



PROJECT... Building G5 - Nottingham

DATE... 28/11/2007

SYSTEM... AHU No 1 Supply

ENGINEER... P.Higgins

## INTRODUCTION REPORT

### Terms Of Reference:

Commission AHU 1 Supply System, which consists recording equipment design data, proportionally balancing and setting system.

### Method Of Approach:

Test and set system to CIBSE Codes of practice, code A and BSRIA application guides 2/89

Instruments used to commission system: PVM620 Micromanometer and pitot tube - serial No 20744005 - Calibration Oct 07 - 08

VT50 Hotwire and K35 / K75 Hood - serial No MVA0700291 - Calibration Oct 07 - 08

### General Comments & Observations:

Micromanometer and pitot tube used to test and set main volume. VT50 Hotwire & K35 / K75 Hood used to proportionally balance grilles throughout.

Volume dampers have been locked, marked and sealed with tape for tamper proof.

Condition of system balance ok no irregular noise from grilles.

For test results please refer to test sheets 1 - 3.



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## FAN TEST

### DESIGN DATA

Manufacturer	Comefri	Overload Set	Inverter
Fan Reference	RDZ 250	Volts	415/3/50
Fan Serial No.	46298769	Motor Pulley	SPZ 100 x 2
Motor Serial No.	9023749 - 2	Bush / Shaft	1610 / 24
Motor Speed - rpm	1450	Fan Pulley	SPZ 165 x 2
Fan Speed - rpm	878	Bush / Shaft	1610 / 28
Motor flc	4.70	Belt Type	SPZ 1350
Motor kw	2.20	No of Belts	2
Overload Range	Inverter	Centres	410

### PLANT MEASURED DATA

Fan Speed - rpm	Inverter rpm
Motor Speed - rpm	Inverter rpm
Run Current - amps	Inverter amps
TEST MEASURED DATA	
Actual Volume m <sup>3</sup> /s	<b>1.493m<sup>3</sup>/s = 103%</b>
Design Volume m <sup>3</sup> /s	1.454 m <sup>3</sup> /s
Suction pa	25 pa
Discharge pa	96 pa
Total pa	121 pa

### PITOT TRAVERSE TEST

Test point Reference	TP1									
Duct Height mm	600									
Duct Width mm	600									
Duct Dia mm	n/a		3.80	3.90	3.80	4.00	4.00	3.90		
Duct Area m <sup>2</sup>	0.360		3.90	4.00	4.00	4.20	4.30	4.10		
No. of Readings	36		4.00	4.10	4.10	4.40	4.40	4.20		
Total	149.30		4.20	4.30	4.30	4.40	4.50	4.20		
Actual Velocity m/s	4.147		4.20	4.30	4.20	4.20	4.40	4.40		
Actual Volume m <sup>3</sup> /s	1.493		4.00	4.00	4.10	4.10	4.30	4.10		
Design Volume m <sup>3</sup> /s	1.454									
% of Design	103									
Meas Pa	75									

COMMENTS: GRILLE SCHEDULE TOTALS 1.454m<sup>3</sup>/s, % OF DESIGN BASED ON THIS FIGURE

Inverter set @ 42 Hz



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### GRILLE TEST

GRILLE REF	HOOD AREA	DES VOL	DES VEL	FINAL VEL	FINAL VOL	CORR FACTOR	CORR VEL	CORR VOL	% OF DESIGN	COMMENTS
SG1	0.042	0.090	2.143	2.200	0.092	0.996	2.191	0.092	102	Grd flr Riser No 4 Canteen & Kitchen Area
SG2	0.042	0.090	2.143	2.250	0.095	0.996	2.241	0.094	105	Grd flr Riser No 4 Canteen & Kitchen Area
SG3	0.042	0.090	2.143	2.250	0.095	0.996	2.241	0.094	105	Grd flr Riser No 4 Canteen & Kitchen Area
SG4	0.042	0.090	2.143	2.300	0.097	0.996	2.291	0.096	107	Grd flr Riser No 4 Canteen & Kitchen Area
SG5	0.042	0.080	1.905	1.950	0.082	0.996	1.942	0.082	102	1st flr Riser No 3 Main Office Area
SG6	0.042	0.080	1.905	1.950	0.082	0.996	1.942	0.082	102	1st flr Riser No 3 Main Office Area
SG7	0.042	0.080	1.905	2.000	0.084	0.996	1.992	0.084	105	1st flr Riser No 3 Main Office Area
SG8	0.042	0.080	1.905	2.050	0.086	0.996	2.042	0.086	107	1st flr Riser No 3 Main Office Area
SG9	0.042	0.080	1.905	1.950	0.082	0.996	1.942	0.082	102	1st flr Riser No 3 Main Office Area
SG10	0.042	0.070	1.667	1.700	0.071	0.996	1.693	0.071	102	1st flr Riser No 3 Main Office Area
SG11	0.042	0.070	1.667	1.700	0.071	0.996	1.693	0.071	102	2nd flr Riser No 2 Office No 1
SG12	0.042	0.072	1.714	1.800	0.076	0.996	1.793	0.075	105	2nd flr Riser No 2 Office No 2
SG13	0.0136	0.020	1.471	1.500	0.020	0.994	1.491	0.020	101	2nd flr Riser No 2 Store Room
SG14	0.042	0.072	1.714	1.800	0.076	0.996	1.793	0.075	105	2nd flr Riser No 2 Lab Area No 2
SG15	0.042	0.072	1.714	1.800	0.076	0.996	1.793	0.075	105	2nd flr Riser No 2 Lab Area No 2
SG16	0.042	0.072	1.714	1.750	0.074	0.996	1.743	0.073	102	2nd flr Riser No 2 Lab Area No 2
SG17	0.0136	0.030	2.206	2.250	0.031	0.994	2.237	0.030	101	3rd flr Riser No 1 Store Room
SG18	0.042	0.072	1.714	1.800	0.076	0.996	1.793	0.075	105	3rd flr Riser No 1 Supervisors Office
SG19	0.042	0.072	1.714	1.850	0.078	0.996	1.843	0.077	107	3rd flr Riser No 1 Lab Area No 1
SG20	0.042	0.072	1.714	1.800	0.076	0.996	1.793	0.075	105	3rd flr Riser No 1 Lab Area No 1

Comments:



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# SCHEMATIC

AHU LOCATED IN ROOFTOP PLANTROOM

