System Checksums

By CANNONDESIGN

AHU-2/3 — **Variable Volume Reheat (30% Min Flow Default)**

COOLING COIL PEAK

Peaked at Time: Mo/Hr: 7 / 13
Outside Air: OADB/WB/HR: 93 / 78 / 126

	Space Sens. + Lat. Btu/h	Plenum Sens. + Lat Btu/h	Net Total Btu/h	Percent Of Total (%)
Envelope Loads				
Skylite Solar	0	0	0	0
Skylite Cond	0	0	0	0
Roof Cond	0	0	0	0
Glass Solar	0	0	0	0
Glass/Door Cond	0	0	0	0
Wall Cond	0	0	0	0
Partition/Door	0		0	0
Floor	0		0	0
Adjacent Floor	0	0	0	0
Infiltration	0		0	0
Sub Total ==>	0	0	0	0
Internal Loads				
Lights	3,472	415	3,887	23
People	947	0	947	6
Misc	4,760	0	4,760	28
Sub Total ==>	9,179	415	9,594	56
Ceiling Load	0	0	0	0
Ventilation Load	0	0	6,910	40
Adj Air Trans Heat	0		0	0
Dehumid. Ov Sizing			0	0
Ov/Undr Sizing	580		580	3
Exhaust Heat		0	0	0
Sup. Fan Heat			0	0
Ret. Fan Heat		0	0	0
Duct Heat Pkup		-1,453	0	0
Underflr Sup Ht Pkup			0	0
Supply Air Leakage		0	0	0
***Grand Total* ==>**	9,760	-1,038	17,084	100.00

CLG SPACE PEAK

Mo/Hr: 7 / 15
OADB: 95

	Space Sensible Btu/h	Percent Of Total (%)
Envelope Loads		
Skylite Solar	0	0
Skylite Cond	0	0
Roof Cond	0	0
Glass Solar	0	0
Glass/Door Cond	0	0
Wall Cond	0	0
Partition/Door	0	0
Floor	0	0
Adjacent Floor	0	0
Infiltration	0	0
Sub Total ==>	0	0
Internal Loads		
Lights	3,472	37
People	473	5
Misc	4,760	51
Sub Total ==>	8,706	94
Ceiling Load	0	0
Ventilation Load	0	0
Adj Air Trans Heat	0	0
Ov/Undr Sizing	580	6
Grand Total ==>	9,286	100.00

HEATING COIL PEAK

Mo/Hr: Heating Design
OADB: 3

	Space Peak Space Sens Btu/h	Coil Peak Tot Sens Btu/h	Percent Of Total (%)
Envelope Loads			
Skylite Solar	0	0	0.00
Skylite Cond	0	0	0.00
Roof Cond	0	0	0.00
Glass Solar	0	0	0.00
Glass/Door Cond	0	0	0.00
Wall Cond	0	0	0.00
Partition/Door	0	0	0.00
Floor	0	0	0.00
Adjacent Floor	0	0	0
Infiltration	0	0	0.00
Sub Total ==>	0	0	0.00
Internal Loads			
Lights	0	0	0.00
People	0	0	0.00
Misc	0	0	0.00
Sub Total ==>	0	0	0.00
Ceiling Load	0	0	0.00
Ventilation Load	0	-7,476	75.62
Adj Air Trans Heat	0	0	0
Ov/Undr Sizing	0	0	0.00
Exhaust Heat		0	0.00
OA Preheat Diff.		-991	10.02
RA Preheat Diff.		-1,420	14.36
Additional Reheat		0	0.00
Underflr Sup Ht Pkup		0	0.00
Supply Air Leakage		0	0.00
***Grand Total* ==>**	0	-9,886	100.00

These values have the same issues the containment suite and circulation have. Transfer air is not set at 100

TEMPERATURES

	Cooling	Heating
SADB	55.0	70.9
Ra Plenum	73.0	70.0
Return	75.1	70.0
Ret/OA	79.1	41.3
Fn MtrTD	0.0	0.0
Fn BldTD	0.0	0.0
Fn Frict	0.0	0.0

AIRFLOWS

	Cooling	Heating
Diffuser	443	231
Terminal	443	231
Main Fan	443	231
Sec Fan	0	0
Nom Vent	101	101
AHU Vent	101	101
Infil	0	0
MinStop/Rh	231	231
Return	182	128
Exhaust	0	0
Rm Exh	278	135
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS

	Cooling	Heating
% OA	22.7	43.5
cfm/ft²	0.36	0.19
cfm/ton	311.35	
ft²/ton	862.95	
Btu/hr·ft²	13.91	-8.28
No. People	2	

COOLING COIL SELECTION

	Total Capacity ton	Total Capacity MBh	Sens Cap. MBh	Coil Airflow cfm	Enter DB °F	Enter WB °F	Enter HR gr/lb	Leave DB °F	Leave WB °F	Leave HR gr/lb
Main Clg	1.4	17.1	11.8	443	79.1	65.0	71.7	52.0	51.9	58.8
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
Total	1.4	17.1								

AREAS

	Gross Total	Glass ft²	Glass (%)
Floor	1,229		
Part	0		
Int Door	0		
ExFlr	0		
Roof	0	0	0
Wall	0	0	0
Ext Door	0	0	0

HEATING COIL SELECTION

	Capacity MBh	Coil Airflow cfm	Ent °F	Lvg °F
Main Htg	-4.8	231	52.0	70.9
Aux Htg	0.0	0	0.0	0.0
Preheat	-5.4	101	2.8	52.0
Reheat	-4.8	231	52.0	70.9
Humidif	0.0	0	0.0	0.0
Opt Vent	0.0	0	0.0	0.0
Total	-10.2			

Room Checksums

By CANNONDESIGN

115 ANTE ROOM

COOLING COIL PEAK

Peaked at Time: Mo/Hr: 7 / 13
Outside Air: OADB/WB/HR: 93 / 78 / 126

	Space Sens. + Lat. Btu/h	Plenum Sens. + Lat Btu/h	Net Total Btu/h	Percent Of Total (%)
Envelope Loads				
Skylite Solar	0	0	0	0
Skylite Cond	0	0	0	0
Roof Cond	0	0	0	0
Glass Solar	0	0	0	0
Glass/Door Cond	0	0	0	0
Wall Cond	0	0	0	0
Partition/Door	0		0	0
Floor	0		0	0
Adjacent Floor	0	0	0	0
Infiltration	0		0	0
Sub Total ==>	0	0	0	0
Internal Loads				
Lights	499	125	624	17
People	415	0	415	11
Misc	1,134	0	1,134	31
Sub Total ==>	2,049	125	2,174	60
Ceiling Load	0	0	0	0
Ventilation Load	0	0	1,487	41
Adj Air Trans Heat	0		0	0
Dehumid. Ov Sizing			0	0
Ov/Undr Sizing	0		0	0
Exhaust Heat		-28	-28	-1
Sup. Fan Heat			0	0
Ret. Fan Heat		0	0	0
Duct Heat Pkup		-307	0	0
Underflr Sup Ht Pkup			0	0
Supply Air Leakage		0	0	0
Grand Total ==>	2,049	-210	3,632	100.00

CLG SPACE PEAK

Mo/Hr: 7 / 15
OADB: 95

	Space Sensible Btu/h	Percent Of Total (%)
Envelope Loads		
Skylite Solar	0	0
Skylite Cond	0	0
Roof Cond	0	0
Glass Solar	0	0
Glass/Door Cond	0	0
Wall Cond	0	0
Partition/Door	0	0
Floor	0	0
Adjacent Floor	0	0
Infiltration	0	0
Sub Total ==>	0	0
Internal Loads		
Lights	499	27
People	208	11
Misc	1,134	62
Sub Total ==>	1,841	100
Ceiling Load	0	0
Ventilation Load	0	0
Adj Air Trans Heat	0	0
Ov/Undr Sizing	0	0
Grand Total ==>	1,841	100.00

HEATING COIL PEAK

Mo/Hr: Heating Design
OADB: 3

	Space Peak Space Sens Btu/h	Coil Peak Tot Sens Btu/h	Percent Of Total (%)
Envelope Loads			
Skylite Solar	0	0	0.00
Skylite Cond	0	0	0.00
Roof Cond	0	0	0.00
Glass Solar	0	0	0.00
Glass/Door Cond	0	0	0.00
Wall Cond	0	0	0.00
Partition/Door	0	0	0.00
Floor	0	0	0.00
Adjacent Floor	0	0	0.00
Infiltration	0	0	0.00
Sub Total ==>	0	0	0.00
Internal Loads			
Lights	0	0	0.00
People	0	0	0.00
Misc	0	0	0.00
Sub Total ==>	0	0	0.00
Ceiling Load	0	0	0.00
Ventilation Load	0	-1,253	65.51
Adj Air Trans Heat	0	0	0
Ov/Undr Sizing	0	0	0.00
Exhaust Heat		0	0.00
OA Preheat Diff.		-224	11.70
RA Preheat Diff.		-436	22.79
Additional Reheat		0	0.00
System Plenum Heat		0	0.00
Underflr Sup Ht Pkup		0	0.00
Supply Air Leakage		0	0.00
Grand Total ==>	0	-1,912	100.00

Supply & Return are equal as they should be

TEMPERATURES

	Cooling	Heating
SADB	55.0	70.0
Ra Plenum	73.0	70.0
Return	74.2	70.0
Ret/OA	78.5	40.8
Fn MtrTD	0.0	0.0
Fn BldTD	0.0	0.0
Fn Frict	0.0	0.0

AIRFLOWS

	Cooling	Heating
Diffuser	94	39
Terminal	94	39
Main Fan	94	39
Sec Fan	0	0
Nom Vent	21	17
AHU Vent	21	17
Infil	0	0
MinStop/Rh	39	39
Return	94	39
Exhaust	21	17
Rm Exh	0	0
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS

	Cooling	Heating
% OA	22.7	43.5
cfm/ft²	0.56	0.24
cfm/ton	309.35	
ft²/ton	549.00	
Btu/hr·ft²	21.86	-11.51
No. People	0.8	5.0/1000 ft²

COOLING COIL SELECTION

	Total Capacity ton	Total Capacity MBh	Sens Cap. MBh	Coil Airflow cfm	Enter DB °F	Enter WB °F	Enter HR gr/lb	Leave DB °F	Leave WB °F	Leave HR gr/lb
Main Clg	0.3	3.6	2.4	94	78.5	64.8	71.7	52.0	51.6	57.4
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.3	3.6								

AREAS

	Gross Total	Glass ft²	Glass (%)
Floor	166		
Part	0		
Int Door	0		
ExFlr	0		
Roof	0	0	0
Wall	0	0	0
Ext Door	0	0	0

HEATING COIL SELECTION

	Capacity MBh	Coil Airflow cfm	Ent °F	Lvg °F
Main Htg	-0.8	39	52.0	70.0
Aux Htg	0.0	0	0.0	0.0
Preheat	-1.1	21	2.8	52.0
Reheat	-0.8	39	52.0	70.0
Humidif	0.0	0	0.0	0.0
Opt Vent	0.0	0	0.0	0.0
Total	-1.9			

Room Checksums

By CANNONDESIGN

116 CONTAINMENT SUITE

COOLING COIL PEAK

Peaked at Time: Mo/Hr: 7 / 13
Outside Air: OADB/WB/HR: 93 / 78 / 126

	Space Sens. + Lat. Btu/h	Plenum Sens. + Lat Btu/h	Net Total Btu/h	Percent Of Total (%)
Envelope Loads				
Skylite Solar	0	0	0	0
Skylite Cond	0	0	0	0
Roof Cond	0	0	0	0
Glass Solar	0	0	0	0
Glass/Door Cond	0	0	0	0
Wall Cond	0	0	0	0
Partition/Door	0		0	0
Floor	0		0	0
Adjacent Floor	0	0	0	0
Infiltration	0		0	0
Sub Total ==>	0	0	0	0
Internal Loads				
Lights	1,813	0	1,813	18
People	531	0	531	5
Misc	3,626	0	3,626	36
Sub Total ==>	5,970	0	5,970	60
Ceiling Load	0	0	0	0
Ventilation Load	0	0	4,017	40
Adj Air Trans Heat	0		0	0
Dehumid. Ov Sizing			0	0
Ov/Undr Sizing	0		0	0
Exhaust Heat		0	0	0
Sup. Fan Heat			0	0
Ret. Fan Heat		0	0	0
Duct Heat Pkup		-856	0	0
Underflr Sup Ht Pkup			0	0
Supply Air Leakage		0	0	0
Grand Total ==>	5,970	-856	9,987	100.00

CLG SPACE PEAK

Mo/Hr: 7 / 15
OADB: 95

	Space Sensible Btu/h	Percent Of Total (%)
Envelope Loads		
Skylite Solar	0	0
Skylite Cond	0	0
Roof Cond	0	0
Glass Solar	0	0
Glass/Door Cond	0	0
Wall Cond	0	0
Partition/Door	0	0
Floor	0	0
Adjacent Floor	0	0
Infiltration	0	0
Sub Total ==>	0	0
Internal Loads		
Lights	1,813	32
People	266	5
Misc	3,626	64
Sub Total ==>	5,705	100
Ceiling Load	0	0
Ventilation Load	0	0
Adj Air Trans Heat	0	0
Ov/Undr Sizing	0	0
Grand Total ==>	5,705	100.00

HEATING COIL PEAK

Mo/Hr: Heating Design
OADB: 3

	Space Peak Space Sens Btu/h	Coil Peak Tot Sens Btu/h	Percent Of Total (%)
Envelope Loads			
Skylite Solar	0	0	0.00
Skylite Cond	0	0	0.00
Roof Cond	0	0	0.00
Glass Solar	0	0	0.00
Glass/Door Cond	0	0	0.00
Wall Cond	0	0	0.00
Partition/Door	0	0	0.00
Floor	0	0	0.00
Adjacent Floor	0	0	0.00
Infiltration	0	0	0.00
Sub Total ==>	0	0	0.00
Internal Loads			
Lights	0	0	0.00
People	0	0	0.00
Misc	0	0	0.00
Sub Total ==>	0	0	0.00
Ceiling Load	0	0	0.00
Ventilation Load	0	-3,396	81.58
Adj Air Trans Heat	0	0	0
Ov/Undr Sizing	0	0	0.00
Exhaust Heat		0	0.00
OA Preheat Diff.		-767	18.43
RA Preheat Diff.		0	0.00
Additional Reheat		0	0.00
System Plenum Heat		0	0.00
Underflr Sup Ht Pkup		0	0.00
Supply Air Leakage		0	0.00
Grand Total ==>	0	-4,163	100.00

Room exhaust is greater than the supply air but it isn't 100 CFM greater like it should be

TEMPERATURES

	Cooling	Heating
SADB	55.0	72.0
Ra Plenum	75.0	72.0
Return	75.0	72.0
Ret/OA	79.1	41.9
Fn MtrTD	0.0	0.0
Fn BldTD	0.0	0.0
Fn Frict	0.0	0.0

AIRFLOWS

	Cooling	Heating
Diffuser	261	103
Terminal	261	103
Main Fan	261	103
Sec Fan	0	0
Nom Vent	59	45
AHU Vent	59	45
Infil	0	0
MinStop/Rh	103	103
Return	0	0
Exhaust	0	0
Rm Exh	278	135
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS

	Cooling	Heating
% OA	22.7	43.5
cfm/ft²	0.49	0.19
cfm/ton	313.73	
ft²/ton	638.26	
Btu/hr·ft²	18.80	-10.24
No. People	1.1	2.0/1000 ft²

COOLING COIL SELECTION

	Total Capacity ton	Total Capacity MBh	Sens Cap. MBh	Coil Airflow cfm	Enter DB °F	Enter WB °F	Enter gr/lb	Leave DB °F	Leave WB °F	Leave gr/lb
Main Clg	0.8	10.0	6.9	261	79.1	65.0	71.7	52.0	51.9	58.8
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.8	10.0								

AREAS

	Gross Total	Glass ft²	Glass (%)
Floor	531		
Part	0		
Int Door	0		
ExFlr	0		
Roof	0	0	0
Wall	0	0	0
Ext Door	0	0	0

HEATING COIL SELECTION

	Capacity MBh	Coil Airflow cfm	Ent °F	Lvg °F
Main Htg	-2.3	103	52.0	72.0
Aux Htg	0.0	0	0.0	0.0
Preheat	-3.2	59	2.8	52.0
Reheat	-2.3	103	52.0	72.0
Humidif	0.0	0	0.0	0.0
Opt Vent	0.0	0	0.0	0.0
Total	-5.4			

Room Checksums

By CANNONDESIGN

196 CIRCULATION

COOLING COIL PEAK

Peaked at Time: Mo/Hr: 7 / 13
Outside Air: OADB/WB/HR: 93 / 78 / 126

	Space Sens. + Lat. Btu/h	Plenum Sens. + Lat Btu/h	Net Total Btu/h	Percent Of Total (%)
Envelope Loads				
Skylite Solar	0	0	0	0
Skylite Cond	0	0	0	0
Roof Cond	0	0	0	0
Glass Solar	0	0	0	0
Glass/Door Cond	0	0	0	0
Wall Cond	0	0	0	0
Partition/Door	0		0	0
Floor	0		0	0
Adjacent Floor	0	0	0	0
Infiltration	0		0	0
Sub Total ==>	0	0	0	0
Internal Loads				
Lights	1,160	290	1,450	37
People	0	0	0	0
Misc	0	0	0	0
Sub Total ==>	1,160	290	1,450	37
Ceiling Load	0	0	0	0
Ventilation Load	0	0	1,406	36
Adj Air Trans Heat	0		0	0
Dehumid. Ov Sizing			0	0
Ov/Undr Sizing	1,161		1,161	29
Exhaust Heat		-66	-66	-2
Sup. Fan Heat			0	0
Ret. Fan Heat		0	0	0
Duct Heat Pkup		-290	0	0
Underflr Sup Ht Pkup			0	0
Supply Air Leakage		0	0	0
Grand Total ==>	2,321	-66	3,951	100.00

CLG SPACE PEAK

Mo/Hr: 7 / 15
OADB: 95

	Space Sensible Btu/h	Percent Of Total (%)
Envelope Loads		
Skylite Solar	0	0
Skylite Cond	0	0
Roof Cond	0	0
Glass Solar	0	0
Glass/Door Cond	0	0
Wall Cond	0	0
Partition/Door	0	0
Floor	0	0
Adjacent Floor	0	0
Infiltration	0	0
Sub Total ==>	0	0
Internal Loads		
Lights	1,160	67
People	0	0
Misc	0	0
Sub Total ==>	1,160	67
Ceiling Load	0	0
Ventilation Load	0	0
Adj Air Trans Heat	0	0
Ov/Undr Sizing	580	33
Grand Total ==>	1,741	100.00

HEATING COIL PEAK

Mo/Hr: Heating Design
OADB: 3

	Space Peak Space Sens Btu/h	Coil Peak Tot Sens Btu/h	Percent Of Total (%)
Envelope Loads			
Skylite Solar	0	0	0.00
Skylite Cond	0	0	0.00
Roof Cond	0	0	0.00
Glass Solar	0	0	0.00
Glass/Door Cond	0	0	0.00
Wall Cond	0	0	0.00
Partition/Door	0	0	0.00
Floor	0	0	0.00
Adjacent Floor	0	0	0.00
Infiltration	0	0	0.00
Sub Total ==>	0	0	0.00
Internal Loads			
Lights	0	0	0.00
People	0	0	0.00
Misc	0	0	0.00
Sub Total ==>	0	0	0.00
Ceiling Load	0	0	0.00
Ventilation Load	0	-2,827	74.19
Adj Air Trans Heat	0	0	0
Ov/Undr Sizing	0	0	0.00
Exhaust Heat		0	0.00
OA Preheat Diff.		0	0.00
RA Preheat Diff.		-984	25.81
Additional Reheat		0	0.00
System Plenum Heat		0	0.00
Underflr Sup Ht Pkup		0	0.00
Supply Air Leakage		0	0.00
Grand Total ==>	0	-3,810	100.00

Supply & Return are equal, the 100 CFM transfer air through the ante room into the containment suite isn't accounted for

TEMPERATURES

	Cooling	Heating
SADB	55.0	70.0
Ra Plenum	73.0	70.0
Return	76.0	70.0
Ret/OA	79.8	40.8
Fn MtrTD	0.0	0.0
Fn BldTD	0.0	0.0
Fn Frict	0.0	0.0

AIRFLOWS

	Cooling	Heating
Diffuser	89	89
Terminal	89	89
Main Fan	89	89
Sec Fan	0	0
Nom Vent	20	39
AHU Vent	20	39
Infil	0	0
MinStop/Rh	89	89
Return	89	89
Exhaust	20	39
Rm Exh	0	0
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS

	Cooling	Heating
% OA	22.7	43.5
cfm/ft²	0.17	0.17
cfm/ton	268.86	
ft²/ton	1,613.18	
Btu/hr·ft²	7.44	-7.17
No. People	0.0	0.0/1000 ft²

COOLING COIL SELECTION

	Total Capacity ton	Total Capacity MBh	Sens Cap. MBh	Coil Airflow cfm	Enter DB °F	Enter WB °F	Enter HR gr/lb	Leave DB °F	Leave WB °F	Leave HR gr/lb
Main Clg	0.3	4.0	3.0	89	79.8	65.2	71.7	52.0	49.9	51.2
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.3	4.0								

AREAS

	Gross Total ft²	Glass ft²	Glass (%)
Floor	531		
Part	0		
Int Door	0		
ExFlr	0		
Roof	0	0	0
Wall	0	0	0
Ext Door	0	0	0

HEATING COIL SELECTION

	Capacity MBh	Coil Airflow cfm	Ent °F	Lvg °F
Main Htg	-1.7	89	52.0	70.0
Aux Htg	0.0	0	0.0	0.0
Preheat	-2.1	39	2.8	52.0
Reheat	-1.7	89	52.0	70.0
Humidif	0.0	0	0.0	0.0
Opt Vent	0.0	0	0.0	0.0
Total	-3.8			