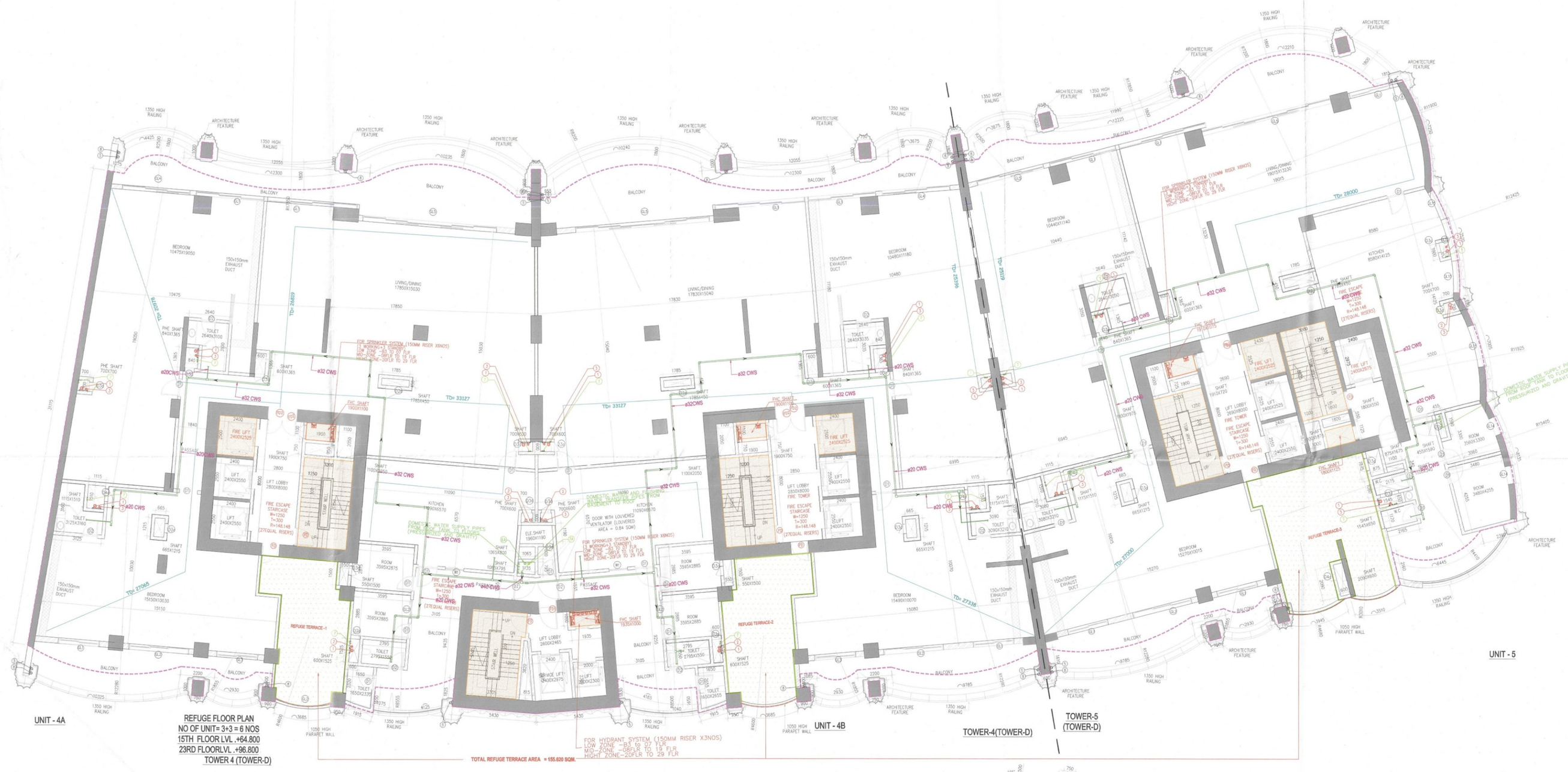
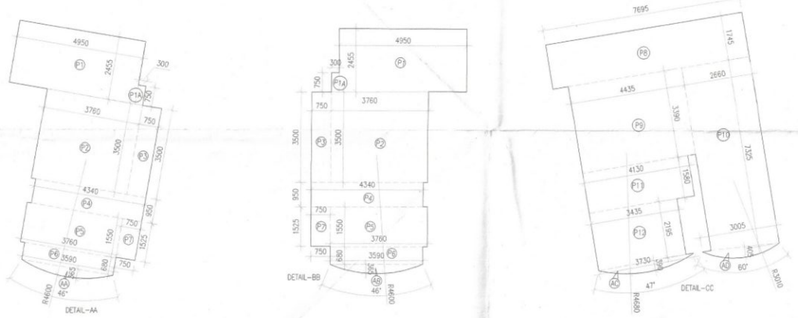
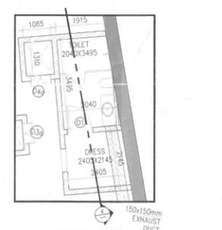


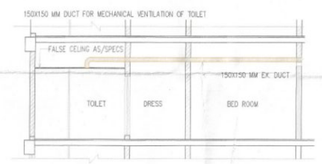
REFUGE FLOOR PLAN
NO OF UNIT= 3+3 = 6 NOS
15TH FLOOR LVL .+64.800
23RD FLOOR LVL .+96.600
TOWER 4 (TOWER-D)

TOTAL REFUGE TERRACE AREA = GROSS (R1) + GROSS (R2) = 145.409 + 3.581 = 148.9

GROSS AREA OF TYPICAL FLOOR (TOWER -4&5)	=	2976.100	SQM	
GROSS AREA OF REFUGE FLOOR (TOWER -4&5)	=	2833.200	SQM	
TOTAL	=	5809.300	SQM	
REFUGE AREA REQUIRED	=	5809.300 /30 X 2	=	ADDITIONAL SPACE TO ACCOMMODATE ONE WHEEL CHAIR SPACE
	=	193.10	SQM	
REFUGE AREA PROVIDED	=	148.914	SQM	







Location	Qty.	Height	Length	Design CFM	SELECTED EXHAUST FAN	JOB NO.	DIAMETER OF DUCT SIZE
TYPICAL MECHANICAL VENTILATION FOR AC	1	0.3	0.3	0.3	Lafant [mm]	Fc [Hz [mm]	
1.Toilet	8	0.3	0.3	480	EOT #130 (Ac) cassette ceiling fan	50/60	250/0.37 DUCT 0.130

AREA CALCULATION OF REFUGE FLOOR (TOWER-4&5)

GROSS-A NO.	A		B		C				=	AREA OF T (B2-A+B-B2-C)		Area	
1	1.075	+	31.115	+	31.135	/	2	=	31.6625	279.792		16.724	SQM
2	10.020	+	32.195	+	31.135	/	2	=	36.63	24238.388		155.680	SQM
3	3.870	+	32.415	+	32.105	/	2	=	34.195	3857.711		62.110	SQM
4	12.095	+	33.720	+	32.415	/	2	=	39.095	37958.210		194.824	SQM
5	2.200	+	33.170	+	32.640	/	2	=	34.005	1232.700		35.110	SQM
5A	2.835	+	33.170	+	32.640	/	2	=	34.2225	1800.499		42.432	SQM
6	9.585	+	35.055	+	32.640	/	2	=	38.84	24148.959		155.398	SQM
7	2.505	+	35.055	+	36.325	/	2	=	36.9425	1482.797		38.507	SQM
8	1.085	+	36.325	+	35.840	/	2	=	36.625	308.539		17.508	SQM
9	6.730	+	36.940	+	33.780	/	2	=	38.185	12287.048		110.847	SQM
10	2.220	+	6.730	+	5.095	/	2	=	7.0225	19.014		4.361	SQM
11	1.805	+	5.110	+	4.540	/	2	=	5.0275	12.739		3.569	SQM
12	1.805	+	0.900	+	0.745	/	2	=	1.625	0.921		0.144	SQM
13	0.375	+	1.070	+	0.900	/	2	=	1.2725	0.067		0.259	SQM
14	0.900	+	1.070	+	0.955	/	2	=	1.4625	0.164		0.405	SQM
15	0.230	+	0.955	+	0.745	/	2	=	0.995	0.002		0.040	SQM
16	0.345	+	0.950	+	0.980	/	2	=	1.0875	0.014		0.116	SQM
17	0.950	+	0.980	+	0.240	/	2	=	1.085	0.013		0.114	SQM
17a	0.960	+	5.110	+	5.095	/	2	=	5.1325	0.022		0.148	SQM
18	1.940	+	1.690	+	2.220	/	2	=	2.905	2.410		1.552	SQM
19	5.135	+	31.805	+	33.780	/	2	=	35.35	6020.400		77.591	SQM
20	10.520	+	31.385	+	31.805	/	2	=	36.855	28810.718		169.740	SQM
21	10.520	+	5.730	+	5.730	/	2	=	10.99	142.911		11.955	SQM
22	5.730	+	5.430	+	1.825	/	2	=	6.4625	34.501		4.955	SQM
23	5.430	+	1.830	+	5.730	/	2	=	6.485	34.685		4.998	SQM
24	6.135	+	32.875	+	31.385	/	2	=	34.7475	6132.839		78.311	SQM
25	3.365	+	33.645	+	32.975	/	2	=	34.9925	3008.723		54.852	SQM
25A	4.450	+	35.055	+	33.645	/	2	=	38.575	5232.855		72.338	SQM
26	1.915	+	2.220	+	1.850	/	2	=	2.8625	2.383		1.537	SQM
27	2.220	+	6.730	+	5.095	/	2	=	7.0225	19.014		4.361	SQM
28	0.950	+	4.220	+	5.095	/	2	=	5.1325	0.735		0.857	SQM
29	0.950	+	0.995	+	0.300	/	2	=	1.125	0.020		0.142	SQM
30	0.950	+	0.995	+	0.245	/	2	=	1.095	0.013		0.116	SQM
31	4.220	+	3.590	+	1.605	/	2	=	4.7075	7.857		2.821	SQM
32	0.900	+	0.745	+	1.655	/	2	=	1.625	0.021		0.144	SQM
33	0.230	+	0.745	+	0.955	/	2	=	0.995	0.002		0.040	SQM
34	0.900	+	1.070	+	0.955	/	2	=	1.4625	0.164		0.405	SQM
35	0.900	+	1.070	+	0.575	/	2	=	1.2725	0.067		0.259	SQM
36	2.655	+	36.250	+	35.055	/	2	=	38.97	1750.200		41.835	SQM
37	9.585	+	36.250	+	33.170	/	2	=	39.5025	24341.222		156.017	SQM
38	2.290	+	33.720	+	33.170	/	2	=	34.545	1267.503		35.602	SQM
39	12.095	+	32.825	+	33.720	/	2	=	39.3	38985.956		198.687	SQM
40	9.530	+	32.415	+	32.825	/	2	=	37.385	23600.531		153.625	SQM
40A	0.600	+	32.825	+	32.825	/	2	=	33.125	96.985		9.847	SQM
41	3.355	+	31.990	+	32.825	/	2	=	34.085	2764.906		52.582	SQM
42	9.530	+	33.385	+	31.990	/	2	=	37.4425	25236.564		152.432	SQM
43	2.910	+	33.385	+	32.620	/	2	=	34.3475	1961.124		39.511	SQM
44	2.200	+	33.090	+	32.620	/	2	=	33.855	1245.126		35.286	SQM
44A	2.655	+	33.090	+	33.795	/	2	=	34.755	1862.830		42.481	SQM
44B	1.085	+	33.795	+	34.145	/	2	=	34.5075	302.094		17.380	SQM
44C	3.850	+	34.145	+	35.435	/	2	=	36.625	3504.290		59.197	SQM
44D	3.850	+	4.275	+	1.545	/	2	=	4.735	7.539		2.746	SQM
44E	0.850	+	4.275	+	4.085	/	2	=	4.805	2.987		1.723	SQM
44F	0.575	+	4.085	+	3.830	/	2	=	4.245	1.034		1.017	SQM
44G	0.470	+	0.885	+	0.790	/	2	=	1.0525	0.031		0.178	SQM
44H	0.525	+	1.000	+	1.130	/	2	=	1.3275	0.069		0.262	SQM
44J	0.885	+	1.130	+	0.575	/	2	=	1.295	0.063		0.251	SQM
45	3.355	+	34.345	+	35.455	/	2	=	36.5775	3045.258		55.184	SQM
46	4.130	+	35.360	+	34.345	/	2	=	38.9175	4849.802		69.641	SQM
47	11.990	+	31.730	+	35.360	/	2	=	39.54	35561.951		188.579	SQM
48	8.275	+	33.905	+	31.730	/	2	=	36.955	18890.344		129.983	SQM
49	10.860	+	33.905	+	29.500	/	2	=	37.1275	23668.448		154.484	SQM
50	1.815	+	29.550	+	29.490	/	2	=	30.4275	718.210		26.792	SQM
51	4.130	+	1.545	+	4.270	/	2	=	4.9725	10.087		3.176	SQM
52	4.270	+	3.315	+	2.180	/	2	=	4.8725	12.402		3.522	SQM
									TOTAL	=		2948.200	SQM

TOTAL FAR AREA OF REFUGE FLOOR (TOWER-4&5)	=	GROSS – A	+	GROSS – B	+	GROSS – C	-	GROSS – D	-	GROSS –E	-	GROSS –F	+	GROSS –R1	-	GROSS –R2
	=	2948.200	+	88.544	+	10.626	-	25.159	-	132.180	-	91.864	-	145.409	-	3.581
GROSS –1	=	2855.138	SQM													

AREA CALCULATION OF REFUGE FLOOR (TOWER-4&5)

GROSS –E									
E1	3	X	1.115	X	1.610	=	5.261	SQM	
E2	3	X	2.085	X	1.215	=	7.614	SQM	
E3	3	X	0.850	X	1.385	=	3.532	SQM	
E4	3	X	2.085	X	1.215	=	7.614	SQM	
E5	4	X	2.400	X	2.550	=	12.240	SQM	
E6	4	X	2.400	X	2.550	=	24.480	SQM	
E7	1	X	0.850	X	1.085	=	2.637	SQM	
E8	1	X	1.900	X	1.130	=	2.236	SQM	
E9	1	X	1.900	X	1.130	=	2.236	SQM	
E10	1	X	1.130	X	2.250	=	2.225	SQM	
E10	1	X	1.190	X	1.450	=	2.215	SQM	
E11	1	X	0.850	X	1.085	=	1.920	SQM	
E12	2	X	0.900	X	1.535	=	1.935	SQM	
E13	2	X	0.900	X	1.535	=	1.935	SQM	
E14	1	X	2.400	X	2.550	=	6.120	SQM	
E15	1	X	2.400	X	2.550	=	6.120	SQM	
E16	1	X	1.900	X	1.130	=	2.236	SQM	
E17	1	X	1.900	X	1.130	=	2.236	SQM	
E18	1	X	2.400	X	2.550	=	6.120	SQM	
E19	1	X	2.400	X	2.550	=	6.120	SQM	
E20	1	X	1.900	X	1.130	=	2.236	SQM	
E21	1	X	1.900	X	1.130	=	2.236	SQM	
E22	1	X	2.400	X	2.550	=	6.120	SQM	
E23	1	X	2.400	X	2.550	=	6.120	SQM	
E24	1	X	1.900	X	1.130	=	2.236	SQM	
E25	1	X	1.900	X	1.130	=	2.236	SQM	
E26	1	X	2.400	X	2.550	=	6.120	SQM	
E27	1	X	2.400	X	2.550	=	6.120	SQM	
E28	1	X	1.900	X	1.130	=	2.236	SQM	
E29	1	X	1.900	X	1.130	=	2.236	SQM	
E30	1	X	2.400	X	2.550	=	6.120	SQM	
E31	1	X	2.400	X	2.550	=	6.120	SQM	
E32	1	X	1.900	X	1.130	=	2.236	SQM	
E33	1	X	1.900	X	1.130	=	2.236	SQM	
E34	1	X	1.045	X	0.850	=	1.004	SQM	
E35	1	X	1.045	X	0.850	=	1.004	SQM	
E36	1	X	0.850	X	1.085	=	1.920	SQM	
					TOTAL	=	132.180		

STAIRCASE AREA									
GROSS –F									
F11	1	X	2.300	X	3.750	=	18.400	SQM	
F12	1	X	2.250	X	3.600	=	18.200	SQM	
F12a	1	X	2.250	X	1.500	=	3.400	SQM	
F13	1	X	2.250	X	3.750	=	18.400	SQM	
F14	1	X	2.300	X	3.750	=	17.625	SQM	
F15	1	X	2.300	X	3.750	=	17.625	SQM	
					TOTAL	=	91.864	SQM	

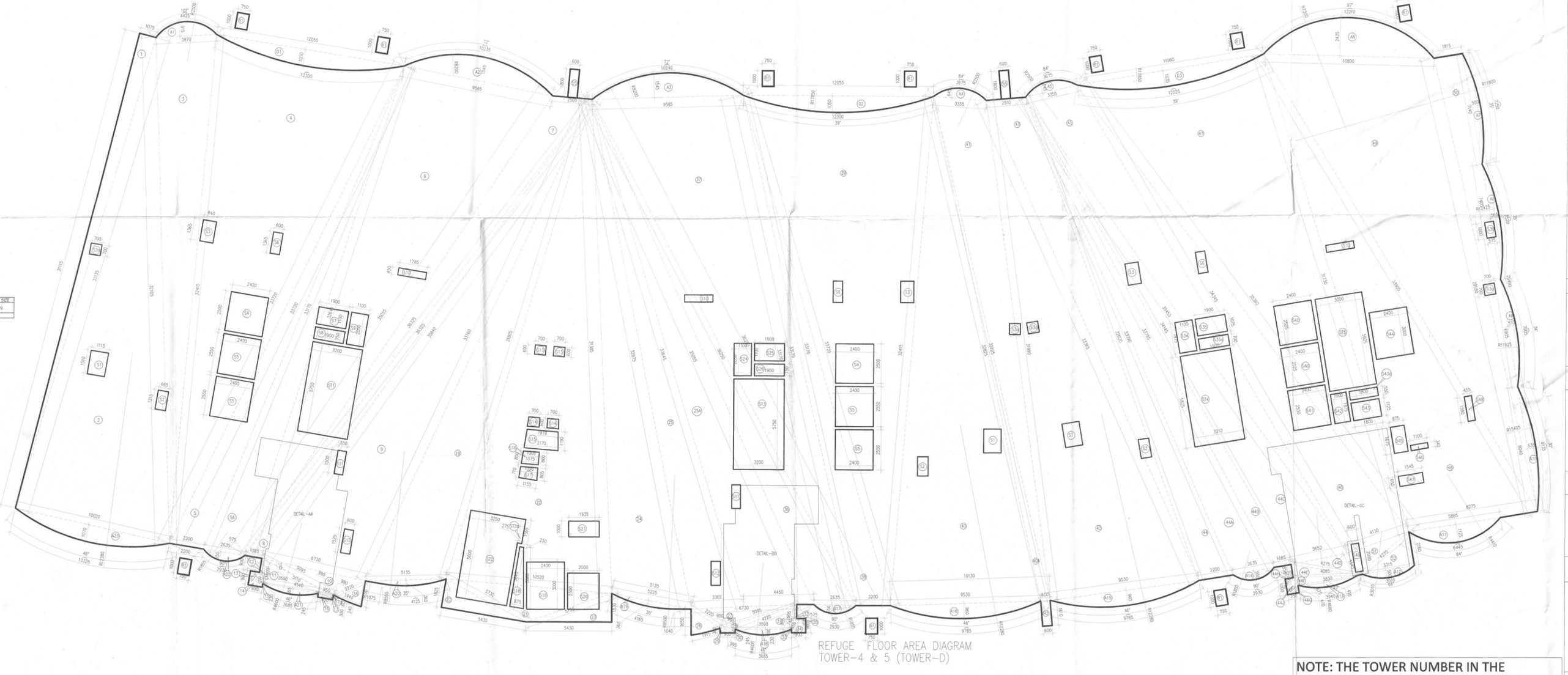
TOTAL BUILT-UP AREA OF REFUGE FLOOR (TOWER-4)	=	GROSS – 1	+	GROSS –F			
	=	2855.138	+	91.864			
			=				
	GROSS –2	=	2747.041	SQM			
NON FAR AREA OF REFUGE FLOOR (TOWER-4)	=	GROSS – 2	-	GROSS – 1			
	=	2747.041	-	2855.138			
	GROSS –3	=	91.904	SQM			

ADDITIONAL AREA

GROSS –C									
P1	10	X	1.500	X	0.750	=	7.500	SQM	
P2	1	X	0.800	X	1.610	=	1.288	SQM	
P3	1	X	0.800	X	1.610	=	1.288	SQM	
					TOTAL	=	10.076	SQM	

DEDUCTION AREA									
GROSS –R1									
P-1	2	X	0.950	X	1.455	=	2.765	SQM	
P-2	2	X	1.100	X	2.750	=	6.050	SQM	
P-3	2	X	1.750	X	3.500	=	12.250	SQM	
P-4	1	X	2.750	X	3.500	=	9.625	SQM	
P-5	1	X	4.300	X	2.050	=	8.815	SQM	
P-6	1	X	2.750	X	1.550	=	11.902	SQM	
P-7	1	X	2.750	X	2.550	=	4.862	SQM	
P-8	1	X	3.750	X	1.125	=	2.109	SQM	
P-9	1	X	1.605	X	1.125	=	1.806	SQM	
P-10	1	X	2.410	X	1.350	=	14.035	SQM	
P-11	1	X	2.850	X	7.125	=	19.406	SQM	
P-12	1	X	1.130	X	1.080	=	8.125	SQM	
P-13	1	X	4.430	X	2.125	=	7.540	SQM	
					TOTAL	=	145.409	SQM	

ADDITIONAL AREA CALCULATION OF (TOWER-4&5)																			
GROSS – B																			
a1	3.14	X	2.500	X	2.500	X	101	/	360	-	0.5	X	2.500	-	0.915	X	3.870	=	2.439	SQM
a2	3.14	X	8.200	X	8.200	X	72	/	360	-	0.5	X	8.200	-	1.545	X	9.585	=	10.333	SQM
a3	3.14	X	8.200	X	8.200	X	72	/	360	-	0.5	X	8.200	-	1.545	X	9.585	=	10.333	SQM
a4	3.14	X	2.500	X	2.500	X	84	/	360	-	0.5	X	2.500	-	0.645	X	3.355	=	1.467	SQM
a5	3.14	X	2.500	X	2.500	X	84	/	360	-	0.5	X	2.500	-	0.645	X	3.355	=	1.467	SQM
a6	3.14	X	7.200	X	7.200	X	97	/	360	-	0.5	X	7.200	-	2.435	X	10.800	=	18.129	SQM
a7	3.14	X	11.900	X	11.900	X	35	/	360	-	0.5	X	11.900	-	0.550	X	7.140	=	2.711	SQM
a8	3.14	X	12.425	X	12.425	X	35	/	360	-	0.5	X	12.425	-	0.595	X	7.405	=	3.217	SQM
a9	3.14	X	11.925	X	11.925	X	34	/	360	-	0.5	X	11.925	-	0.510	X	6.905	=	2.762	SQM
a10	3.14	X	15.405	X	15.405	X	30	/	360	-	0.5	X	15.405	-	0.535	X	8.040	=	2.320	SQM
a11	3.14	X	4.410	X	4.410	X	84	/	360	-	0.5	X	4.410	-	1.125	X	5.985	=	4.563	SQM
a12	3.14	X	3.010	X	3.010	X	66	/	360	-	0.5	X	3.010	-	0.505	X	3.315	=	1.055	SQM
a13	3.14	X	4.680	X	4.680	X	47	/	360	-	0.5	X	4.680	-	0.410	X	3.630	=	0.802	SQM
a14	3.14	X	1.855	X	1.855	X	90	/	360	-	0.5	X	1.855	-	0.550	X	2.635	=	0.982	SQM
a15	3.14	X	12.280	X	12.280	X	48	/	360	-	0.5	X	12.280	-	0.960	X	9.530	=	6.564	SQM
a16	3.14	X	12.280	X	12.280	X	48	/	360	-	0.5	X	12.280	-	0.960	X	9.530	=	6.564	SQM
a17	3.14	X	1.855	X	1.855	X	90	/	360	-	0.5	X	1.855	-	0.550	X	2.635	=	0.982	SQM
a18	3.14	X	4.600	X	4.600	X	48	/	360	-	0.5	X	4.600	-	0.365	X	3.590	=	0.888	SQM
a19	3.14	X	8.500	X	8.500	X	35	/	360	-	0.5	X	8.500	-	0.365	X	5.225	=	0.804	SQM
a20	3.14	X	8.555	X	8.555	X	35	/	360	-	0.5	X	8.555	-	0.360	X	5.135	=	1.302	SQM
a21	3.14	X	4.600	X	4.600	X	48	/	360	-	0.5	X	4.600	-	0.365	X	3.590	=	0.888	SQM
a22	3.14	X	1.855	X	1.855	X	90	/	360	-	0.5	X	1.855	-	0.550	X	2.635	=	0.982	SQM
a23	3.14	X	12.280	X	12.280	X	48	/	360	-	0.5	X	12.280	-	1.070	X	10.020	=	6.972	SQM
																	TOTAL	=	**88.544**	SQM
DEDUCTION AREA																			
GROSS-D																			
D1	3.14	X	17.850	X	17.850	X	39	/	360	-	0.5	X	17.850	-	1.050	X	12.055	=	8.234	SQM
D2	3.14	X	17.850	X	17.850	X	39	/	360	-	0.5	X	17.850	-	1.050	X	12.055	=	8.234	SQM
D3	3.14	X	17.850	X	17.850	X	39	/	360	-	0.5	X	17.850	-	1.035	X	11.990	=	8.690	SQM
																	TOTAL	=	**25.159**	SQM
GROSS-R2																			
AA	3.14	X	4.600	X	4.600	X	46	/	360	-	0.5	X	4.600	-	0.365	X	3.590	=	0.888	SQM
AB	3.14	X	4.600	X	4.600	X	46	/	360	-	0.5	X	4.600	-	0.365	X	3.590	=	0.888	SQM
AC	3.14	X	4.680	X	4.680	X	47	/	360	-	0.5	X	4.680	-	0.360	X	3.730	=	0.978	SQM
AD	3.14	X	3.010	X	3.010	X	60	/	360	-	0.5	X	3.010	-	0.405	X	3.005	=	0.827	SQM
																	TOTAL	=	**3.581**	SQM



REFUGE FLOOR AREA DIAGRAM
TOWER-4 & 5 (TOWER-D)

NOTE: THE TOWER NUMBER IN THE BRACKET IS THE PREVIOUS TOWER NUMBER.

D.T.P.(HQ) Member Secretary B.P.A.C. | D.T.P.(HQ) Member B.P.A.C. | D.T.P.(N) Chairman B.P.A.C.

D.T.P. (HQ) | D.T.P.(HQ) | D.T.P.(HQ) | D.T.P.(N) | D.T.P.(N)

JD. | P.A. | A.T.P.

Ram Avtar Bassi
JD(HQ)

Notes :-

1. BUILDING WILL BE DESIGNED (STRUCTURES) AS PER RELEVANT IS CODES FOR EARTH QUAKE RESISTANCE.

2. BUILDING HAS AUTOMATIC SPRINKLER SYSTEM ON ALL FLOORS.

3.THE BUILDING IS FULLY VENTILATED & CENTRALLY AIR CONDITIONED WITH 100% POWER BACKUP.

LEGEND :-

1	150M SOIL & WASTE COMBINE PIPE
2	150Ø WASTE O/T PIPE
3	150Ø ANTISPHONE PIPE
4	100Ø TERRACE RAIN WATER PIPE
5	DOMESTIC WATER SUPPLY DOWNTAKE PIPE
6	FLUSHING WATER SUPPLY DOWNTAKE PIPE
7	150M BALCONY RAIN WATER PIPE
8	DOMESTIC WATER SUPPLY RISER PIPE
9	FLUSHING WATER SUPPLY RISER PIPE
	GAUGE 65x65x5MM

DOOR SCHEDULE

DOOR NAME	SIZE	UNITS	UG	FIRE RATED
D1	1200 X 2400	240		
D1	1200 X 2400	240		
D1	1200 X 2400	240		
D2	1000 X 2400	240	2 HR	
D3	1200 X 2400	240	2 HR	
D4	900 X 2400	240	2 HR	
D4a	1200 X 1750	240		
D5	900 X 2400	240		
D6	900 X 2400	240		
D7	900 X 2400	240		

GLAZING SCHEDULE

GLAZING	SIZE	UNITS	UG
G1	1200 X 2400	240	
G1	1200 X 2400	240	
G1	1200 X 2400	240	