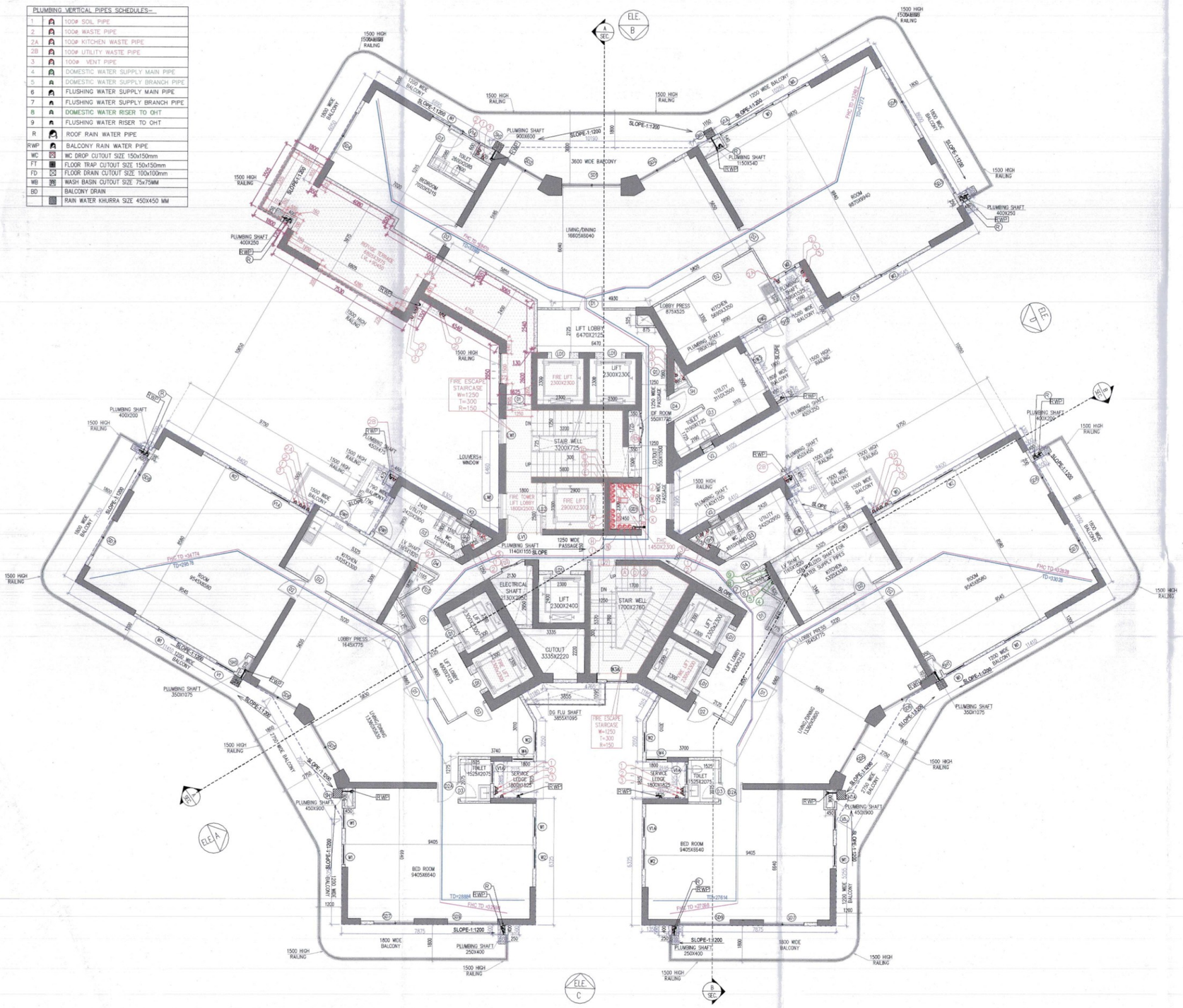
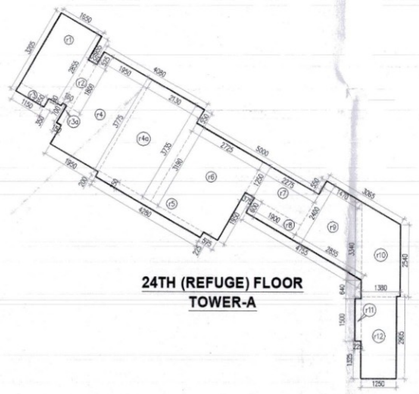
PLUMBING VERTICAL PIPES SCHEDULES:-		
1		100ø SOIL PIPE
2		100ø WASTE PIPE
2A		100ø KITCHEN WASTE PIPE
2B		100ø UTILITY WASTE PIPE
3		100ø VENT PIPE
4		DOMESTIC WATER SUPPLY MAIN PIPE
5		DOMESTIC WATER SUPPLY BRANCH PIPE
6		FLUSHING WATER SUPPLY MAIN PIPE
7		FLUSHING WATER SUPPLY BRANCH PIPE
8		DOMESTIC WATER RISER TO OHT
9		FLUSHING WATER RISER TO OHT
R		ROOF RAIN WATER PIPE
RWP		BALCONY RAIN WATER PIPE
WC		WC DROP CUTOUT SIZE 150x150mm
FT		FLOOR TRAP CUTOUT SIZE 150x150mm
FD		FLOOR DRAIN CUTOUT SIZE 100x100mm
WB		WASH BASIN CUTOUT SIZE 75x75MM
BD		BALCONY DRAIN
		RAIN WATER KHURRA SIZE 450X450 MM



24TH (REFUGE) FLOOR PLAN
TOWER-A
LVL. +90450
NO OF UNIT = 03



24TH (REFUGE) FLOOR
TOWER-A

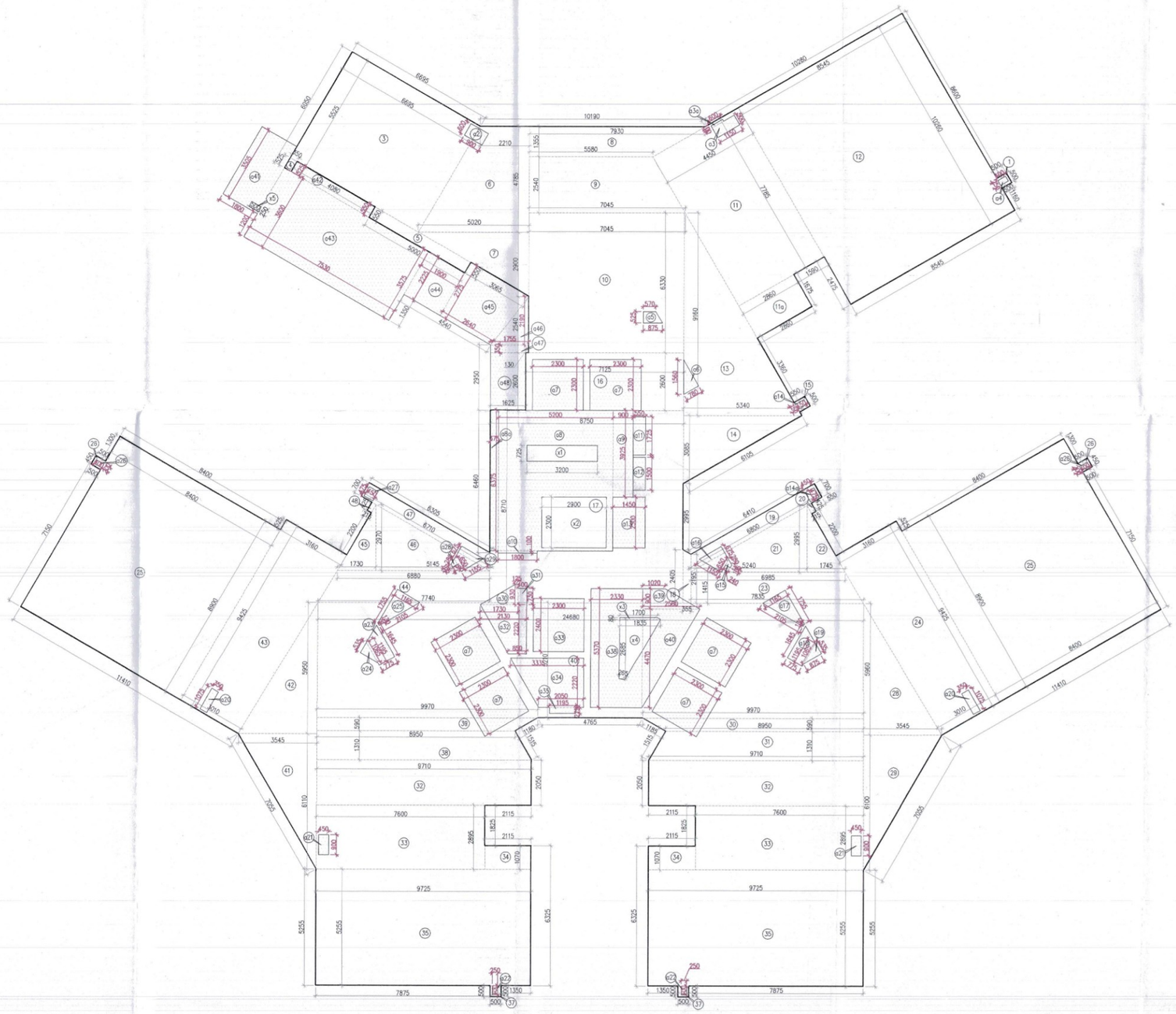
MAX 8 S.T.STEEL TYPICAL 8 REFUGE								
Tag		Width (MM)	Height (MM)	Sill (MM)	Lintel (MM)	DOOR TYPE	OPENING TYPE	LOCATION
SCHEDULE OF NON FIRE RATED DOORS								
D2		1050	2450	0	2450	WOODEN FLUSH DOOR	SINGLE LEAF DOOR	BEDROOMS
D2A		1050	2450	0	2450	WOODEN FLUSH DOOR (SUBFRAME)	SINGLE LEAF DOOR	BEDROOMS
D3		850	2450	0	2450	WOODEN FLUSH DOOR	SINGLE LEAF DOOR	TOILETS ENTRANCE
SCHEDULE OF WINDOWS								
W1A		1000	2100	600	2700	FIXED WINDOW / OPENABLE	FIXED PANEL OPENABLE + GLASS	TOILET
W1		1000	2100	600	2700	FIXED WINDOW / OPENABLE	FIXED PANEL OPENABLE + GLASS	MAIN / CLEAR FACADE
W2		1000	1650	900	2700	FIXED WINDOW / OPENABLE	FIXED PANEL OPENABLE + GLASS	BACK FACADE
W3A		1000	1650	900	2700	FIXED WINDOW / OPENABLE	FIXED PANEL OPENABLE + GLASS	STAIRCASE 2
W4		1050	1650	900	2700	OPENABLE	OPENABLE + GLASS	STUDY
SCHEDULE OF SLIDING DOORS								
SD1		2900	2700	0	2700	SLIDING DOOR, ALUMINUM + GLASS	SLIDING PANEL	LIVING AREA
SD2		2000	2700	0	2700	SLIDING DOOR, ALUMINUM + GLASS	SLIDING PANEL	DINING AREA
SD3		1800	2700	0	2700	SLIDING DOOR, ALUMINUM + GLASS	SLIDING PANEL	MASTER BEDROOM
SD4		2700	2700	0	2700	SLIDING DOOR, ALUMINUM + GLASS	SLIDING PANEL	BEDROOM 2
SD5		2800	2700	0	2700	SLIDING DOOR, ALUMINUM + GLASS	SLIDING PANEL	LIVING AREA
SD6		2200	2700	0	2700	SLIDING DOOR, ALUMINUM + GLASS	SLIDING PANEL	DINING AREA
SD7		2050	2700	0	2700	SLIDING DOOR, ALUMINUM + GLASS	SLIDING PANEL	MASTER BEDROOM
SD8		1765	2700	0	2700	SLIDING DOOR, ALUMINUM + GLASS	SLIDING PANEL	BEDROOM 3
SD9		2400	2700	0	2700	SLIDING DOOR, ALUMINUM + GLASS	SLIDING PANEL	BEDROOM 4
SCHEDULE OF EXTERNAL DOOR/ WINDOW & VENTILATORS								
DW1	DOOR	1000	2700	0	2700	HINGED GLASS DOOR / WINDOW	SINGLE SHUTTER DOOR, OPENABLE OUTSIDE + FIXED WINDOW	KITCHEN/UTILITY ROOM
	WINDOW	850	1650	900	2700			
DW2	DOOR	1000	2700	0	2700	HINGED GLASS DOOR / WINDOW	SINGLE SHUTTER DOOR, OPENABLE OUTSIDE + FIXED WINDOW	KITCHEN/UTILITY ROOM
	WINDOW	850	1650	900	2700			
DW3	DOOR	1000	2700	0	2700	HINGED GLASS DOOR / WINDOW	SINGLE SHUTTER DOOR, OPENABLE OUTSIDE + FIXED WINDOW	KITCHEN/UTILITY ROOM
	WINDOW	850	1650	900	2700			
SCHEDULE OF SHAFTS								
SH1		600	2000	150	2650	SINGLE GLASS DOOR	SINGLE SHUTTER DOOR	TOILET
SH2		600	2000	150	2650	SINGLE GLASS DOOR	SINGLE SHUTTER DOOR	CORRIDOR
SCHEDULE OF VENTILATORS								
V1		1000	600	600	2400	OPENABLE	OPENABLE GLASS PANEL	TOILET
V1A		1000	1000	600	2400	OPENABLE	OPENABLE GLASS PANEL	TOILET
V2		600	1000	600	2400	OPENABLE	OPENABLE GLASS PANEL	TOILET
SCHEDULE OF FIRE RATED DOOR								
D1		1250	2700	0	2700	FIRE RATED DOOR (SEE SHT. FOR SWING)	SINGLE LEAF DOOR	UNIT ENTRANCE
D4		1050	2700	0	2700	WOODEN FLUSH DOOR (SEE SHT. FOR SWING)	SINGLE LEAF DOOR	UTILITY ROOM
FD2		900	2000	150	2400	METAL DOOR WITH VISION PANEL (SEE SHT. FOR SWING)	SINGLE SHUTTER, OPENABLE OUTSIDE	ELECTRICAL SHAFT
FD3		900	2000	150	2400	METAL FIRE DOOR (SEE SHT. FOR SWING)	SINGLE SHUTTER, OPENABLE OUTSIDE	LV SHAFT
FD4		1050	2000	150	2400	METAL FIRE DOOR (SEE SHT. FOR SWING)	SINGLE SHUTTER, OPENABLE OUTSIDE	IDF ROOM
SCHEDULE OF GLASS DOOR								
GD1		800	2000	150	2450	SINGLE SHUTTER, OPENABLE INSIDE	GLASS DOOR AS SPEC	SHC
SCHEDULE OF LOUVERED DOOR								
LD1		1800	2650	0	2650	LOUVERED DOOR	DOUBLE SHUTTER, OPENABLE INSIDE	FIRE STAIRCASE LOBBY
LD2		900	2650	0	2650	LOUVERED DOOR	SINGLE SHUTTER OPENABLE INSIDE	STAIRCASE
LD3		950	2000	150	2450	LOUVERED DOOR	SINGLE SHUTTER, OPENABLE OUTSIDE	LOBBY FIRE EXTINGUISHER
SCHEDULE OF LOUVERED DOOR-WINDOW								
LW1	LOUVERS	1270	2450	0	2450	HINGED GLASS + LOUVER / WINDOW	DOUBLE SHUTTER, OPENABLE OUTSIDE	FIRE STAIRCASE LOBBY
	WINDOW	1270	1050	900	2450			
SCHEDULE OF LIFT OPENINGS								
LO1		900	2000	0	2100	AS PER DESIGN / I/T		LIFTS
LO2		1000	2000	0	2100	AS PER DESIGN / I/T		LIFTS

FAR AREA OF 24TH REFUGE FLOOR CALCULATION										
GROSS – A										
1	1	X		0.500		X	0.500	=	0.250	SQM
3	1	X		6.695		X	5.525	=	36.990	SQM
4	1	X		0.350		X	0.525	=	0.184	SQM
5	1	X		5.000		X	0.550	=	2.750	SQM
6	0.5	X	2.210	+	5.020	X	4.785	=	17.298	SQM
7	0.5	X		5.020		X	2.900	=	7.279	SQM
8	0.5	X	7.930	+	5.580	X	1.355	=	9.153	SQM
9	0.5	X	5.580	+	7.045	X	2.540	=	16.034	SQM
10	1	X		7.045		X	6.330	=	44.595	SQM
11	1	X		4.450		X	7.785	=	34.643	SQM
11a	1	X		2.860		X	1.675	=	4.791	SQM
12	1	X		8.545		X	10.260	=	87.672	SQM
13	0.5	X		9.160		X	5.340	=	24.457	SQM
14	0.5	X		5.340		X	3.085	=	8.237	SQM
15	1	X		0.550		X	0.500	=	0.275	SQM
16	1	X		7.125		X	2.600	=	18.525	SQM
17	1	X		8.750		X	8.710	=	76.213	SQM
18	0.5	X	2.405	+	2.195	X	0.355	=	0.817	SQM
19	0.5	X	6.410	+	6.800	X	0.700	=	4.624	SQM
20	1	X		0.425		X	0.215	=	0.091	SQM
21	0.5	X		2.995		X	5.240	=	7.847	SQM
22	0.5	X		2.995		X	1.745	=	2.613	SQM
23	0.5	X	6.985	+	7.835	X	1.415	=	10.485	SQM
24	0.5	X	3.160	+	3.010	X	9.425	=	29.076	SQM
25	2	X		8.400		X	8.900	=	149.520	SQM
26	2	X		0.450		X	0.500	=	0.450	SQM
28	0.5	X		3.545		X	5.960	=	10.564	SQM
29	0.5	X		3.545		X	6.100	=	10.812	SQM
30	0.5	X	9.970	+	8.950	X	0.590	=	5.581	SQM
31	0.5	X	8.950	+	9.710	X	1.310	=	12.222	SQM
32	2	X		8.710		X	2.050	=	39.911	SQM
33	2	X		7.600		X	2.915	=	44.308	SQM
34	2	X		2.115		X	1.070	=	4.526	SQM
35	2	X		9.725		X	5.255	=	102.210	SQM
37	2	X		0.500		X	0.500	=	0.500	SQM
38	0.5	X	8.950	+	9.710	X	1.310	=	12.222	SQM
39	0.5	X	9.970	+	8.950	X	0.590	=	5.581	SQM
40	1	X		24.680		X	5.210	=	128.583	SQM
41	0.5	X		3.545		X	6.110	=	10.830	SQM
42	0.5	X		3.545		X	5.950	=	10.546	SQM
43	0.5	X	3.160	+	3.010	X	9.425	=	28.699	SQM
44	0.5	X	6.680	+	7.740	X	1.470	=	10.628	SQM
45	0.5	X		1.730		X	2.970	=	2.569	SQM
46	0.5	X		5.145		X	2.970	=	7.640	SQM
47	0.5	X	6.305	+	6.710	X	0.700	=	4.555	SQM
48	1	X	0.215	+	0.425	X	0.215	=	0.091	SQM
							TOTAL	=	1047.348	SQM

REFUGE AREA CALCULATION - 24TH REFUGE FLOOR									
GROSS – A									
r1	=	1	X	1.650	X	2.855	=	4.711	SQM
r2	=	1	X	0.350	X	1.800	=	0.630	SQM
r3	=	1	X	1.150	X	0.360	=	0.403	SQM
r3a	=	1	X	0.150	X	0.700	=	0.105	SQM
r4	=	1	X	1.950	X	3.775	=	7.361	SQM
r4a	=	1	X	2.130	X	3.725	=	7.956	SQM
r5	=	1	X	4.280	X	0.250	=	1.070	SQM
r6	=	1	X	2.725	X	3.190	=	8.693	SQM
r7	=	1	X	2.275	X	1.250	=	2.844	SQM
r8	=	1	X	1.900	X	0.600	=	1.140	SQM
r9	=	0.5	X	(1.470+2.855)	X	2.400	=	5.190	SQM
r10	=	0.5	X	(3.340+2.540)	X	1.380	=	4.057	SQM
r11	=	1	X	0.220	X	1.500	=	0.328	SQM
r12	=	1	X	1.250	X	2.905	=	3.631	SQM
						TOTAL	=	48.128	SQM

TOTAL REFUGE AREA	=	GROSS – A	
	=	48.128	
	=	48.128	SQM
GROSS AREA OF 24TH. FLOOR	=	957.321	SQM
GROSS AREA OF TYPICAL FLOOR	=	1003.995	SQM
TOTAL	=	1961.316	SQM

TOTAL NO. OF OCCUPANTS	=	GROSS AREA	/	OCCUPANY FACTOR				
	=	1961.316	/	12.5	=	157	PERSONS	
REFUGE AREA REQUIRED	=	0.3 SQM. PER PERSON	*	0.9 SQM. ADDITIONAL SPAE TO ACCOMMODATE WHEEL CHAIR				
	=	0.3	X	157	+	0.9		
	=	47.100			+	0.9		
	=	48.000	SQM.					
PROPOSED REFUGE AREA	=	48.128	SQM.					



24TH REFUGE FLOOR

DEDUCTION										
GROSS – B										
a1	1	X		0.350		X	0.400	=	0.140	SQM
a2	1	X		0.900		X	0.600	=	0.540	SQM
a3	1	X		1.150		X	0.500	=	0.575	SQM
a3a	1	X		0.600		X	0.100	=	0.060	SQM
a4	1	X		0.400		X	0.250	=	0.100	SQM
a5	0.5	X	0.570	+	0.875	X	0.525	=	0.379	SQM
a6	0.5	X		1.560		X	0.780	=	0.608	SQM
a7	6	X		2.300		X	2.300	=	31.740	SQM
a8	1	X		5.200		X	6.430	=	33.436	SQM
a8a	1	X		0.375		X	6.375	=	2.391	SQM
a9	1	X		0.900		X	3.925	=	3.533	SQM
a10	1	X		1.800		X	0.100	=	0.180	SQM
a11	1	X		0.550		X	1.725	=	0.949	SQM
a12	1	X		0.550		X	1.500	=	0.825	SQM
a13	1	X		1.450		X	2.300	=	3.335	SQM
a14	1	X		0.450		X	0.250	=	0.113	SQM
a14a	1	X		0.450		X	0.475	=	0.214	SQM
a15	0.5	X	0.240	+	0.280	X	0.135	=	0.035	SQM
a16	0.5	X	1.155	+	0.675	X	0.650	=	0.595	SQM
a17	0.5	X	0.130	+	1.165	X	1.755	=	1.136	SQM
a18	0.5	X	1.645	+	1.195	X	0.775	=	1.101	SQM
a19	0.5	X		1.065		X	0.535	=	0.285	SQM
a20	2	X		0.350		X	1.075	=	0.753	SQM
a21	2	X		0.450		X	0.900	=	0.810	SQM
a22	2	X		0.250		X	0.400	=	0.200	SQM
a23	0.5	X	1.645	+	1.195	X	0.775	=	1.101	SQM
a24	0.5	X		1.065		X	0.535	=	0.285	SQM
a25	0.5	X	1.165	+	0.130	X	1.755	=	1.136	SQM
a26	2	X		0.200		X	0.400	=	0.160	SQM
a27	1	X		0.475		X	0.450	=	0.214	SQM
a28	0.5	X	0.280	+	0.235	X	0.135	=	0.035	SQM
a29	0.5	X	0.675	+	1.155	X	0.650	=	0.595	SQM
a30	0.5	X	0.125	+	1.730	X	0.930	=	0.863	SQM
a31	1	X		0.400		X	0.730	=	0.292	SQM
a32	0.5	X	2.130	+	0.850	X	2.220	=	3.308	SQM
a33	1	X		2.300		X	2.400	=	5.520	SQM
a34	0.5	X	3.335	+	2.050	X	2.220	=	5.755	SQM
a35	1	X		1.195		X	0.275	=	0.329	SQM
a36	1	X		2.330		X	5.370	=	12.512	SQM
a39	0.5	X	1.020	+	2.580	X	0.900	=	1.620	SQM
a40	0.5	X		2.580		X	4.470	=	5.766	SQM
							TOTAL	=	123.521	SQM

TOTAL FAR AREA OF 24TH REFUGE FLOOR	=	GROSS – A	-	GROSS – B		
	=	1047.348	-	123.521		
	=	923.827	SQM			

NON FAR AREA (ADDITION)										
GROSS – C										
a8	1	X		5.200		X	6.375	=	33.150	SQM
a8a	1	X		0.375		X	6.375	=	2.391	SQM
a9	1	X		0.900		X	3.925	=	3.533	SQM
a10	1	X		1.800		X	0.100	=	0.180	SQM
a36	1	X		2.330		X	5.370	=	12.512	SQM
a39	0.5	X	1.020	+	2.580	X	0.900	=	1.620	SQM
a40	0.5	X		2.580		X	4.470	=	5.766	SQM
a41	1	X		1.800		X	3.505	=	6.309	SQM
a42	0.5	X	0.550	+	0.525	X	4.080	=	2.193	SQM
a43	0.5	X	3.575	+	3.600	X	7.530	=	27.014	SQM
a44	1	X		1.900		X	2.225	=	4.228	SQM
a45	0.5	X	3.065	+	2.640	X	2.775	=	7.916	SQM
a46	0.5	X		1.755		X	2.190	=	1.922	SQM
a47	1	X		1.755		X	0.350	=	0.614	SQM
a48	1	X		1.625		X	2.600	=	4.225	SQM
							TOTAL	=	113.572	SQM

NON FAR AREA (DEDUCTION)										
GROSS – D										
x1	1	X		3.200		X	0.725	=	2.320	SQM
x2	1	X		2.900		X	2.300	=	6.670	SQM
x3	0.5	X	1.700	+	1.835	X	0.080	=	0.141	SQM
x4	0.5	X	1.835	+	0.265	X	2.685	=	2.819	SQM
x5	1	X		0.500		X	0.250	=	0.125	SQM
							TOTAL	=	12.076	SQM

TOTAL NON FAR AREA OF 24TH REFUGE FLOOR	=	GROSS – C	-	GROSS –D		
	=	113.572	-	12.076		
	=	101.496	SQM			
TOTAL BUILTUP AREA OF 24TH REFUGE FLOOR	=	FAR AREA	+	NON FAR AREA		
	=	923.827	+	101.496		
	=	1025.323	SQM			

Note :-

1. BUILDING HAS AUTOMATIC SPRINKLER SYSTEM WHEREVER REQUIRED BY NBC.
2. BUILDING WILL BE DESIGNED (STRUCTURES) AS PER RELEVENT IS CODES FOR EARTH QUAKE RESISTANCE.
3. ALL TOILET & KITCHEN HAVE PERMANENT VENTILATION /EXHAUST
4. ALL BUILDINGS ARE NATURALLY VENTILATED AND WHERE EVER REQUIRED MECHANICAL VENTILATION IS PROPOSED WITH 100% POWER BACKUP.

Project

PROPOSED BUILDING PLAN OF GROUP HOUSING COLONY FOR PHASE 3 AREA MEASURING 8.19375 ACRES PART OF TOTAL LICENSED LAND MEASURING 34.175 ACRES(LICENCE NO. 16 OF 2008 DATED 31.01.2008, LICENCE NO. 28 OF 2008 DATED 17.02.2008, LICENCE NO. 44 OF 2011 DATED 13.05.2011) IN SECTOR-59 GURUGRAM MANESAR URBAN COMPLEX BEING DEVELOPED BY BTVS BUILDWELL PVT LTD. AND OTHERS IN COLLABORATION WITH BASE EXPORTS PVT LTD. AND BUZZ HOTELS PVT. LTD.

Architects:

Morphogenesis
Plot No. 41, Industrial Estate,
Okhla Phase-III,
New Delhi 110020, India
TEL: +91 11 41828070
FAX: 91 11 26490351
E Mail:studio@morphogenesis.org

Associate Architects:

SBA Design N Code LLP
Architecture·Codes·Interiors
(Formerly known as RSMS)
Plot no. 10 A&B, Bhawani Kunj,
Behind D2,Vasant Kunj,
New Delhi-110070.
Mob.: 9810791652,9811077209

S.T.P.(HQ) Member Secretary B.P.A.C. | M.D. (HR) B.P.A.C. | Chairman B.P.A.C.

DTP(HQ) | ATP(HQ) JD. | ATP

DEEPAK KUMAR PA(HQ)

Checked and found ok for Public Health (Internal) Service only subject to comments in forwarding letter No. 226466 Dtt. 02/09/2021

ADTP (HQ) Member BPAC | FBO, (HQ) Member BPAC

OWNER'S SEAL & SIGNATURE

Superintending Engineer (HQ) for Chief Engineer-I HSVP, Panchkula

SANCTIONED TO BE READ WITH THIS OFFICE MEMO NO.

BIP HOLDER'S SEAL & SIGNATURE	ARCHITECT'S SEAL & SIGNATURE
	REENA SHARMA B.ARCH. CA/2010/77247

JUL-2026 | Scale : 1:100

Drawing Title:-	Drawing No:-
24th REFUGE FLOOR PLAN & AREA CALCULATION (TOWER-A)	TA-08
	03-20072026