

# AIR HANDLING UNIT SELECTION WORKSHEET

Project:		Date:	
Project No.:		Calc. By:	
Unit Identification			
Number:	AHU-1		
Total CFM of Constant Vol. Boxes	=	60000 cfm	
Total CFM of Variable Vol. Boxes	=	0 cfm	
Diversity of VAV System (%)	=	100%	
CFM of VAV Boxes with Diversity	=	0 cfm	

COOLING COIL DATA			
Total CFM of Constant Vol. Boxes	=	60000 cfm	
Total CFM of Variable Vol. Boxes	=	0 cfm	
Total CFM	=	60000 cfm	
Scheduled AHU CFM	=	60000 cfm	
Coil Area @ 500 fpm	=	120.0 sf	

Total Exhaust CFM	=	10800 cfm
Percent Outside Air	=	20%
Outside Air	=	12000 cfm
Scheduled Outside Air CFM	=	12000 cfm
Percent Pressurization	=	10.0%
Is pressure between 0% and 10%?	=	YES
Return Air CFM	=	48000 cfm

	DB	WB
Outside Air Temp.	96.0°F	74.0°F
Return Air Temp.	75.0°F	62.6°F

Number of People	=	100
Total Sensible Heat (with)	=	1,745,605 Btuh
Total Latent Heat (with)	=	207,530 Btuh
Return Air Temperature	=	75.0°F
Room Delta T	=	20.0°F

Fan Location/Type	=	Blow Thru
Motor Heat Gain	=	152,155 Btuh
Temperature Rise	=	2.3°F

	DB	WB	Enthalp
Entering Air Temp.	81.94°F	64.84°F	29.16
Leaving Air	55.00°F	54.50°F	22.87

Grand Total Heat (with 0% SF)	=	1,698,380 Btuh
Tonnage	=	141.5 tons
Leaving Water Temperature	=	58.0°F
Entering Water Temperature	=	44.0°F
Chilled Water Flow	=	242.6 gpm

Outside Air Temperature	=	10.0°F
Return Air Temperature	=	75.0°F
Entering Air Temperature	=	62.0°F
Pre-Heat Coil BTU	=	Not Required

Entering (or Outside) Air Temperature	=	62.0°F
Leaving Air Temperature	=	100.0°F
Re-Heat (or Heating) Coil BTU	=	2,462,400

AHU STATIC PRESSURE CALCS			
External Static Pressure			
Discharge Plenum		0.25 in.	0.00 in.
Final		1.00 in.	0.00 in.
Med. Pressure Duct		0 ft.	0.00 in.
Terminal		0.75 in.	0.00 in.
Reheat		0.25 in.	0.00 in.
Low Pressure S.A.		200 ft.	0.16 in.
Volume Damper	1	0.10 in.	0.10 in.
Supply Air Grille	1	0.10 in.	0.10 in.
Return Air Device	1	0.10 in.	0.10 in.
Low Pressure R.A.		200 ft.	0.16 in.
Return Air Plenum	1	0.25 in.	0.25 in.
Pre-Filter	1	0.60 in.	0.60 in.
Fire Dampers	1	0.20 in.	0.20 in.
Smoke Dampers		0.20 in.	0.00 in.
Fire/Smoke		0.20 in.	0.00 in.
O.A.	1	0.15 in.	0.15 in.
Outside Air Damper	1	0.10	0.10 in.
Outside Air Duct		100 ft.	0.08 in.
Misc.			0.00 in.
Misc.			0.00 in.
Misc.			0.00 in.
Total External Static Pressure			2.00 in.

Scheduled		<b>2.00 in.</b>
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Internal Static Pressure			
Pre-Filter		0.50 in.	0.00 in.
Mixing		0.25 in.	0.00 in.
Blender/Dampers		0.20 in.	0.00 in.
Pre-Heat Coil		0.25 in.	0.00 in.
Cooling	1	0.35 in.	0.35 in.
Reheat Coil	1	0.25 in.	0.25 in.
Diffuser Section		0.40 in.	0.00 in.
Cartridge/Final	1	1.20 in.	1.20 in.
Discharge Plenum		0.15 in.	0.00 in.
Total Internal Static Pressure	=		1.80 in.
Total Static Pressure	=		3.80 in.

Scheduled Total S.P.	=	<b>3.80 in.</b>
Brake Horsepower	=	59.79 BHP

PRE-HEAT COIL DATA	
Entering Water Temperature	= 200.0°F
Leaving Water Temperature	= 160.0°F
Leaving Air Temperature	= 60.0°F
Hot Water Flow (GPM)	= 0.0

RE-HEAT (OR HEATING) COIL DATA	
Entering Water Temperature	= 200.0°F
Leaving Water Temperature	= 160.0°F
Hot Water Flow (GPM)	= 123.1

# Manual J Load Calculation Spreadsheet

**Julia Schneider**



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**Management Services** ,1987

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