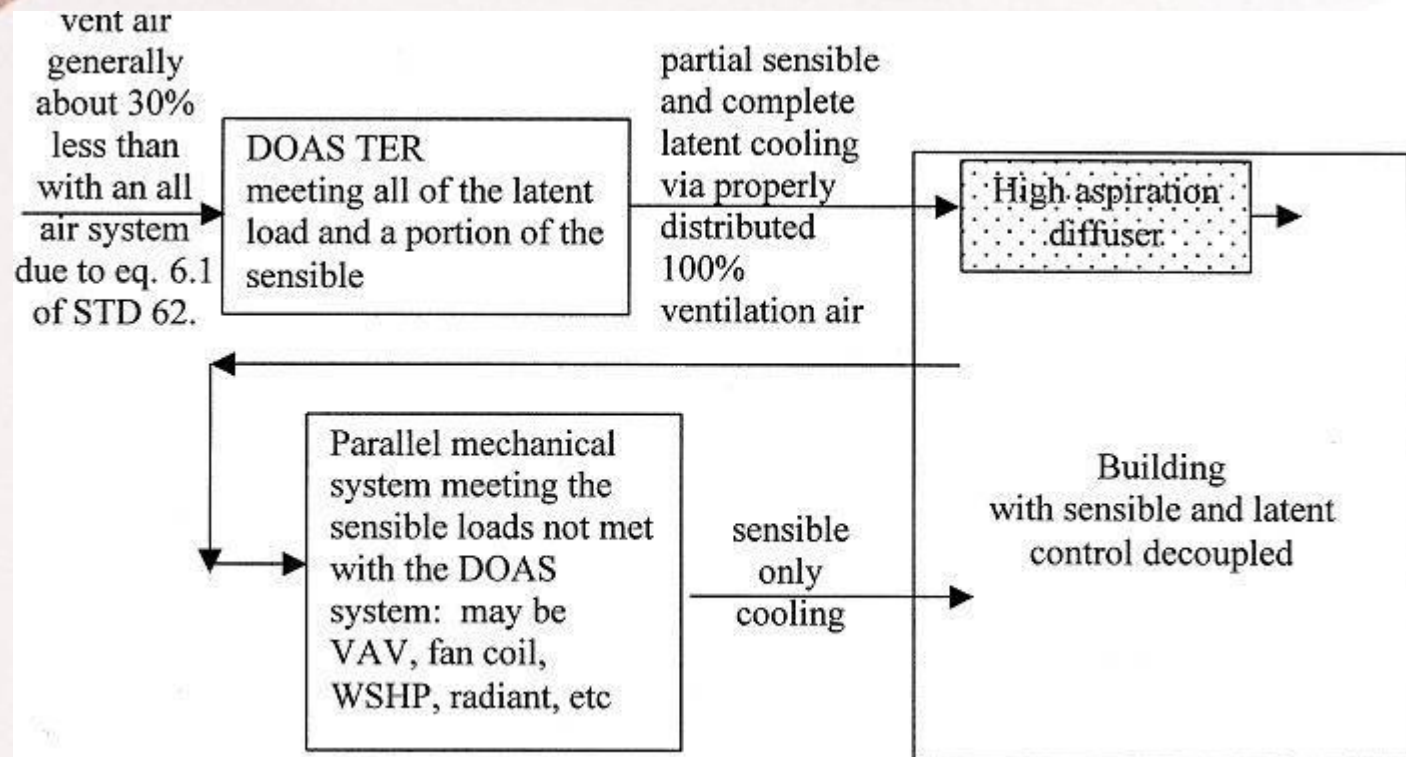




Handling Moisture loads in Radiant Cooling / Chilled Beams design

Divide & Conquer Approach



- Divide the load into the two components i.e. Sensible & Latent.
- Approach commonly referred to as the “Divide and Conquer”.
- All the latent load brought by outside air is removed at the source & also air is supplied at a low dew point to take care of internal latent load.
- The parallel internal cooling devices are then limited to take care of sensible cooling load.

Parallel Sensible Cooling System Options, operating with dry surfaces

- Radiant Cooling Systems
- Chilled Beam Systems
- VRV Systems, AHUs, FCUs etc...

Calculating building moisture load is most important

Size the DOAS to handle ALL the internal latent load

➤ Prevent condensation in Radiant Cooling Systems

➤ Prevents chilled beams from sweating

- #1 fear of design engineers I have spoken with
- Provides proper space %RH

➤ Allows VRV systems to operate at most efficient

- Prevents condensation within AHUs
- Mold grown
- Maintenance of wet coils, etc...
- Proper space %RH

Condensation, the biggest concern?

- Condensation happens if you are not able to maintain the space dew point lower than chilled water temperature
- This can be done with fresh air supply only
- That is why pairing these systems with right ventilation solution is important

Designing_System - Assumptions

<i>Floor Area</i>	10000 m2 (107600 ft2)
<i>Internal Sensible Load</i>	70 W/m2 (22 BTUH / ft2)
<i>Occupancy Density</i>	1 person/7m2 (1 person / 75ft2)
<i>Latent Load / person</i>	62 W (215 BTUH)
<i>Total Internal Sensible Load</i>	700 KW (200 TR)
<i>No. of people</i>	1450
<i>Total Internal Latent Load</i>	90 KW (316500 BTUH)
<i>Outdoor Conditions</i>	Delhi
<i>Room Conditions</i>	26°C / 55% RH / 10.5g/kg (78°F / 55% RH / 72grs/#)

Designing System - DOAS

DOAS to be designed to supply outdoor air at dew point sufficiently lower than room dew point to cater to internal latent load

Outdoor Air Flow = 18000 CFM (30% more than ASHRAE 62.1)

$$ILL = 0.68 \times CFM \times \Delta w$$

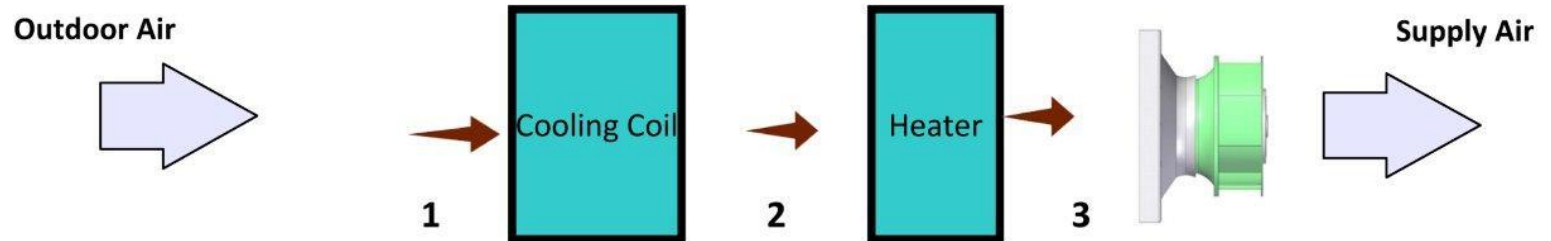
$$\Delta w = \frac{ILL}{0.68 \times CFM} = \frac{316500}{0.68 \times 18000} = 26 \text{ grains/\#} \quad (3.7\text{g/Kg})$$

DOAS Outlet conditions: 46 grains/\# (6.8g/Kg)

Various DOAS Configuration

Option I

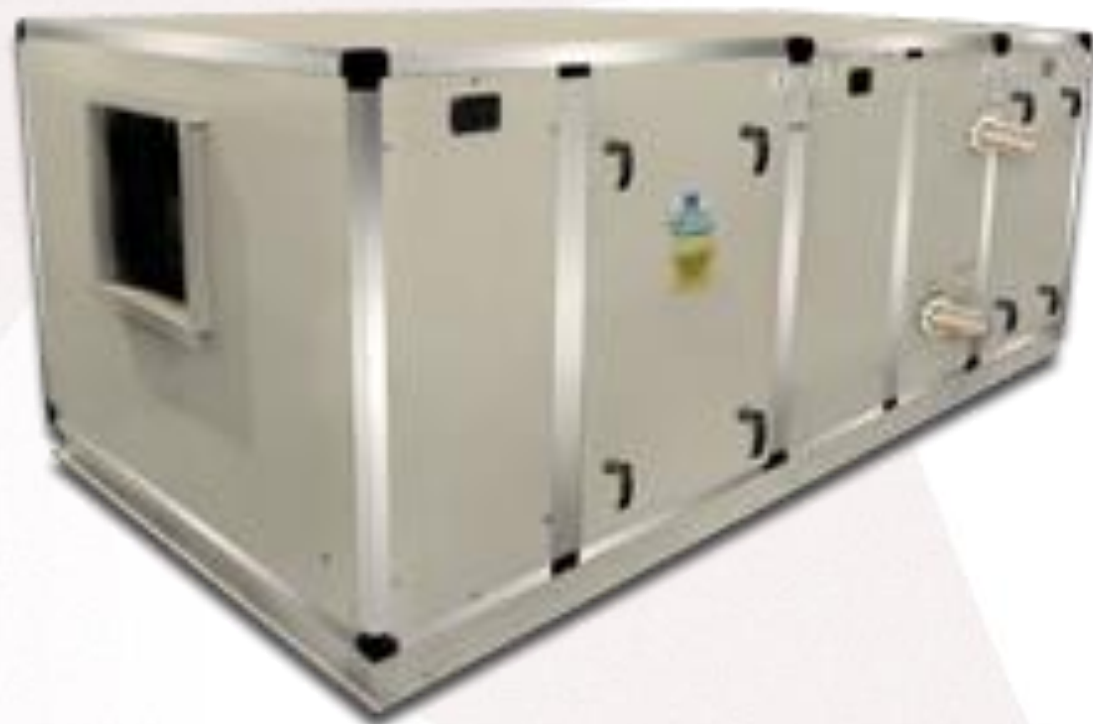
Schedule of Cooling Coil & Heater



Air Flow (cfm):			Supply 18000	Return 16200									
1			Freq. Hours/year	2			3			Heater Load (kw)	Cooling Coil Capacity		Coil Capacity (tons/hr)
Outdoor Air Conditions				Off Coil Conditions			Off Heater Conditions				Sensible Load (TR)	Total Load (TR)	
DBT °F	gr/lbs	Btu/lbs		DBT °F	gr/lbs	Btu/lbs	DBT °F	gr/lbs	Btu/lbs				
85.3	185	49.53	1	46.5	46	18.27	59	46	21.3	71.1	62.9	208.7	208.7
86.1	175	48.16	2	46.5	46	18.27	59	46	21.3	71.1	64.2	199.5	399.0
85.3	165	46.39	32	46.5	46	18.27	59	46	21.3	71.1	62.9	187.7	6006.4
87.4	155	45.34	234	46.5	46	18.27	59	46	21.3	71.1	66.3	180.7	42282.0
86.7	145	43.6	543	46.5	46	18.27	59	46	21.3	71.1	65.1	169.1	91809.2
86.3	135	41.93	729	46.5	46	18.27	59	46	21.3	71.1	64.5	157.9	115131.3
87.2	125	40.58	698	46.5	46	18.27	59	46	21.3	71.1	65.9	148.9	103945.6
86.5	115	38.84	662	46.5	46	18.27	59	46	21.3	71.1	64.8	137.3	90895.7
88.3	105	37.71	493	46.5	46	18.27	59	46	21.3	71.1	67.7	129.8	63972.7
86.2	95	35.62	342	46.5	46	18.27	59	46	21.3	71.1	64.3	115.8	39607.4
84.6	85	33.66	355	46.5	46	18.27	59	46	21.3	71.1	61.7	102.7	36468.5
74.6	75	29.63	656	46.5	46	18.27	59	46	21.3	71.1	45.5	75.8	49743.2
70.4	65	27.04	1213	46.5	46	18.27	59	46	21.3	71.1	38.7	58.5	71008.7
66.8	55	24.6	1322	46.5	46	18.27	59	46	21.3	71.1	32.9	42.3	55858.1
63.3	45	22.19	1144	59	45	21.15	59	45	21.15	0.0	7.0	6.9	7941.6
59.4	35	19.7	315	59.4	35	19.7	59.4	35	19.7	0.0	0.0	0.0	0.0
64.9	25	19.47	17	59	25	18	59	25	18	0.0	9.6	9.8	166.8
80.8	15	21.75	2	59	15	16.5	59	15	16.5	0.0	35.3	35.3	70.6

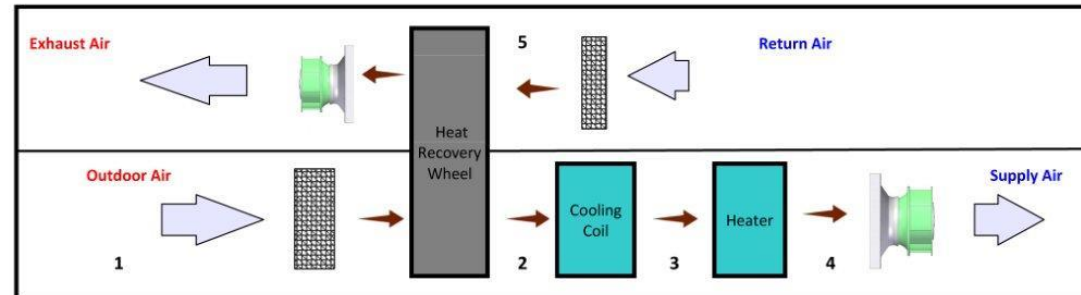
775516

Summer	110	74.23	38.17	0	46.5	46	18.27	59	46	21.3	71.1	102.9	132.8
Monsoon	95	152	46.79	0	46.5	46	18.27	59	46	21.3	71.1	78.6	190.4



Option II

Schedule of DOAS with Enthalpy Wheel, Cooling Coil and Heater

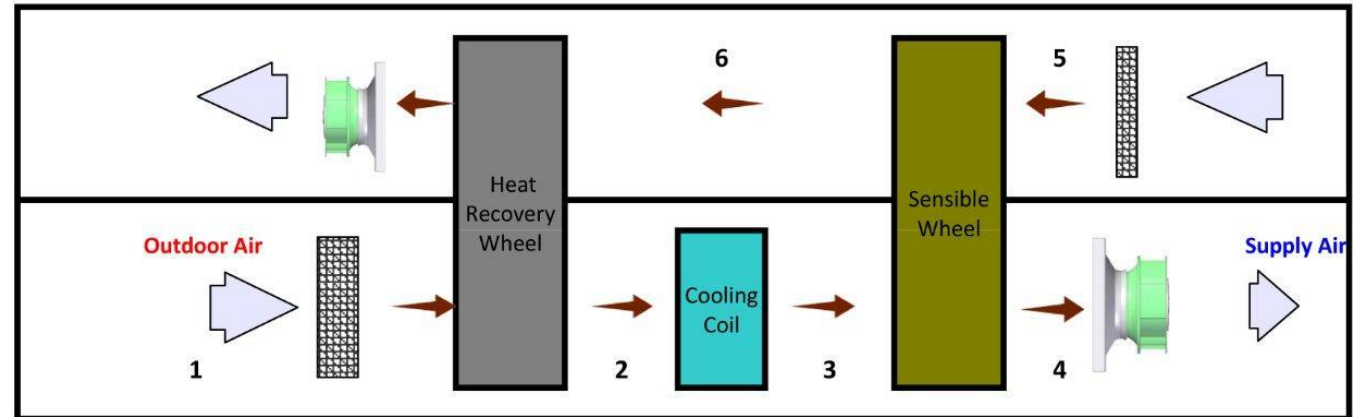


Air Flow (cfm):			Supply 18000	Return 16200																				
1			Freq. Hours/year	2			3			4			5			6			Cooling Coil		Heater Load (Kw)	Coil Capacity (tons/hr)	Heater Load (Kw/hr)	
Outdoor Air Conditions				Off Wheel Air Conditions			Off coil Conditions			Supply air Conditions			Return air Conditions			Off Heater Conditions			Sensible	Total Load (
DBT °F	gr/lbs	Btu/lbs		DBT °F	gr/lbs	Btu/lbs	DBT °F	gr/lbs	Btu/lbs	DBT °F	gr/lbs	Btu/lbs	DBT °F	gr/lbs	Btu/lbs	DBT °F	gr/lbs	Btu/lbs	DBT °F	gr/lbs				Btu/lbs
85.3	185	49.53	1	79.07	106.68	35.57	55	63	22.98	75.8	46.00	25.39	77	76.52	30.46	122	185.00	58.81	38.99	84.04	208.9	84.0	208.9	
86.1	175	48.16	2	79.27	103.90	35.20	55.5	64.2	23.28	76.8	45.85	25.6	77	76.52	30.46	122	175.00	57.21	38.50	79.59	204.3	159.2	408.6	
85.3	165	46.39	32	79.07	101.12	34.73	56	65.5	23.6	77.9	45.71	25.85	77	76.52	30.46	122	165.00	55.62	37.37	74.29	208.9	2377.2	6683.4	
87.4	155	45.34	234	79.59	98.34	34.45	57	67.9	24.21	79.3	46.13	26.25	77	76.52	30.46	122	155.00	54	36.60	68.34	196.9	15991.0	46075.5	
86.7	145	43.6	543	79.42	95.56	33.98	57.5	69.13	24.53	80.7	46.13	26.6	77	76.52	30.46	122	145.00	52.43	35.50	63.09	200.9	34257.3	109082.0	
86.3	135	41.93	729	79.32	92.78	33.53	58	70.4	24.85	81.9	45.78	26.6	77	76.52	30.46	122	135.00	50.84	34.53	57.97	203.2	42256.8	148106.5	
87.2	125	40.58	698	79.54	90.00	33.17	55.3	63.8	23.2	70.5	45.80	24.1	77	76.52	30.46	115	125.00	47.5	39.27	66.56	158.2	46461.8	110427.9	
86.5	115	38.84	662	79.37	87.22	32.71	55.3	63.8	23.2	70.3	45.90	24	77	76.52	30.46	112	115.00	45.1	38.99	63.45	145.1	42004.9	96067.5	
88.3	105	37.71	493	79.81	84.44	32.40	55.3	63.8	23.2	69.97	46.10	24	77	76.52	30.46	108	105.00	42.6	39.71	61.43	112.1	30285.0	55270.3	
86.2	95	35.62	342	79.29	81.66	31.84	55.3	63.8	23.2	69.88	46.00	23.9	77	76.52	30.46	105	95.00	40.2	38.87	57.69	107.0	19730.4	36590.0	
84.6	85	33.66	355	78.89	78.88	31.32	55.3	63.8	23.2	69.62	46.10	23.9	77	76.52	30.46	101	85.00	37.7	38.22	54.18	93.3	19235.7	33132.2	
74.6	75	29.63	656	74.6	75	29.63	55.3	63.8	23.2	69.42	46.10	23.9	77	76.52	30.46	97	75.00	35.1	31.27	42.92	127.5	28155.7	83623.9	
70.4	65	27.04	1213	70.4	65	27.04	55.4	65	23.4	70.38	45.8	24	77	76.52	30.46	95	65.00	32.4	24.30	24.30	140.0	29472.3	169814.3	
66.8	55	24.6	1322	66.8	55	24.6	56	55	22	63.43	55	27.3	77	76.52	30.46	78	55.00	27.3	17.50	17.36	63.7	22943.3	84261.2	
63.3	45	22.19	1144	63.3	45	22.19	59	45	21.15	59	45	21.15	77	76.52	30.46	63.3	45.00	22.19	6.97	6.94	0.0	7941.6	0.0	
59.4	35	19.7	315	59.4	35	19.7	59.4	35	19.7	59.4	35	19.7	77	76.52	30.46	59.4	35.00	19.7	0.00	0.00	0.0	0.0	0.0	
64.9	25	19.47	17	64.9	25	19.47	59	25	18	59	25	18	77	76.52	30.46	64.9	25.00	19.47	9.56	9.81	0.0	166.8	0.0	
80.8	15	21.75	2	80.8	15	21.75	59	15	16.5	59	15	16.5	77	76.52	30.46	80.8	15.00	21.75	35.32	35.04	0.0	70.1	0.0	
341593																							979752	
110	74.23	38.17	0	85.22	75.88	32.53	56.2	65.9	23.7	72.62	45.71	24.6	77	76.52	30.46	110	74.23	38.17	47.01	58.92	0.0			
95	152	46.79	0	81.48	97.50	34.84	57	67.88	24.21	79.7	46.00	26.33	77	76.52	30.46	122	152.00	53.5	39.66	70.93	153.7			



Option III

Schedule of Heat Recovery Wheel, Cooling Coil & Sensible Wheel

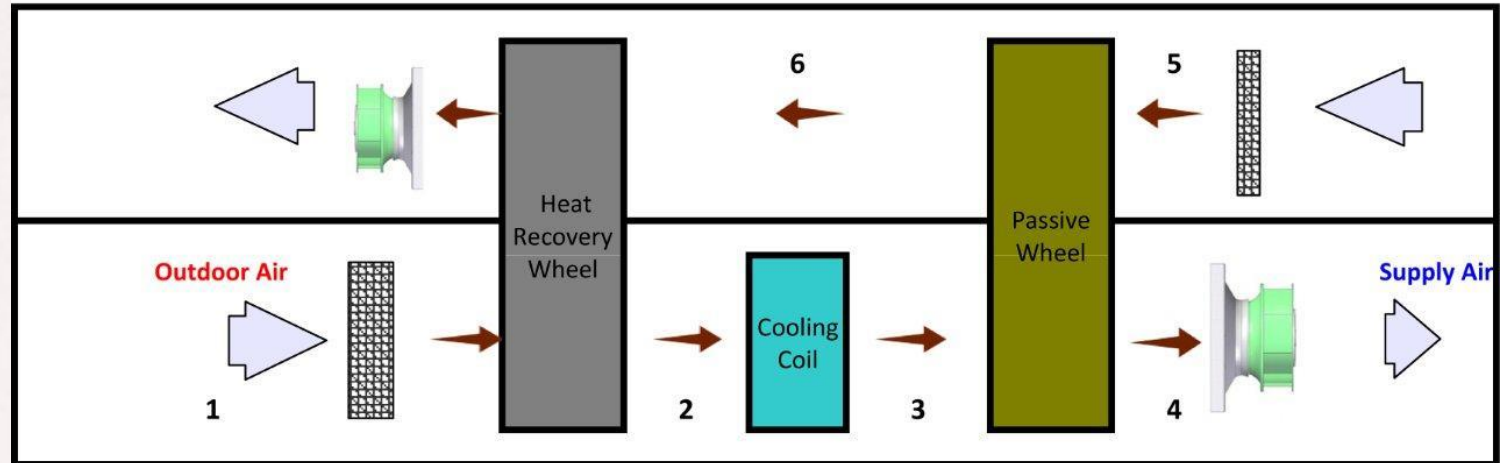


Air Flow (cfm):			Supply 18000	Return 16200																			
1			Freq. Hours/year	2			3			4			5			6			Cooling Coil		Coil		
Outdoor Air Conditions				Off Wheel Air Conditions			Off coil Conditions			Supply air Conditions			Return air Conditions			Return air on EW Conditions			Sensible	Total Load	Capacity		
DBT °F	gr/lbs	Btu/lbs		DBT °F	gr/lbs	Btu/lbs	DBT °F	gr/lbs	Btu/lbs	DBT °F	gr/lbs	Btu/lbs	DBT °F	gr/lbs	Btu/lbs	DBT °F	gr/lbs	Btu/lbs	DBT °F	gr/lbs	Btu/lbs	Load (TR)	(TR)
85.3	185	49.53	1	68.30	106.68	32.99	46.5	46	18.27	59.31	46	21.38	77	76.52	30.46	62.67	76.52	26.94	37.08	103.20	103.2		
86.1	175	48.16	2	68.50	103.90	32.63	46.5	46	18.27	59.31	46	21.38	77	76.52	30.46	62.67	76.52	26.94	37.42	100.62	201.2		
85.3	165	46.39	32	68.30	101.12	32.15	46.5	46	18.27	59.31	46	21.38	77	76.52	30.46	62.67	76.52	26.94	37.08	97.30	3113.6		
87.4	155	45.34	234	68.82	98.34	31.87	46.5	46	18.27	59.31	46	21.38	77	76.52	30.46	62.67	76.52	26.94	37.97	95.33	22306.6		
86.7	145	43.6	543	68.65	95.56	31.40	46.5	46	18.27	59.31	46	21.38	77	76.52	30.46	62.67	76.52	26.94	37.68	92.06	49988.1		
86.3	135	41.93	729	68.55	92.78	30.96	46.5	46	18.27	59.31	46	21.38	77	76.52	30.46	62.67	76.52	26.94	37.51	88.92	64824.3		
87.2	125	40.58	698	68.77	90.00	30.60	46.5	46	18.27	59.31	46	21.38	77	76.52	30.46	62.67	76.52	26.94	37.89	86.39	60297.8		
86.5	115	38.84	662	68.60	87.22	30.13	46.5	46	18.27	59.31	46	21.38	77	76.52	30.46	62.67	76.52	26.94	37.59	83.12	55024.2		
88.3	105	37.71	493	69.05	84.44	29.83	46.5	46	18.27	59.31	46	21.38	77	76.52	30.46	62.67	76.52	26.94	38.35	81.00	39930.8		
86.2	95	35.62	342	68.53	81.66	29.27	46.5	46	18.27	59.31	46	21.38	77	76.52	30.46	62.67	76.52	26.94	37.46	77.07	26357.9		
84.6	85	33.66	355	68.13	78.88	28.74	46.5	46	18.27	59.31	46	21.38	77	76.52	30.46	62.67	76.52	26.94	36.79	73.39	26052.9		
74.6	75	29.63	656	65.64	76.10	27.66	46.5	46	18.27	59.31	46	21.38	77	76.52	30.46	62.67	76.52	26.94	32.55	65.82	43177.0		
70.4	65	27.04	1213	64.59	73.32	26.97	46.5	46	18.27	59.31	46	21.38	77	76.52	30.46	62.67	76.52	26.94	30.77	60.95	73936.8		
66.8	55	24.6	1322	66.8	55	24.6	46.5	46	18.27	59.31	46	21.38	77	76.52	30.46	77	76.52	30.46	34.53	44.37	58651.0		
63.3	45	22.19	1144	63.3	45	22.19	59	45	21.15	59	45	21.15	77	76.52	30.46	77	76.52	30.46	7.31	7.29	8338.7		
59.4	35	19.7	315	59.4	35	19.7	59.4	35	19.7	59.4	35	19.7	77	76.52	30.46	77	76.52	30.46	0.00	0.00	0.0		
64.9	25	19.47	17	64.9	25	19.47	59	25	18	59	25	18	77	76.52	30.46	77	76.52	30.46	10.04	10.30	175.1		
80.8	15	21.75	2	80.8	15	21.75	59	15	16.5	59	15	16.5	77	76.52	30.46	77	76.52	30.46	37.08	36.80	73.6		
532553																							
er	110	74.23	38.17	0	74.45	75.88	29.95	46.5	46	18.27	59.31	46	21.38	77	76.52	30.46	62.67	76.52	26.94	47.55	81.86		
on	95	152	46.79	0	70.72	97.50	32.26	46.5	46	18.27	59.31	46	21.38	77	76.52	30.46	62.67	76.52	26.94	41.19	98.05		



Option IV

Schedule of Heat Recovery Wheel, Cooling Coil & Passive Desiccant Wheel



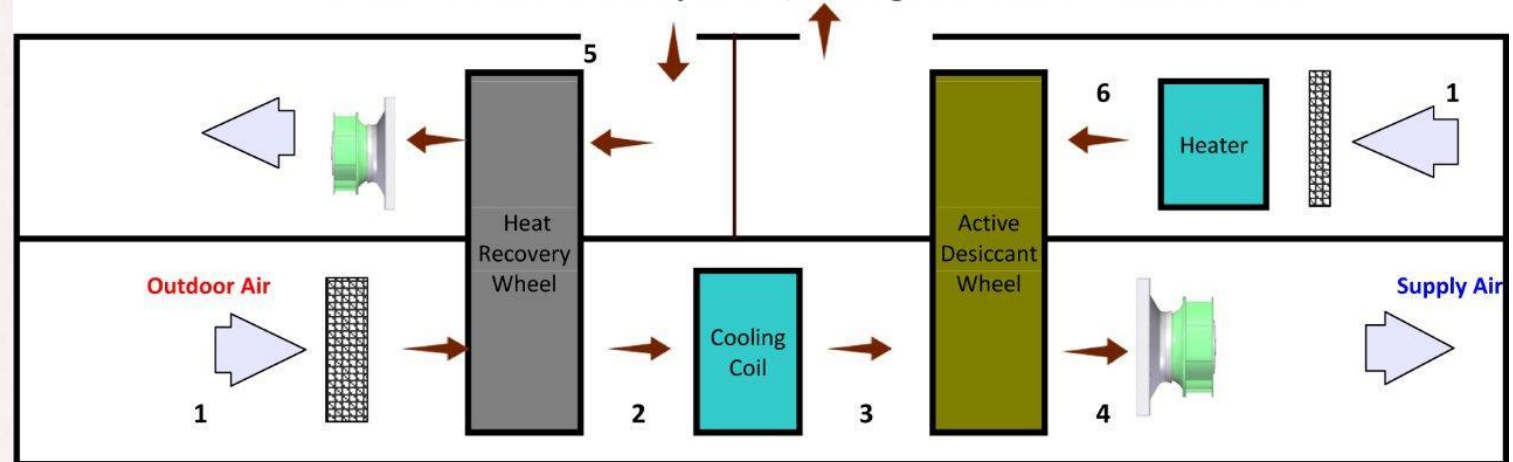
Supply 18000			Return 16200																				
1			Freq. Hours/year	2			3			4			5			6			Cooling Coil		Coil		
Outdoor Air Conditions				Off Wheel Air Conditions			Off coil Conditions			Supply air Conditions			Return air Conditions			Return air on EW Conditions			Sensible Load (TR)	Total Load (TR)	Capacity (tons/hr)		
DBT °F	gr/lbs	Btu/lbs		DBT °F	gr/lbs	Btu/lbs	DBT °F	gr/lbs	Btu/lbs	DBT °F	gr/lbs	Btu/lbs	DBT °F	gr/lbs	Btu/lbs	DBT °F	gr/lbs	Btu/lbs					
85.3	185	49.53	1	73.06	113.52	35.23	51.5	55.4	20.9	58.8	46.50	21.3	77	76.52	30.46	69	86.00	30	34.93	95.68	95.7		
86.1	175	48.16	2	73.26	110.74	34.87	51.5	55.4	20.9	58.8	46.50	21.3	77	76.52	30.46	69	86.00	30	35.25	93.23	186.5		
85.3	165	46.39	32	73.06	107.96	34.39	51.5	55.4	20.9	58.8	46.50	21.3	77	76.52	30.46	69	86.00	30	34.93	90.06	2882.0		
87.4	155	45.34	234	73.58	105.18	34.11	51.5	55.4	20.9	58.8	46.50	21.3	77	76.52	30.46	69	86.00	30	35.77	88.18	20635.1		
86.7	145	43.6	543	73.41	102.40	33.64	51.5	55.4	20.9	58.8	46.50	21.3	77	76.52	30.46	69	86.00	30	35.49	85.07	46193.8		
86.3	135	41.93	729	73.31	99.62	33.20	51.5	55.4	20.9	58.8	46.50	21.3	77	76.52	30.46	69	86.00	30	35.33	82.08	59839.3		
87.2	125	40.58	698	73.53	96.84	32.84	51.5	55.4	20.9	58.8	46.50	21.3	77	76.52	30.46	69	86.00	30	35.69	79.67	55609.0		
86.5	115	38.84	662	73.36	94.06	32.37	51.5	55.4	20.9	58.8	46.50	21.3	77	76.52	30.46	69	86.00	30	35.41	76.56	50680.3		
88.3	105	37.71	493	73.81	91.28	32.07	51.5	55.4	20.9	58.8	46.50	21.3	77	76.52	30.46	69	86.00	30	36.14	74.53	36745.7		
86.2	95	35.62	342	73.28	88.50	31.51	51.5	55.4	20.9	58.8	46.50	21.3	77	76.52	30.46	69	86.00	30	35.29	70.80	24212.3		
84.6	85	33.66	355	72.88	85.72	30.98	51.5	55.4	20.9	58.8	46.50	21.3	77	76.52	30.46	69	86.00	30	34.64	67.29	23887.9		
74.6	75	29.63	656	74.6	75	29.63	51.5	55.4	20.9	58.8	46.50	21.3	77	76.52	30.46	69	86.00	30	37.42	58.27	38226.9		
70.4	65	27.04	1213	70.4	65	27.04	51.5	55.4	20.9	58.8	46.50	21.3	77	76.52	30.46	69	86.00	30	30.62	40.98	49714.2		
66.8	55	24.6	1322	66.8	55	24.6	51.5	55.4	20.9	58.8	46.50	21.3	77	76.52	30.46	69	86.00	30	24.79	24.70	32650.1		
63.3	45	22.19	1144	63.3	45	22.19	59	45	21.15	59	45	21.15	77	76.52	30.46	77	76.52	30.46	6.97	6.94	7941.6		
59.4	35	19.7	315	59.4	35	19.7	59.4	35	19.7	59.4	35	19.7	77	76.52	30.46	77	76.52	30.46	0.00	0.00	0.0		
64.9	25	19.47	17	64.9	25	19.47	59	25	18	59	25	18	77	76.52	30.46	77	76.52	30.46	9.56	9.81	166.8		
80.8	15	21.75	2	80.8	15	21.75	59	15	16.5	59	15	16.5	77	76.52	30.46	77	76.52	30.46	35.32	35.04	70.1		
																					449737		
Summer Monsoon	110	74.23	38.17	0	79.21	82.73	32.19	51.5	55.4	20.9	58.8	46.50	21.3	77	76.52	30.46	69	86.00	30	44.89	75.36		
	95	152	46.79	0	75.47	104.35	34.50	51.5	55.4	20.9	58.8	46.50	21.3	77	76.52	30.46	69	86.00	30	38.84	90.78		

449737



Option V

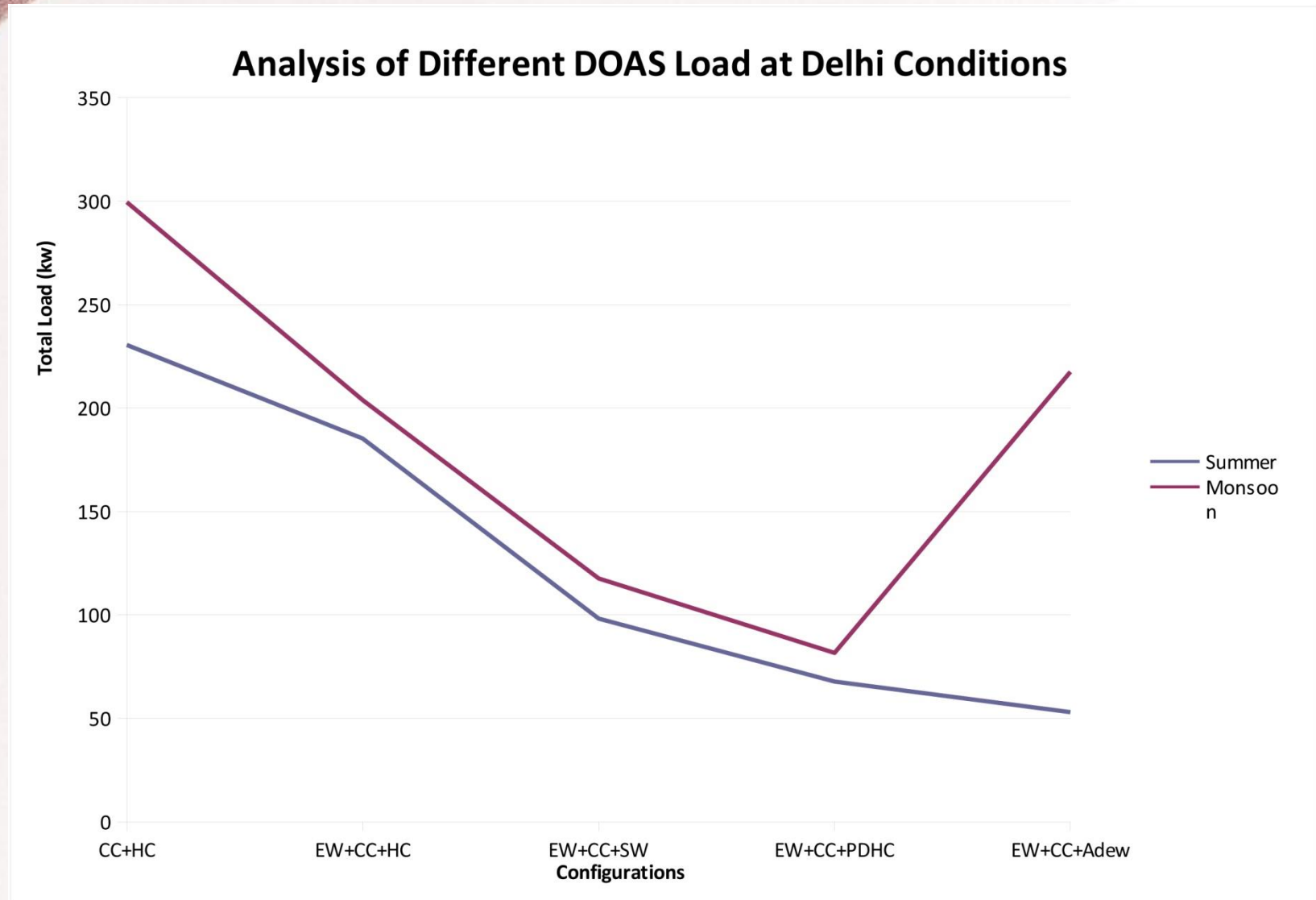
Schedule of Heat Recovery Wheel, Cooling Coil & Active Desiccant Wheel



Air Flow (cfm):			Supply 18000	Return 16200																						
1			Freq. Hours/year	2			3			4			5			6			Cooling Coil		Heater Load (Kw)	Coil Capacity (tons/hr)	Heater Load (Kw/hr)			
Outdoor Air Conditions				Off Wheel Air Conditions			Off coil Conditions			Supply air Conditions			Return air Conditions			Off Heater Conditions			Sensible	Total Load (TR)						
DBT °F	gr/lbs	Btu/lbs		DBT °F	gr/lbs	Btu/lbs	DBT °F	gr/lbs	Btu/lbs	DBT °F	gr/lbs	Btu/lbs	DBT °F	gr/lbs	Btu/lbs	DBT °F	gr/lbs	Btu/lbs	Latent	TR						
85.3	185	49.53	1	79.07	106.68	35.57	55	63	22.98	75.8	46.00	25.39	77	76.52	30.46	122	185.00	58.81	38.99	84.04	208.9	84.0	208.9			
86.1	175	48.16	2	79.27	103.90	35.20	55.5	64.2	23.28	76.8	45.85	25.6	77	76.52	30.46	122	175.00	57.21	38.50	79.59	204.3	159.2	408.6			
85.3	165	46.39	32	79.07	101.12	34.73	56	65.5	23.6	77.9	45.71	25.85	77	76.52	30.46	122	165.00	55.62	37.37	74.29	208.9	2377.2	6683.4			
87.4	155	45.34	234	79.59	98.34	34.45	57	67.9	24.21	79.3	46.13	26.25	77	76.52	30.46	122	155.00	54	36.60	68.34	196.9	15991.0	46075.5			
86.7	145	43.6	543	79.42	95.56	33.98	57.5	69.13	24.53	80.7	46.13	26.6	77	76.52	30.46	122	145.00	52.43	35.50	63.09	200.9	34257.3	109082.0			
86.3	135	41.93	729	79.32	92.78	33.53	58	70.4	24.85	81.9	45.78	26.6	77	76.52	30.46	122	135.00	50.84	34.53	57.97	203.2	42256.8	148106.5			
87.2	125	40.58	698	79.54	90.00	33.17	55.3	63.8	23.2	70.5	45.80	24.1	77	76.52	30.46	115	125.00	47.5	39.27	66.56	158.2	46461.8	110427.9			
86.5	115	38.84	662	79.37	87.22	32.71	55.3	63.8	23.2	70.3	45.90	24	77	76.52	30.46	112	115.00	45.1	38.99	63.45	145.1	42004.9	96067.5			
88.3	105	37.71	493	79.81	84.44	32.40	55.3	63.8	23.2	69.97	46.10	24	77	76.52	30.46	108	105.00	42.6	39.71	61.43	112.1	30285.0	55270.3			
86.2	95	35.62	342	79.29	81.66	31.84	55.3	63.8	23.2	69.88	46.00	23.9	77	76.52	30.46	105	95.00	40.2	38.87	57.69	107.0	19730.4	36590.0			
84.6	85	33.66	355	78.89	78.88	31.32	55.3	63.8	23.2	69.62	46.10	23.9	77	76.52	30.46	101	85.00	37.7	38.22	54.18	93.3	19235.7	33132.2			
74.6	75	29.63	656	74.6	75	29.63	55.3	63.8	23.2	69.42	46.10	23.9	77	76.52	30.46	97	75.00	35.1	31.27	42.92	127.5	28155.7	83623.9			
70.4	65	27.04	1213	70.4	65	27.04	55.4	65	23.4	70.38	45.8	24	77	76.52	30.46	95	65.00	32.4	21.30	24.30	140.0	29472.3	169814.3			
66.8	55	24.6	1322	66.8	55	24.6	56	55	22	63.43	55	27.3	77	76.52	30.46	78	55.00	27.3	17.50	17.36	63.7	22943.3	84261.2			
63.3	45	22.19	1144	63.3	45	22.19	59	45	21.15	59	45	21.15	77	76.52	30.46	63.3	45.00	22.19	6.97	6.94	0.0	7941.6	0.0			
59.4	35	19.7	315	59.4	35	19.7	59.4	35	19.7	59.4	35	19.7	77	76.52	30.46	59.4	35.00	19.7	0.00	0.00	0.0	0.0	0.0			
64.9	25	19.47	17	64.9	25	19.47	59	25	18	59	25	18	77	76.52	30.46	64.9	25.00	19.47	9.56	9.81	0.0	166.8	0.0			
80.8	15	21.75	2	80.8	15	21.75	59	15	16.5	59	15	16.5	77	76.52	30.46	80.8	15.00	21.75	35.32	35.04	0.0	70.1	0.0			
																							341593		979752	
110	74.23	38.17	0	85.22	75.88	32.53	56.2	65.9	23.7	72.62	45.71	24.6	77	76.52	30.46	110	74.23	38.17	47.01	58.92	0.0					
95	152	46.79	0	81.48	97.50	34.84	57	67.88	24.21	79.7	46.00	26.33	77	76.52	30.46	122	152.00	53.5	39.66	70.93	153.7					



System Load at Delhi Condition



Date : March 15, 2016

Analysis of different DOAS System at Delhi Conditions

S.No.	Configuration	Coil Load (tons)		Coil Load (kw)		Heater Load (kw)		Total Load (kw)	
		Summer	Monsoon	Summer	Monsoon	Summer	Monsoon	Summer	Monsoon
1	CC+HC	132.8	190.4	159.4	228.4	71.1	71.1	231	300
2	EW+CC+HC	95.2	110.6	114.2	132.7	71.1	71.1	185	204
3	EW+CC+SW	81.9	98.1	98.2	117.7	0.0	0.0	98	118
4	EW+CC+PDHC	75.4	90.8	67.8	81.7	0.0	0.0	68	82
5	EW+CC+Adew	58.9	70.9	53.0	63.8	0.0	153.7	53	217