



CONTRACT: ROYAL HOSPITAL FOR SICK CHILDREN & DCN - EDINBURGH

SYSTEM: AHU04-06 EXTRACT

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/smoke 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.	✓		
Remarks:			
Engineer: Keiren Paton	Date: 24/10/2018		Sheet 2 of 10



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DIRECT DRIVE AHU TEST SHEET

AHU DETAILS										
AHU Manufacturer		Sandometal			Fan/AHU Serial No.		32027714002			
Fan Manufacturer		Ziehl Abegg			Fan/AHU Model No.		1808913990			
Fan Type		Plug			Fan Size		Not Stated			
Air Volume		External Static Pressure (Pa)			Pre Filter Test Data (Pa)		Sec Filter Test Data (Pa)			
Design (m ³ /s)	3.784	Design	Inlet	348	Inlet	*	Inlet	N/A		
Test (m ³ /s)	3.904		N/D	Outlet	30	Outlet	*	Outlet	N/A	
% of Design	103%			Total	378	ΔP	50*	ΔP	N/A	
Fan Rotational Speed (rpm)		Design Data			1460	Test Data		1460		
MOTOR DETAILS										
Motor Manufacturer		Ziehl Abegg			Output (kW)		7.5			
Motor Serial No.		31429019/007			Motor FullLoad Current (amps)		14.6			
Voltage		400			Motor Running Current (amps)		13.9			
Motor Rotational Speed (rpm)		Design Data			1460	Test Data		58 hz		
DRIVE DETAILS										
Speed Controller		Yes			Set Point		1460			
STANDBY PLANT										
Air Volume		External Static Pressure (Pa)			Motor Rotational Speed		1460			
Test (m ³ /s)	3.904	Inlet	348	Fan Rotational Speed		1460				
% of Design	103%		Outlet	30	Motor Running Current (amps)		10.00			
Speed Controller		Yes			Set Point		1460			
Remarks: *Filter data taken from magnahelic gauges. RPM taken from Ziehl Abegg controller										
Instrument Used: HV4/1							Date: 24/10/2018			
Engineer: Keiren Paton							Sheet 3 of 10			



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DUCT VOLUME TEST SHEET

VELOCITY PROFILE (taken facing air flow)

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
MAIN TH				750	700	0.5250		3.784		7.21	
7.20	6.50	6.70	7.80	7.70							
7.30	6.80	7.70	7.70	7.60							
7.10	6.40	7.80	7.90	8.00							
6.90	7.90	7.90	7.80	7.80							
6.80	7.60	8.20	7.80	7.00							
Velocity Sub Totals											
35.30	35.20	38.30	39.00	38.10							
Total Velocity	Number of Readings		Average Velocity		Measured Air Volume		% Design		Static Pressure		
m/s			m/s		m ³ /s				Pa		
185.90	25		7.44		3.904		103%		271		
Remarks:											
Instrument Used: HV04/1								Date: 24/10/2018			
Engineer: Keiren Paton								Sheet 4 of 10			



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DUCT VOLUME TEST SHEET

VELOCITY PROFILE (taken facing air flow)

TEST HOLE LOCATION: EG51

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		m ²		m ³ /s		m/s	
FTH 1		350				0.0962		0.190		1.97	
2.10	1.90										
1.90	1.80										
2.10	2.10										
2.30	2.10										
Velocity Sub Totals											
8.40	7.90										
Total Velocity		Number of Readings		Average Velocity		Measured Air Volume		% Design		Static Pressure	
m/s				m/s		m ³ /s				Pa	
16.30		8		2.04		0.196		103%		48	
Remarks: Test Volume 196l/s ÷ Grille Volume 128l/s = 1.18 Factor.											
Instrument Used: HV04/1									Date: 24/10/2018		
Engineer: Keiren Paton									Sheet 5 of 10		



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GRILLE TEST SHEET

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Reference No.	Design Air Volume	Balometer Initial Air Volume	Balometer Final Air Volume	K Factor	Balometer Final Air Volume	% of Design
	l/s	l/s	l/s		l/s	
EG47	111.00	69.00	95.00	1.18	112.10	101
EG51	190.00	117.00	166.00	1.18	195.88	103
EG49	190.00	118.00	166.00	1.18	195.88	103
EG45	107.00	63.00	95.00	1.18	112.10	105
EG46	70.00	45.00	60.00	1.18	70.80	101
EG42A	130.00	69.00	115.00	1.18	135.70	104
EG42B	130.00	20.00	115.00	1.18	135.70	104
EG44	48.00	30.00	41.00	1.18	48.38	101
EG41	45.00	25.00	40.00	1.18	47.20	105
EG43	20.00	14.00	18.00	1.18	21.24	106
EG42C	88.00	74.00	75.00	1.18	88.50	101
EG39	50.00	27.00	45.00	1.18	53.10	106
EG38	78.00	39.00	70.00	1.18	82.60	106
EG40	49.00	35.00	42.00	1.18	49.56	101
EG37	10.00	13.00	9.00	1.18	10.62	106
EG31	90.00	69.00	80.00	1.18	94.40	105
EG33	65.00	51.00	55.00	1.18	64.90	100
EG32	24.00	17.00	21.00	1.18	24.78	103
EG35	50.00	34.00	45.00	1.18	53.10	106
EG29	78.00	36.00	66.00	1.18	77.88	100
EG28	79.00	40.00	67.00	1.18	79.06	100
EG27	60.00	27.00	55.00	1.18	64.90	108
Remarks:						
Instrument Used: HV6/15					Date: 24/10/2018	
Engineer: Keiren Paton					Sheet 6 of 10	



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GRILLE TEST SHEET

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Reference No.	Design Air Volume	Balometer Initial Air Volume	Balometer Final Air Volume	K Factor	Balometer Final Air Volume	% of Design
	l/s	l/s	l/s		l/s	
EG26B	124.00	108.00	108.00	1.18	127.44	103
EG26A	124.00	66.00	109.00	1.18	128.62	104
EG25	14.00	10.00	12.00	1.18	14.16	101
EG24	10.00	0.00	9.00	1.18	10.62	106
EG26C	84.00	137.00	75.00	1.18	88.50	105
EG19	82.00	54.00	73.00	1.18	86.14	105
EG20	40.00	27.00	35.00	1.18	41.30	103
EG21	46.00	35.00	40.00	1.18	47.20	103
EG22	36.00	30.00	32.00	1.18	37.76	105
EG17	124.00	108.00	110.00	1.18	129.80	105
EG18	80.00	67.00	70.00	1.18	82.60	103
EG15C	78.00	106.00	70.00	1.18	82.60	106
EG10C	72.00	44.00	65.00	1.18	76.70	107
EG10B	72.00	49.00	65.00	1.18	76.70	107
EG10A	37.00	21.00	32.00	1.18	37.76	102
EG11	54.00	76.00	50.00	1.18	59.00	109
EG12	21.00	29.00	19.00	1.18	22.42	107
EG13	40.00	18.00	35.00	1.18	41.30	103
EG15B	117.00	63.00	100.00	1.18	118.00	101
EG15A	117.00	70.00	100.00	1.18	118.00	101
EG16	32.00	27.00	29.00	1.18	34.22	107
EG14	28.00	23.00	25.00	1.18	29.50	105
EG2	34.00	23.00	30.00	1.18	35.40	104
EG3	148.00	123.00	135.00	1.18	159.30	108
Remarks:						
Instrument Used: HV6/15					Date: 24/10/2018	
Engineer: Keiren Paton					Sheet 7 of 10	

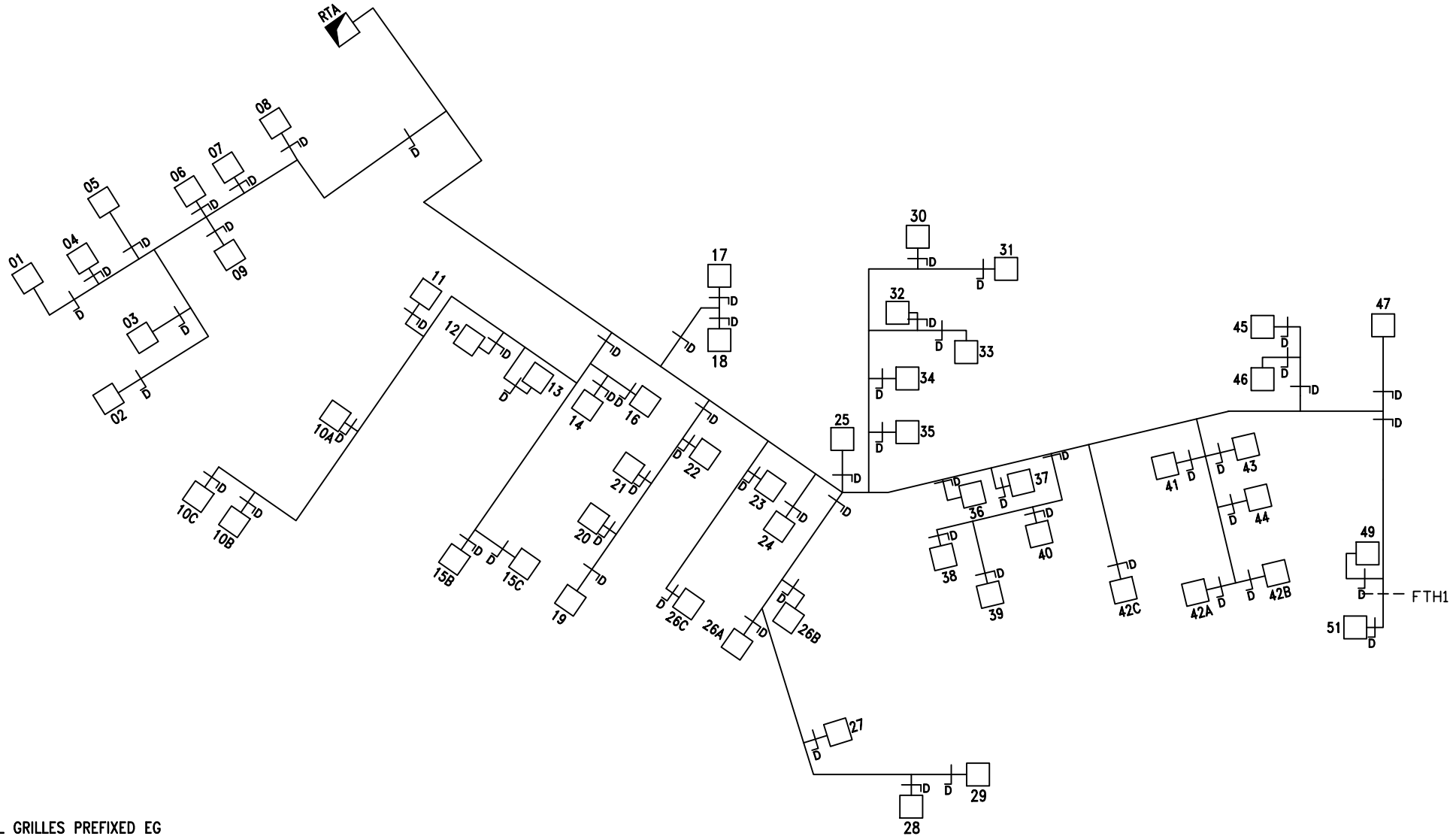


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GRILLE TEST SHEET

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Reference No.	Design Air Volume	Balometer Initial Air Volume	Balometer Final Air Volume	K Factor	Balometer Final Air Volume	% of Design
	l/s	l/s	l/s		l/s	
EG1	23.00	21.00	20.00	1.18	23.60	103
EG4	92.00	73.00	85.00	1.18	100.30	109
EG5	35.00	25.00	30.00	1.18	35.40	101
EG9	48.00	34.00	42.00	1.18	49.56	103
EG6	27.00	19.00	25.00	1.18	29.50	109
EG7	60.00	42.00	55.00	1.18	64.90	108
EG8	50.00	31.00	45.00	1.18	53.10	106
Remarks:						
Instrument Used: HV6/15					Date: 24/10/2018	
Engineer: Keiren Paton					Sheet 8 of 10	



ALL GRILLES PREFIXED EG

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CONTRACT:
 RHSC & DCN - EDINBURGH

CLIENT:
 MERCURY ENGINEERING (UK)
 LTD

TITLE:
 SCHEMATIC LAYOUT OF
 AHU04-06 EXTRACT

DRAWN:
 LH/JC
DATE:
 15/08/18
DRG No.:
 7281/V83
SHEET:
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