

Date 4th Sep 2023

Project Hevacomp Upper Project no. -
 Engineer JK Checked by Date checked
 File C:\Users\joe.k\MEP Design\Projects - Documents\22_023 Upper & Lower Campfield - Design\1 Mechanical Services

Design basis

Location Manchester Design day 15 July No external shading is considered
 Resultant room design temperatures used, no room heat losses are added to project totals
 Supply air temp 12 °C Central plant fresh air 12 l/s/person
 No fixed temperature air is included
 Fins are considered
 Outside 29 dry bulb/19.1 wet bulb, Room temperatures not allowed to rise

Rooms included : All rooms selected

Summary results

Room ref.	No. off	Peak room loads (Watt)			Time of peak	Maximum temp.	Air flow (m³/s)
		Sensible	Latent	Total			
G00	1	17747	-136	17611	18.00	23	1.3444
G01	1	959	-2	957	16.00	23	0.0727
G02	1	583	-1	581	16.00	23	0.0441
G03	1	84	0	84	16.00	23	0.0064
G04	1	489	-1	488	16.00	23	0.0371
G05	1	599	-1	597	16.00	23	0.0454
G06	1	259	-1	258	16.00	23	0.0196
G07	1	770	-2	768	16.00	23	0.0583
G08	1	9954	-458	9496	12.00	23	0.7574
G09	1	4197	-79	4118	11.00	23	0.3179
G10	1	308	-1	307	16.00	23	0.0233
G11	1	308	-1	307	16.00	23	0.0233
G12	1	308	-1	307	16.00	23	0.0233
G13	1	400	-4	395	18.00	23	0.0303
G14	1	744	-4	741	17.00	23	0.0564
G15	1	437	-5	433	18.00	23	0.0331
G16	1	323	-1	323	16.00	23	0.0245
G17	1	205	0	205	16.00	23	0.0156
G18	1	205	0	205	16.00	23	0.0156
G19	1	113	0	113	16.00	23	0.0085
G20	1	111	0	110	16.00	23	0.0084
G21	1	19857	-332	19524	13.00	23	1.5043
G22	1	1531	-3	1527	16.00	23	0.1162
G23	1	302	-1	301	16.00	23	0.0229
G24	1	200	0	199	16.00	23	0.0151
G25	1	947	-2	945	16.00	23	0.0719
G26	1	22045	-53	21992	17.00	23	1.6701
G27	1	3344	-8	3336	16.00	23	0.2533
G28	1	2242	-5	2236	16.00	23	0.1698
G29	1	5844	-14	5831	16.00	23	0.4427
M00	1	13436	-32	13403	16.00	23	1.0179
M01	1	306	-2	304	16.00	23	0.0232
M02	1	3967	-52	3915	10.00	23	0.3006

Project Hevacomp Upper

Room ref.	No. off	Peak room loads (Watt)			Time of peak	Maximum temp.	Air flow (m³/s)
		Sensible	Latent	Total			
M03	1	4932	-269	4663	11.00	23	0.3736
M04	1	11680	-273	11407	11.00	23	0.8849
M05	1	992	-5	987	16.00	23	0.0752
M06	1	146	-1	145	16.00	23	0.0111
M07	1	331	-7	324	18.00	23	0.0251
M08	1	25903	-85	25817	15.00	23	1.9623
M09	1	27804	-172	27632	18.00	23	2.1064
M10	1	1790	-9	1781	16.00	23	0.1356
M11	1	1967	-9	1958	16.00	23	0.149
M12	1	8301	-43	8257	16.00	23	0.6288

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Project total results

* Sensible fresh air load excluded

Sun time	Outside temp	Building loads		Fresh air loads		Plant total loads		
(hrs)	(°C)	Sensible (kW)	Latent (kW)	Sensible (kW)	Latent (kW)	Sensible (kW)	Latent (kW)	Total (kW)
1.00	15.3	0.1	0	0	0	0.1	0	0.1
2.00	13.7	0.03	0	0	0	0.03	0	0.03
3.00	12.6	0	0	0	0	0	0	0
4.00	11.9	0	0	0	0	0	0	0
5.00	11.7	0	0	0	0	0	0	0
6.00	12.2	0	0	0	0	0	0	0
7.00	13.2	6.6	0	0	0	6.6	0	6.6
8.00	14.9	24.91	0	0	0	24.91	0	24.91
9.00	17	83	0	0	0	83	0	83
10.00	19.3	104.31	0	0	0	104.31	0	104.31
11.00	21.7	125.13	0	0	0	125.13	0	125.13
12.00	24.1	140.7	0	0	0	140.7	0	140.7
13.00	26.1	150.37	0	0	0	150.37	0	150.37
14.00	27.7	154.05	0	0	0	154.05	0	154.05
15.00	28.7	165.29	0	0	0	165.29	0	165.29
16.00	29	173.69	0	0	0	173.69	0	173.69
17.00	28.7	174.06	0	0	0	174.06	0	174.06 peak
18.00	28	166.55	0	0	0	166.55	0	166.55
19.00	26.8	102.66	0	0	0	102.66	0	102.66
20.00	25.2	87.61	0	0	0	87.61	0	87.61
21.00	23.3	62.62	0	0	0	62.62	0	62.62
22.00	21.2	28.8	0	0	0	28.8	0	28.8
23.00	19.1	6.66	0	0	0	6.66	0	6.66
24.00	17.1	0.56	0	0	0	0.56	0	0.56

Peak coincident plant load 174.06 kW at 17.00 hrs (67.8 W/m² and 9.6 W/m³)
 Supply air flow rate 14.9254m³/s Fresh air flow rate 0 m³/s (Total 0 occupants)