc.	Review membership of WSG to include high risk areas. Review monitoring particularly in relation to TVCs Review use of sterile water in high risk areas Review all water sources including hydro pools, water coolers, dishwashers, ECMO, renal dialysis, birthing pools	Board water safety group TI to review renal dialysis	TBC
Recommendation 6 To develop and asset register as described above. This asset register should then inform the group of the needs for risk assessment, management and maintenance regimes and surveillance and monitoring requirements	Review content and scope of current asset register and link to planned Preventive Maintenance strategy within SFG20, compliance template.	Alan Gallacher\Ian Powrie	End May
Recommendation 7 To review the numbers and placement of wash hand basins and remove those deemed unnecessary. The installation of flow sensors may indicate where there is	This contradicts SHTM and HBN guidance Can review little used outlets e.g. WHB in storage rooms	HPS/HFS to advise Board water safety group	TBC TBC

lack of use and potential for stagnation. The WSG in consultation with the users should agree where WHBs should be retained and if flushing regime needs to be implemented. Self flushing outlets installation based on local risk assessment may reduce the risk of human factor	Review board policy on flushing	" "	TBC
Recommendation 8 Sluice rooms The trust to develop / review their design guidance in collaboration with IPCT to ensure infection risk is inherent in any future design. This includes the separation of hot and cold services to reduce the risk of heat gain/loss in water systems	Retrospective Learning point While hot and cold water services are run in common risers, they are fully insulated and separated by a minimum distance in order to address potential heat gain\loss issues.		Completed at Design stage
Recommendation 9 The trust design should exclude the use of outlets with inserts and opt for more hygienic single bore outlets which are demountable for disinfection. In high risk areas consideration should be given to removing these high risk outlets and replacing with those that can be easily maintained	Consider removing taps from high risk areas and replacing with a demountable and autoclave safe Marwick 21 tap. (Incorporating bio guard open ended flow control device) High risk areas defined as per Pseudomonas risk assessment	Water safety SLWG	Next
Recommendation 10 For such outlets in low risk areas to develop a procedure for removing and disposing of the inserts at regular intervals. The	In low risk areas ensure regular maintenance and change inserts every 3 months	Water safety SLWG	Next SLWG meeting 4\5\2018

timescale to be determined by the amount of debris/film buildup. Quarterly would be a good starting point with review after 12 months.			
Recommendation 11 To ensure that filters are correctly fitted to the outlet; change only as recommended by the manufacturer or when the water pressure drops. It may be worth those fitting the filters are fully trained in both fitting and aseptic technique	Revert to 30 day changing of filters in all areas. Staff fitting the filters has either been trained by the manufacturer of by a colleague under the train the trainer approach, supported by a written SOP incorporating aseptic technique.	Water safety SLWG	Next SLWG meeting 4\5\2018 Complete 20\3\2018
Recommendation 12 Parents should be advised to fill baby baths through the shower filters to reduce risk of filter removal and refitting	Agreed	Lead IPCN	TBC
Recommendation 13 Cleaning of filters with single use alcohol wipe	Agreed	Karen Connolly	Complete 1/5/18
Recommendation 14 Where POU filters are deemed to be necessary on a WHB where there is insufficient height to retain both a sufficient air gap and activity space. Where this is not possible as an interim measures the plug can be removed. Users should be advised why the plug has been removed and on how to avoid contaminating the external surfaces of the filter	Agreed Removal of Plugs. User advice on how to avoid external contamination	Estates Lead IPCN	RHC Complete by end 2\5\2018. User advised of reason for removal 30\4\2018. Adult complete by end 4\5\2018. User advised of reason for removal 30\4\2018. TBC

From: Walsh, Tom
Sent: 20 July 2018 14:00
To: RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND)
Cc: Kane, Mary Anne
Subject: RE: Commissioning records

Hi Annette

Mary Anne and I discussed the emails in the context of potentially useful background when producing an update for SG and Cab Sec rather than part of our formal response to the questions from this week.

I would be grateful if the information can be treated as such at this point in time, and we can provide this as relevant as the investigations progress.

bw

Tom

From: RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND) [redacted]
Sent: 20 July 2018 12:04
To: Walsh, Tom
Cc: Kane, Mary Anne
Subject: [ExternaltoGGC]Re: Commissioning records

Thanks Tom

Do you want me to forward this on to SG?
Annette

Sent from my iPhone

On 20 Jul 2018, at 11:35, Walsh, Tom [redacted] wrote:

> Hi Annette
>
> Emails as background and as discussed with Mary Anne.
>
> Kr
>
> Tom

Email 1
Confirmation from 2015 by the new build Project Team on commissioning process for RHC.

From: Wrath, Frances
Sent: 05 May 2015 11:04
To: Barmanroy, Jackie
Cc: Robertson, Lynne; Joannidis, Pamela
Subject: RE: New Children's hospital

Hi Jackie

Sorry I was on leave for most of last week. All areas have been commissioned in line with contract ER's and all legislative requirements. The Board's Estates Team have access to all commissioning data and any specific questions are better addressed to them.

Regards

Frances

Email 2
My offer to David Loudon of any additional support required from the IPCT in relation to the commissioning process.

From: Walsh, Tom
Sent: 29 July 2014 11:32
To: Loudon, David
Cc: McNamee, Sandra
Subject: Infection Control input to new SGH

Dear David

The commissioning of the new SGH was discussed at the Board Infection Control Committee yesterday. The NHSGGC Infection Prevention and Control Team (IPCT) have been, and are, engaged in a number of groups advising on aspects of the new build through liaison between Fiona McCluskey and our Assistant Director of Nursing, Sandra McNamee.

The Infection Control Committee were keen that the IPCT are appropriately involved in the on-going and future commissioning of the new facilities, and asked that I contact you to offer any support required.

Happy to discuss if that would be helpful.

Kind regards

Tom

Tom Walsh
Board Infection Control Manager
NHSGGC

From: Kane, Mary Anne [redacted]
Sent: 16 September 2018 17:08
To: STEELE, Tom (NHS NATIONAL SERVICES SCOTLAND)
Cc: STORRAR, Ian (NHS NATIONAL SERVICES SCOTLAND); MCLAUGHLAN, Edward (NHS NATIONAL SERVICES SCOTLAND); jimleiper[redacted]; Grant Jane (NHS GREATER GLASGOW & CLYDE); ATKINSON, Ailsa (NHS NATIONAL SERVICES SCOTLAND)
Subject: Re: [ExternaltoGGC]FW: IMT water incident RHC, NHSGGC

Tom
IMT is at 1 tomorrow which myself Andy and Karen will need to attend
At 8 am Andy Karen and I are meeting to discuss decant
At 9 drainage survey expert from Morris's and Spottiswood are joining us to discuss how quickly 2Ab can be surveyed and RHC as priorities
Dennis Kelly Authorising Engineer is also joining us in respect of individual ward shock dosing
RHC as a unit can be shock dosed however clinical team for hospital do not consider it feasible from a patient safety perspective Especially in light of the time toilets will be out of commission
All of this has been explored in detail at the WTG
WTG comprises Myself Teresa Inkster Ian Kennedy Alan Gallacher Colin Purdon Ian Powrie Annette Rankin Ian Storrar and various ICNs at different times
Ian and Eddie have all the papers Ian Powrie has produced as part of the group to bring you up to speed in the morning
Once per month Tom Maiken and Tim Wafer join the WTG and discuss/explore/advise based on their experience across the world
Susan Lees has participated once in a session and does not respond to anyone except Teresa Inkster she has not committed to the monthly participation
Perhaps 12 at QEUH before IMT meeting of WTG together would be helpful to bring you up to speed on all of the above prior to the IMT
Another hypothesis also being looked at on Monday is the module build connections in the hospital - we will seek this detail from Multiplex as this has not been explored as yet and only came to light as a potential issue on Friday
Sorry to go on have commented below however Ian Storrar and Eddie can provide you with all background of the WTG as members
Let me know if you want WTG members pulled together tomorrow at 12
Regards
Mary Anne

Sent from my iPhone

On 16 Sep 2018, at 15:57, STEELE, Tom (NHS NATIONAL SERVICES SCOTLAND) [redacted] wrote:

> Ian, thanks for sending this update.
>
> By way of update, I attended a meeting on Friday afternoon that the GGC CEO Chaired. In short, there is a increasing possibility that 2A/2B will require to be decanted and this could be sometime this forthcoming week. This is clearly very sensitive matter for all stakeholders involved and a such we need to have a clear and coherent plan in place for the "so what now" question that will arise about providing assurance that there is technical grip of remedial actions as well as minimising the period that the decant will be in place for.
>
> As such, we need to corral all of our available technical resources to review the current and previous measures and create a unified action plan that will provide unambiguous information back to

stakeholders. I am therefore suggesting that we meet tomorrow to discuss the foregoing and also to ascertain what other sources of support there may be either with NHSS, or wider afield.

I can make time between 12-2pm tomorrow, that way it is early enough in the day for some actions to be put in place before COB. I will get a room at Meridian Court, or I'm happy to go to the QEUH site, but that may prove more challenging about logistics.

Maryanne, I think that Alan may be back tomorrow, but I don't have an email address for him, nor do I have for Andy, so could you possibly liaise with them, or others within the GGC team and coordinate their responses about meeting availability. This will need to take priority for all as there is a need for us to be able to provide a comprehensive overview of all FM interventions and areas of focus back to the CEO and wider clinical/management teams. I know that there is currently a Water Technical Team in place, but I am not too sure who participates in this, so feel free to include others as necessary.

Can you all confirm your availability for this please?

My understanding of the current areas discussed at Friday's meeting for us to provide update on are, although I appreciate that this may not be exhaustive:

- Current status of the procurement and commission of the chlorine dioxide plant

On order delivery due Oct for install end month first week Nov will get actual contractual dates tomorrow am

- Confirmation that the proposal is for continuous dosing only?

At this stage due to patient safety issues emergency fill points are part of this as are replacement buffer vessels

- Confirmation that shock dosing is possible, or not, and contact times are deliverable/practical?

Full paper been done for WTG

- Consideration of tap replacement and timing thereof?

Taps were agreed to be changed after dosing commencement by the WTG A model has been chosen but in light of potential decant I will ask Andy to ascertain delivery times to accelerate the install

- Review of the previous as well as this weekend's efforts on drain decontamination

Drains will be completed by Monday am This is mechanical agitation next week chemical dosing of chlorine dioxide sanitary will be completed as previously agreed at WTG

- Review of drainage schematics, as designed and installed

This has been completed by IP and Colin Purden Colin can you send details to Tom am please

- Confirmation of the current ventilation system performance and thoughts about its contribution+/- to the situation

Ventilation in ward area is currently achieving 2.5-3 air changes per hour except in the BMT rooms which are achieving 6 per hour
There is potential this has contributed and needs further investigation as no BMT patient has had an infection in 2A and its the only physical difference environmentally
POUF has increased aerosilisation due to the proximity of the tap to the tap/drain space being reduced . This coupled potentially with the biofilm in RHC being visible further compounds this The patients in the area being the most immuno suppressed and susceptible to bacterium has created a perfect storm potentially
However to be clear there is nowhere in adults or RHC which achieves higher air changes than the ward they are currently in In addition we have identified drain contamination in the adults hospital as well The only difference being there is no visible biofilm in the sink
I am uncomfortable about decant in these circumstances and feel IMT must discuss and minute this and then make a decision on if decant is still the best option
Teresa Inkster is of the view that clinicians are aware that decant facilities have these limitations I have not seen this discussed in full anywhere

- Review of all available "expert" commentary received to date and consider others

WTG has completed this and all actions in place have been informed by this
Thanks, Tom

From: Ian Storrar [redacted]
Date: Friday, 14 September 2018 at 19:07
To: Edward McLaughlan [redacted], Tom Steele [redacted]
Subject: FW: IMT water incident RHC, NHSGGC

FYI

Sent from my Windows Phone

From: RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND)
Sent: 14/09/2018 19:06
To: RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); Birch, Jason (SGPU); CHRISTIE, Katie (NHS NATIONAL SERVICES SCOTLAND); MCINTYRE, Jackie (NHS NATIONAL SERVICES SCOTLAND); REILLY, Jacqui (NHS NATIONAL SERVICES SCOTLAND); Mediarelations (NHS NATIONAL SERVICES SCOTLAND); RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND); Syme, Margaret; Fiona.mcqueen[redacted]; WILSON, Julie (NHS NATIONAL SERVICES SCOTLAND); DALZIEL, Catherine (NHS NATIONAL SERVICES SCOTLAND); MULLINGS, Abigail (NHS NATIONAL SERVICES SCOTLAND); IMRIE, Laura (NHS NATIONAL SERVICES SCOTLAND); WALLACE, Heather (NHS NATIONAL SERVICES SCOTLAND); BROWN, Claire (NHS NATIONAL SERVICES SCOTLAND); HPSInfectionControl (NHS National Services Scotland); TOMB, Rachael (NHS NATIONAL SERVICES SCOTLAND); CAIRNS, Shona (NHS NATIONAL SERVICES SCOTLAND); goodfellow, melanie; LOCKHART, Michael (NHS NATIONAL SERVICES SCOTLAND); Rachael.Dunk[redacted]; LONGSTAFF, Jenny (NHS NATIONAL SERVICES SCOTLAND); HOOKER, Emma (NHS NATIONAL SERVICES SCOTLAND); UNZURRUNZAGA, Garazi (NHS NATIONAL SERVICES SCOTLAND); SHEPHERD, Lesley (NHS NATIONAL SERVICES SCOTLAND); KANE, Hayley (NHS NATIONAL SERVICES SCOTLAND); GOLDBERG, David (NHS NATIONAL SERVICES SCOTLAND); Fiona.mcqueen[redacted]; Rodgers Jennifer (NHS GREATER GLASGOW & CLYDE); Redfern James (NHS GREATER GLASGOW & CLYDE); Hill Kevin (NHS GREATER GLASGOW & CLYDE)
Cc: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE); Dodd Susan (NHS GREATER GLASGOW & CLYDE); STORRAR, Ian (NHS NATIONAL SERVICES SCOTLAND); Kane Maryanne (NHS GREATER

GLASGOW & CLYDE)

Subject: RE: IMT water incident RHC, NHSGGC

Dear all,
Please find attached an update following today's IMT and subsequent SMT
In summary:

Cases:

0 new cases identified. 1 new patient case of sepsis reported, blood cultures taken and results awaited.
None of the cases are reported as giving cause for concern
Total cases: 22

Hypothesis:

Extensive discussions have taken place over the day. The current hypothesis remains that the source of infection is the microorganisms originating from the drains.

Additional control measures:

A further drain cleaning protocol in wards 2a/b is being undertaken.
Admission to ward 2A/2B has been reviewed:

- No new admissions. Placement of these patients will be on a case by case basis.
- Any new patients will be diverted to Edinburgh
- Any existing patient from outwith the GGC area with febrile neutropaenia will be diverted to their local paediatric unit
- Any existing patient from within the GGC area with febrile neutropaenia will be assessed on a case by case basis and placement agreed at that point.
- Elective patients requiring chemotherapy will be admitted on a case by case patients where treatment delay outweighs risk.

Contingency/transfer of care:

Consideration has been given to a number of options relating to the transfer of patients and complete closure of wards 2A/2B to allow investigation and remedial works to be undertaken. A further meeting will be held on Monday afternoon to discuss further.

Communications

Staff:
A meeting was held in the medicinema early this morning for clinical staff chaired by the lead ICD and Director of childrens.
A further follow up meeting was held this evening by the GM and Lead IPCN.
There is significant anxiety amongst staff.
Parents:
A written briefing is being prepared.
Press:
A holding statement is being prepared. This will be shared with SG and HPS comms
Significant work is ongoing to understand the complex nature of this incident. This is supported by HPS and HFS.
HIATT assessed as RED.
Next planned update following IMT and SMT on Monday 17th September
Teresa/Sandra/MaryAnne please advise of any errors or omissions
Annette

Annette Rankin
Nurse Consultant Infection Control
NHS National Services Scotland
Health Protection Scotland
4th Floor
Meridian Court
5 Cadogan Street
Glasgow
G2 6QE
[redacted]
www.hps.scot.nhs.uk/
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NHS National Services Scotland is the common name for the Common Services Agency for the Scottish

NHS GG&C – QEUH/RHC

Review of Issues Relating to Hospital Water Systems' Risk Assessment

Draft

INDEX

Section	Title	Page
1.0	**Introduction**	1
1.1	Background	1
1.2	L8 Risk Assessment	1
1.3	Terms of Reference	1
1.4	Methodology	1
2.0	**High Level Findings**	2
2.1	Changing the Procurement Model	2
2.2	Contribution by the Board's Estate Professionals	2
2.3	Design Issues	2
2.4	Resource Estimation Methodology	2
2.5	Contractor's Actions	2
2.6	Definition of Roles & Responsibilities	2
2.7	Operational Preparedness & Readiness at Handover	2
2.8	Fluidity of Staff & Impacts on Response to the L8 Risk Assessment	2
2.9	Source of Contamination	3
3.0	**Concluding Remarks**	4

Draft

1.0 Introduction

The Queen Elizabeth University Hospital, (QEUH) and the Royal Hospital for Children, (RHC) were handed over to the GGC Health Board on 26th January 2015. Patient care started at the hospital in April 2015 and both hospitals were fully occupied by mid-June 2015.
Ward 2A has two sections: 'Schiehallion', the Paediatric Bone Marrow Transplant Unit and the 'Teenage Cancer Trust', (Oncology). Patient groups, cared for in Ward 2A can be immunocompromised, which makes them more susceptible to infection.

1.1 Background
There had been [redacted] of patient infection in Ward 2A between 2016 and 31 May 2018. The infections complicated the patients' conditions and treatment. There were no related cases on Ward 2A between May and September 2018 but a further [redacted] contracted infections in later in September. At the time of writing, no mortality had been associated with any of the infections. The nature of the microorganisms make it very difficult to categorically determine the exact source of the infections. Microorganisms that might be harmful to people, particularly those that are immunocompromised, are common in the general environment. It is possible that at least some of the infections resulted from exposure to microorganisms outside of the Hospital. However, NHS GGC Infection Control professionals believe it is also possible, that some infections are associated with microorganisms from the hospital's water and/or drainage systems.

1.2 L8 Risk Assessment
In April 2015 a Risk Assessment, (RA), (based on, 'L8, Legionnaires' Disease. The Control of Legionella bacteria in water systems, the Approved Code of Practice'), was provided to the Board by DMA, a company of independent, qualified water consultants. The RA report gave a list of recommended actions. DMA provided a further RA in October 2017 and this inferred little progress against the original list of recommendations at the time of their survey.

1.3 Terms of Reference
In August 2018, the Board CEO asked Mr Jim Leiper, Project Manager, to review the context and circumstances relating to the Board's response to the DMA Risk Assessments' findings.

1.4 Methodology
The intention to undertake the review was communicated to Trades Union Representatives and to the members of staff to be interviewed. Mr Leiper, supported by Ms Gillian Gall, Senior HR Advisor, conducted prearranged interviews with Staff members who could be accompanied if they wished. Responses to a set of pre formed and supplemented questions by Mr Leiper, were recorded by Ms Gall and Ms Allyson Hirst, PA to the Director of Property, Procurement & Facilities, onto a template previously utilised by the Board.
A draft of the completed notes on individual responses was provided to each interviewee to comment on factual accuracy and to provide any necessary clarifications. These notes, together with any copies of associated documentation provided by the interviewees and author's notes of discussion/argument and more detailed conclusions arising from the interviews, are retained to inform any further, subsequent and more detailed investigation if this is considered appropriate.
The findings of this review are provided in light of factual occurrences and drawn from information received (and where possible, corroborated), during this 'brief' review. There has been strenuous effort during the review, to try to put the findings 'in context' and to understand how circumstances that persisted at the time, on the balance of probabilities, might have contributed to outcomes.
The contributors to the review gave a strong impression of openness in their accounts to the best of their recollection. The brevity of the review slightly curtailed the ability to interview everyone that may have had some contribution and a significant number of people that might have been able to give good testimony are now retired or no longer employed by the Board. It is considered however, that the level of detail gained from this review is sufficient to allow a reasonable understanding of salient events and it is thought that a good level of confidence can be assumed in the accuracy of the high level findings. The level of detail and corroboration of findings might be supplemented by a more forensic review if that is felt appropriate and achievable.
The author's high level findings and conclusions were presented for consideration of the CEO.

Draft

2.0 High Level Findings

It is considered that the following issues have contributed to the level of response to the DMA L8 Risk Assessment recommendations.

2.1 Changing the Procurement Model
The change from a PPP to a Treasury funded procurement model had implication to the post contract arrangements for Hard FM service provision. The timing and level of consultations with the Board's Estates professionals could have been earlier and more deliberately intensive.

2.2 Contribution by the Board's Estates Professionals
Input by the Board's Estates professional managers that might have improved some design weaknesses was inhibited by their late inclusion. Earlier inclusion may have encouraged a more meaningful and valuable contribution.

2.3 Design Issues
Aspects of the design of the water systems and some of the components installed have the potential to contribute to proliferation of microbiological contamination.

2.4 Resource Estimation Methodology
The process that established the original estimates of the Board's operational resource requirements, may have been more accurately defined had there been the opportunity for a further, better-informed and refined iteration.

2.5 Contractor's Actions
The absence of prescriptive national guidance and the NEC3 contractual process, allows the main contractor and designer a degree of latitude in interpretation and application. The motivation to ensure this freedom is applied appropriately and in the best interest of the Client, is assisted by robust, accurately recorded specifications in the Board's Requirements. Some project outcomes and adversarial responses by the Contractor to some requests by the Board might have been improved by a higher definition of some of the Board's Requirements.

2.6 Definition of Roles & Responsibilities
There is a recognised management structure, normally deployed for the functional management of a hospital's technical systems. The roles and responsibilities of the trained, formally appointed individuals are defined and agreed. This structure is a fundamental component of the safe management of a range of technical systems, which allows the Board an acceptable level of assurance that these complex systems are being managed appropriately. Circumstances appear to have conspired against the formation of these recommended structures that would have ideally been functional at the handover of the hospital. This would have possibly allowed a smoother transition between the contractor and the Board's team taking over responsibility for the systems. It might also have minimised any confusion of responsibility and accountability. This item, together with the items referred to above, fundamentally contributed to the items referred to below.

2.7 Operational Preparedness & Readiness at Handover
The Board's Estates team was relatively small and inexperienced. Despite their huge effort, it is clear they were overwhelmed by the wave of demand. Managing the ongoing intensive contractor activity, significant emerging operational difficulties with several essential, technically complex systems, the transfer of clinical functions and the demands of staff beginning to occupy the hospital, all without efficiently functional Building Management and Facilities Management Systems whilst trying to improve on their basic familiarisation of the hospital and its systems, afforded little time to effectively plan activity. They worked extremely long hours over a protracted period of time, often at personal cost, and their overall contribution to sustaining the functionality of the hospital should not be underestimated or overlooked.

2.8 Fluidity of Staff and Impacts on Response to the L8 Risk Assessment
The Board has experienced a high level of movement within the Technical and Project teams. People retired and others changed jobs within and out with the Service. The dilution of corporate memory and the effect on activity and approach is unavoidably damaged when people leave their positions. There is a diminished ability to ensure consistency when a string of changes occurs over a relatively short period of time to one specific role.

Draft

These circumstances appear to have applied to the role that would have carried responsibility for implementing actions in response to the L8 Risk Assessment recommendations. None of the post holders had been trained to an acceptable standard but despite this, they had formulated an Action Plan covering the whole of the site. There is evidence that this included actions on water systems, some of which were apparently informed by the findings recorded in the L8 Risk Assessment and that certain financial allocations were used to progress actions. It appears that the timing of these actions may have overlapped the survey to inform the 2017 DMA gap analysis and this perhaps explains why there appeared to be little progress. The transition between incumbents' changing roles was fairly informal and of short duration and probably delaying the progress on actions. The consistency of approach appears to have been further compounded by the absence of the formal recommended management structure, which would have driven a more intensive, defined level of review and monitoring. The delayed level of response seems to have been obscured by the large volume and intensity of other priority demands taking the attention of those whom may have understood earlier, the significance of the need for a greater focus on progress.

2.9 Source of Contamination

Routine monitoring results from before handover up until the subsequent investigation by the Board following higher than expected levels of patient infections had largely shown good results, with occasional variations to acceptable standards being effectively managed.

The subsequent investigation by the Board identified microorganisms not normally investigated for under the national standard monitoring regime common across the NHS in Scotland and although not categorically identified as the source of the infection, were thought most likely.

There is evidence that, prior to commissioning (and perhaps subsequently), the water system was filled with water that bypassed the installed filtration system. This may have been carried out due to the failure of the filtration system, (which appears to have been an early issue), or for, with the best of intention, for practical and/or financial reasons. This may however, have been the original source of the contamination of the water system and its proliferation could have been encouraged by 'dead legs' in the system, temperatures out with acceptable limits, the lack of turnover of water in the system that would have been fairly inevitable between hand over and full occupation of the hospital, despite routine efforts to flush water appliances being organised.

The installation of point of use filters effectively mitigated the risk from the water system.

The latest number of patient infections in Ward 2a are thought to have possibly emanated from the drainage system, which may have been contaminated from microorganisms from people's hands or from other uses of the sinks, but the source of the contamination has not yet, at the time of writing, been categorically established. Work is progressing now to control the risks identified.

Draft

3.0 Concluding Remarks

It is apparent that actions on the recommendations in the L8 risk assessment could have been better and that a more robust response may have reduced the risk levels. It is possible that the source of some of the problems being experienced was potentially routed in activities during the design, construction and commissioning of the hospital.

The chain of events, reflected above, together, all created the circumstances where the probability of some omission was arguably predictable. To allocate responsibility for confusion and oversight to an individual would ignore systemic causation and the arising significant mitigation. Disciplinary action would, in the opinion of the writer, be unsafe, unfair and quite inappropriate.

The significant additional pressure and apprehension staff have experienced since this review was announced could be lifted by signalling the matter has been concluded, if the findings of this review are accepted.

Future endeavours would benefit from the application of strategic learning arising from the experience.

It is noted, at the time of writing that:

- The training of all appropriate staff on water systems has been completed.
- All necessary formal appointments have been made
- There is a robust management structure in place for the management of the hospital's water systems
- The latest report from the independent Authorising Engineer records significant improvement in the Board's approach
- The recommended actions from the L8 Risk Assessment have been successfully managed
- The Board is currently considering how it might improve the governance oversight of its Support Services.

The author would wish to thank NHS GGC Staff for their cooperation and contribution to the review.

Draft

Douglas Ross

From: Kane, Mary Anne [redacted]
Sent: 03 October 2018 11:38
To: Douglas Ross
Cc: Steele, Tom
Subject: Re: [BlockedURL][ExternaltoGGC]QEUH - Multiplex

Please do not release monies DOF and CEO will personally need to authorise this

Sent from my iPhone

On 3 Oct 2018, at 10:19, Douglas Ross [redacted] wrote:

> Mary Anne
> I have received the first payment application from Multiplex since last year, which would release circa £350K to them in connection with the hospitals work. This has all been accrued for as it was expected costs, but hadn't been applied for by Multiplex through the cladding and energy centre issues. Are you content with the dialogue with Multiplex on energy Centre issues that I process and release this? Still siting with around £300K retention, and probably around £200K of other costs still to be applied for, so reasonable leverage to keep Multiplex at the table.
> **Douglas Ross**
> Senior Director
> <image001.png>
> 150 St Vincent Street, Glasgow, G2 5NE, United Kingdom
> [redacted]
> <image002.png>
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Douglas Ross

From: Douglas Ross
Sent: 15 November 2018 13:13
To: Powrie, Ian; Steele, Tom
Cc: Kane, Mary Anne
Subject: RE: [BlockedURL][ExternaltoGGC]RE: Potential latent defects?

Tom / Ian

I am out of office for a couple of days and no access to our files. It does not harm issuing your letters, and I can look at our files early next week in parallel with Multiplex reviewing.

I did manage to have a quick chat with David Hall this morning, and his recollection was that Schehallion users asked for the ward environment they had at Yorkhill to be replicated at NCH. Therefore standard rooms akin to rest of hospital were fine. Key documents to look at will be the Environmental Matrix which will be on Aconex (I don't believe I have access to this as would have been issued direct to the Board for Frances Wrath / Capita review). Prior to looking out documents it would be worth asking Frances on her recollection of room environment requirements for this Ward.

Douglas Ross
Senior Director

Currie & Brown

150 St Vincent Street, Glasgow, G2 5NE, United Kingdom
[redacted]

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From: Powrie, Ian [redacted]
Sent: 15 November 2018 08:34
To: Steele, Tom [redacted]; Douglas Ross [redacted]
Cc: Kane, Mary Anne [redacted]
Subject: RE: [BlockedURL][ExternaltoGGC]RE: Potential latent defects?

Tom,

No Problem I will await Douglass feedback.

Regards

Ian

[redacted]
Deputy General Manager (Estates)

Queen Elizabeth University Hospital Campus
Property, Procurement & Facilities Management Directorate
Facilities Corporate Services Dept
CMB Building
Glasgow
G51 4TF

PA Elaine McNeil: [redacted]

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From: Steele, Tom
Sent: 15 November 2018 08:28
To: Douglas Ross
Cc: Powrie, Ian; Kane, Mary Anne
Subject: Re: [BlockedURL][ExternaltoGGC]RE: Potential latent defects?

Ian, given Douglas's thoughts hold back at present and make sure that our position is contractually and ta tidally correct.

Regards, Tom

Sent from my iPhone

On 15 Nov 2018, at 07:32, Douglas Ross [redacted] wrote:

> Ian
>
> I would suggest when issuing note to Multiplex you provide separate notes for each issue, this will create an audit trail of correspondence and avoid potential for issues accriss each item to be lost in communication. Suggest they are also issued as letters, can be scanned and email, but letter will act as formal contractual correspondence.
>
> I have not had a chance to research any information that may contradict what you have pointed out as a contractual requirement, I quickly located the Clinical Output Spec for the NCH Schehallion, and not sure if it in any ways provides a different starting point from you have indicated. Suggest you issue your note and let Multiplex investigate and tells us where contractually they believe requirements are different from what you have set out.
>
> I would also suggest you start each letter with:
>
> With reference to the contract for the construction of the New South Glasgow Hospital between NHS Greater Glasgow & Clyde and Brookfield Construction Ltd (now trading as Multiplex Construction Europe Ltd) executed 18 December 2009, we would write to advise of a potential latent defect identified and request your immediate attention to address the points highlighted in this letter.
>
> We would refer to Clause 43.3 of the contract which states that **"*The Employer rights in respect of a defect which the Supervisor has not found or notified are not affected by the issue of the Defects Certificate.*"**

Douglas Ross
Senior Director
<image002.png>
150 St Vincent Street, Glasgow, G2 5NE, United Kingdom
[redacted]
<image003.png>
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Americas | Asia Pacific | Europe | India | Middle East

From: Powrie, Ian [redacted]
Sent: 14 November 2018 17:00
To: Douglas Ross [redacted]
Cc: Steele, Tom [redacted]; Kane, Mary Anne
[redacted]
Subject: Potential latent defects?

Hi Douglas,

As per our telephone discussion please see below points of concern regarding ventilation and water system design\installation, can you please advise on the appropriate mode too communicate THESE ISSUES WITH Multiplex and are any of these appropriate for recording as latent defects ether in relation to the design or the installation practices adopted?

Many Thanks

Regards

Ian

Morning David,

Thanks you for both you & Ciaran's time on Monday to review recent concerns identified with respect to the ventilation and potable water installations within the QEUH development.
I have details the concerns raised below and would be grateful if you could confirm the anticipated time scale for you to provide a response to these issues?

RHC, Ward 2A (Schiehallion) General ventilation systems, Neutropenic patient accommodation:

1. Upper Ward 2A areas (i.e. Mid-Ward & TCT) served via AHU reference 41/AHU/20A supply & extract and individual extract fan reference 41/20AEF/01.
   a) PDF attachment "H&V AHU 20A – Supply Pressure" commissioning report identifies that the intended design external static resistance was not provided to H&V, the overall external static pressure is 802Pa, and outlet side external static pressure is 606Pa.
   Therefore, supply air system was commissioned for operation under medium pressure classification (i.e. Class B).

   - Can you please confirm the duct pressure classification for these systems?

   b) PDF attachment "H&V AHU 20A – Extract from En-Suites" illustrates extract terminals served from the AHU 20A extract system within Level 2. Terminal references, and approximate locations, correlate with upper Ward 2A Bedroom En-Suites and Public WC's . Therefore, this identifies AHU 20A serves 'dirty' type areas within upper Ward 2A. This would appear to have been the design intent as there are no adverse

comments raised within the commissioning report ref: "SYSTEM: 41 - AHU 20A EXTRACT (1ST, 2ND & 3RD 23HRS SCHIEHALLION INPATIENT WARD)" In addition, and as per the other ventilation layouts attached, AHU 20A extract also serves 'dirty' areas on Levels 3, 1, and Ground Floor, including En-Suites, Public WC's, Dirty Utility Rooms, Disposal Hold Rooms, Disposal Rooms, etc.

- If this is the design intent what if any cognisance was made of National standards provided within SHTM 03-01 (*Ventilation for healthcare premises Part A – Design and validation) which states:*

  "Separate extract ventilation will be required for sanitary facilities, lavage areas, dirty utilities and in rooms where odorous, but non-toxic fumes are likely, in order to ensure air movement into the space.
  10 air changes per hour have been found necessary, particularly in geriatric and psycho geriatric accommodation. This will assist with infection control procedures.
  A single fan/motor unit can be suitable for individual rooms, but multi-room systems should be provided with duty and standby fans or motors to meet this need."

c) This dirty extract is directly linked to the clean supply 41/AHU/20A where there is a risk of contaminated air crossover via the thermal wheel from the "dirty" extract and the supply air to the Neutropenic patient group housed within ward 2A single rooms.

- What design consideration was taken into account to address this risk?
- Where there any design derogations with respect to meeting the above SHTM 03-01 Part A guidance?

d) Commissioning data indicates that the ward 2A (Schiehallion) ward single bed rooms are slightly negative pressure relative to the corridor these, this appears to have been derived from a general application of a derogation recorded in the M&E clarification log for the is implementation of Chilled beam technology which states:

> "***The proposal is accepted on the basis of 40 litres per second per single room (8 litres per second per second) for one patient and four others. Joint review to be carried out between the Board and Brookfield of the energy model to determine any impact on the energy target/BREEAM rating. Brookfield, however, remain responsible for achievement of the energy target/BREEAM, with £250,000 added to the contract sum in this regard. Negative pressure to be created in the design solution.***"

- *What consideration was given to the design requirements for specialist area's such as Haemato-oncology (Neutropenic patient groups) in this design? Where SHTM 03:01, Part A, Appendix 1: Recommended air change-rates: "**Neutropenic patient ward Supply 10 ACH at +10pa relative to the corridor, complete with H12 HEPA filtration, noise level 30 (NR)."***

e) PDF attachment "H&V EF01 – Extract from Upper Ward 2A" indicates extract terminals served from individual extract fan EF01 within Level 2. Terminal references, and approximate locations, correlate with upper Ward 2A TCT Contingency Room, Clean Utility Room, and Play/Dining Room (i.e. 'clean' type spaces). Please also refer to 2nd Floor Vent Layout (terminals highlighted in blue).

f) GF Level Vent Layout indicates extract from 'dirty' type areas rising to 1st Floor Level. Drawing identifies 500x250mm 'Toilet Extract' ductwork being served via 41-46/EF02. PDF attachment "H&V AHU 20A – Extract from GF Level" indicates extract

terminals served via AHU 20A on the Ground Floor Level. Terminal references, and indicative routes, correlate with extract from 'dirty' type spaces shown on the associated Vent Layout (i.e. therefore terminals are not served via 41-46/EF02).

g) 1st Floor Vent Layout (RHS) indicates the 500x250mm 'Toilet Extract' ductwork rising from the Ground Floor Level, again referencing 41-46/EF02. This section of ductwork then connects into the main Level 1 'Toilet Extract' system, which is distributed to Riser 36 (LHS). Within Riser 36 this ductwork (now 600x550mm) is referenced to Note 7 (i.e. derived via 41/AHU/20A, and not 41-46/EF02)? This indicates that the extract from 'dirty' areas on the Ground Floor Level is not served via 41-46/EF02, and is shown connected back to AHU 20A along with 'dirty' extract distribution from the other floor levels directly above.

h) The above may also suggest why there is a considerable difference between 'design' and 'test' air volumes indicated on H&V commissioning records (refer to PDF attachment H&V AHU 20A – Extract Volume).

i) AHU 20A serves numerous toilet facilities spread over four floor levels. This AHU is equipped with a single extract fan unit, and therefore, does not afford any form of resilience in the event of failure see above SHTM 03-01 Part "A" extract guidance requirements. Extract fan failure would effectively result in complete loss of the associated Hospital facilities.

Basement Bulk storage water tank room:

As per my previous e-mail, according to the information recorded in the Zutec O&M data the distribution pipe work within the basement tank room is Pegler Yorkshire Xpress (316L stainless steel), however during preparation works for introduction of water treatment it has been established that the installed pipe work is actually COMBINATION OF ilta-inox and OUTOKUMPU 304L stainless steel, this material has also been employed on the distribution risers and into the hospital plant rooms.

a) You have provided me with a copy of a WRAS approval certificate for the OUTOKUMPU 304L stainless steel however this certification is dated 2017 – 2022 and does not cover the Ilta-inox product.
   - Can you please confirm: What WRAS approval was in place at the time of selection and installation (circa 2010-2015) for both products?
   - What formal approval was obtained from the water regulator (Scottish Water) for the erection of the QEUH building as required under Para: 5.1 of the Water Supply (Water Fittings) (Scotland) Byelaws applicable at the time of construction.
   - Can you please provide me with a copy of the water regulator's approval for the use of 304L stainless steel within QEUH potable water system?
   - Can you confirm where in Zutec Compliance approval documentation is held?

b) During investigation we have now established that the Yorkshire Pegler isolation valve installed on to the 150mm 304L stainless steel pipe are fitted with ferrous flanges on to Cast iron valves using galvanised bolts, these flanges are connected directly to the stainless steel pipe without any galvanic isolation resulting in galvanic corrosion of the flanges, there is also evidence of galvanic reaction on the stainless steel pipe welds (See attached Photo's). I suspect that this practice will have been adopted across the installation.

[redacted]

Deputy General Manager (Estates)

Queen Elizabeth University Hospital Campus
Property, Procurement & Facilities Management Directorate
Facilities Corporate Services Dept
CMB Building
Glasgow
G51 4TF

PA Elaine McNeil: [redacted]
[redacted]
[redacted]
[redacted]

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****

Inkster, Teresa

From: Gibson, Brenda
Sent: 08 January 2019 22:16
To: Armstrong, Jennifer; INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE); Redfern, Jamie

Follow Up Flag: Flag for follow up
Flag Status: Completed

Dear Jennifer,

[redacted]

As a consultant body we are now very concerned about the safety of our environment. We have not experienced water associated environmental organisms in blood cultures since our decant , [redacted] with these infections that we are aware of . We are concerned that we may have moved to an even less safe environment . We are being asked to nurse patients in rooms with portable HEPA filters and to prophylax vulnerable patients . The latter is not without risk . Only AmBisome and Posaconazole can be used . We have already experienced two serious anaphylactic reactions in patients receiving AmBisome requiring adrenaline . We are being told that prophylaxis will have to last for a year. The prolonged use of Posaconazole is not without the risk of hepatotoxicity. Are all new patients to be told that the environment carries a risk to their child which will require prophylaxis , and that in itself may carry a risk? Is that a true statement?

Securing the safety of our current environment requires action across the Directorates. In sending this e mail I am not bypassing Jamie or Kevin , but they can only control Women and Childrens Directorate. We are disappointed that air sampling in the ward is having to be repeated because that sampled before Christmas was not treated as a priority and the results may not be meaningful. This is the remit of the Diagnostics Directorate. We have two rooms on the ward out of action because of water damage with mould on the wall , which have not been dealt with because of reported difficulties in identifying a contractor over the holiday period. This responsibility lies with Estates and Facilities Directorate. Promised statements from the Press Office have not materialised and we are prophylaxing children without any agreement on what information should be given to the parents. It is hard to believe that the gravity of this situation is really appreciated by those charged with resolving it.

We need to be assured that someone to whom all Directors are answerable is managing this situation , co ordinating the necessary work and guaranteeing that timelines are met. We also need to be assured of the safety of the environment for our children and the safety of long term prophylaxis.

We have a Unit meeting at 8.30 am this Friday on ward 6A QEUH and we ask if you would be willing to use this opportunity to meet with us. If you are not the appropriate person at the Board , please let me know who is.

B.W.

Brenda

FW: Leakage from chilled beams - Ward 6A

Peters, Christine [redacted]
Fri 30/08/2019 12:40
To: Crighton, Emilia [redacted]
Cc: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE) [redacted];Gibson, Brenda [redacted]

Dear Emilia,

I am writing to you as current chair of the 6A IMT.

I attended the IMT re 6A on 14th August, as I was invited by Dr Inkster who was the chair at that time to clarify the clinical microbiology data and the history of leaking chilled beams. The minutes of that meeting were not circulated to me for comment .

At the meeting there was discussion regarding the veracity of statements regarding whether or not I had witnessed leaking in the chilled beams on 6A.
I therefore am forwarding to you the SBAR I did on the day of the leakage and the photos taken at the time. At no point did any of the recipients of the email write back to challenge the account below. I understand that in fact the recommendation to change the fittings was accepted and was followed up which would indicate that the summary below is accurate. Furthermore Dr Brenda Gibson, Dr Kam Khalsa, and Dr Shazia Chaudry and Nurse Angela Howatt were present for the discussions with Estates personnel and witnessed the swab taking .

Should there be ANY suggestion that this account is factually incorrect I would appreciate it in writing with a note as to which element of my account was incorrect and why this was not raised previously. I would also appreciate a coherent and scientifically credible explanation for why water as per photos was present if leakage did not happen.

I am therefore formally requesting that you share this SBAR with members of the IMT and that the IMT formally writes to me to note that my account is in keeping with the documented facts in light of my photographic evidence and the presence of many witnesses.

Regards,

[redacted]
Dr Christine Peters
Consultant Microbiologist
Queen Elizabeth University Hospital,
GGC
[redacted]

From: Peters, Christine
Sent: 14 August 2019 15:46
To: Steele, Tom
Cc: Inkster, Teresa (NHSmail)
Subject: FW: Leakage from chilled beams - Ward 6A

Hi Tom,
As discussed at the IMT, please find SBAR re chilled beam investigation below,
Kr
Chrisitine

From: Peters, Christine
Sent: 03 June 2019 18:42
To: Dodd, Susie; Inkster, Teresa; Johnson, Angela; Inkster, Teresa (NHSmail); Khalsa, Kamaljit (NHSmail)
Cc: Conner, Darryl James; Gibson, Brenda
Subject: RE: Leakage from chilled beams - Ward 6A

Hi All,
Just back from assessing the water and pigeon issues.

Re pigeon it looks like pigeons are nesting in a bit of building ornamentation over the walkway between RHC and Mat building. Darryl has already called pest control. At present it does not look like this has access to any ventilation or indeed any internal component of the building. No further action taken.

Re Water drip:
Situation

IPCT alerted to dripping of water through chilled beam supply ventilation grills on 6A

Background

2A houses the decant Haemonc patients from Schallion including BMT patients . These rooms have en-suite facilities , in-room portable HEPAs and a cooler beam supply of 2.5 ACH with a nominal positive/neutral pressure to corridor.

There has been a history of leaks of water from the beam area since the hospital opened in different wards , with a particular incident occurring on 6A 2 weeks ago.

There is currently a 3 monthly cleaning schedule in place for vacuuming the components of the chilled beam. Last time this occurred in February on 6A.

Nurses were alerted by a [redacted] who had noticed a cold foot – the sock was soaked in water and water was noted to be heavily dripping from the supply grill.

Assessment

Cause of leak

A rapid HAISCRIBE was put in place signed by Darryl (Estates) , Emma (ward charge nurse) and Dr Peters (Microbiology Consultant) to assess the status of the chilled beams. Classed as a Grade iii/iV piece of work. This was done in room 5 , which had recently had raised fungal counts.

Inspection of the cooler beam found:

1. Very dusty metal heat exchange grill
2. Dry copper piping of the hot and cold supply to beam (ie no evidence of condensation)

3. Dripping from fitting at the hot water connection into the metal casing. There was evidence of previous drips and pooling of water with black markings on the upward facing casing.
4. The attachments were considered to require replacement
5. Swabs were taken of the dripping water and the dusty grills.

The sequence of events appears to be boiler failing (due to reduction in incoming water pressure ?)leading to reduced heat in hot water system to beams, leading to reduction in temperature of pipes, leading to contraction of metal, leading to loss of seal integrity at the point of join to beam pipes , leading to leak into casing and gravity driven dropping into the grill to floor. There was evidence of old leaks which fits with history of previous dripping events.
Photos of the cooler beams are attached to show the dripping water, the dust collection and the leak in the ceiling space.

RISKS

The risk presented by water collecting and dripping over dusty material is the precipitation of fungal sporulation into a room which houses severe immune compromised patients prone to fungal infections.

Recommendations

1. Rooms should remain closed until the following work can be completed for each room (following the HAISCRIBE precautions as already agreed)

- Fixing of the root problem – boiler has already been fixed by estates, and fittings should be replaced to a higher standard of connection to reduce likelihood of recurrence
- Reducing contamination by cleaning the casing in the ceiling void with achticlor wipe
- Reducing contamination by cleaning the beam and grill using vacuum
- Deep clean of room

2. Frequency of cleaning of beams should be increased to monthly and monitored
3. Antifungal Prophylaxis should continue as per policy already in place on the unit for high risk patients (one patient identified to commence prophylaxis by clinical team)
4. If for any reason a high risk patient is not able to take prophylaxis they should be housed on 4B or in a PPVL room with HEPA filtration in RHC as the best available option within the two hospitals
5. Current accommodation is already decant facility and is not to a standard of a BMT unit in that ACH (2.5) , pressure differentials (neutral basically) and lack of sealed roof tiles and light fittings, are sub optimal . These risks are being mitigated with prophylaxis and portable HEPA units. Increased fungal counts on the unit have already occurred and any source of water ingress and pooling should be rigorously sought and managed rapidly.
6. An SOP should be developed for the event of water dripping into rooms of immune compromised patients.

Please do not hesitate to contact me for clarification on any of the issues

Kind regards,

[redacted]
Dr Christine Peters
Consultant Microbiologist
Queen Elizabeth University Hospital,
GGC
[redacted]

From: Dodd, Susie
Sent: 03 June 2019 15:22
To: Peters, Christine; Inkster, Teresa; Johnson, Angela; Inkster, Teresa (NHSmail)
Subject: RE: Leakage from chilled beams - Ward 6A

Thanks Christine. Agree re. future risks. This just seems to be a repeated problem.
I note that Daryl said there are no leaks noted on other wards. This used to happen a lot in 2A as well and the problem seems to have followed them to 6A. Do each of the wards have their own boiler? Or does it supply other wards and if so, why is it that they are not affected? Or maybe other areas just don't notice/report it as frequently??
S

Susie Dodd
Lead Infection Prevention and Control Nurse
Royal Hopsital for Children
[redacted]

From: Peters, Christine
Sent: 03 June 2019 15:12
To: Dodd, Susie; Inkster, Teresa; Johnson, Angela; Inkster, Teresa (NHSmail)
Subject: RE: Leakage from chilled beams - Ward 6A

Hi ALl,
I am on the ward , Darryl is just comin gup , I am signing off an urgent scribe to open up the beams in one room to visualise the exact issue (this will be the room with the raised fungal counts apparently? - bed 5).

So far:

- Ascertained 6 rooms on 6A and 3 inDaycare have had significant drips of water , landing on patient beds.
- Beam grills inspected - dirty and water dripping through. 3 Swabs taken - Kam will set up LI in lab for SAB, CLED, BA,
- all patietns moved out of rooms, now no rooms on ward, awaiting one transfer from Aberdeen.
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- I will forward scribe

Risk : fungal sporulation due to water dripping on collected dust in beam supply vent grills
Mitigation : antifungal prophylaxis, cleaning of ward after dripping has stopped

Will need assessment re future risks when the exact nature of the leakage is ascertained.

kr
Christine

From: Dodd, Susie
Sent: 03 June 2019 14:43
To: Inkster, Teresa; Johnson, Angela; Inkster, Teresa (NHSmail)
Cc: Peters, Christine
Subject: RE: Leakage from chilled beams - Ward 6A

Thanks Christine.

Susie Dodd
Lead Infection Prevention and Control Nurse
Royal Hopsital for Children
[redacted]

From: Inkster, Teresa
Sent: 03 June 2019 14:42
To: Dodd, Susie; Johnson, Angela; Inkster, Teresa (NHSmail)
Cc: Peters, Christine
Subject: RE: Leakage from chilled beams - Ward 6A

Thanks Susie. Im across at BICC so Christine will go up and check. Agree we need to find out why leaking
Teresa

From: Dodd, Susie
Sent: 03 June 2019 14:31
To: Johnson, Angela [redacted]; Inkster, Teresa [redacted]; Inkster, Teresa (NHSmail) [redacted]
Subject: RE: Leakage from chilled beams - Ward 6A

Hi Angela,
Not a good sign if they are leaking again. I think we need to find out from estates what the cause of the leak is this time.
I don't think we need a wall wash unless the volumes of water were such that there was splashing up the walls. The room and all the equipment within them should get an Actichlor plus clean.
Thanks,
Susie

Susie Dodd
Lead Infection Prevention and Control Nurse
Royal Hopsital for Children
[redacted]

From: Johnson, Angela
Sent: 03 June 2019 13:46
To: Dodd, Susie; Inkster, Teresa; Inkster, Teresa (NHSmail)
Subject: Leakage from chilled beams - Ward 6A
Importance: High

Hi,
I've received a phone call from Angela Howat in 6A letting us know that Estates have been called to investigate drips coming from the chilled beams in 6 rooms in 6A. 3 are in Day Care and 3 are in-patient rooms. All rooms have been vacated of patients while Estates investigate.
Angela described the worst leak as up to 10mls and soaking into the sock [redacted].
Do we need wall washing after this has been resolved or would an actichlor clean of the room and equipment be sufficient before bringing back into use?

With 6 rooms out of action Angela is concerned that any further leaks in any other rooms will become challenging in terms of relocating patients.

Kind regards

Angela

Angela Johnson
Senior Infection Control Nurse
The Royal Hospital for Children
Glasgow G51 4TF
[redacted]

[redacted]

From: Peters, Christine
Sent: 30 August 2019 11:21
To: Mallon, John
Subject: FW: Leakage from chilled beams - Ward 6A
Attachments: IMG_2745.jpg; IMG_2739.jpg; IMG_2737.jpg; IMG_2735.jpg; IMG_2734.jpg; IMG_2733.jpg; IMG_2732.jpg; IMG_2729.jpg

FYI

From: Peters, Christine
Sent: 14 August 2019 15:46
To: Steele, Tom
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Kind regards
[redacted]

Angela Johnson
Senior Infection Control Nurse
The Royal Hospital for Children
Glasgow G51 4TF
[redacted]

71

75. Isolation rooms

[redacted]

From: Peters, Christine
Sent: 16 July 2019 10:14
To: Dodd, Susie; Conner, Darryl James; Johnson, Angela
Cc: Inkster, Teresa (NHSmail); Balfour, Alison; Gibson, Brenda; Redfern, Jamie
Subject: Isolation rooms

Hi All,

Please see SBAR re [redacted]. Some names and titles are incomplete, but hopefully you will know who I mean.

[redacted]

Situation

[redacted]

Background
Immune suppressed Haematology oncology patients are currently accommodated in 6A as a decant due to 2A requiring remedial works. 6A does not have airborne source isolation facilities.

There has been a lot of work recently on the isolation facilities in RHC and there are a number of important differences between each of the rooms with regard to HEPA filtration and pressure cascades.
Chicken pox requires airborne isolation, which if immune competent is best achieved in a negative pressure room, and if immune compromised in a HEPA filtered PPVL room (pending the provision of a negatively pressured ante room facility) .

Assessment

Assessment carried out by discussions with ICNs Angela Johnstone and Susie Dodd, Charge Nurse Hazel , Bed manager Louise, Estates Manger Darryl Conner and ward visit. Table of room features previously circulated by DR Inkster Lead ICD was utilised.

6A: ICN assessed admission of a few hours: [redacted] did not have contact with any patients on 6A , and there does not appear to have been any contacts of concern on 6A.

2C: first admitted on [redacted] which is a NEGATIVELY pressured room, that does have HEPA supply and was recently commissioned. Then moved to room 5 which is a PPVL room WITHOUT HEPA filtration.

On inspection on the ward it was clear that:

1. There was no written policy for where these patients should go
2. Confusion regarding the differences between the rooms
3. No mechanism to check and monitor the pressures of both rooms
4. Room 5 does NOT have a HEPA filter supply
5. The pressure for the PPVL was 20 PA (normal range 8-12 Pascals) with all doors closed and this had not been picked up by either estates or ward staff. This carries with it the risk that
    - If extract has failed, when doors open air from bedroom escapes into corridor
    - If extract has not failed make up air is drawn from non HEPA filtered air

6. [redacted]

As [redacted] was not neutropenic it could be argued that the negative pressure room that was HEPA filtered was appropriate. However on discussion with Dr Chris Hasnie we agreed that as [redacted] was on antifungal prophylaxis, and due to clinical condition could be regarded as immune compromised requiring HEPA filtered air.

The diagnosis of chickenpox was based on clinical findings and appearance of rash, however a virology result was not yet available and an alternative diagnosis could arise.

That being the case the best accommodation for this scenarios is offered by a functional HEPA filtered PPVL room, the only 3 available in RHC with this combination are on 3C rooms 9 and 10, and 3A room 15.

It is important to have a streamlined patient pathway for all isolation requirements especially in the context of increasing measles cases in the community which is even more contagious than chicken pox.

In terms of risks to the other [redacted], while neither room was ideal for [redacted] was mainly in the negative pressure room which gives protection to the ward . [redacted]

RECOMMENDATIONS

1. [redacted] moved to [redacted] in 3C which had a 14 Pa reading on the gauge which is just out with the acceptable range but was better than room 9 sitting at 20 Pa. The room is HEPA filtered. The room is on a renal ward but at the opposite end of the ward and the suite gives the best available airborne protection in the circumstances.
2. Estates colleagues to assess the reason for the aberrant pressure differentials on the 3 PPVL rooms
3. Full review of condition of the isolation facilities on RHC by ICN and ICD to take place on 16/07
4. Written policy regarding placement pathways to be produced urgently by IPCT
5. Staff education regarding the use of the different specialist ventilation suites to be arranged
6. Estates to roll out signage for rooms as agreed by the specialist ventilation group
7. A system to continuously monitor the pressures of isolation rooms is urgently required as well as actions in event of failure – Estates already have this action from Specialist Ventilation group
8. A high level of awareness for any secondary cases on ward 2C if chicken pox is confirmed by clinical staff is required and concerns re any immune compromised patients on the ward should be discussed on a case by case basis.

Please do not hesitate to contact me if any further queries arise,

Kind regards,

[redacted]
Dr Christine Peters
Consultant Microbiologist
Queen Elizabeth University Hospital,
GGC
[redacted]

From: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND)
Sent: 11 September 2019 12:49
To: MCINTOSH, Julie (NHS NATIONAL SERVICES SCOTLAND)
Subject: FW: SBAR Relating to Ward 6A
Attachments: Ward 6A SBAR.xlsx

Follow Up Flag: Follow up
Flag Status: Flagged

And this one too please

From: Devine, Sandra [redacted]
Sent: 06 September 2019 12:18
To: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND) [redacted]
Subject: FW: SBAR Relating to Ward 6A

Sandra Devine
Acting Infection Control Manager
NHS Greater Glasgow & Clyde
01412010326 (PA Ann Lang)
07984005021

From: Purdon, Colin
Sent: 04 September 2019 17:49
To: Steele, Tom [redacted]; Conner, Darryl James [redacted]; Gallacher, Alan [redacted]; Crighton, Emilia [redacted]; Davidson, Scott [redacted]; Devine, Sandra [redacted]
Cc: Hirst, Allyson [redacted]
Subject: RE: SBAR Relating to Ward 6A

Emilia,

We have had some round table discussion on the points raised within the SBAR and our collective responses are noted against each area.

Kind regards

[redacted]

Colin Purdon | BSc (Hons)
Interim Sector Estates Manager (*South*)

Estates Dept
Queen Elizabeth University Hospital Campus,
Room L0/B/002
Laboratory Medicine and Facilities Management Bldg.
1345 Govan Rd
Glasgow

G51 4TF

[redacted]

[redacted]

From: Steele, Tom
Sent: 03 September 2019 16:24
To: Conner, Darryl James; Purdon, Colin; Gallacher, Alan
Cc: Hirst, Allyson
Subject: FW: SBAR Relating to Ward 6A

Can you possibly review the various elements of this SBAR, firstly for general accuracy about statements and thereafter for actions that are complete.

We need to be robust in all areas, in particular if there are any water outlets that are not covered by PoU, then they need to be removed, replaced, or altered to an acceptable condition.

I will be at QEUH tomorrow afternoon and would appreciate some collective time to review our position. This will need to be completed in advance of the next IMT on Friday.

Ally, can you get us an hour early tomorrow afternoon?

Tom Steele | Director of Estates and Facilities
| NHS Greater Glasgow and Clyde | JB Russell House | Gartnavel Royal Hospital | 1055 Great Western Road | Glasgow | G12 0XH
[redacted]

From: Crighton, Emilia
Sent: 03 September 2019 15:27
To: Steele, Tom [redacted]; Devine, Sandra [redacted]
Subject: FW: SBAR Relating to Ward 6A
Importance: High

Tom and Sandra,
Please find attached an SBAR relating to ward 6A QEUH environmental risks co-authored by all consultant Microbiologists at QEUH and sent to me as Chair of the IMT.

The Assessment section has a comprehensive list of the environmental risks and am mindful of a number of actions underway to address/mitigate risks we knew of.

I would appreciate if you could consider the whole list to identify if any feasible additional measures would be practical.

Many thanks

With kind regards,
Emilia

Dr Emilia M Crighton
Deputy Director of Public Health
NHS Greater Glasgow and Clyde
West House

1055 Great Western Road
Glasgow, G12 0XH

[redacted]

From: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND)
Sent: 17 September 2019 14:53
To: Crighton Emilia (NHS GREATER GLASGOW & CLYDE); Devine, Sandra
Cc: HPSINFECTIONCONTROL (NHS NATIONAL SERVICES SCOTLAND)
Subject: FW: SBAR Leakage from chilled beams - Ward 6A, QEUH

Afternoon Emilia, Sandra,

In terms of the IMT addressing all matters arising/brought to the attention of the IMT regarding the current incident/outbreak in Ward 6A; have all the risks and recommendations made in the SBAR from Dr Peters (email below) been addressed? Does this need to be formally closed off by the IMT?

Kind regards,

[redacted]

Dr. Lisa Ritchie
NHS Improvement IPC Fellow
Nurse Consultant Infection Control

Infection Control Team / ARHAI Group
Health Protection Scotland
NHS National Services Scotland
4th Floor Meridian Court
5 Cadogan Street
Glasgow G2 6QE
[redacted]

Scotland's National Infection Prevention and Control Manual Website
http://www.nipcm.hps.scot.nhs.uk

ANTIBIOTIC GUARDIAN

From: MacLeod, Calum
Sent: 09 September 2019 14:12
To: RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND) ; Bowskill Gillian (NHS GREATER GLASGOW & CLYDE) ; Chaudhury, Shahzya ; Conner Darryl (NHS GREATER GLASGOW & CLYDE) ; Crighton Emilia (NHS GREATER GLASGOW & CLYDE) ; Davidson, Scott ; Deighan, Chris ; Dell Mark (NHS GREATER GLASGOW & CLYDE) ; Devine, Sandra ; Dick Lorraine (NHS GREATER GLASGOW & CLYDE) ; Friel Patricia (NHS GREATER GLASGOW & CLYDE) ; alan.gallacher[redacted]; Gibson, Brenda ; Sandra.Higgins[redacted]; Hill Kevin (NHS GREATER GLASGOW & CLYDE) ; Howat Angela (NHS GREATER GLASGOW & CLYDE) ; Hunter William (NHS GREATER GLASGOW & CLYDE) ; Joannidis Pamela (NHS GREATER GLASGOW & CLYDE) ; Kennedy Iain (NHS GREATER GLASGOW & CLYDE) ; Macdonald, David ; Mallon John (NHS GREATER GLASGOW & CLYDE) ; Murphy, Dermot ; Office, Press ; phpu[redacted]; Purdon Colin (NHS GREATER GLASGOW & CLYDE) ; Redfern James (NHS GREATER GLASGOW & CLYDE) ; Rodgers Jennifer (NHS GREATER GLASGOW & CLYDE) ; Rolls Gael (NHS GREATER GLASGOW & CLYDE) ; Sastry Jairam (NHS GREATER GLASGOW & CLYDE) ; Somerville, Emma ; Steele, Tom ; RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND)
Cc: Hamilton Pauline (NHS GREATER GLASGOW & CLYDE) ; Hackett Janice (NHS GREATER GLASGOW & CLYDE) ; Emma.Kinghorn[redacted]; Harkness Anne (NHS GREATER GLASGOW & CLYDE) ; Lang Ann (NHS GREATER

GLASGOW & CLYDE)
Subject: SBAR Leakage from chilled beams - Ward 6A, QEUH

Sent on behalf of Dr Christine Peters

I have been asked to forward on Dr Christine Peters SBAR regarding leakage from Chilled Beams as per below.

Re pigeon it looks like pigeons are nesting in a bit of building ornamentation over the walkway between RHC and Mat building. Darryl has already called pest control. At present it does not look like this has access to any ventilation or indeed any internal component of the building. No further action taken.

Re Water drip:
Situation

IPCT alerted to dripping of water through chilled beam supply ventilation grills on 6A

Background

2A houses the decant Haemonc patients from Schallion including BMT patients . These rooms have en-suite facilities , in-room portable HEPAs and a cooler beam supply of 2.5 ACH with a nominal positive/neutral pressure to corridor.

There has been a history of leaks of water from the beam area since the hospital opened in different wards , with a particular incident occurring on 6A 2 weeks ago.

There is currently a 3 monthly cleaning schedule in place for vacuuming the components of the chilled beam. Last time this occurred in February on 6A.

Nurses were alerted by a [redacted] who had noticed a cold foot – the sock was soaked in water and water was noted to be heavily dripping from the supply grill.

Assessment

Cause of leak

A rapid HAISCRIBE was put in place signed by Darryl (Estates) , Emma (ward charge nurse) and Dr Peters (Microbiology Consultant) to assess the status of the chilled beams. Classed as a Grade iii/iV piece of work. This was done in room 5 , which had recently had raised fungal counts.

Inspection of the cooler beam found:

1. Very dusty metal heat exchange grill
2. Dry copper piping of the hot and cold supply to beam (ie no evidence of condensation)
3. Dripping from fitting at the hot water connection into the metal casing. There was evidence of previous drips and pooling of water with black markings on the upward facing casing.
4. The attachments were considered to require replacement
5. Swabs were taken of the dripping water and the dusty grills.

The sequence of events appears to be boiler failing (due to reduction in incoming water pressure ?)leading to reduced heat in hot water system to beams, leading to reduction in temperature of pipes, leading to contraction of metal, leading to loss of seal integrity at the point of join to beam pipes , leading to leak into casing and gravity driven dropping into the grill to floor. There was evidence of old leaks which fits with history of previous dripping events.
Photos of the cooler beams are attached to show the dripping water, the dust collection and the leak in the ceiling space.

RISKS

The risk presented by water collecting and dripping over dusty material is the precipitation of fungal sporulation into a room which houses severe immune compromised patients prone to fungal infections.

Recommendations

1. Rooms should remain closed until the following work can be completed for each room (following the HAISCRIBE precautions as already agreed)

- Fixing of the root problem – boiler has already been fixed by estates, and fittings should be replaced to a higher standard of connection to reduce likelihood of recurrence
- Reducing contamination by cleaning the casing in the ceiling void with achticlor wipe
- Reducing contamination by cleaning the beam and grill using vacuum
- Deep clean of room

2. Frequency of cleaning of beams should be increased to monthly and monitored
3. Antifungal Prophylaxis should continue as per policy already in place on the unit for high risk patients (one patient identified to commence prophylaxis by clinical team)
4. If for any reason a high risk patient is not able to take prophylaxis they should be housed on 4B or in a PPVL room with HEPA filtration in RHC as the best available option within the two hospitals
5. Current accommodation is already decant facility and is not to a standard of a BMT unit in that ACH (2.5) , pressure differentials (neutral basically) and lack of sealed roof tiles and light fittings, are sub optimal . These risks are being mitigated with prophylaxis and portable HEPA units. Increased fungal counts on the unit have already occurred and any source of water ingress and pooling should be rigorously sought and managed rapidly.
6. An SOP should be developed for the event of water dripping into rooms of immune compromised patients.

Calum MacLeod
Infection Prevention & Control Administrator
Level 2, Zone 1, Office Block
Queen Elizabeth University Hospital
G51 4TF

[redacted]

[redacted]

From: RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND)
Sent: 08 October 2019 13:04
To: Crighton Emilia (NHS GREATER GLASGOW & CLYDE); Devine, Sandra
Cc: HPSINFECTIONCONTROL (NHS NATIONAL SERVICES SCOTLAND); RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND); IMRIE, Laura (NHS NATIONAL SERVICES SCOTLAND)
Subject: FW: Minutes & Action Plan of Ward 6A IMT, 18th September 2019
Attachments: IMT Ward 6A Gram Negative Blood Cultures 18 09 19 (2) hps comments.docx; Action Plan Ward 6A 180919 (002) LR AR} (2).docx; IMT Teleconference Notes Friday LI AR LR comments 081019.DOCX; NHSGGC 2019-09-13 GGC SBAR Final Draft v1 2.docx; SBAR updated comments from HPS 021019 LR AR comments.docx

Hi Emilia/Sandra

In advance of todays IMT, please see attached HPS comments on the minutes from the last IMT, the action list, the teleconference notes and the NHSGGC briefing paper (SBAR). I have also attached a copy of the updated HPS SBAR(as per action list) however please note the data in this SBAR only covers until July 2019.

Happy to discuss further any of the comments/attachments

[redacted]

Annette Rankin
Nurse Consultant Infection Control

NHS National Services Scotland
Health Protection Scotland
4th Floor
Meridian Court
5 Cadogan Street
Glasgow
G2 6QE
[redacted]
www.hps.scot.nhs.uk/

Incident Management Team meeting
Gram Negative Bacteraemia (GNB) – Paediatric Haem Onc
Wednesday 18th September 2019, 14:00
Level 9 Seminar Room, QEUH

Present: Dr Emilia Crighton, Dr Lisa Ritchie, Annette Rankin, Sandra Devine, Mark Dell, , Pamela Joannidis, Dr Iain Kennedy, Prof Brian Jones, Dr Alan Mathers, Kevin Hill, Jenn Rodgers, Sandra Higgins, Dr Scott Davidson, Jamie Redfern, Sharon Johnstone, Dr Shahzya Chaudhury, Anne Clark, Kirsteen Meikle, Calum MacLeod (minutes)

Apologies: Colin Purdon, Dr Kalliopi Valyraki, Dr Chris Deighan, Gael Rolls, Angela Johnson, Gillian Bowskill, Dr Jairam Sastry, William Hunter, Dr Alison Balfour, Alan Gallagher

Actions

Welcome, Apologies, Introductions

Dr Crighton welcomed everyone to the meeting, introductions were made and everyone was reminded of the confidentiality surrounding IMTs.

Minutes of the last meeting

Minutes from the previous IMT held on 13th September were disseminated to the group and the following amendments were requested:

Page 2, Incident Update, 1st para - To date there has been 12 confirmed cases of gram negative bacteraemia with 1 possible case under investigation. Also ,,, no positive blood cultures have been reported

Page 2, epidemiology, 1st para - Dr Kennedy introduced his epidemiology data with commentary from Prof Brian Jones and Prof Alistair Leanord.

Page2 : epidemiology, 3rd para, final sentence - The graph demonstrates a downward trend over the last few years of CLABSI rates.

Page 2, 5th para , 2nd line - There have been no patient cases linked to any environmental sampling undertaken in relation to this gram negative incident that have been identified in any patient isolates.

Page 2, epidemiology, 2nd para - compared to the counts when the ward was at the old Yorkhill hospital

Page 2, epidemiology, 4th para - in their opinion Ward 6A, QEUH was microbiologically safe

Page 2, Incident Update, 1st para - 12 confirmed cases and 1 possible case under investigation.

Page 2, Other relevant Reports, 1st para – Since the introduction of biocide to the cold water system of the chilled beams all water samples have been negative/clear.

Page 3- hypothesis update 2nd section – 1st sentence – add in Dr Ritchie stated that there would appear to have been many hypotheses considered by the IMT. I ~~i~~t was clarified there are currently two hypothes~~e~~is

Page 3 hypothesis - The group clarified that the following two hypothes~~i~~~~e~~s are

1. Exposure to unfiltered water out with Ward 6A where there isn't a point of use filter
2. The chilled beams either leaking or dripping ~~condensation~~ onto patients.

Page 3: risk management/control measures general ... add in word ~~measure~~ (assurance measure)
Page 3, Further Investigations Required,
1st para detailed review of each case * 12 confirmed and 1 possible) to be undertaken,
~~3~~rd para - Discussion regarding whether ~~if~~ a Hydrogen Peroxide Vapour Clean (HPV) to be included for every discharge clean/terminal clean for all Ward 6A rooms. This is an adjunct to terminal cleaning, whilst recommended in UK MDRO guidelines there is no requirement for such cleaning to be undertaken.~~There is no requirement for a HPV clean to be undertaken as no evidence showing it would be effective for this incident.~~

Page 4, Advice to Professionals – Dr Ronghe, Consultant Oncologist was the only clinician who attended the IMT from Ward 6A for a period of time. It was agreed that a separate meeting will be held with clinicians from Ward 6A on Monday 16th September where they can go over the evidence regarding the ward.

Page 4:Dr Ritchie has received a copy of the GOSH ventilation policy which she will share with estates (remove ... so that a comparison can be undertaken)

Update on Actions:

Please see separate action plan.
Incident update
Dr Ritchie raised the draft SBAR produced by NHSGGC as a summary of the incident. A number of comments were made on the SBAR. Agreed t~~T~~he SBAR will be revised and recirculated for further comment

Incident Update – Patient Report

To date there has been 12 cases of gram negative bacteraemia with 1 possible case (under investigation). All 12 confirmed cases are now clear of their gram negative bacteraemia infection.

All patients are reported to be stable and none are giving any cause for concern.

The last case reported was a positive Serratia marcescens from a blood culture on 3rd September 2019 which was considered a non Hospital Acquired Infection .

Formatted: Superscript

Commented [a1]: Who reported this? Its important to state who reported this

Commented [a2]: By who? Is this the 48 hour rule if so this should be stated

Commented [a3]: Clarity on terminology required

Commented [a4]: The peer review by GOSH was discussed. A Rankin sought clarification on the scope of this review.

Incident Update – Microbiology Report

Dr Ritchie sought clarification on whether the actions raised in an SBAR previously circulated by a group of NHSGGC microbiologists had been addressed and whether a further response from them had been received.

Dr Ritchie asked the chair if the IMT was going to discuss an email sent to her as chair and copied to some members of the IMT relating to environmental organisms. The chair confirmed that she had received the email from Dr Peters the day before. Chairs decision not to discuss the content of this email at the IMT.

IPCT

Prof Brian Jones stated that the median rate of CLABSI is now lower than it has ever been before as detailed in the documents issued for the meeting. A Rankin raised that there has been a reported reduction in gram positive but not gram negative and therefore CLABSI rates may not be the best indicator for an IMT called in response to issues related to gram negative/environmental organisms.

HPS

Prof Brian Jones reported that some of the organisms found in Ward 6A were also found in the Schiehallion Ward at Yorkhill hospital. In 2018 there were 24 patients with positive gram negative organisms from blood cultures. In 2019 so far there have been 11 cases.

Commented [a5]: It was also noted however a number of these cases were as a result of the water/drain incident

The position of the IMT is that Ward 6A is microbiologically safe and the safety of patients being moved to other health boards needs to be discussed.

Commented [a6]: A Rankin/Dr Ritchie do not agree this was a statement made by all IMT members or on behalf of the IMT. It was the opinion of some members however this statement is not an accurate reflection. This was a previous statement by Prof Leanord and ? Dr Jones however this was not reflective of this IMT discussion. This is not a view made by HPS

Epidemiology

The group asked about the rates of all bacteraemia's within RHC and if these are found in any other areas. Prof Brian Jones commented that these organisms will be present throughout the environment.

~~Further analysis of the epidemiology will be carried out by splitting the cases of gram negative and gram positive bacteraemia over the past 5 years. This data along with the CLABSI data being used as a denominator will enable Prof Brian Jones to compile an analysis. If the data presented comes back different the decision to re-open the ward will be revoked.~~

HPS SBAR

The SBAR distributed by HPS was discussed and comments were received regarding the clarity of the data. The graph Figure 3 within the report refers to count of blood positive cultures; the figure is followed by narrative about comparisons in the rate of infection. It was felt that it would be useful to have the rates data displayed as well. Lisa Ritchie agreed to take an action to ~~will~~ speak with ~~her~~ HPS colleagues regarding the addition of the rate data within the report and re-issue an updated report.

Estates

Dr Ritchie ~~discussed about~~ raised the ~~support fo~~ matter of~~r~~ clinicians who were now being presented with 2 differing microbiological opinions and what was being done to support what would appear to be an 'impasse'.

Risk Management/Control Measures - Patients

[redacted] There is the potential of sending patients to other health boards who may not have the same facilities which are present in GG&C.

Commented [a7]: This requires further clarification. What type of facilities are being referred to?

Risk Management/Control Measures - General

Lisa Ritchie requested what assurances will be put in place within Ward 6A until Ward 2A/2B, RHC is re opened. Sandra Devine informed her that enhanced supervision is to be continued by the Infection Control team once a week. Central line infection triggers have been put in place so that if these are reached then appropriate action will be taken. Also there is a development of Standard Operating Procedures with regards to future testing regimes of water, air handling and chilled beams with the help of HPS colleagues, in order to monitor the patient environment. HPS requested a note on the triggers once~~d~~ agreed by NHSGGC be shared with HPS

J Redfern

Access to a disabled toilet within an OPD clinic which has been highlighted in Ward 6A patient pathway requires a point of use filter fitted to the tap.

~~The IMT~~Facilities confirmed that all work within the ward is complete apart from the installation of the en-suite HEPA filters which we are currently awaiting delivery.

Healthcare Infection Incident Assessment Tool (HIIAT)

Severity of illness – MINOR
Services – MINOR (chair has recommended that we are ready for new admissions depending on confirmation of the data that has been circulated to the IMT)
Risk of transmission – MINOR
Public anxiety – MODERATE

Commented [a8]: Detailed discussion took place regarding this and this should be reflected

Commented [a9]: Dr Chaudhury commented that she would rather consult with her consultant colleagues relating to the HIIAT and ward accepting admissions, this should be reflected in the minutes

~~The~~ Members of the ~~group~~ IMT agreed on an HIIAT score of GREEN. There were~~as~~ some members who did not agree. It was noted the HIIAT score was the chairs decision and the chairs decision was the HIIAT was green

Further analysis of the epidemiology will be carried out by splitting the cases of gram negative and gram positive bacteraemia over the past 5 years. This data along with the C_ABSI data being used as a denominator will enable Prof Brian Jones to compile an analysis. If the data presented comes back different the recommendation by the chair to re-open the ward may be revoked.

The meeting was then paused at 17:45 to allow NHSGGC to review some further data which will influence the decision on the ward re-opening. A number of IMT members were unable to stay and left the meeting. These members included HPS (Dr Ritchie, A Rankin), list who else left.

It should be noted here the time the meeting resumed: those present and the discussions that took place.

Communications

Advice to Public

Ongoing advice given to patients and relatives.

Advice to Professionals

After Mondays meeting with the clinicians there was no consensus to accept the information to reopen Ward 6A to new admissions.

A meeting to discuss prescribing antifungal and other relevant prophylaxis for patients is to be arranged where Prof Jones will attend for Microbiology along with a representative from BMT, Haematology and an oncology clinician. Prior to this meeting background information surrounding this IMT will be shared.

HPS

Pamela Joannidis will complete the HIORT and send onto HPS.

AOCB

A teleconference will arranged for Friday morning to discuss the progress of the actions agreed from today's meeting and confirm the decision to reopen ward 6A for the care of new admissions and high risk patients.

Outstanding Action List

Gram Negative Bacteraemia (GNB) and Mycobacterium *chelonae* Incident Management Team

Date Agreed Action	Action	Responsible Person/s	Completion Date	Status/Update
18/09/19	Add infection rates data to HPS SBAR if possible.	HPS	Ongoing	
18/09/19	Check to see if a point a point of use filter has been attached to a tap within a disabled toilet, within OPD area which is part of Ward 6A patient pathway	Estates	Ongoing	
18/09/19	Epidemiology from Public Health is to be split into gram negative and gram positive organisms over the last 5 years. This will enable Prof Brian Jones to compare rates	IPCT	Ongoing	
18/09/19	Prof Brian Jones will compile an analysis of the epidemiology data and form a proposal regarding his findings	Prof Brian Jones	Ongoing	
18/09/19	Pamela Joannidis is to see if an air sampling form used at the old Schiehallion ward at Yorkhill can be found and implemented for future air sampling.	Pamela Joannidis	Ongoing	
13/09/19	A detailed review of each case is to be undertaken, including a full microbiological analysis and development of root cause analysis tools for each new case of positive blood cultures going forward.	Micro IPCT	Ongoing	IPCT have drawn up a proforma that will capture line listing data for each of the 12 confirmed cases and 1 possible. This proforma is to be shared with HPS ?prior to a full review of each patient clinical care pathway
13/09/19	A summary of all mitigating actions taken to date and a summary of the epidemiology is to be collated and presented at the next IMT.	IPCT Public Health	Ongoing	Sandra Devine has drafted a paper outlining everything this IMT has undertaken. Lisa Richie made a number of comments at the meeting and agreed to also ~~has a few comments regarding the paper which she will~~ forward onto Sandra to update.

13/09/19	ICDs, ID physicians and the clinical team to decide the arrangements regarding Ciprofloxacin/prophylaxis going forward.	Jamie Redfern	Ongoing	No meeting has been agreed to date. Representation form Microbiology will be from Prof Brian Jones. Information regarding the background to this IMT will be supplied to clinicians who will be attending this meeting. The current use of antifungal medication on patients which was agreed at previous IMTs not this one will also be discussed. These were introduced due to the combination of building works out with ward (cladding work) and high fungal counts within Ward 2A.
Date Agreed Action	**Action**	**Responsible Person/s**	**Completion Date**	**Status/Update**
13/09/19	Decision regarding a peer review and what this will entail is to be decided.	IMT	Ongoing	This was requested on the back on a letter sent to the Chief Executive. The IMT need to speak to clinicians regarding what the peer review will undertake (environment/results/IMT) If the peer review is agreed and organised it will not review the design built and maintenance of the building. Two people have already been approached but had to decline due to work commitments.

NHS Greater Glasgow & Clyde
~~**NHS Greater Glasgow & Clyde**~~

Teleconference to discuss Ward 6a Status
20th September 2019

Attendees: **Emelia Crighton (EC), Alan Mathers (AMM), Kevin Hill (KH), Scott Davidson (SD), Pamela Joanidis (PJ), Jen Rodgers (JRo), Jamie Redfern (JR), Iain Kennedy (IK), ~~Sandra Devine~~ (SDe), Tom Steele (TS), Annette Rankin (AR), Laura Imrie (LR)**

Apologies: **No apologies submitted**

Purpose of Teleconference

After introductions EC confirmed with all on the call the purpose of today's teleconference.
She noted it as an action from IMT Wednesday 18/9/2019 & for further discussion on recommendation made at said IMT meeting to lift all restrictions on Ward 6a.
It was also an opportunity to prepare for meeting on Monday 23/9/2019 where the recommendation would be discussed in more detail with the Consultant team.

Update from Estates visit to Great Ormond Street Hospital (GOSH)

TS updated on initial feedback from Estates visit to GOSH. He summarised the visit focused on comparisons between QEUH and GOSH in regards to ventilation and water systems /control measures. All were informed that a report of the visit would be written up and circulated for comment next week.

Data in support of lifting Ward 6a

JRo and IK circulated a power point presentation to all which outlined the current data set around infection rates linked to Ward 6a. After discussion IK was to amend the slide which showed different types of infections in the haematology oncology population 2013/14 to present date. Amendment to show actual numbers of each infection by year. JR would submit information on Bone Marrow Transplant activity over this time period to review impact fluctuation in the number of cases completed over time had on bed day activity / occupancy. Further updates on the positive / negative infections split by environment / non environment to be provided (noting BJ remained unhappy with the classification being used for environment / non environment). JRo and IK to finalize slides and submit to EC for approval and then onward circulation to wider Consultant team ahead of the meeting.

HPS Report

AR to confirm when the HPS SBAR September 2019 report on comparisons between QEUH, RHSC Edinburgh and Children Hospital, Aberdeen to be updated. On receipt this will be circulated to IMT members including all consultants in Haematology Oncology.

Future IMTs

PJ described how the NHS Board would trigger a new IMT if there were further problems with infections in Ward 6a once restrictions lifted. She noted each infection

Commented [a1]: Sandra wasn't at tc

Commented [I2]: ? sub group of IMT – was this agreed at the IMT on the 18th September?
? IMT membership

Commented [a3]: Who was invited?

Commented [a4]: This was an action not a recommendation

Commented [a5]: The minutes were not available at the tc. The recommendations in the IMT minute were made after the IMT adjourned.

Commented [I6]: This recommendation was made by who? This was not a unanimous decision of the whole IMT?

Commented [a7]: There was also recommendations made from HPS through NHSGGC Medical Director.

Commented [I8]: What areas/comparisons made?
GOSH do not have ventilation and water issues??

Commented [a9]: More detail should be provided

Commented [a10]: What does this mean

Commented [a11]: HPS had not received this prior to the meeting and due to technical issues : GGC were unable to send during the meeting

Commented [a12]: Who is BJ – BJ not on teleconference
HPS do not recall any discussion re this

Commented [a13]: There was some discussion regarding how individual RCA were joined up

Commented [I14]: Not all remedial actions have been put in place e.g. HEPA filters in all bathrooms…
Have IMT members been made aware of what the assurance measures are going forward?

would have Root Cause Analysis (RCA). She also concluded that PAG/ IMT would be triggered if 2 cases of the same infection were identified within a 2 week period. HPS did not think this was a sensitive enough trigger given the vaiety of organisms ~~colleagues queried whether this was sensitive enough to identifying any future problems.~~ They thought cognisance should be given to the number of infections being identified irrespective of type. PJ agreed to provide a written document for comment on how a future IMT would be triggered for comment and approval based on discussion.

Case Reviews

PJ confirmed she was still working through the individual case reviews with BJ and on completion a summary report on each case would be circulated to all for information. This would include the last case of [redacted] who had multiple infections reported but was thought to include contaminant samples.

Estates Work

TS confirmed all Estates work linked to the IMT / lifting of restrictions to the Ward had been completed. In addition he reaffirmed the further works in 6 weeks time for fitting of hepa filtration units in the on-suite rooms in the Ward. JRo noted this work was not required for restrictions to be lifted as previously discussed at IMT meetings. TS also noted tap fittings for outpatients in RHC would be completed next week. Again, it was noted this estate work was not linked to lift on restrictions to IMT.

IMT HIIAT~~ART~~

HPS colleagues noted Government officials concerned that the latest IMT had reported Green. Specific concern on score for public anxiety and disruption to service. JRo explained the level of detail the IMT had gone into for these two ratings. HPS colleagues agreed to feed this back to Government noting it was based on the final recommendation that the Ward was lifting all restrictions.

Option Appraisal

KH noted an option appraisal paper was currently with EC, Board Medical Director and Chief Executive Officer. This paper would be used through the IMT / service to agree business continuity plans if further problems with Ward 6a infections occurred. HPS colleagues agreed to update Government on the progress of this however this has not yet been shared with the IMT.

Current use of other hospital providers

JR updated that since the IMT [redacted] There were no planned chemotherapy transfers for next week. Case by case discussion on any new admissions noting current IMT recommendation and forthcoming consultant meeting next week.

Air Sampling / Infections

JR asked if there was a summary of air sampling results which could be shared with the wider consultant team for Monday's meeting and also whether there was any

Commented [a15]: did not think this was a sensitive enough trigger given the variety organisms reported

Commented [a16]: who is this?

Commented [I17]: HEPA filters in all bathrooms? ?assurances to lift restrictions

Commented [a18]: There was discussion on how all the estates work is reported back to the IMT. HPS have previously requested that a written report is provided for IMT members consideration.

concerns about air borne infections in the patient population during the period IMT had been running. BJ/ IK to review and update on any results available. PJ confirmed this incident is not related to airborne infections.

~~**External Peer Review**~~

~~Matter not discussed. Refer to last IMT meeting for update.~~

Conclusions

EC summarised all discussions / actions. She then asked each member of the call on an individual basis if they had any concerns and were in agreement with the IMT recommendation to reopen 6a to new and high risk patients based on the data and advice given. . Prior to the ward reopening HPS requested that the outstanding actions including the triggers and separation of infections should be carried out to ensure a proactive approach to any further incidents ~~All present on the call raised no concerns and agreed with the recommendation.~~

Commented [a19]: There was no discussion relating to air sampling

Commented [l20]: Evidence to support this statement?

Commented [a21]: There was no agenda issued;: if this was not discussed it shouldn't be included

Health Protection Scotland

NHS National Services Scotland

Title: To support NHSGG&C IMT: Mycobacterium chelonae cases and the incidence of gram-negative bacteraemia (paediatric haemato-oncology) **Author: HPS** **Audience: NHSGG&C – Incident Management Team** **Date of issue: September 2019**	
Situation	To support NHS Greater Glasgow and Clyde (NHSGG&C) with their investigations into an increased incidence of gram-negative bacteraemia (GNB) and data exceedance of *Mycobacterium chelonae* bacteraemia in Ward 6A (currently occupied by decanted paediatric haemoto-oncology patients (inpatient and day care services)), QEUH.
Background	Health Protection Scotland (HPS) were supporting NHSGG&C with a recent water related incident investigating and managing a contaminated water system across the Queen Elizabeth University Hospital (QEUH) and Royal Hospital for Children (RHC) with probable linked cases of bloodstream infections associated with wards 2A/2B RHC. The RHC opened in June 2015 replacing Yorkhill Hospital (YH). Wards 2A/2B RHC is a haemato-oncology unit, also known as Schiehallion, and houses the National Bone Marrow Transplant (BMT) Unit. To allow remediation works to be undertaken in 2A/2B, patients were transferred to QEUH on the 26th September 2018 to ward 6A and three rooms were allocated within the adult Bone Marrow Transplant (BMT) of ward 4B for the paediatric BMT unit. Adults from 6A were transferred to Gartnavel General.
Assessment	**METHODS** **Increased incidence of gram-negative bacteraemia (GNB)** A refreshed data extract from Electronic Communication of Surveillance in Scotland (ECOSS) system of all blood samples in children less than 16 years of age from 2013 to present was obtained on the 8th August 2019. For the purposes of this report, the patient population was categorised as follows • 2A/2B Group o Patients cared for in Yorkhill Hospital (YH) Schiehallion or Ward 7a; Royal Hospital for Children (RHC) Wards 2a and 2b; or Ward 6A and allocated rooms of 4B Queen Elizabeth University Hospital (QEUH); patients cared for in haematology/oncology specialties including A&E admissions with previous admission to RHC haematology/oncology specialties data up to May 2018. However, due to time restraints it has not been possible to establish if episodes since June 2018 with an A&E admission had a previous admission to RHC haematology/oncology specialties. Positive blood cultures of the following micro-organisms were included: • Gram-negative bacteria • Environmental bacteria (all species of the following: *Achromobacter; Acinetobacter; Aeromonas; Brevundimonas; Brevibacillus; Brevundimonas; Burkholderia; Chryseobacterium; Citrobacter; Cupriavidus; Delftia acidovorans;*

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Elizabethkingia; Enterobacter; Gordonia; Klebsiella; Pantoea; Pseudomonas; Rhizobium; Rhodococcus; Serratia; Sphingomonas; Stenotrophomonas).

De-duplication were undertaken on one case per patient per genus per 14-day period but only including one case of Gram-negative or environmental bacteria when two or more genus were isolated from one or more blood cultures within a 48-hour period of the positive blood culture. The latter was to avoid duplications of episodes due to polymicrobial cases.

A rolling 14-day episode definition was used to align with mandatory surveillance programmes. The exclusion criteria included any samples coded as post mortem blood, any test samples, foetal samples or non-human samples.

NHS health boards are coded by the location of the submitting laboratory. Additional hospital/ward data was derived from the ECOSS unit location field, or where incomplete free text within the medical specialty and requesting location fields were used to generate a final hospital list to be mapped against the total occupied bed days to generate hospital level rates.

For NHSGG&C hospitals, the free text within the unit location, medical specialty and requesting location fields were used to derive a location and ward within the hospital where the positive blood culture aspirated was associated, to find any specimens with a connection to wards 6A and 4B in the QEUH, 2a or 2b within Royal Hospital for Children, or the equivalent within Yorkhill hospital.

Since it was not clear how the bed days were coded following the move to the QEUH monthly cases rather than incidence rates were used in the ward analysis (Figures 1, 2 and 3).

Counts of cases reported by NHSGG&C plus non-validated positive environmental blood cultures sourced from ECOSS are shown in a timeline in Figure 1.

The cases between August 2014 and July 2019 were analysed using statistical process control (SPC) C-charts (Figure 2 and Figure 3). The SPC charts describe the counts of positive blood cultures over time with the move to QEUH after the closure of wards 2A and 2B represented by vertical light brown line, the opening of the RHC represented in the charts with a vertical black line. In addition, the following control measures have been added to the SPC charts – filters added to taps marked as an orange vertical line and cleaning of drains marked as purple vertical line. The centreline of the SPC was calculated as the median of the monthly cases between August 2014 and July 2019. The following SPC rules were applied:

TABLE 1: Statistical Process Control (SPC) rules

Rule	Description	Marker
Outlier	Data point(s) exceeding the upper or lower control limit (as 3 standard deviations)	Red diamond
Trigger point	Data point(s) exceeding the upper or lower warning limit (as 2 standard deviations)	Yellow triangle
Shift	A run of 8 or more consecutive data points above or below the centreline	Circle drawn round points
Trend	A run of 6 or more consecutive data points either increasing or decreasing.	N/A

When comparing RHC against other children's hospitals, rates per 100,000 total occupied bed days at hospital level were used to standardise the counts. These data were obtained from the Information Services Division ISD(S)1 data source. However, for

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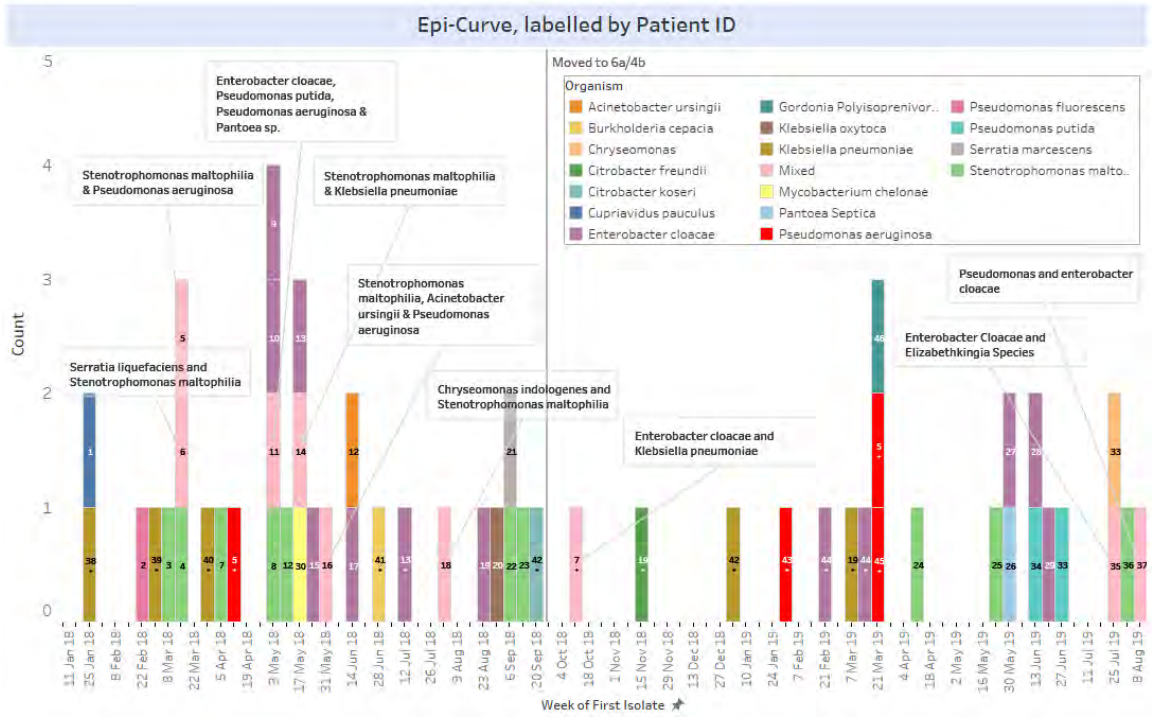
hospital comparisons monthly incidence rates were calculated using bed days at hospital level as the denominator.

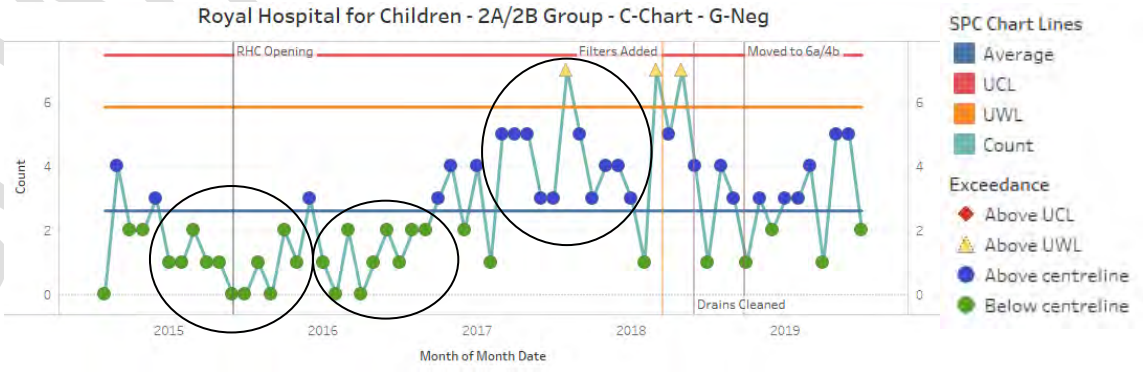
RESULTS

Figure 1: Timeline of Environmental cases as provided by NHSGG&C plus non validated positive blood cultures from 26/01/2018 to 08/08/2019. Cases with a * are from patients with more than one episode within the time period. *



* *Mycobacterium chelonae* isolate included in Figure 1 was from a sample other than blood and was therefore not included in the SPC charts.

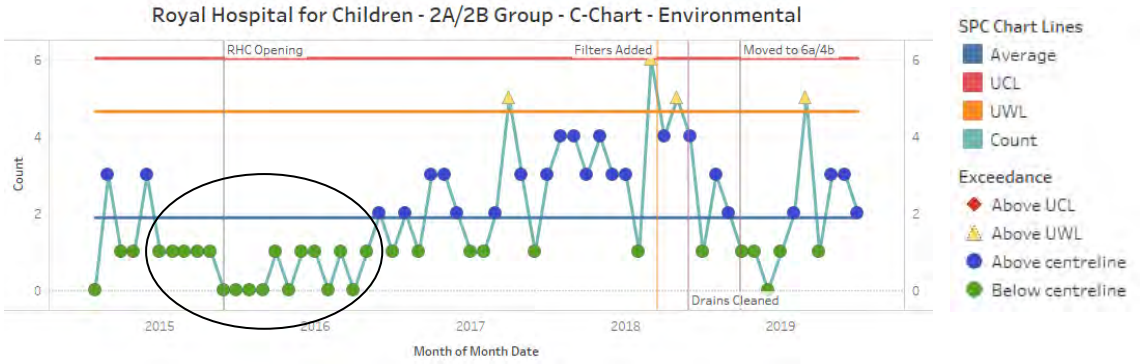
Figure 2: SPC charts of Gram-negative blood culture positive count for 2A/2B Group – counts from August 2014 to July 2019.



All episodes included in the timeline (Figure 1) are included within the data analysed in the SPC charts (Figures 2 and 3).

Following the move to the QEUH the number of cases of the Gram-negative positive blood cultures has not breached the upper warning limit (UWL) or above the control limit (UCL) (Figure 2). For the environmental bacteria positive blood cultures, the number of cases breached the UWL in March 2019 but not above the UCL (Figure 3).

Figure 3: SPC charts of environmental blood culture positive count for 2A/2B Group – counts from August 2014 to July 2019.



Comparison of RHC Rates to Other Children's Hospitals

When comparing the overall rate (per 100,000 total occupied bed days) over 5 years at RCH/YH to the combined rate of the other two Scottish children's hospitals (Royal Aberdeen Children's Hospital (NHS Grampian) and Royal Hospital for Sick Children (NHS Lothian)), the rates of positive blood cultures in RCH/YH was higher compared with the other hospitals for environmental bacteria ($p<0.001$) however there was no difference in the rates of Gram-negative blood cultures ($p=0.11$).

When comparing post move only (September 2018 onwards) there was no difference between RCH and the other children's hospitals in the rates of Gram-negative blood cultures ($p=0.10$) or environmental blood cultures ($p=0.11$).

***Mycobacterium* atypical positive cases**

There is no formal surveillance of non tuberculous mycobacteria. An extract from ECOSS was obtained on the 11th July 2019, for all blood samples for all atypical *Mycobacterium* which included *Mycobacterium chelonae; Mycobacterium abseccus*; *Mycobacterium gordonae*; *Mycobacterium fortuitim* for the five-year period July 2014 to June 2019. A deduplication of one episode per 365 days was applied. The numbers were small and for patients 16 and under there were less than five episodes with a positive blood sample and 30 episodes for any specimen type as reported by the Southern General laboratory. For all Scotland there were 20 positive blood samples and 962 from any specimen type.

Limitations and Caveats

There are a number of limitations associated with the use of ECOSS blood culture data. Blood samples are non-validated records. The cases may include contaminants, and may include non-blood cases which are incorrectly mapped to a blood sample within either the laboratory system or within ECOSS. Location mappings within ECOSS records may also be prone to error.

De-duplication method was undertaken at genus level to avoid recounting interim laboratory results as they are reported through ECOSS.

De-duplication method may still mean that a patient is recorded as having more than one episode of positive blood culture in a 14-day period leading to an overestimate of the number of bacteraemic episodes. For example, if a patient has had a positive blood

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	culture on day one, then a different genus cultured on day seven, this may be classed as the same clinical episode of bacteraemia but are classed as two episodes according to these definitions. Environmental bacteria grouping include bacteria commonly found in the environment however they may also be associated with normal human microbiome and laboratory surveillance is unable to distinguish. It is not possible to determine whether changes in episodes are confounded by changes in the patient population and their underlying medical conditions. Gram-negative blood culture data may be incomplete for July 2019 and non tuberculous mycobacteria data may be incomplete from 2019 onward as samples are still to be reported. It has not been possible to capture all haematology/oncology patients admitted to other RHC or YH wards who subsequently had a positive blood culture. Episodes in 2A/2B Group derived through linkage (to establish if A&E admissions had a previous admission to RHC haematology/oncology specialties) were only included in data up to June 2018. The rates used to compare the overall rate at RHC following the move to QEUH to the combined rate of the other two Scottish children's hospitals used an estimated denominator (Total Occupied Bed Days) for September 2018 by taking the proportion of days following the move. In the monthly analysis of environmental bacteria positive blood cultures, the numbers are small and should be treated with caution. The non tuberculous mycobacteria ECOSS extract included patients 16 and younger however the Gram-negative blood cultures included only patients under 16 to match the extract used in the 2A/2B report. Numbers are small and should be treated with caution.
Recommendations	• Blood cultures should continue to be monitored in this high risk patient population. • A robust review of all new individual cases is carried out in real time by a multidisciplinary team including microbiology & clinical representatives. • Further analysis of positive blood cultures associated with environmental bacteria in other specialities within RAH/QEUH and within other children's hospitals may be beneficial to understanding the epidemiology and risk of environmental exposure in high risk individuals.

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References

1. Information Services Division of National Services Scotland, 2018. Statistical Process Control Monitoring Quality in Healthcare. Available at: https://www.isdscotland.org/Health-Topics/Quality-Indicators/Statistical-Process-Control/_docs/Statistical-Process-Control-Tutorial-Guide-180713.pdf

NHS Greater Glasgow and Clyde	**NHS Greater Glasgow & Clyde**
Purpose:	Briefing Paper: Ward 6a (Haematology/Oncology)
From:	Incident Management Team
To:	Clinical team ward 6A
Date:	2 October 2019
Subject/ situation:	Since the middle of April 2019 there has been a reported ~~n potential~~ increase in gram negative bacteraemia hypothesised to be ~~possibly~~ caused by an environmental source (11 cases from the 13 of April 2019 until 2 August 2019). The ~~list of~~ organisms ~~included~~ identified in this increase were also ~~as based on the~~ organisms found in water and ~~or~~ drains during 2018 investigations; reported in ~~and~~ the HPS 2A/2B situational report. ~~Defined as:~~ Environmental organism defined as': [*Achromobacter*], *Acinetobacter, Aeromonas, Brevundimonas , Burkholderia ,* [*Cedecea*] , *Chryseobacterium,*[*Commamonas*], *Cupriavidus , Delftia, Elizabehtkingia,* ,[*Morganella*], *Pantoea,* [*Paracoccus*], *Pseudomonas,*[*Pseudoxanthomonas*],[*Ralstonia*], *Rhizobium, Serratia,* [*Shewanella*], *Sphingomonas, Stenotrophomonas* 'Non-environmental': *Citrobacter, Enterobacter, Klebsiella*
Background	On 20 June 2019, NHSGGC reported to HPS an increased ~~i~~incidence of Gram Negative Bacteraemia (GNB) linked to Ward 6A: Five cases over an 8-week period (April 13 2019 until June 12 2019) and two cases in 12 months of Mycobacterium chelonae, the second of which was a cutaneous infection. ~~case, in 12 months.~~ Laboratory t~~T~~yping linked the second case of mycobacteria to water in the hospital. The first case was also typed; no link to the hospital water supply was confirmed (NB novel typing technology). However this case was not sent for typing at the time of case identification along with water samples obtained at this time (12 months earlier).It was also agreed at the initial IMTs (based on expert opinion) that typing would be used to include and not exclude cases. This case was not considered at the time of acquisition as M.Chelonae had not been reported from the water samples tested. Of the five cases of GNB identified between April 2019 and June 2019; one was considered by clinicians to be [redacted]; two were considered to be hospital acquired ([redacted]); the remaining three cases were considered to be healthcare associated.

Commented [l1]: Is this a situational update?

Commented [a2]: From when to when?

Commented [l3]: Not clear who this includes, and also the clinical team are part of the IMT and therefore why a briefing paper required

Commented [a4]: The briefing paper is dated October but figures only until August

Commented [l5]: Is this the same definition or different from HPS report / analysis?

Commented [a6]: Has this been agreed by the IMT? If so: when?

Commented [a7]: Where is the evidence for this? Enterobacter was previously included in case definition as isolated from the water.

Commented [a8]: Clear definitions based on national guidance and agreed by IMT are required for HAI, HCAI and CI)

Commented [l9]: Definition of the use of these terms require to be noted here

Case definitions were as follows *(based on a precautionary principle)*:
Any patient ~~in~~ linked to Ward 6a with a laboratory confirmed bloodstream infection from an environmental organism(s) associated with the QEUH or RHC since 2017.

Previous case ~~D~~definition-GNB: any patient with an HAI due to an organism previously linked to water or drains.

M.chelonae: any patient who had contact with QEUH or RHC testing positive for M chelonae (in any sample not exclusively BC) from 2017. There were no further cases of M.chelonae.

Two key Hypothesis were proposed during this incident:

Hypothesis 1
Patients ~~were~~ exposed to unfiltered water outside of Ward 6a but within the hospital environment, for example in theatre, in school (RHC) or when visiting either of the main atriums with families.

As of September 2018 PoU filters were fitted to all tap outlets in Ward 6a and this was extended to include the Domestic Services Room (DSR) and Kitchen during this incident.

The route of transmission was proposed that…

Hypothesis 2
In July 2019 the outside temperature increased significantly for several days. It was hypothesised that during this time the 'hot' circuit in the chilled beams temperature reduced to a level where there was a contraction of the metal which reduced the seal of the circuit at the end of the unit, which in turn lead to a leak from the beam. The water in the chilled beam system is circulated at 75 degrees so it is considered unlikely to be harbouring microorganisms. The cold chill beam circulates at a constant 15 degrees so is not prone to extremes of temperature and therefore constriction and leakage.

Need to put a bit in about the boiler failure (Tom would you mind having a look at this section).

The route of transmission was proposed that water (leaks / condensate) from the beams was falling directly into the patient care environment leading to direct contact with the patient, or indirectly from the patient's immediate care environment e.g. into the patient's bloodstream possibly via central lines.

Hypothesis

Commented [l10]: Recommend that the date and the agreed case definition be stated for the record – this presumably will be in the minutes of the IMT meetings?

Commented [a11]: Why 2017?

Commented [l12]: Date?

Current case definition?

Commented [l13]: How does this relate to the definitions above – hospital acquired / healthcare acquired?

Commented [a14]: Were others considered and excluded?

Commented [l15]: Date would be helpful

Commented [a16]: Is the over arching hypothesis : exposure to a contaminated water source/environmental organisms with the ones below being the ones considered. What other water sources were considered and excluded and why?

Commented [l17]: But if exposed to unfiltered water within 6a too??

Commented [l18]: This is not hypothesis this is investigation and outcome

Commented [l19]: Is this a third hypothesis?

Commented [l20]: Is there a third hypothesis regarding breakdown in SICPs? Given the ongoing enhanced supervision from IPCT that has come on?

Healthcare Associated BSI Definition – Health Protection Scotland

Positive blood culture obtained from a patient within 48 hours of admission to hospital and fulfils one or more of the following criteria:

Was hospitalised overnight in the 30 days prior to the positive blood culture being taken
OR
Resides in a nursing home
OR
IV, or intraarticular medication in the 30 days prior to the positive blood culture being taken, but excluding illicit drug use
OR
Regular user of a registered medical device
OR
Underwent a medical procedure which broke mucous or skin barrier in the 30 days prior to the positive blood cultures being taken
OR
Underwent care for a medical condition by a healthcare worker in the community which involved contact with non-intact skin, mucous membranes or the use of an invasive device 30 days prior to the positive blood culture being taken

Summary

From 13th April 2019 to date, 12 GNB have met the case definition i.e. any patient in Ward 6a with a bloodstream infection from an environmental organism associated with the QEUH or RHC and were included in the time line. It should be noted that inpatient admission restriction to Ward 6a has been in place since 2nd August 2019. One case has been included since 2nd August 2019.

- 12 cases of GNB
  - 4 considered to be hospital acquired (48hr rule – one of these was considered by clinicians on the unit to be due to gut translocation); 8 were considered to be healthcare associated.
  - Of those able to be typed all are unique.

A review of data has established:

- Current numbers of bacteraemia are consistent with historical ~~norms~~figures; the split between environmental and gram negative BSI and has also been broadly consistent over time (appendix 1).
- Incidence of Central Line Associated Blood Stream infections is at the lowest level ever recorded (appendix 2) and is consistent with those recorded by Great Ormond Street Hospital (appendix 3).
- All organisms considered to be unusual have been isolated previously in this patient group in the Royal Hospital for Sick Children, Yorkhill.

Commented [l21]: Do these reflect the definitions of NHSGGC described above?

Does this section need to be moved up?

Commented [a22]: Where are HCAI and CAI?

Commented [l23]: 6b remains open to outpatients… cross-over

Commented [a24]: Is this restriction ot limited to new cases only: existing cases requiring admission could be admitted?

Commented [l25]: ?

Commented [a26]: As per national definitions? If not HAI were they HCAI or CAI?

Commented [l27]: How many samples did this include?

Commented [l28]: What data?

Commented [a29]: Evidence for this?

Commented [a30]: Where is the appendix?

Commented [l31]: This sentence doesn't make sense

Commented [a32]: Where is this appendix?

Commented [l33]: Do they use same denominators, etc?

Commented [a34]: Where is this appendix?

Commented [a35]: More detail required on this: time frames they were identified/numbers etc.

Commented [l36]: So now in a new purpose built building… If you were to set these lists out side by side they are exactly the same?

	• Since 2016, patient acuity has increased as has bed occupancy (appendix 5). • There has been no identified link between clinical isolates and results from environmental sampling in Ward 6A except for the case of M. chelonae which was isolated from pre filtered water. -A SBAR report from HPS concluded that following the move in September 2018 the rates of positive blood cultures for both gram negative and environmental bacteria in Glasgow Unit were no different when compared to the rates of the combined Lothian & Aberdeen Units. This provides additional independent evidence (appendix 4 – To be inserted after update – this was previously submitted HPS SBAR).
Actions/Assurance	These actions have been split into those linked to proposed hypothesis and those which should provide assurance going forward. **Hypothesis 1** Patients were exposed to unfiltered water outside of the ward environment. **Actions** • Additional point of use filters (POU) were installed in all areas (except clinic 2 and nuclear medicine – taps being sourced which would enable a POU filter to be added) where this cohort of patients may attend. • Point of use filters were installed in the DSR and the kitchen areas within ward 6A. • Toilet seat covers were fitted to patient en-suites in ward 6A. **Hypothesis 2** Leaking chilled beams were contaminating the patients' environment and leading to colonisation of patients and resulting in infection. **Actions** • Biocide dosing introduced to the chilled beam water system. • Push fittings replaced with mechanical fittings for all chilled beams in Ward 6A. • Increase cleaning of chilled beam outer grilles from 3 monthly to 6 weekly. • A new algorithm regarding the functionality of chilled beams was implemented. This should eliminate the problem experienced during fluctuations in outside temperatures. **Additional actions taken** • HEPA filtration units to be installed in all en-suites in Ward 6A.

Commented [l37]: But same organisms found in drains…

Commented [a38]: What environmental sampling? Chilled beams:
Previously these organisms have been identified

Commented [a39]: The report mentioned the rate of environmental organisms were higher

Commented [a40]: As per previous comments on hypothesis

Commented [l41]: I would pull the section from above down to here

Commented [l42]: So this is in the ward not outside?

Commented [l43]: So this is within the ward not outside?

	• Water pipes to/from the Arjo bath were capped. • New shower hoses procured to ensure that shower heads could not reach the drain if left out of the holder. • Review of line care by practice development was carried out in all areas. • Commencement of antibiotic and antifungal prophylaxis **Further actions agreed ~~-~~to provide ongoing assurance:** • A root cause analysis review to be completed for all clinical cases identified in this incident • Appraisal of options for this cohort of patients will be completed. • A closed NHSGGC face book page developed for parents and carers. • An environmental pathogen SOP will be developed with reset triggers as ~~before;~~ before; in addition to this, a multidisciplinary review will be conducted for all new positive BC with any gram negative or environmental organism going forward. • An air/environmental sampling regimen will be developed with agreed parameters that would trigger additional action. NB there is no agreed standards for air quality in non-ventilated areas so this will be a local SOP. The previously issued HPS SBAR for adult BMT services will be reviewed and will inform this SOP. • Water sampling will continue as per the Water Technical Group recommendations; and ICD can trigger additional water sampling in order to investigate a cluster or trigger. • An external peer review - still being actively pursued by Acute Medical Director. • Enhanced supervision of practice will continue at intervals agreed by Chief Nurse and IPC.
Recommendations	The IMT is asked to note the above, and support the recommendation of the IMT from Friday 13th September 2019 that the ward is re-opened to new admissions. The Senior Management Team Women and Children will be kept informed of all results, triggers and reports. It is anticipated that they will liaise with clinical staff as appropriate SCRIBE documents and an installation plan for the additional HEPA filters will be forwarded to HPS for information.

Commented [a44]: Further actions and assurances are not the same thing

Commented [l45]: Who will this be reported to? It might be more beneficial to split these further actions and assurances as I do think these are two different things

Commented [l46]: Purpose of this?

Commented [l47]: Is this contingency measures? Has this been shared with the IMT?

Commented [a48]: This is not assurance

Commented [l49]: Is this assurance or communication?

Commented [a50]: Have these been agreed by the IMT?

Commented [l51]: Stated what these triggers are

Commented [l52]: Who and also how does this differ from the RCAs?

Commented [l53]: This is not an assurance, this is an action

Commented [a54]: This is an action. Has this been agreed by the IMT

Commented [l55]: As above comment

Commented [a56]: What are these?have they been shared with the IMT?

Commented [a57]: Further detail on the exact nature of the review to be discussed and agreed by IMT

Commented [l58]: Current status?

Commented [l59]: Rationale? Was this ever considered as a hypothesis?

Commented [a60]: Further cases reported

Commented [l61]: Further patient cases have been identified since 13th September

Commented [l62]: Who, what, when

Commented [l63]: What's the plan?

[redacted]

From: Peters, Christine
Sent: 01 October 2019 14:30
To: Peters, Christine; Redfern, Jamie; Hill, Kevin; Conner, Darryl James; Chaudhury, Shahzya; Rodgers, Jennifer
Cc: Joannidis, Pamela; Inkster, Teresa (NHSmail); Gibson, Brenda
Subject: RE: Incident leakage 6A

Good afternoon all,

Microbiology update on swabs taken from the 6A kitchen from leakage area on Friday night.

Swabs are growing a number of organisms some of which have been identified today as:

Klebsiella pneumonia
Acinetobacter noscomialis
Enterobacter cloace
Rhodotorula
Mould ? Aspergillus – for further ID

This has relevance to any ongoing risk assessments regarding 6A for the IMT.

HAISCRIBE measures will need to take into account the removal route for the mouldy material as there are still neutropenic patients accommodated on the ward as highlighted on Friday – Dr Chauhury confirmed high risk patients were already on antifungal prophylaxis as per policy.

A final report will not be issued until the fungal organisms have been identified,

Kr

[redacted]
Dr Christine Peters
Consultant Microbiologist
Queen Elizabeth University Hospital,
GGC
[redacted]
[redacted]

From: Peters, Christine
Sent: 27 September 2019 18:41
To: Redfern, Jamie; Hill, Kevin; Conner, Darryl James; Chaudhury, Shahzya; Rodgers, Jennifer
Cc: Joannidis, Pamela; Inkster, Teresa (NHSmail); Gibson, Brenda
Subject: Incident leakage 6A

Situation

ICD Dr Peters on call alerted at 5.08 pm regarding a leaking tap in 6A kitchen and an immediate HAISCRIBE was requested

Background

6A is a ward that has 15 beds open for Haematoncology paediatric patients. This ward has been undergoing a number of estates interventions to improve the environment and is subject to an ongoing IMT regarding infections A water leak had been detected by the fridge under the work top in the kitchen on ward 6A. The kitchen is not accessed by patients or parents, and houses a fridge which contains special feeds . Food and drink for relatives and patients is prepared in this room.

Assessment

Dr Peters, Dr Inkster, Dr Chaudhury, SN on ward, Jen Rodgers, Jamie Redfern, Darryl and Kerr (Estates) convened to assess the situation and agree control measures

The understanding was that the hot tap had been leaking for some time –noted today and alerted to estates early afternoon. Hot water had been isolated so dripping was no longer apparent

On inspection:

There was clear evidence of a long standing leak behind the kitchen cabinets, (photos attached) with old bits of paper in situ , wet to the touch and covered with corrosive material.

There was also a clear dead leg with a filter attached ? had been connected to a previous water cooler or other device. Dead legs pose a significant risk in a water system due to stagnation , and there was evidence of wet material immediately below the filter.

There is a clear risk of this being a source of mould and may have contributed to positive air samples on the ward in the past.

Two swabs of black material taken to lab for culture.

Recommendations

- Remove fridge, clean with achtichlor wipes, to be placed in empty room with signage to prevent entry
- Throw out any soft material/ uncovered items in kitchen
- Seal off room , put under negative pressure by closing off supply
- HAISCRIBE to be undertaken on Tuesday to get both dead leg and all wet materials removed
- Jen Rodgers to agree communication with relatives

Please do not hesitate to contact me if any further queries
Kr

[redacted]
Dr Christine Peters
Consultant Microbiologist
Queen Elizabeth University Hospital,
GGC
[redacted]
[redacted]

96a. Re Follow up

[redacted]

From: PETERS, Christine (NHS AYRSHIRE AND ARRAN) [redacted]
Sent: 15 January 2020 13:45
To: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE); BAIN, Marion (NHS NATIONAL SERVICES SCOTLAND)
Subject: Re: Follow up

Thanks for the update Marion,
I agree with Teresa; Prior to you starting I was troubled by the incomplete governance represented by the total exclusion of us, as experts in IC who have documented evidence based concerns , from direct follow up discussions with upper management when those views are not taken on board . Whilst it is clearly plausible that an alternative view is entirely justifyable , I feel that our science informed views are easily misrepresented, truncated, undermined, caricatured, and filtered by third party discussions. Furthermore this leads to an omission of a right to reply when a diamtericlaly opposed view/decision is taken when infact open, documented discussion and clarifications would be a safer approach. For me this is most clearly seen in the abscence of a request for my response as a whistle blower to the "action plan" produced for HIS *as a direct response to our whistle blow SBAR in 2017*. I was not happy with it in terms of accuracy or scope. But was not given the opportunity to comment despite requesting to do so.
I hope your meetings go well and bring us further forward to sustainable mode of working.
kr
Christine

From: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE)
Sent: 15 January 2020 10:47
To: BAIN, Marion (NHS NATIONAL SERVICES SCOTLAND); PETERS, Christine (NHS AYRSHIRE AND ARRAN)
Subject: Re: Follow up
Thanks Marion

One of the issues I am particularly concerned about it is the governance in relation to the Cryptococcal advisory group. This group was established as a subgroup of the Cryptococcal IMT and the report commissioned by myself as the chair of that IMT.

I am aware that parts of the report have been discussed at board meetings and submitted to HSE. This is failed governance as the report should come back to the IMT for comment and discussion before being disseminated elsewhere. Also it is misleading to submit sections of an incomplete report to external agencies without the full picture, particularly when it does not make reference to epidemiology

It would be useful for me as the Chair of the IMT to have an estimated date of report completion as this work has now gone on for a year .

I would also like to point out that this group is not independent, several members of the Crypto IMT sit on this group

Kr
Teresa

Dr Teresa Inkster
Consultant Microbiologist, QEUH

National Training Programme Director Medical Microbiology
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: BAIN, Marion (NHS NATIONAL SERVICES SCOTLAND)
Sent: 15 January 2020 09:20
To: PETERS, Christine (NHS AYRSHIRE AND ARRAN); INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE)
Subject: RE: Follow up

Dear Christine and Teresa

Just wanted to give you a quick update. I have meetings in the diary over the next couple of weeks with relevant people to discuss the points below, and will get back to you once I've had those discussions.

All the best

Marion

Professor Marion Bain
Director of Infection Prevention and Control
NHS Greater Glasgow and Clyde
Senior Medical Consultant
NHS National Services Scotland
[redacted]

From: PETERS, Christine (NHS AYRSHIRE AND ARRAN) [redacted]
Sent: 13 January 2020 11:20
To: BAIN, Marion (NHS NATIONAL SERVICES SCOTLAND) [redacted]
Cc: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE) [redacted]
Subject: Re: Follow up

Hi Marion, Thanks for your response and I look forward to future discussions .

Kr

Christine

From: BAIN, Marion (NHS NATIONAL SERVICES SCOTLAND)
Sent: 13 January 2020 10:24:12
To: PETERS, Christine (NHS AYRSHIRE AND ARRAN)
Cc: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE)
Subject: RE: Follow up

Hello Christine, and thank you to you and Teresa for your time too.

On the other issues:

I will liaise with colleagues on the outstanding issues you mention and get back to you.

On the public statements - Craig White and I have been discussing this and I am checking how these have been informed. Once I have some more details I would welcome another discussion.

Best wishes

Marion

Professor Marion Bain
Director of Infection Prevention and Control
NHS Greater Glasgow and Clyde
Senior Medical Consultant
NHS National Services Scotland
[redacted]

From: PETERS, Christine (NHS AYRSHIRE AND ARRAN) [redacted]
Sent: 10 January 2020 16:46
To: BAIN, Marion (NHS NATIONAL SERVICES SCOTLAND) [redacted]
Cc: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE) [redacted]
Subject: Follow up

Dear Marion,

Thankyou for meeting with us both yesterday and for taking the time to listen to the history that we related.

On reflection there are a couple of issues that we would also like to raise:

1. Outstanding actions from investigating groups with in the organisation:

- HPS whistle blow investigation chaired by Dr De Casteker - was due to update us on documentation of meeting as well as outcomes in early Novemeber with nothing communicated since our interviews in Spetember - covering Clinical Governance, Minutes being inaccurate and changing , Sick leave management and IMT demission process
- Meetings with senior management regarding infection issues - patient placement polcy was to be provided to Microbiology consultants - outstanding

2. Public statements - we have been raising our deep concerns with members of the Oversight Committee regarding accuracy of media statements (as read in the press) as well as comminications to parents. We wondwer how this is being progressed..

thanks again for your time and hope you have a good weekend,

kr

Christine

Consultant MIcrobiologist

QEUH

From: Green, John [redacted]
Sent: 14 February 2020 16:34
To: 'Kathryn.Wilson[redacted]
Cc: Cameron.Adam[redacted]; MacPherson, Anne; Steele, Tom
Subject: RE: Follow-up from Meeting of January 27th
Attachments: Let_15Jan20-Ward5C-5D.PDF; Ward 5C Pressure change report.pdf; Ward 5D 7D Pressure change report.pdf; 20200121 NHS GGC close letter 2.0.pdf

Dear Kate

As of today's deadline I wish to advise that I am unable to provide a full response to your email.

Please be assured that providing a response remains one of our priorities and I aim to do so by 19th February 2020.

I am able to provide the correspondence between the Board and Health Improvement Scotland, attached.

Regards

John T Green
Interim Health and Safety Lead
NHS Greater Glasgow and Clyde
Level 5A
West Glasgow ACH (Yorkhill)
G3 8SJ

[redacted]

HR Support and Advice Unit
[redacted]
Email: [redacted]

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From: Kathryn.Wilson[redacted]
Sent: 06 February 2020 12:14
To: MacPherson, Anne; Steele, Tom
Cc: Cameron.Adam[redacted]; Green, John
Subject: [BlockedURL][ExternaltoGGC]Follow-up from Meeting of January 27th

Dear Anne/Tom

At our meeting on 27th, I promised to get back to you regarding two issues; the content of the Derogation Form completed for PICU and the initial paperwork required regarding Infectious Disease Wards 5C and 5D. I'd be grateful if you could forward this email to Scott Davidson and Anne Harkness as I do not have their contact details.

Derogation Form:

HSE's primary concern is that GGHB is complying with Section 3 of the Health and Safety at Work etc Act (HSWA) to ensure that, as far as is reasonably practicable, patients and visitors are not subject to un-necessary risk. In terms of Specialised Ventilation, compliance with SHTM 03-01 is the primary route to do that. In situations where a decision is made to deviate from the SHTM, Health Facilities Scotland have made it clear to the HSE that any alternative should be of the same, or higher, standard than that set out in the SHTM.

Cameron and I both made clear at the meeting that we would expect that any derogation would cover the points set out on Page 4 of the Notification of Contravention Letter which in turn, would ensure that the provision of Specialised Ventilation Systems is sufficient to meet the Boards duties under HSWA.

Having had the opportunity to look at the form in detail, it is clear that this more detail is required. For example:
There is no evidence of any assessment of risk either in terms of patient safety or the suitability of the ward (stating that there is no evidence of any outbreaks of cross contamination is not an assessment of risk).
There is no rationale included as requested in 1)c)ii) and no contingency plans in place.
There is no clarity as to whether the Ventilation now in place is of the same standard or higher than that required in the SHTM.

Additionally, it is not clear who the signatories are on the back page. The names should be printed to ensure they can be easily identified. I also have some concern that the Infection Control signature is dated two weeks after all the others as that would suggest that, whoever it is, they weren't involved in the discussions or at the sign-off meeting.

The latter might be explained in the minutes of the Ventilation Group that I requested on January 21st but, as I have yet to receive those, I cannot make that assessment.

On the evidence mentioned above, you will need to revisit the derogation process to ensure the above points are covered by 31st March 2020

<u>Infectious Diseases Ward</u>
We discussed that, during the course of the investigation, concerns had also been raised regarding the ventilation on the Respiratory Wards and, in particular, wards 5C and 5D.
In order for me to assess the situation further please forward the following documentation for review:

a. NHS GGC Policy for Infectious Diseases
b. NHS GGC Policy and Procedures for training staff working in these Wards
c. The Commissioning document for the Ward
d. Any verification documentation for the ward
e. All documentation relating to pressure regimes for the Ward (whether completed by H&V or Correct Air)

You also offered to share correspondence between NHS GGC and HIS regarding 5C and 5D and I'd be grateful if you could forward this with the above documentation.

I understand you are keen to progress this quickly so I'd be grateful if you could arrange for both the above paperwork and that requested on the 21st January to be forward to me by 14th February so that I can understand what next steps are required.

Kind Regards

Kate

Kathryn Wilson|HM Inspector of Health and Safety|Field Operations Directorate
Health & Safety Executive | 3rd Floor, Cornerstone House, 107 West Regent Street, Glasgow, G2 2BA |
☎ [redacted] | ☎ [redacted] | ✉ [redacted]

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[3]

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Greater Glasgow and Clyde NHS Board

JB Russell House
Gartnavel Royal Hospital
1055 Great Western Road
GLASGOW
G12 0XH

[redacted]
www.nhsggc.org.uk

Private and Confidential
Ms L Hamilton and Ms S Lovatt
Senior Reviewers
NHS Health Improvement Scotland
Gyle Square
1 South Gyle Crescent
Edinburgh
EH12 9EB

Date: 15th January 2020
Our Ref: JG/LLPAE

Enquiries to: Jane Grant
[redacted]

Dear Ms Hamilton and Ms Lovatt

NHS Greater Glasgow and Clyde, QEUH, Infectious Diseases Unit

Thank you for your letter dated 6th January 2020 in which you note that issues have been raised with you regarding ventilation in Wards 5C and 5D of the Queen Elizabeth University Hospital (QEUH) in Glasgow. I regret that there has been concern about this matter, and I hope this response will be helpful in clarifying the position.

I have noted your specific questions, and having investigated these, I can now confirm the following information by way of response.

1. Are you aware of the concerns, and if so, how have you responded?

We were aware of past concerns around this issue and I will describe the issue and action taken below.

In December 2018, some clinical staff raised potential concerns with regard to air pressure in rooms in Ward 5C (Communicable Diseases) and Ward 5D (General Medicine). The concern at that time was that there was variance in room pressures, making it difficult to plan which rooms could be used for which types of patient, which is important in limiting the risk of airborne infections spreading.

These concerns were responded to following a meeting, also in December 2018, with the Director of our South Sector, Estates and Facilities colleagues, and the lead Infection Control Doctor.

At that time, the wards were assessed by a specialist ventilation contractor and any necessary adjustments were made to ensure that all rooms in Ward 5C and 5D were negatively pressurised in the general ward environment. I have enclosed the reports which verify this. This information was shared with key senior colleagues and the Infectious Diseases Team.

At the same time, further engineering work was already underway to ensure that high risk patient isolation rooms were validated, and this was completed in June 2019.

During this period lower risk patients were cared for in Wards 5C and 5D, and we had an agreed process and triage system for possible or proven Middle East Respiratory Syndrome Coronavirus (MERS Co-V) and smear positive pulmonary Tuberculosis (TB) patients, who were high risk. Those patients were considered on a case by case basis, and if required, transferred to either Glasgow Royal Infirmary or Monklands Hospital, where appropriate facilities were available.

When the work on the isolation rooms was completed in June 2019, high risk patients were then accommodated on the QEUH site. The clinical staff, and a Consultant in Infectious Diseases and General Medicine wrote to colleagues in both Monklands Hospital and Glasgow Royal Infirmary to confirm this position, and thank them for their support whilst this was resolved. Low risk patients continue to be appropriately cared for in 5C and 5D.

It may be helpful to explain that patients with possible or confirmed highly infectious disease are only admitted with the agreement of an Infectious Diseases Consultant, in line with national guidance, to the negative pressure isolation rooms in our Medical High Dependency Unity. Therefore high risk patients in this category are not admitted to Wards 5C or 5D.

2. **How are you assured that the ventilation system within the infectious diseases unit (Wards 5C and 5D) is adequate and that appropriate pressure is maintained?**

The data in the aforementioned and enclosed reports confirms the air pressure in rooms within Wards 5C and 5D, and we are satisfied that this has been maintained.

3. **Have there been any identified patient care issues as a consequence of poor ventilation within Wards 5C and 5D within the last 12 months, and how have these been responded to?**

These concerns appear to have been raised as a potential issue, rather than as a result of a specific incident. We have reviewed our Datix system for recording incidents, and can confirm that we can see no individual patient case with issues that relate to what has been raised, nor are we aware of any specific case.

I hope this information is helpful, but if you require anything else, please do not hesitate to let me know.

Yours sincerely

Jane Grant
Chief Executive
NHS Greater Glasgow and Clyde

QUEEN ELIZABETH UNIVERSITY HOSPITAL

QEUH Adults – Ward 5C - Change Pressure Profile

Client:	NHS Greater Glasgow & Clyde	**Client Contact:**	Darryl Conner
Hospital:	Queen Elizabeth University Hospital	**Site Address:**	1345 Govan Road, Glasgow G51 4TF
Area:	Ward 5C	**AHU:**	124AHU04 S&E 124AHU05 S&E
Theatre Condition:	**N/A**	**Report No:**	A11977
Date of Test:	3rd December 2018	**Date of Last Test:**	N/A
Test Engineer & Report Preparation:	Ian McKenzie	**Signature:**	[redacted]
H&V Approval:	Ian Stewart	**Signature:**	
Client Reviewed by:		**Signature:**	

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16 BARRMILL ROAD
GALSTON
AYRSHIRE
KA4 8HH

Table of Contents

1. Scope of Works
2. Ward 4C & 5C - Results
3. Executive Summary

Section 1 – Scope of Works

Increase 124AHU04 @ 60Hz (RC = 7.7amps) & 124AHU05 @ 56Hz (RC = 7.2amps) max FLC 8.1amps for both extract fans set to full capacity.

Record room pressures form corridor to bedroom pre and ward/floor post balance.

Scope to maximise bedrooms on ward 5C to negative pressure from corridor to bedroom and ward 4C to positive pressure. Target pressures greater than 1Pa.

.

QUEEN ELIZABETH UNIVERSITY HOSPITAL

Section 2 – Ward 4C & 5C Results

WARD -5C (Negative Pressure Ward)					
Room/Bed Nos.:	Pre Fan alteration (BMS Control)	Post Fan Ward Balance	Room/Bed Nos.:	Pre Fan alteration (BMS Control)	Post Fan Ward Balance
57	0	-1.0	71	0	-1.3
58	0	-1.9	72	0	-1.0
59	0	-2.6	73	0	-1.3
60	0	-1.3	74	0	-1.0
61	0	-2.0	75	0	-1.9
62	0	-1.0	76	0	-ve
63	0	-1.5	77	0	-1.4
64	0	-2.5	78	0	-1.0
65	0	-3.5	79	0	-1.4
66	-ve	-1.4	80	0	-ve
67	0	-2.3	81	+ve	-ve
68	0	-1.4	82	+ve	-1.0
69	0	-1.7	83	0	-1.0
70	0	-2.0	84	0	-ve

Comments:
-ve = 0 - <1Pa (notionally negative)
+ve = 0- <1Pa (notionally positive)
Any pressure greater than 1Pa is detailed.

QUEEN ELIZABETH UNIVERSITY HOSPITAL

WARD +4C (Positive Pressure Ward)					
Room/Bed Nos.:	Pre Fan alteration (BMS Control)	Post Fan Ward Balance	Room/Bed Nos.:	Pre Fan alteration (BMS Control)	Post Fan Ward Balance
1-4 Renal Day	+ve	+1.8	64	+ve	+0.8
51	+1.3	+1.6	65	0	+0.8
52	+1.3	+1.7	66	+ve	+1.2
53	+1.1	+1.5	67	+ve	+1.0
54	+1.3	+1.6	68	+ve	+1.1
55	+2.2	+1.8	69	+ve	+1.5
56	+1.6	+1.5	70	+ve	+1.4
57	+1.2	+2.2	71	+1.7	+3.3
58	+2.2	+1.6	72	+1.2	+2.6
59	+1.1	+1.6	73	+1.1	+3.1
60	+1.0	+1.5	74	+ve	+1.8
61	+2.0	+1.9	75	+ve	+1.6
62	+1.3	+1.6			
63	-ve	+0.8			

Comments:
-ve = 0 - <1Pa (notionally negative)
+ve = 0- <1Pa (notionally positive)
Any pressure greater than 1Pa is detailed.

Pressure varied as the corridor doors operated, these also differed if patients toilet doors were open/closed this impacts on door differential pressure to corridor.

Several variances slightly change the profile, the door finish also has an impact on the pressure control. The retro fit of door drop down seals would help with this control and stabilise pressures, as fitted on ward 4B.

3. Executive Summary

The fan inverters, as advised by Barkell the AHU manufacturer were set to operate at their max capacity on FLC (Full Load Current) In the case of the AHU serving the floors 5C 124AHU04 & 124AHU05 we set the inverter drives to a max (in hand operation) set point of 56Hz for 124AHU05 and 60Hz for 124AHU04.

The detail shown is with main fan adjustments only, we await a HAI-SCRIBE sign off before commencing with individual ward balancing. The HAI-SCRIBE will cover us for gaining access to VCDs (volume control dampers) located about ceiling tiles, these are located and have been identified on layout drawings to form part of the HAI-SCRIBE.

The VCDs are either in and mostly located in corridor locations, however some are located within occupied bedrooms above suspended ceiling grids.

The next, as discussed actions, would be to alter the main branch VCDs, controlling alterations proportionally to each floor to increase extract volumes within rooms/wards that are to control to a negative pressure and reduce extract volumes to increase rooms/wards where positive pressures are required.

Another action discussed was to attach door drop down seals (as fitted in ward 4B) except we have recommended adjustable seals, as this will aid with the room pressure control on an individual room by room basis, without requiring access to individual rooms and local VCDs.

The initial findings are encouraging and alterations of main branch dampers will support the desired end result.

Going forward I will update and expand on the attached, for transparency of our actions and adjustments. This will also help with the assessment of the next required ward pressure change.

Ian McKenzie
H&V Commissioning Services Ltd.

QUEEN ELIZABETH UNIVERSITY HOSPITAL

QEUH Adults – Ward 7D & 5D - Change Pressure Profile to Negative Wards

Client:	NHS Greater Glasgow & Clyde	**Client Contact:**	Darryl Conner
Hospital:	Queen Elizabeth University Hospital	**Site Address:**	1345 Govan Road, Glasgow G51 4TF
Area:	Ward 5D &7D	**AHU:**	123AHU04 Extract 123AHU05 Extract
Theatre Condition:	**N/A**	**Report No:**	A12104
Date of Test:	23rd December 2018	**Date of Last Test:**	N/A
Test Engineer & Report Preparation:	Ian McKenzie	**Signature:**	[redacted]
H&V Approval:	Ian Stewart	**Signature:**	
Client Reviewed by:		**Signature:**	

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KA4 8HH

Table of Contents

1. Scope of Works
2. Ward 5D & 7D - Results
3. Executive Summary

Section 1 – Scope of Works

Increase 123AHU04 @ 56.5Hz (RC = 7.8amps) & 123AHU05 @ 51Hz (RC = 8.0amps) max FLC 8.1amps for both extract fans set to full capacity.

Record room pressures form corridor to bedroom pre and ward/floor post balance.

Scope to maximise bedrooms on ward 5D & 7D from a neutral pressure room to corridor to a negative pressure from corridor to bedroom. Target pressures greater than 1Pa.

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QUEEN ELIZABETH UNIVERSITY HOSPITAL

Section 2 – Ward 5D & 7D Results

WARD -7D (Negative Pressure Corridor to Rooms)					
Room/Bed Nos.:	Pre Fan alteration (BMS Control)	Post Fan Ward Balance	Room/Bed Nos.:	Pre Fan alteration (BMS Control)	Post Fan Ward Balance
29	+2.3	-ve	43	+0.8	-0.4
30	0	-1.1	44	+1.3	-1.0
31	+1	-2.8	45	+ve	-1.3
32	+1.3	-1.0	46	+2.7	-1.1
33	+1.0	-1.1	47	+1.6	-1.0
34	+0.7	-0.8	48	+1.3	-1.7
35	+0.9	-ve	49	+1.0	-1.0
36	+0.9	-ve	50	+0.7	-1.2
37	-ve	-ve	51	+0.8	-1.0
38	-ve	-1.4	52	+0.8	-1.9
39	-1.0	-1.0	53	+0.8	-1.2
40	-0.7	-1.4	54	+0.8	-1.4
41	-0.5	-1.0	55	+ve	-ve
42	-1.6	-1.8	56	+0.7	-1.1

Comments:
-ve = 0 - <1Pa (notionally negative)
+ve = 0- <1Pa (notionally positive)
Any pressure greater than 1Pa is detailed.

Room pressures vary due to toilet doors being open/closed fabric seal of room and door seal to frame and distance from frame to floor. Most bedrooms doors open during survey and these were closed one door at a time to record pressures. This will also have a varying factor to recording room pressures.

QUEEN ELIZABETH UNIVERSITY HOSPITAL

WARD -5D (Negative Pressure Corridor to Rooms)					
Room/Bed Nos.:	Pre Fan alteration (BMS Control)	Post Fan Ward Balance	Room/Bed Nos.:	Pre Fan alteration (BMS Control)	Post Fan Ward Balance
29	-ve	-0.4	43	-ve	-1.1
30	-ve	-0.4	44	-ve	-1.3
31	-ve	-0.7	45	-ve	-1.0
32	0	-0.4	46	0	-1.0
33	0	-0.3	47	-ve	-1.4
34	0	-0.5	48	-ve	-1.8
35	+ve	-1.0	49	-ve	-2.4
36	-ve	-1.0	50	-ve	-1.3
37	0	-0.7	51	-ve	-1.5
38	+ve	-0.7	52	-1.2	-2.7
39	0	-0.8	53	+ve	-1.2
40	-ve	-1.1	54	+1.1	-2.1
41	+ve	-1.3	55	+1.7	-1.1
42	0	-0.6	56	+0.6	-1.8

Comments:
-ve = 0 - <1Pa (notionally negative)
+ve = 0- <1Pa (notionally positive)
Any pressure greater than 1Pa is detailed.

Pressure varied as the corridor doors operated, these also differed if patients toilet doors were open/closed this impacts on door differential pressure to corridor.

Several variances slightly change the profile, the door finish also has an impact on the pressure control. The retro fit of door drop down seals would help with this control and stabilise pressures, as fitted on ward 4B.

3. Executive Summary

The fan inverters, as advised by Barkell the AHU manufacturer were set to operate at their max capacity on FLC (Full Load Current) In the case of the AHU serving the floors 7D 123AHU04 & 123AHU05 we set the inverter drives to a max (in hand operation) set point of 51Hz for 123AHU05 and 56.5Hz for 123AHU04.

Another action discussed was to attach door drop down seals (as fitted in ward 4B) except we have recommended adjustable seals, as this will aid with the room pressure control on an individual room by room basis, without requiring access to individual rooms and local VCDs.

TOILET EXTRACT FIRE DAMPERS CLOSED – MARKED UP DRAWINGS PASSED TO ESTATES FOR LOCATION.
The detail shown above shows that there would appear to be fire dampers dropped in between rooms, the patients in the rooms could not be moved at this time, as per detail in the HAI-SCRIBE the patients need to vacate the room when we are lifting the suspended ceiling tiles to adjust dampers, although altering MFSD is not detailed within the HAI-SCRIBE.

We did open a MFSD (Motorised Fire/Smoke Damper) in the toilet next to the mechanical riser that we found closed serving 123AHU04 Extract east side of Tower D 6th Floor

Ian McKenzie
H&V Commissioning Services Ltd.

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Gyle Square
1 South Gyle Crescent
Edinburgh
EH12 9EB

Glasgow office
Delta House
50 West Nile Street
Glasgow
G1 2NP

[redacted] [redacted]

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Jane Grant
Chief Executive
NHS Greater Glasgow and Clyde

Gyle Square Office
Date: 21 January 2020
[redacted]

Dear Ms Grant

NHS GGC, QEUH, Infectious Diseases Unit

Thank you for your correspondence of 15 January 2020, in which you provided information in relation to the potential concerns about the ventilation within Ward 5C and Ward 5D at the Queen Elizabeth University Hospital.

On review of the information provided, it is clear that there has been concerted action taken to address the concerns, which were originally raised in December 2018 and we note the two reports provided as evidence of the work undertaken. We note you are satisfied that air pressure in the rooms has been maintained.

We also acknowledge that patients with possible or confirmed highly infectious disease are only admitted with the agreement of an Infectious Diseases Consultant, in line with national guidance, to the negative pressure isolation rooms in the Medical High Dependency Unity. Therefore high risk patients in this category are not admitted to Wards 5C or 5D.

We are therefore satisfied that no further assessment of this matter is required by Healthcare Improvement Scotland at this time. We will notify the complainant of our decision.

I would like to take this opportunity to thank you for your support with this matter.

Yours sincerely

I would like to take this opportunity to thank you for your support with this matter.

Yours sincerely

[redacted]
Leanne Hamilton
Senior Reviewer (job share)

[redacted]
Sue Lovatt
Senior Reviewer (job share)

NHS SCOTLAND

From: Green, John [redacted]
Sent: 19 February 2020 16:23
To: 'Kathryn.Wilson[redacted]
Cc: Cameron.Adam[redacted]; MacPherson, Anne; Steele, Tom
Subject: RE: Follow-up from Meeting of January 27th
Attachments: Ward 5D & 7D Pressure change report. 23 Dec 2018 Rev2.1.pdf; Ward 5C Pressure change report. 14 Dec 2017 Rev1.doc; 123 - AHU 04 SUPPLY (4TH TO 7TH FLOOR WARDS) REPORT (1).pdf; 123 - AHU 05 DIRTY EXTRACT (4TH TO 7TH FLOOR WARDS).pdf; 123 - AHU 05 SUPPLY (4TH TO 7TH FLOOR WARDS).pdf; 123 - AHU 03 SUPPLY (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS) REPORT.PDF; 123 - AHU 03 CLEAN EXTRACT (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS) REPORT.PDF; 123 - AHU 04 SUPPLY (4TH TO 7TH FLOOR WARDS) REPORT.PDF; 124 - AHU 04 DIRTY EXTRACT REPORT.PDF; 124 - AHU 04 SUPPLY REPORT.PDF; 124 - AHU 05 DIRTY EXTRACT REPORT.PDF; 124 - AHU 05 SUPPLY REPORT.PDF; 124 - AHU 06 SUPPLY REPORT.PDF; 124 - AHU 06 CLEAN EXTRACT REPORT.PDF

Dear Kate

Thank you for your email.

Firstly can I apologise for the delay in response to your email of 21st January. I trust you have now received that response with the associated requested documentation.

To the matters below;

Infectious Diseases Ward
We discussed that, during the course of the investigation, concerns had also been raised regarding the ventilation on the Respiratory Wards and, in particular, wards 5C and 5D.
In order for me to assess the situation further please forward the following documentation for review:

a. *NHS GGC Policy for Infectious Diseases* –
There is no specific policy. As with all NHS Scotland Boards, NHSGGC operates with the National Infection Prevention and Control Manual which can be found via this link http://www.nipcm.hps.scot.nhs.uk/

b. *NHS GGC Policy and Procedures for training staff working in these Wards* –
Infection Prevention and Control, training for staff in wards 5C and 5D is consistent with the training undertaken by other clinical staff working in other clinical settings. This is set out in the NHSGGC Infection Prevention and Control (IPC) Education and Training Hub. Access to this can be arranged. As you will be aware the subject of training for staff within wards 5C and 5D was the subject of an Improvement Notice which was complied with in early 2019.

c. *The Commissioning document for the Ward* –
Requested documentation attached

d. *Any verification documentation for the ward* –
As above the named wards are general wards therefore no specific verification was undertaken .

e. *All documentation relating to pressure regimes for the Ward (whether completed by H&V or Correct Air)* –
Requested documentation attached

You also offered to share correspondence between NHS GGC and HIS regarding 5C and 5D and I'd be grateful if you could forward this with the above documentation.

This documentation was provided on 14th February 2020.

By way of further explanation I can advise that, as described, in the correspondence with HIS , Wards 5C and D are not used for the care of patients with a high consequence infectious disease. For the period of time when work was underway to create negative pressure rooms arrangements were in place with adjacent hospitals to admit such patients.

We note your comments re the derogation document. As we stated at the meeting, such a document did not previously exist within NHS Scotland and therefore what we presented was developed by ourselves and before receipt of the NOC letter. We note your comments on the document for PICU and we can confirm that the PICU derogation will be reviewed and revised in the light of those comments, and that they will also be taken into account when undertaking the HDU and ICU derogations. We did identify at the meeting that the works associated with preparing the derogations would not be complete by 31st March 2020. We will write to you shortly with a request to extend this deadline to a date based on a programme of works currently being developed.

Regards

John T Green
Interim Health and Safety Lead
NHS Greater Glasgow and Clyde
Level 5A
West Glasgow ACH (Yorkhill)
G3 8SJ

[redacted]

HR Support and Advice Unit
[redacted]

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Internet Telephone E-mail Direct

From: Kathryn.Wilson[redacted]
Sent: 06 February 2020 12:14
To: MacPherson, Anne; Steele, Tom
Cc: Cameron.Adam[redacted]; Green, John
Subject: [BlockedURL][ExternaltoGGC]Follow-up from Meeting of January 27th

Dear Anne/Tom

At our meeting on 27th, I promised to get back to you regarding two issues; the content of the Derogation Form completed for PICU and the initial paperwork required regarding Infectious Disease Wards 5C and 5D. I'd be grateful if you could forward this email to Scott Davidson and Anne Harkness as I do not have their contact details.

Derogation Form:

HSE's primary concern is that GGHB is complying with Section 3 of the Health and Safety at Work etc Act (HSWA) to ensure that, as far as is reasonably practicable, patients and visitors are not subject to un-necessary risk. In terms of Specialised Ventilation, compliance with SHTM 03-01 is the primary route to do that. In situations where a decision is made to deviate from the SHTM, Health Facilities Scotland have made it clear to the HSE that any alternative should be of the same, or higher, standard than that set out in the SHTM.

Cameron and I both made clear at the meeting that we would expect that any derogation would cover the points set out on Page 4 of the Notification of Contravention Letter which in turn, would ensure that the provision of Specialised Ventilation Systems is sufficient to meet the Boards duties under HSWA.

Having had the opportunity to look at the form in detail, it is clear that this more detail is required. For example:
There is no evidence of any assessment of risk either in terms of patient safety or the suitability of the ward (stating that there is no evidence of any outbreaks of cross contamination is not an assessment of risk).
There is no rationale included as requested in 1)c)ii) and no contingency plans in place.
There is no clarity as to whether the Ventilation now in place is of the same standard or higher than that required in the SHTM.

Additionally, it is not clear who the signatories are on the back page. The names should be printed to ensure they can be easily identified. I also have some concern that the Infection Control signature is dated two weeks after all the others as that would suggest that, whoever it is, they weren't involved in the discussions or at the sign-off meeting.

The latter might be explained in the minutes of the Ventilation Group that I requested on January 21st but, as I have yet to receive those, I cannot make that assessment.

On the evidence mentioned above, you will need to revisit the derogation process to ensure the above points are covered by 31st March 2020

Infectious Diseases Ward

We discussed that, during the course of the investigation, concerns had also been raised regarding the ventilation on the Respiratory Wards and, in particular, wards 5C and 5D.
In order for me to assess the situation further please forward the following documentation for review:

f. NHS GGC Policy for Infectious Diseases
g. NHS GGC Policy and Procedures for training staff working in these Wards
h. The Commissioning document for the Ward
i. Any verification documentation for the ward
j. All documentation relating to pressure regimes for the Ward (whether completed by H&V or Correct Air)

You also offered to share correspondence between NHS GGC and HIS regarding 5C and 5D and I'd be grateful if you could forward this with the above documentation.

I understand you are keen to progress this quickly so I'd be grateful if you could arrange for both the above paperwork and that requested on the 21st January to be forward to me by 14th February so that I can understand what next steps are required.

Kind Regards

Kate

Kathryn Wilson|HM Inspector of Health and Safety|Field Operations Directorate
Health & Safety Executive | 3rd Floor, Cornerstone House, 107 West Regent Street, Glasgow, G2 2BA |
☎ [redacted] | ☎ [redacted] | ✉ [redacted]

[3]

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QUEEN ELIZABETH UNIVERSITY HOSPITAL

QEUH Adults – Ward 7D & 5D - Change Pressure Profile to Negative Wards

Client:	NHS Greater Glasgow & Clyde	**Client Contact:**	Darryl Conner
Hospital:	Queen Elizabeth University Hospital	**Site Address:**	1345 Govan Road, Glasgow G51 4TF
Area:	Ward 5D &7D	**AHU:**	123AHU04 Extract 123AHU05 Extract
Theatre Condition:	**N/A**	**Report No:**	A12104
Date of Test:	23rd December 2018	**Date of Last Test:**	N/A
Test Engineer & Report Preparation:	Ian McKenzie	**Signature:**	[redacted]
H&V Approval:	Ian Stewart	**Signature:**	
Client Reviewed by:		**Signature:**	

KILKNOWE OFFICE
16 BARRMILL ROAD
GALSTON
AYRSHIRE
KA4 8HH

Table of Contents

1. Scope of Works
2. Ward 5D & 7D - Results
3. Executive Summary

Section 1 – Scope of Works

Increase 123AHU04 @ 56.5Hz (RC = 7.8amps) & 123AHU05 @ 51Hz (RC = 8.0amps) max FLC 8.1amps for both extract fans set to full capacity.

Record room pressures form corridor to bedroom pre and ward/floor post balance.

Scope to maximise bedrooms on ward 5D & 7D from a neutral pressure room to corridor to a negative pressure from corridor to bedroom. Target pressures greater than 1Pa.

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QUEEN ELIZABETH UNIVERSITY HOSPITAL

Section 2 – Ward 5D & 7D Results

WARD -7D (Negative Pressure Corridor to Rooms)					
Room/Bed Nos.:	Pre Fan alteration (BMS Control)	Post Fan Ward Balance	Room/Bed Nos.:	Pre Fan alteration (BMS Control)	Post Fan Ward Balance
29	+2.3	-ve	43	+0.8	-0.4
30	0	-1.1	44	+1.3	-1.0
31	+1	-2.8	45	+ve	-1.3
32	+1.3	-1.0	46	+2.7	-1.1
33	+1.0	-1.1	47	+1.6	-1.0
34	+0.7	-0.8	48	+1.3	-1.7
35	+0.9	-ve	49	+1.0	-1.0
36	+0.9	-ve	50	+0.7	-1.2
37	-ve	-ve	51	+0.8	-1.0
38	-ve	-1.4	52	+0.8	-1.9
39	-1.0	-1.0	53	+0.8	-1.2
40	-0.7	-1.4	54	+0.8	-1.4
41	-0.5	-1.0	55	+ve	-ve
42	-1.6	-1.8	56	+0.7	-1.1

Comments:
-ve = 0 - <1Pa (notionally negative)
+ve = 0- <1Pa (notionally positive)
Any pressure greater than 1Pa is detailed.

Room pressures vary due to toilet doors being open/closed fabric seal of room and door seal to frame and distance from frame to floor. Most bedrooms doors open during survey and these were closed one door at a time to record pressures. This will also have a varying factor to recording room pressures.

QUEEN ELIZABETH UNIVERSITY HOSPITAL

WARD -5D (Negative Pressure Corridor to Rooms)					
Room/Bed Nos.:	Pre Fan alteration (BMS Control)	Post Fan Ward Balance	Room/Bed Nos.:	Pre Fan alteration (BMS Control)	Post Fan Ward Balance
29	-ve	-0.4	43	-ve	-1.1
30	-ve	-0.4	44	-ve	-1.3
31	-ve	-0.7	45	-ve	-1.0
32	0	-0.4	46	0	-1.0
33	0	-0.3	47	-ve	-1.4
34	0	-0.5	48	-ve	-1.8
35	+ve	-1.0	49	-ve	-2.4
36	-ve	-1.0	50	-ve	-1.3
37	0	-0.7	51	-ve	-1.5
38	+ve	-0.7	52	-1.2	-2.7
39	0	-0.8	53	+ve	-1.2
40	-ve	-1.1	54	+1.1	-2.1
41	+ve	-1.3	55	+1.7	-1.1
42	0	-0.6	56	+0.6	-1.8

Comments:
-ve = 0 - <1Pa (notionally negative)
+ve = 0- <1Pa (notionally positive)
Any pressure greater than 1Pa is detailed.

Pressure varied as the corridor doors operated, these also differed if patients toilet doors were open/closed this impacts on door differential pressure to corridor.

Several variances slightly change the profile, the door finish also has an impact on the pressure control. The retro fit of door drop down seals would help with this control and stabilise pressures, as fitted on ward 4B.

3. Executive Summary

The fan inverters, as advised by Barkell the AHU manufacturer were set to operate at their max capacity on FLC (Full Load Current) In the case of the AHU serving the floors 7D 123AHU04 & 123AHU05 we set the inverter drives to a max (in hand operation) set point of 51Hz for 123AHU05 and 56.5Hz for 123AHU04.

Another action discussed was to attach door drop down seals (as fitted in ward 4B) except we have recommended adjustable seals, as this will aid with the room pressure control on an individual room by room basis, without requiring access to individual rooms and local VCDs.

TOILET EXTRACT FIRE DAMPERS CLOSED – MARKED UP DRAWINGS PASSED TO ESTATES FOR LOCATION.
The detail shown above shows that there would appear to be fire dampers dropped in between rooms, the patients in the rooms could not be moved at this time, as per detail in the HAI-SCRIBE the patients need to vacate the room when we are lifting the suspended ceiling tiles to adjust dampers, although altering MFSD is not detailed within the HAI-SCRIBE.

We did open a MFSD (Motorised Fire/Smoke Damper) in the toilet next to the mechanical riser that we found closed serving 123AHU04 Extract east side of Tower D 6th Floor

Ian McKenzie
H&V Commissioning Services Ltd.

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QEUH Adults – Ward 5C - Change Pressure Profile

Client:	NHS Greater Glasgow & Clyde	**Client Contact:**	Darryl Conner
Hospital:	Queen Elizabeth University Hospital	**Site Address:**	1345 Govan Road, Glasgow G51 4TF
Area:	Ward 5C	**AHU:**	124AHU04 S&E 124AHU05 S&E
Theatre Condition:	**N/A**	**Report No:**	A11977
Date of Test:	3rd December 2018	**Date of Last Test:**	N/A
Test Engineer & Report Preparation:	Ian McKenzie	**Signature:**	[redacted]
H&V Approval:	Ian Stewart	**Signature:**	
Client Reviewed by:		**Signature:**	

KILKNOWE OFFICE
16 BARRMILL ROAD
GALSTON
AYRSHIRE
KA4 8HH

Table of Contents

1. Scope of Works
2. Ward 4C & 5C - Results
3. Executive Summary

Section 1 – Scope of Works

Increase 124AHU04 @ 60Hz (RC = 7.7amps) & 124AHU05 @ 56Hz (RC = 7.2amps) max FLC 8.1amps for both extract fans set to full capacity.

Record room pressures form corridor to bedroom pre and ward/floor post balance.

Scope to maximise bedrooms on ward 5C to negative pressure from corridor to bedroom and ward 4C to positive pressure. Target pressures greater than 1Pa.

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Section 2 – Ward 4C & 5C Results

WARD -5C (Negative Pressure Ward)					
Room/Bed Nos.:	**Pre Fan alteration (BMS Control)**	**Post Fan Ward Balance**	**Room/Bed Nos.:**	**Pre Fan alteration (BMS Control)**	**Post Fan Ward Balance**
57	**0**	**-1.0**	**71**	**0**	**-1.3**
58	**0**	**-1.9**	**72**	**0**	**-1.0**
59	**0**	**-2.6**	**73**	**0**	**-1.3**
60	**0**	**-1.3**	**74**	**0**	**-1.0**
61	**0**	**-2.0**	**75**	**0**	**-1.9**
62	**0**	**-1.0**	**76**	**0**	**-ve**
63	**0**	**-1.5**	**77**	**0**	**-1.4**
64	**0**	**-2.5**	**78**	**0**	**-1.0**
65	**0**	**-3.5**	**79**	**0**	**-1.4**
66	**-ve**	**-1.4**	**80**	**0**	**-ve**
67	**0**	**-2.3**	**81**	**+ve**	**-ve**
68	**0**	**-1.4**	**82**	**+ve**	**-1.0**
69	**0**	**-1.7**	**83**	**0**	**-1.0**
70	**0**	**-2.0**	**84**	**0**	**-ve**

Comments:
-ve = 0 - <1Pa (notionally negative)
+ve = 0- <1Pa (notionally positive)
Any pressure greater than 1Pa is detailed.

WARD +4C (Positive Pressure Ward)					
Room/Bed Nos.:	**Pre Fan alteration (BMS Control)**	**Post Fan Ward Balance**	**Room/Bed Nos.:**	**Pre Fan alteration (BMS Control)**	**Post Fan Ward Balance**
1-4 Renal Day	**+ve**	**+1.8**	**64**	**+ve**	**+0.8**
51	**+1.3**	**+1.6**	**65**	**0**	**+0.8**
52	**+1.3**	**+1.7**	**66**	**+ve**	**+1.2**
53	**+1.1**	**+1.5**	**67**	**+ve**	**+1.0**
54	**+1.3**	**+1.6**	**68**	**+ve**	**+1.1**
55	**+2.2**	**+1.8**	**69**	**+ve**	**+1.5**
56	**+1.6**	**+1.5**	**70**	**+ve**	**+1.4**
57	**+1.2**	**+2.2**	**71**	**+1.7**	**+3.3**
58	**+2.2**	**+1.6**	**72**	**+1.2**	**+2.6**
59	**+1.1**	**+1.6**	**73**	**+1.1**	**+3.1**
60	**+1.0**	**+1.5**	**74**	**+ve**	**+1.8**
61	**+2.0**	**+1.9**	**75**	**+ve**	**+1.6**
62	**+1.3**	**+1.6**			
63	**-ve**	**+0.8**			

Comments:
-ve = 0 - <1Pa (notionally negative)
+ve = 0- <1Pa (notionally positive)
Any pressure greater than 1Pa is detailed.

Pressure varied as the corridor doors operated, these also differed if patients toilet doors were open/closed this impacts on door differential pressure to corridor.

Several variances slightly change the profile, the door finish also has an impact on the pressure control. The retro fit of door drop down seals would help with this control and stabilise pressures, as fitted on ward 4B.

3. Executive Summary

The fan inverters, as advised by Barkell the AHU manufacturer were set to operate at their max capacity on FLC (Full Load Current) In the case of the AHU serving the floors 5C 124AHU04 & 124AHU05 we set the inverter drives to a max (in hand operation) set point of 56Hz for 124AHU05 and 60Hz for 124AHU04.

The detail shown is with main fan adjustments only, we await a HAI-SCRIBE sign off before commencing with individual ward balancing. The HAI-SCRIBE will cover us for gaining access to VCDs (volume control dampers) located about ceiling tiles, these are located and have been identified on layout drawings to form part of the HAI-SCRIBE.

The VCDs are either in and mostly located in corridor locations, however some are located within occupied bedrooms above suspended ceiling grids.

The next, as discussed actions, would be to alter the main branch VCDs, controlling alterations proportionally to each floor to increase extract volumes within rooms/wards that are to control to a negative pressure and reduce extract volumes to increase rooms/wards where positive pressures are required.

Another action discussed was to attach door drop down seals (as fitted in ward 4B) except we have recommended adjustable seals, as this will aid with the room pressure control on an individual room by room basis, without requiring access to individual rooms and local VCDs.

The initial findings are encouraging and alterations of main branch dampers will support the desired end result.

Going forward I will update and expand on the attached, for transparency of our actions and adjustments. This will also help with the assessment of the next required ward pressure change.

Ian McKenzie
H&V Commissioning Services Ltd.

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EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N^{o}. 01563 821991
FAX N^{o}. 01563 822220
E-Mail: talk2us@handv.co.uk

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SYSTEM: 123 - AHU 04 SUPPLY (4TH TO 7TH FLOOR WARDS)

WITNESSING OF TESTING AND BALANCING

	Client Representative / Commissioning Manager	Client
Witnessed By:	Julie Miller	
Representing:	Brookfield Multiplex	
Signature:	[redacted]	
Date:	11/12/14	
Witnessed By:		
Representing:		
Signature:		
Date:		

Remarks:

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16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

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SYSTEM: 123 – AHU 04 SUPPLY (4TH TO 7TH FLOOR WARDS)

	AIR SYSTEMS PRE COMMISSIONING SHEET	✓	X	N/A
1.	Check AHU for damage and that all the components are secure	✓		
2.	Check the transit straps have been removed, if applicable	✓		
3.	Check pulleys are secure, tight, aligned and belts are correctly tensioned, if applicable	✓		
4.	Check with the controls engineer that the system is available to run and that plant rotation is correct	✓		
5.	Check all ductwork/air terminals are fitted and that air regulating dampers are open	✓		
6.	Check louvres are fitted and clear from obstructions, if applicable	✓		
7.	Check fire dampers are open, if applicable	✓		
8.	Check the motor overloads are suitable and set			✓
9.	Check VAV or CAV boxes are installed correctly and ready for use.			✓
10.	Check the floor plenums are complete, if applicable			✓
11.	Complete commissioning test sheets.	✓		

COMMENTS

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16 Barrmill Road,
Galston,
Ayshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

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AHU TEST SHEET

SYSTEM: 123 – AHU 04 SUPPLY (4TH TO 7TH FLOOR WARDS)

AHU									
AHU Manufacturer		Barkell		Fan Size		400			
Fan Manufacturer		Comefri		AHU Serial No		OP1 B305 8002			
Fan Type		Centrifugal		AHU Model N°.		TZAF 400 RFF			
		Design		**Test**				**% Design**	
Air Volume (L/S)		2400		2638				110	
External Static Pressure (Pa)		445		Inlet	76	Outlet	253	Total	329
Fan Rotational Speed (R.P.M)		2002		1601					
Filter Test Data	Pre Filter (Pa)	Inlet	N/A	Outlet	N/A			ΔP	*35
	Sec Filter (Pa)	Inlet	N/A	Outlet	N/A			ΔP	*75

MOTOR			
Manufacturer	TEC	Output kW	4.0
Serial N°	1305-0563022	Motor Full Load Current	8.14 Amps
Voltage	400	Motor Running Current	5.0 Amps
	Design	**Test**	
Rotational Speed.	1430	1142	

DRIVE DETAILS			
Motor Pulley/Shaft Size (mm∅)	SPZ 140 28	Motor Pulley Taper Lock Size	1610
Fan Pulley/Shaft Size (mm∅)	SPZ 100 40	Fan Pulley Taper Lock Size	1610
Belt Type/Size	XPZ 950	N°. Of Belts	4
Shaft Centres mm	280	Adjustment	- 25 + 35 mm
Variable Speed Drive	Yes	Set Point	40Hz

STANDBY PLANT							
Test Air Volume	2638	Inlet Pressure	76	Motor Rotational Speed	1142	Motor Running Current	
% Design	110	Outlet Pressure	253	Fan Rotational Speed	1601	5.0 Amps	
Variable Speed Drive			Yes	Set Point	40Hz		

Comments. N/A – Not Applicable

2nd Motor Serial Number – 1305-0563027

*Filter pressure taken from magnehelic gauge.

Static Pressure Sensor = 253Pa

Instrument Used (Ref N°.) HV01/1, HV01/4 & HV01/5

Date: 21/10/14	Engineer: Daniel Gilliland & Steven Hamilton	Sheet 3 of 15

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

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DUCT VOLUME TEST SHEET

SYSTEM: 124 – AHU 04 SUPPLY (4TH TO 7TH FLOOR WARDS)

VELOCITY PROFILE (taken facing air flow) **TEST HOLE LOCATION: LEVEL 8 RISER**

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
Main TH				1100	500	0.6000		2400		4.00	
4.10	4.60	4.60	4.10	4.10	4.00						
4.40	5.00	5.00	4.60	4.50	4.20						
4.30	4.80	4.90	4.80	4.80	4.30						
3.70	4.20	4.30	4.40	4.00	3.80						
Velocity Sub Totals											
16.50	18.60	18.80	17.90	17.40	16.30						

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
105.5	24	4.40	2638	110	157

Remarks:

Instrument Used: HV01/1

Date: 21/10/14 | Engineer: Daniel Gilliland & Steven Hamilton | Sheet 4 of 15

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

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DUCT VOLUME TEST SHEET

SYSTEM: 124 – AHU 04 SUPPLY (4TH TO 7TH FLOOR WARDS)

VELOCITY PROFILE (taken facing air flow)

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
TH1		160				0.0201		40		1.99	
2.00	1.80										
2.10	2.00										
2.10	2.20										
2.00	2.00										
Velocity Sub Totals											
8.20	8.00										

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
16.2	8	2.03	41	102	68

Remarks: Test Hole for Chilled Beam L1/1 Level 6

Instrument Used: HV01/1

Date: 21/10/14 | Engineer: Daniel Gilliland & Steven Hamilton | Sheet 5 of 15

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

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DUCT VOLUME TEST SHEET

SYSTEM: 124 – AHU 04 SUPPLY (4TH TO 7TH FLOOR WARDS)

VELOCITY PROFILE (taken facing air flow)

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
TH2		160				0.0201		40		1.99	
1.90	1.90										
2.10	2.00										
2.00	2.10										
1.90	2.00										
Velocity Sub Totals											
7.90	8.00										

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
15.9	8	1.99	40	100	77

Remarks: Test Hole for Chilled Beam L3/2 Level 6

Instrument Used: HV01/1

Date: 21/10/14 | Engineer: Daniel Gilliland & Steven Hamilton | Sheet 6 of 15

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

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CHILLED BEAM BALANCE SHEET

SYSTEM: 123 – AHU 04 SUPPLY (4TH TO 7TH FLOOR WARDS)

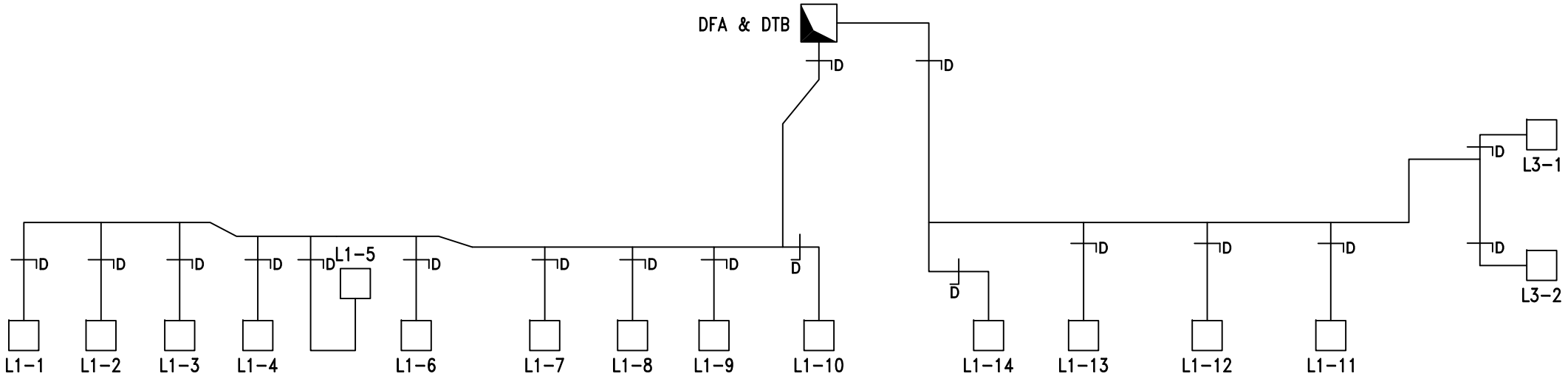
LEVEL 7

Chilled Beam Data			Design Data		Test Data			
No.	Size (mm)	Setting	Volume (l/s)	Pressure (Pa)	Initial Pressure (Pa)	Final Pressure (Pa)	Final Volume (l/s)	% Design
CB/W1/L1/1	N/A	N/A	40	51.8	40	51.5	39.90	100
CB/W1/L1/2	N/A	N/A	40	51.8	42	51.5	39.90	100
CB/W1/L1/3	N/A	N/A	40	51.8	64	53.0	40.50	101
CB/W1/L1/4	N/A	N/A	40	51.8	64	52.0	40.08	100
CB/W1/L1/5	N/A	N/A	40	51.8	65	52.0	40.08	100
CB/W1/L1/6	N/A	N/A	40	51.8	67	52.0	40.08	100
CB/W1/L1/7	N/A	N/A	40	51.8	67	51.5	39.90	100
CB/W1/L1/8	N/A	N/A	40	51.8	69	52.0	40.08	100
CB/W1/L1/9	N/A	N/A	40	51.8	71	53.0	40.50	101
CB/W1/L1/10	N/A	N/A	40	51.8	73	53.0	40.50	101
CB/W1/L3/1	N/A	N/A	40	63.0	74	64.0	40.30	101
CB/W1/L3/2	N/A	N/A	40	63.0	73	63.0	40.00	100
CB/W1/L1/11	N/A	N/A	40	51.8	67	52.0	40.08	100
CB/W1/L1/12	N/A	N/A	40	51.8	66	52.0	40.08	100
CB/W1/L1/13	N/A	N/A	40	51.8	68	53.0	40.50	101
CB/W1/L1/14	N/A	N/A	40	51.8	68	53.0	40.50	101

REMARKS

INSTRUMENT USED: HV01/1

Date:	21/10/14	Engineer:	Daniel Gilliland & Steven Hamilton	Sheet 7 of 15



LEVEL 7

SHEET: 8 OF 15

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
Fax: 01563 822220 email: talk2us@handv.co.uk

A4/089198

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

123-AHU 04 SUPPLY (4TH-7TH FLOOR WARDS)

DRAWN: LH/DG

DATE: 24/11/14

DRG. No.: 5902/V06

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

CHILLED BEAM BALANCE SHEET

SYSTEM: 123 – AHU 04 SUPPLY (4TH TO 7TH FLOOR WARDS)

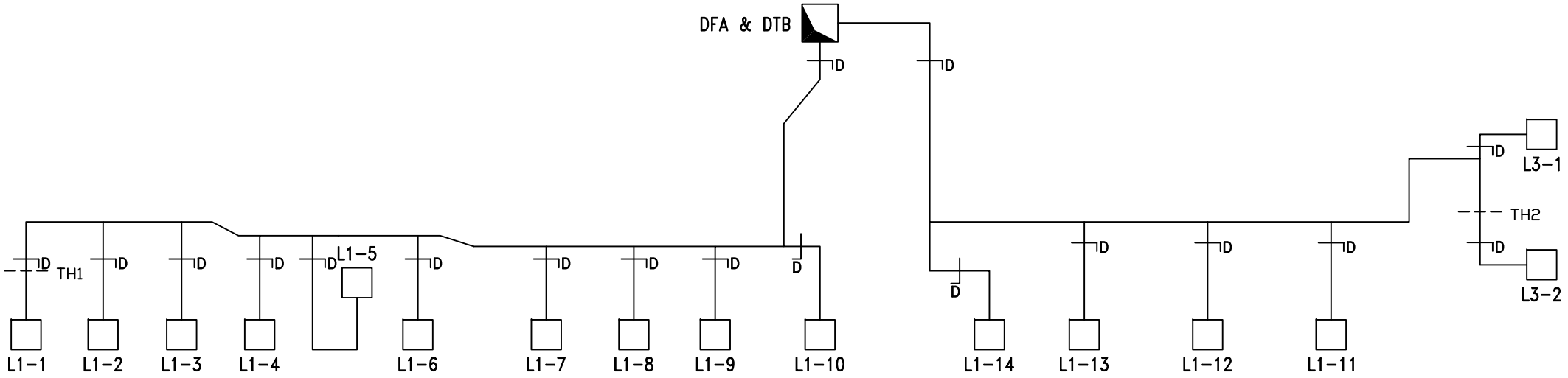
LEVEL 6

Chilled Beam Data			Design Data		Test Data			
No.	Size (mm)	Setting	Volume (l/s)	Pressure (Pa)	Initial Pressure (Pa)	Final Pressure (Pa)	Final Volume (l/s)	% Design
CB/W1/L1/1	N/A	N/A	40	51.8	47	51.5	39.90	100
CB/W1/L1/2	N/A	N/A	40	51.8	49	52.0	40.08	100
CB/W1/L1/3	N/A	N/A	40	51.8	54	52.0	40.08	100
CB/W1/L1/4	N/A	N/A	40	51.8	56	51.5	39.90	100
CB/W1/L1/5	N/A	N/A	40	51.8	56	53.0	40.50	101
CB/W1/L1/6	N/A	N/A	40	51.8	56	51.5	39.90	100
CB/W1/L1/7	N/A	N/A	40	51.8	57	52.0	40.08	100
CB/W1/L1/8	N/A	N/A	40	51.8	58	52.0	40.08	100
CB/W1/L1/9	N/A	N/A	40	51.8	59	53.0	40.50	101
CB/W1/L1/10	N/A	N/A	40	51.8	60	52.0	40.08	100
CB/W1/L3/1	N/A	N/A	40	63.0	72	62.5	39.80	100
CB/W1/L3/2	N/A	N/A	40	63.0	73	63.0	40.00	100
CB/W1/L1/11	N/A	N/A	40	51.8	77	52.0	40.08	100
CB/W1/L1/12	N/A	N/A	40	51.8	79	52.0	40.08	100
CB/W1/L1/13	N/A	N/A	40	51.8	81	53.0	40.50	101
CB/W1/L1/14	N/A	N/A	40	51.8	82	52.0	40.08	100

REMARKS

INSTRUMENT USED: HV01/1

Date:	21/10/14	Engineer:	Daniel Gilliland & Steven Hamilton	Sheet 9 of 15



LEVEL 6

SHEET: 10 OF 15

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
Fax: 01563 822220 email: talk2us@handv.co.uk

A47069198

CONTRACT:	NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123
CLIENT:	MERCURY ENGINEERING UK
TITLE:	SCHEMATIC LAYOUT OF 123-AHU 04 SUPPLY (4TH-7TH FLOOR WARDS)
DRAWN:	LH/DG
DATE:	24/11/14
DRG. No.:	5902/V07

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

CHILLED BEAM BALANCE SHEET

SYSTEM: 123 – AHU 04 SUPPLY (4TH TO 7TH FLOOR WARDS)

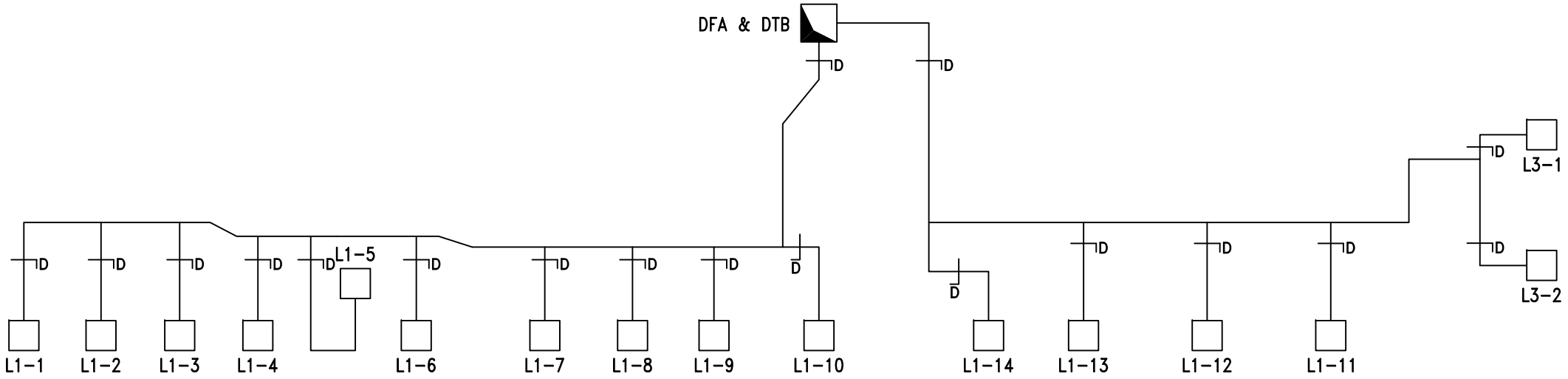
LEVEL 5

Chilled Beam Data			Design Data		Test Data			
No.	Size (mm)	Setting	Volume (l/s)	Pressure (Pa)	Initial Pressure (Pa)	Final Pressure (Pa)	Final Volume (l/s)	% Design
CB/W1/L1/1	N/A	N/A	40	51.8	42	51.5	39.90	100
CB/W1/L1/2	N/A	N/A	40	51.8	45	51.5	39.90	100
CB/W1/L1/3	N/A	N/A	40	51.8	46	52.0	40.08	100
CB/W1/L1/4	N/A	N/A	40	51.8	44	52.0	40.08	100
CB/W1/L1/5	N/A	N/A	40	51.8	52	52.0	40.08	100
CB/W1/L1/6	N/A	N/A	40	51.8	58	52.0	40.08	100
CB/W1/L1/7	N/A	N/A	40	51.8	58	53.0	40.50	101
CB/W1/L1/8	N/A	N/A	40	51.8	69	53.0	40.50	101
CB/W1/L1/9	N/A	N/A	40	51.8	69	53.0	40.50	101
CB/W1/L1/10	N/A	N/A	40	51.8	73	53.0	40.50	101
CB/W1/L3/1	N/A	N/A	40	63.0	74	63.0	40.00	100
CB/W1/L3/2	N/A	N/A	40	63.0	76	64.0	40.30	101
CB/W1/L1/11	N/A	N/A	40	51.8	78	52.0	40.08	100
CB/W1/L1/12	N/A	N/A	40	51.8	83	52.0	40.08	100
CB/W1/L1/13	N/A	N/A	40	51.8	80	52.0	40.08	100
CB/W1/L1/14	N/A	N/A	40	51.8	87	52.0	40.08	100

REMARKS

INSTRUMENT USED: HV01/1

Date:	21/10/14	Engineer:	Daniel Gilliland & Steven Hamilton	Sheet 11 of 15



LEVEL 5

SHEET: 12 OF 15

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Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
A47069198
Fax: 01563 822220 email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

123-AHU 04 SUPPLY (4TH-7TH FLOOR WARDS)

DRAWN: LH/DG

DATE: 24/11/14

DRG. No.: 5902/V08

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

CHILLED BEAM BALANCE SHEET

SYSTEM: 123 – AHU 04 SUPPLY (4TH TO 7TH FLOOR WARDS)

LEVEL 4

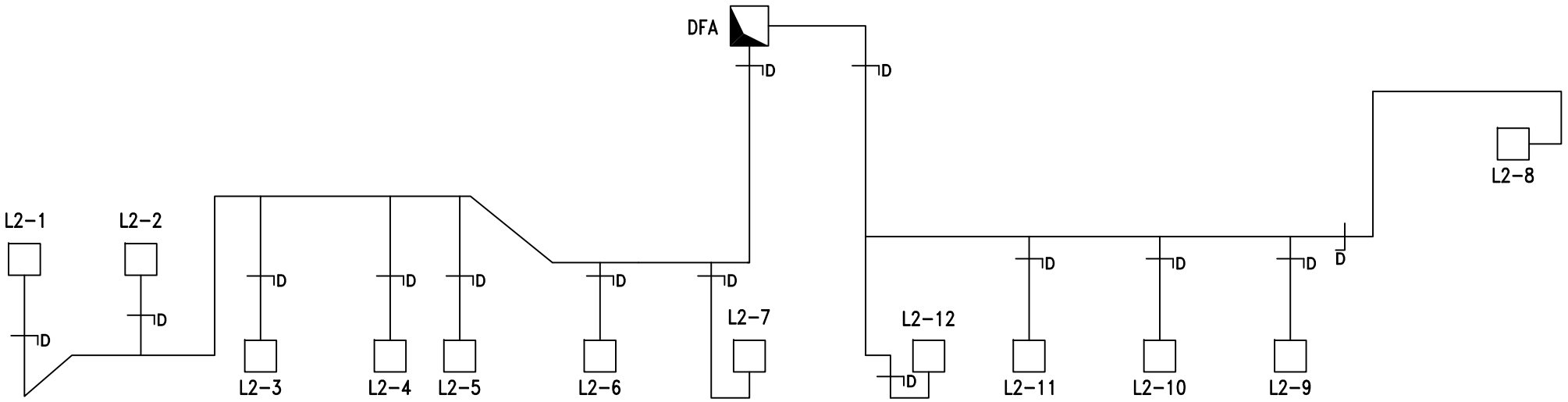
Chilled Beam Data			Design Data		Test Data			
No.	Size (mm)	Setting	Volume (l/s)	Pressure (Pa)	Initial Pressure (Pa)	Final Pressure (Pa)	Final Volume (l/s)	% Design
CB/W1/L2/1	N/A	N/A	40	63	56	62.5	39.8	100
CB/W1/L2/2	N/A	N/A	40	63	56	63.0	40.0	100
CB/W1/L2/3	N/A	N/A	40	63	59	64.0	40.3	101
CB/W1/L2/4	N/A	N/A	40	63	60	64.0	40.3	101
CB/W1/L2/5	N/A	N/A	40	63	57	63.0	40.0	100
CB/W1/L2/6	N/A	N/A	40	63	64	65.0	40.6	102
CB/W1/L2/7	N/A	N/A	40	63	90	64.0	40.3	101
CB/W1/L2/8	N/A	N/A	40	63	74	64.0	40.3	101
CB/W1/L2/9	N/A	N/A	40	63	74	64.0	40.3	101
CB/W1/L2/10	N/A	N/A	40	63	81	63.0	40.0	100
CB/W1/L2/11	N/A	N/A	40	63	84	64.0	40.3	101
CB/W1/L2/12	N/A	N/A	40	63	86	63.0	40.0	100

REMARKS

INSTRUMENT USED: HV01/1

Date:	21/10/14	Engineer:	Daniel Gilliland & Steven Hamilton	Sheet 13 of 15

ALL CHILLED BEAMS PRE-FIXED CB/W1/

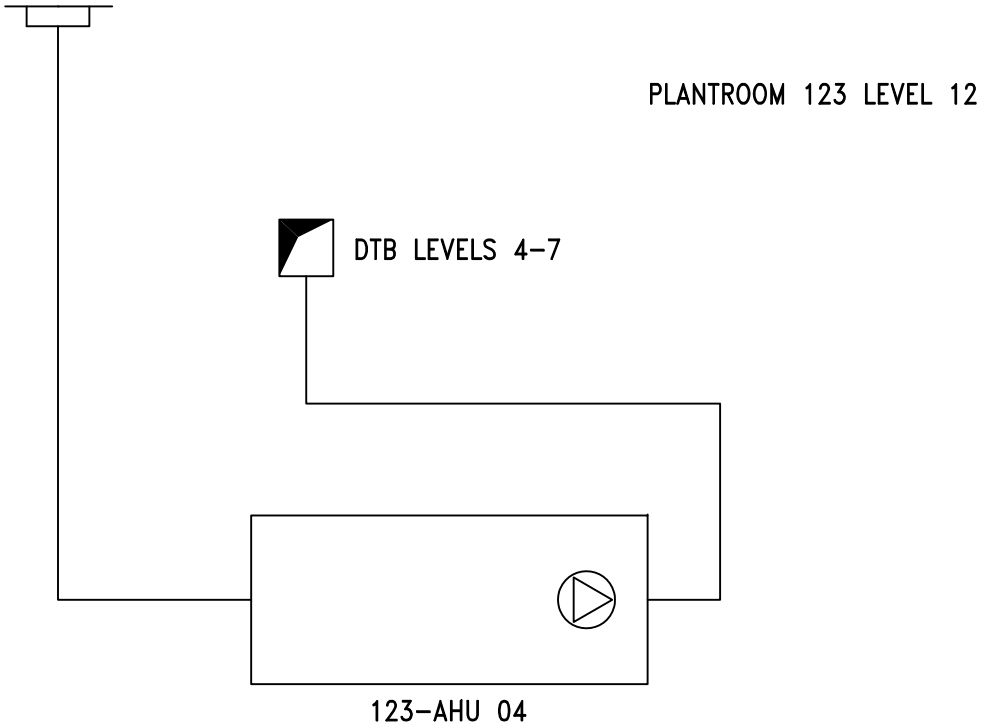


LEVEL 4

SHEET: 14 OF 15

H&V Commissioning Services Limited **Kilknowe Office** **16 Barrmill Road** **Galston** **East Ayrshire, KA4 8HH** **Tel : 01563 824991** **Fax: 01563 822220 email: talk2us@handv.co.uk**	**CONTRACT:** **NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123** **CLIENT:** **MERCURY ENGINEERING UK**	**TITLE:** **SCHEMATIC LAYOUT OF** **123-AHU 04 SUPPLY (4TH-7TH FLOOR WARDS)**	**DRAWN:** LH/DG **DATE:** 22/01/2015 **DRG. No.:** 5902/V09

A4/089198



SHEET: 15 OF 15

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
A4709198
Fax: 01563 822220 email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

123-AHU 04 SUPPLY (4TH-7TH FLOOR WARDS)

DRAWN: LH/DG

DATE: 24/11/14

DRG. No.: 5902/V10

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

SYSTEM: 123 – AHU 05 DIRTY EXTRACT (4TH TO 7TH FLOOR WARDS)

	AIR SYSTEMS PRE COMMISSIONING SHEET	✓	X	N/A
1.	Check AHU for damage and that all the components are secure	✓		
2.	Check the transit straps have been removed, if applicable	✓		
3.	Check pulleys are secure, tight, aligned and belts are correctly tensioned, if applicable	✓		
4.	Check with the controls engineer that the system is available to run and that plant rotation is correct	✓		
5.	Check all ductwork/air terminals are fitted and that air regulating dampers are open	✓		
6.	Check louvres are fitted and clear from obstructions, if applicable	✓		
7.	Check fire dampers are open, if applicable	✓		
8.	Check the motor overloads are suitable and set			✓
9.	Check VAV or CAV boxes are installed correctly and ready for use.			✓
10.	Check the floor plenums are complete, if applicable			✓
11.	Complete commissioning test sheets.	✓		

COMMENTS

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

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AHU TEST SHEET

SYSTEM: 123 – AHU 05 DIRTY EXTRACT (4TH TO 7TH FLOOR WARDS)

AHU											
AHU Manufacturer			Barkell		Fan Size			400			
Fan Manufacturer			Comefri		AHU Serial No			OP1 B305 8003			
Fan Type			Centrifugal		AHU Model N°.			TZAF 450 RFF			
			Design			**Test**				**% Design**	
Air Volume	(L/S)		3109			3348				108	
External Static Pressure	(Pa)		400		Inlet	284	Outlet	100	Total	384	
Fan Rotational Speed	(R.P.M)		1740			1703					
Filter Test Data	Pre Filter	(Pa)	Inlet	N/A	Outlet	N/A			ΔP	N/A	
	Sec Filter	(Pa)	Inlet	N/A	Outlet	N/A			ΔP	*50	

MOTOR				
Manufacturer	TEC	Output kW	3.0	
Serial N°	1305-0265963	Motor Full Load Current	10.9	Amps
Voltage	400	Motor Running Current	7.9	Amps
	Design	**Test**		
Rotational Speed.	1450	1420		

DRIVE DETAILS				
Motor Pulley/Shaft Size (mm∅)	SPZ 180	38	Motor Pulley Taper Lock Size	2012
Fan Pulley/Shaft Size (mm∅)	SPZ 150	50	Fan Pulley Taper Lock Size	2517
Belt Type/Size	XPZ	1112	N°. Of Belts	4
Shaft Centres mm	300		Adjustment	- 30 + 30 mm
Variable Speed Drive	Yes		Set Point	49Hz

STANDBY PLANT							
Test Air Volume	3348	Inlet Pressure	284	Motor Rotational Speed	1420	Motor Running Current	
% Design	98	Outlet Pressure	100	Fan Rotational Speed	1703	7.9	Amps
Variable Speed Drive			Yes	Set Point	49Hz		

Comments. N/A – Not Applicable

2nd Motor Serial Number – 1305-0266180.

*Filter pressure taken from magnehelic gauge.

Instrument Used (Ref N°.) HV01/1, HV01/4 & HV01/5

Date: 30/10/14	Engineer: Daniel Gilliland & Steven Hamilton	Sheet 3 of 14

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

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DUCT VOLUME TEST SHEET

SYSTEM: 123 – AHU 05 DIRTY EXTRACT (4TH TO 7TH FLOOR WARDS)

VELOCITY PROFILE (taken facing air flow)

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
Main TH				1150	650	0.7475		3109		4.16	
4.80	4.60	4.60	4.80	4.80	4.80						
5.20	5.20	5.10	4.80	4.20	4.70						
5.10	5.00	4.50	3.60	3.40	4.00						
4.40	4.30	4.10	3.40	3.90	4.20						
Velocity Sub Totals											
19.50	19.10	18.30	16.60	16.30	17.70						

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
107.5	24	4.48	3348	108	190

Remarks:

Instrument Used: HV01/1

Date: 30/10/14 | Engineer: Daniel Gilliland & Steven Hamilton | Sheet 4 of 14

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16 Barrmill Road,
Galston,
Ayshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

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DUCT VOLUME TEST SHEET

SYSTEM: 123 – AHU 05 DIRTY EXTRACT (4TH TO 7TH FLOOR WARDS)

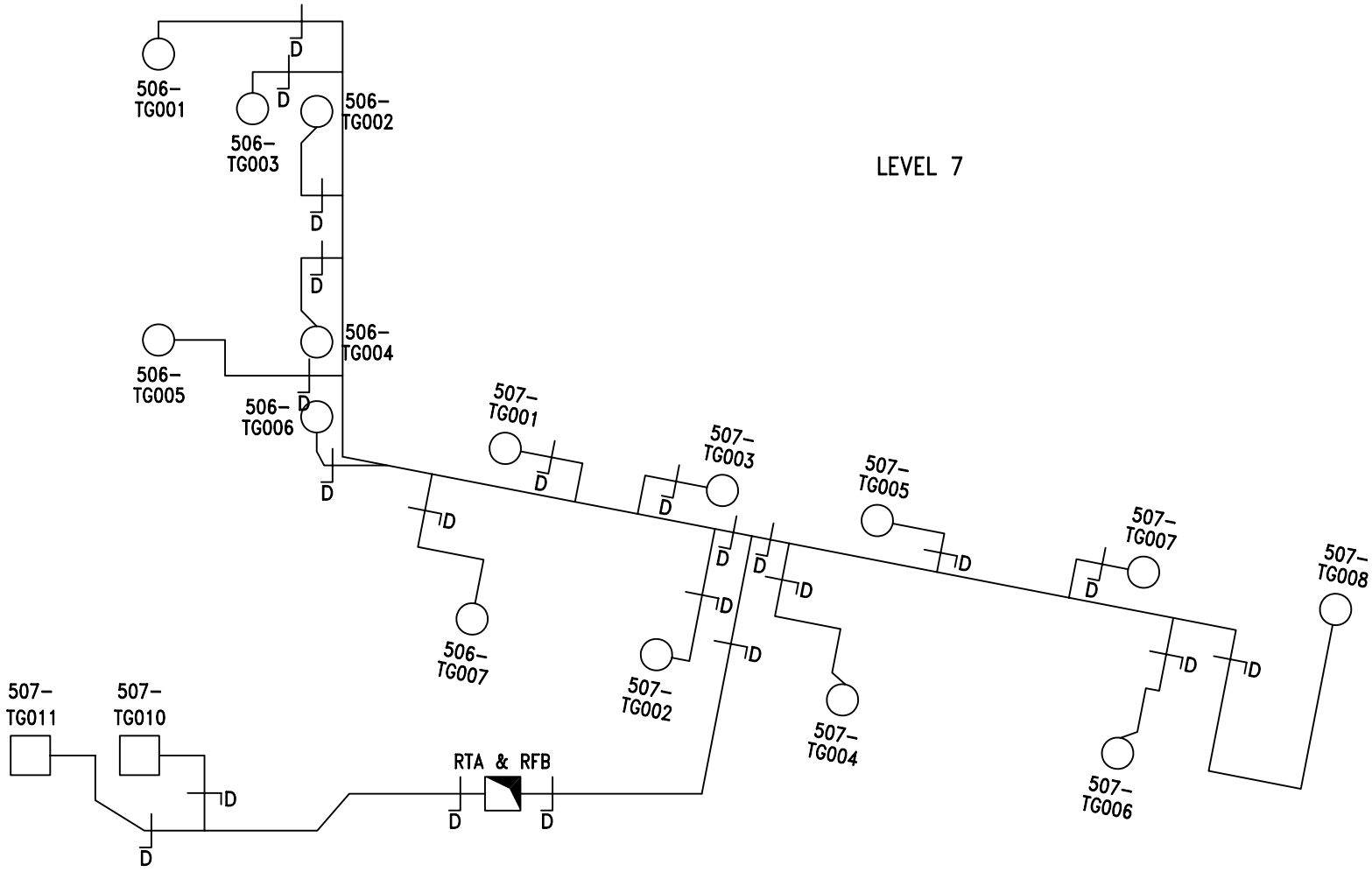
LEVEL 7

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
*TG001	35	34	30	1.19	35.70	102
*TG003	45	38	39	1.19	46.41	103
*TG002	45	43	40	1.19	47.60	106
*TG004	45	44	40	1.19	47.60	106
*TG005	45	44	40	1.19	47.60	106
*TG006	45	45	41	1.19	48.79	108
*TG007	45	57	41	1.19	48.79	108
**TG001	45	62	40	1.19	47.60	106
**TG003	45	55	41	1.19	48.79	108
**TG002	45	64	41	1.19	48.79	108
**TG008	45	39	39	1.19	46.41	103
**TG006	45	48	40	1.19	47.60	106
**TG007	45	56	40	1.19	47.60	106
**TG005	45	57	40	1.19	47.60	106
**TG004	45	55	41	1.19	48.79	108
**TG011	62	146	54	1.19	64.26	104
**TG010	59	136	54	1.19	64.26	109

Remarks: *Grilles prefixed with 506-. **Grilles prefixed with 507-

Instrument Used: HV01/15

Date: 30/10/14	Engineer: Daniel Gilliland & Steven Hamilton	Sheet 6 of 14



H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220
email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123

CLIENT:
MERCURY ENGINEERING LTD.

TITLE:
SCHEMATIC LAYOUT OF 123-AHU05 DIRTY EXTRACT (4TH-7TH FLOOR WARDS)

DRAWN: LH/DG

DATE: 09/01/15

DRG No.: 5902/V15

SHEET: 7 OF 14

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EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

GRILLE TEST SHEET

SYSTEM: 123 – AHU 05 DIRTY EXTRACT (4TH TO 7TH FLOOR WARDS)

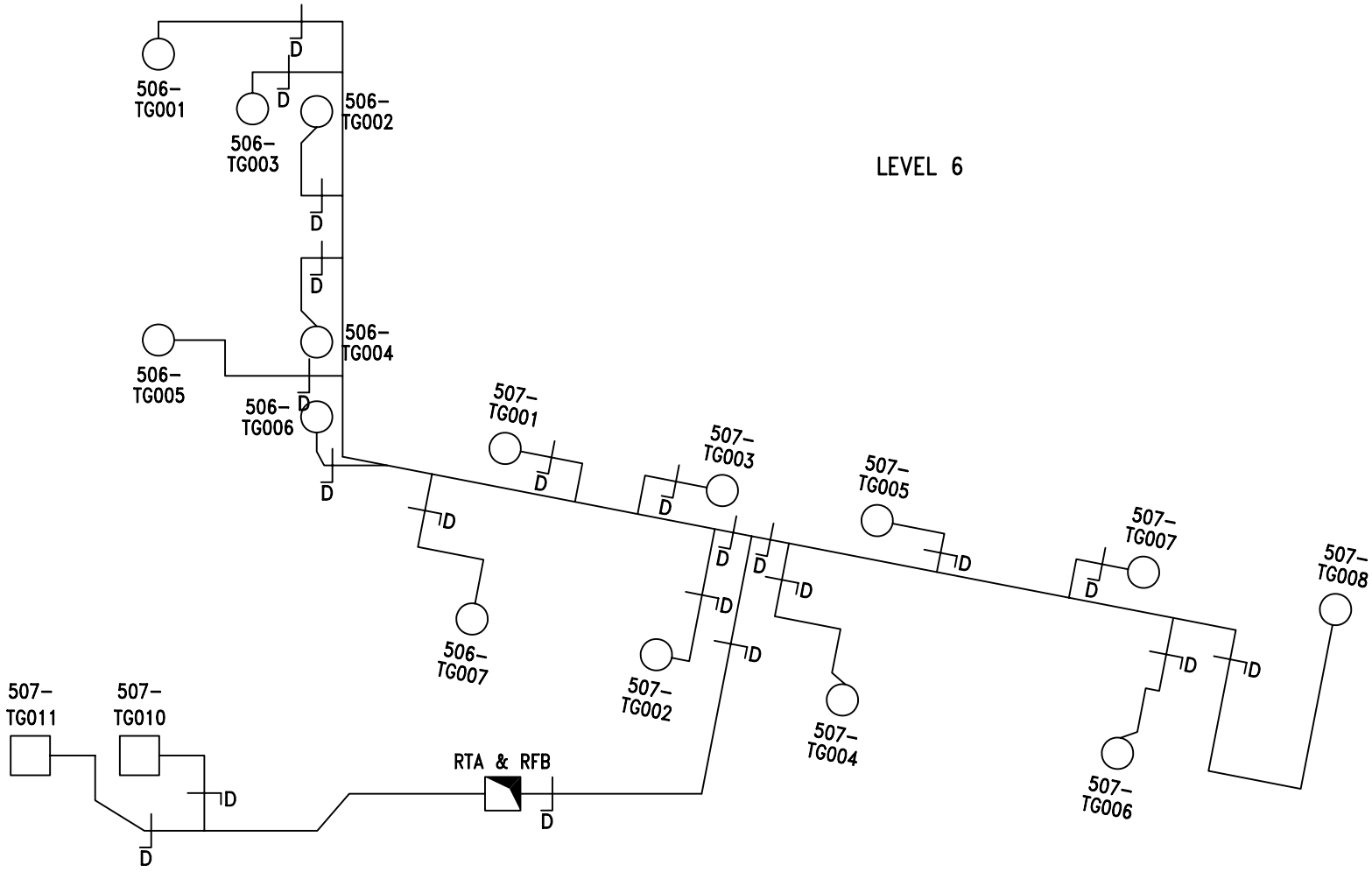
LEVEL 6

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
*TG001	35	33	31	1.19	36.89	105
*TG003	45	37	40	1.19	47.60	106
*TG002	45	42	41	1.19	48.79	108
*TG004	45	43	41	1.19	48.79	108
*TG005	45	53	40	1.19	47.60	106
*TG006	45	44	41	1.19	48.79	108
*TG007	45	56	41	1.19	48.79	108
**TG001	45	61	41	1.19	48.79	108
**TG003	45	54	41	1.19	48.79	108
**TG002	45	57	41	1.19	48.79	108
**TG008	45	38	40	1.19	47.60	106
**TG006	45	47	40	1.19	47.60	106
**TG007	45	51	40	1.19	47.60	106
**TG005	45	56	41	1.19	48.79	108
**TG004	45	54	41	1.19	48.79	108
**TG011	62	132	56	1.19	66.64	107
**TG010	59	127	54	1.19	64.26	109

Remarks: *All Grilles prefixed with 506. **All Grilles prefixed with 507.

Instrument Used: HV01/15

Date: 30/10/14	Engineer: Daniel Gilliland & Steven Hamilton	Sheet 8 of 14



H&V Commissioning Services Limited
Kilknowe Office
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Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220
email: talk2us@handv.co.uk

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SCHEMATIC LAYOUT OF 123-AHU05 DIRTY EXTRACT (4TH-7TH FLOOR WARDS)

DRAWN: LH/DG

DATE: 09/01/15

DRG No.: 5902/V16

SHEET: 9 OF 14

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EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N^{o}. 01563 821991
FAX N^{o}. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

GRILLE TEST SHEET

SYSTEM: 123 – AHU 05 DIRTY EXTRACT (4TH TO 7TH FLOOR WARDS)

LEVEL 5

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
*TG001	35	29	30	1.19	35.70	102
*TG003	45	31	40	1.19	47.60	106
*TG002	45	36	41	1.19	48.79	108
*TG004	45	40	40	1.19	47.60	106
*TG005	45	42	41	1.19	48.79	108
*TG006	45	42	41	1.19	48.79	108
*TG007	45	44	41	1.19	48.79	108
**TG001	45	46	41	1.19	48.79	108
**TG003	45	46	41	1.19	48.79	108
**TG002	45	49	41	1.19	48.79	108
**TG008	45	46	39	1.19	46.41	103
**TG006	45	47	40	1.19	47.60	106
**TG007	45	49	41	1.19	48.79	108
**TG005	45	50	41	1.19	48.79	108
**TG004	45	54	46	1.19	54.74	122
**TG011	62	141	57	1.19	67.83	109
**TG010	59	111	54	1.19	64.26	109

Remarks: *All Grilles prefixed with 506. **All Grilles prefixed with 507.

Instrument Used: HV01/15

Date: 30/10/14	Engineer: Daniel Gilliland & Steven Hamilton	Sheet 10 of 14

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

GRILLE TEST SHEET

SYSTEM: 123 – AHU 05 DIRTY EXTRACT (4TH TO 7TH FLOOR WARDS)

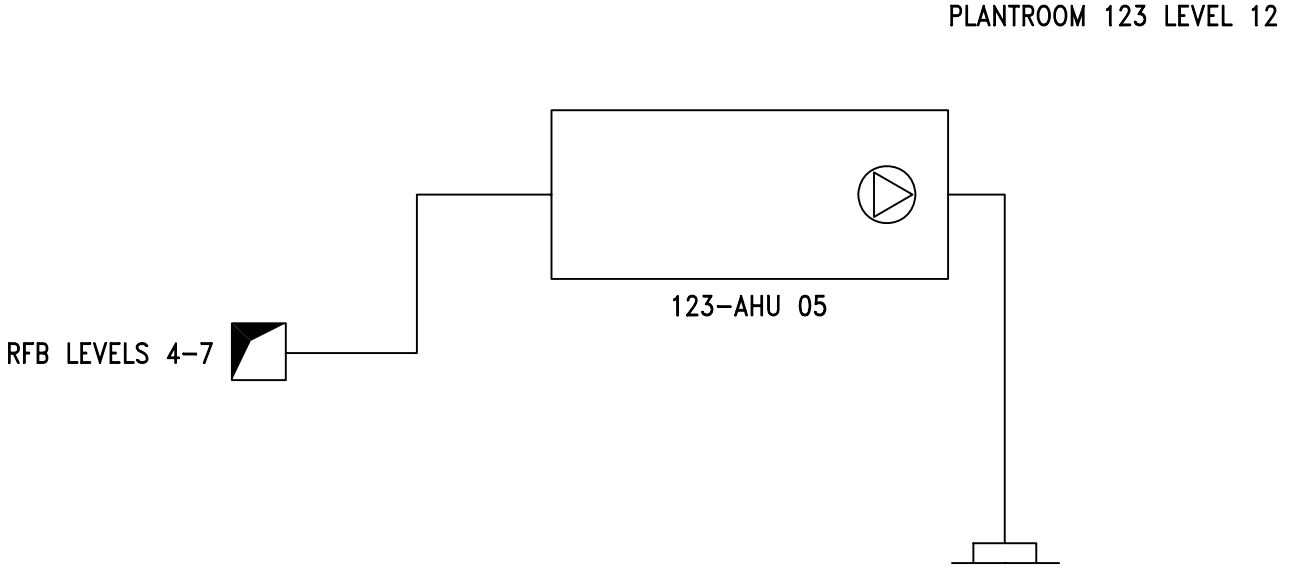
LEVEL 4

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
*TG002	45	35	39	1.19	46.40	103
*TG001	45	38	40	1.19	47.60	106
*TG003	45	38	40	1.19	47.60	106
*TG004	45	36	41	1.19	48.80	108
*TG005	45	47	40	1.19	47.60	106
*TG006	45	43	39	1.19	46.40	103
**TG016	45	46	39	1.19	46.40	103
**TG015	45	49	40	1.19	47.60	106
**TG014	45	57	40	1.19	47.60	106
**TG009	45	46	391	1.19	46.40	103
**TG010	45	46	40	1.19	47.60	106
**TG011	45	49	40	1.19	47.60	106
**TG012	45	51	40	1.19	47.60	106
**TG013	45	55	40	1.19	47.60	106
***TG007	62	110	57	1.19	67.80	109
**TG017	59	94	53	1.19	63.10	107

Remarks: *All Grilles prefixed with 506. **All Grilles prefixed with 507. ***Grille prefixed with 508.

Instrument Used: HV01/15

Date: 30/10/14	Engineer: Daniel Gilliland & Steven Hamilton	Sheet 12 of 14



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H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
A4789198
Fax: 01563 822220 email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

123-AHU 05 EXTRACT (4TH-7TH FLOOR WARDS)

DRAWN: LH/DG

DATE: 24/11/14

DRG. No.: 5902/V17

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EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

SYSTEM: 123 – AHU 05 SUPPLY (4TH TO 7TH FLOOR WARDS)

	AIR SYSTEMS PRE COMMISSIONING SHEET	✓	X	N/A
1.	Check AHU for damage and that all the components are secure	✓		
2.	Check the transit straps have been removed, if applicable	✓		
3.	Check pulleys are secure, tight, aligned and belts are correctly tensioned, if applicable	✓		
4.	Check with the controls engineer that the system is available to run and that plant rotation is correct	✓		
5.	Check all ductwork/air terminals are fitted and that air regulating dampers are open	✓		
6.	Check louvres are fitted and clear from obstructions, if applicable	✓		
7.	Check fire dampers are open, if applicable	✓		
8.	Check the motor overloads are suitable and set			✓
9.	Check VAV or CAV boxes are installed correctly and ready for use.			✓
10.	Check the floor plenums are complete, if applicable			✓
11.	Complete commissioning test sheets.	✓		

COMMENTS

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16 Barrmill Road,
Galston,
Ayshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

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AHU TEST SHEET

SYSTEM: 123 – AHU 05 SUPPLY (4TH TO 7TH FLOOR WARDS)

AHU											
AHU Manufacturer			Barkell		Fan Size			400			
Fan Manufacturer			Comefri		AHU Serial No			OP1 B302 5384			
Fan Type			Centrifugal		AHU Model N°.			TZAF 400 RFF			
			Design			**Test**				**% Design**	
Air Volume (L/S)			2240			2236				100	
External Static Pressure (Pa)			550		Inlet	120	Outlet	270	Total	390	
Fan Rotational Speed (R.P.M)			1902			1900					
Filter Test Data	Pre Filter (Pa)	Inlet	N/A	Outlet	N/A			ΔP	*35		
	Sec Filter (Pa)	Inlet	N/A	Outlet	N/A			ΔP	*75		

MOTOR			
Manufacturer	TEC	Output kW	3.0
Serial N°	1306-1197502	Motor Full Load Current	6.52 Amps
Voltage	400	Motor Running Current	5.7 Amps
	Design	**Test**	
Rotational Speed.	1440	1440	

DRIVE DETAILS			
Motor Pulley/Shaft Size (mm∅)	SPZ 140 28	Motor Pulley Taper Lock Size	1610
Fan Pulley/Shaft Size (mm∅)	SPZ 106 40	Fan Pulley Taper Lock Size	1610
Belt Type/Size	XPZ 975	N°. Of Belts	2
Shaft Centres mm	300	Adjustment	- 35 + 25 mm
Variable Speed Drive	Yes	Set Point	50Hz

STANDBY PLANT							
Test Air Volume	2236	Inlet Pressure	120	Motor Rotational Speed	1440	Motor Running Current	
% Design	100	Outlet Pressure	270	Fan Rotational Speed	1900	5.7 Amps	
Variable Speed Drive			Yes	Set Point	50Hz		

Comments. N/A – Not Applicable

2nd Motor Serial Number – 1306 – 1197499.

*Filter pressure taken from magnehelic gauge.

Static Pressure Sensor = 270Pa

Instrument Used (Ref N°.) HV01/1, HV01/4 & HV01/5

Date: 27/10/14	Engineer: Daniel Gilliland & Steven Hamilton	Sheet 3 of 14

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EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

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DUCT VOLUME TEST SHEET

SYSTEM: 123 – AHU 05 SUPPLY (4TH TO 7TH FLOOR WARDS)

VELOCITY PROFILE (taken facing air flow)

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
Main TH				800	650	0.5200		2240		4.31	
4.00	4.50	4.70	4.20	3.80							
4.40	4.50	4.60	4.60	4.30							
4.10	4.40	4.50	4.70	4.30							
3.60	4.10	4.40	4.40	3.90							

Velocity Sub Totals

16.10	17.50	18.20	17.90	16.30							

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
86	20	4.30	2236	100	230

Remarks:

Instrument Used: HV01/1

Date: 27/10/14 | Engineer: Daniel Gilliland & Steven Hamilton | Sheet 4 of 14

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EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

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DUCT VOLUME TEST SHEET

SYSTEM: 123 – AHU 05 SUPPLY (4TH TO 7TH FLOOR WARDS)

VELOCITY PROFILE (taken facing air flow)

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
TH1		160				0.0201		40		1.99	
1.90	2.00										
2.00	2.10										
2.10	2.10										
2.00	1.90										
Velocity Sub Totals											
8.00	8.10										

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
16.1	8	2.01	40	101	42

Remarks: Test Hole for Chilled Beam L2/1 Level 4

Instrument Used: HV01/1

Date: 27/10/14 | Engineer: Daniel Gilliland & Steven Hamilton | Sheet 5 of 14

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

CHILLED BEAM BALANCE SHEET

SYSTEM: 123 – AHU 05 SUPPLY (4TH TO 7TH FLOOR WARDS)

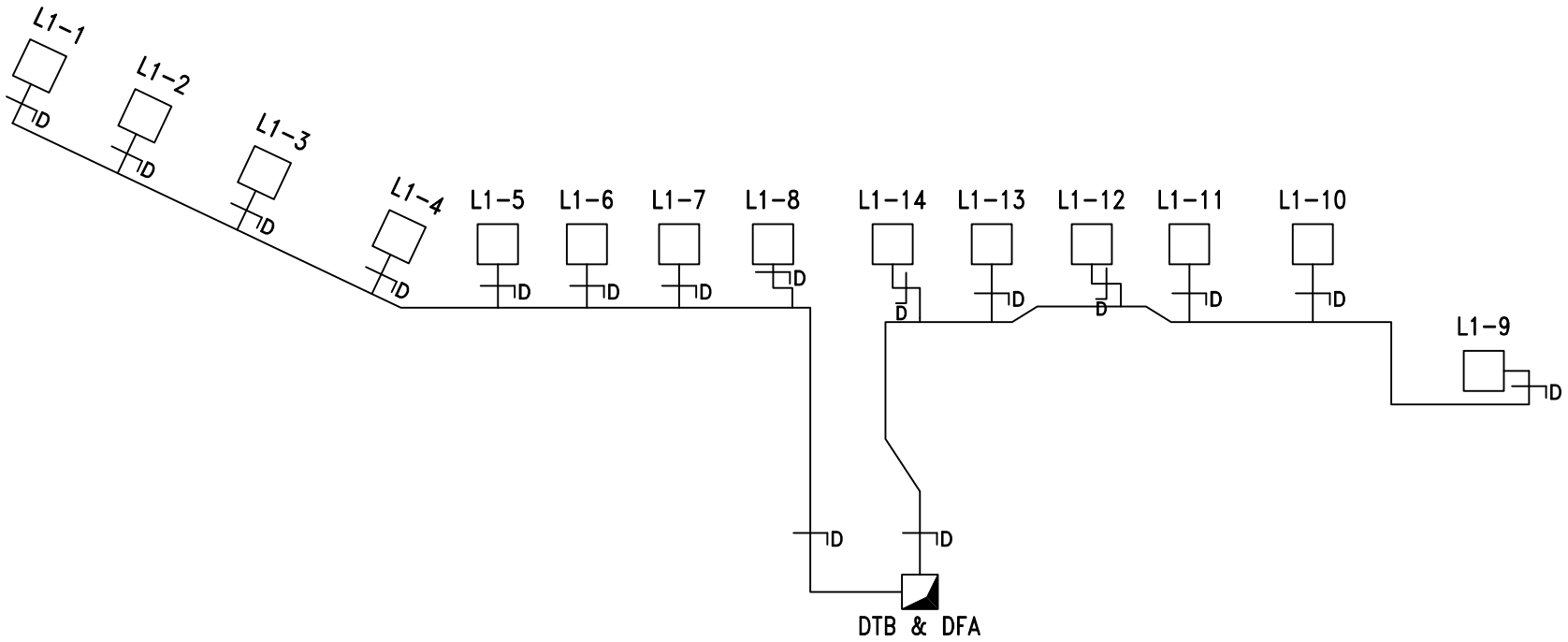
LEVEL 7

Chilled Beam Data			Design Data		Test Data			
No.	Size (mm)	Setting	Volume (l/s)	Pressure (Pa)	Initial Pressure (Pa)	Final Pressure (Pa)	Final Volume (l/s)	% Design
CB/W1/L1/1	N/A	N/A	40	51.8	42	51.5	39.9	100
CB/W1/L1/2	N/A	N/A	40	51.8	47	52	40.08	100
CB/W1/L1/3	N/A	N/A	40	51.8	48	52	40.08	100
CB/W1/L1/4	N/A	N/A	40	51.8	48	52	40.08	100
CB/W1/L1/5	N/A	N/A	40	51.8	62	53	40.5	101
CB/W1/L1/6	N/A	N/A	40	51.8	71	52	40.08	100
CB/W1/L1/7	N/A	N/A	40	51.8	78	53	40.5	101
CB/W1/L1/8	N/A	N/A	40	51.8	76	53	40.5	101
CB/W1/L1/9	N/A	N/A	40	51.8	72	51.5	39.9	100
CB/W1/L1/10	N/A	N/A	40	51.8	85	53	40.5	101
CB/W1/L1/11	N/A	N/A	40	51.8	83	53	40.5	101
CB/W1/L1/12	N/A	N/A	40	51.8	85	54	40.8	102
CB/W1/L1/13	N/A	N/A	40	51.8	87	52	40.08	100
CB/W1/L1/14	N/A	N/A	40	51.8	92	52	40.08	100

REMARKS

INSTRUMENT USED: HV01/1

Date:	27/10/14	Engineer:	Daniel Gilliland & Steven Hamilton	Sheet 6 of 14



LEVEL 7

SHEET: 7 OF 14

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220 email: talk2us@handv.co.uk

A4706-198

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

123-AHU 05 SUPPLY (4TH-7TH FLOOR WARDS)

DRAWN: LH/DG

DATE: 24/11/14

DRG. No.: 5902/V11

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EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

CHILLED BEAM BALANCE SHEET

SYSTEM: 123 – AHU 05 SUPPLY (4TH TO 7TH FLOOR WARDS)

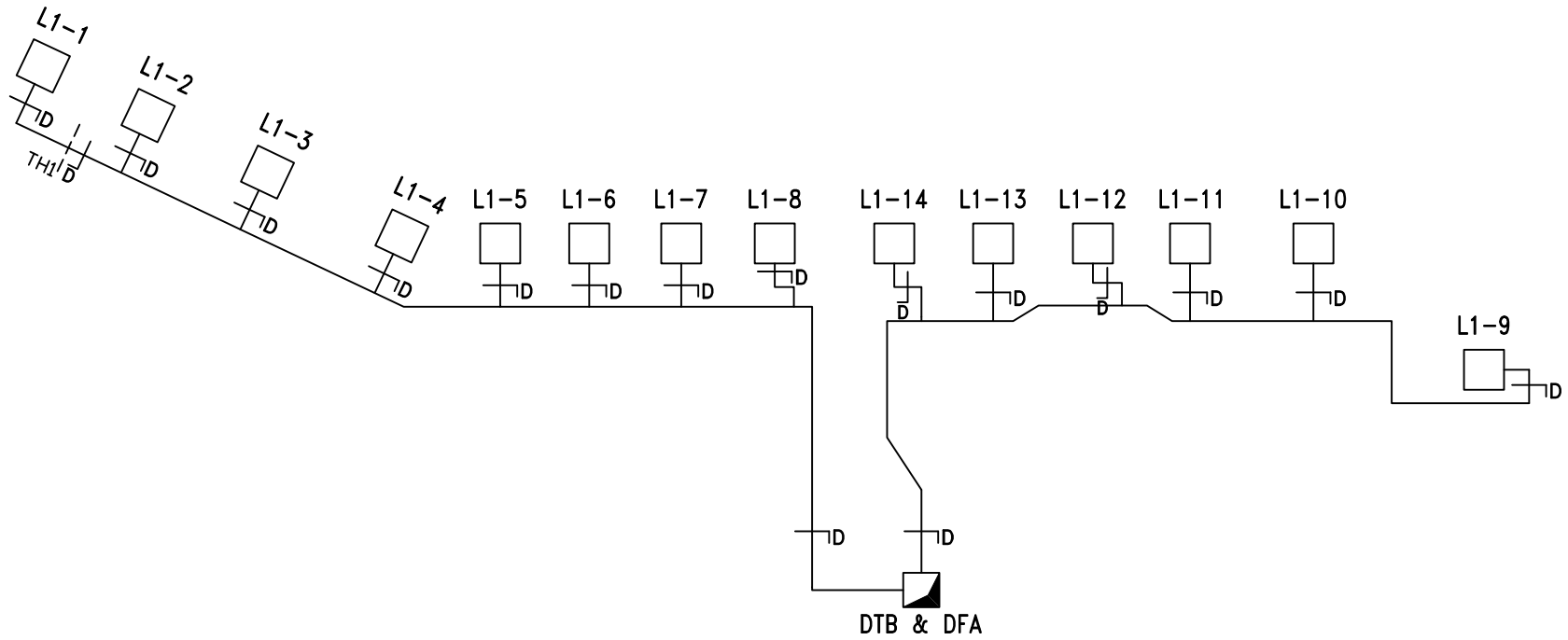
LEVEL 6

Chilled Beam Data			Design Data		Test Data			
No.	Size (mm)	Setting	Volume (l/s)	Pressure (Pa)	Initial Pressure (Pa)	Final Pressure (Pa)	Final Volume (l/s)	% Design
CB/W1/L1/1	N/A	N/A	40	51.8	48	51.5	39.9	100
CB/W1/L1/2	N/A	N/A	40	51.8	52	53	40.5	101
CB/W1/L1/3	N/A	N/A	40	51.8	52	53	40.5	101
CB/W1/L1/4	N/A	N/A	40	51.8	53	52	40.08	100
CB/W1/L1/5	N/A	N/A	40	51.8	60	53	40.5	101
CB/W1/L1/6	N/A	N/A	40	51.8	61	52	40.08	100
CB/W1/L1/7	N/A	N/A	40	51.8	62	52	40.08	100
CB/W1/L1/8	N/A	N/A	40	51.8	64	52	40.08	100
CB/W1/L1/9	N/A	N/A	40	51.8	73	52	40.8	100
CB/W1/L1/10	N/A	N/A	40	51.8	86	53	40.5	101
CB/W1/L1/11	N/A	N/A	40	51.8	84	52	40.8	100
CB/W1/L1/12	N/A	N/A	40	51.8	86	53	40.5	101
CB/W1/L1/13	N/A	N/A	40	51.8	88	54	40.8	102
CB/W1/L1/14	N/A	N/A	40	51.8	93	53	40.5	101

REMARKS

INSTRUMENT USED: HV01/1

Date:	27/10/14	Engineer:	Daniel Gilliland & Steven Hamilton	Sheet 8 of 14



LEVEL 6

SHEET: 9 OF 14

H&V Commissioning Services Limited **Kilknowe Office** **16 Barrmill Road** **Galston** **East Ayrshire, KA4 8HH** **Tel : 01563 821991** **Fax: 01563 822220 email: talk2us@handv.co.uk**	**CONTRACT:** **NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123** **CLIENT:** **MERCURY ENGINEERING UK**	**TITLE:** **SCHEMATIC LAYOUT OF** **123-AHU 05 SUPPLY (4TH-7TH FLOOR WARDS)**	**DRAWN:** LH/DG **DATE:** 24/11/14 **DRG. No.:** 5902/V12

A4706-198

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Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

CHILLED BEAM BALANCE SHEET

SYSTEM: 123 – AHU 05 SUPPLY (4TH TO 7TH FLOOR WARDS)

LEVEL 5

Chilled Beam Data			Design Data		Test Data			
No.	Size (mm)	Setting	Volume (l/s)	Pressure (Pa)	Initial Pressure (Pa)	Final Pressure (Pa)	Final Volume (l/s)	% Design
CB/W1/L1/1	N/A	N/A	40	51.8	40	52	40.08	100
CB/W1/L1/2	N/A	N/A	40	51.8	46	52	40.08	100
CB/W1/L1/3	N/A	N/A	40	51.8	47	53	40.5	101
CB/W1/L1/4	N/A	N/A	40	51.8	47	53	40.5	101
CB/W1/L1/5	N/A	N/A	40	51.8	61	53	40.5	101
CB/W1/L1/6	N/A	N/A	40	51.8	70	53	40.5	101
CB/W1/L1/7	N/A	N/A	40	51.8	74	54	40.8	102
CB/W1/L1/8	N/A	N/A	40	51.8	72	54	40.8	102
CB/W1/L1/9	N/A	N/A	40	51.8	70	51.5	39.9	100
CB/W1/L1/10	N/A	N/A	40	51.8	84	52	40.08	100
CB/W1/L1/11	N/A	N/A	40	51.8	85	52	40.08	100
CB/W1/L1/12	N/A	N/A	40	51.8	86	53	40.5	101
CB/W1/L1/13	N/A	N/A	40	51.8	89	53	40.5	101
CB/W1/L1/14	N/A	N/A	40	51.8	90	53	40.5	101

REMARKS

INSTRUMENT USED: HV01/1

Date:	27/10/14	Engineer:	Daniel Gilliland & Steven Hamilton	Sheet 10 of 14

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EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

CHILLED BEAM BALANCE SHEET

SYSTEM: 123 – AHU 05 SUPPLY (4TH TO 7TH FLOOR WARDS)

LEVEL 4

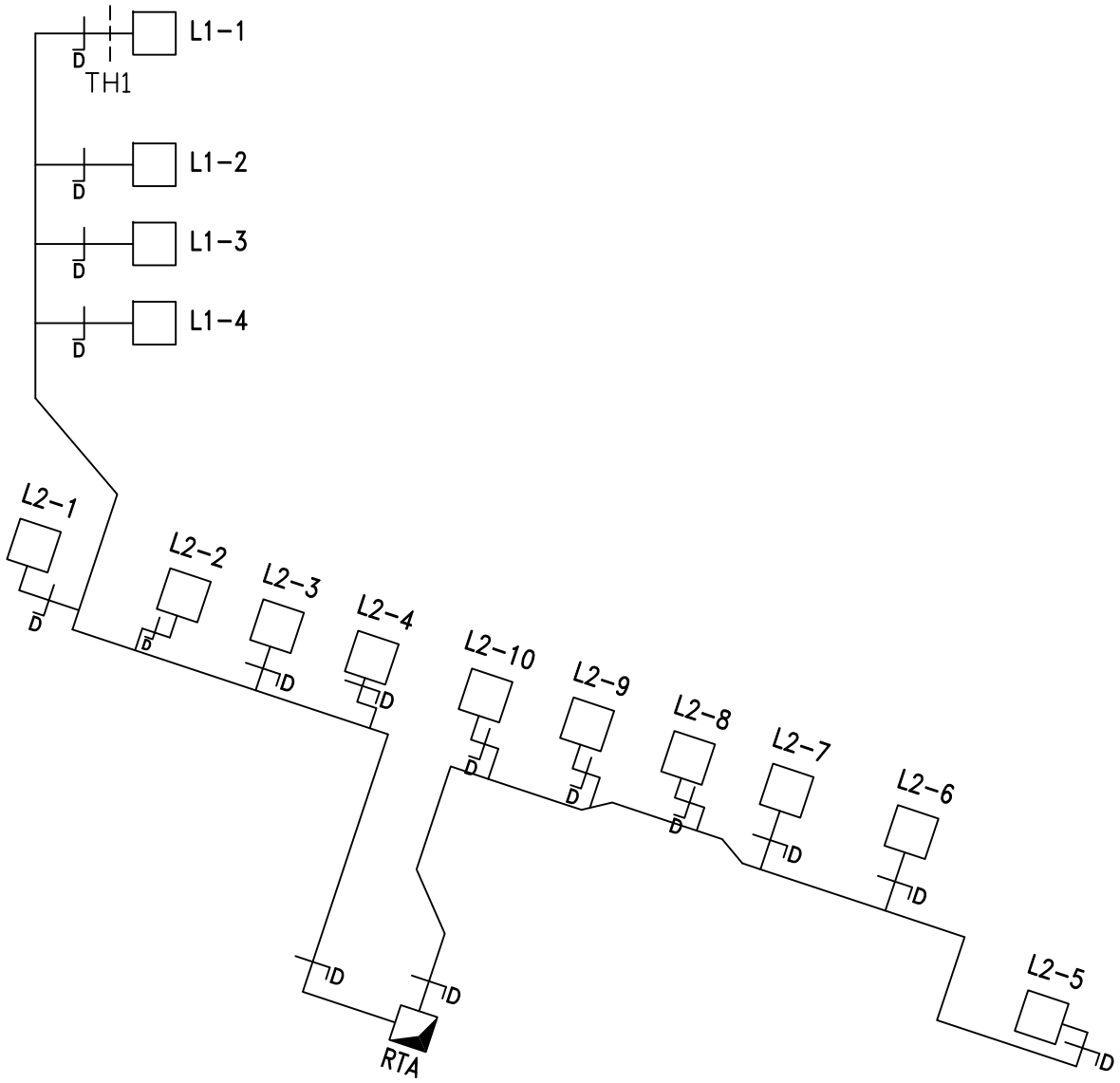
Chilled Beam Data			Design Data		Test Data			
No.	Size (mm)	Setting	Volume (l/s)	Pressure (Pa)	Initial Pressure (Pa)	Final Pressure (Pa)	Final Volume (l/s)	% Design
CB/W1/L2/1	N/A	N/A	40	63	38	52.5	39.8	100
CB/W1/L2/2	N/A	N/A	40	63	43	63	40	100
CB/W1/L2/3	N/A	N/A	40	63	47	63	40	100
CB/W1/L2/4	N/A	N/A	40	63	47	64	40.3	101
CB/W1/L2/1	N/A	N/A	40	63	49	64	40.3	101
CB/W1/L2/2	N/A	N/A	40	63	48	64	40.3	101
CB/W1/L2/3	N/A	N/A	40	63	52	64	40.3	101
CB/W1/L2/4	N/A	N/A	40	63	53	63	40	100
CB/W1/L2/5	N/A	N/A	40	63	60	63	40	100
CB/W1/L2/6	N/A	N/A	40	63	62	64	40.3	101
CB/W1/L2/7	N/A	N/A	40	63	69	64	40.3	101
CB/W1/L2/8	N/A	N/A	40	63	74	63	40	101
CB/W1/L2/9	N/A	N/A	40	63	87	65	40.3	102
CB/W1/L2/10	N/A	N/A	40	63	90	65	40.3	102

REMARKS

INSTRUMENT USED: HV01/1

Date:	27/10/14	Engineer:	Daniel Gilliland & Steven Hamilton	Sheet 12 of 14

ALL CHILLED BEAMS PRE-FIXED CB/W1/



LEVEL 4

SHEET: 13 OF 14

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
A47069198
Fax: 01563 822220 email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123

CLIENT:
MERCURY ENGINEERING UK

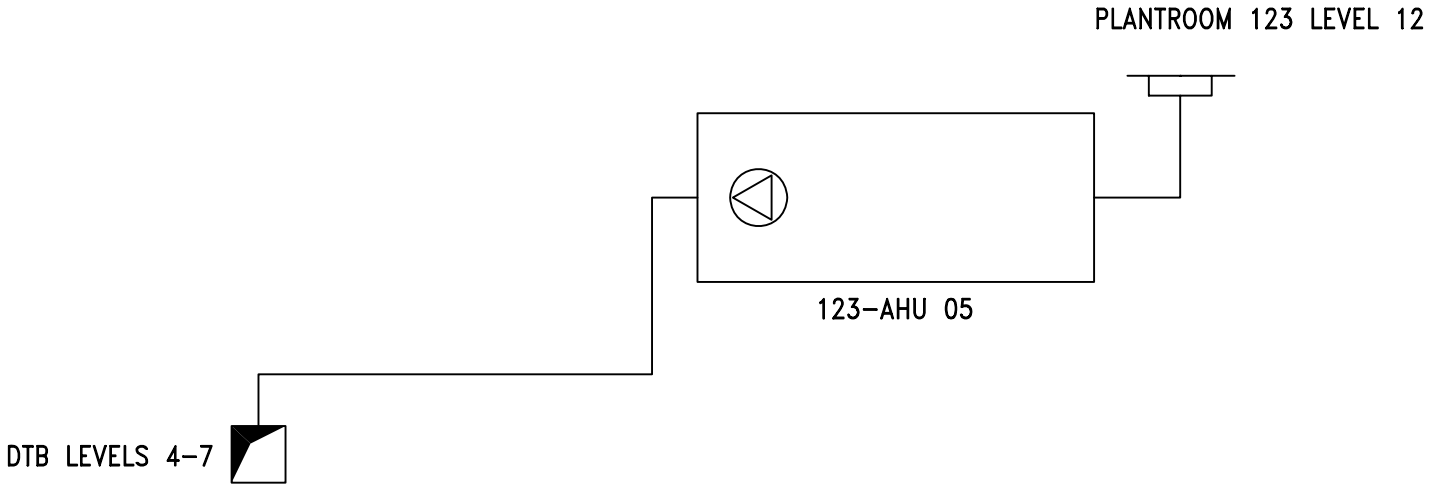
TITLE:
SCHEMATIC LAYOUT OF

123-AHU 05 SUPPLY (4TH-7TH FLOOR WARDS)

DRAWN: LH/DG

DATE: 24/11/14

DRG. No.: 5902/V14



SHEET: 14 OF 14

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
A4709198
Fax: 01563 822220 email: talk2us@handv.co.uk

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123-AHU 05 SUPPLY (4TH-7TH FLOOR WARDS)

DRAWN: LH/DG

DATE: 24/11/14

DRG. No.: 5902/V13

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H & V

Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N^{o}. 01563 821991
FAX N^{o}. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

SYSTEM: 123 - AHU 03 SUPPLY (CENTRAL CORE & 8TH, 11TH FLOOR WARDS)

WITNESSING OF TESTING AND BALANCING

	Client Representative / Commissioning Manager	Client
Witnessed By:	David Wilson	
Representing:	Brookfield Multiplex	
Signature:	[redacted]	
Date:	22/1/15	
Witnessed By:		
Representing:		
Signature:		
Date:		

Remarks:

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Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

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SYSTEM: 123 – AHU 03 SUPPLY (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

	AIR SYSTEMS PRE COMMISSIONING SHEET	✓	X	N/A
1.	Check AHU for damage and that all the components are secure	✓		
2.	Check the transit straps have been removed, if applicable	✓		
3.	Check pulleys are secure, tight, aligned and belts are correctly tensioned, if applicable	✓		
4.	Check with the controls engineer that the system is available to run and that plant rotation is correct	✓		
5.	Check all ductwork/air terminals are fitted and that air regulating dampers are open	✓		
6.	Check louvres are fitted and clear from obstructions, if applicable	✓		
7.	Check fire dampers are open, if applicable	✓		
8.	Check the motor overloads are suitable and set			✓
9.	Check VAV or CAV boxes are installed correctly and ready for use.			✓
10.	Check the floor plenums are complete, if applicable			✓
11.	Complete commissioning test sheets.	✓		

COMMENTS

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Galston,
Ayrshire, KA48HH.
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FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

AHU TEST SHEET

SYSTEM: 123 – AHU 03 SUPPLY (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

AHU											
AHU Manufacturer		Barkell		Fan Size		560					
Fan Manufacturer		Comefri		AHU Serial No		OP1B3046190					
Fan Type		Centrifugal		AHU Model N°.		TZAF 560 RFF					
		Design		**Test**					**% Design**		
Air Volume (L/S)		4724		4913					104		
External Static Pressure (Pa)		550		Inlet	126	Outlet	418		Total	544	
Fan Rotational Speed (R.P.M)		1548		1515							
Filter Test Data	Pre Filter (Pa)	Inlet	*	Outlet	*				ΔP	*60	
	Sec Filter (Pa)	Inlet	*	Outlet	*				ΔP	*125	

MOTOR				
Manufacturer	TEC	Output kW	11.0	
Serial N°	1305-0573429	Motor Full Load Current	21.0	Amps
Voltage	400	Motor Running Current	15.0	Amps
	Design	**Test**		
Rotational Speed.	1460	1431		

DRIVE DETAILS									
Motor Pulley/Shaft Size (mm∅)	SPA 212	42	Motor Pulley Taper Lock Size	2517					
Fan Pulley/Shaft Size (mm∅)	SPA 200	60	Fan Pulley Taper Lock Size	3020					
Belt Type/Size	XPA	1400	N°. Of Belts	4					
Shaft Centres mm	380		Adjustment	-	15	+	0	mm	
Variable Speed Drive	Yes		Set Point	49 Hz					

STANDBY PLANT							
Test Air Volume	4913	Inlet Pressure	126	Motor Rotational Speed	1431	Motor Running Current	
% Design	104	Outlet Pressure	418	Fan Rotational Speed	1515	15.0	Amps
Variable Speed Drive			Yes	Set Point	49 Hz		

Comments. N/A – Not Applicable

2nd Motor Serial Number – 1305 – 0573440.

*Filter pressures taken from magnehelic gauge.

Controls static pressure set point = 420 Pa

Instrument Used (Ref N°.) HV04/1, HV01/4 & HV01/5

Date: 21/1/15	Engineer: Daniel Gilliland & Chris Haldane	Sheet 3 of 30

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

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DUCT VOLUME TEST SHEET

SYSTEM: 123 – AHU 03 SUPPLY (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

VELOCITY PROFILE (taken facing air flow)

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
TH1				750	650	0.4875		2113		4.33	
3.70	3.70	3.80	3.40								
4.60	3.90	3.90	3.50								
4.60	4.80	4.40	3.60								
5.30	5.40	4.50	3.70								
5.40	5.40	5.10	4.30								
Velocity Sub Totals											
23.60	23.20	21.70	18.50								

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
87	20	4.35	2121	100	166

Remarks: Test Hole for Branch C Levels 8, 9 and 10.

Instrument Used: HV04/1

Date:21/1/15 | Engineer: Daniel Gilliland & Chris Haldane | Sheet 4 of 30

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EST: 1975

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16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

DUCT VOLUME TEST SHEET

SYSTEM: 123 – AHU 03 SUPPLY (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

VELOCITY PROFILE (taken facing air flow)

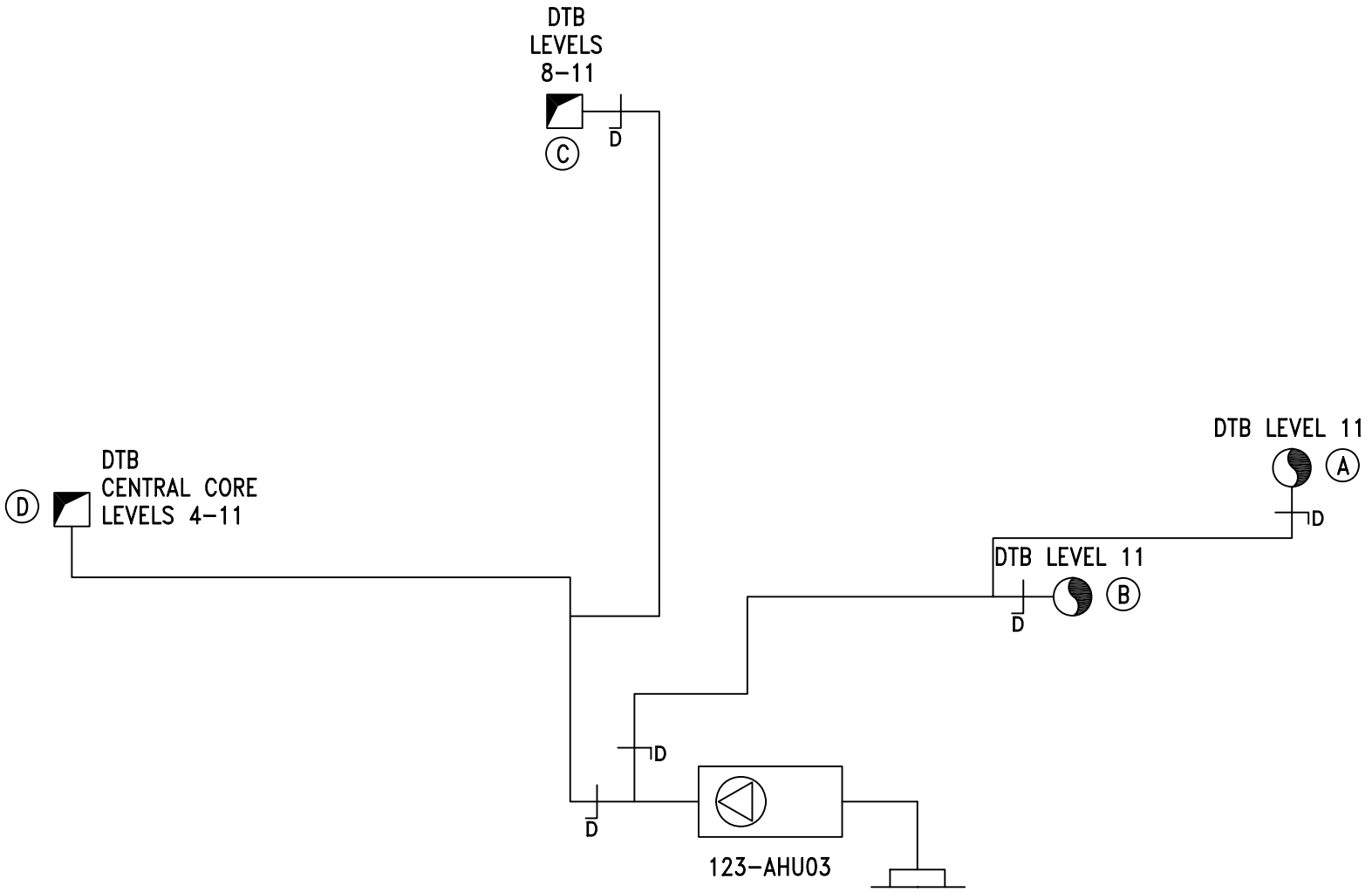
Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
TH2		200				0.0314		60		1.91	
2.00	2.10										
2.10	2.10										
2.10	2.10										
2.00	2.10										
Velocity Sub Totals											
8.20	8.40										

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
16.6	8	2.08	65	109	13

Remarks: Test Hole for Grille 506-SG002 (Level 11). Test Volume 65 l/s ÷ Balometer Volume 62 l/s = 1.05 Factor.

Instrument Used: HV04/1

Date: 21/1/15 | Engineer: Daniel Gilliland & Chris Haldane | Sheet 5 of 30



SHEET: 6 OF 30

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
A4789198
Fax: 01563 822220 email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

123-AHU 03 SUPPLY (CENTRAL CORE 8TH-11TH FLOOR WARDS)

DRAWN: LH/DG

DATE: 09/01/15

DRG. No.: 5902/V65

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EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

GRILLE TEST SHEET

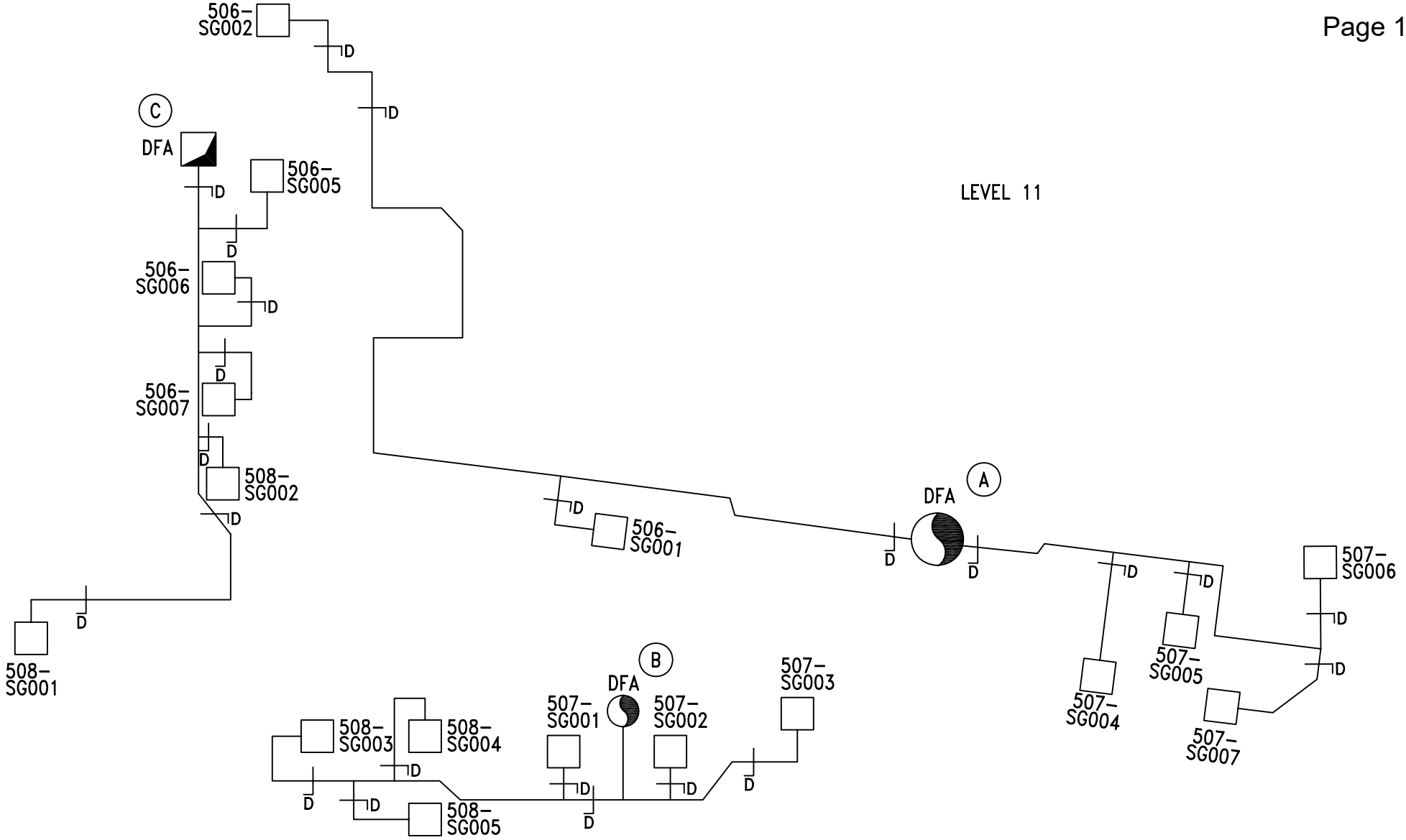
SYSTEM: 123 – AHU 03 SUPPLY (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
BRANCH A						
506-SG002	60	161	62	1.05	65.10	109
506-SG001	15	32	15	1.05	15.75	105
507-SG006	35	17	34	1.05	35.70	102
507-SG007	35	13	34	1.05	35.70	102
507-SG005	33	0	32	1.05	33.60	102
507-SG004	25	0	24	1.05	25.20	101
BRANCH B						
508-SG003	10	34	10	1.05	10.50	105
508-SG005	19	38	19	1.05	19.95	105
507-SG001	49	96	47	1.05	49.35	101
507-SG003	78	139	77	1.05	80.85	104
507-SG002	47	95	46	1.05	48.30	103
508-SG004	45	93	44	1.05	46.20	103
BRANCH C						
508-SG001	50	100	49	1.05	51.45	103
508-SG002	40	101	39	1.05	40.95	102
506-SG007	60	158	58	1.05	60.90	102
506-SG006	90	238	89	1.05	93.45	104
506-SG005	20	94	20	1.05	21.00	105

Remarks

Instrument Used: HV01/15

Date: 20/1/15	Engineer: Daniel Gilliland & Chris Haldane	Sheet 7 of 30



SHEET: 8 OF 30

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
Fax: 01563 822220 email: talk2us@handv.co.uk

A4/089198

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

123-AHU03 SUPPLY (8TH TO 11TH FLOOR WARDS)

DRAWN: LH/DG

DATE: 27/01/15

DRG. No.: 5902/V73

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Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

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GRILLE TEST SHEET

SYSTEM: 123 – AHU 03 SUPPLY (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

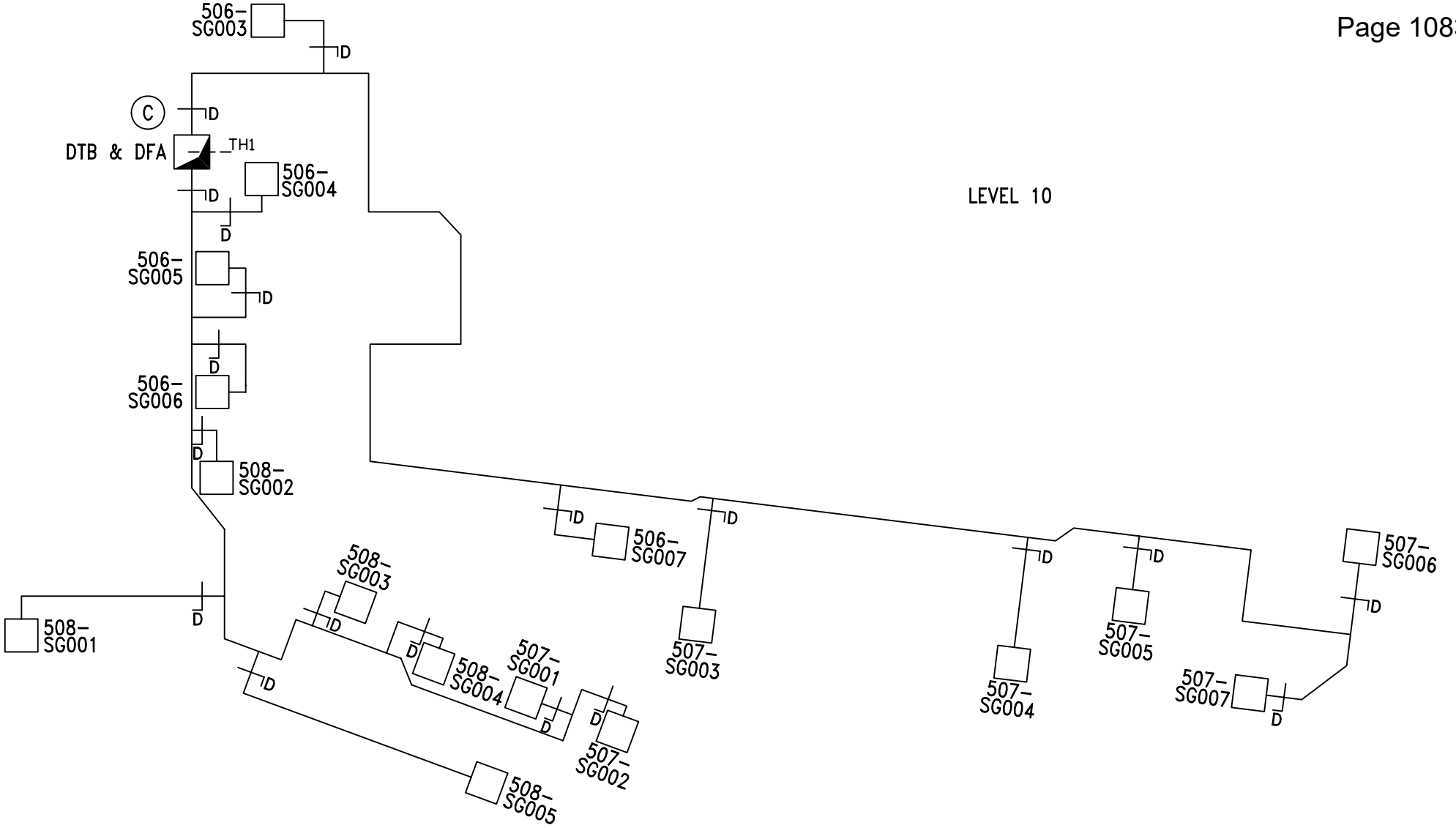
LEVEL 10

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
507-SG002	47	63	46	1.05	48.30	103
507-SG001	49	83	47	1.05	49.35	101
508-SG004	45	83	43	1.05	45.15	100
508-SG003	10	21	10	1.05	10.50	105
508-SG005	19	17	19	1.05	19.95	105
508-SG001	50	52	48	1.05	50.40	101
508-SG002	40	73	39	1.05	40.95	102
506-SG006	60	158	59	1.05	61.95	103
506-SG005	90	250	89	1.05	93.45	104
506-SG004	20	73	20	1.05	21.00	105
507-SG006	35	22	34	1.05	35.70	102
507-SG007	35	23	34	1.05	35.70	102
507-SG005	33	30	34	1.05	35.70	108
507-SG004	25	17	25	1.05	26.25	105
507-SG003	78	75	75	1.05	78.75	101
506-SG007	15	20	15	1.05	15.75	105
506-SG008	60	110	61	1.05	64.05	107

Remarks

Instrument Used: HV01/15

Date: 20/1/15	Engineer: Daniel Gilliland & Chris Haldane	Sheet 9 of 30



SHEET: 10 OF 30

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
Fax: 01563 822220 email: talk2us@handv.co.uk

A4/089198

CONTRACT:	NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123
CLIENT:	MERCURY ENGINEERING UK
TITLE:	SCHEMATIC LAYOUT OF 123-AHU03 SUPPLY (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)
DRAWN:	LH/DG
DATE:	27/01/15
DRG. No.:	5902/V72

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Commissioning Services Ltd

EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

GRILLE TEST SHEET

SYSTEM: 123 – AHU 03 SUPPLY (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

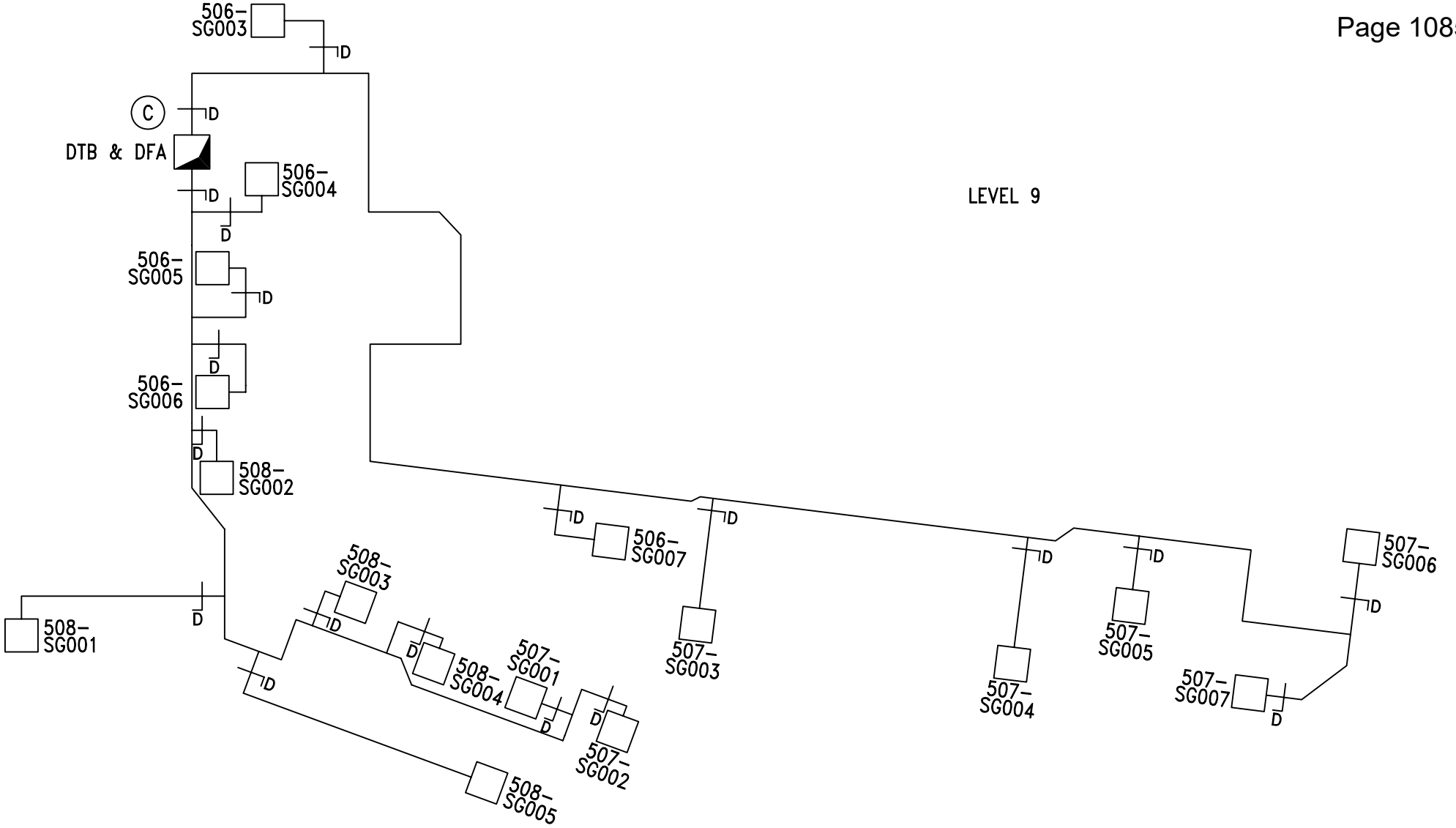
LEVEL 9

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
507-SG002	47	47	46	1.05	48.30	103
507-SG001	49	60	50	1.05	52.50	107
508-SG004	45	50	47	1.05	49.35	110
508-SG003	10	17	10	1.05	10.50	105
508-SG005	19	20	19	1.05	19.95	105
508-SG001	50	61	52	1.05	54.60	109
508-SG002	40	32	39	1.05	40.95	102
506-SG006	60	123	60	1.05	63.00	105
506-SG005	90	195	86	1.05	90.30	100
506-SG004	20	49	19	1.05	19.95	100
507-SG006	35	26	35	1.05	36.75	105
507-SG007	35	24	34	1.05	35.70	102
507-SG005	33	30	32	1.05	33.60	102
507-SG004	25	20	24	1.05	25.20	101
507-SG003	78	73	76	1.05	79.80	102
506-SG007	15	26	15	1.05	15.75	105
506-SG008	60	117	57	1.05	59.85	100

Remarks

Instrument Used: HV01/15

Date: 20/1/15	Engineer: Daniel Gilliland & Chris Haldane	Sheet 11 of 30



SHEET: 12 OF 30

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
Fax: 01563 822220 email: talk2us@handv.co.uk

A4/089198

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

123-AHU03 SUPPLY (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

DRAWN: LH/DG

DATE: 27/01/15

DRG. No.: 5902/V71

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H & V

Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

GRILLE TEST SHEET

SYSTEM: 123 – AHU 03 EXTRACT (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

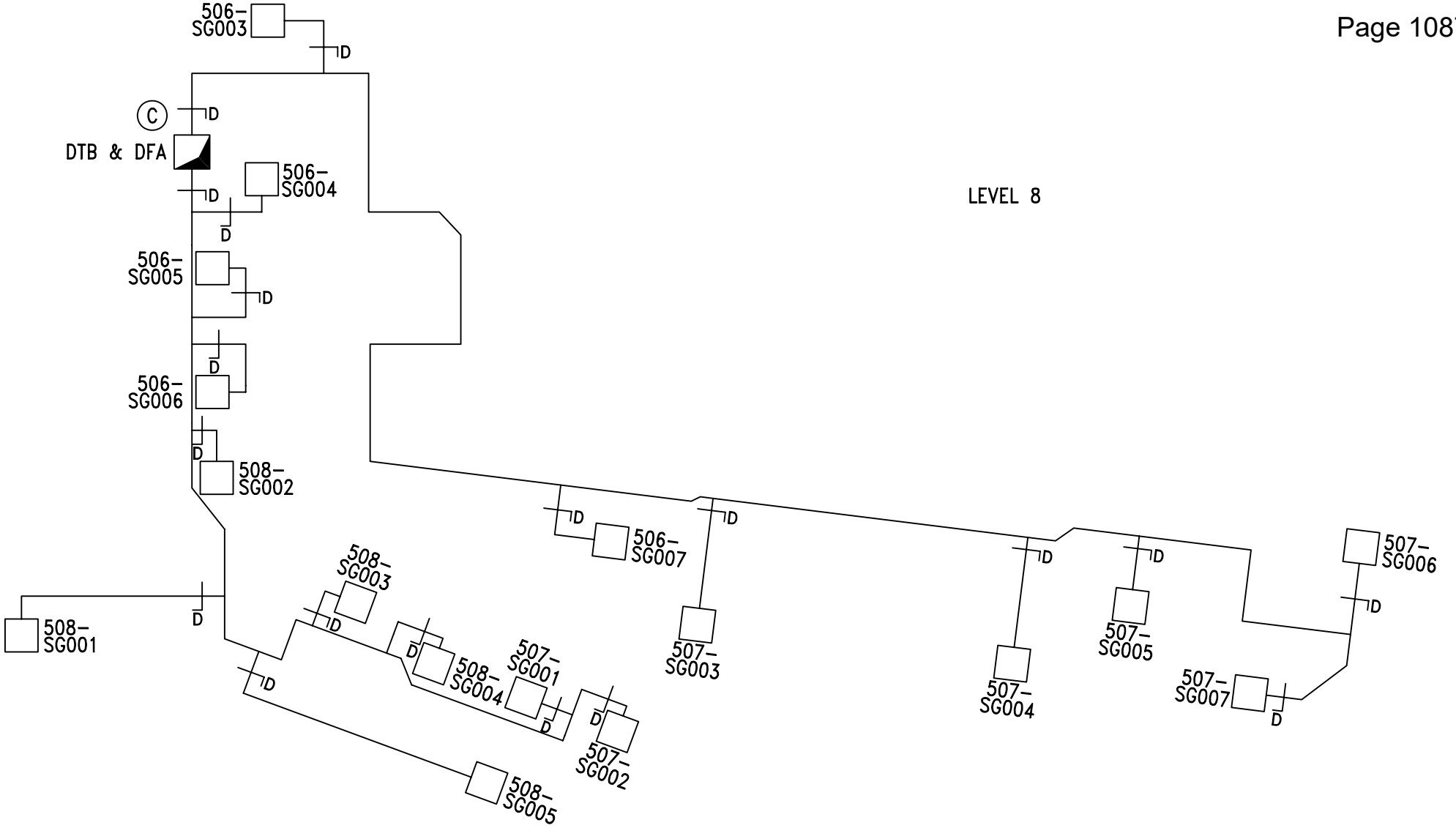
LEVEL 8

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
507-SG002	47	40	48	1.05	50.40	107
507-SG001	49	76	50	1.05	52.50	107
508-SG004	45	49	46	1.05	48.30	107
508-SG003	10	16	10	1.05	10.50	105
508-SG005	19	16	19	1.05	19.95	105
508-SG001	50	55	52	1.05	54.60	109
508-SG002	40	55	42	1.05	44.10	110
506-SG006	60	114	61	1.05	64.05	107
506-SG005	90	190	91	1.05	95.55	106
506-SG004	20	47	21	1.05	22.05	110
507-SG006	35	26	34	1.05	35.70	102
507-SG007	35	28	36	1.05	37.80	108
507-SG005	33	26	32	1.05	33.60	102
507-SG004	25	18	24	1.05	25.20	101
507-SG003	78	79	80	1.05	84.00	108
506-SG007	15	17	15	1.05	15.75	105
506-SG008	60	125	62	1.05	65.10	109

Remarks

Instrument Used: HV01/15

Date: 20/1/15	Engineer: Daniel Gilliland & Chris Haldane	Sheet 13 of 30



SHEET: 14 OF 30

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
Fax: 01563 822220 email: talk2us@handv.co.uk

A4/089198

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

123-AHU03 SUPPLY (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

DRAWN: LH/DG

DATE: 27/01/15

DRG. No.: 5902/V70

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H & V
H & V

Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

GRILLE TEST SHEET

SYSTEM: 123 – AHU 03 SUPPLY (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

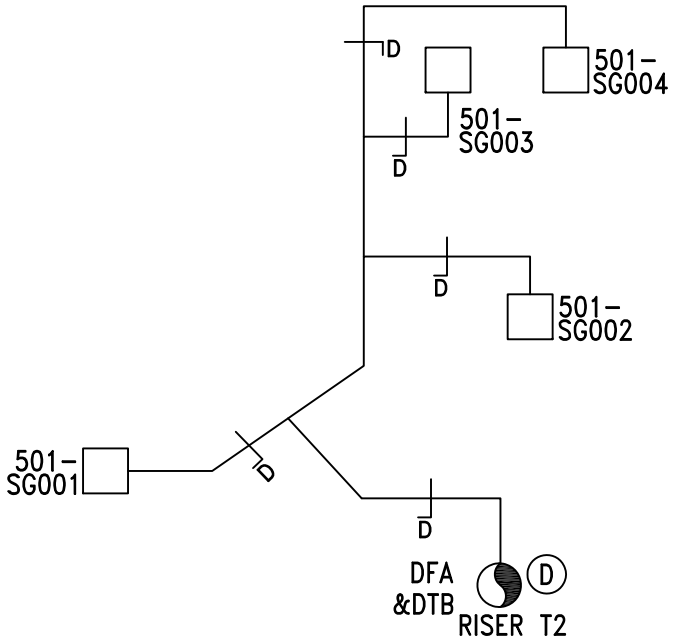
LEVEL 11 CENTRAL CORE

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
501-SG004	75	84	74	1.05	77.70	104
501-SG003	75	74	74	1.05	77.70	104
501-SG002	60	72	59	1.05	61.95	103
501-SG001	25	21	24	1.05	25.20	101

Remarks

Instrument Used: HV01/15

Date: 20/1/15	Engineer: Daniel Gilliland & Chris Haldane	Sheet 15 of 30



11TH FLOOR CENTRAL CORE

SHEET: 16 OF 30

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
A4789198
Fax: 01563 822220 email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

123-AHU03 SUPPLY (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

DRAWN: LH/DG

DATE: 23/01/15

DRG. No.: 5902/63

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Commissioning Services Ltd

EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

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GRILLE TEST SHEET

SYSTEM: 123 – AHU 03 SUPPLY (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

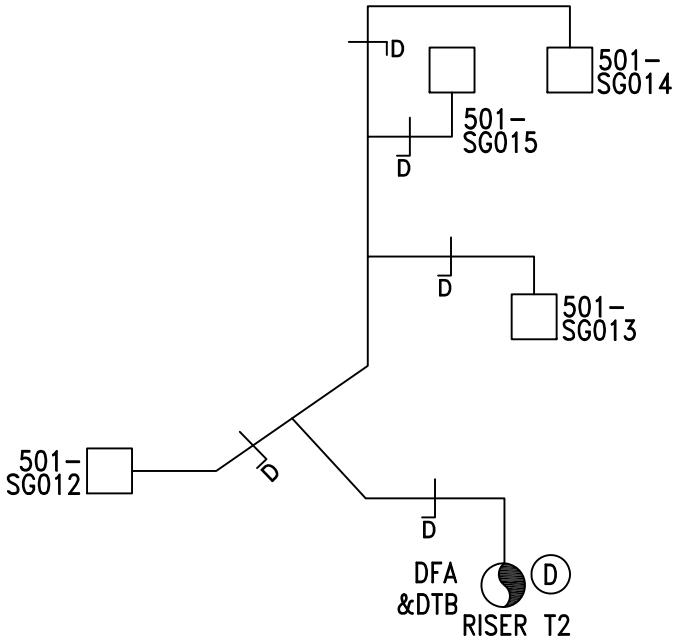
LEVEL 10 CENTRAL CORE

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
501-SG014	75	74	76	1.05	79.80	106
501-SG015	75	72	74	1.05	77.70	104
501-SG013	60	58	62	1.05	65.10	109
501-SG012	25	20	25	1.05	26.25	105

Remarks

Instrument Used: HV01/15

Date: 20/1/15	Engineer: Daniel Gilliland & Chris Haldane	Sheet 17 of 30



10TH FLOOR CENTRAL CORE

SHEET: 18 OF 30

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
A4789198
Fax: 01563 822220 email: talk2us@handv.co.uk

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NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123

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MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

123-AHU03 SUPPLY (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

DRAWN: LH/DG

DATE: 23/01/15

DRG. No.: 5902/62

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16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

GRILLE TEST SHEET

SYSTEM: 123 – AHU 03 SUPPLY (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

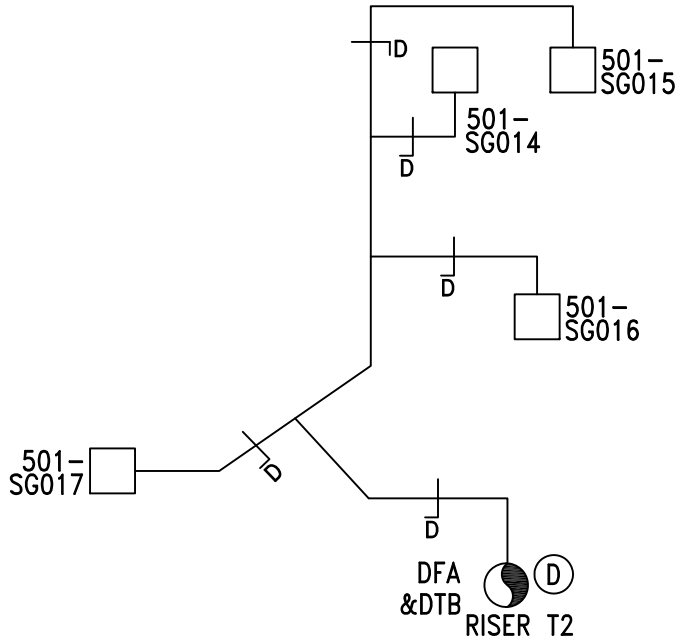
LEVEL 9 CENTRAL CORE

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
501-SG015	75	67	73	1.05	76.65	102
501-SG014	75	75	75	1.05	78.75	105
501-SG016	60	54	59	1.05	61.95	103
501-SG017	25	23	24	1.05	25.20	101

Remarks

Instrument Used: HV01/15

Date: 20/1/15	Engineer: Daniel Gilliland & Chris Haldane	Sheet 19 of 30



9TH FLOOR CENTRAL CORE

SHEET: 20 OF 30

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Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
Fax: 01563 822220 email: talk2us@handv.co.uk

A4/089198

CONTRACT: NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123	**TITLE:** SCHEMATIC LAYOUT OF	**DRAWN:** LH/DG
CLIENT: MERCURY ENGINEERING UK	123-AHU03 SUPPLY (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)	**DATE:** 23/01/15
		DRG. No.: 5902/61

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16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
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FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

GRILLE TEST SHEET

SYSTEM: 123 – AHU 03 SUPPLY (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

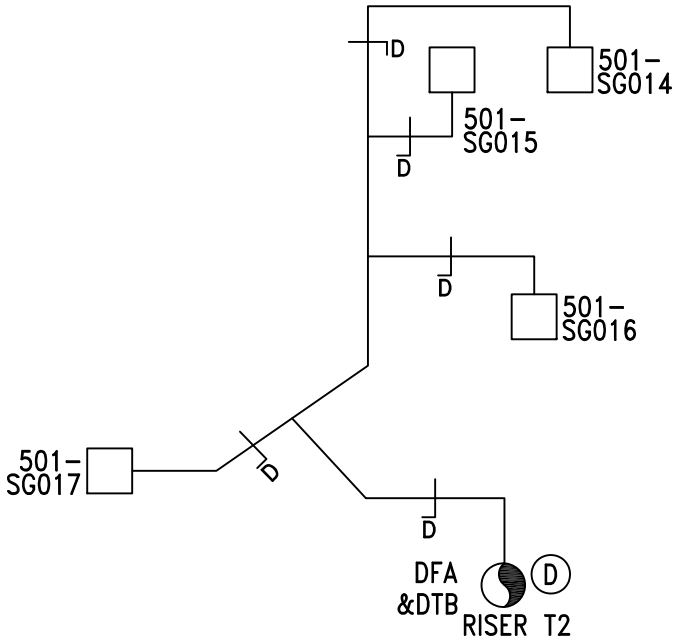
LEVEL 8 CENTRAL CORE

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
501-SG014	75	68	74	1.05	77.70	104
501-SG015	75	74	75	1.05	78.75	105
501-SG016	60	59	62	1.05	65.10	109
501-SG017	25	22	24	1.05	25.20	101

Remarks

Instrument Used: HV01/15

Date: 20/1/15	Engineer: Daniel Gilliland & Chris Haldane	Sheet 21 of 30



8TH FLOOR CENTRAL CORE

SHEET: 22 OF 30

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Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
A4709198
Fax: 01563 822220 email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

123-AHU03 SUPPLY (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

DRAWN: LH/DG

DATE: 23/01/15

DRG. No.: 5902/60

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FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

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GRILLE TEST SHEET

SYSTEM: 123 – AHU 03 SUPPLY (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

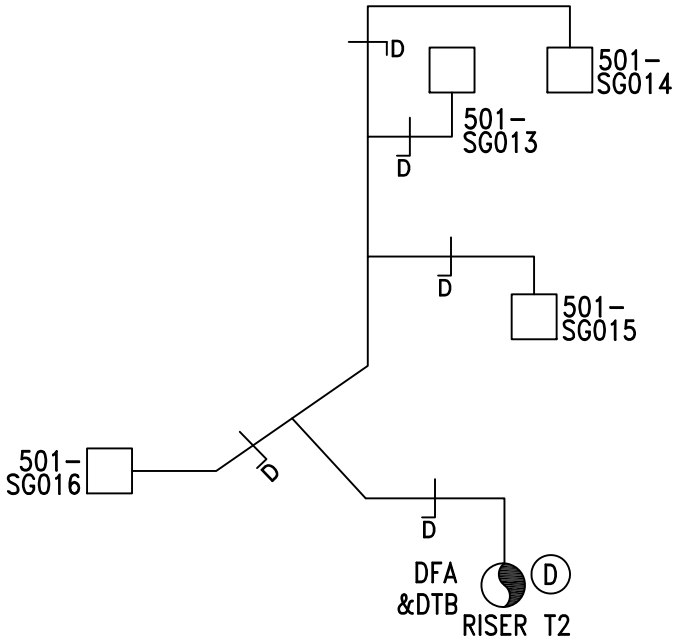
LEVEL 7 CENTRAL CORE

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
501-SG014	75	94	74	1.05	77.70	104
501-SG013	75	72	73	1.05	76.65	102
501-SG015	60	74	60	1.05	63.00	105
501-SG016	25	27	25	1.05	26.25	105

Remarks

Instrument Used: HV01/15

Date: 20/1/15	Engineer: Daniel Gilliland & Chris Haldane	Sheet 23 of 30



7TH FLOOR CENTRAL CORE

SHEET: 24 OF 30

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Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
A4789198
Fax: 01563 822220 email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

123-AHU03 SUPPLY (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

DRAWN: LH/DG

DATE: 23/01/15

DRG. No.: 5902/59

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
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FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

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GRILLE TEST SHEET

SYSTEM: 123 – AHU 03 SUPPLY (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

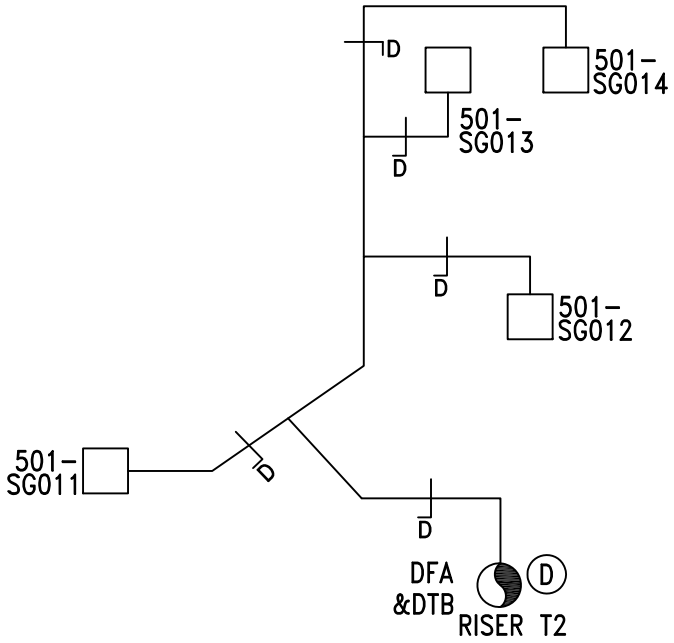
LEVEL 6 CENTRAL CORE

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
501-SG014	75	64	73	1.05	76.65	102
501-SG013	75	68	76	1.05	79.80	106
501-SG012	60	57	61	1.05	64.05	107
501-SG011	25	29	26	1.05	27.30	109

Remarks

Instrument Used: HV01/15

Date: 20/1/15	Engineer: Daniel Gilliland & Chris Haldane	Sheet 25 of 30



6TH FLOOR CENTRAL CORE

SHEET: 26 OF 30

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Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
Fax: 01563 822220 email: talk2us@handv.co.uk

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CONTRACT: NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123	**TITLE:** SCHEMATIC LAYOUT OF	**DRAWN:** LH/DG
CLIENT: MERCURY ENGINEERING UK	123-AHU03 SUPPLY (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)	**DATE:** 23/01/15
		DRG. No.: 5902/58

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Galston,
Ayrshire, KA48HH.
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FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

GRILLE TEST SHEET

SYSTEM: 123 – AHU 03 SUPPLY (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

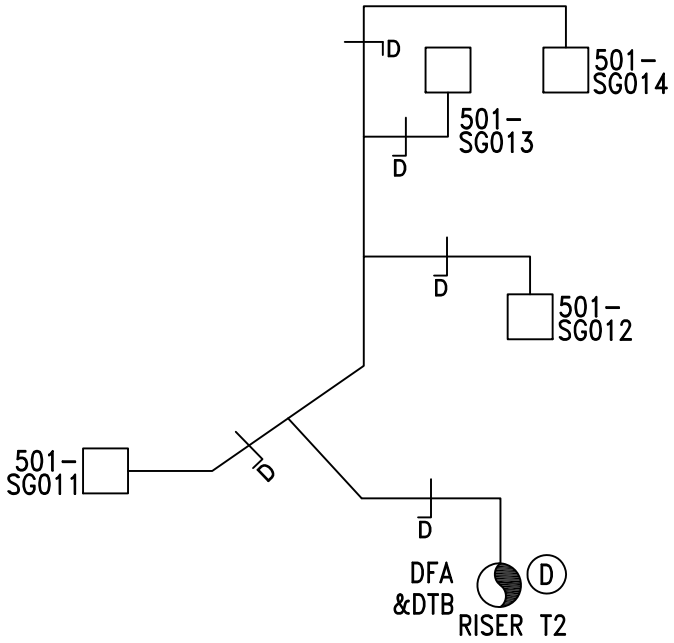
LEVEL 5 CENTRAL CORE

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
501-SG014	75	62	75	1.05	78.75	105
501-SG013	75	60	75	1.05	78.75	105
501-SG012	60	52	61	1.05	64.05	107
501-SG011	25	24	25	1.05	26.25	105

Remarks

Instrument Used: HV01/15

Date: 20/1/15	Engineer: Daniel Gilliland & Chris Haldane	Sheet 27 of 30



5TH FLOOR CENTRAL CORE

SHEET: 28 OF 30

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Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
A4789198
Fax: 01563 822220 email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

123-AHU03 SUPPLY (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

DRAWN: LH/DG

DATE: 23/01/15

DRG. No.: 5902/57

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16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
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FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

GRILLE TEST SHEET

SYSTEM: 123 – AHU 03 SUPPLY (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

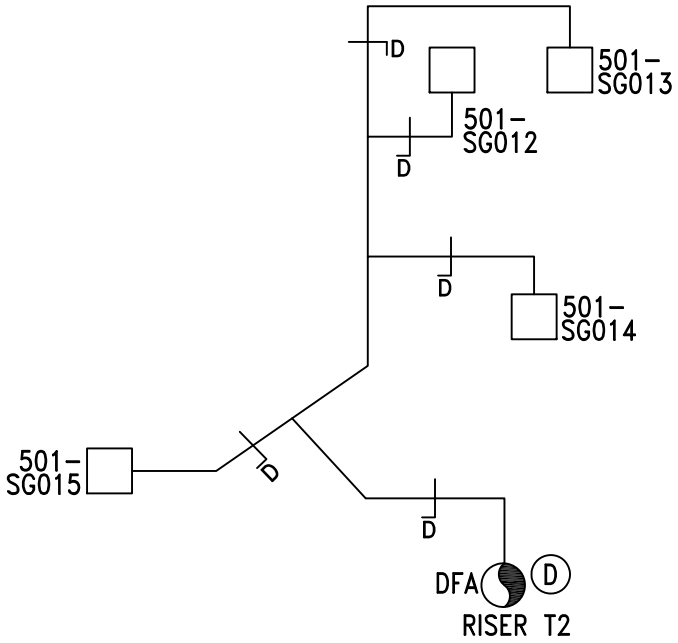
LEVEL 4 CENTRAL CORE

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
501-SG013	75	68	76	1.05	79.80	106
501-SG012	75	95	76	1.05	79.80	106
501-SG014	60	69	61	1.05	64.05	107
501-SG015	25	24	25	1.05	26.25	105

Remarks

Instrument Used: HV01/15

Date: 20/1/15	Engineer: Daniel Gilliland & Chris Haldane	Sheet 29 of 30



4TH FLOOR CENTRAL CORE

SHEET: 30 OF 30

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
Fax: 01563 822220 email: talk2us@handv.co.uk

A4/089198

CONTRACT: NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123	**TITLE:** SCHEMATIC LAYOUT OF	**DRAWN:** LH/DG	
CLIENT: MERCURY ENGINEERING UK	123-AHU03 SUPPLY (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)	**DATE:** 23/01/15	
		DRG. No.: 5902/56	

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16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

SYSTEM: 123 - AHU 03 CLEAN EXTRACT (CENTRAL CORE & 8TH, 11TH FLOOR WARDS)

WITNESSING OF TESTING AND BALANCING

	Client Representative / Commissioning Manager	Client
Witnessed By:	David Wilson	
Representing:	Brookfield Multiplex	
Signature:	[redacted]	
Date:	22/1/15	
Witnessed By:		
Representing:		
Signature:		
Date:		

Remarks:

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16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

SYSTEM: 123 – AHU 03 CLEAN EXTRACT (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

	AIR SYSTEMS PRE COMMISSIONING SHEET	✓	X	N/A
1.	Check AHU for damage and that all the components are secure	✓		
2.	Check the transit straps have been removed, if applicable	✓		
3.	Check pulleys are secure, tight, aligned and belts are correctly tensioned, if applicable	✓		
4.	Check with the controls engineer that the system is available to run and that plant rotation is correct	✓		
5.	Check all ductwork/air terminals are fitted and that air regulating dampers are open	✓		
6.	Check louvres are fitted and clear from obstructions, if applicable	✓		
7.	Check fire dampers are open, if applicable	✓		
8.	Check the motor overloads are suitable and set			✓
9.	Check VAV or CAV boxes are installed correctly and ready for use.			✓
10.	Check the floor plenums are complete, if applicable			✓
11.	Complete commissioning test sheets.	✓		

COMMENTS

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16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

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AHU TEST SHEET

SYSTEM: 123 – AHU 03 EXTRACT (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

AHU											
AHU Manufacturer		Barkell		Fan Size		450					
Fan Manufacturer		Comefri		AHU Serial No		OP1B3058003					
Fan Type		Centrifugal		AHU Model N°.		TZAF 450 RFF					
		Design		**Test**						**% Design**	
Air Volume (L/S)		2996		3225						108	
External Static Pressure (Pa)		400		Inlet	270	Outlet	128	Total	398		
Fan Rotational Speed (R.P.M)		1625		1624							
Filter Test Data	Pre Filter (Pa)	Inlet	*	Outlet	*			ΔP	*25		
	Sec Filter (Pa)	Inlet	N/A	Outlet	N/A			ΔP	N/A		

MOTOR					
Manufacturer	TEC	Output kW	4.0		
Serial N°	1305-0562982	Motor Full Load Current	8.14	Amps	
Voltage	400	Motor Running Current	6.6	Amps	
	Design	**Test**			
Rotational Speed.	1430	1430			

DRIVE DETAILS								
Motor Pulley/Shaft Size (mm∅)	SPZ 150	28	Motor Pulley Taper Lock Size	2012				
Fan Pulley/Shaft Size (mm∅)	SPZ 132	50	Fan Pulley Taper Lock Size	2517				
Belt Type/Size	XPA	1060	N°. Of Belts	4				
Shaft Centres mm	280		Adjustment	-	32	+	28	mm
Variable Speed Drive	Yes		Set Point	50 Hz				

STANDBY PLANT							
Test Air Volume	3225	Inlet Pressure	270	Motor Rotational Speed	1430	Motor Running Current	
% Design	108	Outlet Pressure	128	Fan Rotational Speed	1624	6.6	Amps
Variable Speed Drive			Yes	Set Point	50 Hz		

Comments. N/A – Not Applicable

2nd Motor Serial Number – 1305 – 0563009.

*Filter pressure taken from magnehelic gauge.

Instrument Used (Ref N°.) HV04/1, HV01/4 & HV01/5

Date: 7/1/15	Engineer: Daniel Gilliland & Connor Fulton	Sheet 3 of 31

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16 Barrmill Road,
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Ayrshire, KA48HH.
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FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

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DUCT VOLUME TEST SHEET

SYSTEM: 123 – AHU 03 EXTRACT (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

VELOCITY PROFILE (taken facing air flow)

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
TH1		550				0.2376		1200		5.05	
5.90	4.90										
6.10	5.70										
6.30	5.90										
5.20	6.00										
3.40	6.10										
3.20	6.00										
Velocity Sub Totals											
30.10	34.60										

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
64.7	12	5.39	1281	107	94

Remarks: Test Hole for Branch Levels 4 - 11

Instrument Used: HV04/1

Date:7/1/15 | Engineer: Daniel Gilliland & Connor Fulton | Sheet 4 of 31

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FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

DUCT VOLUME TEST SHEET

SYSTEM: 123 – AHU 03 EXTRACT (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

VELOCITY PROFILE (taken facing air flow)

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
TH2				750	500	0.3750		1527		4.07	
4.50	4.60	3.90	3.00								
4.80	5.40	4.30	3.30								
4.80	5.40	4.60	4.30								
4.40	4.80	4.30	4.30								
Velocity Sub Totals											
18.50	20.20	17.10	14.90								

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
70.7	16	4.42	1657	109	120

Remarks: Test Hole for Levels 11, 10, 9 & 8

Instrument Used: HV04/1

Date: 7/1/15	Engineer: Daniel Gilliland & Connor Fulton	Sheet 5 of 31

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Galston,
Ayrshire, KA48HH.
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FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

DUCT VOLUME TEST SHEET

SYSTEM: 123 – AHU 03 EXTRACT (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

VELOCITY PROFILE (taken facing air flow) **TEST HOLE LOCATION: PLANTROOM 123**

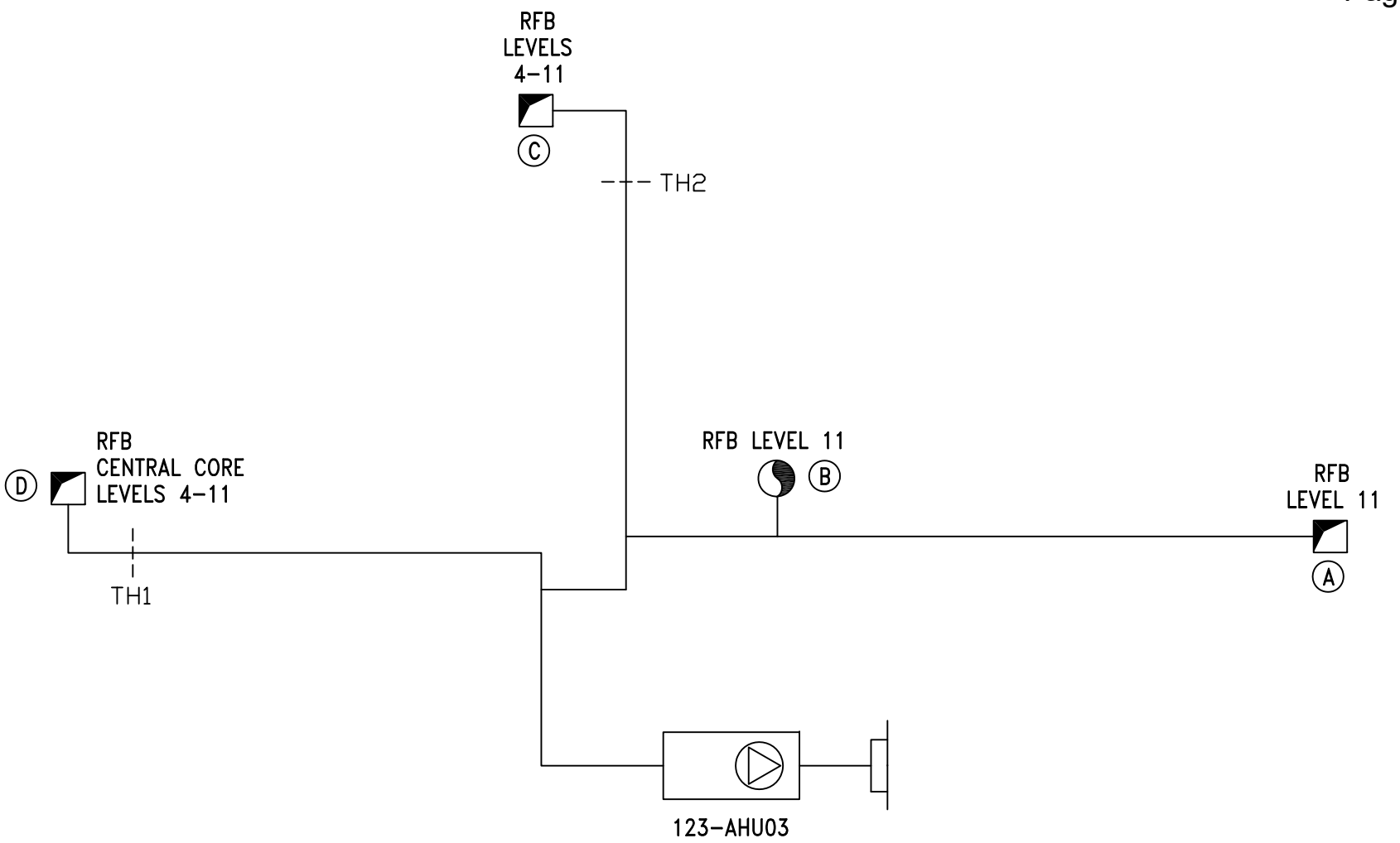
Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
TH3		200				0.0314		54		1.72	
1.90	1.80										
1.80	1.80										
1.90	1.70										
1.80	1.80										
Velocity Sub Totals											
7.40	7.10										

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
14.5	8	1.81	57	105	62

Remarks: Test Hole for Grille 508-EG001. Test Volume 57 l/s ÷ Balometer Volume 47 l/s = 1.21 Factor.

Instrument Used: HV04/1

Date: 7/1/15 | Engineer: Daniel Gilliland & Connor Fulton | Sheet 6 of 31



SHEET: 7 OF 31

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
Fax: 01563 822220 email: talk2us@handv.co.uk

A47069198

CONTRACT:	**NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123**
CLIENT:	**MERCURY ENGINEERING UK**
TITLE:	**SCHEMATIC LAYOUT OF** **123-AHU 03 EXTRACT (CENTRAL CORE 8TH-11TH FLOOR WARDS)**
DRAWN:	**LH/DG**
DATE:	**09/01/15**
DRG. No.:	**5902/V64**

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EST: 1975

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16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
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CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

GRILLE TEST SHEET

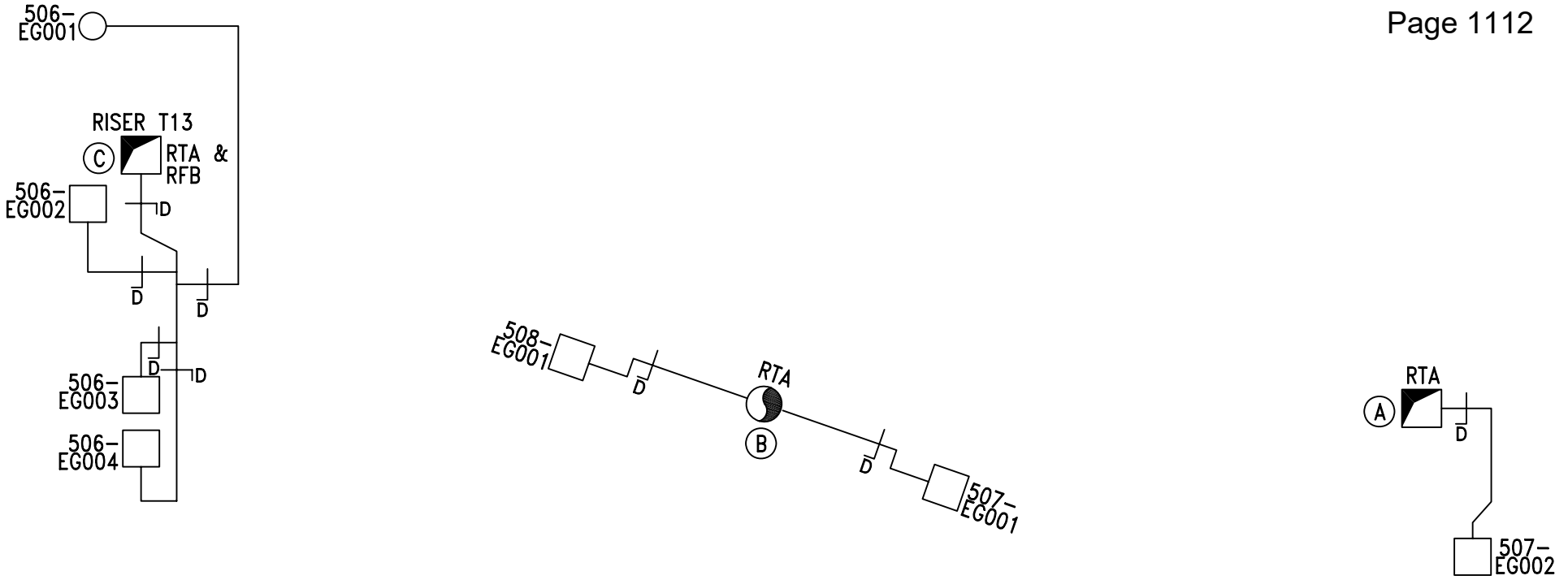
SYSTEM: 123 – AHU 03 EXTRACT (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
BRANCH A						
507-EG002	150	280	131	1.21	158.51	106
BRANCH B						
507-EG001	65	100	57	1.21	68.97	106
508-EG001	54	179	48	1.21	58.08	108
BRANCH C						
506-EG004	60	104	53	1.21	64.13	107
506-EG003	90	185	75	1.21	90.75	101
506-EG001	10	10	9	1.21	10.89	109
506-EG002	20	56	18	1.21	21.78	109

Remarks

Instrument Used: HV01/15

Date: 7/1/15	Engineer: Daniel Gilliland & Connor Fulton	Sheet 8 of 31



LEVEL 11

SHEET: 9 OF 31

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Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
Fax: 01563 822220 email: talk2us@handv.co.uk

A4/089198

CONTRACT:	**NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123**
CLIENT:	**MERCURY ENGINEERING UK**
TITLE:	**SCHEMATIC LAYOUT OF** **123-AHU03 CLEAN EXTRACT (CENTRAL CORE 8TH-11TH FLOOR WARDS)**
DRAWN:	**LH/DG**
DATE:	**26/01/15**
DRG. No.:	**5902/V66**

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Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

GRILLE TEST SHEET

SYSTEM: 123 – AHU 03 EXTRACT (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

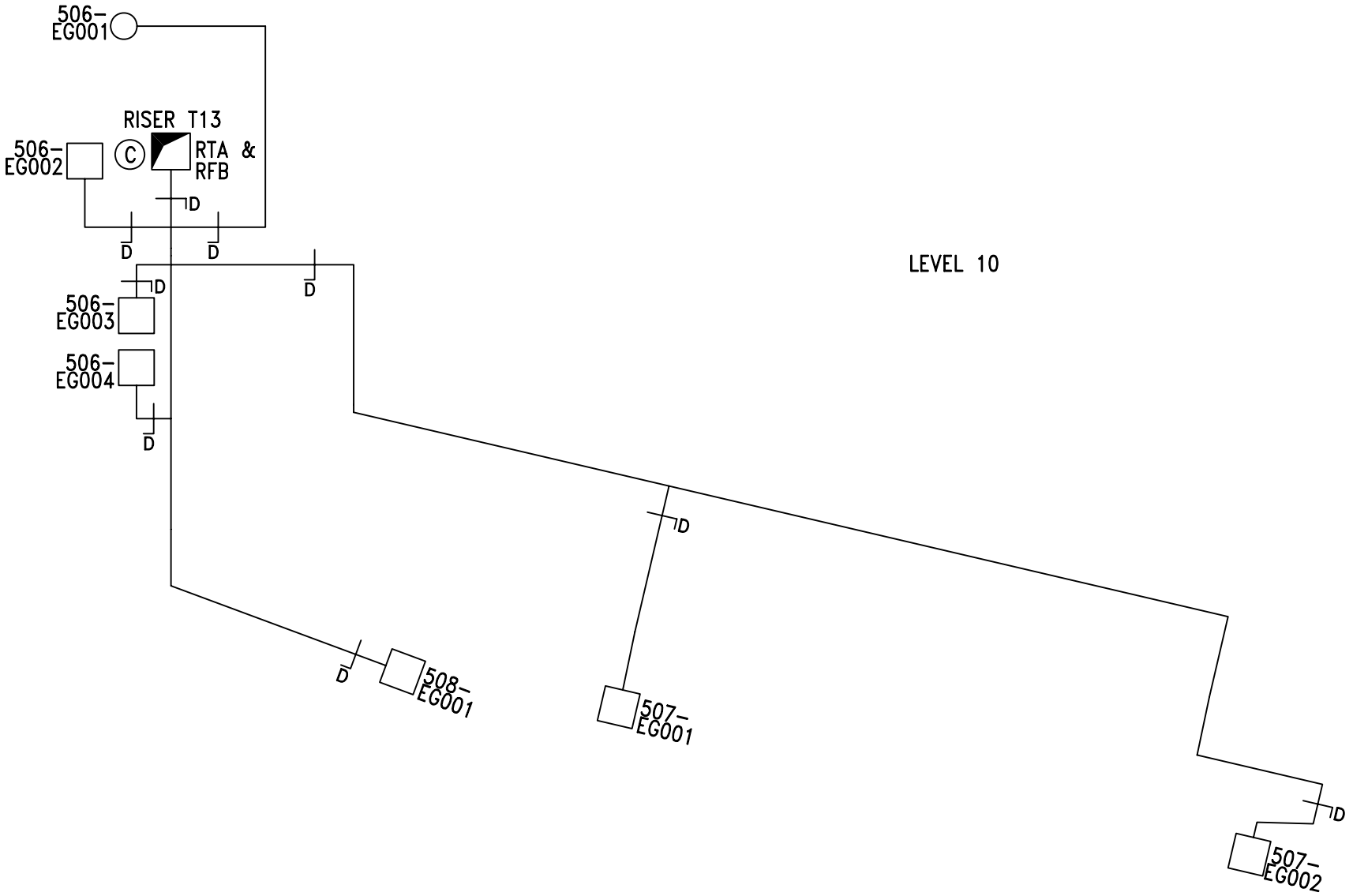
LEVEL 10

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
507-EG002	150	94	125	1.21	151.25	101
507-EG001	65	50	56	1.21	67.76	104
508-EG001	54	78	47	1.21	56.87	105
506-EG004	60	71	52	1.21	62.92	105
506-EG003	90	123	79	1.21	95.59	106
506-EG002	20	29	18	1.21	21.78	109
506-EG001	10	0	9	1.21	10.89	109

Remarks

Instrument Used: HV01/15

Date: 7/1/15	Engineer: Daniel Gilliland & Connor Fulton	Sheet 10 of 31



SHEET: 11 OF 31

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
Fax: 01563 822220 email: talk2us@handv.co.uk

A4/089198

CONTRACT: NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123	TITLE: SCHEMATIC LAYOUT OF 123-AHU03 CLEAN EXTRACT (CENTRAL CORE 8TH-11TH FLOOR WARDS)
CLIENT: MERCURY ENGINEERING UK	

DRAWN:	LH/DG
DATE:	26/01/15
DRG. No.:	5902/V69

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Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

GRILLE TEST SHEET

SYSTEM: 123 – AHU 03 EXTRACT (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

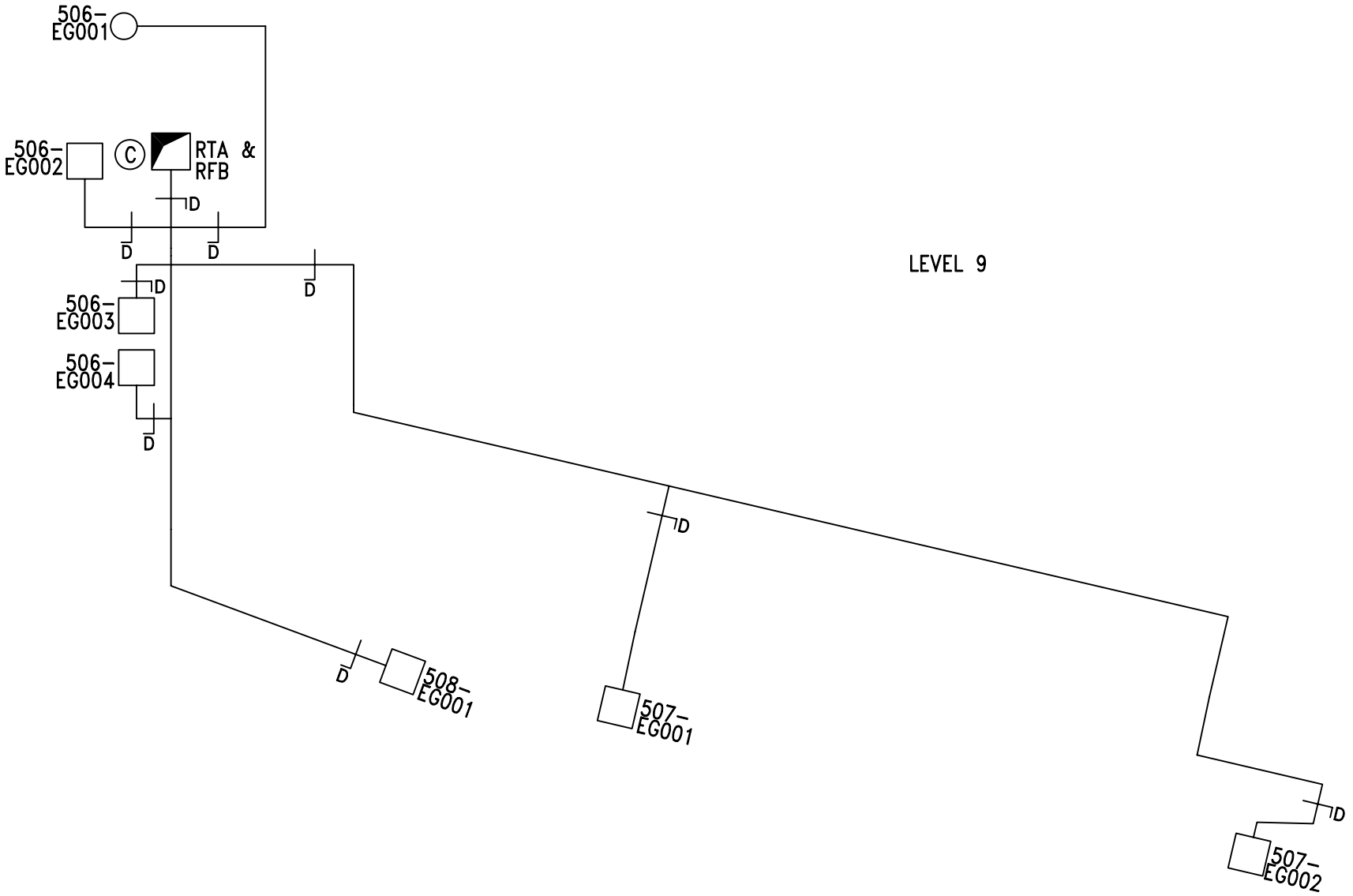
LEVEL 9

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
507-EG002	150	94	125	1.21	151.25	101
507-EG001	65	57	54	1.21	65.34	101
508-EG001	54	74	45	1.21	54.45	101
506-EG004	60	69	51	1.21	61.71	103
506-EG003	90	128	75	1.21	90.75	101
506-EG002	20	38	17	1.21	20.57	103
506-EG001	10	9	9	1.21	10.89	109

Remarks

Instrument Used: HV01/15

Date: 7/1/15	Engineer: Daniel Gilliland & Connor Fulton	Sheet 12 of 31



SHEET: 13 OF 31

H&V Commissioning Services Limited Kilknowe Office 16 Barrmill Road Galston East Ayrshire, KA4 8HH Tel : 01563 824991 Fax: 01563 822220 email: talk2us@handv.co.uk A4/089198	**CONTRACT:** NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123 **CLIENT:** MERCURY ENGINEERING UK	**TITLE:** SCHEMATIC LAYOUT OF 123-AHU03 CLEAN EXTRACT (CENTRAL CORE 8TH-11TH FLOOR WARDS)	**DRAWN:** LH/DG **DATE:** 26/01/15 **DRG. No.:** 5902/V68

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

GRILLE TEST SHEET

SYSTEM: 123 – AHU 03 EXTRACT (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

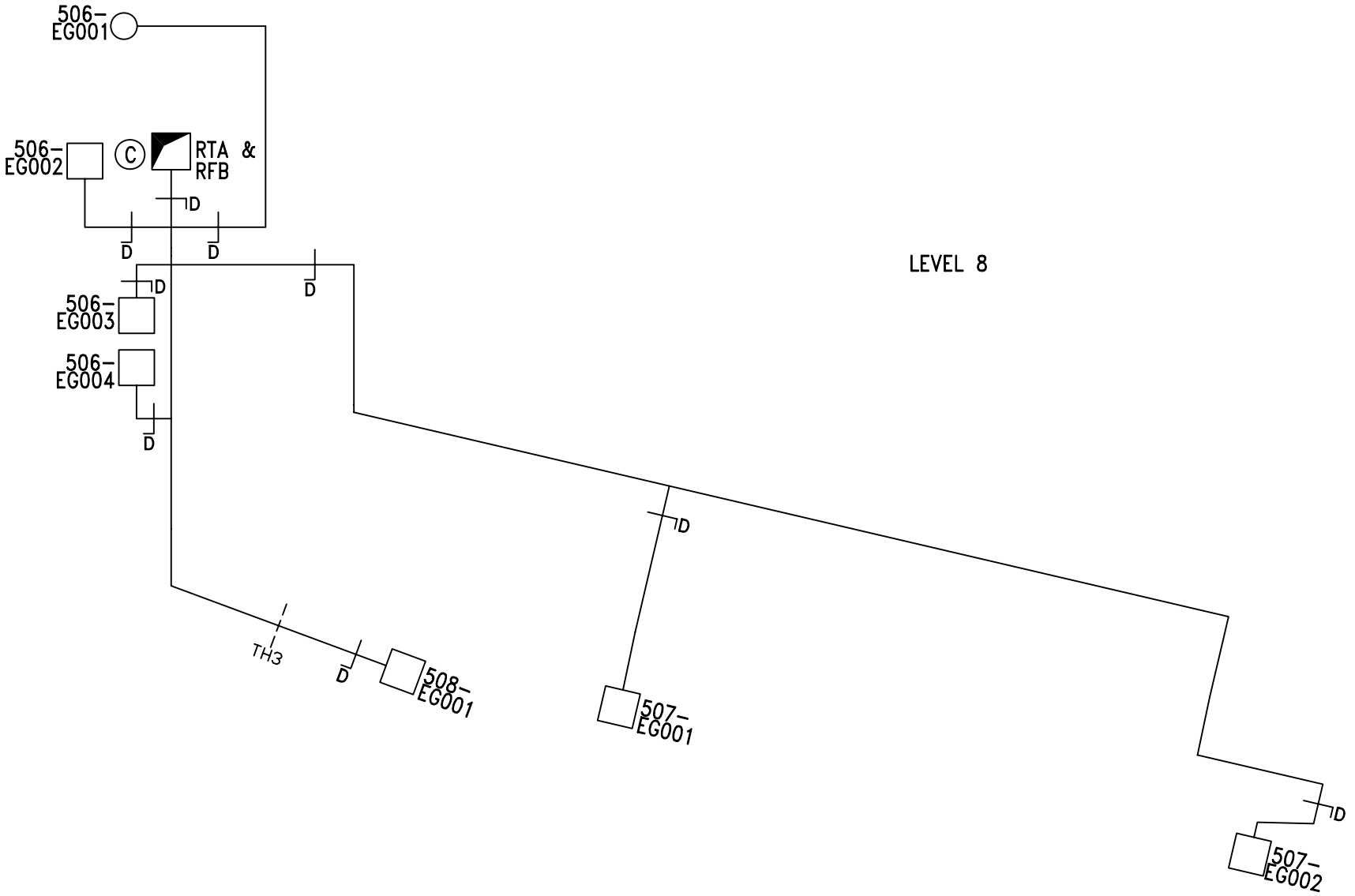
LEVEL 8

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
507-EG002	150	88	124	1.21	150.04	100
507-EG001	65	52	57	1.21	68.97	106
508-EG001	54	62	47	1.21	56.87	105
506-EG004	60	70	54	1.21	65.34	109
506-EG003	90	166	77	1.21	93.17	104
506-EG002	20	31	18	1.21	21.78	109
506-EG001	10	*	9	1.21	10.89	109

Remarks * Door Locked.

Instrument Used: HV01/15

Date: 7/1/15	Engineer: Daniel Gilliland & Connor Fulton	Sheet 14 of 31



SHEET: 15 OF 31

H&V Commissioning Services Limited **Kilknowe Office** **16 Barrmill Road** **Galston** **East Ayrshire, KA4 8HH** **Tel : 01563 824991** **Fax: 01563 822220 email: talk2us@handv.co.uk**	**CONTRACT:** **NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123** **CLIENT:** **MERCURY ENGINEERING UK**	**TITLE:** **SCHEMATIC LAYOUT OF** **123-AHU03 CLEAN EXTRACT (CENTRAL CORE 8TH-11TH FLOOR WARDS)**	**DRAWN:** LH/DG **DATE:** 26/01/15 **DRG. No.:** 5902/V67

A4/089198

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

GRILLE TEST SHEET

SYSTEM: 123 – AHU 03 EXTRACT (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

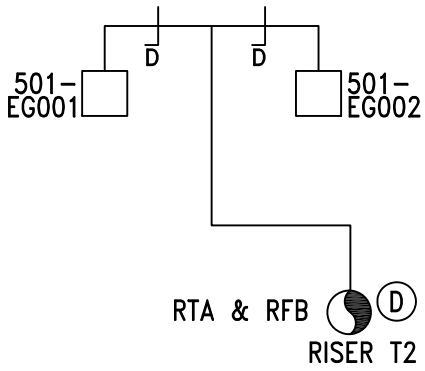
LEVEL 11 CENTRAL CORE

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
501-EG001	75	82	63	1.21	76.23	102
501-EG002	75	88	63	1.21	76.23	102

Remarks

Instrument Used: HV01/15

Date: 7/1/15	Engineer: Daniel Gilliland & Connor Fulton	Sheet 16 of 31



11TH FLOOR CENTRAL CORE

SHEET: 17 OF 31

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
A4789198
Fax: 01563 822220 email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

123-AHU03 CLEAN EXTRACT (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

DRAWN: LH/DG

DATE: 23/01/15

DRG. No.: 5902/V47

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Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

GRILLE TEST SHEET

SYSTEM: 123 – AHU 03 EXTRACT (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

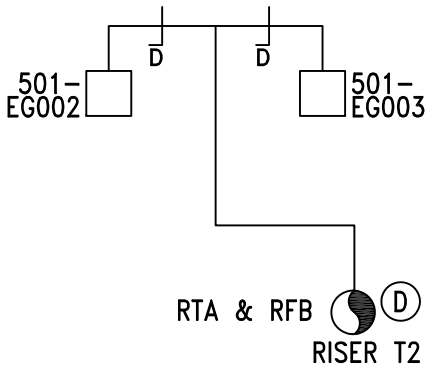
LEVEL 10 CENTRAL CORE

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
501-EG002	75	70	66	1.21	79.86	106
501-EG003	75	70	65	1.21	78.65	105

Remarks

Instrument Used: HV01/15

Date: 7/1/15	Engineer: Daniel Gilliland & Connor Fulton	Sheet 18 of 31



10TH FLOOR CENTRAL CORE

SHEET: 19 OF 31

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
Fax: 01563 822220 email: talk2us@handv.co.uk

A47069198

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

123-AHU03 CLEAN EXTRACT (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

DRAWN: LH/DG

DATE: 23/01/15

DRG. No.: 5902/V46

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

GRILLE TEST SHEET

SYSTEM: 123 – AHU 03 EXTRACT (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

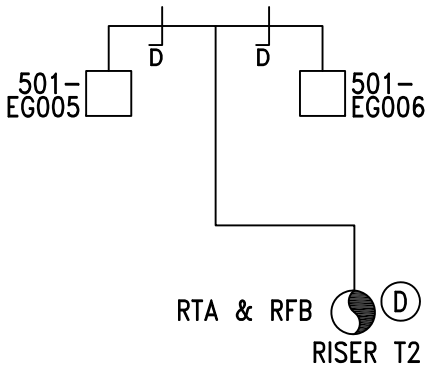
LEVEL 9 CENTRAL CORE

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
501-EG005	75	67	64	1.21	77.44	103
501-EG006	75	67	64	1.21	77.44	103

Remarks

Instrument Used: HV01/15

Date: 7/1/15	Engineer: Daniel Gilliland & Connor Fulton	Sheet 20 of 31



9TH FLOOR CENTRAL CORE

SHEET: 21 OF 31

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
A4789198
Fax: 01563 822220 email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

123-AHU03 CLEAN EXTRACT (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

DRAWN: LH/DG

DATE: 23/01/15

DRG. No.: 5902/V45

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Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

GRILLE TEST SHEET

SYSTEM: 123 – AHU 03 EXTRACT (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

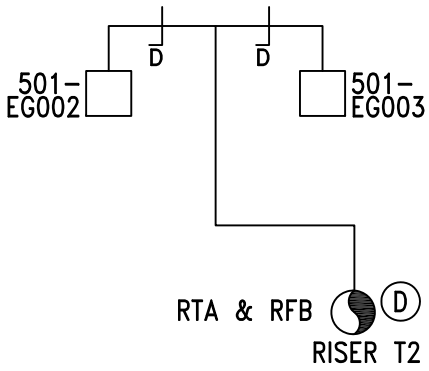
LEVEL 8 CENTRAL CORE

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
501-EG002	75	70	68	1.21	82.28	110
501-EG003	75	67	67	1.21	81.07	108

Remarks

Instrument Used: HV01/15

Date: 7/1/15	Engineer: Daniel Gilliland & Connor Fulton	Sheet 22 of 31



8TH FLOOR CENTRAL CORE

SHEET: 23 OF 31

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
A4789198
Fax: 01563 822220 email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

123-AHU03 CLEAN EXTRACT (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

DRAWN: LH/DG

DATE: 23/01/15

DRG. No.: 5902/V44

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Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

GRILLE TEST SHEET

SYSTEM: 123 – AHU 03 EXTRACT (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

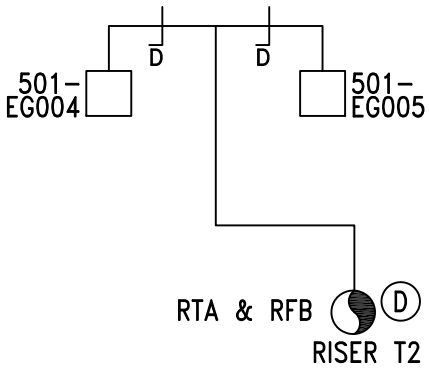
LEVEL 7 CENTRAL CORE

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
501-EG004	75	120	64	1.21	77.44	103
501-EG005	75	174	64	1.21	77.44	103

Remarks

Instrument Used: HV01/15

Date: 7/1/15	Engineer: Daniel Gilliland & Connor Fulton	Sheet 24 of 31



7TH FLOOR CENTRAL CORE

SHEET: 25 OF 31

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
A4709198
Fax: 01563 822220 email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

123-AHU03 CLEAN EXTRACT (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

DRAWN: LH/DG

DATE: 23/01/15

DRG. No.: 5902/V43

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EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

GRILLE TEST SHEET

SYSTEM: 123 – AHU 03 EXTRACT (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

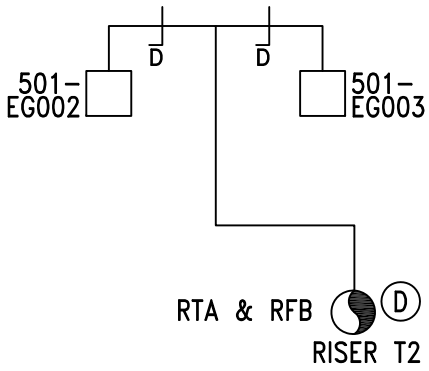
LEVEL 6 CENTRAL CORE

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
501-EG002	75	87	66	1.21	79.86	106
501-EG003	75	54	67	1.21	81.07	108

Remarks

Instrument Used: HV01/15

Date: 7/1/15	Engineer: Daniel Gilliland & Connor Fulton	Sheet 26 of 31



6TH FLOOR CENTRAL CORE

SHEET: 27 OF 31

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
A4709198
Fax: 01563 822220 email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

123-AHU03 CLEAN EXTRACT (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

DRAWN: LH/DG

DATE: 23/01/15

DRG. No.: 5902/V42

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H & V

Commissioning Services Ltd

EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

GRILLE TEST SHEET

SYSTEM: 123 – AHU 03 EXTRACT (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

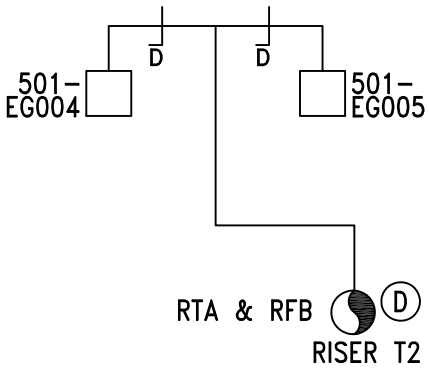
LEVEL 5 CENTRAL CORE

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
501-EG004	75	77	66	1.21	79.86	106
501-EG005	75	62	67	1.21	81.07	108

Remarks

Instrument Used: HV01/15

Date: 7/1/15	Engineer: Daniel Gilliland & Connor Fulton	Sheet 28 of 31



5TH FLOOR CENTRAL CORE

SHEET: 29 OF 31

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
Fax: 01563 822220 email: talk2us@handv.co.uk

A4/089198

CONTRACT:	NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123
CLIENT:	MERCURY ENGINEERING UK
TITLE:	SCHEMATIC LAYOUT OF 123-AHU03 CLEAN EXTRACT (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)
DRAWN:	LH/DG
DATE:	23/01/15
DRG. No.:	5902/V41

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H & V

Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

GRILLE TEST SHEET

SYSTEM: 123 – AHU 03 EXTRACT (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

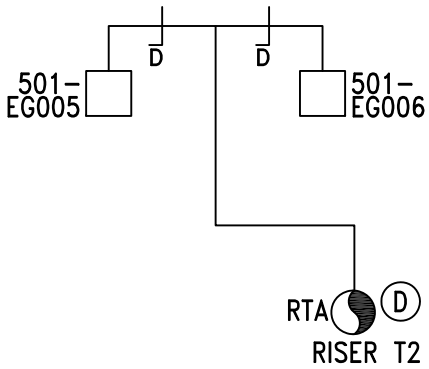
LEVEL 4 CENTRAL CORE

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
501-EG005	75	97	64	1.21	77.44	103
501-EG006	75	59	64	1.21	77.44	103

Remarks

Instrument Used: HV01/15

Date: 7/1/15	Engineer: Daniel Gilliland & Connor Fulton	Sheet 30 of 31



4TH FLOOR CENTRAL CORE

SHEET: 31 OF 31

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
A4789198
Fax: 01563 822220 email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

123-AHU03 CLEAN EXTRACT (CENTRAL CORE & 8TH TO 11TH FLOOR WARDS)

DRAWN: LH/DG

DATE: 23/01/15

DRG. No.: 5902/V40

H & V
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H & V

Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

SYSTEM: 123 - AHU 04 SUPPLY (4TH TO 7TH FLOOR WARDS)

WITNESSING OF TESTING AND BALANCING

	Client Representative / Commissioning Manager	Client
Witnessed By:	Julie Miller	
Representing:	Brookfield Multiplex	
Signature:	[redacted]	
Date:	11/12/14	
Witnessed By:		
Representing:		
Signature:		
Date:		

Remarks:

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Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

SYSTEM: 123 – AHU 04 SUPPLY (4TH TO 7TH FLOOR WARDS)

	AIR SYSTEMS PRE COMMISSIONING SHEET	✓	X	N/A
1.	Check AHU for damage and that all the components are secure	✓		
2.	Check the transit straps have been removed, if applicable	✓		
3.	Check pulleys are secure, tight, aligned and belts are correctly tensioned, if applicable	✓		
4.	Check with the controls engineer that the system is available to run and that plant rotation is correct	✓		
5.	Check all ductwork/air terminals are fitted and that air regulating dampers are open	✓		
6.	Check louvres are fitted and clear from obstructions, if applicable	✓		
7.	Check fire dampers are open, if applicable	✓		
8.	Check the motor overloads are suitable and set			✓
9.	Check VAV or CAV boxes are installed correctly and ready for use.			✓
10.	Check the floor plenums are complete, if applicable			✓
11.	Complete commissioning test sheets.	✓		

COMMENTS

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EST: 1975

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Galston,
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CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

AHU TEST SHEET

SYSTEM: 123 – AHU 04 SUPPLY (4TH TO 7TH FLOOR WARDS)

AHU										
AHU Manufacturer			Barkell		Fan Size			400		
Fan Manufacturer			Comefri		AHU Serial No			OP1 B305 8002		
Fan Type			Centrifugal		AHU Model N°.			TZAF 400 RFF		
			Design		**Test**				**% Design**	
Air Volume (L/S)			2400		2638				110	
External Static Pressure (Pa)			445		Inlet	76	Outlet	253	Total	329
Fan Rotational Speed (R.P.M)			2002		1601					
Filter Test Data	Pre Filter (Pa)	Inlet	N/A		Outlet	N/A			ΔP	*35
	Sec Filter (Pa)	Inlet	N/A		Outlet	N/A			ΔP	*75
MOTOR										
Manufacturer			TEC		Output kW			4.0		
Serial N°			1305-0563022		Motor Full Load Current			8.14		Amps
Voltage			400		Motor Running Current			5.0		Amps
			Design		**Test**					
Rotational Speed.			1430		1142					
DRIVE DETAILS										
Motor Pulley/Shaft Size (mm∅)			SPZ 140	28	Motor Pulley Taper Lock Size			1610		
Fan Pulley/Shaft Size (mm∅)			SPZ 100	40	Fan Pulley Taper Lock Size			1610		
Belt Type/Size			XPZ	950	N°. Of Belts			4		
Shaft Centres mm			280		Adjustment			- 25	+ 35	mm
Variable Speed Drive			Yes		Set Point			40Hz		
STANDBY PLANT										
Test Air Volume	2638	Inlet Pressure	76		Motor Rotational Speed	1142		Motor Running Current		
% Design	110	Outlet Pressure	253		Fan Rotational Speed	1601		5.0 Amps		
Variable Speed Drive			Yes		Set Point	40Hz				

Comments. N/A – Not Applicable

2nd Motor Serial Number – 1305-0563027

*Filter pressure taken from magnehelic gauge.

Static Pressure Sensor = 253Pa

Instrument Used (Ref N°.) HV01/1, HV01/4 & HV01/5

Date: 21/10/14	Engineer: Daniel Gilliland & Steven Hamilton	Sheet 3 of 15

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Ayshire, KA48HH.
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CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

DUCT VOLUME TEST SHEET

SYSTEM: 124 – AHU 04 SUPPLY (4TH TO 7TH FLOOR WARDS)

VELOCITY PROFILE (taken facing air flow) **TEST HOLE LOCATION: LEVEL 8 RISER**

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
Main TH				1100	500	0.6000		2400		4.00	
4.10	4.60	4.60	4.10	4.10	4.00						
4.40	5.00	5.00	4.60	4.50	4.20						
4.30	4.80	4.90	4.80	4.80	4.30						
3.70	4.20	4.30	4.40	4.00	3.80						
Velocity Sub Totals											
16.50	18.60	18.80	17.90	17.40	16.30						

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
105.5	24	4.40	2638	110	157

Remarks:

Instrument Used: HV01/1

Date: 21/10/14 | Engineer: Daniel Gilliland & Steven Hamilton | Sheet 4 of 15

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Galston,
Ayshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

DUCT VOLUME TEST SHEET

SYSTEM: 124 – AHU 04 SUPPLY (4TH TO 7TH FLOOR WARDS)

VELOCITY PROFILE (taken facing air flow)

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
TH1		160				0.0201		40		1.99	
2.00	1.80										
2.10	2.00										
2.10	2.20										
2.00	2.00										
Velocity Sub Totals											
8.20	8.00										

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
16.2	8	2.03	41	102	68

Remarks: Test Hole for Chilled Beam L1/1 Level 6

Instrument Used: HV01/1

Date: 21/10/14 | Engineer: Daniel Gilliland & Steven Hamilton | Sheet 5 of 15

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Commissioning Services Ltd
EST: 1975

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16 Barrmill Road,
Galston,
Ayshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

DUCT VOLUME TEST SHEET

SYSTEM: 124 – AHU 04 SUPPLY (4TH TO 7TH FLOOR WARDS)

VELOCITY PROFILE (taken facing air flow)

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
TH2		160				0.0201		40		1.99	
1.90	1.90										
2.10	2.00										
2.00	2.10										
1.90	2.00										
Velocity Sub Totals											
7.90	8.00										

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
15.9	8	1.99	40	100	77

Remarks: Test Hole for Chilled Beam L3/2 Level 6

Instrument Used: HV01/1

Date: 21/10/14 | Engineer: Daniel Gilliland & Steven Hamilton | Sheet 6 of 15

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Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

CHILLED BEAM BALANCE SHEET

SYSTEM: 123 – AHU 04 SUPPLY (4TH TO 7TH FLOOR WARDS)

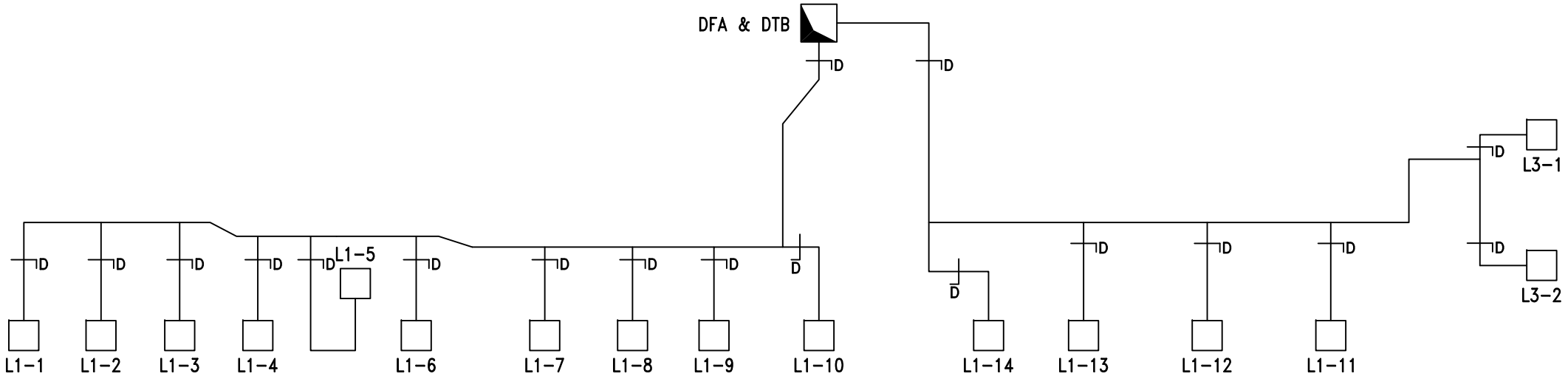
LEVEL 7

Chilled Beam Data			Design Data		Test Data			
No.	Size (mm)	Setting	Volume (l/s)	Pressure (Pa)	Initial Pressure (Pa)	Final Pressure (Pa)	Final Volume (l/s)	% Design
CB/W1/L1/1	N/A	N/A	40	51.8	40	51.5	39.90	100
CB/W1/L1/2	N/A	N/A	40	51.8	42	51.5	39.90	100
CB/W1/L1/3	N/A	N/A	40	51.8	64	53.0	40.50	101
CB/W1/L1/4	N/A	N/A	40	51.8	64	52.0	40.08	100
CB/W1/L1/5	N/A	N/A	40	51.8	65	52.0	40.08	100
CB/W1/L1/6	N/A	N/A	40	51.8	67	52.0	40.08	100
CB/W1/L1/7	N/A	N/A	40	51.8	67	51.5	39.90	100
CB/W1/L1/8	N/A	N/A	40	51.8	69	52.0	40.08	100
CB/W1/L1/9	N/A	N/A	40	51.8	71	53.0	40.50	101
CB/W1/L1/10	N/A	N/A	40	51.8	73	53.0	40.50	101
CB/W1/L3/1	N/A	N/A	40	63.0	74	64.0	40.30	101
CB/W1/L3/2	N/A	N/A	40	63.0	73	63.0	40.00	100
CB/W1/L1/11	N/A	N/A	40	51.8	67	52.0	40.08	100
CB/W1/L1/12	N/A	N/A	40	51.8	66	52.0	40.08	100
CB/W1/L1/13	N/A	N/A	40	51.8	68	53.0	40.50	101
CB/W1/L1/14	N/A	N/A	40	51.8	68	53.0	40.50	101

REMARKS

INSTRUMENT USED: HV01/1

Date:	21/10/14	Engineer:	Daniel Gilliland & Steven Hamilton	Sheet 7 of 15



LEVEL 7

SHEET: 8 OF 15

H&V Commissioning Services Limited **Kilknowe Office** **16 Barrmill Road** **Galston** **East Ayrshire, KA4 8HH** **Tel : 01563 824991** **Fax: 01563 822220 email: talk2us@handv.co.uk**	**CONTRACT:** **NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123** **CLIENT:** **MERCURY ENGINEERING UK**	**TITLE:** **SCHEMATIC LAYOUT OF** **123-AHU 04 SUPPLY (4TH-7TH FLOOR WARDS)**	**DRAWN:** LH/DG **DATE:** 24/11/14 **DRG. No.:** 5902/V06

A4709198

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H & V

Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

CHILLED BEAM BALANCE SHEET

SYSTEM: 123 – AHU 04 SUPPLY (4TH TO 7TH FLOOR WARDS)

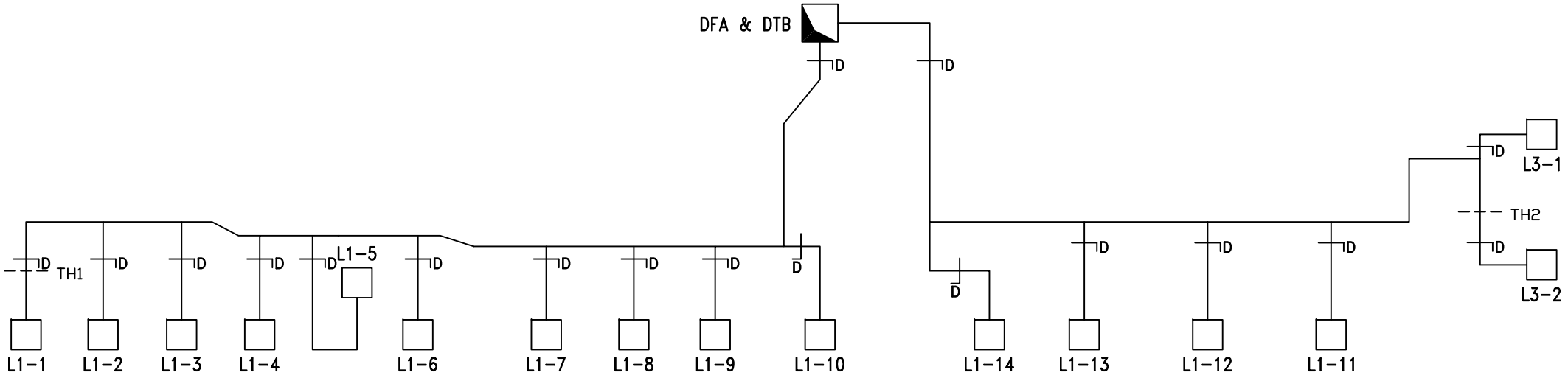
LEVEL 6

Chilled Beam Data			Design Data		Test Data			
No.	Size (mm)	Setting	Volume (l/s)	Pressure (Pa)	Initial Pressure (Pa)	Final Pressure (Pa)	Final Volume (l/s)	% Design
CB/W1/L1/1	N/A	N/A	40	51.8	47	51.5	39.90	100
CB/W1/L1/2	N/A	N/A	40	51.8	49	52.0	40.08	100
CB/W1/L1/3	N/A	N/A	40	51.8	54	52.0	40.08	100
CB/W1/L1/4	N/A	N/A	40	51.8	56	51.5	39.90	100
CB/W1/L1/5	N/A	N/A	40	51.8	56	53.0	40.50	101
CB/W1/L1/6	N/A	N/A	40	51.8	56	51.5	39.90	100
CB/W1/L1/7	N/A	N/A	40	51.8	57	52.0	40.08	100
CB/W1/L1/8	N/A	N/A	40	51.8	58	52.0	40.08	100
CB/W1/L1/9	N/A	N/A	40	51.8	59	53.0	40.50	101
CB/W1/L1/10	N/A	N/A	40	51.8	60	52.0	40.08	100
CB/W1/L3/1	N/A	N/A	40	63.0	72	62.5	39.80	100
CB/W1/L3/2	N/A	N/A	40	63.0	73	63.0	40.00	100
CB/W1/L1/11	N/A	N/A	40	51.8	77	52.0	40.08	100
CB/W1/L1/12	N/A	N/A	40	51.8	79	52.0	40.08	100
CB/W1/L1/13	N/A	N/A	40	51.8	81	53.0	40.50	101
CB/W1/L1/14	N/A	N/A	40	51.8	82	52.0	40.08	100

REMARKS

INSTRUMENT USED: HV01/1

Date:	21/10/14	Engineer:	Daniel Gilliland & Steven Hamilton	Sheet 9 of 15



LEVEL 6

SHEET: 10 OF 15

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
Fax: 01563 822220 email: talk2us@handv.co.uk

A47069198

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

123-AHU 04 SUPPLY (4TH-7TH FLOOR WARDS)

DRAWN: LH/DG

DATE: 24/11/14

DRG. No.: 5902/V07

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Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

CHILLED BEAM BALANCE SHEET

SYSTEM: 123 – AHU 04 SUPPLY (4TH TO 7TH FLOOR WARDS)

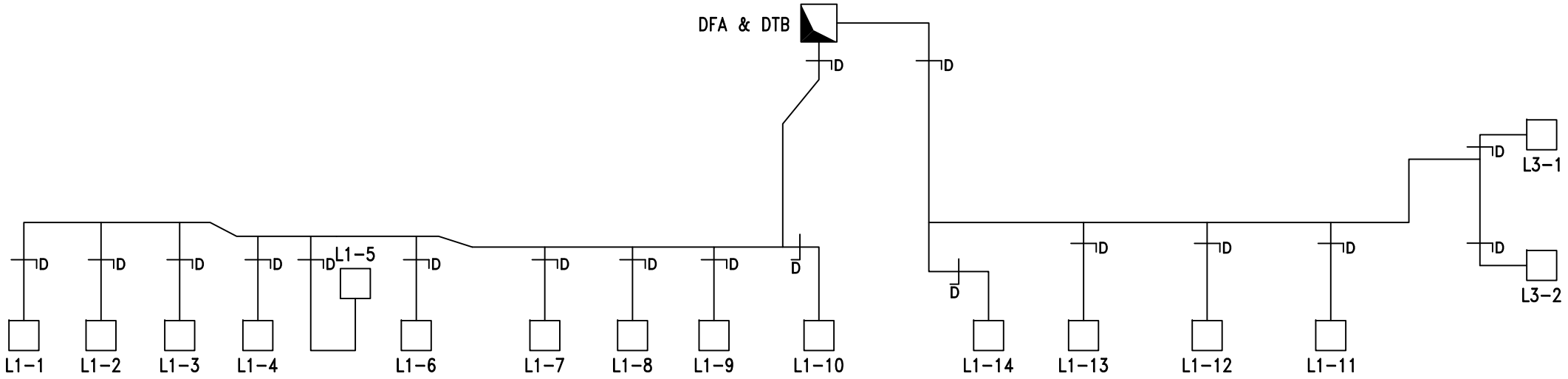
LEVEL 5

Chilled Beam Data			Design Data		Test Data			
No.	Size (mm)	Setting	Volume (l/s)	Pressure (Pa)	Initial Pressure (Pa)	Final Pressure (Pa)	Final Volume (l/s)	% Design
CB/W1/L1/1	N/A	N/A	40	51.8	42	51.5	39.90	100
CB/W1/L1/2	N/A	N/A	40	51.8	45	51.5	39.90	100
CB/W1/L1/3	N/A	N/A	40	51.8	46	52.0	40.08	100
CB/W1/L1/4	N/A	N/A	40	51.8	44	52.0	40.08	100
CB/W1/L1/5	N/A	N/A	40	51.8	52	52.0	40.08	100
CB/W1/L1/6	N/A	N/A	40	51.8	58	52.0	40.08	100
CB/W1/L1/7	N/A	N/A	40	51.8	58	53.0	40.50	101
CB/W1/L1/8	N/A	N/A	40	51.8	69	53.0	40.50	101
CB/W1/L1/9	N/A	N/A	40	51.8	69	53.0	40.50	101
CB/W1/L1/10	N/A	N/A	40	51.8	73	53.0	40.50	101
CB/W1/L3/1	N/A	N/A	40	63.0	74	63.0	40.00	100
CB/W1/L3/2	N/A	N/A	40	63.0	76	64.0	40.30	101
CB/W1/L1/11	N/A	N/A	40	51.8	78	52.0	40.08	100
CB/W1/L1/12	N/A	N/A	40	51.8	83	52.0	40.08	100
CB/W1/L1/13	N/A	N/A	40	51.8	80	52.0	40.08	100
CB/W1/L1/14	N/A	N/A	40	51.8	87	52.0	40.08	100

REMARKS

INSTRUMENT USED: HV01/1

Date:	21/10/14	Engineer:	Daniel Gilliland & Steven Hamilton	Sheet 11 of 15



LEVEL 5

SHEET: 12 OF 15

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
Fax: 01563 822220 email: talk2us@handv.co.uk

A47069198

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

123-AHU 04 SUPPLY (4TH-7TH FLOOR WARDS)

DRAWN: LH/DG

DATE: 24/11/14

DRG. No.: 5902/V08

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Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 123

CHILLED BEAM BALANCE SHEET

SYSTEM: 123 – AHU 04 SUPPLY (4TH TO 7TH FLOOR WARDS)

LEVEL 4

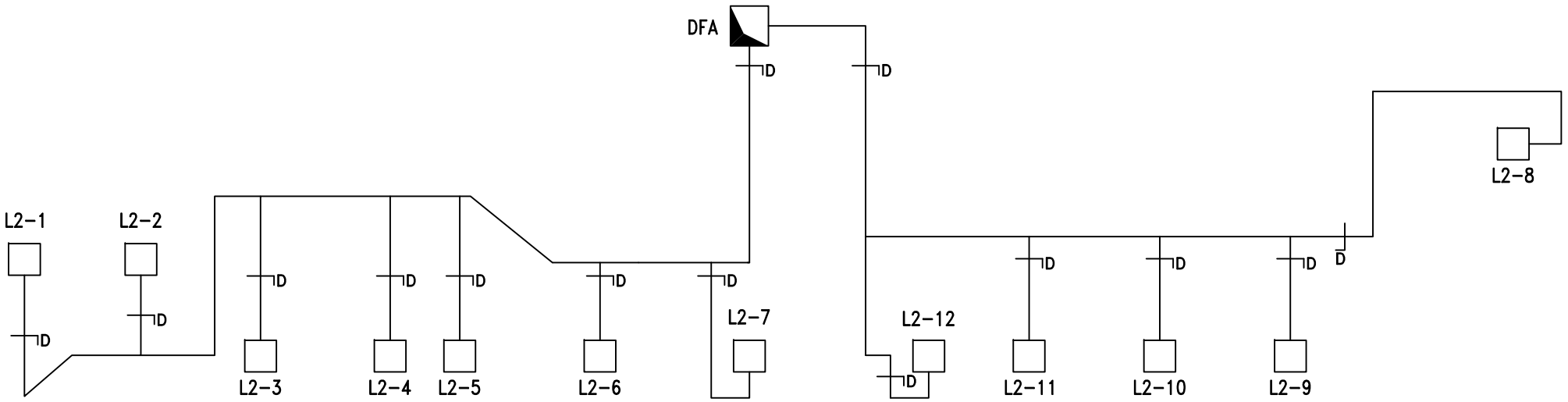
Chilled Beam Data			Design Data		Test Data			
No.	Size (mm)	Setting	Volume (l/s)	Pressure (Pa)	Initial Pressure (Pa)	Final Pressure (Pa)	Final Volume (l/s)	% Design
CB/W1/L2/1	N/A	N/A	40	63	56	62.5	39.8	100
CB/W1/L2/2	N/A	N/A	40	63	56	63.0	40.0	100
CB/W1/L2/3	N/A	N/A	40	63	59	64.0	40.3	101
CB/W1/L2/4	N/A	N/A	40	63	60	64.0	40.3	101
CB/W1/L2/5	N/A	N/A	40	63	57	63.0	40.0	100
CB/W1/L2/6	N/A	N/A	40	63	64	65.0	40.6	102
CB/W1/L2/7	N/A	N/A	40	63	90	64.0	40.3	101
CB/W1/L2/8	N/A	N/A	40	63	74	64.0	40.3	101
CB/W1/L2/9	N/A	N/A	40	63	74	64.0	40.3	101
CB/W1/L2/10	N/A	N/A	40	63	81	63.0	40.0	100
CB/W1/L2/11	N/A	N/A	40	63	84	64.0	40.3	101
CB/W1/L2/12	N/A	N/A	40	63	86	63.0	40.0	100

REMARKS

INSTRUMENT USED: HV01/1

Date:	21/10/14	Engineer:	Daniel Gilliland & Steven Hamilton	Sheet 13 of 15

ALL CHILLED BEAMS PRE-FIXED CB/W1/

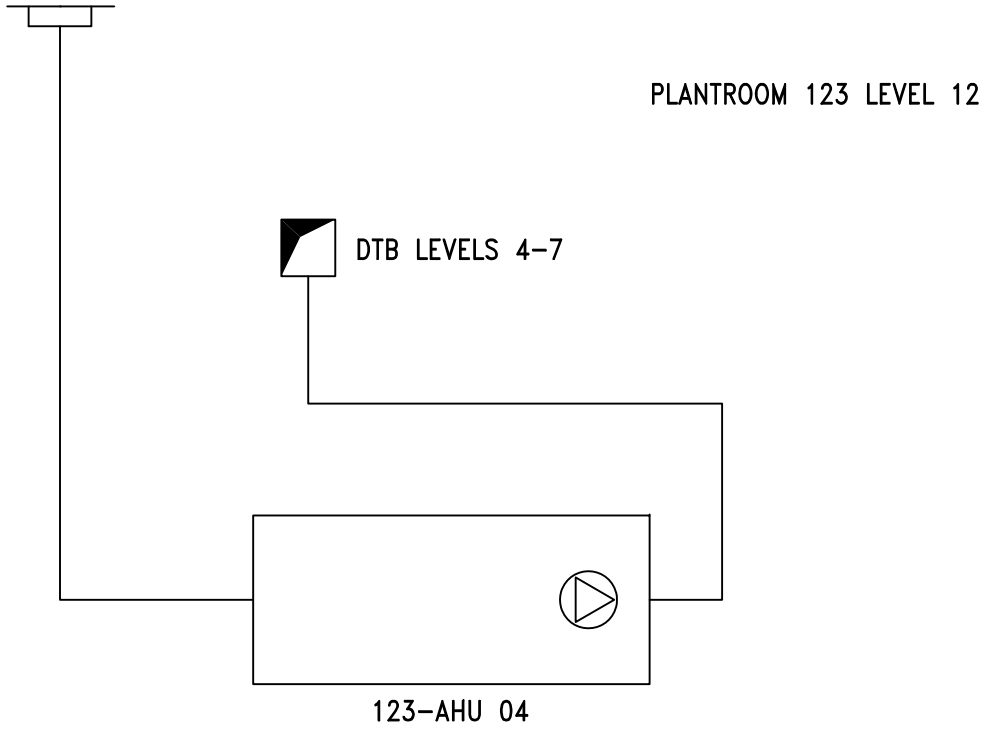


LEVEL 4

SHEET: 14 OF 15

H&V Commissioning Services Limited **Kilknowe Office** **16 Barrmill Road** **Galston** **East Ayrshire, KA4 8HH** **Tel : 01563 824991** **Fax: 01563 822220 email: talk2us@handv.co.uk**	**CONTRACT:** **NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123** **CLIENT:** **MERCURY ENGINEERING UK**	**TITLE:** **SCHEMATIC LAYOUT OF** **123-AHU 04 SUPPLY (4TH-7TH FLOOR WARDS)**	**DRAWN:** LH/DG **DATE:** 22/01/2015 **DRG. No.:** 5902/V09

A4/089198



SHEET: 15 OF 15

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
A4789198
Fax: 01563 822220 email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

123-AHU 04 SUPPLY (4TH-7TH FLOOR WARDS)

DRAWN: LH/DG

DATE: 24/11/14

DRG. No.: 5902/V10

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H & V

Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
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Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

SYSTEM: 124 – AHU 04 DIRTY EXTRACT (LEVELS 4, 5, 6 & 7)

WITNESSING OF TESTING AND BALANCING

	Client Representative / Commissioning Manager	Client
Witnessed By:	David Wilson	
Representing:	Brookfield Multiplex	
Signature:	[redacted]	
Date:	12/12/14	
Witnessed By:		
Representing:		
Signature:		
Date:		

Remarks:

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Commissioning Services Ltd
EST: 1975

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FAX N°. 01563 822220
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CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

SYSTEM: 124 – AHU 04 DIRTY EXTRACT (LEVELS 4, 5, 6 & 7)

	AIR SYSTEMS PRE COMMISSIONING SHEET	✓	X	N/A
1.	Check AHU for damage and that all the components are secure	✓		
2.	Check the transit straps have been removed, if applicable	✓		
3.	Check pulleys are secure, tight, aligned and belts are correctly tensioned, if applicable	✓		
4.	Check with the controls engineer that the system is available to run and that plant rotation is correct	✓		
5.	Check all ductwork/air terminals are fitted and that air regulating dampers are open	✓		
6.	Check louvres are fitted and clear from obstructions, if applicable	✓		
7.	Check fire dampers are open, if applicable	✓		
8.	Check the motor overloads are suitable and set			✓
9.	Check VAV or CAV boxes are installed correctly and ready for use.			✓
10.	Check the floor plenums are complete, if applicable			✓
11.	Complete commissioning test sheets.	✓		

COMMENTS

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16 Barrmill Road,
Galston,
Ayshire, KA48HH.
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CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

AHU TEST SHEET

SYSTEM: 124 – AHU 04 DIRTY EXTRACT (LEVELS 4, 5, 6 & 7)

AHU											
AHU Manufacturer			Barkell		Fan Size			450			
Fan Manufacturer			Comefri		AHU Serial No			OP1 B3050963			
Fan Type			Centrifugal		AHU Model N°.			TZAF 450 RFF			
			Design		**Test**					**% Design**	
Air Volume (L/S)			2608		2750					105	
External Static Pressure (Pa)			420		Inlet	224	Outlet	42	Total	266	
Fan Rotational Speed (R.P.M)			2400		2256						
Filter Test Data	Pre Filter (Pa)	Inlet	*		Outlet	*			ΔP	30	
	Sec Filter (Pa)	Inlet	N/A		Outlet	N/A			ΔP	N/A	

MOTOR			
Manufacturer	TEC	Output kW	4.0
Serial N°	1305-0562805	Motor Full Load Current	8.14 Amps
Voltage	400	Motor Running Current	5.18 Amps
	Design	**Test**	
Rotational Speed.	1430	1344	

DRIVE DETAILS			
Motor Pulley/Shaft Size (mm∅)	SPZ 180 28	Motor Pulley Taper Lock Size	2012
Fan Pulley/Shaft Size (mm∅)	SPZ 170 50	Fan Pulley Taper Lock Size	2517
Belt Type/Size	XPZ 1162	N°. Of Belts	4
Shaft Centres mm	300	Adjustment	- 20 + 40 mm
Variable Speed Drive	Yes	Set Point	47Hz

STANDBY PLANT							
Test Air Volume	2750	Inlet Pressure	224	Motor Rotational Speed	1344	Motor Running Current	
% Design	105	Outlet Pressure	42	Fan Rotational Speed	2256	5.18	Amps
Variable Speed Drive			Yes	Set Point	47Hz		

Comments. 2nd Motor Serial Number – 1305-0562818.

*Filter pressure taken from magnehelic gauge.

N/A – Not Applicable.

Instrument Used (Ref N°.) HV12/1, HV12/4 & HV12/5

Date: 02/10/14	Engineer: Stephen Murdoch & Grant Foster	Sheet 3 of 14

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FAX N°. 01563 822220
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DUCT VOLUME TEST SHEET

SYSTEM: 124 – AHU 04 DIRTY EXTRACT (LEVELS 4, 5, 6 & 7)

VELOCITY PROFILE (taken facing air flow) **TEST HOLE LOCATION: LEVEL 8, RISER T6**

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
Main				1000	600	0.6000		2608		4.35	
4.70	4.90	4.50	4.80	4.90	4.30						
4.50	4.20	3.90	4.50	4.90	4.80						
4.20	4.20	4.50	4.90	4.80	4.70						
4.00	4.10	4.80	5.10	5.00	4.80						
Velocity Sub Totals											
17.40	17.40	17.70	19.30	19.60	18.60						

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
110	24	4.58	2750	105	165

Remarks:

Instrument Used: HV12/1

Date: 02/10/14 | Engineer: Stephen Murdoch & Gregor Fulton | Sheet 4 of 14

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FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

DUCT VOLUME TEST SHEET

SYSTEM: 124 – AHU 04 DIRTY EXTRACT (LEVELS 4, 5, 6 & 7)

VELOCITY PROFILE (taken facing air flow) **TEST HOLE LOCATION: ABOVE CEILING**

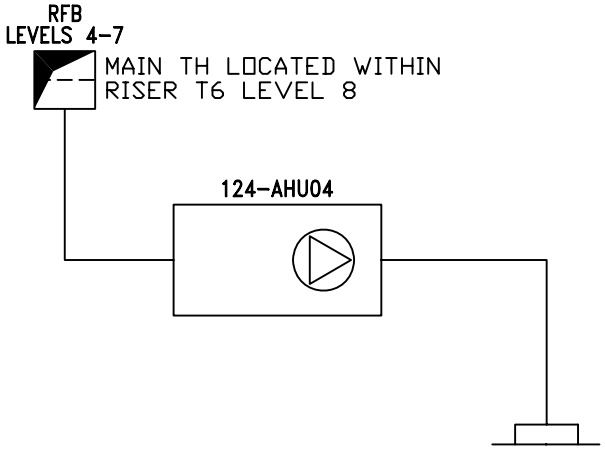
Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
TH1		160				0.0201		45		2.24	
2.40	2.30										
2.20	2.20										
2.20	2.10										
2.30	2.20										
Velocity Sub Totals											
9.10	8.80										

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
17.9	8	2.24	45	100	34

Remarks: Test Hole serves 509-TG007, Level 7.
Test Volume = 45 l/s ÷ Balometer Volume = 41 l/s = 1.10 Factor

Instrument Used: HV12/1

Date: 02/10/14 | Engineer: Stephen Murdoch & Gregor Fulton | Sheet 5 of 14



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Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220
email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 124

CLIENT:
MERCURY ENGINEERING LTD.

TITLE:
SCHEMATIC LAYOUT OF 124-AHU04 EXTRACT PLANTROOM 124 - LEVEL 12

DRAWN: KL/SM

DATE: 27/11/14

DRG No.: 5902/V16

SHEET: 6 OF 14

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16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

GRILLE TEST SHEET

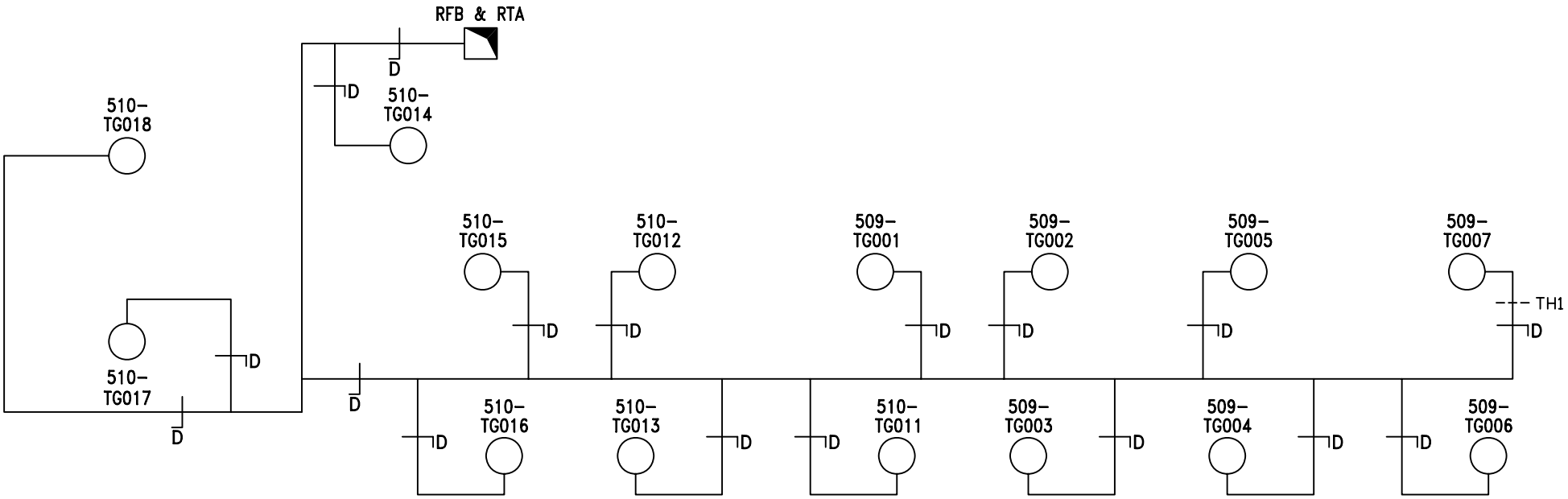
SYSTEM: 124 – AHU 04 DIRTY EXTRACT (LEVELS 4, 5, 6 & 7)

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
LEVEL 7						
*TG007	45	21	41	1.10	45.10	100
*TG006	45	29	44	1.10	48.40	108
*TG004	45	22	41	1.10	45.10	100
*TG005	45	31	42	1.10	46.20	103
*TG003	45	39	42	1.10	46.20	103
*TG002	45	37	42	1.10	46.20	103
*TG001	45	48	41	1.10	45.10	100
**TG011	45	45	41	1.10	45.10	100
**TG013	45	54	42	1.10	46.20	103
**TG012	45	55	43	1.10	47.30	105
**TG015	45	55	43	1.10	47.30	105
**TG016	45	59	44	1.10	48.40	108
**TG017	45	71	41	1.10	45.10	100
**TG018	45	61	42	1.10	46.20	103
**TG014	22	43	21	1.10	23.10	105

Remarks: *All Grilles prefixed with 509- **All Grilles prefixed with 510-

Instrument Used: HV12/15

Date: 02/10/14	Engineer: Stephen Murdoch & Gregor Fulton	Sheet 7 of 14



H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220 44 1563 820198
email: talk2us@handv.co.uk

CONTRACT:	NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 124
CLIENT:	MERCURY ENGINEERING LTD.
TITLE:	SCHEMATIC LAYOUT OF 124-AHU04 DIRTY EXTRACT LEVEL 7 ZONE H
DRAWN:	KL/SM
DATE:	27/11/14
DRG No.:	5902/V20
SHEET:	8 OF 14

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Galston,
Ayrshire, KA48HH.
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FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

GRILLE TEST SHEET

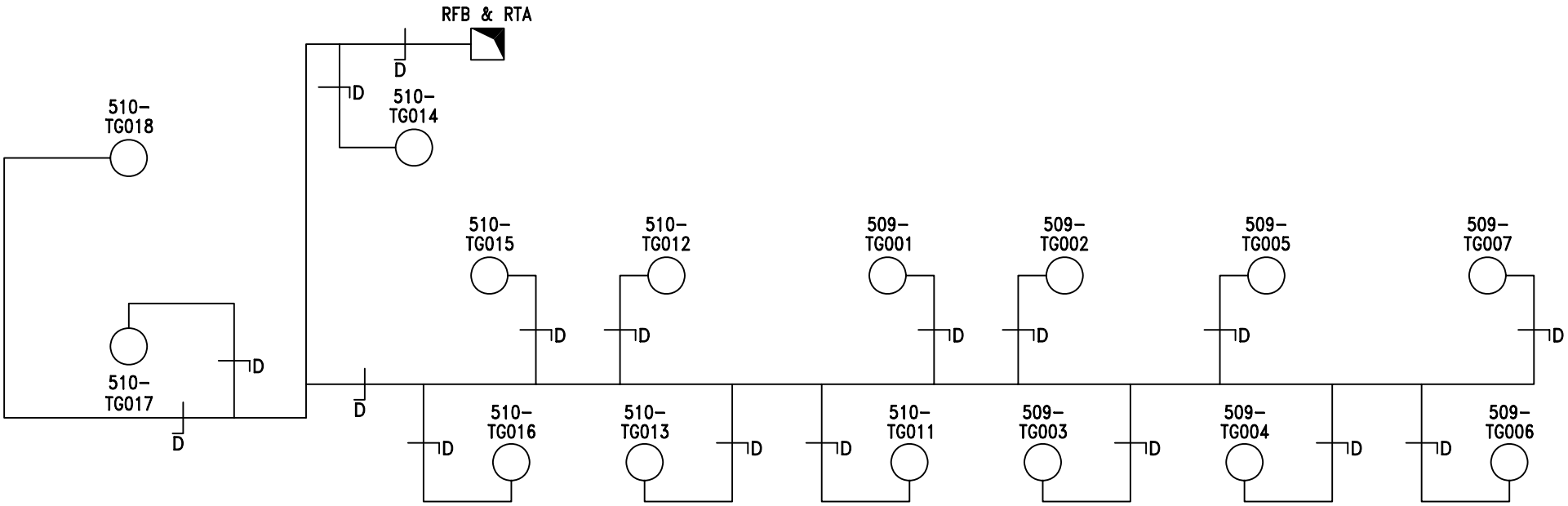
SYSTEM: 124 – AHU 04 DIRTY EXTRACT (LEVELS 4, 5, 6 & 7)

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
LEVEL 6						
*TG007	45	21	42	1.10	46.20	103
*TG006	45	22	42	1.10	46.20	103
*TG004	45	29	42	1.10	46.20	103
*TG005	45	23	42	1.10	46.20	103
*TG003	45	33	42	1.10	46.20	103
*TG002	45	40	42	1.10	46.20	103
*TG001	45	40	42	1.10	46.20	103
**TG011	45	46	43	1.10	47.30	105
**TG013	45	52	43	1.10	47.30	105
**TG012	45	58	42	1.10	46.20	103
**TG015	45	65	42	1.10	46.20	103
**TG016	45	54	42	1.10	46.20	103
**TG017	45	49	42	1.10	46.20	103
**TG018	45	70	42	1.10	46.20	103
**TG014	22	46	21	1.10	23.10	105

Remarks: *All Grilles prefixed with 509- **All Grilles prefixed with 510-

Instrument Used: HV12/15

Date: 02/10/14	Engineer: Stephen Murdoch & Gregor Fulton	Sheet 9 of 14



H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220
email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 124

CLIENT:
MERCURY ENGINEERING LTD.

TITLE:
SCHEMATIC LAYOUT OF 124-AHU04 DIRTY EXTRACT LEVEL 6 ZONE H

DRAWN: KL/SM
DATE: 27/11/14
DRG No.: 5902/V19
SHEET: 10 OF 14

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16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
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FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

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GRILLE TEST SHEET

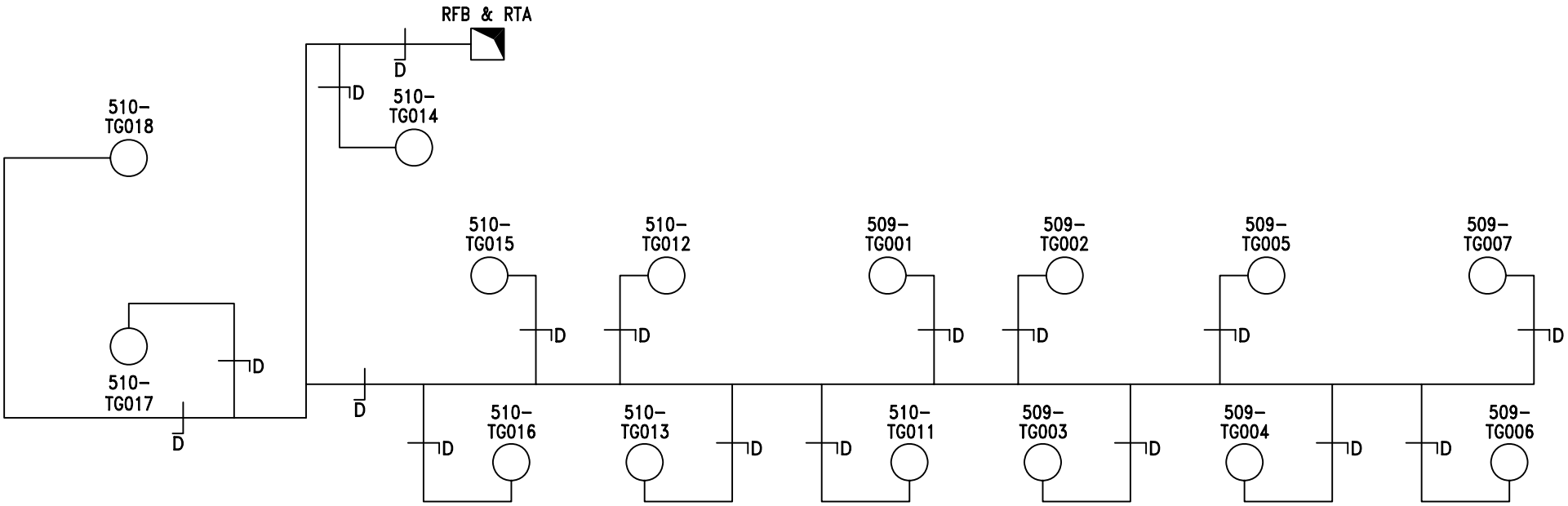
SYSTEM: 124 – AHU 04 DIRTY EXTRACT (LEVELS 4, 5, 6 & 7)

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
LEVEL 5						
*TG007	45	22	41	1.10	45.10	100
*TG006	45	29	41	1.10	45.10	100
*TG004	45	33	41	1.10	45.10	100
*TG005	45	24	41	1.10	45.10	100
*TG003	45	61	41	1.10	45.10	100
*TG002	45	60	41	1.10	45.10	100
*TG001	45	46	41	1.10	45.10	100
**TG011	45	54	41	1.10	45.10	100
**TG013	45	65	41	1.10	45.10	100
**TG012	45	89	41	1.10	45.10	100
**TG015	45	84	41	1.10	45.10	100
**TG016	45	91	42	1.10	46.20	103
**TG017	45	74	42	1.10	46.20	103
**TG018	45	65	42	1.10	46.20	103
**TG014	22	52	20	1.10	22.00	100

Remarks: *All Grilles prefixed with 509- **All Grilles prefixed with 510-

Instrument Used: HV12/15

Date: 02/10/14	Engineer: Stephen Murdoch & Gregor Fulton	Sheet 11 of 14



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Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220
email: talk2us@handv.co.uk

CONTRACT:
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CLIENT:
MERCURY ENGINEERING LTD.

TITLE:
SCHEMATIC LAYOUT OF 124-AHU04 DIRTY EXTRACT LEVEL 5 ZONE H

DRAWN: KL/SM

DATE: 27/11/14

DRG No.: 5902/V18

SHEET: 12 OF 14

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FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

GRILLE TEST SHEET

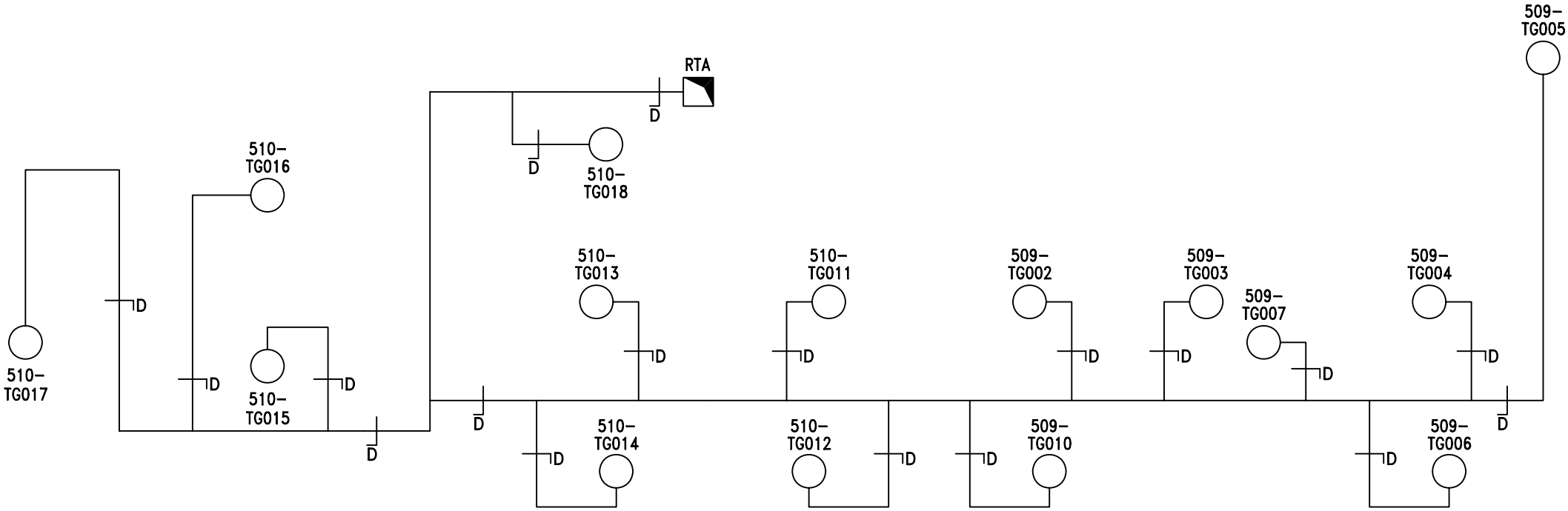
SYSTEM: 124 – AHU 04 DIRTY EXTRACT (LEVELS 4, 5, 6 & 7)

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
LEVEL 4						
**TG017	45	39	41	1.10	45.10	100
**TG016	45	51	42	1.10	46.20	103
**TG015	45	61	41	1.10	45.10	100
*TG005	29	13	27	1.10	29.70	102
*TG004	39	29	36	1.10	39.60	102
*TG006	45	29	42	1.10	46.20	103
*TG007	45	30	42	1.10	46.20	103
*TG003	45	33	41	1.10	45.10	100
*TG002	45	35	41	1.10	45.10	100
**TG010	45	49	41	1.10	45.10	100
**TG012	45	57	41	1.10	45.10	100
**TG011	45	57	41	1.10	45.10	100
**TG013	45	57	41	1.10	45.10	100
**TG014	45	57	41	1.10	45.10	100
**TG018	44	48	42	1.10	46.20	105

Remarks: *All Grilles prefixed with 509- **All Grilles prefixed with 510-

Instrument Used: HV12/15

Date: 02/10/14	Engineer: Stephen Murdoch & Gregor Fulton	Sheet 13 of 14



LEVEL 4

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220
email: talk2us@handv.co.uk

CONTRACT:
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CLIENT:
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TITLE:
SCHEMATIC LAYOUT OF 124-AHU04 DIRTY EXTRACT LEVEL 4

DRAWN: LH/SM
DATE: 27/11/14
DRG No.: 5902/V17
SHEET: 14 OF 14

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SYSTEM: 124 – AHU 04 SUPPLY (LEVELS 4, 5, 6 & 7)

WITNESSING OF TESTING AND BALANCING

	Client Representative / Commissioning Manager	Client
Witnessed By:	David Wilson	
Representing:	Brookfield Multiplex	
Signature:	[redacted]	
Date:	12/12/14	
Witnessed By:		
Representing:		
Signature:		
Date:		

Remarks:

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Galston,
Ayrshire, KA48HH.
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FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

SYSTEM: 124 – AHU 04 SUPPLY (LEVELS 4, 5, 6 & 7)

	AIR SYSTEMS PRE COMMISSIONING SHEET	✓	X	N/A
1.	Check AHU for damage and that all the components are secure	✓		
2.	Check the transit straps have been removed, if applicable	✓		
3.	Check pulleys are secure, tight, aligned and belts are correctly tensioned, if applicable	✓		
4.	Check with the controls engineer that the system is available to run and that plant rotation is correct	✓		
5.	Check all ductwork/air terminals are fitted and that air regulating dampers are open	✓		
6.	Check louvres are fitted and clear from obstructions, if applicable	✓		
7.	Check fire dampers are open, if applicable	✓		
8.	Check the motor overloads are suitable and set			✓
9.	Check VAV or CAV boxes are installed correctly and ready for use.			✓
10.	Check the floor plenums are complete, if applicable			✓
11.	Complete commissioning test sheets.	✓		

COMMENTS

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FAX N°. 01563 822220
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CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

AHU TEST SHEET — SYSTEM: 124 – AHU 04 SUPPLY (LEVELS 4, 5, 6 & 7)

AHU											
AHU Manufacturer			Barkell		Fan Size			400			
Fan Manufacturer			Comefri		AHU Serial No			OP1B3050962			
Fan Type			Centrifugal		AHU Model N°.			TZAF 400 RFF			
			Design		**Test**					**% Design**	
Air Volume		(L/S)	2560		2788					109	
External Static Pressure		(Pa)	480		Inlet	80	Outlet	310	Total	390	
Fan Rotational Speed		(R.P.M)	2700		2592						
Filter Test Data	Pre Filter	(Pa)	Inlet	*	Outlet	*			ΔP	45	
	Sec Filter	(Pa)	Inlet	*	Outlet	*			ΔP	50	
MOTOR											
Manufacturer			TEC		Output kW			5.5			
Serial N°			1305-0265837		Motor Full Load Current			10.9	Amps		
Voltage			400		Motor Running Current			7.43	Amps		
			Design		**Test**						
Rotational Speed.			1450		1392						
DRIVE DETAILS											
Motor Pulley/Shaft Size		(mm∅)	SPZ 140	28	Motor Pulley Taper Lock Size			2012			
Fan Pulley/Shaft Size		(mm∅)	SPZ 118	40	Fan Pulley Taper Lock Size			2012			
Belt Type/Size			XPZ	1012	N°. Of Belts			4			
Shaft Centres mm			285		Adjustment			-	35	+	25 mm
Variable Speed Drive			Yes		Set Point			48Hz			
STANDBY PLANT											
Test Air Volume	2788	Inlet Pressure	80		Motor Rotational Speed	1392	Motor Running Current				
% Design	109	Outlet Pressure	310		Fan Rotational Speed	2592	7.43 Amps				
Variable Speed Drive			Yes		Set Point	48Hz					

Comments. 2nd Motor Serial Number – 1305-0265861

*Filter pressure taken from magnehelic gauge.

Control static pressure sensor = 305Pa.

Instrument Used (Ref N°.) HV12/1, HV12/4 & HV12/5

Date: 30/09/14	Engineer: Stephen Murdoch & Grant Foster	Sheet 3 of 15

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayshire, KA48HH.
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FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

DUCT VOLUME TEST SHEET

SYSTEM: 124 – AHU 04 SUPPLY (LEVELS 4, 5, 6 & 7)

VELOCITY PROFILE (taken facing air flow) **TEST HOLE LOCATION: PLANTROOM 124**

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
Main				1000	600	0.6000		2560		4.27	
5.40	5.00	4.50	4.40	4.40	3.90						
6.20	4.90	4.40	3.90	3.90	3.60						
6.20	5.30	4.50	3.80	3.70	3.30						
6.10	5.70	5.50	5.00	4.70	3.20						
Velocity Sub Totals											
23.90	20.90	18.90	17.10	16.70	14.00						

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
111.5	24	4.65	2788	109	190

Remarks:

Instrument Used: HV12/1

Date: 30/09/14 | Engineer: Stephen Murdoch & Gregor Fulton | Sheet 4 of 15

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16 Barrmill Road,
Galston,
Ayshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

DUCT VOLUME TEST SHEET

SYSTEM: 124 – AHU 04 SUPPLY (LEVELS 4, 5, 6 & 7)

VELOCITY PROFILE (taken facing air flow) **TEST HOLE LOCATION: CEILING VOID**

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
TH1		160				0.0201		40		1.99	
2.00	2.10										
1.90	2.30										
2.20	2.30										
2.30	2.20										
Velocity Sub Totals											
8.40	8.90										

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
17.3	8	2.16	43	109	101

Remarks: Test Hole serves CB/W1/L3/1, Level 7.

Instrument Used: HV12/1

Date: 30/09/14 | Engineer: Stephen Murdoch & Gregor Fulton | Sheet 5 of 15

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Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

DUCT VOLUME TEST SHEET

SYSTEM: 124 – AHU 04 SUPPLY (LEVELS 4, 5, 6 & 7)

VELOCITY PROFILE (taken facing air flow) **TEST HOLE LOCATION: CEILING VOID**

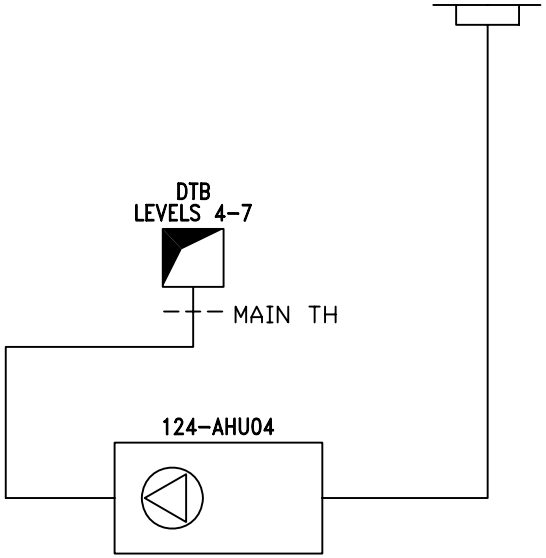
Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
TH2		160				0.0201		40		1.99	
1.90	2.00										
2.20	2.10										
2.40	2.50										
2.00	2.10										
Velocity Sub Totals											
8.50	8.70										

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
17.2	8	2.15	43	108	72

Remarks: Test Hole serves CB/W1/L1/14, Level 7.

Instrument Used: HV12/1

Date: 30/09/14 | Engineer: Stephen Murdoch & Gregor Fulton | Sheet 6 of 15



H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220
email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 124

CLIENT:
MERCURY ENGINEERING LTD.

TITLE:
SCHEMATIC LAYOUT OF 124-AHU04 SUPPLY PLANTROOM 124 - LEVEL 12

DRAWN: KL/SM

DATE: 27/11/14

DRG No.: 5902/V11

SHEET: 7 OF 15

A4.0019198

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EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

CHILLED BEAM BALANCE SHEET

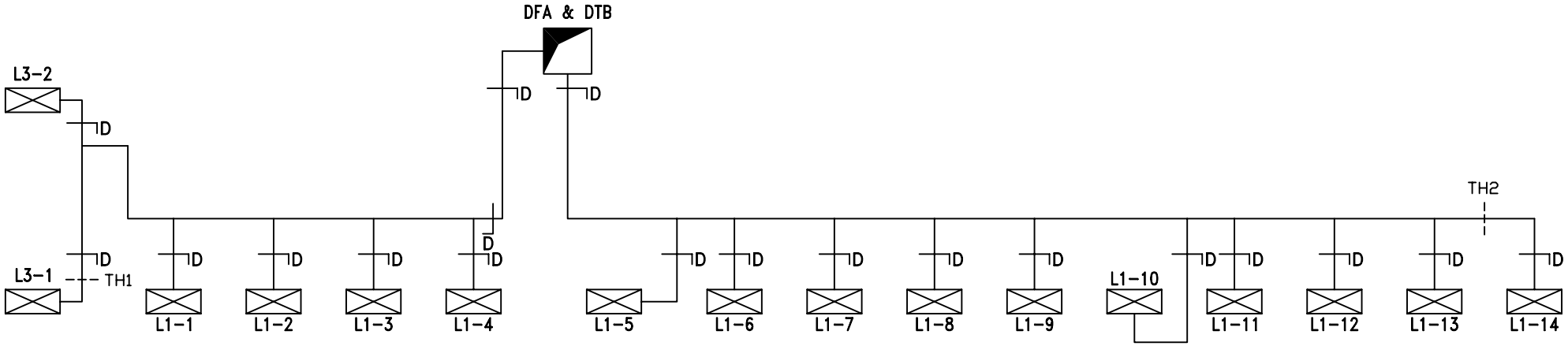
SYSTEM: 124 – AHU 04 SUPPLY (LEVELS 4, 5, 6 & 7)

Chilled Beam Data			Design Data		Test Data			
No.	Size (mm)	Setting	Volume (l/s)	Pressure (Pa)	Initial Pressure (Pa)	Final Pressure (Pa)	Final Volume (l/s)	% Design
LEVEL 7								
CB/W1/L3/1	N/A	N/A	40	63	62	63	40	100
CB/W1/L3/2	N/A	N/A	40	63	74	63	40	100
CB/W1/L1/1	N/A	N/A	40	51.8	83	52	40.1	100
CB/W1/L1/2	N/A	N/A	40	51.8	80	52	40.1	100
CB/W1/L1/3	N/A	N/A	40	51.8	80	52	40.1	100
CB/W1/L1/4	N/A	N/A	40	51.8	87	52	40.1	100
CB/W1/L1/14	N/A	N/A	40	51.8	50	53	40.5	101
CB/W1/L1/13	N/A	N/A	40	51.8	49	52	40.1	100
CB/W1/L1/12	N/A	N/A	40	51.8	54	52	40.1	100
CB/W1/L1/11	N/A	N/A	40	51.8	55	52	40.1	100
CB/W1/L1/10	N/A	N/A	40	51.8	65	52	40.1	100
CB/W1/L1/9	N/A	N/A	40	51.8	65	52	40.1	100
CB/W1/L1/8	N/A	N/A	40	51.8	71	52	40.1	100
CB/W1/L1/7	N/A	N/A	40	51.8	69	52	40.1	100
CB/W1/L1/6	N/A	N/A	40	51.8	73	52	40.1	100
CB/W1/L1/5	N/A	N/A	40	51.8	85	53	40.5	101

REMARKS:

INSTRUMENT USED: HV12/1

Date:	30/09/14	Engineer:	Stephen Murdoch & Gregor Fulton	Sheet 8 of 15



L3-5 ALL CHILLED BEAMS PREFIXED CB/W1/

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220
email: talk2us@handv.co.uk

A4.0198

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 124

CLIENT:
MERCURY ENGINEERING LTD.

TITLE:
SCHEMATIC LAYOUT OF
124-AHU04 SUPPLY
LEVEL 7 - ZONE H

DRAWN: KL/SM

DATE: 27/11/14

DRG No.: 5902/V15

SHEET: 9 OF 15

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

CHILLED BEAM BALANCE SHEET

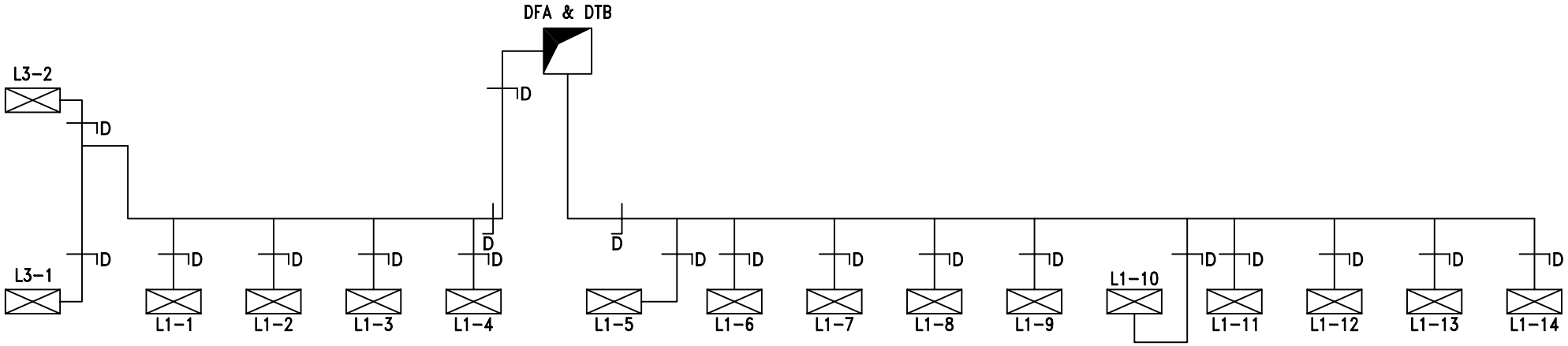
SYSTEM: 124 – AHU 04 SUPPLY (LEVELS 4, 5, 6 & 7)

Chilled Beam Data			Design Data		Test Data			
No.	Size (mm)	Setting	Volume (l/s)	Pressure (Pa)	Initial Pressure (Pa)	Final Pressure (Pa)	Final Volume (l/s)	% Design
LEVEL 6								
CB/W1/L3/1	N/A	N/A	40	63	80	63	40	100
CB/W1/L3/2	N/A	N/A	40	63	51	64	40.3	101
CB/W1/L1/1	N/A	N/A	40	51.8	83	52	40.1	100
CB/W1/L1/2	N/A	N/A	40	51.8	84	52	40.1	100
CB/W1/L1/3	N/A	N/A	40	51.8	84	53	40.5	101
CB/W1/L1/4	N/A	N/A	40	51.8	84	53	40.5	101
CB/W1/L1/14	N/A	N/A	40	51.8	56	54	40.8	102
CB/W1/L1/13	N/A	N/A	40	51.8	55	53	40.5	101
CB/W1/L1/12	N/A	N/A	40	51.8	57	53	40.5	101
CB/W1/L1/11	N/A	N/A	40	51.8	61	53	40.5	101
CB/W1/L1/10	N/A	N/A	40	51.8	69	56	41.6	104
CB/W1/L1/9	N/A	N/A	40	51.8	68	54	40.8	102
CB/W1/L1/8	N/A	N/A	40	51.8	79	53	40.5	101
CB/W1/L1/7	N/A	N/A	40	51.8	75	55	41.2	103
CB/W1/L1/6	N/A	N/A	40	51.8	82	53	40.5	101
CB/W1/L1/5	N/A	N/A	40	51.8	93	54	40.8	102

REMARKS:

INSTRUMENT USED: HV12/1

Date:	30/09/14	Engineer:	Stephen Murdoch & Gregor Fulton	Sheet 10 of 15



L3-5 ALL CHILLED BEAMS PREFIXED CB/W1/

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220
email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 124

CLIENT:
MERCURY ENGINEERING LTD.

TITLE:
SCHEMATIC LAYOUT OF
124-AHU04 SUPPLY
LEVEL 6 - ZONE H

DRAWN: KL/SM

DATE: 27/11/14

DRG No.: 5902/V14

SHEET: 11 OF 15

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Commissioning Services Ltd

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

CHILLED BEAM BALANCE SHEET

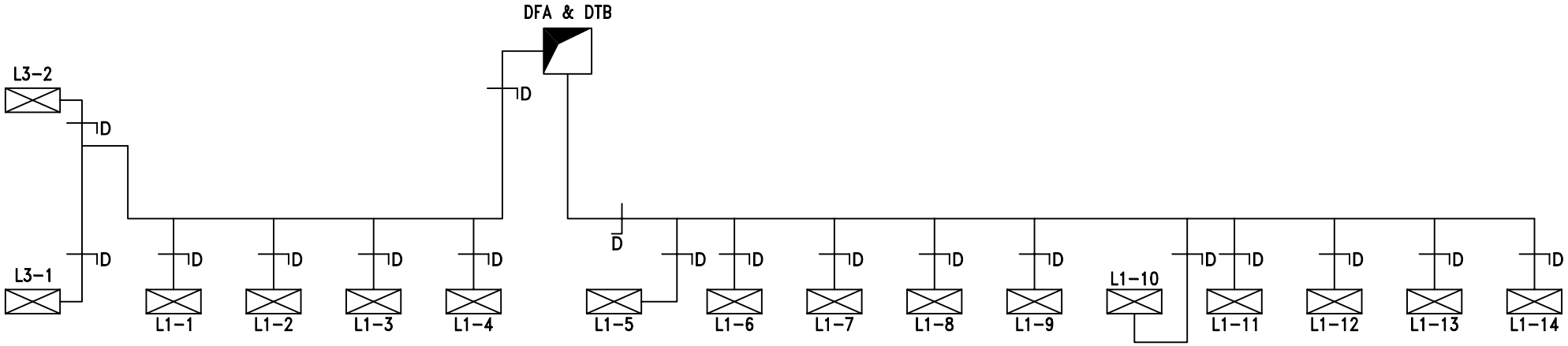
SYSTEM: 124 – AHU 04 SUPPLY (LEVELS 4, 5, 6 & 7)

Chilled Beam Data			Design Data		Test Data			
No.	Size (mm)	Setting	Volume (l/s)	Pressure (Pa)	Initial Pressure (Pa)	Final Pressure (Pa)	Final Volume (l/s)	% Design
LEVEL 5								
CB/W1/L3/1	N/A	N/A	40	63	88	63	40	100
CB/W1/L3/2	N/A	N/A	40	63	91	63	40	100
CB/W1/L1/1	N/A	N/A	40	51.8	90	52	40.1	100
CB/W1/L1/2	N/A	N/A	40	51.8	99	53	40.5	101
CB/W1/L1/3	N/A	N/A	40	51.8	99	53	40.5	101
CB/W1/L1/4	N/A	N/A	40	51.8	100	53	40.5	101
CB/W1/L1/14	N/A	N/A	40	51.8	47	52	40.1	100
CB/W1/L1/13	N/A	N/A	40	51.8	50	52	40.1	100
CB/W1/L1/12	N/A	N/A	40	51.8	49	52	40.1	100
CB/W1/L1/11	N/A	N/A	40	51.8	51	52	40.1	100
CB/W1/L1/10	N/A	N/A	40	51.8	50	52	40.1	100
CB/W1/L1/9	N/A	N/A	40	51.8	61	52	40.1	100
CB/W1/L1/8	N/A	N/A	40	51.8	59	53	40.5	101
CB/W1/L1/7	N/A	N/A	40	51.8	63	55	41.2	103
CB/W1/L1/6	N/A	N/A	40	51.8	65	53	40.5	101
CB/W1/L1/5	N/A	N/A	40	51.8	68	54	40.8	102

REMARKS:

INSTRUMENT USED: HV12/1

Date:	30/09/14	Engineer:	Stephen Murdoch & Gregor Fulton	Sheet 12 of 15



L3-5 ALL CHILLED BEAMS PREFIXED CB/W1/

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220
email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 124

CLIENT:
MERCURY ENGINEERING LTD.

TITLE:
SCHEMATIC LAYOUT OF
124-AHU04 SUPPLY
LEVEL 5 - ZONE H

DRAWN: KL/SM

DATE: 27/11/14

DRG No.: 5902/V13

SHEET: 13 OF 15

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EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

CHILLED BEAM BALANCE SHEET

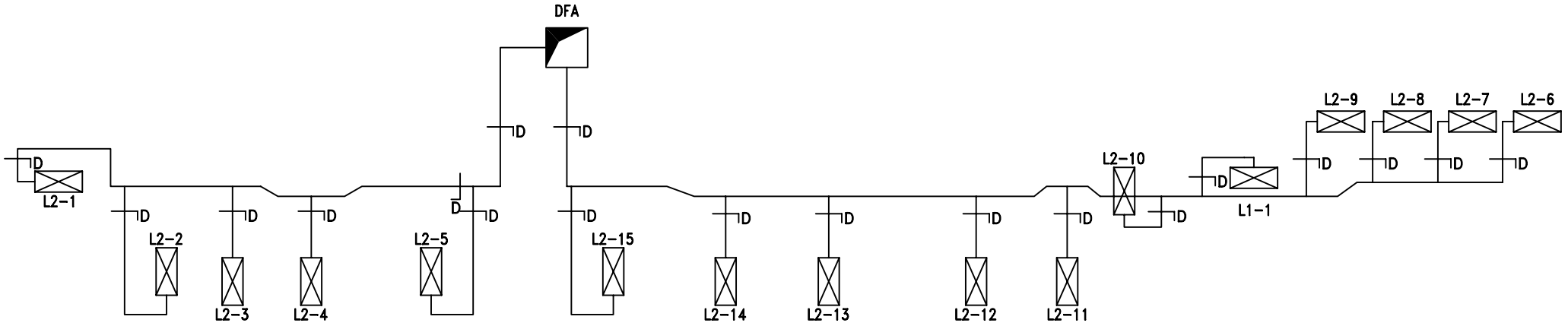
SYSTEM: 124 – AHU 04 SUPPLY (LEVELS 4, 5, 6 & 7)

Chilled Beam Data			Design Data		Test Data			
No.	Size (mm)	Setting	Volume (l/s)	Pressure (Pa)	Initial Pressure (Pa)	Final Pressure (Pa)	Final Volume (l/s)	% Design
LEVEL 4								
CB/W1/L2/1	N/A	N/A	40	63.0	71	63	40	100
CB/W1/L2/2	N/A	N/A	40	63.0	89	63	40	100
CB/W1/L2/3	N/A	N/A	40	63.0	86	64	40.3	101
CB/W1/L2/4	N/A	N/A	40	63.0	85	63	40	100
CB/W1/L2/5	N/A	N/A	40	63.0	85	65	40.6	102
CB/W1/L2/6	N/A	N/A	40	63.0	47	63	40	100
CB/W1/L2/7	N/A	N/A	40	63.0	45	63	40	100
CB/W1/L2/8	N/A	N/A	40	63.0	47	63	40	100
CB/W1/L2/9	N/A	N/A	40	63.0	48	63	40	100
CB/W1/L1/1	N/A	N/A	40	51.8	42	53	40.5	101
CB/W1/L2/10	N/A	N/A	40	63.0	54	63	40	100
CB/W1/L2/11	N/A	N/A	40	63.0	55	64	40.3	101
CB/W1/L2/12	N/A	N/A	40	63.0	60	63	40	100
CB/W1/L2/13	N/A	N/A	40	63.0	63	65	40.6	102
CB/W1/L2/14	N/A	N/A	40	63.0	67	65	40.6	102
CB/W1/L2/15	N/A	N/A	40	63.0	80	64	40.3	101
CB/W1/L2/2	N/A	N/A	40	63.0	89	63	40	100

REMARKS:

INSTRUMENT USED: HV12/1

Date:	30/09/14	Engineer:	Stephen Murdoch & Gregor Fulton	Sheet 14 of 15



LEVEL 4

L2-1 ALL CHILLED BEAMS PREFIXED CB/W1/

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220
email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 124

CLIENT:
MERCURY ENGINEERING LTD.

TITLE:
SCHEMATIC LAYOUT OF 124-AHU04 SUPPLY LEVEL 4

DRAWN: LH/SM
DATE: 27/11/14
DRG No.: 5902/V12
SHEET: 15 OF 15

A4.0019198

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EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

SYSTEM: 124 – AHU 05 DIRTY EXTRACT (LEVELS 4, 5, 6 & 7)

WITNESSING OF TESTING AND BALANCING

	Client Representative / Commissioning Manager	Client
Witnessed By:	David Wilson	
Representing:	Brookfield Multiplex	
Signature:	[redacted]	
Date:	12/12/14	
Witnessed By:		
Representing:		
Signature:		
Date:		

Remarks:

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Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

SYSTEM: 124 – AHU 05 DIRTY EXTRACT (LEVELS 4, 5, 6 & 7)

	AIR SYSTEMS PRE COMMISSIONING SHEET	✓	X	N/A
1.	Check AHU for damage and that all the components are secure	✓		
2.	Check the transit straps have been removed, if applicable	✓		
3.	Check pulleys are secure, tight, aligned and belts are correctly tensioned, if applicable	✓		
4.	Check with the controls engineer that the system is available to run and that plant rotation is correct	✓		
5.	Check all ductwork/air terminals are fitted and that air regulating dampers are open	✓		
6.	Check louvres are fitted and clear from obstructions, if applicable	✓		
7.	Check fire dampers are open, if applicable	✓		
8.	Check the motor overloads are suitable and set			✓
9.	Check VAV or CAV boxes are installed correctly and ready for use.			✓
10.	Check the floor plenums are complete, if applicable			✓
11.	Complete commissioning test sheets.	✓		

COMMENTS

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EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

AHU TEST SHEET SYSTEM: 124 – AHU 05 DIRTY EXTRACT (LEVELS 4, 5, 6 & 7)

AHU											
AHU Manufacturer			Barkell		Fan Size			500			
Fan Manufacturer			Comefri		AHU Serial No			OP1B3024168			
Fan Type			Centrifugal		AHU Model N°.			TZAF 500 RFF			
			Design		**Test**					**% Design**	
Air Volume		(L/S)	3064		3193					104	
External Static Pressure		(Pa)	470		Inlet	286	Outlet	101	Total	387	
Fan Rotational Speed		(R.P.M)	2100		2100						
Filter Test Data	Pre Filter	(Pa)	Inlet	*	Outlet	*			ΔP	25	
	Sec Filter	(Pa)	Inlet	N/A	Outlet	N/A			ΔP	N/A	
MOTOR											
Manufacturer			TEC		Output kW			4.0			
Serial N°			1305-0562792		Motor Full Load Current			8.14	Amps		
Voltage			400		Motor Running Current			6.03	Amps		
			Design		**Test**						
Rotational Speed.			1430		1430						
DRIVE DETAILS											
Motor Pulley/Shaft Size		(mm∅)	SPZ 140	28	Motor Pulley Taper Lock Size			1610			
Fan Pulley/Shaft Size		(mm∅)	SPZ 150	50	Fan Pulley Taper Lock Size			2517			
Belt Type/Size			XPZ	1180	N°. Of Belts			4			
Shaft Centres mm			350		Adjustment			-	25	+	38 mm
Variable Speed Drive			Yes		Set Point			50Hz			

STANDBY PLANT							
Test Air Volume	3193	Inlet Pressure	286	Motor Rotational Speed	1430	Motor Running Current	
% Design	104	Outlet Pressure	101	Fan Rotational Speed	2100	6.03	Amps
Variable Speed Drive			Yes	Set Point		50Hz	

Comments. 2nd Motor Serial Number – 1305-0562769.

*Filter pressure taken from magnehelic gauge.

Instrument Used (Ref N°.) HV12/1, HV12/4 & HV12/5

Date: 13/10/14	Engineer: Stephen Murdoch & Grant Foster	Sheet 3 of 14

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EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

DUCT VOLUME TEST SHEET

SYSTEM: 124 – AHU 05 DIRTY EXTRACT (LEVELS 4, 5, 6 & 7)

VELOCITY PROFILE (taken facing air flow) **TEST HOLE LOCATION: LEVEL 8, RISER T6**

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
Main				1150	650	0.7475		3064		4.10	
4.70	4.50	4.20	4.50	4.30	4.30	4.00					
4.70	4.60	4.80	4.70	4.20	4.00	3.50					
4.80	4.80	4.50	4.60	3.90	3.50	3.20					
4.70	4.60	4.40	4.40	4.20	3.80	3.20					
Velocity Sub Totals											
18.90	18.50	17.90	18.20	16.60	15.60	13.90					

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
119.6	28	4.27	3193	104	174

Remarks:

Instrument Used: HV12/1

Date: 13/10/14 | Engineer: Stephen Murdoch & Gregor Fulton | Sheet 4 of 14

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Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

DUCT VOLUME TEST SHEET

SYSTEM: 124 – AHU 05 DIRTY EXTRACT (LEVELS 4, 5, 6 & 7)

VELOCITY PROFILE (taken facing air flow) **TEST HOLE LOCATION: CEILING VOID**

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
TH1		160				0.0201		45		2.24	
2.40	2.40										
2.20	2.10										
2.10	2.20										
2.30	2.20										
Velocity Sub Totals											
9.00	8.90										

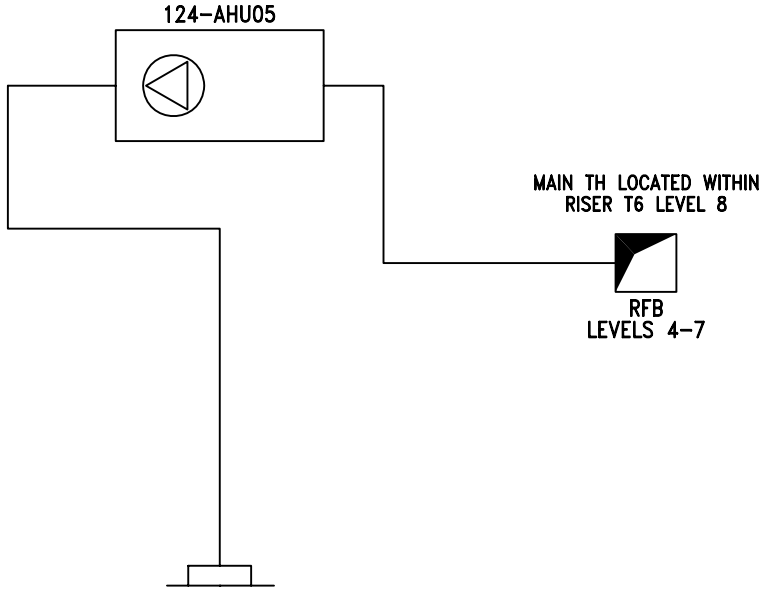
Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
17.9	8	2.24	45	100	19

Remarks: Test Hole serves 510-TG001, Level 4.
Test Volume = 45 l/s ÷ Balometer Volume = 40 l/s = 1.13 Factor

Instrument Used: HV12/1

Date: 13/10/14 | Engineer: Stephen Murdoch & Gregor Fulton | Sheet 5 of 14

PLANTROOM 124 LEVEL 12



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Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
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Fax: 01563 822220
email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 124

CLIENT:
MERCURY ENGINEERING LTD.

TITLE:
SCHEMATIC LAYOUT OF 124-AHU05 EXTRACT (4TH-7TH FLOOR)

DRAWN: LH/SM

DATE: 27/11/14

DRG No.: 5902/V26

SHEET: 6 OF 14

A4.0199198

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Ayrshire, KA48HH.
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FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

GRILLE TEST SHEET

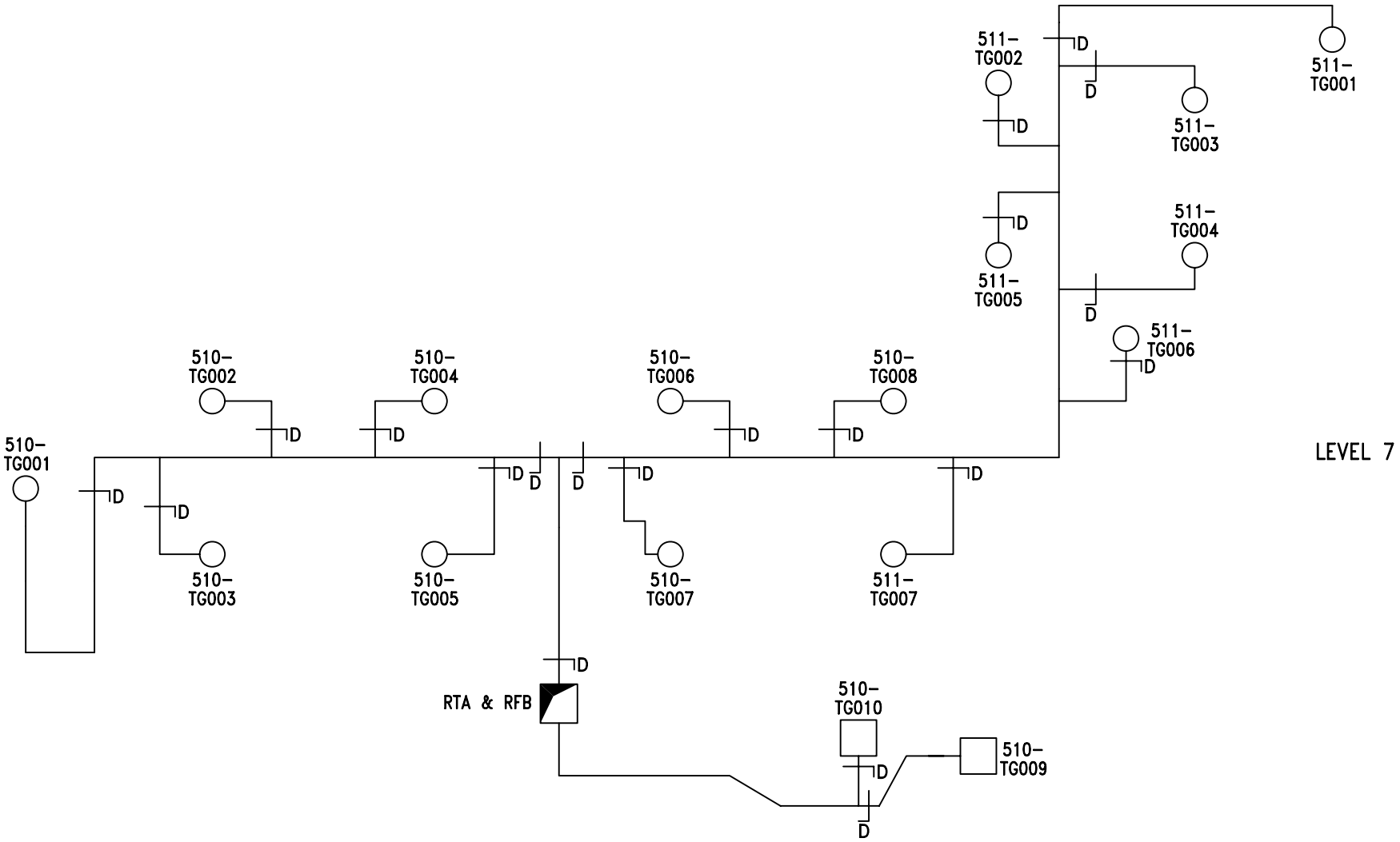
SYSTEM: 124 – AHU 05 DIRTY EXTRACT (LEVELS 4, 5, 6 & 7)

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
LEVEL 7						
*TG001	45	31	41	1.13	46.33	103
*TG003	45	41	42	1.13	47.46	105
*TG002	45	40	42	1.13	47.46	105
*TG004	45	56	42	1.13	47.46	105
*TG005	45	54	42	1.13	47.46	105
**TG001	35	19	34	1.13	38.42	110
**TG003	45	24	40	1.13	45.20	100
**TG002	45	23	40	1.13	45.20	100
**TG005	45	35	40	1.13	45.20	100
**TG004	45	37	42	1.13	47.46	105
**TG006	45	41	40	1.13	45.20	100
**TG007	45	41	41	1.13	46.33	103
*TG008	45	45	41	1.13	46.33	103
*TG006	45	51	43	1.13	48.59	108
*TG007	45	47	42	1.13	47.46	105
*TG009	62	115	56	1.13	63.28	102
*TG010	59	89	53	1.13	59.89	102

Remarks: *All Grilles prefixed with 510- **All Grilles prefixed with 511-

Instrument Used: HV12/15

Date: 13/10/14	Engineer: Stephen Murdoch & Gregor Fulton	Sheet 7 of 14



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Galston
East Ayrshire, KA4 8HH
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CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 124

CLIENT:
MERCURY ENGINEERING LTD.

TITLE:
SCHEMATIC LAYOUT OF 124-AHU05 DIRTY EXTRACT LEVEL 7

DRAWN: LH/SM
DATE: 27/11/14
DRG No.: 5902/V30
SHEET: 8 OF 14

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E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

GRILLE TEST SHEET

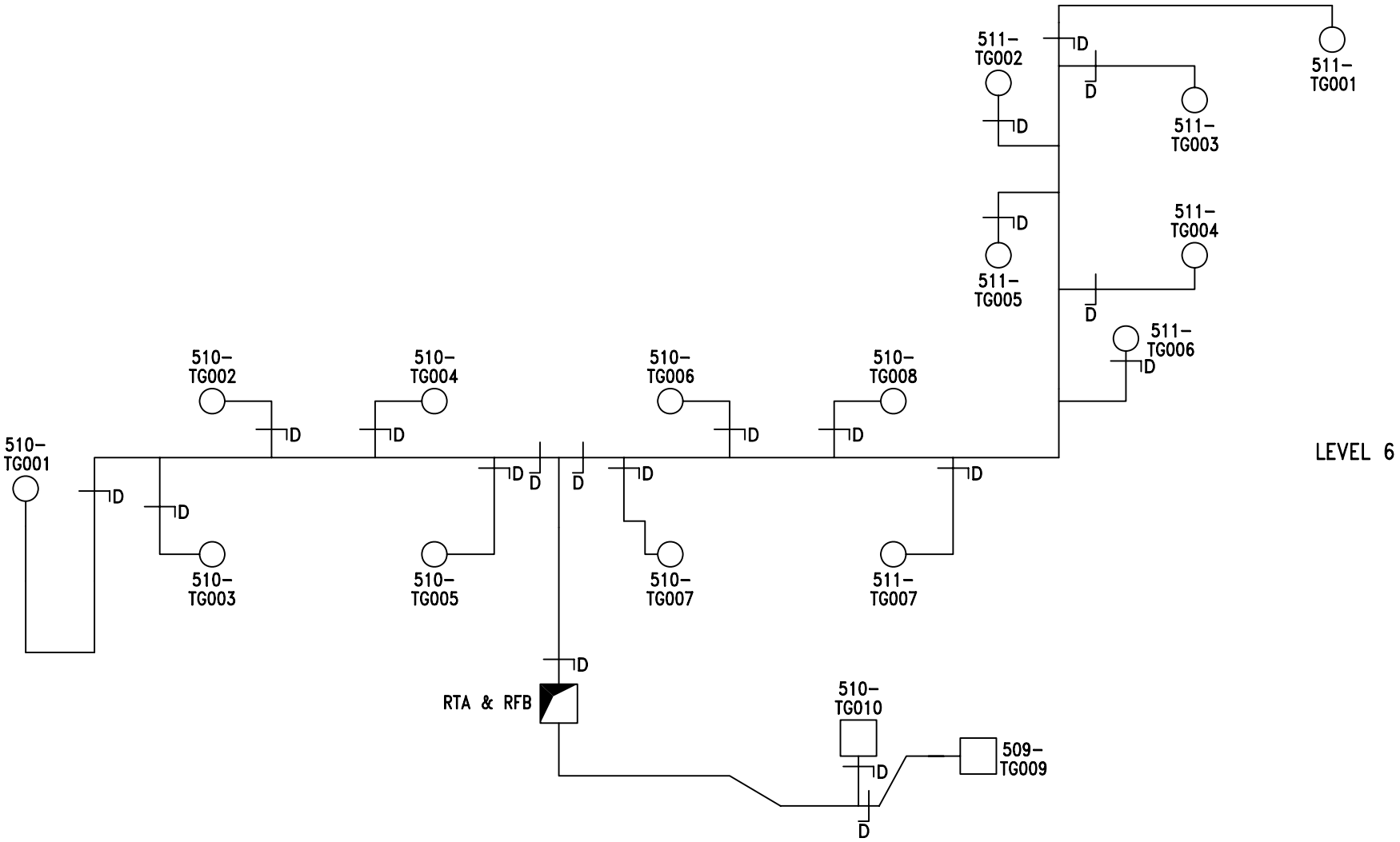
SYSTEM: 124 – AHU 05 DIRTY EXTRACT (LEVELS 4, 5, 6 & 7)

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
LEVEL 6						
*TG001	45	28	40	1.13	45.20	100
*TG003	45	38	42	1.13	47.46	105
*TG002	45	39	40	1.13	45.20	100
*TG004	45	40	43	1.13	48.59	108
*TG005	45	44	40	1.13	45.20	100
**TG001	35	19	33	1.13	37.29	107
**TG003	45	23	40	1.13	45.20	100
**TG002	45	21	41	1.13	46.33	103
**TG005	45	29	41	1.13	46.33	103
**TG004	45	26	40	1.13	45.20	100
**TG006	45	32	40	1.13	45.20	100
**TG007	45	33	43	1.13	48.59	108
*TG008	45	40	42	1.13	47.46	105
*TG006	45	21	40	1.13	45.20	100
*TG007	45	49	42	1.13	47.46	105
*TG009	62	102	57	1.13	64.41	104
*TG010	59	82	54	1.13	61.02	103

Remarks: *All Grilles prefixed with 510- **All Grilles prefixed with 511-

Instrument Used: HV12/15

Date: 13/10/14	Engineer: Stephen Murdoch & Gregor Fulton	Sheet 9 of 14



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Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220
email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 124

CLIENT:
MERCURY ENGINEERING LTD.

TITLE:
SCHEMATIC LAYOUT OF 124-AHU05 DIRTY EXTRACT LEVEL 6

DRAWN: LH/SM
DATE: 27/11/14
DRG No.: 5902/V29
SHEET: 10 OF 14

A4.0198

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Ayrshire, KA48HH.
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FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

GRILLE TEST SHEET

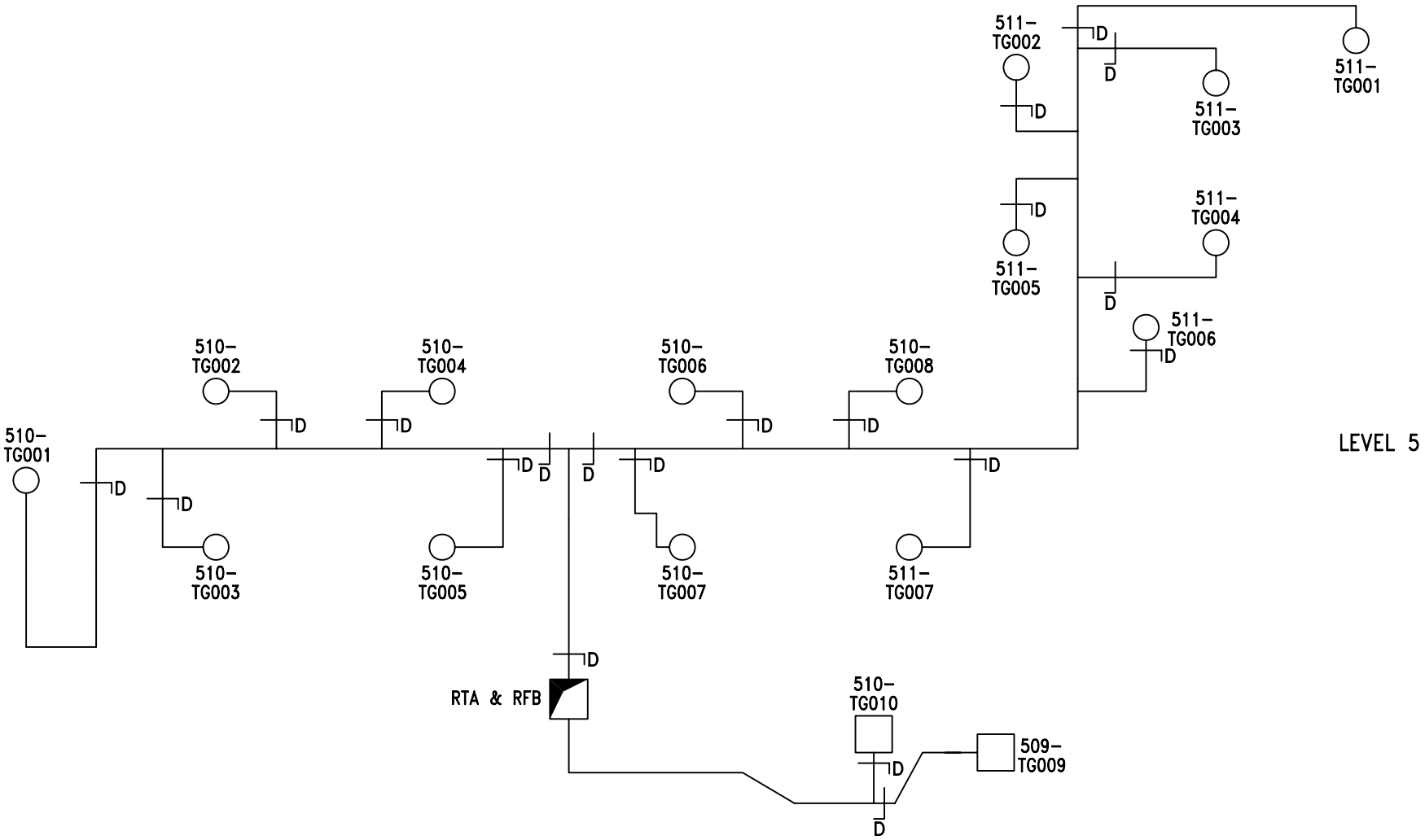
SYSTEM: 124 – AHU 05 DIRTY EXTRACT (LEVELS 4, 5, 6 & 7)

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
LEVEL 5						
*TG001	45	22	40	1.13	45.20	100
*TG003	45	38	41	1.13	46.33	103
*TG002	45	45	40	1.13	45.20	100
*TG004	45	45	40	1.13	45.20	100
*TG005	45	47	43	1.13	48.59	108
**TG001	35	22	34	1.13	38.42	110
**TG003	45	29	41	1.13	46.33	103
**TG002	45	22	40	1.13	45.20	100
**TG005	45	36	40	1.13	45.20	100
**TG004	45	35	40	1.13	45.20	100
**TG006	45	22	40	1.13	45.20	100
**TG007	45	33	40	1.13	45.20	100
*TG008	45	40	40	1.13	45.20	100
*TG006	45	46	41	1.13	46.33	103
*TG007	45	47	40	1.13	45.20	100
*TG009	62	69	58	1.13	65.54	106
*TG010	59	101	56	1.13	63.28	107

Remarks: *All Grilles prefixed with 510- **All Grilles prefixed with 511-

Instrument Used: HV12/15

Date: 13/10/14	Engineer: Stephen Murdoch & Gregor Fulton	Sheet 11 of 14



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Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
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email: talk2us@handv.co.uk

CONTRACT:
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CLIENT:
MERCURY ENGINEERING LTD.

TITLE:
SCHEMATIC LAYOUT OF 124-AHU05 DIRTY EXTRACT LEVEL 5

DRAWN: LH/SM
DATE: 27/11/14
DRG No.: 5902/V28
SHEET: 12 OF 14

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Ayrshire, KA48HH.
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FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

GRILLE TEST SHEET

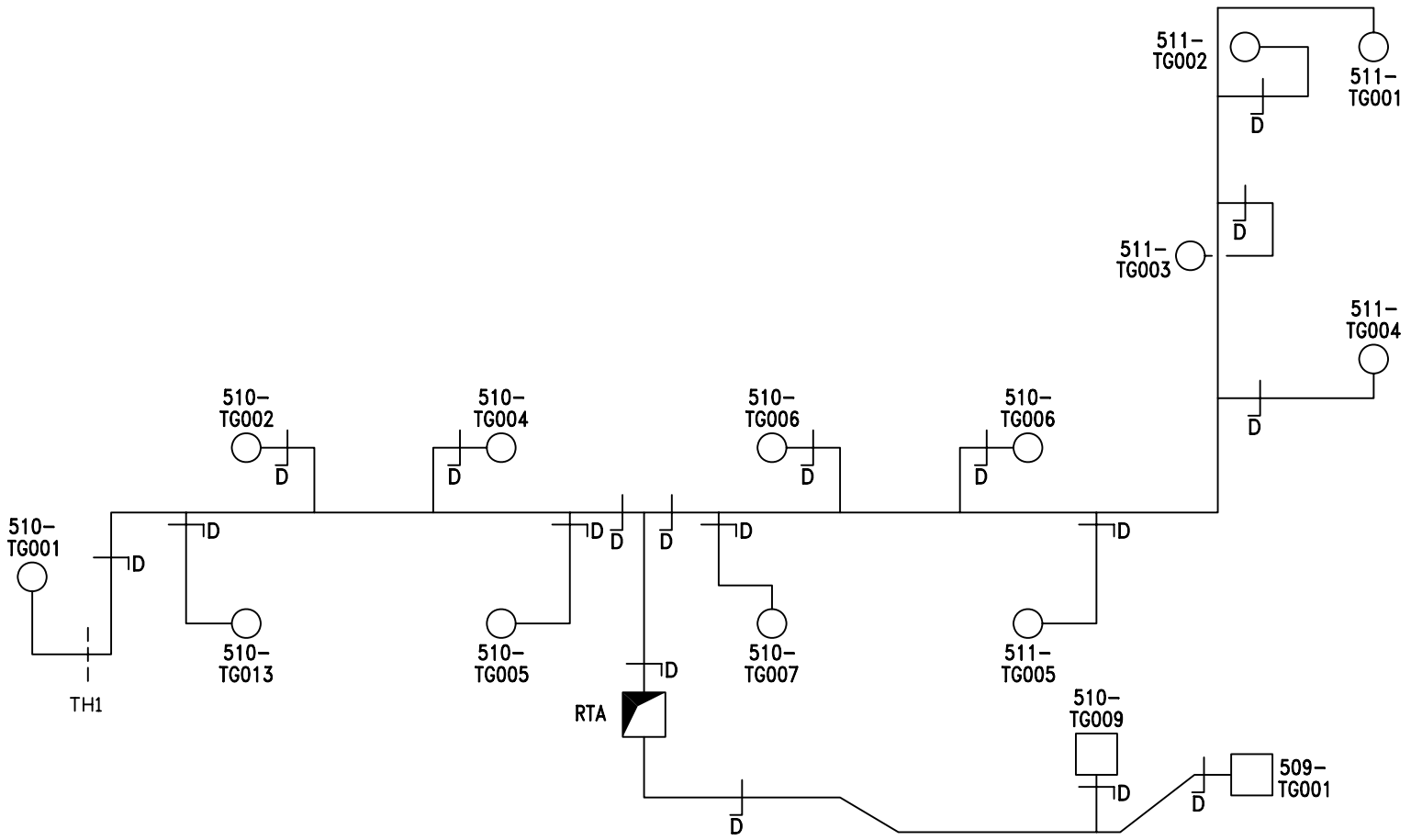
SYSTEM: 124 – AHU 05 DIRTY EXTRACT (LEVELS 4, 5, 6 & 7)

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
LEVEL 4						
*TG001	45	30	40	1.13	45.20	100
*TG003	45	37	40	1.13	45.20	100
*TG002	45	38	40	1.13	45.20	100
*TG004	45	49	40	1.13	45.20	100
*TG005	45	47	40	1.13	45.20	100
**TG001	45	26	40	1.13	45.20	100
**TG002	45	24	40	1.13	45.20	100
**TG003	45	30	42	1.13	47.46	105
**TG004	45	29	40	1.13	45.20	100
**TG005	45	30	40	1.13	45.20	100
**TG008	45	43	40	1.13	45.20	100
**TG007	45	47	40	1.13	45.20	100
*TG006	45	43	41	1.13	46.33	103
***TG001	62	77	60	1.13	67.80	109
*TG009	59	84	57	1.13	64.41	109

Remarks: *All Grilles prefixed with 510- **All Grilles prefixed with 511- ***All grilles prefixed with 509-

Instrument Used: HV12/15

Date: 02/10/14	Engineer: Stephen Murdoch & Gregor Fulton	Sheet 13 of 14



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Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220
email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 124

CLIENT:
MERCURY ENGINEERING LTD.

TITLE:
SCHEMATIC LAYOUT OF 124-AHU05 DIRTY EXTRACT LEVEL 4

DRAWN: LH/SM
DATE: 27/11/14
DRG No.: 5902/V27
SHEET: 14 OF 14

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E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

SYSTEM: 124 – AHU 05 SUPPLY (LEVELS 4, 5, 6 & 7)

WITNESSING OF TESTING AND BALANCING

	Client Representative / Commissioning Manager	Client
Witnessed By:	David Wilson	
Representing:	Brookfield Multiplex	
Signature:	[redacted]	
Date:	12/12/14	
Witnessed By:		
Representing:		
Signature:		
Date:		

Remarks:

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Galston,
Ayrshire, KA48HH.
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FAX N°. 01563 822220
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CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

SYSTEM: 124 – AHU 05 SUPPLY (LEVELS 4, 5, 6 & 7)

	AIR SYSTEMS PRE COMMISSIONING SHEET	✓	X	N/A
1.	Check AHU for damage and that all the components are secure	✓		
2.	Check the transit straps have been removed, if applicable	✓		
3.	Check pulleys are secure, tight, aligned and belts are correctly tensioned, if applicable	✓		
4.	Check with the controls engineer that the system is available to run and that plant rotation is correct	✓		
5.	Check all ductwork/air terminals are fitted and that air regulating dampers are open	✓		
6.	Check louvres are fitted and clear from obstructions, if applicable	✓		
7.	Check fire dampers are open, if applicable	✓		
8.	Check the motor overloads are suitable and set			✓
9.	Check VAV or CAV boxes are installed correctly and ready for use.			✓
10.	Check the floor plenums are complete, if applicable			✓
11.	Complete commissioning test sheets.	✓		

COMMENTS

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FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

AHU TEST SHEET

SYSTEM: 124 – AHU 05 SUPPLY (LEVELS 4, 5, 6 & 7)

AHU											
AHU Manufacturer			Barkell		Fan Size			400			
Fan Manufacturer			Comefri		AHU Serial No			OP1B3050962			
Fan Type			Centrifugal		AHU Model N°.			TZAF 400 RFF			
			Design		**Test**					**% Design**	
Air Volume	(L/S)		2360		2502					106	
External Static Pressure	(Pa)		450		Inlet	165	Outlet	397	Total	562	
Fan Rotational Speed	(R.P.M)		2700		2700						
Filter Test Data	Pre Filter	(Pa)	Inlet	*	Outlet	*			ΔP	50	
	Sec Filter	(Pa)	Inlet	*	Outlet	*			ΔP	50	

MOTOR				
Manufacturer	TEC	Output kW	4.0	
Serial N°	1305-0562787	Motor Full Load Current	8.14	Amps
Voltage	400	Motor Running Current	6.57	Amps
	Design	**Test**		
Rotational Speed.	1430	1430		

DRIVE DETAILS			
Motor Pulley/Shaft Size (mm∅)	SPZ 140 28	Motor Pulley Taper Lock Size	1610
Fan Pulley/Shaft Size (mm∅)	SPZ 100 40	Fan Pulley Taper Lock Size	1610
Belt Type/Size	XPZ 950	N°. Of Belts	4
Shaft Centres mm	285	Adjustment	- 30 + 30 mm
Variable Speed Drive	Yes	Set Point	50Hz

STANDBY PLANT							
Test Air Volume	2502	Inlet Pressure	165	Motor Rotational Speed	1430	Motor Running Current	
% Design	106	Outlet Pressure	397	Fan Rotational Speed	2700	6.57	Amps
Variable Speed Drive			Yes	Set Point	50Hz		

Comments. 2nd Motor Serial Number – 1305-0562804.

*Filter pressure taken from magnehelic gauge.

Control static pressure sensor = 397Pa.

Instrument Used (Ref N°.) HV12/1, HV12/4 & HV12/5

Date: 11/10/14	Engineer: Stephen Murdoch & Gregor Fulton	Sheet 3 of 15

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CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

DUCT VOLUME TEST SHEET

SYSTEM: 124 – AHU 05 SUPPLY (LEVELS 4, 5, 6 & 7)

VELOCITY PROFILE (taken facing air flow) **TEST HOLE LOCATION: PLANTROOM 124**

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
Main				900	600	0.5400		2360		4.37	
4.20	5.20	5.40	5.50	6.40	6.20						
3.60	3.90	4.20	5.10	5.80	6.50						
2.70	3.00	3.80	4.00	5.00	6.00						
2.70	3.50	4.00	4.50	4.70	5.30						
Velocity Sub Totals											
13.20	15.60	17.40	19.10	21.90	24.00						

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
111.2	24	4.63	2502	106	231

Remarks:

Instrument Used: HV12/1

Date: 11/10/14 | Engineer: Stephen Murdoch & Gregor Fulton | Sheet 4 of 15

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FAX N°. 01563 822220
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CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

DUCT VOLUME TEST SHEET

SYSTEM: 124 – AHU 05 SUPPLY (LEVELS 4, 5, 6 & 7)

VELOCITY PROFILE (taken facing air flow) **TEST HOLE LOCATION: CEILING VOID**

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
TH1		160				0.0201		40		1.99	
1.80	2.10										
2.20	2.50										
2.40	2.10										
2.10	2.10										
Velocity Sub Totals											
8.50	8.80										

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
17.3	8	2.16	43	109	96

Remarks: Test Hole serves CB/W1/L1/1, Level 4.

Instrument Used: HV12/1

Date: 11/10/14 | Engineer: Stephen Murdoch & Gregor Fulton | Sheet 5 of 15

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CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

DUCT VOLUME TEST SHEET

SYSTEM: 124 – AHU 05 SUPPLY (LEVELS 4, 5, 6 & 7)

VELOCITY PROFILE (taken facing air flow) **TEST HOLE LOCATION: CEILING VOID**

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
TH2		160				0.0201		40		1.99	
2.00	1.90										
2.50	1.90										
2.50	2.20										
2.00	2.30										
Velocity Sub Totals											
9.00	8.30										

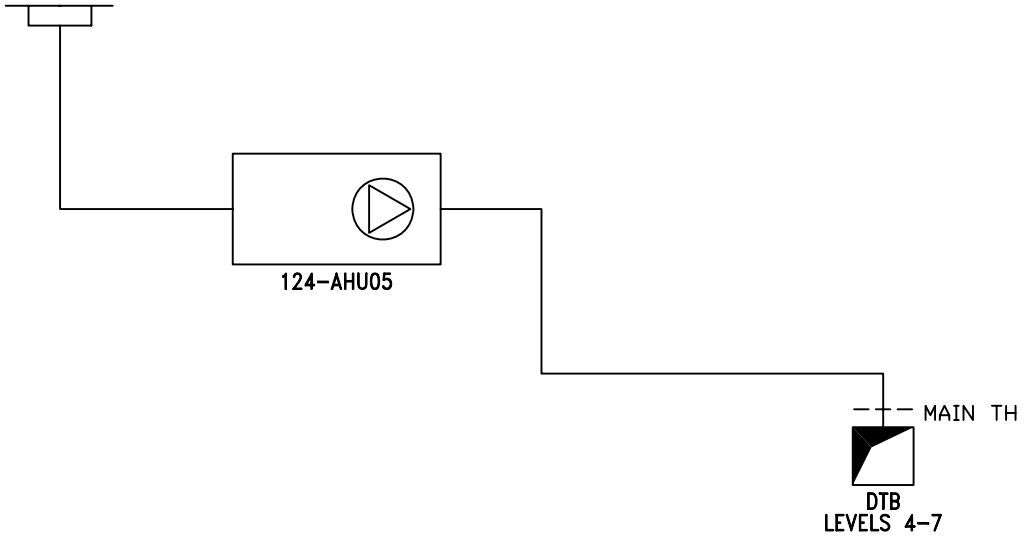
Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
17.3	8	2.16	43	109	100

Remarks: Test Hole serves CB/W1/L2/1, Level 4.

Instrument Used: HV12/1

Date: 11/10/14 | Engineer: Stephen Murdoch & Gregor Fulton | Sheet 6 of 15

PLANTROOM 124 LEVEL 12



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Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220
email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 124

CLIENT:
MERCURY ENGINEERING LTD.

TITLE:
SCHEMATIC LAYOUT OF 124-AHU05 SUPPLY (4TH-7TH FLOOR)

DRAWN: LH/SM
DATE: 27/11/14
DRG No.: 5902/V21
SHEET: 7 OF 15

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Galston,
Ayrshire, KA48HH.
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FAX N°. 01563 822220
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CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

CHILLED BEAM BALANCE SHEET

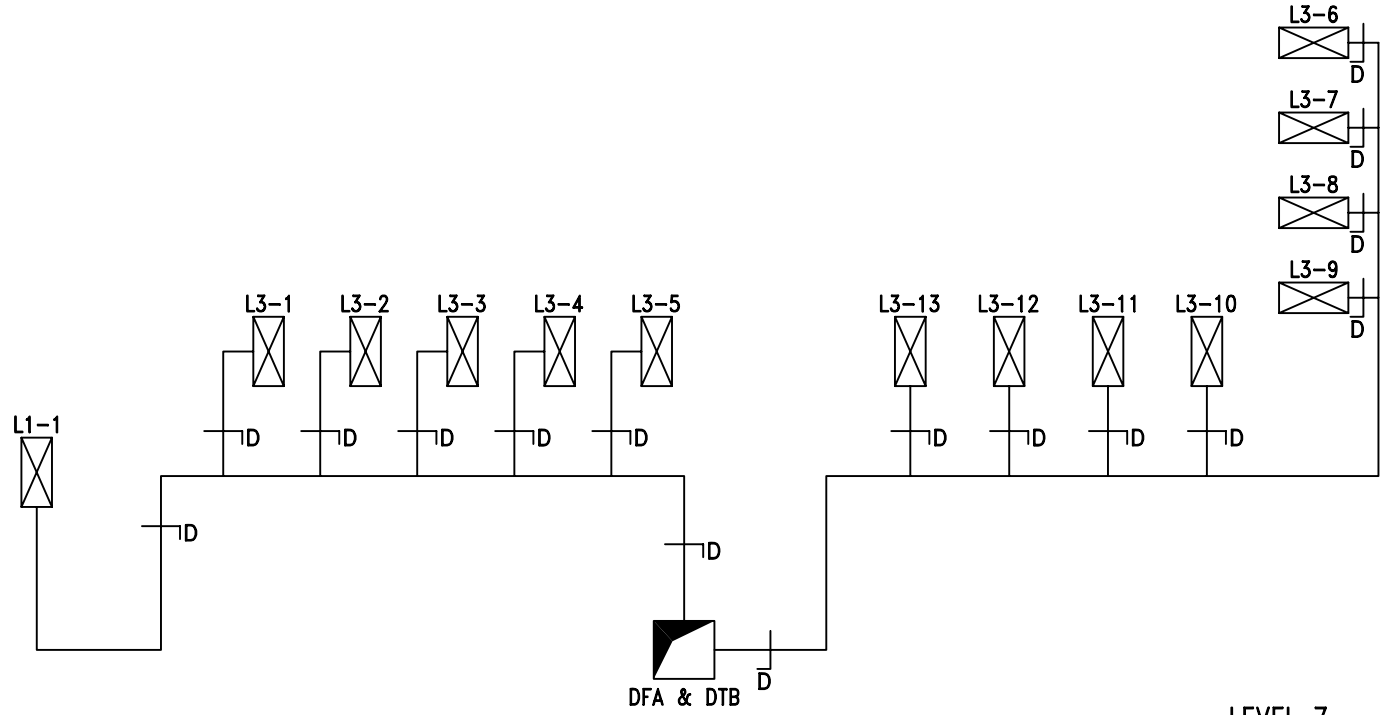
SYSTEM: 124 – AHU 05 SUPPLY (LEVELS 4, 5, 6 & 7)

Chilled Beam Data			Design Data		Test Data			
No.	Size (mm)	Setting	Volume (l/s)	Pressure (Pa)	Initial Pressure (Pa)	Final Pressure (Pa)	Final Volume (l/s)	% Design
LEVEL 7								
CB/W1/L1/1	N/A	N/A	40	51.8	58	54	40.8	102
CB/W1/L3/1	N/A	N/A	40	63	68	64	40.3	101
CB/W1/L3/2	N/A	N/A	40	63	74	66	40.9	102
CB/W1/L3/3	N/A	N/A	40	63	75	66	40.9	102
CB/W1/L3/4	N/A	N/A	40	63	74	66	40.9	102
CB/W1/L3/5	N/A	N/A	40	63	80	63	40	100
CB/W1/L3/6	N/A	N/A	40	63	43	64	40.3	101
CB/W1/L3/7	N/A	N/A	40	63	47	64	40.3	101
CB/W1/L3/8	N/A	N/A	40	63	49	64	40.3	101
CB/W1/L3/9	N/A	N/A	40	63	46	64	40.3	101
CB/W1/L3/10	N/A	N/A	40	63	63	63	40	100
CB/W1/L3/11	N/A	N/A	40	63	69	64	40.3	101
CB/W1/L3/12	N/A	N/A	40	63	68	63	40	100
CB/W1/L3/13	N/A	N/A	40	63	67	63	40	100

REMARKS:

INSTRUMENT USED: HV12/1

Date:	11/10/14	Engineer:	Stephen Murdoch & Gregor Fulton	Sheet 8 of 15



L3-5
ALL CHILLED BEAMS PREFIXED CB/W1/

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220
email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 124

CLIENT:
MERCURY ENGINEERING LTD.

TITLE:
SCHEMATIC LAYOUT OF 124-AHU05 SUPPLY (4TH-7TH FLOOR) LEVEL 7

DRAWN: LH/SM

DATE: 27/11/14

DRG No.: 5902/V25

SHEET: 9 OF 15

A4.0198

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16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

CHILLED BEAM BALANCE SHEET

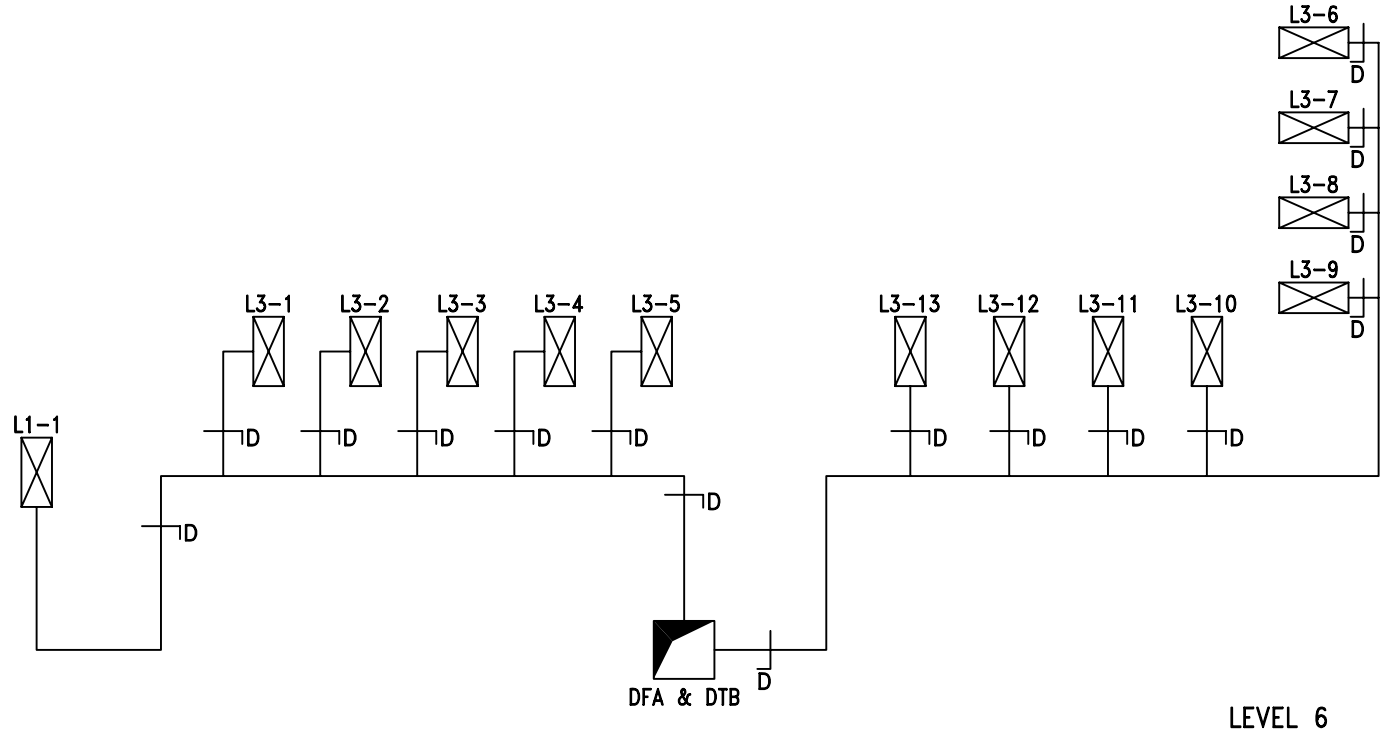
SYSTEM: 124 – AHU 05 SUPPLY (LEVELS 4, 5, 6 & 7)

Chilled Beam Data			Design Data		Test Data			
No.	Size (mm)	Setting	Volume (l/s)	Pressure (Pa)	Initial Pressure (Pa)	Final Pressure (Pa)	Final Volume (l/s)	% Design
LEVEL 6								
CB/W1/L1/1	N/A	N/A	40	51.8	58	53	40.5	101
CB/W1/L3/1	N/A	N/A	40	63	72	65	40.6	102
CB/W1/L3/2	N/A	N/A	40	63	79	67	41.3	103
CB/W1/L3/3	N/A	N/A	40	63	73	66	40.9	102
CB/W1/L3/4	N/A	N/A	40	63	78	66	40.9	102
CB/W1/L3/5	N/A	N/A	40	63	83	64	40.3	101
CB/W1/L3/6	N/A	N/A	40	63	49	64	40.3	101
CB/W1/L3/7	N/A	N/A	40	63	50	64	40.3	101
CB/W1/L3/8	N/A	N/A	40	63	51	64	40.3	101
CB/W1/L3/9	N/A	N/A	40	63	54	66	40.9	102
CB/W1/L3/10	N/A	N/A	40	63	65	66	40.9	102
CB/W1/L3/11	N/A	N/A	40	63	69	64	40.3	101
CB/W1/L3/12	N/A	N/A	40	63	70	65	40.6	102
CB/W1/L3/13	N/A	N/A	40	63	70	65	40.6	102

REMARKS:

INSTRUMENT USED: HV12/1

Date:	11/10/14	Engineer:	Stephen Murdoch & Gregor Fulton	Sheet 10 of 15



L3-5 ALL CHILLED BEAMS PREFIXED CB/W1/

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220
A44 0198
email: talk2us@handv.co.uk

CONTRACT:	NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 124
CLIENT:	MERCURY ENGINEERING LTD.
TITLE:	SCHEMATIC LAYOUT OF 124-AHU05 SUPPLY (4TH-7TH FLOOR) LEVEL 6
DRAWN:	LH/SM
DATE:	27/11/14
DRG No.:	5902/V24
SHEET:	11 OF 15

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

CHILLED BEAM BALANCE SHEET

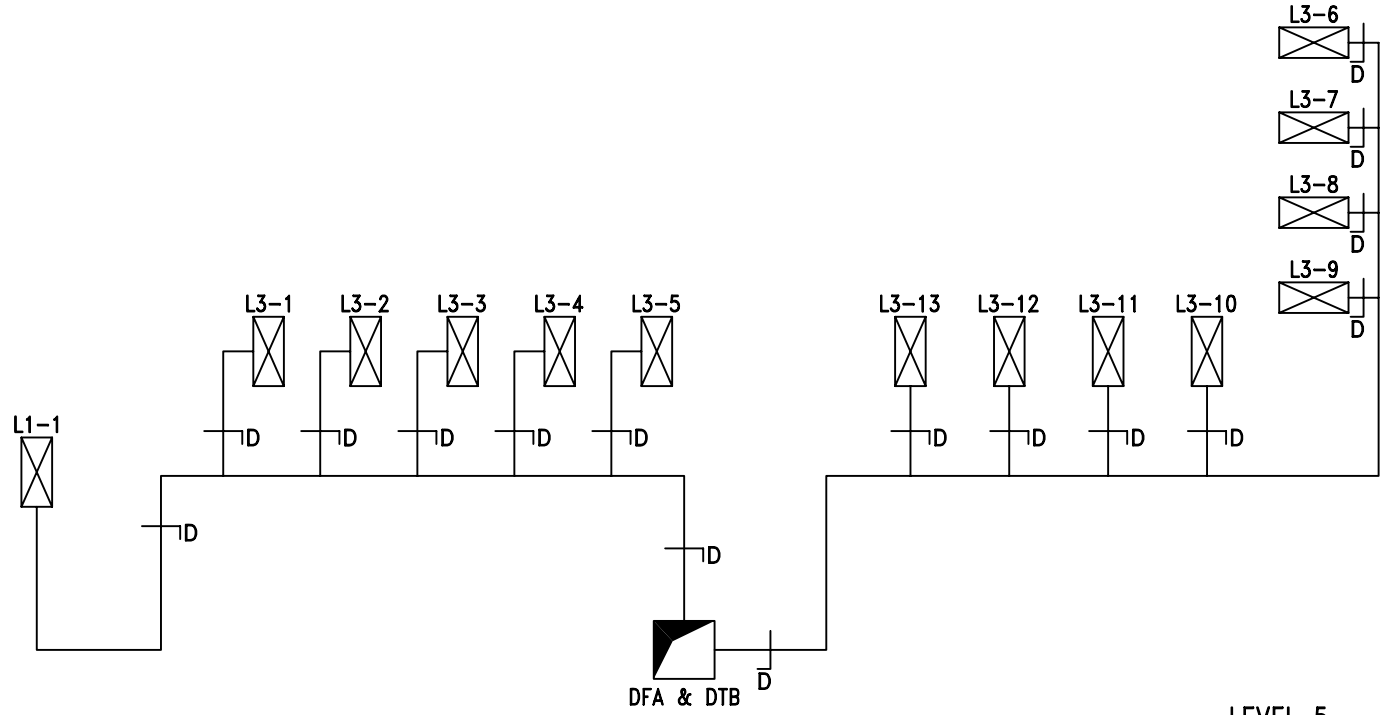
SYSTEM: 124 – AHU 05 SUPPLY (LEVELS 4, 5, 6 & 7)

Chilled Beam Data			Design Data		Test Data			
No.	Size (mm)	Setting	Volume (l/s)	Pressure (Pa)	Initial Pressure (Pa)	Final Pressure (Pa)	Final Volume (l/s)	% Design
LEVEL 5								
CB/W1/L1/1	N/A	N/A	40	51.8	69	52	40.1	100
CB/W1/L3/1	N/A	N/A	40	63	75	63	40	100
CB/W1/L3/2	N/A	N/A	40	63	83	63	40	100
CB/W1/L3/3	N/A	N/A	40	63	76	63	40	100
CB/W1/L3/4	N/A	N/A	40	63	83	64	40.3	101
CB/W1/L3/5	N/A	N/A	40	63	75	63	40	100
CB/W1/L3/6	N/A	N/A	40	63	44	63	40	100
CB/W1/L3/7	N/A	N/A	40	63	45	63	40	100
CB/W1/L3/8	N/A	N/A	40	63	46	63	40	100
CB/W1/L3/9	N/A	N/A	40	63	48	63	40	100
CB/W1/L3/10	N/A	N/A	40	63	61	64	40.3	101
CB/W1/L3/11	N/A	N/A	40	63	65	63	40	100
CB/W1/L3/12	N/A	N/A	40	63	70	63	40	100
CB/W1/L3/13	N/A	N/A	40	63	67	63	40	100

REMARKS:

INSTRUMENT USED: HV12/1

Date:	11/10/14	Engineer:	Stephen Murdoch & Gregor Fulton	Sheet 12 of 15



LEVEL 5

L3-5 ALL CHILLED BEAMS PREFIXED CB/W1/

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220
email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 124

CLIENT:
MERCURY ENGINEERING LTD.

TITLE:
SCHEMATIC LAYOUT OF 124-AHU05 SUPPLY (4TH-7TH FLOOR) LEVEL 5

DRAWN: LH/SM

DATE: 27/11/14

DRG No.: 5902/V23

SHEET: 13 OF 15

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16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

CHILLED BEAM BALANCE SHEET

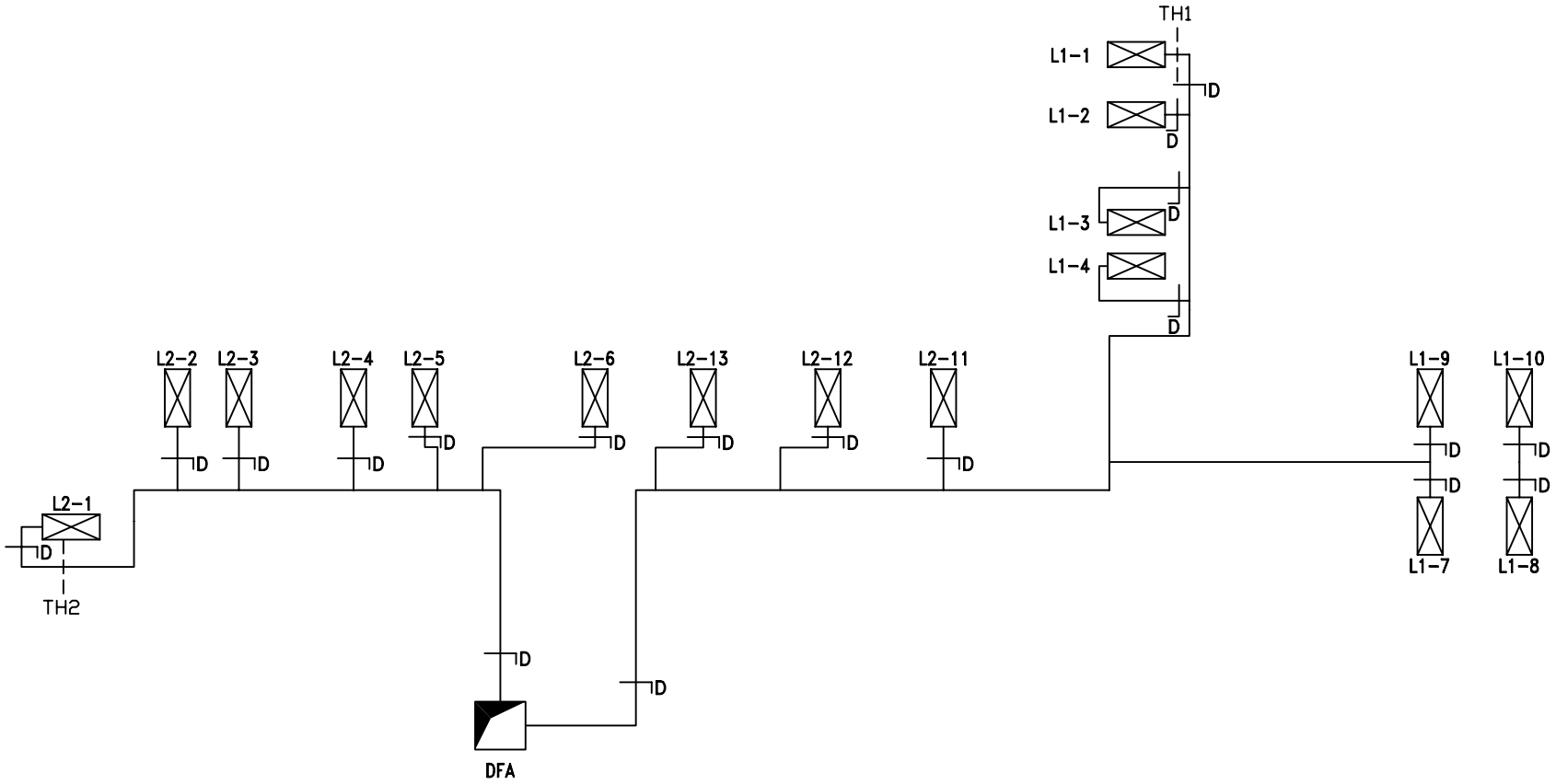
SYSTEM: 124 – AHU 05 SUPPLY (LEVELS 4, 5, 6 & 7)

Chilled Beam Data			Design Data		Test Data			
No.	Size (mm)	Setting	Volume (l/s)	Pressure (Pa)	Initial Pressure (Pa)	Final Pressure (Pa)	Final Volume (l/s)	% Design
LEVEL 4								
CB/W1/L2/1	N/A	N/A	40	63.0	71	68	41.6	104
CB/W1/L2/2	N/A	N/A	40	63.0	75	65	40.6	102
CB/W1/L2/3	N/A	N/A	40	63.0	79	65	40.6	102
CB/W1/L2/4	N/A	N/A	40	63.0	79	67	41.3	103
CB/W1/L2/5	N/A	N/A	40	63.0	76	64	40.3	101
CB/W1/L2/6	N/A	N/A	40	63.0	75	68	41.6	104
CB/W1/L1/7	N/A	N/A	40	51.8	40	56	41.6	104
CB/W1/L1/8	N/A	N/A	40	51.8	40	56	41.6	104
CB/W1/L1/9	N/A	N/A	40	51.8	34	58	42.3	106
CB/W1/L1/10	N/A	N/A	40	51.8	32	58	42.3	106
CB/W1/L1/1	N/A	N/A	40	51.8	25	52	40.1	100
CB/W1/L1/2	N/A	N/A	40	51.8	49	52	40.1	100
CB/W1/L1/3	N/A	N/A	40	51.8	50	52	40.1	100
CB/W1/L1/4	N/A	N/A	40	51.8	41	53	40.5	101
CB/W1/L2/11	N/A	N/A	40	63.0	57	67	41.3	103
CB/W1/L2/12	N/A	N/A	40	63.0	56	65	40.6	102
CB/W1/L2/13	N/A	N/A	40	63.0	60	63	40	100

REMARKS:

INSTRUMENT USED: HV12/1

Date:	30/09/14	Engineer:	Stephen Murdoch & Gregor Fulton	Sheet 14 of 15



LEVEL 4

L2-1 ALL CHILLED BEAMS PREFIXED CB/W1/

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220 44 1563 820198
email: talk2us@handv.co.uk

CONTRACT:	NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 124
CLIENT:	MERCURY ENGINEERING LTD.
TITLE:	SCHEMATIC LAYOUT OF 124-AHU05 SUPPLY LEVEL 4
DRAWN:	LH/SM
DATE:	27/11/14
DRG No.:	5902/V22
SHEET:	15 OF 15

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

SYSTEM: 124 - AHU 06 SUPPLY (LEVELS 4 5 6 & 7)

WITNESSING OF TESTING AND BALANCING

	Client Representative / Commissioning Manager	Client
Witnessed By:	David Wilson	
Representing:	Brookfield Multiplex	
Signature:	[redacted]	
Date:	12/12/14	
Witnessed By:		
Representing:		
Signature:		
Date:		

Remarks:

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

SYSTEM: 124 – AHU 06 SUPPLY (LEVELS 4, 5, 6 & 7)

	AIR SYSTEMS PRE COMMISSIONING SHEET	✓	X	N/A
1.	Check AHU for damage and that all the components are secure	✓		
2.	Check the transit straps have been removed, if applicable	✓		
3.	Check pulleys are secure, tight, aligned and belts are correctly tensioned, if applicable	✓		
4.	Check with the controls engineer that the system is available to run and that plant rotation is correct	✓		
5.	Check all ductwork/air terminals are fitted and that air regulating dampers are open	✓		
6.	Check louvres are fitted and clear from obstructions, if applicable	✓		
7.	Check fire dampers are open, if applicable	✓		
8.	Check the motor overloads are suitable and set			✓
9.	Check VAV or CAV boxes are installed correctly and ready for use.			✓
10.	Check the floor plenums are complete, if applicable			✓
11.	Complete commissioning test sheets.	✓		

COMMENTS

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16 Barrmill Road,
Galston,
Ayshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

AHU TEST SHEET

SYSTEM: 124 – AHU 06 SUPPLY (LEVELS 4, 5, 6 & 7)

AHU											
AHU Manufacturer			Barkell		Fan Size			450			
Fan Manufacturer			Comefri		AHU Serial No			OP133050963			
Fan Type			Centrifugal		AHU Model N°.			TZAF 450 RFF			
			Design		**Test**					**% Design**	
Air Volume	(L/S)		3010		3168					105	
External Static Pressure	(Pa)		430		Inlet	170	Outlet	231	Total	401	
Fan Rotational Speed	(R.P.M)		2400		2700						
Filter Test Data	Pre Filter	(Pa)	Inlet	*	Outlet	*			∆P	*55	
	Sec Filter	(Pa)	Inlet	*	Outlet	*			∆P	*75	

MOTOR					
Manufacturer	TEC	Output kW	5.5		
Serial N°	1305-0265 834	Motor Full Load Current	10.9	Amps	
Voltage	400	Motor Running Current	8.12	Amps	
	Design	**Test**			
Rotational Speed.	1450	1363			

DRIVE DETAILS					
Motor Pulley/Shaft Size (mm∅)	SPZ 180	38	Motor Pulley Taper Lock Size	2012	
Fan Pulley/Shaft Size (mm∅)	SPZ 150	50	Fan Pulley Taper Lock Size	2517	
Belt Type/Size	XPZ	1120	N°. Of Belts	4	
Shaft Centres mm	300		Adjustment	- 30	+ 30 mm
Variable Speed Drive	Yes		Set Point	47Hz	

STANDBY PLANT							
Test Air Volume	3168	Inlet Pressure	170	Motor Rotational Speed	1363	Motor Running Current	
% Design	105	Outlet Pressure	231	Fan Rotational Speed	2700	8.12 Amps	
Variable Speed Drive			Yes	Set Point	47Hz		

Comments. 2nd Motor Serial Number – 1305-0265860

*Filter pressure taken from magnehelic gauge.

Control static pressure sensor = 236Pa.

Instrument Used (Ref N°.) HV12/1, HV12/4 & HV12/5

Date: 17/10/14	Engineer: Stephen Murdoch & Gregor Fulton	Sheet 3 of 14

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EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

DUCT VOLUME TEST SHEET

SYSTEM: 124 – AHU 06 SUPPLY (LEVELS 4, 5, 6 & 7)

VELOCITY PROFILE (taken facing air flow) **TEST HOLE LOCATION: LEVEL 8 RISER T5**

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
Main				950	750	0.7125		3010		4.22	
4.20	4.30	4.50	4.40	4.40	3.90						
4.60	4.60	4.60	4.70	4.60	4.00						
4.40	4.80	4.80	4.70	4.60	4.40						
4.10	4.70	4.70	4.40	4.30	4.00						
Velocity Sub Totals											
17.30	18.40	18.60	18.20	17.90	16.30						

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
106.7	24	4.45	3168	105	142

Remarks:

Instrument Used: HV12/1

Date: 17/10/14 | Engineer: Stephen Murdoch & Gregor Fulton | Sheet 4 of 14

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Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

DUCT VOLUME TEST SHEET

SYSTEM: 124 – AHU 06 SUPPLY (LEVELS 4, 5, 6 & 7)

VELOCITY PROFILE (taken facing air flow) **TEST HOLE LOCATION: CEILING VOID**

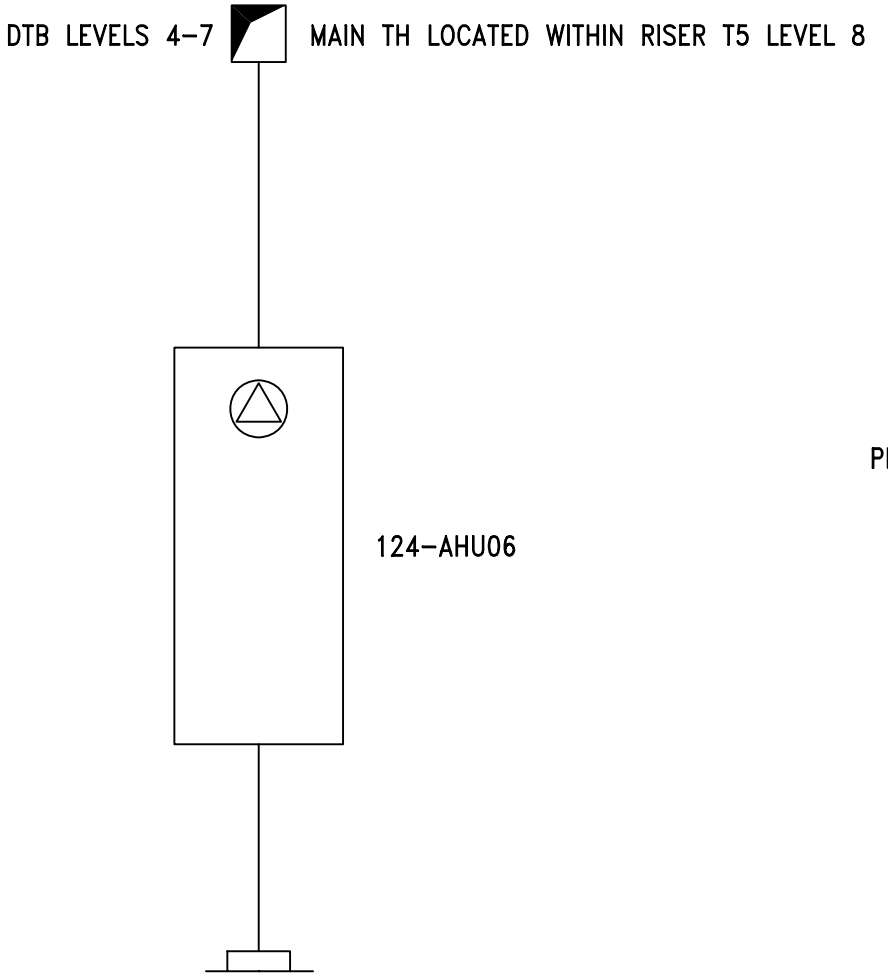
Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
TH1		160				0.0201		35		1.74	
1.80	1.80										
1.70	1.80										
1.80	1.90										
1.60	1.50										
Velocity Sub Totals											
6.90	7.00										

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
13.9	8	1.74	35	100	12

Remarks: Test Hole serves 510-SG002, Level 5.
Test Volume = 35 l/s ÷ Balometer Volume = 33 l/s = 1.06 Factor

Instrument Used: HV12/1

Date: 11/10/14 | Engineer: Stephen Murdoch & Gregor Fulton | Sheet 5 of 14



SHEET: 6 OF 14

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
Fax: 01563 822220 email: talk2us@handv.co.uk

A4709198

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 124

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

124-AHU 06 SUPPLY (4TH-7TH FLOOR)

DRAWN: LH/SM

DATE: 15/12/14

DRG. No.: 5902/V37

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Commissioning Services Ltd

EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

GRILLE TEST SHEET SYSTEM: 124 – AHU 06 SUPPLY (LEVELS 4, 5, 6 & 7)

LEVEL 7

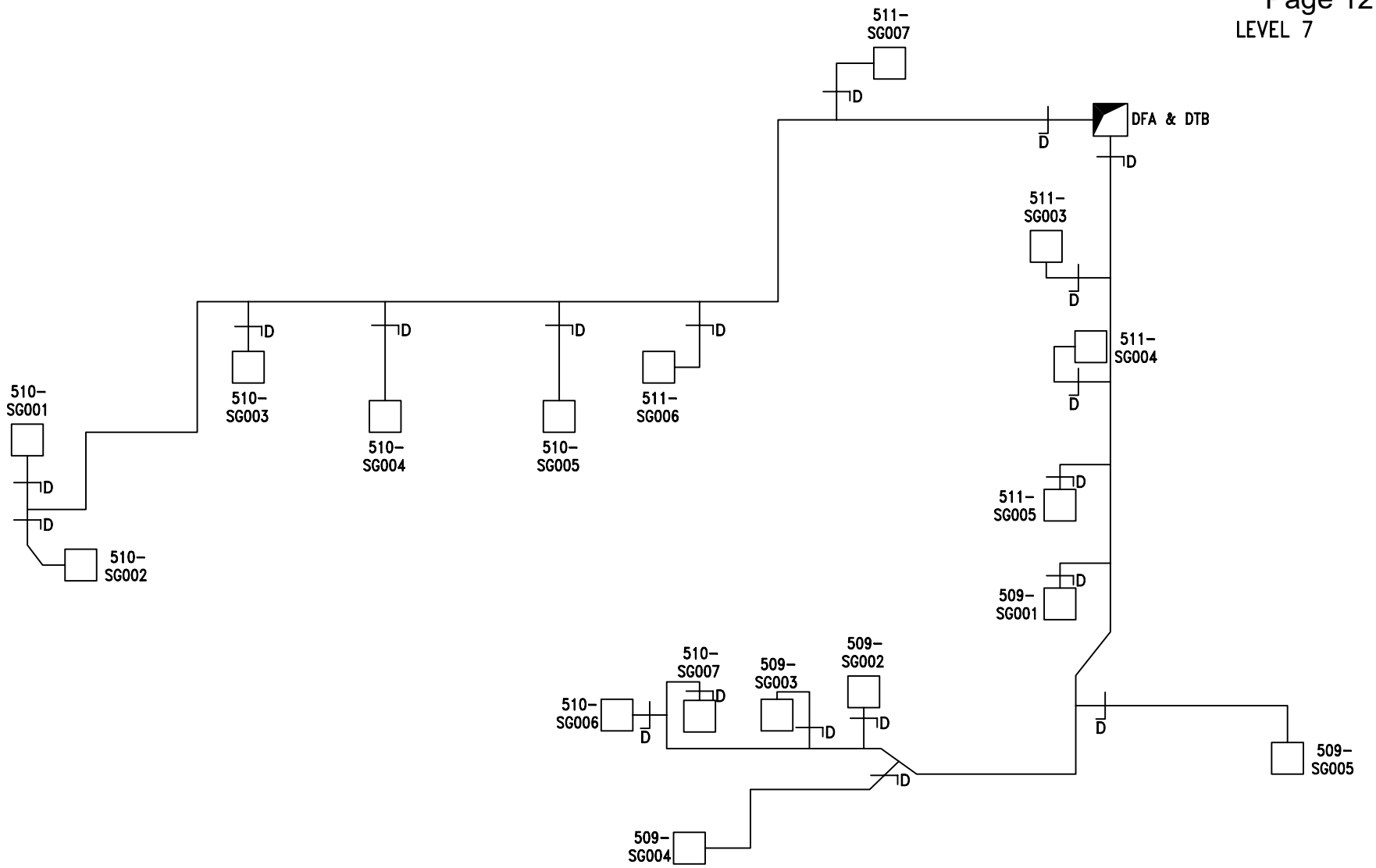
Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
*SG001	35	21	34	1.06	36.04	103
*SG002	35	23	33	1.06	34.98	100
*SG003	33	30	32	1.06	33.92	103
*SG004	25	20	25	1.06	26.50	106
*SG005	78	67	77	1.06	81.62	105
**SG006	15	13	15	1.06	15.90	106
**SG007	60	101	58	1.06	61.48	102
*SG006	47	28	46	1.06	48.76	104
*SG007	49	53	47	1.06	49.82	102
***SG003	45	32	44	1.06	46.64	104
***SG002	10	14	10	1.06	10.60	106
***SG004	19	14	19	1.06	20.14	106
***SG005	50	45	48	1.06	50.88	102
***SG001	40	50	38	1.06	40.28	101
**SG005	60	90	57	1.06	60.42	101
**SG004	90	147	89	1.06	94.34	105
**SG003	20	34	19	1.06	20.14	101

Remarks: *Grilles prefixed with 7-510-. **Grilles prefixed with 7-511-. ***Grilles prefixed with 7-509-.

Instrument Used: HV12/15

Date: 17/10/14	Engineer: Stephen Murdoch & Gregor Fulton	Sheet 7 of 14

LEVEL 7



H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220
email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 124

CLIENT:
MERCURY ENGINEERING LTD.

TITLE:
SCHEMATIC LAYOUT OF 124-AHU06 SUPPLY LEVEL 7

DRAWN: LH/DG

DATE: 16/01/15

DRG No.: 5902/V43

SHEET: 8 OF 14

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EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

GRILLE TEST SHEET SYSTEM: 124 – AHU 06 SUPPLY (LEVELS 4, 5, 6 & 7)

LEVEL 6

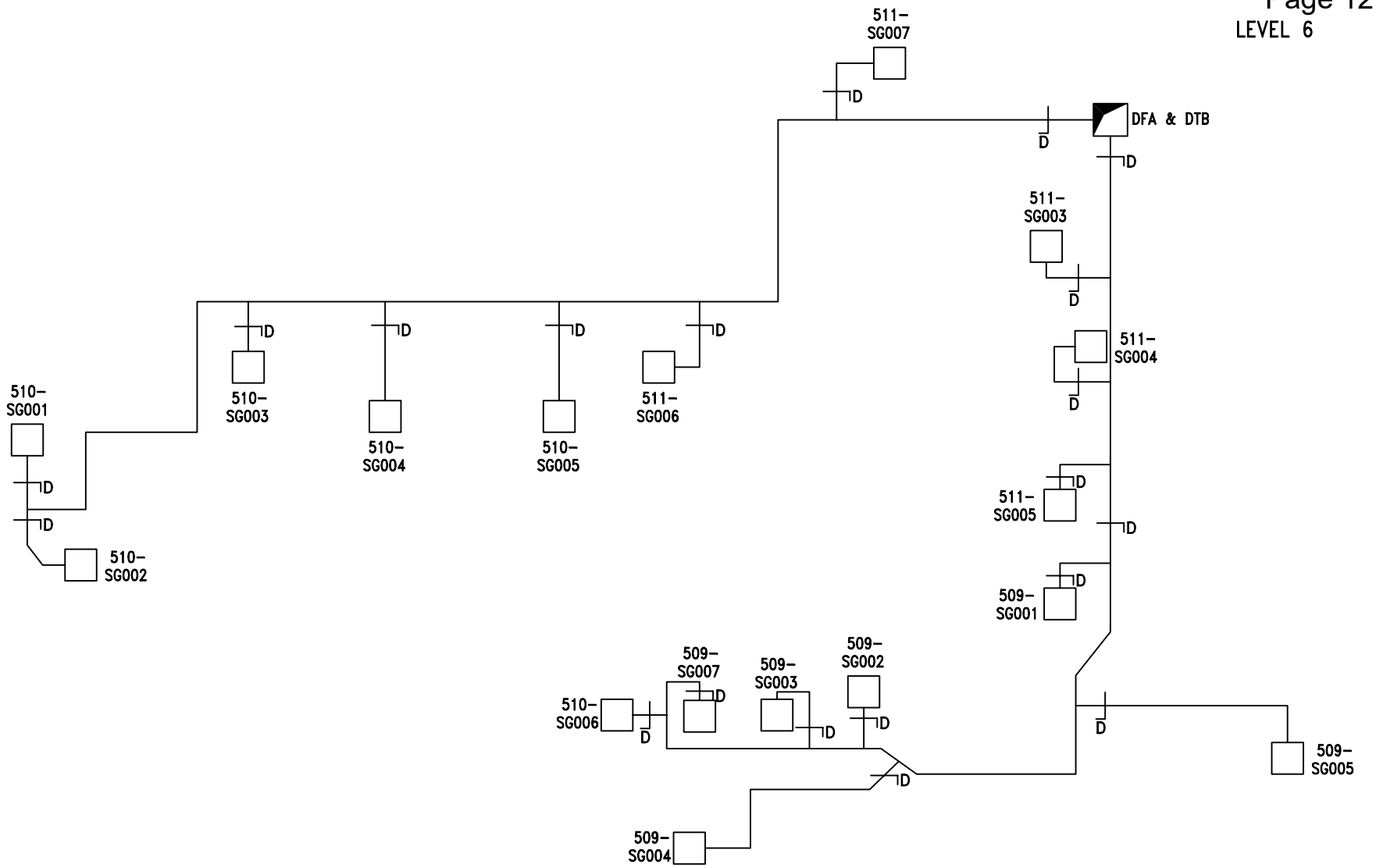
Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
*SG001	35	20	33	1.06	34.98	100
*SG002	35	19	33	1.06	34.98	100
*SG003	33	30	33	1.06	34.98	106
*SG004	25	22	25	1.06	26.50	106
*SG005	78	62	79	1.06	83.74	107
**SG006	15	15	15	1.06	15.90	106
**SG007	60	119	62	1.06	65.72	110
*SG006	47	36	47	1.06	49.82	106
*SG007	49	52	49	1.06	51.94	106
***SG003	45	36	43	1.06	45.58	101
***SG002	10	12	10	1.06	10.60	106
***SG004	19	11	19	1.06	20.14	106
***SG005	50	41	47	1.06	49.82	100
***SG001	40	41	38	1.06	40.28	101
**SG005	60	98	59	1.06	62.54	104
**SG004	90	134	87	1.06	92.22	102
**SG003	20	35	19	1.06	20.14	101

Remarks: *Grilles prefixed with 6-510-. **Grilles prefixed with 6-511-. ***Grilles prefixed with 6-509-.

Instrument Used: HV12/15

Date: 17/10/14	Engineer: Stephen Murdoch & Gregor Fulton	Sheet 9 of 14

LEVEL 6



H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220
email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 124

CLIENT:
MERCURY ENGINEERING LTD.

TITLE:
SCHEMATIC LAYOUT OF 124-AHU06 SUPPLY LEVEL 6

DRAWN: LH/DG

DATE: 16/01/15

DRG No.: 5902/V44

SHEET: 10 OF 14

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16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

GRILLE TEST SHEET SYSTEM: 124 – AHU 06 SUPPLY (LEVELS 4, 5, 6 & 7)

LEVEL 5

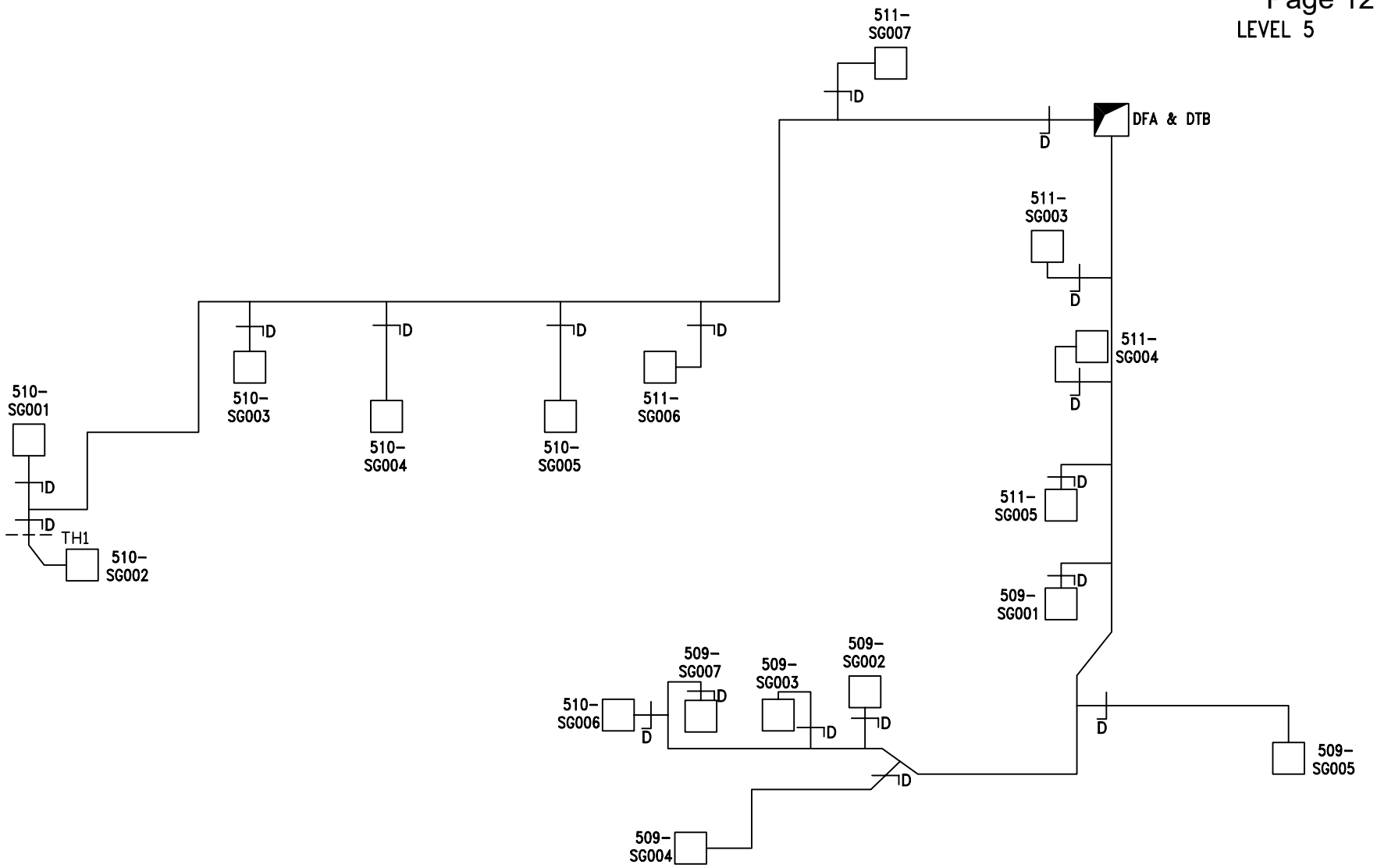
Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
*SG001	35	22	36	1.06	38.16	109
*SG002	35	20	33	1.06	34.98	100
*SG003	33	28	34	1.06	36.04	109
*SG004	25	17	24	1.06	25.44	102
*SG005	78	60	76	1.06	80.56	103
**SG006	15	15	15	1.06	15.90	106
**SG007	60	110	61	1.06	64.66	108
*SG006	47	36	45	1.06	47.70	101
*SG007	49	52	46	1.06	48.76	100
***SG003	45	30	44	1.06	46.64	104
***SG002	10	11	10	1.06	10.60	106
***SG004	19	13	19	1.06	20.14	106
***SG005	50	40	49	1.06	51.94	104
***SG001	40	46	39	1.06	41.34	103
**SG005	60	74	59	1.06	62.54	104
**SG004	90	134	90	1.06	95.40	106
**SG003	20	34	20	1.06	21.20	106

Remarks: *Grilles prefixed with 5-510-. **Grilles prefixed with 5-511-. ***Grilles prefixed with 5-509-.

Instrument Used: HV12/15

Date: 17/10/14	Engineer: Stephen Murdoch & Gregor Fulton	Sheet 11 of 14

LEVEL 5



H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220
email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 124

CLIENT:
MERCURY ENGINEERING LTD.

TITLE:
SCHEMATIC LAYOUT OF 124-AHU06 SUPPLY LEVEL 5

DRAWN: LH/DG

DATE: 16/01/15

DRG No.: 5902/V45

SHEET: 12 OF 14

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16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

GRILLE TEST SHEET SYSTEM: 124 – AHU 06 SUPPLY (LEVELS 4, 5, 6 & 7)

LEVEL 4

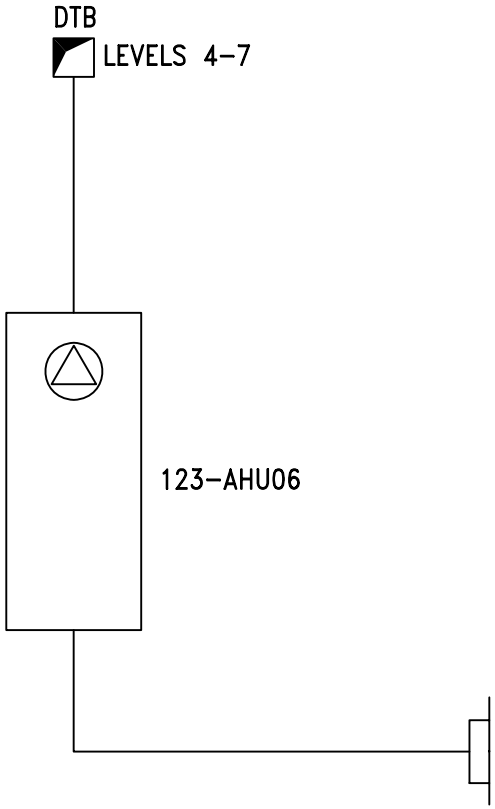
Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
*SG001	44	34	42	1.06	44.52	101
*SG002	25	17	24	1.06	25.44	102
*SG003	18	15	17	1.06	18.02	100
*SG004	78	69	77	1.06	81.62	105
**SG006	150	185	146	1.06	154.76	103
**SG005	150	214	141	1.06	149.46	100
**SG004	10	15	10	1.06	10.60	106
**SG002	15	24	15	1.06	15.90	106
*SG005	41	40	42	1.06	44.52	109
***SG001	49	39	49	1.06	51.94	106
***SG002	10	11	10	1.06	10.60	106
***SG003	45	46	45	1.06	47.70	106
***SG004	30	49	29	1.06	30.74	102
***SG005	40	42	41	1.06	43.46	109
***SG006	40	38	38	1.06	40.28	101
***SG007	40	39	38	1.06	40.28	101
***SG008	10	10	10	1.06	10.60	106
***SG009	24	17	23	1.06	24.38	102
***SG010	40	35	40	1.06	42.40	106
**SG003	18	20	18	1.06	19.08	106

Remarks: *Grilles prefixed with 4-510-. **Grilles prefixed with 4-511-. ***Grilles prefixed with 4-509-.

Instrument Used: HV12/15

Date: 17/10/14	Engineer: Stephen Murdoch & Gregor Fulton	Sheet 13 of 14

PLANTROOM 123 LEVEL 12



SHEET: 14 OF 14

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
Fax: 01563 822220 email: talk2us@handv.co.uk

A4/089198

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 123

CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

123-AHU 06 SUPPLY (4TH-7TH FLOOR WARDS)

DRAWN: LH/RP

DATE: 20/01/15

DRG. No.: 5902/V34

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

SYSTEM: 124 – AHU 06 CLEAN EXTRACT (LEVELS 4, 5, 6 & 7)

WITNESSING OF TESTING AND BALANCING

	Client Representative / Commissioning Manager	Client
Witnessed By:	David Wilson	
Representing:	Brookfield Multiplex	
Signature:	[redacted]	
Date:	12/12/14	
Witnessed By:		
Representing:		
Signature:		
Date:		

Remarks:

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

SYSTEM: 124 – AHU 06 CLEAN EXTRACT (LEVELS 4, 5, 6 & 7)

	AIR SYSTEMS PRE COMMISSIONING SHEET	✓	X	N/A
1.	Check AHU for damage and that all the components are secure	✓		
2.	Check the transit straps have been removed, if applicable	✓		
3.	Check pulleys are secure, tight, aligned and belts are correctly tensioned, if applicable	✓		
4.	Check with the controls engineer that the system is available to run and that plant rotation is correct	✓		
5.	Check all ductwork/air terminals are fitted and that air regulating dampers are open	✓		
6.	Check louvres are fitted and clear from obstructions, if applicable	✓		
7.	Check fire dampers are open, if applicable	✓		
8.	Check the motor overloads are suitable and set			✓
9.	Check VAV or CAV boxes are installed correctly and ready for use.			✓
10.	Check the floor plenums are complete, if applicable			✓
11.	Complete commissioning test sheets.	✓		

COMMENTS

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

AHU TEST SHEET

SYSTEM: 124 – AHU 06 CLEAN EXTRACT (LEVELS 4, 5, 6 & 7)

AHU											
AHU Manufacturer			Barkell		Fan Size			400			
Fan Manufacturer			Comefri		AHU Serial No			OP1 B305 0962			
Fan Type			Centrifugal		AHU Model N°.			TZAF 400 RFF			
			Design		**Test**					**% Design**	
Air Volume	(L/S)		1946		2165					110	
External Static Pressure	(Pa)		2700		Inlet	340	Outlet	39	Total	379	
Fan Rotational Speed	(R.P.M)		2700		2700						
Filter Test Data	Pre Filter	(Pa)	Inlet	*	Outlet	*			ΔP	25	
	Sec Filter	(Pa)	Inlet	N/A	Outlet	N/A			ΔP	N/A	
MOTOR											
Manufacturer			TEC		Output kW			2.2			
Serial N°			1305-0984895		Motor Full Load Current			4.91	Amps		
Voltage			400		Motor Running Current			4.42	Amps		
			Design		**Test**						
Rotational Speed.			1443		1445						
DRIVE DETAILS											
Motor Pulley/Shaft Size	(mm∅)		SPZ 118	28	Motor Pulley Taper Lock Size			1610			
Fan Pulley/Shaft Size	(mm∅)		SPZ 100	40	Fan Pulley Taper Lock Size			1610			
Belt Type/Size			XPZ	925	N°. Of Belts			4			
Shaft Centres mm			285		Adjustment			-	25	+	30 mm
Variable Speed Drive			Yes		Set Point			50Hz			

STANDBY PLANT						
Test Air Volume	2165	Inlet Pressure	340	Motor Rotational Speed	1445	Motor Running Current
% Design	110	Outlet Pressure	39	Fan Rotational Speed	2700	4.42 Amps
Variable Speed Drive			Yes	Set Point	50Hz	

Comments. N/A – Not Applicable.

2nd Motor Serial Number – 1305-0984912

*Filter pressure taken from magnehelic gauge.

Instrument Used (Ref N°.) HV12/1, HV12/4 & HV12/5

Date: 26/11/14	Engineer: Stephen Murdoch & Gregor Fulton	Sheet 3 of 14

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

DUCT VOLUME TEST SHEET

SYSTEM: 124 – AHU 06 CLEAN EXTRACT (LEVELS 4, 5, 6 & 7)

VELOCITY PROFILE (taken facing air flow) **TEST HOLE LOCATION: PLANTROOM 124**

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
Main				750	600	0.4500		1974		4.39	
4.20	5.00	5.00	4.60	4.50							
3.70	5.00	5.20	5.20	4.90							
4.30	5.10	5.40	5.30	4.60							
4.40	5.20	5.20	5.00	4.40							

Velocity Sub Totals

16.60	20.30	20.80	20.10	18.40							

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
96.2	20	4.81	2165	110	162

Remarks:

Instrument Used: HV12/1

Date: 26/11/14 | Engineer: Stephen Murdoch & Gregor Fulton | Sheet 4 of 14

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EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

DUCT VOLUME TEST SHEET

SYSTEM: 124 – AHU 06 CLEAN EXTRACT (LEVELS 4, 5, 6 & 7)

VELOCITY PROFILE (taken facing air flow) **TEST HOLE LOCATION: CEILING VOID**

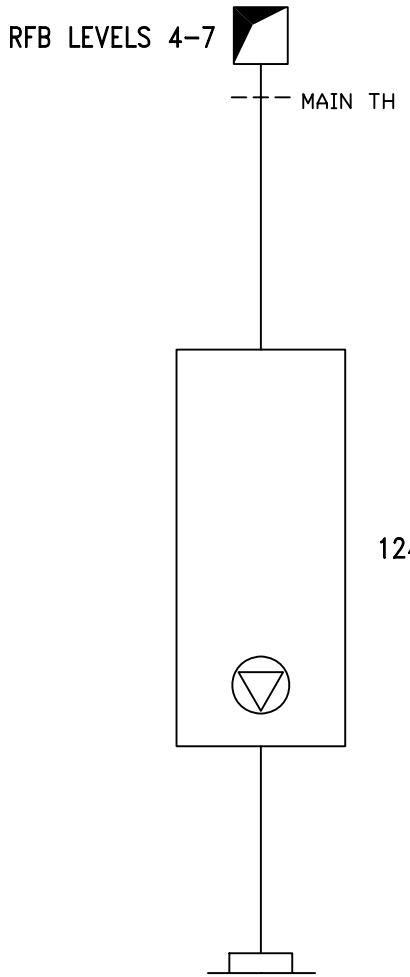
Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
TH1		250				0.0491		80		1.63	
1.70	1.60										
1.70	1.70										
1.50	1.60										
1.60	1.60										
Velocity Sub Totals											
6.50	6.50										

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
13	8	1.63	80	100	7

Remarks: Test Hole serves 509-EG007.
Test Volume = 80 l/s ÷ Balometer Volume = 69 l/s = 1.16 Factor

Instrument Used: HV12/1

Date:26/11/14 | Engineer: Stephen Murdoch & Gregor Fulton | Sheet 5 of 14



PLANTROOM 124 LEVEL 12

SHEET: 6 OF 14

H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 824991
Fax: 01563 822220 email: talk2us@handv.co.uk

A4709198

CONTRACT:	**NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 124**
CLIENT:	**MERCURY ENGINEERING UK**
TITLE:	**SCHEMATIC LAYOUT OF** **124-AHU 06 EXTRACT (4TH-7TH FLOOR)**
DRAWN:	**LH/SM**
DATE:	**15/12/14**
DRG. No.:	**5902/V36**

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EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

GRILLE TEST SHEET

SYSTEM: 124 – AHU 06 CLEAN EXTRACT (LEVELS 4, 5, 6 & 7)

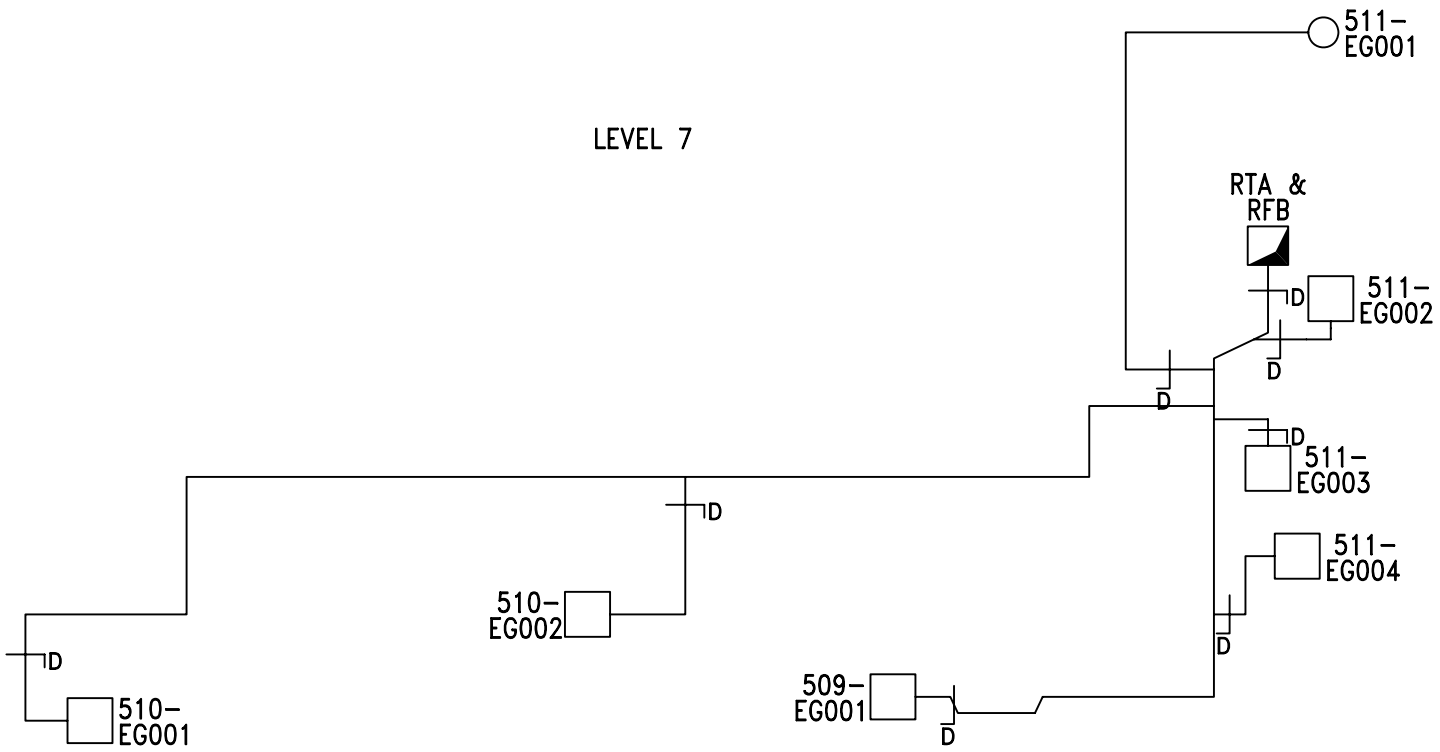
LEVEL 7

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
*EG001	150	84	134	1.16	155.44	104
*EG002	65	46	61	1.16	70.76	109
**EG001	54	52	48	1.16	55.68	103
***EG004	60	70	54	1.16	62.64	104
***EG003	90	116	82	1.16	95.12	106
***EG001	10	10	9	1.16	10.44	104
***EG002	20	34	18	1.16	20.88	104

Remarks: *Grilles prefixed with 7-510-. **Grilles prefixed with 7-509-. ***Grilles prefixed with 7-511-.

Instrument Used: HV12/15

Date: 26/11/14	Engineer: Stephen Murdoch & Gregor Fulton	Sheet 7 of 14



H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220
email: talk2us@handv.co.uk

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CONTRACT:	NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 124
CLIENT:	MERCURY ENGINEERING LTD.
TITLE:	SCHEMATIC LAYOUT OF 124-AHU06 CLEAN EXTRACT LEVEL 7
DRAWN:	LH/DG
DATE:	16/01/15
DRG No.:	5902/V47
SHEET:	8 OF 14

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

GRILLE TEST SHEET

SYSTEM: 124 – AHU 06 CLEAN EXTRACT (LEVELS 4, 5, 6 & 7)

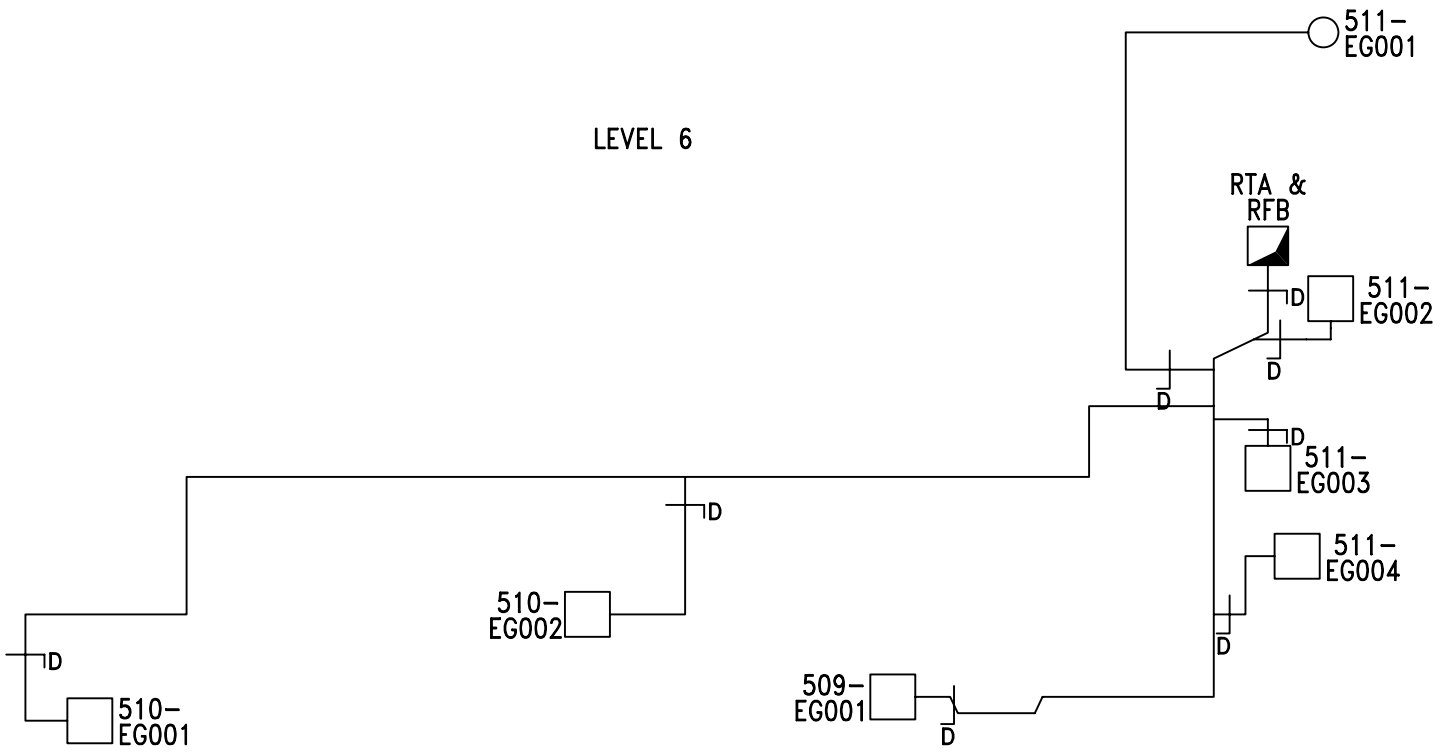
LEVEL 6

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
*EG001	150	71	134	1.16	155.44	104
*EG002	65	40	58	1.16	67.28	104
**EG001	54	48	48	1.16	55.68	103
***EG004	60	67	53	1.16	61.48	102
***EG003	90	123	82	1.16	95.12	106
***EG001	10	9	9	1.16	10.44	104
***EG002	20	25	18	1.16	20.88	104

Remarks: *Grilles prefixed with 6-510-. **Grilles prefixed with 6-509-. ***Grilles prefixed with 6-511-.

Instrument Used: HV12/15

Date: 26/11/14	Engineer: Stephen Murdoch & Gregor Fulton	Sheet 9 of 14



H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220
email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 124

CLIENT:
MERCURY ENGINEERING LTD.

TITLE:
SCHEMATIC LAYOUT OF 124-AHU06 CLEAN EXTRACT LEVEL 6

DRAWN: LH/DG

DATE: 09/01/15

DRG No.: 5902/V48

SHEET: 10 OF 14

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EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

GRILLE TEST SHEET

SYSTEM: 124 – AHU 06 CLEAN EXTRACT (LEVELS 4, 5, 6 & 7)

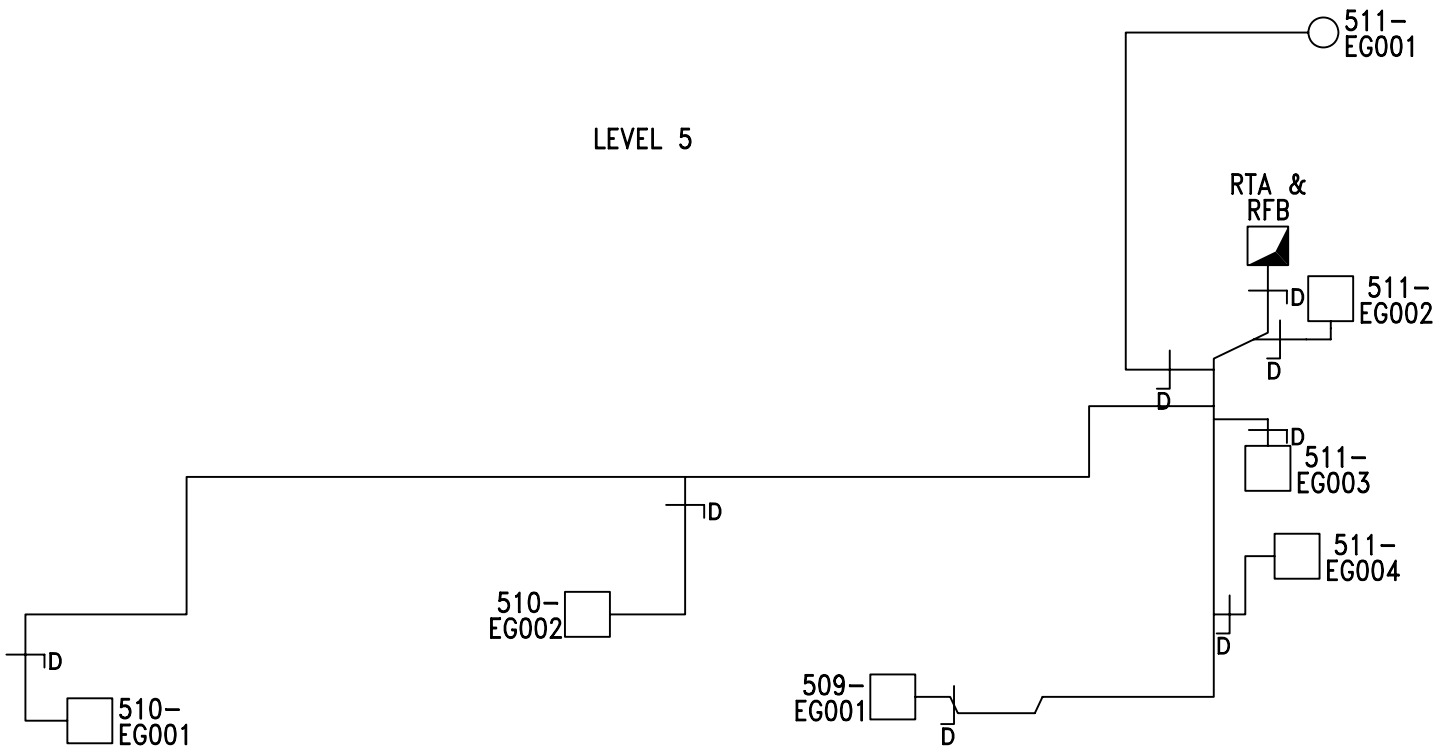
LEVEL 5

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
*EG001	150	80	133	1.16	154.28	103
*EG002	65	51	59	1.16	68.44	105
**EG001	54	44	50	1.16	58.00	107
***EG004	60	71	54	1.16	62.64	104
***EG003	90	114	85	1.16	98.60	110
***EG001	10	11	9	1.16	10.44	104
***EG002	20	40	18	1.16	20.88	104

Remarks: *Grilles prefixed with 5-510-. **Grilles prefixed with 5-509-. ***Grilles prefixed with 5-511-.

Instrument Used: HV12/15

Date: 26/11/14	Engineer: Stephen Murdoch & Gregor Fulton	Sheet 11 of 14



H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220
email: talk2us@handv.co.uk

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CONTRACT:	NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 124
CLIENT:	MERCURY ENGINEERING LTD.
TITLE:	SCHEMATIC LAYOUT OF 124-AHU06 CLEAN EXTRACT LEVEL 5
DRAWN:	LH/DG
DATE:	09/01/15
DRG No.:	5902/V49
SHEET:	12 OF 14

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Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL N°. 01563 821991
FAX N°. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 124

GRILLE TEST SHEET

SYSTEM: 124 – AHU 06 CLEAN EXTRACT (LEVELS 4, 5, 6 & 7)

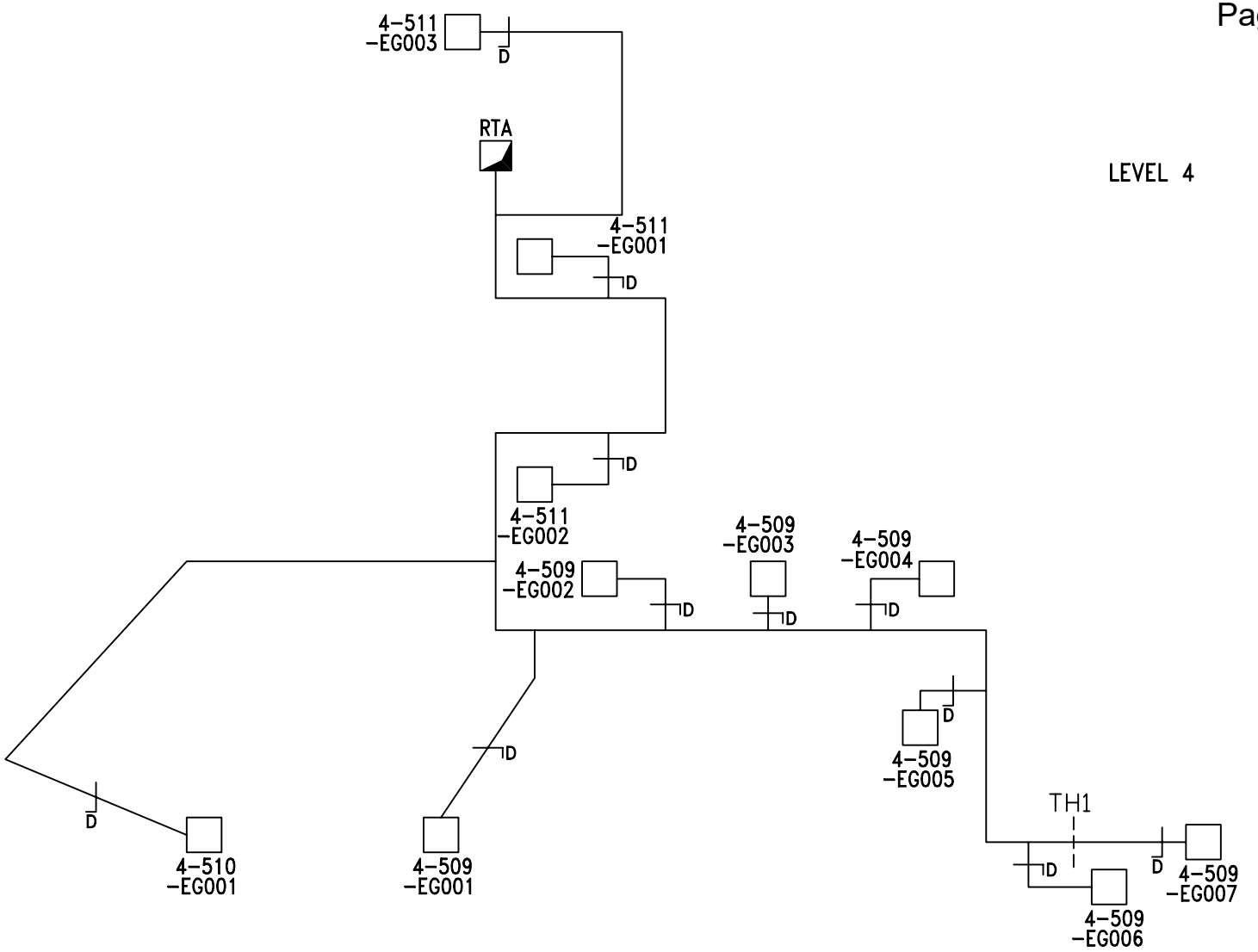
LEVEL 4

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
**EG007	80	24	69	1.16	80.04	100
**EG006	80	29	70	1.16	81.20	102
**EG005	40	17	35	1.16	40.60	102
**EG004	40	22	35	1.16	40.60	102
**EG003	40	26	35	1.16	40.60	102
**EG002	40	38	35	1.16	40.60	102
**EG001	54	44	47	1.16	54.52	101
*EG001	65	37	56	1.16	64.96	100
***EG002	80	125	72	1.16	83.52	104
***EG001	80	123	69	1.16	80.04	100
***EG003	28	12	25	1.16	29.00	104

Remarks: *Grilles prefixed with 5-510-. **Grilles prefixed with 5-509-. ***Grilles prefixed with 5-511-.

Instrument Used: HV12/15

Date: 26/11/14	Engineer: Stephen Murdoch & Gregor Fulton	Sheet 13 of 14



H&V Commissioning Services Limited
Kilknowe Office
16 Barrmill Road
Galston
East Ayrshire, KA4 8HH
Tel : 01563 821991
Fax: 01563 822220
email: talk2us@handv.co.uk

CONTRACT:
NSGH, ADULT & CHILDREN'S HOSPITAL - PLANTROOM 124

CLIENT:
MERCURY ENGINEERING LTD.

TITLE:
SCHEMATIC LAYOUT OF 124-AHU06 CLEAN EXTRACT LEVEL 4

DRAWN: LH/DG
DATE: 09/01/15
DRG No.: 5902/V50
SHEET: 14 OF 14

[redacted]

From: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE) [redacted]
Sent: 25 February 2020 10:23
To: BAIN, Marion (NHS NATIONAL SERVICES SCOTLAND)
Cc: PETERS, Christine (NHS AYRSHIRE AND ARRAN)
Subject: Thurdsay meeting
Attachments: item-11-paper-20_04-qeuh-and-rhc-update.pdf; item-19b-fppc-m-19_06-final.pdf; mould 1.png; mould 2.png; mould 3.png

Hi Marion, thanks for your email. In addition to what you suggested can we discuss the board papers on Thursday. We noted the following;

Paper No 20/04 (attached)

Section 3.3 Facilities and Estates

Section 3.3.2 states that the opportunity was taken to upgrade the ventilation. In fact this upgrade is essential due to the external ventilation report highlighting major concerns with the ventilation strategy which puts patients at risk. This is supported by the HPS situational assessment published in relation to wards 2A/B and concern that the number of outbreaks experienced was due to inadequate ventilation.
Section 3.3.3. Again states the opportunity is to be taken to upgrade shower rooms. Again essential due to the presence of extensive black mould behind IPS panels which presents a risk to immunosuppressed patients (some of the pictures attached)
Section 3.4. This section and subsections that follow summarise findings from the Cryptococcal advisory group. This group is a sub group of IMT and reports to IMT. We have previously highlighted the governance failure and the fact that the IMT has not had a chance to consider and comment on findings which are now already in the public domain. We have previously raised concern that the chair of the IMT was requested not to sit on this group as it had to be independent but note that there are several other members of the IMT on the group
Section 3.4.2 Should state 'one of the hypotheses at the time' as there were several considered
Section 3.4.5 States that the plant room has been categorically ruled out. It is not possible to categorically rule out any hypotheses on a retrospective basis. There is a strong epidemiological link to the plant room and given the emergence of new photographs just last week taken in November which show contamination with bird faeces and dead birds, this investigation is not concluded. The chair of the group has in fact arranged to revisit the plant room in light of this new evidence. It is of huge concern that these photographs and a subsequent set from the first week in December were not shared with the IMT at the time or the expert advisory group until now. (pictures and email below)
There is no mention in this section of the fundamental issue which is a lack of suitable accommodation for immunosuppressed patients
This leads us on to part 5.0 HSE investigation and ward 4C.

Section 5 HSE investigation

It states that haemato-oncology patients do not require specialist ventilation . This is in fact not the case and this ward does not meet the SHTM 03-03 standards for either neutropenic rooms or a general medical ward (given the low air change rate). Information pertaining to this including an SBAR has already been sent to SG

Minutes of the meeting of finance , planning and performance committee 3/12/19 (attached)

Section 99

Again this relates to Cryptococcus and information from the advisory group. It states that the likely source was Cryptococcal spores entering the building from the outside air. There is no evidence of Cryptococcal

spores coming in from outside air, it has not been found in either internal or external air samples. This phenomenon should it be occurring would be a constant and therefore we would expect to see cases of Cryptococcus in hospitals country wide given the increasing number of susceptible individuals.
Again regardless of what actually took place in terms of a transmission event the key is that there are insufficient rooms for immunocompromised patients and again this is not described.

There are comments in another paper regarding whistleblowers not going via appropriate channels and it would be good to understand what is meant be that.
We would welcome further discussion
Kind regards
Teresa and Christine

Dr Teresa Inkster
Consultant Microbiologist, QEUH
National Training Programme Director Medical Microbiology
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: John Hood [redacted]
Sent: 20 February 2020 12:11
To: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE)
Subject: Fwd: Plant Room Pics

Sent from my iPhone

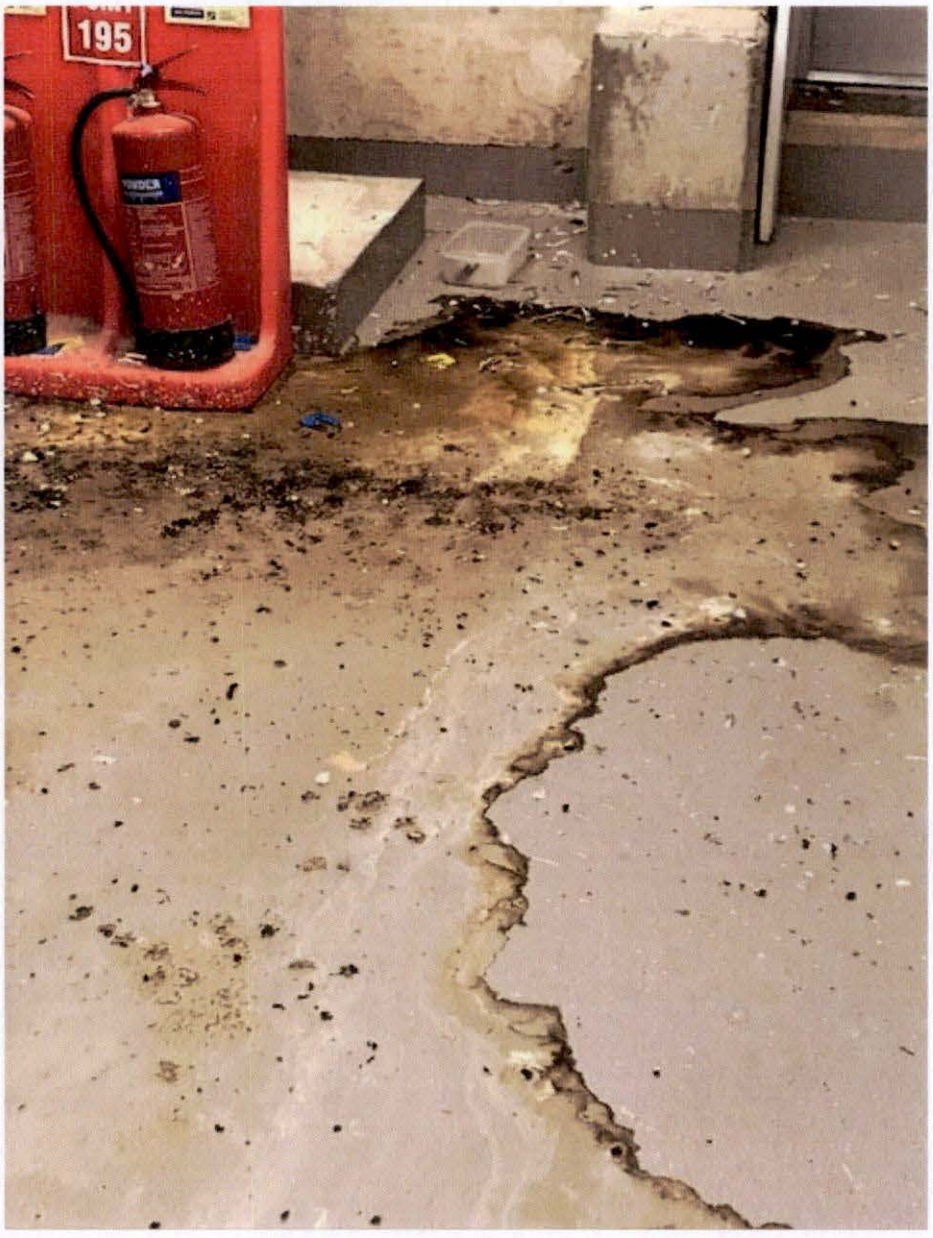
Begin forwarded message:

From: "Hood, John" [redacted]
Date: 19 February 2020 at 13:21:52 GMT
To: "john.hood[redacted]
Subject: FW: Plant Room Pics

From: Conner, Darryl James
Sent: 17 February 2020 13:39
To: Hood, John
Subject: Plant Room Pics
Hi John,
Here are the pictures you requested.
Best
Regards
[redacted]

Darryl James Conner MIET MIHEEM
Site Manager Operational Estates (SMOE)
Queen Elizabeth University Hospital Campus,
Labs Bldg.
1345 Govan Rd
Glasgow
G51 4TF
[redacted]

FIRE
POINT
195


195

From: Kathryn.Wilson[redacted]
Sent: 18 March 2020 09:53
To: MacPherson, Anne
Cc: Green, John; Cameron.Adam[redacted]
Subject: [ExternaltoGGC]Ongoing Investigation

Dear Anne,

I am writing to you as I understand that, since our last meeting, there have been some personnel changes and I am sure you will be able to share this with the appropriate people.

Thank you for sending the documentation requested which I have now reviewed.

With the continuing uncertainty around COVID 19, I am mindful that frontline resources especially are likely to be stretched over the coming months and, for that reason, I don't propose to arrange any further visits at this time. However, I do still have concerns regarding the Infectious Disease Ward and expect work to continue in the background to evaluate whether the ventilation complies fully with SHTM 03-01. I believe the best way to move this forward in a sensible and timely manner is to subject Wards 5C and 5D to the same process as is already being undertaken for PICU, HDU and ICU and Ward 6A.

You asserted in your email of 19th February that "Wards 5C and 5D are not used for the care of patients with a high consequence infectious disease". However, HSE have previously been informed that [redacted] *of which could be considered 'high consequence infectious disease'. It is imperative that a detailed analysis of all patients that have been treated in 5C and 5D is therefore undertaken. Once that is completed, the approach should be the same as is stipulated in the Notification of Contravention Letter and with particular attention to the following;*

a) *A systematic comparison of the existing ventilation system in each ward with the published Standard in SHTM 03-01 Parts A & B in order to determine the extent of any non-compliance. The assessment should include the level of negative pressure being achieved, air changes per hour and the provision of HEPA filtration.*

b) *An assessment of the risk to patients' and staff safety arising from non-compliance and deviation from the standards.*

c) *Identification of the remedial action(s) that are required to:*

   i) *Bring the wards into alignment with the standards in SHTM 03-01 Parts A & B or*

   ii) *If a decision is made to deviate from SHTM 03-01 Parts A&B, a suitable and detailed record of the rationale for derogation should be prepared.*

d) *If it is determined that it is not possible to achieve compliance with SHTM 03-01 Parts A&B, or where derogation has been agreed, a suitable and sufficient risk assessment should be undertaken to determine the suitability of the wards for accommodating the present cohort of patients.*

e) *To be suitable and sufficient, the review must be undertaken and signed off by named appropriate and competent representatives from Infection Control, Estates and Clinicians.*

With regard to 5C and 5D, I suggest this should be completed by the end of September 2020 and I'd be grateful if you confirm that GGHB can comply with this timescale. The completion date for the previous wards is March 31st and it would be helpful if you could advise of the progress made with that work to date with a view to, if necessary under

the circumstances, being flexible with that timescale too. Obviously, this situation is continually evolving and I will endeavour to be as supportive as possible whilst still ensuring that risk is being appropriately managed.

I look forward to hearing from you in due course.

Kind Regards

Kate

Kathryn Wilson|HM Inspector of Health and Safety|Field Operations Directorate
Health & Safety Executive | 3rd Floor, Cornerstone House, 107 West Regent Street, Glasgow, G2 2BA |
☎ [redacted] | ☎ [redacted] | ✉ [redacted]

****

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www.hse.gov.uk

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Greater Glasgow and Clyde NHS Board

JB Russell House
Gartnavel Royal Hospital
1055 Great Western Road
GLASGOW
G12 0XH

[redacted]
www.nhsggc.org.uk

Kathryn Wilson
HM Inspector of Health and Safety
Health and Safety Executive
FOD Ops Unit 1 Group 4
Glasgow – Cornestone
Floor 3
107 West Regent Street
Glasgow
G2 2BA

Date: 27th March 2020
Our Ref: JG/LLPAE

Enquiries to: Jane Grant
[redacted]

Dear Ms Wilson

Health and Safety at Work ETC. Act 1974
Notification of Contraventions

I refer to your letter of 16th December 2019 where you identified Notification of Contraventions (NoCs) related to the ventilation systems associated with the High Dependency Unit and Intensive Care Unit both within the Queen Elisabeth University Hospital (QEUH) and the Paediatric Intensive Care Unit within the Royal Hospital for Children. Your letter further sets a completion deadline of 31st March 2020.

I further refer to your email of 18th March 2020 sent to Anne MacPherson, Director of Human Resources and Organisational Development, raising matters concerning wards 5c and 5d at QEUH. I am grateful for your attendance, with your colleague Mr Cameron Adam, at a meeting on 27th January 2020 with senior clinical, estates and managerial staff where the NoCs were discussed.

At the meeting we were able to advise that the works at PICU were complete and a hard copy of the derogation documentation was provided. Following the meeting we provided an electronic copy. You have provided commentary on this document and we are adopting the majority of the points you have made. We do not however agree with your comment regarding timing of signatories. As we described at the meeting the key for us is to get the relevant stakeholders to agree and sign off. On this instance it was appropriate we did so. We will however consider how best to take this forward. As previously mentioned the development of this documentation has been unique within NHS Scotland. I can advise that Health Facilities Scotland (HFS) are now in direct discussions with us with the aim that the documentation will be developed as an NHS Scotland template.

At the meeting Mr Tom Steele, Director of Estates and Facilities advised that the access requirements to these wards and the works necessary could not be complete by the 31st March 2020 deadline. You accepted that information and asked that we come back seeking an extension with timelines.

It was agreed that Estates and Clinical colleagues would undertake an exercise to agree a programme of works and we would subsequently write to you requesting a reasonable time extension.

I can confirm that a programme of works including access requirements had been agreed between Clinical Managers, Infection Control and Estates. Works began in early March 2020 with an 18 weeks planned programme. However, with the UK now moving through the phases of the national response to the Covid-19 pandemic and The Scottish Government placing NHS Scotland in Emergency Standing under sections 1 and 78 of the 1978 NHS Scotland Act, which will be in place for at least three months, we are not currently in a position to confirm when the wards will return to normal workload to then be able to identify a date by which the works will be completed.

Applying learning from works already undertaken in PICU and ward 6A, it is anticipated that upon completion the wards will meet the criteria set out in SHTM 03 01 and therefore derogation documentation will not be required.

I appreciate that this is not the position either of us wished to be in but I hope that you can understand these events are unprecedented.

I do commit to write to you again by 30th June 2020, when I anticipate being in a position to confirm a date by which the works will be complete and if required associated documentary evidence will be available to confirm compliance against the NoCs.

Your email of 18th March 2020 suggests that we carry out similar actions for wards 5c and 5d within QEUH. You have proposed a completion date of end of September 2020. For the reasons previously set out we do not think this date is practicable. We will need to take some time to review your comments regarding these wards and consider our response. As you will appreciate, key staff who will be involved in this process are totally focused on other matters at present. I would however pick up on one point. It has been confirmed by our Infection Control Manager that, no patients with MDRTB have been treated in 5c or 5d and a sensitive TB (HIV AAFB positive) is not considered to be a high consequence infectious disease.

I therefore commit to responding to these issues by 30th June 2020.

I am able to give you assurance that in normal operational times our senior clinical colleagues have confirmed that they are satisfied that they can continue to deliver safe clinical care within these wards.

If you have any further queries or wish to discuss the contents of this letter and our workplan in more detail please do not hesitate to contact Mrs Anne MacPherson, Director of Human Resources and Organisational Development.

Yours sincerely

[redacted]

Jane Grant
Chief Executive
NHS Greater Glasgow and Clyde

Cc: Anne Macpherson, Director of Human Resources and Organisational Development

FOD Ops Unit 1-3

Kathryn Wilson

FOD Ops Unit 1 Group 4
Glasgow Cornerstone

107 West Regent Street
Glasgow
G2 6BA

[redacted]

http://www.hse.gov.uk/

Principal Inspector
Cameron Adam

Ms Jane Grant,
Chief Executive,
NHS Greater Glasgow and Clyde
Chief Executive Offices,
JB Russell House,
Gartnavel Royal Hospital,
Great Western Road,
Glasgow G12 0XJ

Reference 4588932

Date 30th March 2020

Dear Ms. Grant,

I am writing to confirm receipt of your letter dated 27th March 2020 containing the update on progress made to resolve the matters covered in the Notification of Contravention Letter sent in December the last year.

I appreciate that we are going through an unprecedented period and, whilst I appreciate that you intend to give a further update in June, I would be happy to extend the period until the end of September 2020 to allow you to concentrate on more pressing issues.

In the meantime, I think there has been a misunderstanding concerning the date of the signatures. I am keen to ensure that there is full involvement in discussions and planning by all key stakeholders and that no-one is asked to retrospectively sign anything off without being involved in the decision making. I would, therefore, expect everyone to be present at the sign-off when decisions are made.

I am unsure of what you are referring to in your statement about the potential for derogation documentation not being required. My original letter stated that, even though Ward 6A had been given a 'Good' rating when it was verified, there is still a need to understand whether all the standards required in the SHTM are being met and, if not, an assessment of any risk associated with that undertaken.

I am delighted that you are working closely with Health Facilities Scotland and look forward to receiving updates in that regard. I have also been meeting regularly with HFS throughout the investigation and have found their input invaluable.

Finally, I would like to take the opportunity to wish all your staff well and thank them for their amazing work in these most difficult times.

Yours sincerely

[redacted]

Kathryn Wilson
HM Inspector of Health and Safety

Greater Glasgow and Clyde NHS Board

JB Russell House
Gartnavel Royal Hospital
1055 Great Western Road
GLASGOW
G12 0XH

[redacted]
www.nhsggc.org.uk

Kathryn Wilson
HM Inspector of Health and Safety
Health and Safety Executive
FOD Ops Unit 1 Group 4
Glasgow – Cornestone
Floor 3
107 West Regent Street
Glasgow
G2 2BA

Date: 3rd April 2020
Our Ref: JG/LLPAE

Enquiries to: Jane Grant
[redacted]

Dear Ms Wilson

Thank you for your prompt reply to my letter of 27th March 2020.

Your offer to delay further correspondence until September 2020 is very welcome. Also I thank you for your kind wishes to the staff of NHS Greater Glasgow and Clyde who are doing amazing work in these most difficult times. I certainly concur with this sentiment.

Thank you for clarifying further the point regarding signatures which is helpful.

I can assure you that all the key stakeholders are directly involved in all discussions and decisions taken. In some instances the signatory may be a different individual to that who attended the meeting.

We would expect that the most senior person in the area, for that particular service, would be the signatory but they may be represented at any meetings by a member of their senior staff. An example may be where the Lead Prevention and Control of Infection Nurse for a particular site attends the meeting but the Board Infection Control Doctor (ICD) would be the signatory.

My reference to the potential for derogation documentation not being required was in relation to the HDU and ICU wards. The Estates team have suggested that taking the learning from the works carried out at PICU they feel they may be able to achieve the required standards of SHTM 03-01, therefore not requiring a derogation, however, until these works are complete and the necessary verifications carried out, we will not be able to confirm that position.

If you have any further queries or wish to discuss the contents of this letter and our workplan in more detail please do not hesitate to contact Mrs Anne MacPherson, Director of Human Resources and Organisational Development.

Yours sincerely

[redacted]

Jane Grant
Chief Executive
NHS Greater Glasgow and Clyde

Cc: Anne Macpherson, Director of Human Resources and Organisational Development
John Green, Health & Safety Service Manager (Facilities & Partnerships)
Gerry Cox, Assistant Director of Estates and Capital Planning

FW: Condensation panels - urgent

Inkster, Teresa [redacted]

Wed 29/07/2020 11:30

To INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE) [redacted]

From: Inkster, Teresa
Sent: 13 March 2017 17:41
To: Kirkwood, Jean [redacted]; Madden, William [redacted]; Brattey, David [redacted]; Dawes, Heather [redacted]; Gibson, Brenda [redacted]; Johnson, Angela [redacted]; Dodd, Susie [redacted]; Mohammed, Kalsoom [redacted]; Redfern, Jamie [redacted]
Cc: Hutton, Melanie [redacted]
Subject: RE: Condensation panels - urgent

Thanks Jean

I have informed both Jamie and Billy Hunter.

From an infection control point of view we would advise not using the rooms for patient whilst the water is continuing to drip. Once estates have finished with each room they will need cleaned before putting back into use.

Kind regards
Teresa

From: Kirkwood, Jean
Sent: 13 March 2017 13:58
To: Madden, William; Brattey, David
Cc: Inkster, Teresa; Hutton, Melanie; Dawes, Heather; Gibson, Brenda; Johnson, Angela; Dodd, Susie; Mohammed, Kalsoom
Subject: Condensation panels - urgent
Importance: High

Hi there,
We have three rooms with water dripping out of the panels on the ceiling.
I am unable to move patients out of their rooms. I have put the incidents on FM first.
Can someone advise as soon as possible
many thanks
Jean
[redacted]

A47069198

Inkster, Teresa

From: Redfern, Jamie
Sent: 23 April 2018 15:47
To: Inkster, Teresa
Subject: FW: water from air conditioning

fyi

From: Munro, Kim
Sent: 23 April 2018 15:36
To: Powrie, Ian
Cc: Rodgers, Jennifer; Redfern, Jamie; Dawes, Heather
Subject: water from air conditioning

Hi Ian,

Just to inform you we have x6 rooms out of action in Acute Receiving x3 in ward 2C, x3 in CDU and x2 rooms in ward 2A.
This has been put through FM and highlighted to Facilities manager, hoever it does not appear to be picked up yet.
The Air con system is leaking dirty water onto the floors, when fixed this will require a clean for each room in Acute Receiving to allow them to be functionable, however, it has a bigger impact on ward 2A as they will require air sampling etc and this takes 10 days for testing before the rooms can be terminally cleaned and opened.

Regards

Kim Munro
Clinical Co-ordinator
RHC
[redacted]

04/09/2020

Donna

Donna McConnell
Senior Infection Prevention and Control Nurse
Queen Elizabeth University Hospital
[redacted]

From: Purdon, Colin
Sent: 28 February 2019 15:39
To: McConnell, Donna
Cc: Conner, Darryl James; Nicholson, Garry
Subject: Re: Ward 4C Haematology

Garry,

Can you get someone up to have a look at this and report back please?

Thanks
Colin

Sent from my iPhone

On 28 Feb 2019, at 14:58, McConnell, Donna [redacted] wrote:

> Hi Colin,
>
> Ward 4C Haematology have contacted us to say that they have had a leak from the ventilation unit in Ward 72. The patient who is in the room thinks that it came from the PITOT tube and that it dripped onto her leg. They have reported this on FMFirst and I was wondering if someone from the team could review this.
>
> Kind regards,
>
> Donna
>
> Donna McConnell
> Senior Infection Prevention and Control Nurse
> Queen Elizabeth University Hospital
> [redacted]

FW: Ward 4C Haematology

Inkster, Teresa [redacted]

Thu 23/07/2020 15:30

To:INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE) [redacted]

From: Conner, Darryl James
Sent: 06 March 2019 17:53
To: Pritchard, Lynn [redacted] French, Sofie [redacted]; Barmanroy, Jackie [redacted]; McConnell, Donna [redacted]; Inkster, Teresa [redacted]
Cc: Purdon, Colin [redacted]
Subject: RE: Ward 4C Haematology

Hi Lynn,

The chilled beams only condense when the air dew point in the room is lower than normal, this is because the air has higher than normal levels of Relative humidity either from changing external weather conditions or variable internal conditions (Any procedures within the room environment that would generate additional moisture) possible from room usage. The moisture in the air will condense against the chilled water coil on the beam and precipitation will form and drip from the unit on these rare occasions. The chilled water flow temperatures are set at 14 degrees and the dew point of which the room moisture will condense is designed to be higher than this as the space temperature is set to approximately 23 degrees. All adjacent rooms are fed from the same external air source for any given condition and the chilled water is also supplied from the same chilled water circuit as the adjacent rooms, therefor if the problem was wide spread like on very warm days chances are more than this room would have given us the same problem. As this was an isolated incident to this room for one specific day and the problem has not reoccurred since it is my opinion that the internal room conditions where the problem on that day.

Best

Regards

[redacted]

Darryl James Conner MIHEEM
Interim Site Manager Operational Estates (SMOE)
Queen Elizabeth University Hospital Campus,
Labs Bldg.
1345 Govan Rd
Glasgow
G51 4TF

[redacted]

From: Pritchard, L[redacted]
Sent: 06 March 20[redacted]; Barmanroy, Jackie [redacted]; McConnell,
To: Frenc[redacted], Inkster, Teresa [redacted]; Conner, Darryl James
[redacted]
Subject: RE: Ward 4C Haematology

Hi
Colin is on annual leave this week so not sure who can answer. I thought that the beams only dripped in periods of extreme temperature and that the tube could either be clamped or spigoted .

Darryl – any thoughts?

LP

Lynn Pritchard
Lead Infection Prevention & Control Nurse - South Sector
Queen Elizabeth University Hospital
Zone 2 - 1 Office Block
Govan Rd
Glasgow
G51 4TF
[redacted]

From: French, Sofie
Sent: 06 March 2019 09:14
To: McConnell, Donna; Pritchard, Lynn; Barmanroy, Jackie
Cc: Inkster, Teresa
Subject: RE: Ward 4C Haematology

Hi,

Can you see the response from Colin Purdon please - I don't have a lot of knowledge regarding chilled beams but surely it is not acceptable that they are dripping onto patients? I'm not sure how the explanation below is intended to give any assurance to the ward/patient?

Kind Regards
Sofie

Sofie French
Senior Infection Prevention & Control Nurse
Queen Elizabeth University Hospital
[redacted]

From: McConnell, Donna
Sent: 05 March 2019 08:57
To: Pritchard, Lynn; French, Sofie
Subject: FW: Ward 4C Haematology

FYI

Donna McConnell
Senior Infection Prevention and Control Nurse

2020
Queen Elizabeth University Hospital

[redacted]

From: Purdon, Colin
Sent: 01 March 2019 09:29
To: McConnell, Donna
Cc: Conner, Darryl James; Nicholson, Garry
Subject: RE: Ward 4C Haematology

Hi Donna,

Garry had a look at this yesterday afternoon. He spoke to staff who said it hadn't happened again since the initial report. Just to clarify, the tube is not a used as a drain. It is a connection that is used to take air pressure readings from the chilled beam grille, although it is possible that condensation could have collected and been ejected if conditions in the room were unusually humid. It may not have come from the tube at all but may have dripped from the chilled beam itself, which is common. Staff will let us know if it happens again.

Regards

[redacted]

Colin Purdon | BSc (Hons)
Interim Sector Estates Manager (*South*)

Estates Dept
Queen Elizabeth University Hospital Campus,
Room L0/B/002
Laboratory Medicine and Facilities Management Bldg.
1345 Govan Rd
Glasgow
G51 4TF

☎ [redacted]

[redacted]

From: McConnell, Donna
Sent: 01 March 2019 08:50
To: Purdon, Colin
Cc: Conner, Darryl James; Nicholson, Garry
Subject: RE: Ward 4C Haematology

Many thanks,

Is there any update on this?

Kind regards,

A47069198

From: Brown, Isabel
Sent: 30 June 2019 00:08
To: Neil, Isobel [redacted]
Cc: Cook, Claire [redacted]
Subject: AIR CONDITIONING

HI Isobel,
Have come in onto site.
Patients and staff alerting night co-ordinator that water is coming into the patient rooms via air conditioning vents. This is in varying degrees from minimal droplets to persistent dripping requiring bowls to collect, some wards reporting water is discoloured.

Different floor are affected :

11A	2	Can move patients
11B	5	Ok awaiting clean
11C	2	
11C	1	
10B	7	4 are fixed cannot move patients
10C	9	
9B	9	Patients have been moved and rooms fixed but leaking again
9C	8	
8B	1	
7B	6 50	Cleared 1 pt suggesting they will phone the papers!
7C	4	
6B	4	
6C	5	
5A	1	
5B	12	
5C	10	Concerned that black water
5D	1	
1C	16	4 worst affected attended too.
1E Children		All fixed and terminal cleans
2 nd floor Neonates		Being progressed
6A Children	3	Patients moved to empty rooms

Estates team members are currently attending each room , removing vent cover, cleaning and restoring ventilation.
As calls have increased this has prompted CNC to escalate to Estates Manager.
Wards that have rooms that patients can be relocated to are doing so.
0950 – CNC is meeting with Estates to discuss and all floors being assessed and being worked on.
Holding 4 patient transfers to stack just now until this is complete currently capacity allows for this.
Risk assessments taking place to ensure that the rooms are safe.
Terminal Cleans taking place after rooms have been checked this is giving a pressure there.
Ippy

Isabel (ippy) Brown
Clinical Service Manager
General Medicine and Medical Specialties
South Sector
1st Floor Office Block
Queen Elizabeth University Hospital
Govan Road
Glasgow
G51 4TF
[redacted]

Inkster, Teresa

From: Inkster, Teresa
Sent: 30 June 2019 11:07
To: Meikle, Kirsteen; Dodd, Susie
Subject: Re: Chill beam

Thanks Kirsteen
I have asked Dr Alison Balfour to contact you as she is the on call micro Consultant today and has been in touch with me re this issue. I had suggested estates check the ceiling voids above the rooms to make sure no water is collecting up there

Kind regards
Teresa

Sent from my BlackBerry 10 smartphone on the EE network.

From: Meikle, Kirsteen
Sent: Sunday, 30 June 2019 10:58 AM
To: Dodd, Susie
Cc: Inkster, Teresa
Subject: Chill beam

Hi Susie

We had an issue lastnight with the chill beams in rooms 3, 4 and 5. They were all dripping and the patients had to be moved. This was an issue all over the hospital. Estates attended lastnight and have said the issue has been sorted.

We are awaiting the wall washers today then were told the rooms could be used.

I have contacted on call microbiologist for advice via switchboard but it is just ringing out. I will continue to call them, but wanted to send you an email so you were aware of our situation.

Kind Regards

Kirsteen

RE: Chill beam - INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE)

22/07/2020

RE: Chill beam

Conner, Darryl James [redacted]

Fri 19/07/2019 17:22

To: Peters Christine (NHS GREATER GLASGOW & CLYDE) [redacted]; Purdon Colin (NHS GREATER GLASGOW & CLYDE) [redacted]; Dodd Susan (NHS GREATER GLASGOW & CLYDE) [redacted]; Guthrie James (NHS GREATER GLASGOW & CLYDE) [redacted];

Cc: alison balfour [redacted]; INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE) [redacted]

Hi Christine,

That's no problem at all, if I can achieve full visibility of the recorded chilled beam incidents then I can cross reference that information with the associated plant serving it, if that piece of work shows that the AHUs stated are not included as per the list of AHUs below then I believe that information will support the success of this part of the strategy.

Regards

[redacted]

Darryl James Conner MIHEEM
Interim Site Manager Operational Estates (SMOE)
Queen Elizabeth University Hospital Campus,
Labs Bldg.
1345 Govan Rd
Glasgow
G51 4TF

[redacted]

From: Peters, Christine
Sent: 19 July 2019 15:37
To: Conner, Darryl James [redacted]; Purdon, Colin [redacted]; Dodd, Susie [redacted]; Guthrie, James [redacted]
Cc: Balfour, Alison [redacted]; Inkster, Teresa (NHSmail) [redacted]
Subject: RE: Chill beam

Thanks for that Darryl,
Thanks for all the hard work in trying to resolve the issue.

Is it the case that the AHUs where the de humidification is in the AHU that condensation has not occurred in the chilled beams served by that AHU?

Kr
Christine

From: Conner, Darryl James
Sent: 19 July 2019 14:43
To: Purdon, Colin; Peters, Christine; Dodd, Susie; Guthrie, James
Cc: Balfour, Alison; Inkster, Teresa (NHSmail)
Subject: RE: Chill beam

Hi Colin,

No problem,

Regarding chiller operation, I have carried out an investigation of chiller controls and delivery to main hospital, my findings are :

From the main energy centre chiller plant the chiller flow and return temperature sensors are fixed to 8'C and 12'C , this has no bearing on the temperature delivery to the hospital as the flow temperatures are set in the chillers themselves and the BMS only enables the chillers to be on or off. Having checked the operation of all the field Plate Heat Exchangers for Chilled Water in all the associated plant rooms, they appear to be working correctly by design with a constant set point of 15'C to the chilled beams, this is in fact is the problem with the sweating of the chilled beams under extreme weather conditions. The system is set up that the Plant Room PHX set points are all compensated according to outside air temperature in a fashion that if the outside temperature is 7'C then the PHX set point is 8'C going to the chiller battery on the AHUs and if the outside temperature is 22,C then the PHX set point is 12'C or 14'C depending on the plant room and the AHU plant served from it with respect to the associated AHU discharge air set temp point. In addition to this there are 12 off AHUs that have humidity monitoring set up on them which are :

ADULTS – 121AHU02, 121AHU05, 122AHU02, 122AHU05, 123AHU02, 123AHU05, 124AHU02, 124AHU05.
&
CHILDS – 41AHU03B, 41AHU20A, 41AHU17, 41AHU24.

These units were chosen for this strategy to give us the best space dehumidification within the limits of our chilled water generation capacity, This control strategy governs the operation of the cooling valves on the AHU according to the moisture content of the incoming air and subsequently dehumidifies it depending on the external conditions, this is when the hot humid air is cooled significantly to remove the moisture content and then sensibly heated back to the tempered air set point of that particular system,(16-18 C) the problem we face is that the Plant Room Chilled beam set points serving the room chilled beams are all fixed at 15'C with no implemented dew monitoring strategy applied. As a result of this under extreme atmospheric conditions for Glasgow occurring where the dew point exceeds this set point of 15C then sweating of the chilled beams will occur.

A47069198

22/07/2020

RE: Chill beam

Conner, Darryl James [redacted]

Fri 19/07/2019 14:42

To Purdon Colin (NHS GREATER GLASGOW & CLYDE) [redacted]; Peters Christine (NHS GREATER GLASGOW & CLYDE) [redacted]; Dodd Susan (NHS GREATER GLASGOW & CLYDE) [redacted]; Guthrie James (NHS GREATER GLASGOW & CLYDE) [redacted];

Cc alison.balfour [redacted]; INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE) [redacted]

Hi Colin,

No problem,

Regarding chiller operation, I have carried out an investigation of chiller controls and delivery to main hospital, my findings are :

From the main energy centre chiller plant the chiller flow and return temperature sensors are fixed to 8'C and 12'C , this has no bearing on the temperature delivery to the hospital as the flow temperatures are set in the chillers themselves and the BMS only enables the chillers to be on or off. Having checked the operation of all the field Plate Heat Exchangers for Chilled Water in all the associated plant rooms, they appear to be working correctly by design with a constant set point of 15'C to the chilled beams, this is in fact is the problem with the sweating of the chilled beams under extreme weather conditions. The system is set up that the Plant Room PHX set points are all compensated according to outside air temperature in a fashion that if the outside temperature is 7'C then the PHX set point is 8'C going to the chiller battery on the AHUs and if the outside temperature is 22,C then the PHX set point is 12'C or 14'C depending on the plant room and the AHU plant served from it with respect to the associated AHU discharge air set temp point. In addition to this there are 12 off AHUs that have humidity monitoring set up on them which are :

ADULTS – 121AHU02, 121AHU05, 122AHU02, 122AHU05, 123AHU02, 123AHU05, 124AHU02, 124AHU05.
&
CHILDS – 41AHU03B, 41AHU20A, 41AHU17, 41AHU24.

These units were chosen for this strategy to give us the best space dehumidification within the limits of our chilled water generation capacity, This control strategy governs the operation of the cooling valves on the AHU according to the moisture content of the incoming air and subsequently dehumidifies it depending on the external conditions, this is when the hot humid air is cooled significantly to remove the moisture content and then sensibly heated back to the tempered air set point of that particular system,(16-18 C) the problem we face is that the Plant Room Chilled beam set points serving the room chilled beams are all fixed at 15'C with no implemented dew monitoring strategy applied. As a result of this under extreme atmospheric conditions for Glasgow occurring where the dew point exceeds this set point of 15C then sweating of the chilled beams will occur.

I am currently implementing a reset control scheme to modify the set point of the chilled beams in the event of extreme atmospheric conditions, to maintain the chilled beam flow temperature above the dew point when in excess of 15,C,this will effectively resolve or condensation issues and mitigate the clinical risk associated with chilled beam condensation with the only slight disadvantage that the space cooling capacity will be reduced for the time period that these conditions are met.

While I am establishing this new software our interim contingency SOP is as follows :

To protect against chilled beam condensation under certain extreme conditions on suspected warm days >22d,C
Estates will check the weather dew point periodically (Glasgow Airport website)
If this parameter is found to be above **14 degrees C**
Estates will manually override each chilled water chilled beam circuit set point to **16 Degrees C**, or N+2 depending on what the condition at the time is.
As a result this will keep us away from the condensation dew point and stop any condensation dripping from the chilled beams!

The idea is to create a 2 degree buffer due to the lag on the system adjustment
Space temperatures will be monitored for significant temperature increase and adjusted accordingly.

A47069198

[redacted]/07/2020
[redacted]tem example :

Best

Regards

[redacted]

Darryl James Conner MIHEEM
Interim Site Manager Operational Estates (SMOE)
Queen Elizabeth University Hospital Campus,
Labs Bldg.
1345 Govan Rd
Glasgow
G51 4TF

[redacted]

From: Purdon, Colin
Sent: 19 July 2019 11:54
To: Peters, Christine [redacted]; Dodd, Susie [redacted]; Conner, Darryl James [redacted]; Guthrie, James [redacted]
Cc: Balfour, Alison [redacted]; Inkster, Teresa (NHSmail) [redacted]
Subject: RE: Chill beam

Christine,

I would expect that it does happen in other places as conditions dictate. There may be slight variations in the conditions within the building which leads to varying degrees of condensation formation. Some of these occurrences are possibly going unreported.

Darryl, Can you provide an explanation of the dew point controls strategy programmed into the BMS and also describe your SOP for monitoring the dew point during periods of high humidity please.

I am unaware if the manufacturers were previously approached to comment on the issue. I will make enquiries.

Regards

[redacted]

Colin Purdon | BSc (Hons)
Interim Sector Estates Manager (*South*)

Estates Dept
Queen Elizabeth University Hospital Campus,
Room L0/B/002
Laboratory Medicine and Facilities Management Bldg.
1345 Govan Rd
Glasgow
G51 4TF

[redacted]

A47069198

RE: Chill beam - INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE)

22/07/2020
[redacted]

From: Peters, Christine
Sent: 19 July 2019 10:32
To: Purdon, Colin; Dodd, Susie; Conner, Darryl James; Guthrie, James
Cc: Balfour, Alison; Inkster, Teresa (NHSmail)
Subject: RE: Chill beam

Hi Colin,
The problem I have with the condensation explanation is why does this not happen in other places at the same time? Also what has been done to manage the set dew point? Condensation is as unacceptable in terms of risk for fungus as leaks.

Have the manufacturers of the beam technology been approached regarding this repeated condensation issue?

Kr
Christine

From: Purdon, Colin
Sent: 19 July 2019 10:14
To: Peters, Christine; Dodd, Susie; Conner, Darryl James; Guthrie, James
Cc: Balfour, Alison; Inkster, Teresa (NHSmail)
Subject: RE: Chill beam

Christine,

There are two issues at play here.

The incidence of water coming from the chilled beams around 30th June was related to high relative humidity in the ambient air and resultant condensation forming on the cooling coils of the beam which in turn drip into the room. I would stress that this is not leakage from any of the piped systems in the ceiling. It is moisture forming on the chilled surface from humid air within the environment.

The fittings replacement you refer to only presents itself if we have a loss of temperature within the heating system. This results in contraction of the push fit connections and subsequent water leakage. The six rooms in Ward 6A where this was identified were all addressed through replacement of the push-fit connections for compression fittings.

Regards

[redacted]

Colin Purdon | BSc (Hons)
Interim Senior Estates Manager (South)

Estates Dept
Queen Elizabeth University Hospital Campus,
Room L0/B/002
Laboratory Medicine and Facilities Management Bldg.
1345 Govan Rd
Glasgow
G51 4TF

[redacted]

[redacted]

From: Peters, Christine
Sent: 17 July 2019 15:28
To: Dodd, Susie; Purdon, Colin
Cc: Balfour, Alison; Inkster, Teresa (NHSmail)
Subject: RE: Chill beam

Thanks Susie,
Yes this fits with the air sampling results.
Colin can you please update on what has happened re fixing the fittings to these chilled beams?

Kr
Christine

From: Dodd, Susie
Sent: 17 July 2019 15:24
To: Purdon, Colin
Cc: Peters, Christine
Subject: FW: Chill beam

Hi Colin,
I was sent this email whilst on A/L. This might be the leaks the staff on 6A were referring to. It would also fit with air samples carried out 2 days prior.

A4 7069198

FW: leaking chilled beams

Pritchard, Lynn [redacted]

Mon 22/07/2019 12:26

To:INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE) [redacted]

For info only

Lynn Pritchard
Lead Infection Prevention & Control Nurse - South Sector
Queen Elizabeth University Hospital
Zone 2 - 1 Office Block
Govan Rd
Glasgow
G51 4TF
[redacted]

From: Pritchard, Lynn
Sent: 22 July 2019 12:26
To: Conner, Darryl James
Cc: Barmanroy, Jackie; Dodd, Susie
Subject: leaking chilled beams

Hi Darryl
Just to let you know that we are currently trying to get hold of one of the Estates teams to let them know that Ward 5B have had to close approx 8 rooms today due to the chilled beams leaking.
Thanks
Lynn

Lynn Pritchard
Lead Infection Prevention & Control Nurse - South Sector
Queen Elizabeth University Hospital
Zone 2 - 1 Office Block
Govan Rd
Glasgow
G51 4TF
[redacted]

RE: Leakage from chilled beams - Ward 6A

STORRAR, Ian (NHS NATIONAL SERVICES SCOTLAND)

Thu 08/08/2019 09:39

To INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE) [redacted]; RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND) [redacted]

Thanks Teresa

These are very helpful.

I have to draw a simplified(?) schematic to show what the chilled beam connections are and this is attached below.

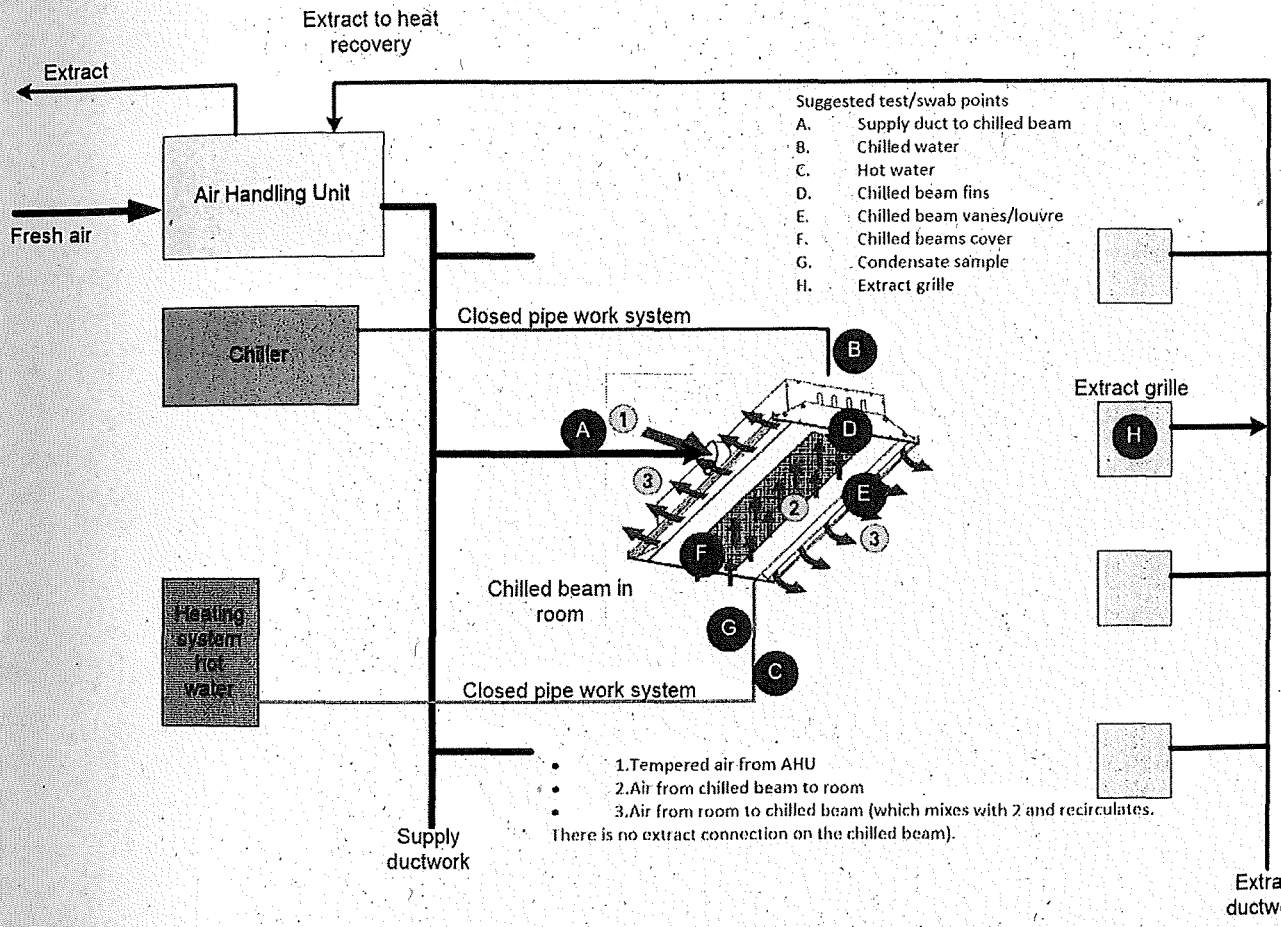
The two water connections are "sealed" and are known as closed systems. They are treated with various chemicals at construction/commissioning stage. The cold water comes from a chiller and the hot water comes from the heat stations on a separate circuit from the tap hot water.
The air comes from the air handling unit and is ducted straight into the chilled beam.
There is an extract system to recover the supply system back to the AHU.

I have suggested some sampling points subject to comment from Annette and yourself of course. Would it be worthwhile doing this exercise in a number of rooms to get a complete picture? As I said yesterday, I think there is a need to get a condensate sample to prove or otherwise this theory.

The photograph of the dust in the fins is interesting. Has this been analysed to determine its composition? I have come across a situation in another Board where scrubs were shedding fibres and clogging up the air vents to electrical equipment. This does not look like that, but will be worth exploring.

I had another look at ZUTEC this morning and the information on the particular manufacturer is different from that I found in it yesterday; but I will email Alan and Colin on this and copy you in.

I hope that lot (and this) makes sense.


Extract to heat recovery
Extract
Air Handling Unit
Fresh air
Suggested test/swab points
A. Supply duct to chilled beam
B. Chilled water
C. Hot water
D. Chilled beam fins
E. Chilled beam vanes/louvre
F. Chilled beams cover
G. Condensate sample
H. Extract grille
Closed pipe work system
Chiller
Extract grille
Chilled beam in room
Heating system hot water
Closed pipe work system
1.Tempered air from AHU
2.Air from chilled beam to room
3.Air from room to chilled beam (which mixes with 2 and recirculates. There is no extract connection on the chilled beam).
Supply ductwork
Extract ductwork

Regards

Ian

Ian Storrar BSc CEng FCIBSE FIHEEM MIET
Head of Engineering - Health Facilities Scotland
Procurement, Commissioning and Facilities

NHS National Services Scotland
3rd Floor
Meridian Court
5 Cadogan Street
Glasgow
G2 6QE

[redacted]

www.hfs.scot.nhs.uk

Please consider the environment before printing this email.
NHS National Services Scotland is the common name for the Common Services Agency for the Scottish Health Service. www.nhsnss.org <http://www.nhsnss.org/>

From: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE) [redacted]
Sent: 08 August 2019 08:53
To: STORRAR, Ian (NHS NATIONAL SERVICES SCOTLAND) [redacted]; RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND) [redacted]
Subject: Fw: Leakage from chilled beams - Ward 6A

These images of chilled beams were taken by a colleague of mine a couple of months ago when leaking was reported on ward 6A. You can see the water in the vicinity of the beam, staining, heavy build up of dust and the drips on the floor - more than just a little condensation in this case.

Hope you find these helpful

Kind regards
Teresa

Dr Teresa Inkster
Lead Infection Control Doctor NHSGGC

From: MacPherson, Anne [redacted]
Sent: 24 September 2020 11:10
To: Kathryn Wilson; Strannigan, Kirsty
Cc: Cameron Adam
Subject: RE: [ExternaltoGGC]Progress on Actions required in the Notification of Contravention Letter dated Dec 2019

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Kate and Cameron,
Kirsty my new Head of Health and Safety will pick this up with the team and we will get back to you shortly with an update on progress, it might be helpful once this is issued that a meeting is set up to talk through the actions. Anne

---

From: Kathryn Wilson [redacted]
Sent: 23 September 2020 15:19
To: MacPherson, Anne [redacted]
Cc: Cameron Adam [redacted]
Subject: [ExternaltoGGC]Progress on Actions required in the Notification of Contravention Letter dated Dec 2019

Good Afternoon Anne,

I hope you are well and keeping safe during in these unprecedented times.
I am about to go on annual leave and will not return until 12th October so thought it would be helpful to touch base. I wrote to Ms Grant back on 30th March 2020 offering to extend the response date until the end of September due to the unprecedented pressures caused by the COVID 19 pandemic.

It may be that you are in the process of compiling the response but I am also very aware that the crisis is still ongoing and that it may have impacted on the ability to complete some of the work required. It would be useful to have an update on progress so that we can decide the best way forward. If the work is complete, I can review any supporting documentation on my return. Alternatively, if more work is required and you feel it would be helpful to have a meeting (either remotely or socially distanced), Cameron has access to my diary and can confirm my availability.

I look forward to hearing from you in due course.

Kind Regards

Kate

Kathryn Wilson|HM Inspector of Health and Safety|Field Operations Directorate
Health & Safety Executive | 3rd Floor, Cornerstone House, 107 West Regent Street, Glasgow, G2 2BA |
☎ [redacted] | ☎ [redacted] | ✉ [redacted]

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[3]

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www.hse.gov.uk

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Greater Glasgow and Clyde NHS Board

JB Russell House
Gartnavel Royal Hospital
1055 Great Western Road
GLASGOW
G12 0XH

[redacted]
www.nhsggc.org.uk

Kathryn Wilson
HM Inspector of Health and Safety
Health and Safety Executive
FOD Ops Unit 1 Group 4
Glasgow – Cornestone
Floor 3
107 West Regent Street
Glasgow
G2 2BA

Date: 12th October 2020
Our Ref: JG/LLPAE

Enquiries to: Jane Grant
[redacted]

Dear Ms Wilson

Thank you for your email requesting an update on progress against the Notice of Contravention (NoC) issued to the Board dated 16th December 2019.

As discussed on the 24th September 2020, we appreciate your acknowledgement that COVID-19 could impact on our ability to address all of the points raised due to lockdown and access to areas.

The work in respect of the Paediatric Intensive Care Unit (PICU) is complete and is described below. As regards to the High Dependency Unit/Intensive Care Unit (HDU/ICU), work has been delayed due to COVID-19, and an indicative start date is currently being reviewed for the programme of works, which are described below. Progress is wholly reliant on access to ward areas which, in the current COVID environment, is unpredictable, particularly for areas such as the ICU/HDU.

Our Estates and Facilities Directorate, our clinical teams and Infection Control have maintained a focus on the actions required within the NoC and have been working on a comprehensive works programme for the areas covered.

Paediatric Intensive Care Unit – Programme of Works

Objective and Output

With an agreed 'derogation' to the SHTM03-01 Part A guidance, signed off by the AE(V), ICT and the respective Service Lead, this will achieve a compliant and suitable ventilation set up for the current and future patient groups that do and will occupy PICU within the RHC. At the same time this will ensure that clinicians have the most flexibility possible to place and treat a specific patient group within that space.

Actions Complete;

- Removal of Ceiling Ventilation Grills (CVG's) only
- Maintain the current Air Changes per Hour (ACH) as per the recent ventilation verification
- Remaining patient 4 bedded room; rebalanced to achieve the compliant air change rate, while having a positive 2 pascal pressure cascade from room to corridor. This has been

achieved by modifying the extract rates to reduce the pressure, while maintaining 10 ACH and the standard for particulate dilution
- Dirty utilities and preparation rooms have also been included within this exercise, so as not to impede the established regimes of the patient areas.

High Dependency Unit/Intensive Care Unit - Programme of Works

Objective and Output

Improve each area of the HDU/ICU fabric permeability and enable the ability to rebalance the ventilation plant, in order to achieve the design intent. Dirty utilities and preparation rooms will also be included within this exercise, so as not to impede the established regimes of the patient areas.

Actions to be Completed;

Conclude the verification programme of all 10 No. isolation rooms within the HDU/ITU, then conduct the following under existing build parameters

- Protect each patient occupied bed space to the Ward standard of the SHTM03-01 part A, which is; 10 ACH and 10 Pascal from any Critical Care Unit to dirty corridor. Achieve this
- Removal of CVG's and replace with a ceiling tile - *Note: this action is complete*
- Pin the existing suspended ceiling
- Seal the IPS columns
- Adjust the door gaps while fitting the draft excluder drop down
- Modify and re-balance the ventilation plant control strategy to achieve 100% output.

Ward 4C

Notably; reference to Ward 4C is not included within the current narrative as it is the subject of the Improvement Notice KWQEUHDEC1901 and the on-going Appeal process.

I trust the foregoing is a helpful update on our current position regarding progress against the Actions required in the Notification of Contravention Letter dated 16th December 2019.

As Anne MacPherson intimated within the email dated 24th September 2019, it would be useful to have a meeting to discuss this programme of work and actions in further detail. It would, in particular, be useful for us to receive feedback from you on the activity completed so far to ensure this satisfies the original action requirements within the NoC and also for us to provide assurance on the outstanding work programme subject to COVID-19 constraints.

Ms Kirsty Strannigan, Head of Health and Safety will be in touch to set up a virtual meeting at a time convenient to you.

Yours sincerely

[redacted]

Jane Grant
Chief Executive
NHS Greater Glasgow and Clyde

Cc: Anne Macpherson, Director of Human Resources and Organisational Development
Tom Steele, Director of Estates and Facilities
Gerry Cox, Assistant Director of Estates and Facilities

From: Strannigan, Kirsty [redacted]
Sent: 12 November 2020 20:01
To: Kathryn Wilson; Cameron Adam
Subject: Meeting Agenda - 13th November 20
Attachments: VENTILATION ACTION PLAN V7a.pdf; AGENDA HSE Meet - QEUH NOC 13.11.20.doc

Both,

I have prepared an agenda to support the conversation tomorrow and also attached an up to date Action Plan showing the works programme, for discussion.

In regards to the PICU derogation, there are additional works being undertaken which will result in an updated derogation, the team will be able to provide information on that at tomorrows session.

Kind Regards

Kirsty

Kirsty Strannigan
Head of Health and Safety

NHS Greater Glasgow and Clyde
Stobhill Hospital,
133 Balornock Road,
Glasgow,
G21 3UW

[redacted]

11th November 2020

Action Plan in response to HSE Notification of Contravention letter dated 17th December 2019.
Ward HDU/ICU/PICU Ventilation

NHS Greater Glasgow and Clyde

NOC COSHH reg 7 (1) (3)	**Action** - Bring forward the verification program of all 10 isolation rooms within HDU/ITU which is currently on going but will now conclude due to existing COVID-19 admission pressures, then the intention on successful completion of this is to conduct the following: Under existing build parameters;

Contravention Ref:	AREA	Verification date	Condition	Action Planned	Start Date	Finish date	Progress	R	A	G
High Dependency Unit/ Intensive Care Unit	• protect each patient occupied bed space to the Ward standard of the SHTM03-01 part A, which is 10 ACH and 10 Pascal from any CCU department to dirty corridor; o achieve this by removal of CVGs and replace with a ceiling tile (which has now been carried out); o pinning the existing suspended ceiling; o seal the IPS columns; o adjust the door gaps while fitting draft excluder drop down; o modify and re balance the ventilation plant control strategy to achieve 100% output. Assuming clinical permission, infection control endorsement and no financial restriction (hence the employment of significant resources), estates anticipates a turnaround time of three weeks per HDU/ITU area establishing an 18 week program that would be variable dependant on success rate and clinical pressures. This is detailed below; HSE HDU/ICU Summary Briefing Pap									
	Until such time as a start date is agreed the period/timescale required to carry out the work is only included. General progress as of 11 November 2020 - 2 further communication meetings made with Senior Clinical Staff on the proposed works and the need to agree access. The area is now under more clinical pressures due to COVID-19 and agreement is still awaited. The work scope has been reviewed/prioritised and where possible reduced where it does not affect compliance and subsequently the timescale reduced to complete each area from 3 weeks to 2 weeks. This means the full HDU/ICU has reduced the overall timescale from 18 weeks to 12 weeks. It is further hoped that once work commences that this can be further reduced.									
	HDU 1 (ICU 1) (Beds 1-10)	2 June 20	AVERAGE	As above	2 weeks	TBA	As general progress above.			Amber

	HDU 2 (Beds 11-20)	15 July 20	GOOD	As above	2 weeks	TBA	As general progress above.	

Contravention Ref:	AREA	Verification date	Condition	Action Planned	Start Date	Finish date	Progress	R	A	G
	HDU 3 (ICU 3) (Beds 21 – 30)	15 July 20	AVERAGE	As above	2 weeks	TBA	As general progress above.			
	HDU 4 (ICU 4) (Beds 31 – 40)	15 July 20	AVERAGE	As above	2 weeks	TBA	As general progress above.			
	HDU 5 (Beds 41 – 49)	7 July 20	AVERAGE	As above	2 weeks	TBA	As general progress above.			
	HDU 6 (Beds 50 – 59)	15 July 20	AVERAGE	As above	2 weeks	TBA	As general progress above.			
	Bed 3 (in HDU1) Isolation Room	14 June 19	AVERAGE	As above	2 days	TBA	Annual verification needs done			
	Bed 4 (in HDU1) Isolation Room	21 June 19	POOR	As above	2 days	TBA	Annual verification needs done.			
	Bed 24 (in HDU3) Isolation Room	22 May 19	AVERAGE	As above	2 days	TBA	Annual verification needs done.			

Contravention Ref:	AREA	Verification date	Condition	Action Planned	Start Date	Finish date	Progress	R	A	G
	Bed 50 (in HDU6) Isolation Room	26 Mar 19	AVERAGE	As above	2 days	TBA	Annual verification needs done			
	Objective & Output Improve each area of HDU/ICU fabric permeability and ability to rebalance the ventilation plant in order to achieve design. Dirty									

	Improve each area of HDU/ICU taone permeability and ability to rebalance the ventilation plant in order to achieve design. Dirty utilities & prep rooms would also be included within this exercise so not to impede the established regimes of the patient areas.	
NOC **COSHH reg 7 (1) (3)** **Paediatric Intensive Care Unit**	**Action:** • Remove Ceiling Ventilation Grills (CVG's) only; • Maintain the current ACH rates as per the recent ventilation verification; • Remaining patient 4 bedded room 1-4 rebalanced to achieve the compliant Air change rate while having a positive 2 pascal pressure cascade from room to corridor, this can be achieved by modifying the extract rates to reduce pressure while maintaining 10 ACH per hour and the standard for particulate dilution. • Include remaining 4 bedded areas. Dirty utilities & prep rooms would also be included within this exercise so not to impede the established regimes of the patient areas. QEUH PICU Permeability Works QEUH PICU Solutions Analysis	

Bed Spaces 1-4	15 Sept 19	GOOD	N/A	N/A	N/A	Completed as per derogation	GREEN
Bed Spaces 8 - 11	6 July 19	GOOD	As above	7/9/20	11/9/20	Completed as per derogation	
Bed Spaces 13 - 16	15 Sept 19	GOOD	N/A	N/A	N/A	Completed as per derogation	

Contravention Ref:	AREA	Verification date	Condition	Action Planned	Start Date	Finish date	Progress	R	A	G
	Bed Spaces 19 - 22	6 July 19	GOOD	As above	14/9/20	17/9/20	Completed as per derogation			
	Room 7	1st Nov 19	GOOD	N/A	N/A	N/A	Completed			
	Room 8	1st Nov 19	GOOD	N/A	N/A	N/A	Completed			
	Objective & Output With an agreed 'derogation' to the SHTM03-01 Part A guidance, signed off by the AE(V), ICT and the respective Service Lead, this will achieve a compliant and suitable ventilation set up for the current and future patient groups that do & will occupy PICU within the RHC while ensuring that clinicians have the most flexibility possible to place and treat a specific patient group within that space.									

Notice of Contravention – QEUH Progress Review

Friday 13th November 2020, 1500
Teams Meeting

AGENDA

1.	**Welcome and Introductions**	**A. MacPherson**
2.	**Clinical and Service Position**	**S. Davidson / F. McLinden**
3.	**Programme of Works – Current status**	**T. Steele / G. Cox**
4.	**Discussion and Way Forward**	**All**
5.	**A.O.C.B**	**All**

From: Strannigan, Kirsty [redacted]
Sent: 13 November 2020 10:52
To: Kathryn Wilson; Cameron Adam
Subject: Ventilation Action Plan
Attachments: Ventilation IN Progress ActionPlanv8.pdf

Both,

I noted the quality of the Action Plan I sent you was not great, the team have amended this now, please see attached.

Tks

Kirsty

Kirsty Strannigan
Head of Health and Safety

NHS Greater Glasgow and Clyde
Stobhill Hospital,
133 Balornock Road,
Glasgow,
G21 3UW

[redacted]

11th Nov 2020

Action Plan in response to HSE Notification of Contravention letter and IN KW/QEUH/DEC19/01 dated 17TH December 2019. HDU/ICU/PICU Ventilation

Contravention Ref:	AREA	Verification date	Condition	Action Planned	Start Date	Finish date	Progress	R	A	G
NOC **COSHH reg 7 (1) (3)** **High Dependency Unit/ Intensive Care Unit**	**Action** - Bring forward the verification program of all 10 isolation rooms within HDU/ITU which is currently on going but will now conclude due to existing COVID-19 admission pressures, then the intention on successful completion of this is to conduct the following: Under existing build parameters; • protect each patient occupied bed space to the Ward standard of the SHTM03-01 part A, which is 10 ACH and 10 Pascal from any CCU department to dirty corridor; o achieve this by removal of CVGs and replace with a ceiling tile (which has now been carried out); o pinning the existing suspended ceiling; o seal the IPS columns; o adjust the door gaps while fitting draft excluder drop down; o modify and re balance the ventilation plant control strategy to achieve 100% output. Assuming clinical permission, infection control endorsement and no financial restriction (hence the employment of significant resources), estates anticipates a turnaround time of three weeks per HDU/ITU area establishing an 18 week program that would be variable dependant on success rate and clinical pressures. This is detailed below; HSE HDU/ICU Summary Briefing Pap									
	Until such time as a start date is agreed the period/timescale required to carry out the work is only included.									

Contravention Ref:	AREA	Verification date	Condition	Action Planned	Start Date	Finish date	Progress	R	A	G
	General progress as of 11 November 2020 - 2 further communication meetings made with Senior Clinical Staff on the proposed works and the need to agree access. The area is now under more clinical pressures due to COVID-19 and agreement is still awaited. The work scope has been reviewed/prioritised and where possible reduced where it does not affect compliance and subsequently the timescale reduced to complete each area from 3 weeks to 2 weeks. This means the full HDU/ICU has reduced the overall timescale from 18 weeks to 12 weeks. It is further hoped that once work commences that this can be further reduced.									
	HDU 1 (ICU 1) (Beds 1-10)	2 June 20	AVERAGE	As above	2 weeks	TBA	As general progress above.		**Amber**	
	HDU 2 (Beds 11-20)	15 July 20	GOOD	As above	2 weeks	TBA	As general progress above.			
	HDU 3 (ICU 3) (Beds 21 – 30)	15 July 20	AVERAGE	As above	2 weeks	TBA	As general progress above.			
	HDU 4 (ICU 4) (Beds 31 – 40)	15 July 20	AVERAGE	As above	2 weeks	TBA	As general progress above.			
	HDU 5 (Beds 41 – 49)	7 July 20	AVERAGE	As above	2 weeks	TBA	As general progress above.			
	HDU 6 (Beds 50 – 59)	15 July 20	AVERAGE	As above	2 weeks	TBA	As general progress above.			
	Bed 3 (in HDU1)	14 June 19	AVERAGE	As above	2 days	TBA	Annual verification needs done			

Contravention Ref:	AREA	Verification date	Condition	Action Planned	Start Date	Finish date	Progress	R	A	G
	Isolation Room									
	Bed 4 (in HDU1) **Isolation Room**	21 June 19	POOR	As above	2 days	TBA	Annual verification needs done.			
	Bed 24 (in HDU3) **Isolation Room**	22 May 19	AVERAGE	As above	2 days	TBA	Annual verification needs done.			
	Bed 50 (in HDU6) **Isolation Room**	26 Mar 19	AVERAGE	As above	2 days	TBA	Annual verification needs done			
	Objective & Output Improve each area of HDU/ICU fabric permeability and ability to rebalance the ventilation plant in order to achieve design. Dirty utilities & prep rooms would also be included within this exercise so not to impede the established regimes of the patient areas.									

Contravention Ref:	AREA	Verification date	Condition	Action Planned	Start Date	Finish date	Progress	R	A	G
NOC **COSHH reg 7 (1) (3)** **Paediatric Intensive Care Unit**	**Action;** • Remove Ceiling Ventilation Grills (CVG's) only; • Maintain the current ACH rates as per the recent ventilation verification; • Remaining patient 4 bedded room 1-4 rebalanced to achieve the compliant Air change rate while having a positive 2 pascal pressure cascade from room to corridor, this can be achieved by modifying the extract rates to reduce pressure while maintaining 10 ACH per hour and the standard for particulate dilution. • Include remaining 4 bedded areas. Dirty utilities & prep rooms would also be included within this exercise so not to impede the established regimes of the patient areas. QEUH PICU Permeability Works QEUH PICU Solutions Analysis									
	Bed Spaces 1-4	15 Sept 19	GOOD	N/A	N/A	N/A	Completed as per derogation	GREEN		
	Bed Spaces 8 - 11	6 July 19	GOOD	As above	7/9/20	11/9/20	Completed as per derogation			
	Bed Spaces 13 - 16	15 Sept 19	GOOD	N/A	N/A	N/A	Completed as per derogation			
	Bed Spaces 19 - 22	6 July 19	GOOD	As above	14/9/20	17/9/20	Completed as per derogation			
	Room 7	1st Nov 19	GOOD	N/A	N/A	N/A	Completed			
	Room 8	1st Nov 19	GOOD	N/A	N/A	N/A	Completed			

Contravention Ref:	AREA	Verification date	Condition	Action Planned	Start Date	Finish date	Progress	R	A	G
	Objective & Output With an agreed 'derogation' to the SHTM03-01 Part A guidance, signed off by the AE(V), ICT and the respective Service Lead, this will achieve a compliant and suitable ventilation set up for the current and future patient groups that do & will occupy PICU within the RHC while ensuring that clinicians have the most flexibility possible to place and treat a specific patient group within that space.									

SCOTTISH HOSPITALS INQUIRY

Bundle of documents for Oral hearings commencing from 19 August 2024 in relation to the Queen Elizabeth University Hospital and the Royal Hospital for Children, Glasgow

Bundle 12 - Estates Communications

A47069198