MARTIAL BUILDCON PRIVATE LIMITED

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28th November, 2018

To,
The Joint Director (S),
Northern Regional Office,
Ministry of Environment, Forest & Climate Change
Bay No. 24-25, Sector-31 A,
Dakshin Marg, Chandigarh-160030

Sub.:- Action Taken Report for the Compliances of the Conditions Stipulated in the (1) Environmental Clearance for Proposed Commercial Complex in (2.71 +2.68)=5.39 Acres at Sector -67, Village –Maidawas & Badshahpur, Gurgaon, Haryana by M/s Martial Buildcon Pvt. Ltd. (2) Environmental Clearance for Proposed Commercial Complex in 2.81875 Acres at Village Maidawas, Sector-67, Gurgaon, Haryana by M/s Martial Buildcon Pvt. Ltd .

Ref.: 1. SEIAA/HR/2013/122, Dated 11.07.201
2. SEIAA/HR/2013/486, Dated 12.07.2013

Dear Sir,
This is with reference to above mentioned subject and your letter No. 4-1057/2012-RO (NZ)/1213 dated 26.11.2018 regarding certification of compliances. In this regards, we are herewith submitting the action taken report along with relevant annexures for compliances.

You are requested to please acknowledge our reply.

Thanking You,

Yours sincerely,

Amar Nath Ichhpujani, Advisor
Authorized Signatory,
C-13, Sushant Lok Phase-I, Gurugram- 9711110147

Encl.: As above

29/11/18

प्राप्त किया/Received
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Min. of Environment, Forests & Climate Change
उत्तर क्षेत्रीय कार्यालय/Northern Regional Office
चण्डीगढ़/Chandigarh

28.11.2018

ACTION TAKEN REPORT

Name of the Project: (1) -Environmental Clearance for Proposed Commercial Complex in (2.71 +2.68)5.39 Acres at Sector -67, Village – Maidawas & Badshahpur, Gurgaon, Haryana by M/s Martial Buildcon Pvt. Ltd. (2) Environmental Clearance for Proposed Commercial Complex in 2.81875 Acres at Village Maidawas, Sector-67, Gurgaon, Haryana by M/s Martial Buildcon Pvt. Ltd .

S.No.	Condition	Status as certified Compliance	Action Taken
	Specific condition: Operational phase (EC 2012)		
1.	The Sewage Treatment Plant (STP) shall be installed for the treatment of sewage generated to be prescribed standards including odours and treated effluent will be recycled to achieve zero discharge. The installation of STP should be certified by an independent expert and a report in this regard should be submitted to SEIAA, Haryana before the project is commissioned for operation. Discharge of treated sewage shall confirm to the norms and standards of HSPCB. Panchkula.	**Not Complied (EC 2012 & EC 2013):** STP of 500 KLD (common for EC-1 & EC-2) was Installed within the premises for the treatment of the sewerage produced with SBR technology (Photo 1). However, certified report from the independent expert are yet to be submitted. Thus condition is considered as not complied for the present visit.	The certified report from the independent expert shall be submitted after formation SEIAA, Haryana before operation of STP and will also be submitted in your esteemed office within one months. Design report of STP is attached as **Annxure-1**
2	For disinfections of the treated waste water ultra violate radiation or ozonization should be used.	**Not Complied:** STP was not operational during the visit as the project was not operational. However, UV system has not been installed to disinfect the treated water. Thus, condition is considered not complied for the present visit. PA was directed to install UV system or ozonization as per condition.	UV system has been installed to disinfect the treated water & Photos are attached as **Annexure-2.**
3	The solid waste generated should be properly collected and segregated. Biodegradable waste shall be decomposed at site and dry /inert solid waste should be disposed off to approved sites for land filling after recovering recyclable materials.	**Not Complied (EC 2012 & EC 2013):** Proper arrangements for collection of solid waste were noticed during the site visit. Further, PP informed that solid waste is being disposed off through MC authorized waste collector. However facilities for	Project is initial stage of operation, we have made proper arrangements for collection of solid waste & OWC will be installed very shortly for which compliance will be submitted

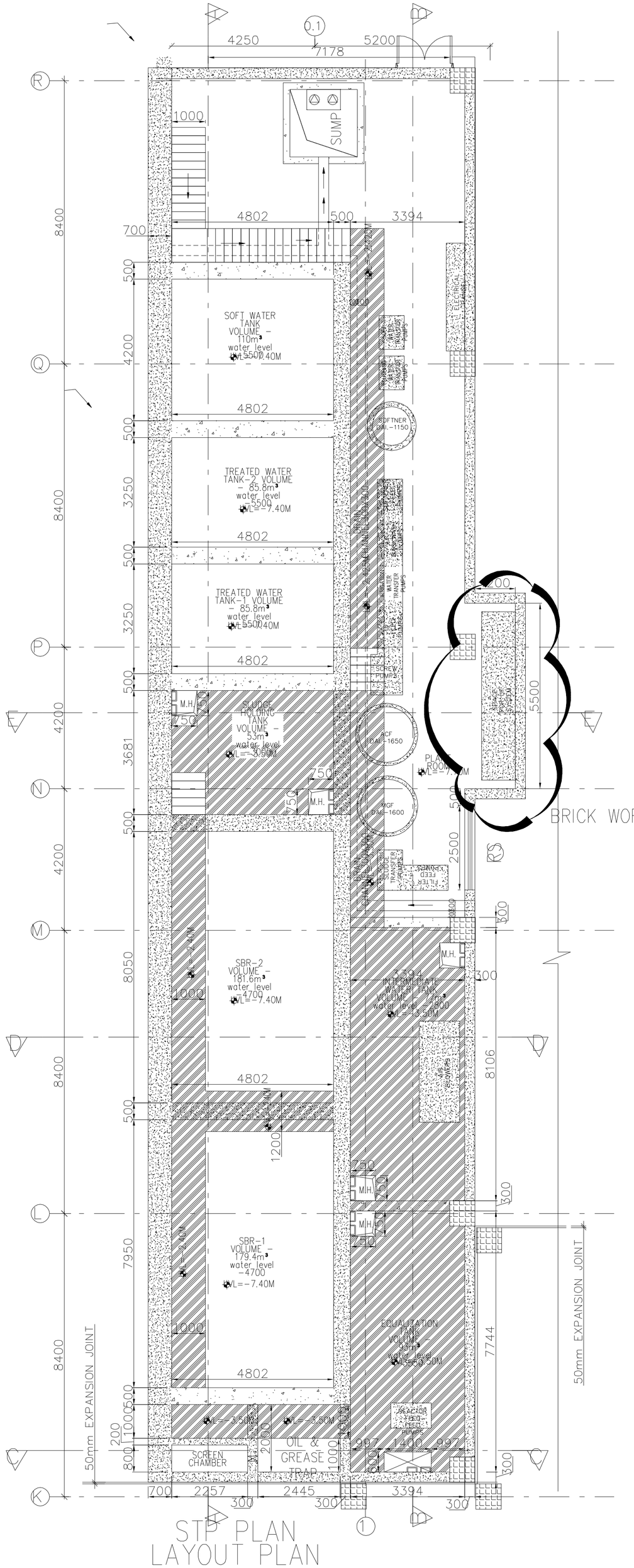
		decommission of biodegradable waste at site was not noticed as per condition. Thus condition is considered as notcompiled for the present visit.	with next compliance report.
4.	The PP should maintain at least 20% (30% in EC2013) as green cover area for tree plantationespecially all around the periphery of theproject site and on the road sides preferablywith local species so as to provide protectionagainst particulates and noise. The open spaceinside the plot should be preferably land scapedand covered with vegetation/grass. Herbs &shrubs. Only locally available species shall beused.	**Not Complied (EC 2012 & EC 2013):** PPsubmitted that they are maintaining required green cover area and total 1256 Nos. of trees have planted (namely alstonia scholaris) grevillearobusta, bauhinia blakeana, plumeriaalba, ficuslyrata etc.) However, proper greenbelt was not noticed all around the peripheryof the project site (Photo 3). Further, details of area covered under green cover have not been submitted yet. The PA has directed to submit the details of area covered under the green belt before EAC during presentation.	Project is in initial stage of operation, we are planting more trees and green cover within the project premises.
5.	Weep holes in the compound walls shall be provided to ensure natural drainage of rain water. In the catchment areas during the monsoon period.	**Not Complied:** Weep holes in the compound walls were not noticed during the visit.	There is no need of weep holes because we have structurally designed the retained wall/compound to take proper load of water and earth pressure.
6.	Rain water harvesting for runoff and surface runoff, as plan submitted should be implemented. Before recharging the surface runoff, pretreatment must be done to remove suspended matter, oil and greases. The bore well for rain water recharging should be kept at least 5 mts above the highest ground water table.	**Not Complied (EC 2012 & EC 2013):** Roof run-off and surface run-off collection system and22 Nos. (14 Nos. EC 2012 & 8 for EC 2013) recharge pits have been provided forrainwater harvesting purpose. It wassubmitted that bore well for rain waterrecharging has been kept at 5 mts. above thehighest ground water table which was 47.0 mts. It was observed that some pits were filled with polluted water. In the absence of proper cleaning and	The maintenance schedule has been prepared as monthly basis for all pits. Noted and shall be submitted in next complicate report.

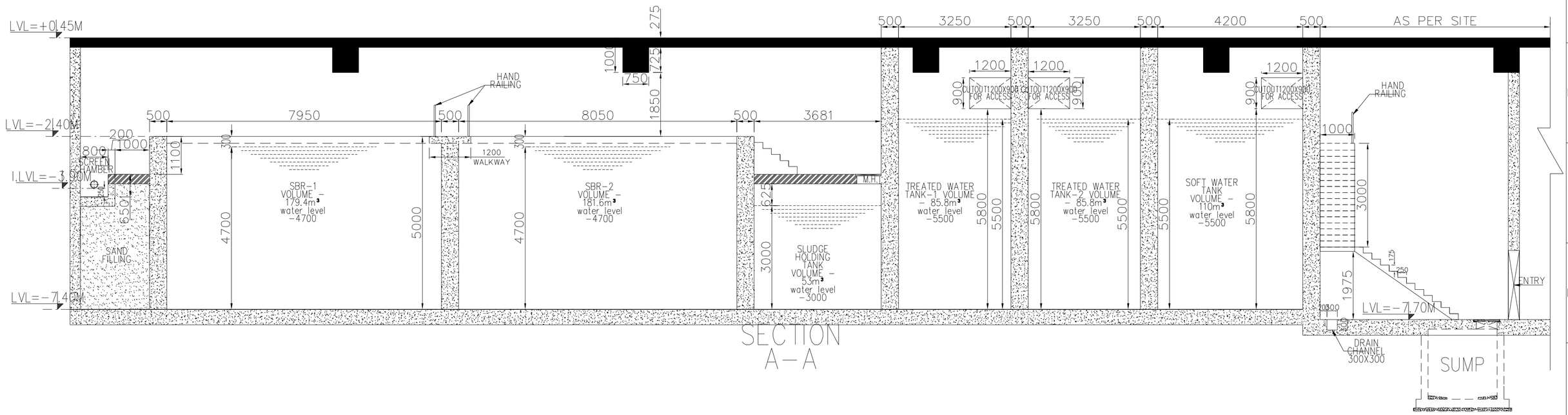
		maintenance schedule, this condition is considered as not complied for present visit. The PA has been directed to submit the maintenance schedule of the RWH pits (Photo 4) with next compliance report.	
7	The ground water level and its quality be monitored regularly in consultation with CGWA.	**Not Complied (EC 2012 & EC 2013):** Piezometers were not installed to measure ground water levels at site. Ground water quality data are being submitted as per the condition. PA was directed to submit the monitoring report of ground water level and its quality along with next compliance report.	Noted & shall be submitted along with next compliance report.
8	A report on energy conservation measures conforming to energy conservations norms finalize by bureau of energy efficiency should be prepared incorporating details about building materials & technology, "R & U factors etc" and submit to IA division of environment and forest department Haryana in three months time.	**Not Complied (EC 2012 & EC 2013):** Report on energy conservation measures related to building materials & technology and H & U factors etc. was not submitted to HO Chandigarh as per condition. Thus, condition is considered as not complied for present visit.	Report on energy conservation measures has been prepared and already submitted. A copy of ECBC report is attached as **Annexure-3**.
9	The provision of the solar water heating system shall be as per the norms specified by HAREDA and shall be made operational in each building block.	**Not Complied (EC 2012 & EC 2013):** PP argued that Haryana Government, Renewable Energy Department has omitted mandatory use of Solar Power Heating System vide order dated 29.07.2005. PP was directed to clarify the issue before EAC during presentation.	A copy of order is attached as **Annexure-4**.
Specific condition: Operational phase (EC 2013)			
1	"Consent to operate" shall be obtained fromHaryana State Pollution Control Board under airand water act and a copy shall be submitted tothe SEIAA, Haryana.	**Not Complied:** Copy of "Consent to Operate "has not been submitted to this office. Thus condition is considered to as not comply for the present visit.	A copy of receipt of application is attached as **Annexure-5**.
2	Different type of wastes should be disposed offas per provisions of municipal solid waste,biomedical	**Not Complied:** Facilities for E-waste	Project is in initial stage of operation and there is no E-

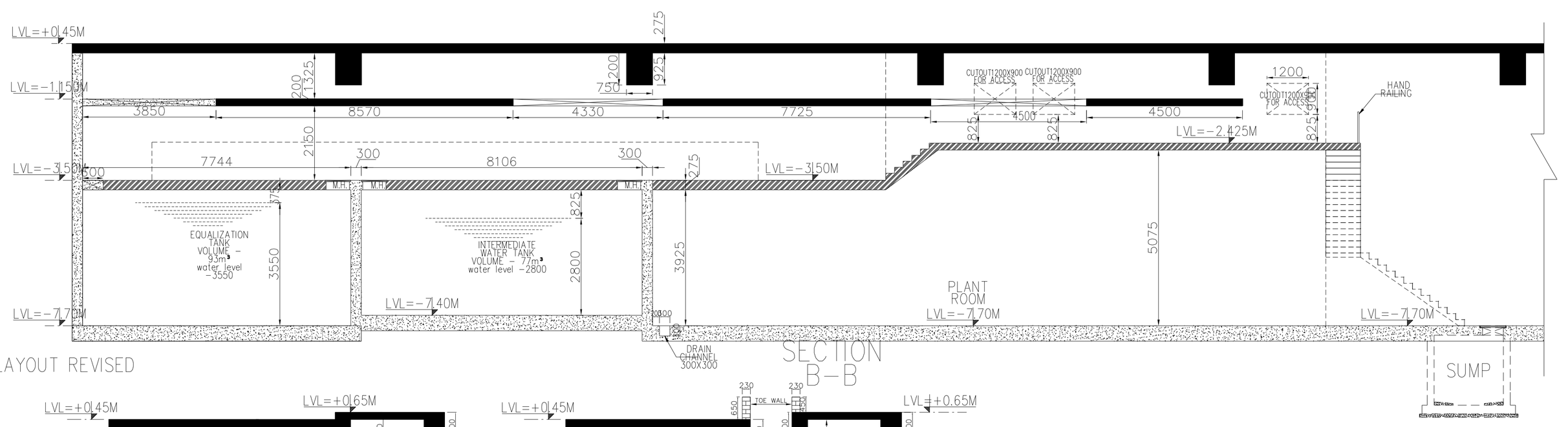
	waste, hazardous waste, E-waste,batteries & plastic rules made under EPA, 1986. Particularly E-waste and Battery waste shall be disposed off as per existing E-waste Management Rules 2011 and Batteries Management Rules 2001. The PP should maintain a collection center for E-waste and it should be disposed of to only registered and authorized dismantler/recycler.	management at site were not noticed as per condition. Thus, condition is considered as not complied for the present visit.	waste being generated at present. However, we are doing proper facilities for E-waste management at site. Proper storage area has been made.
3	The PP shall make provisions for guard pond and other provisions for safety against failure inoperations of waste water treatment facilities. The PP shall also Identify acceptable outfall for treated effluent.	**Not Complied:** No such guard pond for safety against failure in operations of waste water treatment facilities was noticed during the visit. PP was directed to make such arrangement in case on failure.	It is a commercial project with small ground coverage. In case of STP failure, we will intimate Haryana State Pollution Control Board before discharging of effluent in the Municipal Sewer.
	General Condition EC 2012		
1	Six monthly compliance reports should be submitted to the HSPCB and regional office. MoEF, GOI, Northern region, Chandigarh and a copy to regulatory of Haryana.	**Not Complied (EC 2012 & EC 2013):** PA isNot submitting six monthly reports regularly to the regional officeas evident from point 15of Data Sheet.	We are submitting six monthly compliance reports regularly. Receipts of last six monthly submissions are enclosed as **Annexure- 6**.
2	The PP should inform the public that the projecthas been in accorded Environmental clearanceby SEIAA and copies of the clearance letter areavailable with the State Pollution Control Board& SEIAA. This should be advertised within 7 daysfrom date of issue of clearance letter at least in two local newspapers that are widely circulatedin the region and copy of the same should beforwarded to SEIAA Haryana.	**Not Complied:** The PA has submitted the copies of advertisement but clause of sevendays was not followed (Published on 02.08.2012 & 03.08.2012). Condition is, therefore, considered as not complied.	It is submitted that seven days are not sufficient time for advertisement published in newspapers. It may be extended to at least 15 days.
	General Condition EC 2013		
1	Noise STP outlet and stack emission shall bemonitored dally. Other environmentalparameters Shall be monitored on monthlybasis, After every 3 months the PP shall	**Not Complied:** Environmental parameters are being monitored on 6 monthly basis. Report environmental audit is not being submitted by the PP on regular basis. Thus,	A copy of Environmental Audit Report is attached as **Annexure-7**

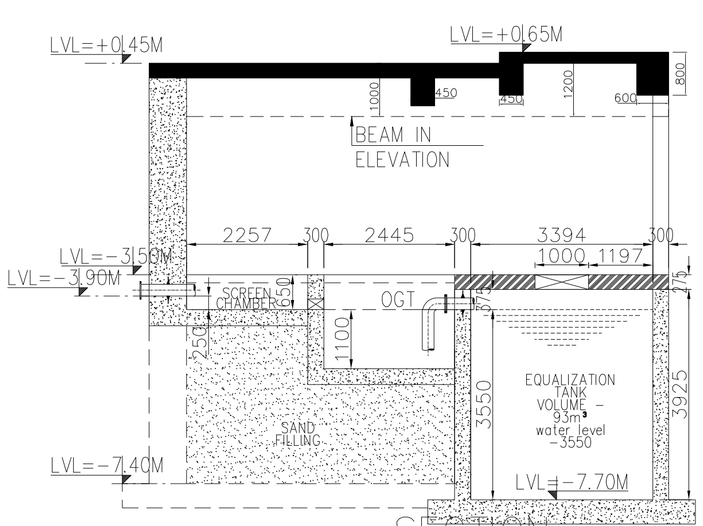
	conduct environmental audit, and shall take corrective measures, if required, without any delay.	condition is considered as not complied for the present visit.	
2	The PP shall put in place corporate environment policy as mentioned in MoEF, GoI OM No. J-11013/41/2006-IA II (I) dated 26.4.2012 within 3months period. Latest Corporate environment policy should be submitted to SEIAA within 3 months of issuance of this letter.	**Not complied:** PP has not submitted corporate environment policy as per conditions, Thus, condition is considered as not complied for thepresent visit.	A copy of corporate environment policy is attached as **Annexure-8**
3	The fund ear-marked for environmentprotection measures should be kept in separateaccount and should not be diverted for otherpurposes and year wise expenditure report shallbe submitted to the SEIAA/RO MoEF, GoI under rules prescribed for environmental audit.	**Not Complied:** PP did not submit details ofrequisite funds earmarked towards capital cost and recurring cost/annum for environmentpollution control measures to implement thestipulated conditions. Thus, condition is considered as not complied for the present visit.	We have been earmarked funds for environment pollution measures and same are mentioned in MoEF&CC data sheet. The capital cost and recurring cost/annum for environment pollution control measures is attached as **Annexure -9**

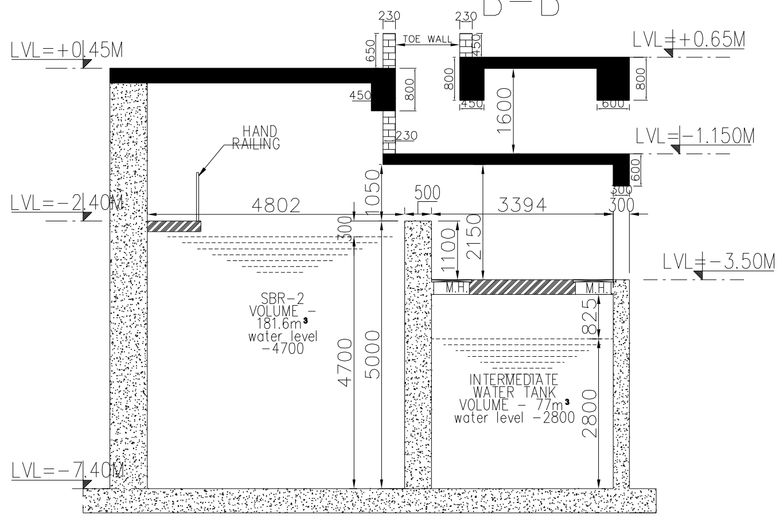
RevNo	Revision note	Date	Signature Checked

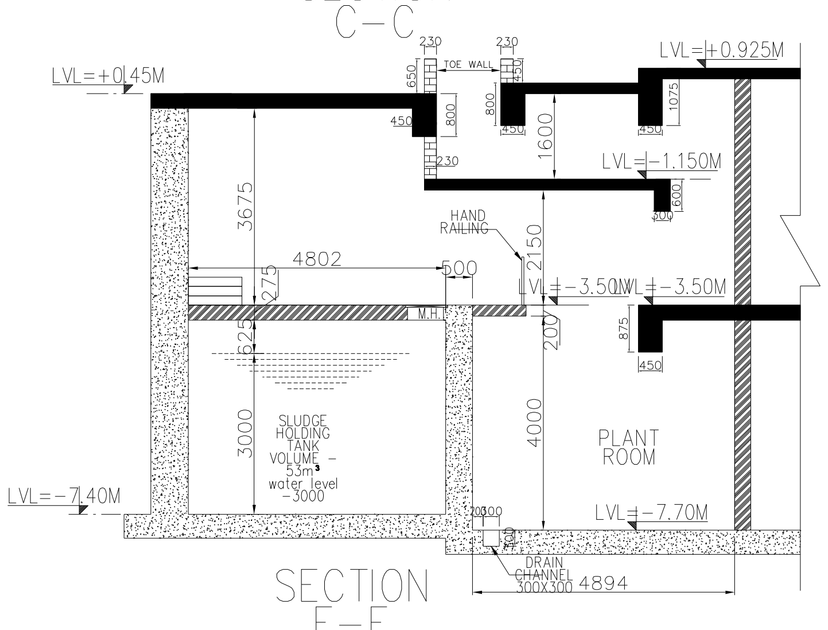












SR. NO.	PARTICULARS	TANK SIZE LxWxH (WD+FB)	M.O.C	QTY.
01.	BAAR SCREEN CHAMBER	2257x800x650	R.C.C	01
02.	OIL & GREASE TRAP	2445x2000x1750	R.C.C	01
03.	EQUALIZATION TANK	7744x3394x3925	R.C.C	01
04.	SEQUENTIAL BATCH REACTOR–1	7950x4802x5000	R.C.C	01
05.	SEQUENTIAL BATCH REACTOR–2	8050x4802x5000	R.C.C	01
06.	INTERMEDIATE WATER TANK	8106x3394x3625	R.C.C	01
07.	SLUDGE HOLDING TANK	4802x3681x3625	R.C.C	01
08.	TREATED WATER TANK–1	4802x3250x5700	R.C.C	01
09.	TREATED WATER TANK–2	4802x3250x5700	R.C.C	01
10.	SOFT WATER TANK	4802x4200x5700	R.C.C	01

ISSUE	MODIFICATION	DATE	SIGN.	APPROV.

CLIENT:- **M/s. MARTIAL BUILDCON PVT LTD.**

CONSULTANT:- **APOSTLE DESIGN STUDIO**

CONTRACTOR:- ENHANCED WAPP SYSTEMS (I) PVT. LTD.
914-B 9 FLOOR BPTP PARK CENTRA,SEC 30, GURGAON
TEL:- 0124-6710000, FAX :- 0124-6710099

PROJECT:- **STP 500KLD SBR BASED**

SIZE	SCALE	DIMN.	TITLE:-
A1		MM	**PLAN & SECTION DRAWING**

DRN. BY	CHD. BY	APP. BY	DATE	DRG NO.	WAPP/M3M/STP/SBR/02
KAPIL	*SUNIL*		*02/12/13*	REV. NO.	0 1 2

INLET QUALITY PARAMETERS	
pH	6.5–8.5
TSS	150–250
BOD	250–350
COD	450–600

OUTLET QUALITY PARAMETERS	
pH	6.5–8.5
TSS	<10
BOD	<5
COD	<40

Rev No.	Revision note	Date	Signature Checked

AIR BLOWER
65NB MS
65NB x 25NB REDUCER
25NB MS
40NB (MS)
40NB (SS-304)
INLET
BAR SCREEN CHAMBER
OIL & GREASE TRAP 4.0m³
EQUALIZATION TANK
V- 96m³ WD- 2.9m
MS(SS-304)
100NB PVC
REACTOR FEED PUMP
80NB MS
100NB MS
80NB SS304
REACTOR–1
REACTOR–2
V- WD2m³ 4.7m
150NB SS304
65NB SS304
100NB SS304
100 NB MS
INTERMEDIATE WATER TANK
V- WD2m³ 2.79m
FILTER FEED PUMP
MGF
ACF
UV
ALL FRONTAL PIPING 80NB(MS)
TO BACKWASH
CHLORINE DOSING
TREATED WATER TANK–1
V- WD2.5m³ 5.5m
REUSE IN IRRIGATION
IRRIGATION WATER TRANSFER PUMP
ALKALI DOSING PUMP
ACID DOSING PUMP
UF FEED PUMP
BACKWASH PUMP
UF SYSTEM
MFM
TREATED WATER TANK–2
FLUSHING WATER TRANSFER PUMP
REUSE IN FLUSHING
POLY DOSING
SCREW PUMP
SLUDGE TRANSFER PUMP
SLUDGE HOLDING TANK
V- WD3m³ 3.09m
BASKET CENTRIFUGE
LEACHATE TO EQT.
SLUDGE CAKE FOR DISPOSAL
FRONTAL PIPING 65NB(MS)
SOFT.
EJECTOR
DRAIN
BRINE TANK
SOFTENER FEED PUMP
SOFT WATER TRANSFER PUMP
SOFT WATER TANK
V- WD1.68m³ 5.5m
TO COOLING TOWER
TO EQT
SUMP
SUMP PUMP

EQUIPMENT SPECIFICATION

S. No.	DESCRIPTION	SPECIFICATION	QTY.
01	AIR BLOWER FOR EQT & SHT	100m³/hr@4000mmWC	02 (1W + 1S)
02	AIR BLOWER FOR SBR-1 & SBR-2	300m³/hr@5500mmWC	03 (2W + 1S)
03	REACTOR FEED PUMP	25m³/hr@12m	03 (2W + 1S)
04	FILTER FEED PUMP	25m³/hr@25m	02 (1W + 1S)
05	IRRIGATION WATER TRANSFER PUMP	13.5m³/hr@55m	02 (1W + 1S)
06	UF FEED PUMP	27m³/hr@25-30m	02 (1W + 1S)
07	FLUSHING WATER TRANSFER PUMP	33m³/hr@85m	02 (1W + 1S)
08	BACKWASH PUMP	36m³/hr@35-40m	02 (1W + 1S)
09	SOFTENER FEED PUMP	15m³/hr@25m	02 (1W + 1S)
10	ALKALI DOSING PUMP	0-6 LPH	01 (1W + 0S)
11	ACID DOSING PUMP	0-6 LPH	01 (1W + 0S)
12	CHLORINE DOSING PUMP	0-6 LPH	01 (1W + 0S)
13	SOFT WATER TRANSFER PUMP	22.5m³/hr@85m	02 (1W + 1S)
14	SUMP PUMP	15m³/hr@20m	02 (1W + 1S)
15	SLUDGE TRANSFER PUMP	13m³/hr@8-10m	02 (1W + 1S)
16	SCREW PUMP	2m³/hr@10-12m	02 (1W + 1S)
17	BASKET CENTRIFUGE	2m³/hr	01 (1W +0S)

TANK SPECIFICATION

Sl.No.	DESCRIPTION	MOC	QTY.
01	BAR SCREEN CHAMBER	RCC	01
02	OIL & GREASE TRAP	RCC	01
03	EQUALIZATION TANK	RCC	01
04	SEQUENTIAL BATCH REACTOR	RCC	02
05	INTERMEDIATE WATER TANK	RCC	01
06	SLUDGE HOLDING TANK	RCC	01
07	TREATED WATER TANK	RCC	02
08	SOFT WATER TANK	RCC	01
06	MULTI GRADE FILTER	MSEP	01
07	ACTIVATED CARBON FILTER	MSEP	01
08	SOFTENER	FRP	01

SYMBOLS

S NO.	SYMBOLS	DESCRIPTION
01		NON-RETURN VALVE
02		BUTTERFLY VALVE
03		BALL VALVE
04		Y-TYPE STRAINER
05		DISC TYPE DIFFUSER
06		TUBULAR DIFFUSER
07		HORIZONTAL SURFACE PUMP
08		SUBMERSIBLE PUMP
09		TWIN LOBE AIR BLOWER
10		SCREW PUMP
11		WATER LEVEL SWITCH

R0	ISSUED FOR APPROVAL	01.10.13		
ISSUE	MODIFICATION	DATE	SIGN.	APPROV.

CLIENT: – M/s MARTIAL BUILDCON PVT LTD

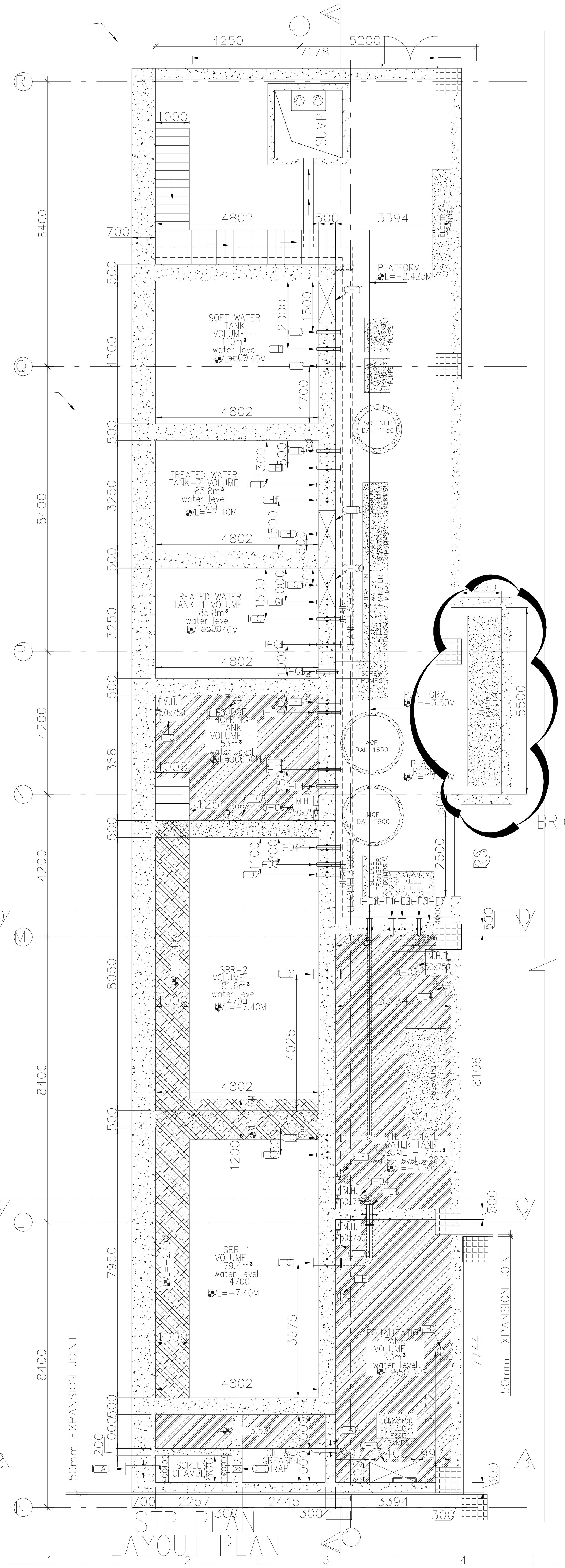
CONSULTANT: –
APOSTLE DESIGN STUDIO

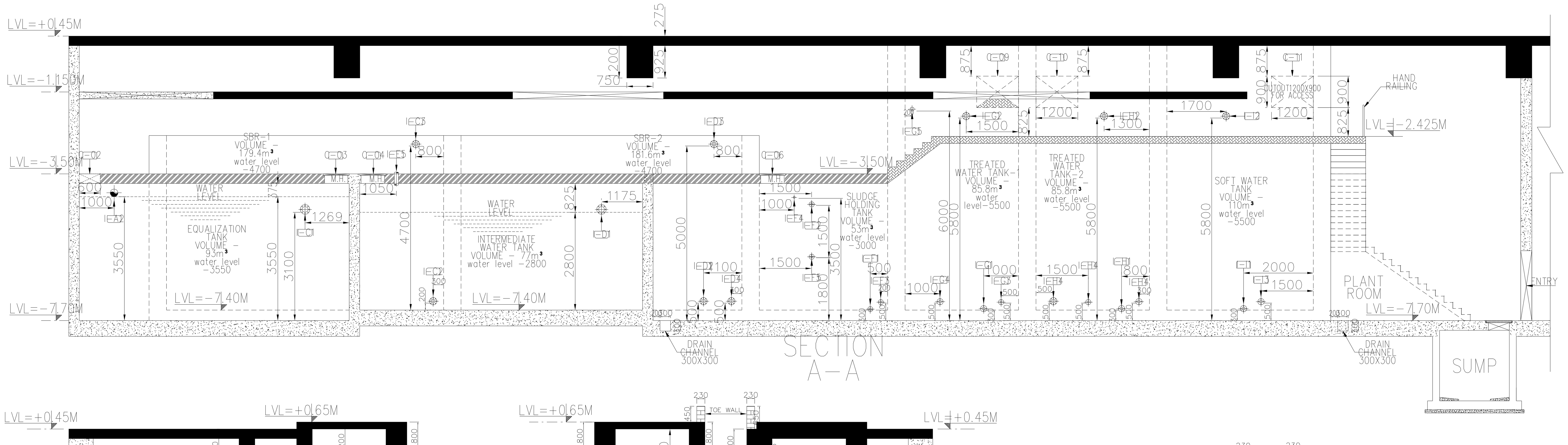
CONTRACTOR: –
ENHANCED WAPP SYSTEMS (I) PVT. LTD.
914–B 9 FLOOR BPTP PARK CENTRA,SEC 30, GURGAON
TEL:– 0124–4710900–98, FAX :– 0124–4710999

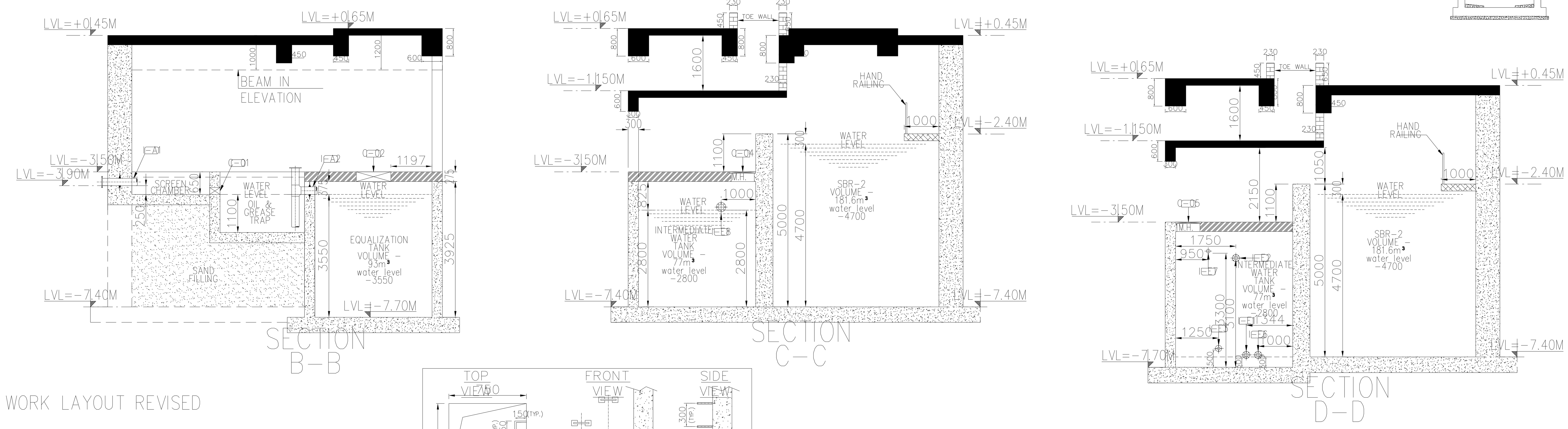
PROJECT: –
500 KLD STP

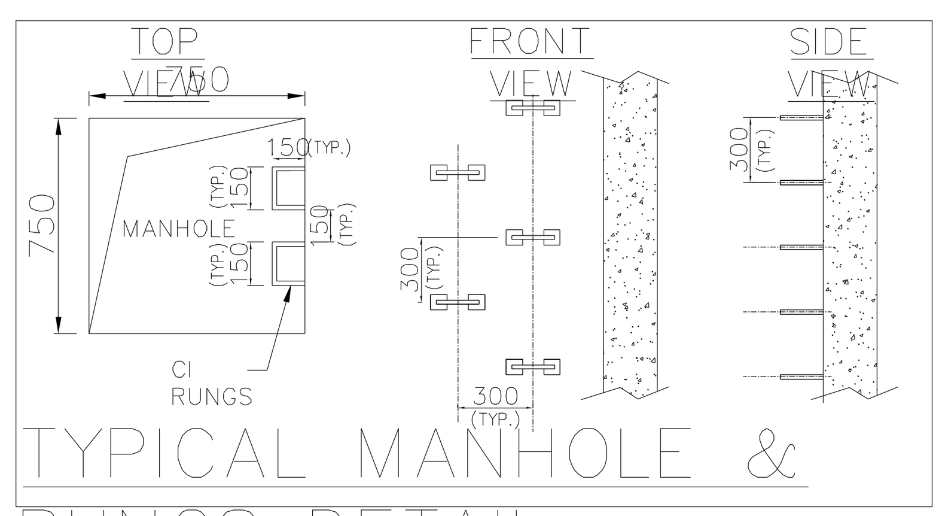
SIZE	SCALE	DIMN.	TITLE: –
A3	N.T.S.	MM	SCHEMATIC FOR 500 KLD STP

DRN. BY	CHD. BY	APP.BY	DATE	DRG NO.	REV. NO.
KAPIL	SUNIL	-	04.10.13	WAPP/STP/M3M/SBR/01	01

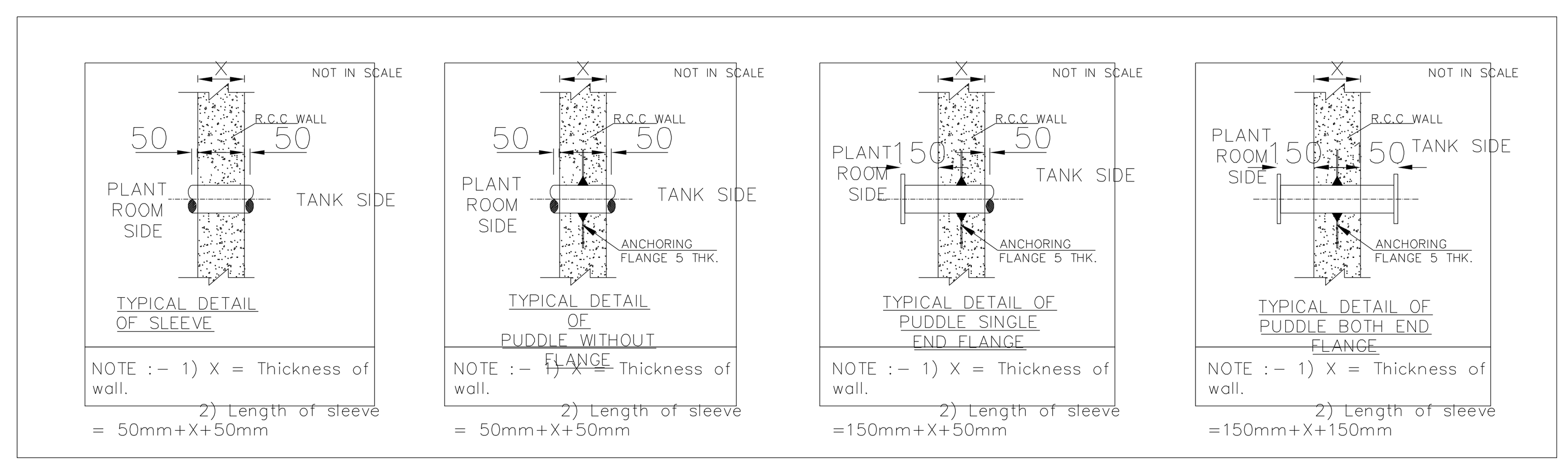








TYPICAL MANHOLE & RUNGS DETAIL



INSERT DETAILS

A) SCREEN CHAMBER, OIL & GREASE TRAP (OGT)

S. NO.	DESCRIPTION	MOC	DIA(MM)	BOTTOM LVL. OF PIPE(M)	PUDDLE / SLEEVE
I-A1	SEWAGE INLET	SS-304	200	-3.90	PUDDLE SINGLE END FLANGE
I-A2	OGT TO COLLECTION TANK	SS-304	200	-4.15	PUDDLE SINGLE END FLANGE

B) EQUALIZATION TANK (EQT)

S. NO.	DESCRIPTION	MOC	DIA(MM)	BOTTOM LVL. OF PIPE(M)	PUDDLE / SLEEVE
I-B1	AIR INLET IN SLAB	PVC	100		SLEEVE
I-B2	AIR VENT IN SLAB	PVC	100		SLEEVE

C) SBR TANK-1

S. NO.	DESCRIPTION	MOC	DIA(MM)	BOTTOM LVL. OF PIPE(M)	PUDDLE / SLEEVE
I-C1	TANK OUTLET TO IWT	SS-304	150	-4.60	PUDDLE BOTH END FLANGE
I-C2	TANK OUTLET CUM DRAIN	SS-304	100	-7.20	PUDDLE SINGLE END FLANGE
I-C3	OVERFLOW	MSEP	100	-2.70	PUDDLE SINGLE END FLANGE

D) SBR TANK-2

S. NO.	DESCRIPTION	MOC	DIA(MM)	BOTTOM LVL. OF PIPE(M)	PUDDLE / SLEEVE
I-D1	TANK OUTLET TO IWT	SS-304	150	-4.60	PUDDLE BOTH END FLANGE
I-D2	TANK OUTLET	SS-304	65	-7.20	PUDDLE SINGLE END FLANGE
I-D3	OVERFLOW	MSEP	100	-2.70	PUDDLE SINGLE END FLANGE
I-D4	DRAIN	MSEP	100	-7.40	PUDDLE SINGLE END FLANGE

E) INTEMEDIATE WATER TANK (IWT)

S. NO.	DESCRIPTION	MOC	DIA(MM)	BOTTOM LVL. OF PIPE(M)	PUDDLE / SLEEVE
I-E1	DRAIN	SS-304	100	-7.40	PUDDLE SINGLE END FLANGE
I-E2	OVERFLOW	MSEP	100	-4.60	PUDDLE SINGLE END FLANGE
I-E3	OUTLET FOR FILTER FEED PUMP	SS-304	80	-7.20	PUDDLE SINGLE END FLANGE
I-E4	AIR VENT IN SLAB	PVC	100		SLEEVE
I-E5	AIR VENT IN SLAB	PVC	100		SLEEVE
I-E6	TANK OUTLET CUM DRAIN FOR SBR-1	SS-304	100	-7.40	PUDDLE BOTH END FLANGE
I-E7	INSTRUMENTS	PVC	100	-4.40	SLEEVE
I-E8	INLET FROM SBR-1	SS-304	150	-4.60	PUDDLE BOTH END FLANGE

F) SLUDGE HOLDING TANK (SHT)

S. NO.	DESCRIPTION	MOC	DIA(MM)	BOTTOM LVL. OF PIPE(M)	PUDDLE / SLEEVE
I-F1	DRAIN	SS-304	50	-7.40	PUDDLE SINGLE END FLANGE
I-F2	OVERFLOW	MSEP	50	-4.40	PUDDLE SINGLE END FLANGE
I-F3	OUTLET	SS-304	65	-7.20	PUDDLE SINGLE END FLANGE
I-F4	SLUDGE INLET	MSEP	50	-4.20	PUDDLE SINGLE END FLANGE
I-F5	SUPERNATANT	SS-304	50	-5.90	PUDDLE SINGLE END FLANGE
I-F6	AIR VENT IN SLAB	PVC	100		SLEEVE

G) TREATED WATER TANK-1 (TWT-1)

S. NO.	DESCRIPTION	MOC	DIA(MM)	BOTTOM LVL. OF PIPE(M)	PUDDLE / SLEEVE
I-G1	DRAIN	SS-304	80	-7.40	PUDDLE SINGLE END FLANGE
I-G2	OVERFLOW	MSEP	100	-1.90	PUDDLE SINGLE END FLANGE
I-G3	OUTLET FOR IWTP	SS-304	65	-7.20	PUDDLE SINGLE END FLANGE
I-G4	OUTLET FOR UF FEED PUMP	SS-304	80	-7.20	PUDDLE SINGLE END FLANGE
I-G5	INLET	PVC	100	-1.70	SLEEVE

H) TREATED WATER TANK-2 (TWT-2)

S. NO.	DESCRIPTION	MOC	DIA(MM)	BOTTOM LVL. OF PIPE(M)	PUDDLE / SLEEVE
I-H1	DRAIN	SS-304	80	-7.40	PUDDLE SINGLE END FLANGE
I-H2	OVERFLOW	MSEP	100	-1.90	PUDDLE SINGLE END FLANGE
I-H3	OUTLET FOR UF BACKWASH PUMP	SS-304	100	-7.20	PUDDLE SINGLE END FLANGE
I-H4	OUTLET FOR IWTP	SS-304	80	-7.20	PUDDLE SINGLE END FLANGE
I-H5	OUTLET FOR SOFTNER FEED PUMP	SS-304	65	-7.20	PUDDLE SINGLE END FLANGE

I) SOFT WATER TANK (SWT)

S. NO.	DESCRIPTION	MOC	DIA(MM)	BOTTOM LVL. OF PIPE(M)	PUDDLE / SLEEVE
I-I1	DRAIN	SS-304	80	-7.40	PUDDLE SINGLE END FLANGE
I-I2	OVERFLOW	MSEP	100	-1.90	PUDDLE SINGLE END FLANGE
I-I3	OUTLET	SS-304	80	-7.20	PUDDLE SINGLE END FLANGE

CUTOUT DETAILS

SCREEN CHAMBERS, OGT, EQT, IWT, SHT, TWT-1, TWT-2, SWT TANK,

S. NO.	DESCRIPTION	SIZE(MM)	BOTTOM LVL. OF CUTOUT(M)	TYPE
C-01	BAR SCREEN CHAMBER TO OIL & GREASE TRAP	250x200	-4.15	RECTANGULAR
C-02	CUTOUT TO EQUALIZATION TANK	1000x600		RECTANGULAR
C-03	FOR MANHOLE EQUALIZATION TANK SLAB	750x750		RECTANGULAR
C-04	FOR MANHOLE IN INTERMEDIATE WATER TANK SLAB	750x750		RECTANGULAR
C-05	FOR MANHOLE IN INTEMEDIATE TANK SLAB	750x750		RECTANGULAR
C-06	FOR MANHOLE IN SLUDGE HOLDING TANK SLAB	750x750		RECTANGULAR
C-07	FOR MANHOLE IN SLUDGE HOLDING TANK SLAB	750x750		RECTANGULAR
C-08	CUTOUT FOR AIR INLET IN SLUDGE HOLDING TANK	150x300		RECTANGULAR
C-09	CUTOUT TO ACCESS TREATED WATER TANK-1	1200x900	-1.60	RECTANGULAR
C-10	CUTOUT TO ACCESS TREATED WATER TANK-2	1200x900	-1.60	RECTANGULAR
C-11	CUTOUT TO ACCESS SOFT WATER TANK	1200x900	-1.60	RECTANGULAR

MISCELLANEOUS INSERTS & CUTOUTS

S NO.	DESCRIPTION	MOC	DIA(MM)	BOTTOM LVL. OF PIPE(M)	PUDDLE / SLEEVE
	ELECTRICAL CABLE INCOMING INSERT	LOCATION & SIZE OF ALL THESE INSERTS & CUTOUTS WILL BE AS PER SITE CONDITION			
	SERVICE WATER INSERTS				
	RAW WATER INSERTS				
	TREATED WATER LINE INSERTS				
	VENTILATION CUTOUTS				

EQUIPMENT SPECIFICATION

S. NO.	DESCRIPTION	SPECIFICATION	QTY.
01.	AIR BLOWER FOR EQT & SHT	100m³/hr@4000mmWC	02 (1W + 1S)
02.	AIR BLOWER FOR SBR-1 & SBR-2	300m³/hr@5500mmWC	03 (2W + 1S)
03.	REACTOR FEED PUMP	25m³/hr@12m	03 (2W + 1S)
04.	FILTER FEED PUMP	25m³/hr@25m	02 (1W + 1S)
05.	IRRIGATION WATER TRANSFER PUMP	13.5m³/hr@55m	02 (1W + 1S)
06.	UF FEED PUMP	27m³/hr@25-30m	02 (1W + 1S)
07.	FLUSHING WATER TRANSFER PUMP	33m³/hr@85m	02 (1W + 1S)
08.	BACKWASH PUMP	36m³/hr@35-40m	02 (1W + 1S)
09.	SOFTENER FEED PUMP	15m³/hr@25m	02 (1W + 1S)
10.	ALKALI DOSING PUMP	0-6 LPH	01 (1W + 0S)
11.	ACID DOSING PUMP	0-6 LPH	01 (1W + 0S)
12.	CHLORINE DOSING PUMP	0-6 LPH	01 (1W + 0S)
13.	SOFT WATER TRANSFER PUMP	22.5m³/hr@85m	02 (1W + 1S)
14.	SUMP PUMP	15m³/hr@20m	02 (1W + 1S)
15.	SLUDGE TRANSFER PUMP	13m³/hr@8-10m	02 (1W + 1S)
16.	SCREW PUMP	2m³/hr@10-12m	02 (1W + 1S)
17.	BASKET CENTRIFUGE	2m³/hr	01 (1W + 0S)

TANK'S SPECIFICATION

S. NO.	DESCRIPTION	TANK SIZE LxWxH (WD+FB) (in mm)	M.O.C	QTY.
01.	BAAR SCREEN CHAMBER	2257x800x650	R.C.C	01
02.	OIL & GREASE TRAP	2445x2000x1750	R.C.C	01
03.	EQUALIZATION TANK	7744x3394x3925	R.C.C	01
04.	SEQUENTIAL BATCH REACTOR-1	7950x4802x5000	R.C.C	01
05.	SEQUENTIAL BATCH REACTOR-2	8050x4802x5000	R.C.C	01
06.	INTERMEDIATE WATER TANK	8106x3394x3625	R.C.C	01
07.	SLUDGE HOLDING TANK	4802x3681x3625	R.C.C	01
08.	TREATED WATER TANK-1	4802x3250x5700	R.C.C	01
09.	TREATED WATER TANK-2	4802x3250x5700	R.C.C	01
10.	SOFT WATER TANK	4802x4200x5700	R.C.C	01
11.	MULTI GRADE FILTER	4802x4200x5700	MSEP	01
12.	ACTIVATED CARBON FILTER	4802x4200x5700	MSEP	01
13.	SOFTENER	4802x4200x5700	FRP	01

NOTE:-

1) ALL DIMENSIONS ARE IN MM.
2) DO NOT SCALE ANY DIMENSION. ALWAYS FOLLOW WRITTEN DIMENSIONS.
3) ALL INSERTS AND PUDDLES ARE IN M3M SCOPE
4) FLANGE DRILLING STANDARD WILL BE AS PER 'TABLE E'
5) ALL FOUNDATION HEIGHT SHOULD BE 150MM.

ISSUE	MODIFICATION	DATE	SIGN.	APPROV.

CLIENT:- M/s Martial Buildcon Pvt. Ltd

CONSULTANT:- APOSTLE DESIGN STUDIO

CONTRACTOR:- ENHANCED WAPP SYSTEMS (I) PVT. LTD.
914-B 9 FLOOR BPTP PARK CENTRA,SEC 30, GURGAON
TEL:- 0124-6710000, FAX :- 0124-6710099

PROJECT:- STP 500KLD SBR BASED

SIZE	SCALE	DIMN.	TITLE:-
A1		MM	INSERTS & CUTOUS DETAIL DRAWING

DRN. BY	CHD. BY	APP. BY	DATE	DRG NO.	WAPP/M3M/STP/SBR/03
KAPIL	-	SHAILESH	07/12/13	REV. NO.	0 1

PROPOSED ECBC REPORT OF REVISED BUILDING PLANS OF COMMERCIAL COLONY MEASURING 11.1375 ACRES IN SECTOR-67, GURGAON

Developed by: MARTIAL BUILDCON PVT. LTD.

GreenTree
Define . Design . Deliver

Submitted By:
GreenTree Building Energy Pvt. Ltd,
B-67, Sector 67, Noida, UP – 201301.
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Email: tech@greentree.global
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CONTENT

TABLES

FIGURES

ABBREVIATIONS

COP – Coefficient of Performance

ECBC – Energy Conservation Building Code

HVAC – Heating Ventilation and Air Conditioning

LPD – Lighting Power Density

SHGC – Solar Heat Gain Coefficient

ECBC Compliance Reporting

1. Objective

- Analyzing the building performance in relation to Orientation, Envelope, Lighting, and HVAC systems by 'Whole Building Performance Method'.
- Inform with respect to ECBC compliance for the commercial buildings.

2. Introduction

Project is commercial building use development located at Sector 67, Golf Course Extn Road, and Gurgaon spread across approximately 11.1375 acres. Project consists of Retail and office area. It provides greater connectivity towards Delhi International Airport, metro stations, and numerous high-end residential projects and 30 minute drive from Delhi International Airport. Prominently located on Southern Peripheral Road (Golf Course Extension Road) one of the widest roads in Gurgaon (90 meters wide) and recently announced as NH 236 and Close to major Hospitals like Medicity, Artemis, Max and Fortis etc.,

3. Weather Conditions

Gurgaon experiences a monsoon-influenced humid subtropical climate . The city experiences four distinct seasons - spring (February - March), summer (April - August), fall/autumn (September - October) and winter (November - January), along with the monsoon season setting in towards the latter half of the summer.

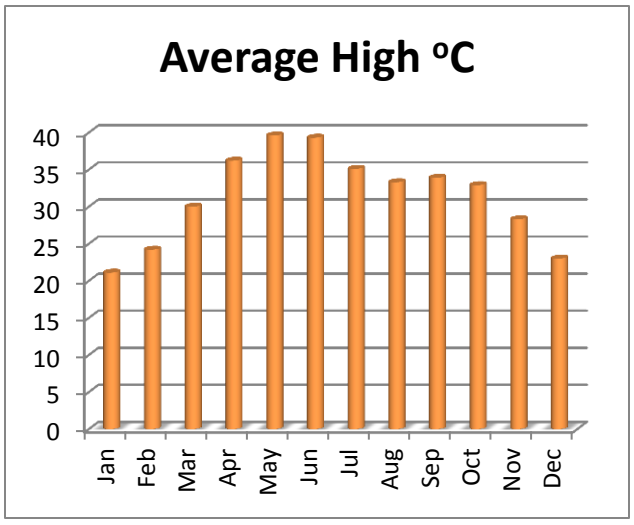


Figure 1: Average high deg C

Summers, from early April to mid-October, are typically hot and humid, with an average daily June high temperature of 40 °C.

The season experiences heat indices easily breaking 43 °C. Winters are cold and foggy with few sunny days, and with a December daytime average of 3 °C. The Western Disturbance brings some rain in winters that further add to the chill. Spring and autumn are mild and pleasant seasons with low humidity. The monsoon season usually starts in the first week of July and continues till August. Thunderstorms are not uncommon during the Monsoon.

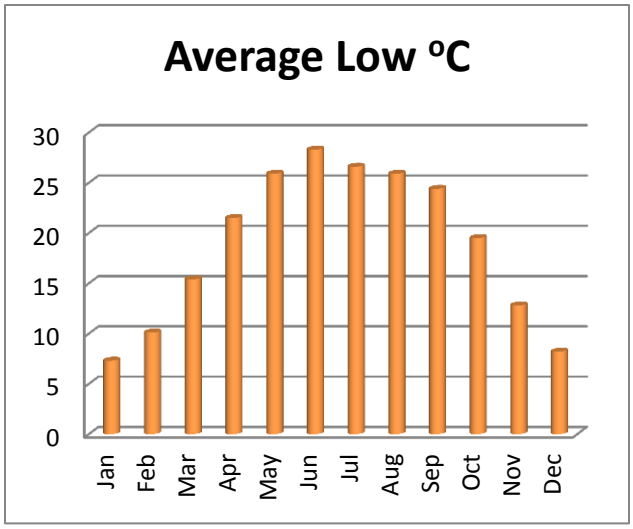


Figure 2: Average Low deg C

The Western Disturbance brings some rain in winters that further add to the chill. Spring and autumn are mild and pleasant seasons with low humidity. The monsoon season usually starts in the first week of July and continues till August. Thunderstorms are not uncommon during the Monsoon. As per Appendix E of ECBC, the climate zone of Gurgaon is Composite

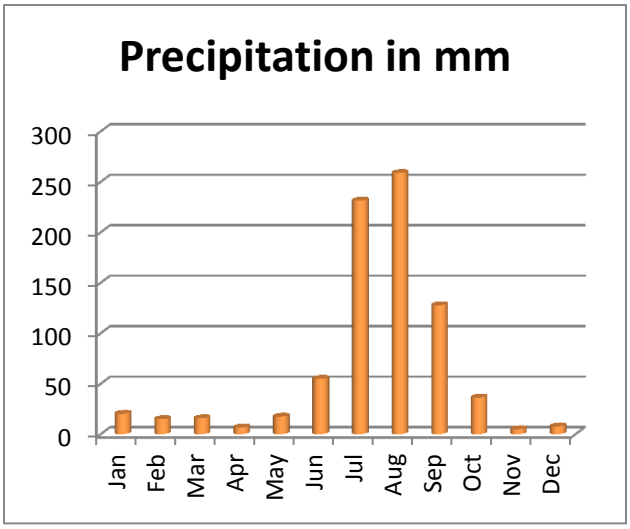


Figure 3: Rainfall in mm

Temperature Range

This chart indicated below shows the dry bulb temperature ranges enclosing the Recorded High and Low Temperature (round dots), the Design High and Low Temperatures (top and bottom of green bars), Average High and Low Temperatures (top and bottom of yellow bars), and Mean or Average Temperature (open slot). These values are calculated for each month and for the full year.

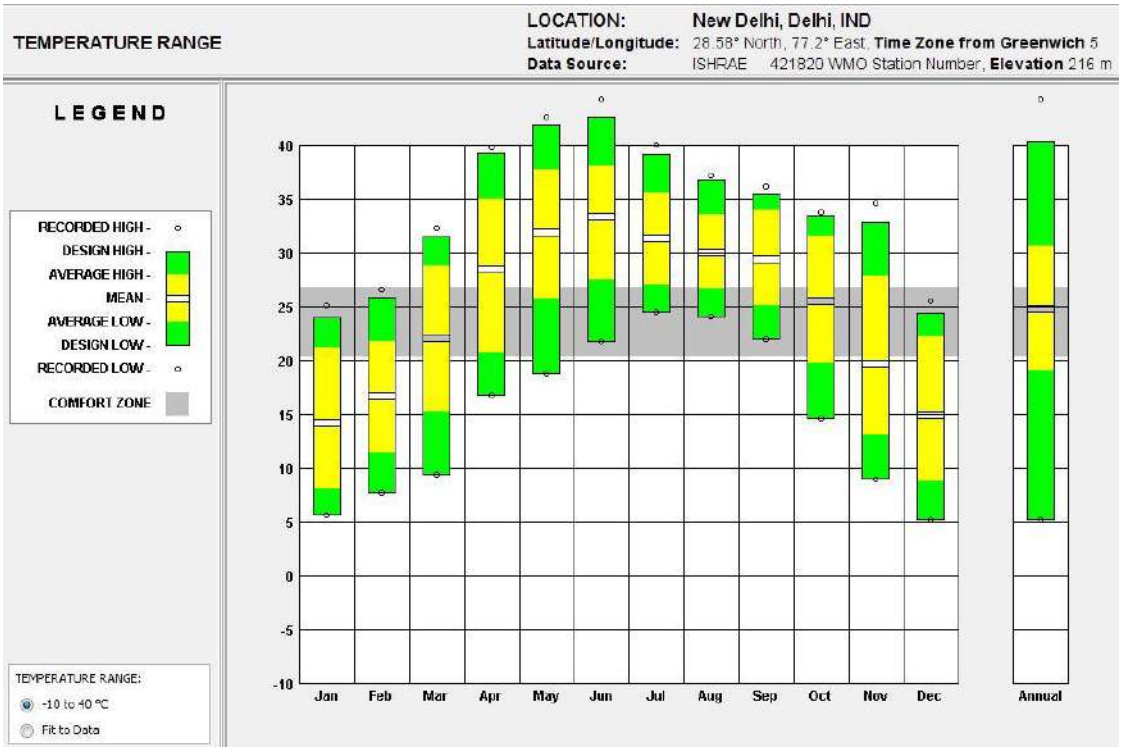


Figure 4: Annual temperature range chart

Dry Bulb vs. Relative Humidity

These 12 charts are the average for each hour of each month of the Dry Bulb Temperature (yellow dot) and the concurrent Relative Humidity (green dot). Also shown on each monthly chart is a gray bar for the Comfort Zone, as defined earlier.

Dry Bulb vs. Dew Point

These 12 charts are the average for each hour of each month of the Dry Bulb Temperature (yellow dot) and the concurrent Dew Point (green dot). Also shown on each monthly chart is a gray bar for the Comfort Zone as defined on the Criteria screen. Notice Dry Bulb temperature increases sharply at sunrise and peaks around 2 or 3 in the afternoon, but that Dew Point temperature is relatively stable throughout the day.

Timetable Plot

This plot shows along the bottom the months of the year and along the side the hours of the day. The time when Sunrise and Sunset occurs for this latitude is indicated by the curved yellow lines. The Dry Bulb Temperature plot was initially named by Olgyay as the Timetable

of Bioclimatic Needs and was used in his text to display graphically the differences between different types of climates. It also shows in the darkest blues when sun-facing windows should be exposed for passive heating and in light blue and red when windows should be shaded.

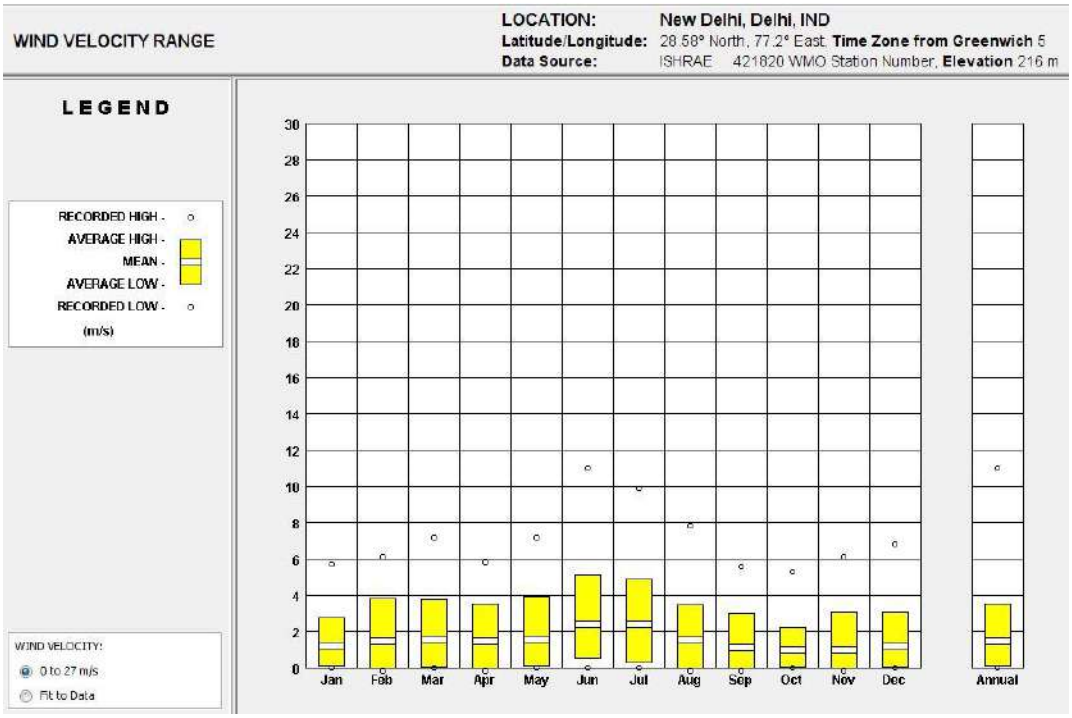


Figure 5: Annual Wing velocity range chart

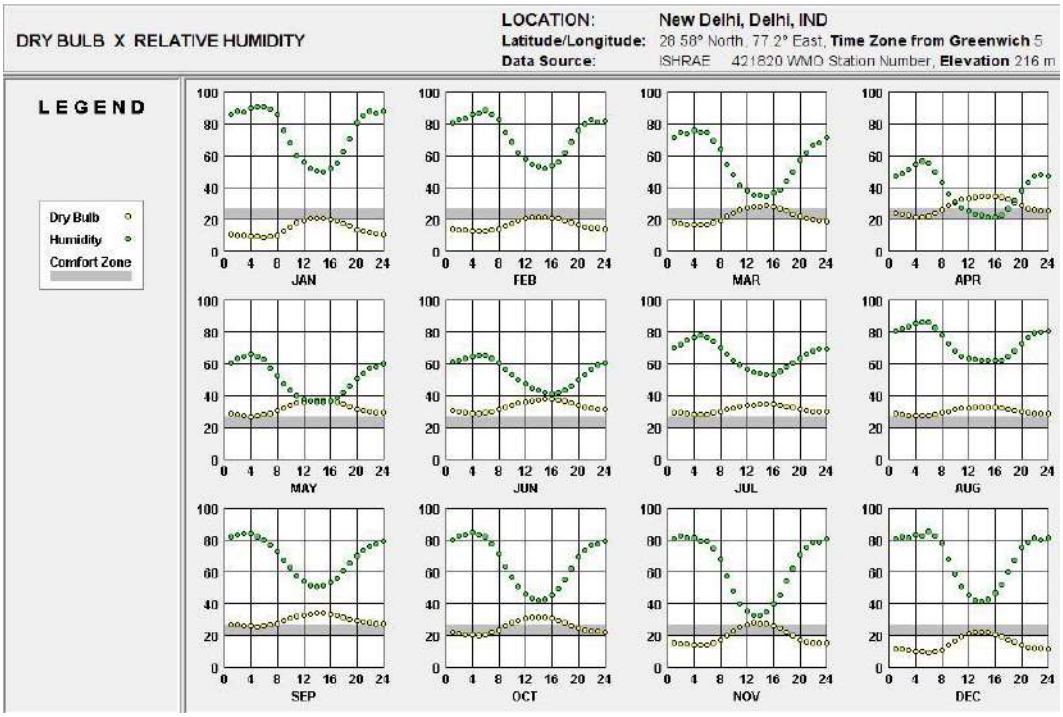


Figure 6: Annual Dry Bulb & Relative Humidity Chart

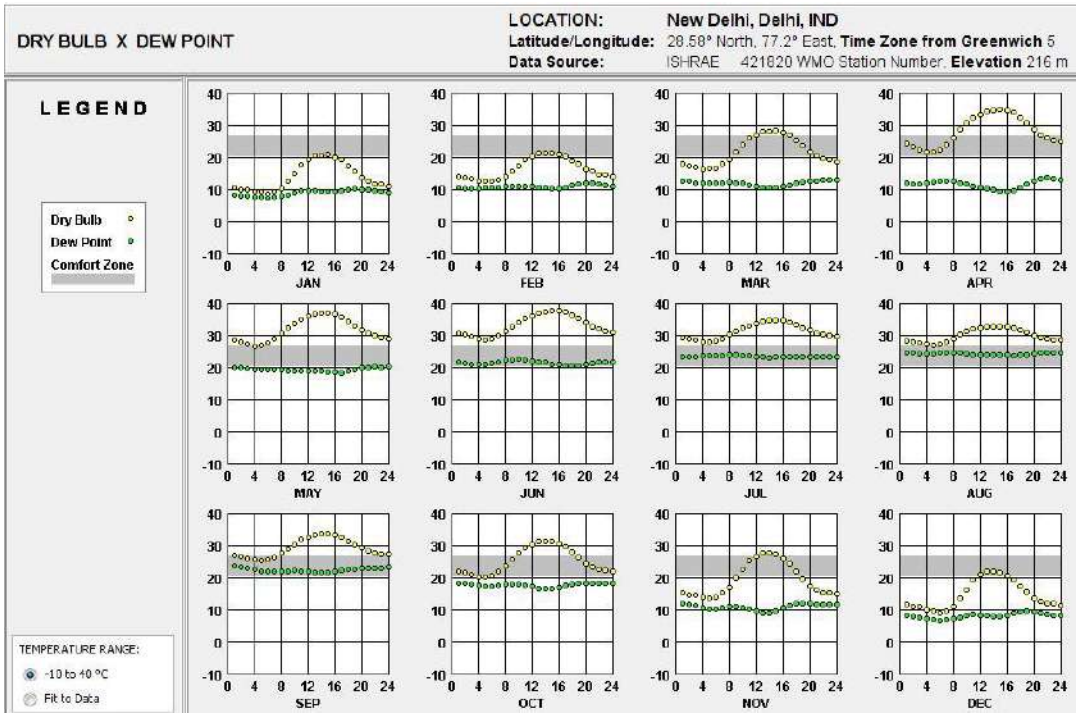


Figure 7: Annual Dry Bulb & Dew point chart

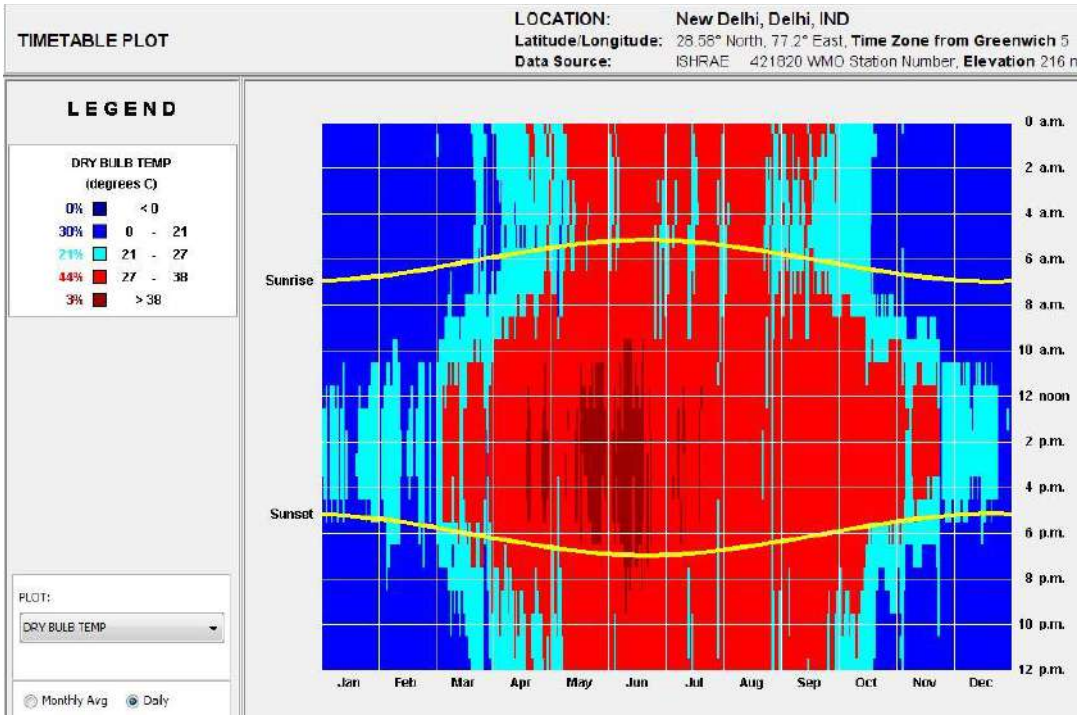


Figure 8: Timetable plot of Dry Bulb Temperature

Psychrometric Chart

This chart is one of the most powerful design tools. It shows dry bulb temperature across the bottom and moisture content of the air up the side. This vertical scale is also called absolute humidity and can be shown as the humidity ratio in pounds of water per pound of dry air (or grams of water per kilogram of dry air), or as the vapor pressure. The curved line on the far left is the saturation line (100% Relative Humidity line) which represents the fact that at lower temperatures air can hold less moisture than at higher temperatures. Every hour in the climate data file is shown as a dot on this chart. Some dots may represent more than one hour, for example when a given temperature and humidity occurs more than once in any month.

The color of each dot can represent whether or not the hour is Comfortable (green) or Uncomfortable (red), according to the inputs defining Comfort on the Criteria screen. The percentages of hours that fall in each category are also shown.

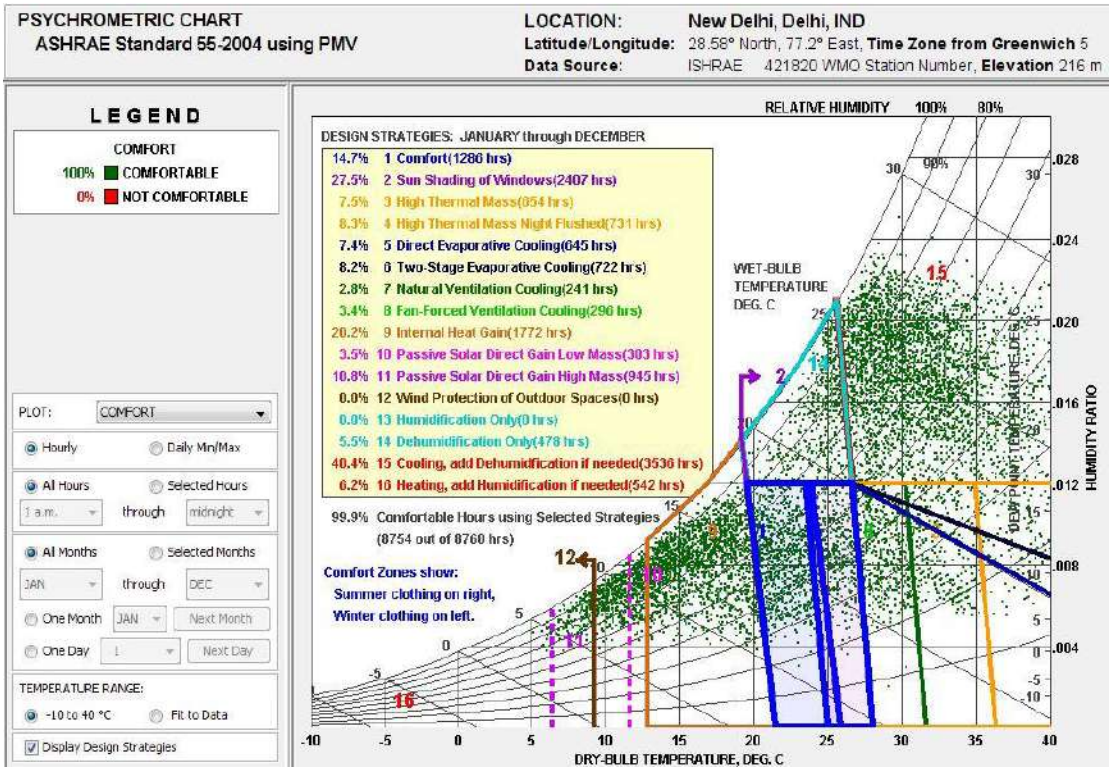


Figure 9: Psychrometric Chart

4. ECBC COMPLIANCE

Project has considered the following energy conservation or efficiency measures in compliance with ECBC requirement,

- Energy efficient DX water cooled unit is considered for the retail areas and Water cooled centrifugal chillers with COP more than the ECBC recommended value is considered for the office area.
- Insulations used for the HVAC piping and ducting are considered with higher R-value than ECBC recommended value.
- Energy efficient lighting fixtures like T5/ LED is proposed for internal lighting of the building.
- Only common area lighting is under developer scope and thus the installation and controls will be provided accordingly.
- Basement lighting is controlled by alternate circuit switch for reducing energy consumption during peak hours, by switching off the alternate lighting fixtures.
- LED lighting fixtures and timer controlled feeder pillars are considered for external areas. (Refer Annexure I for feeder pillar SLD)
- Oil filled transformer of 2 x 1600 kVA capacity with primary side supply from electricity board at 33/0.433kV is considered and the total losses of them at 100% and 50% load are less than ECBC recommended values i.e (Refer Annexure II for transformer sizing calculation).,
    - For 1600 kVA – maximum losses will be limited 16 kW and 4.85 kW respectively.
- Capacitor bank of 850 kVAR is proposed in the project to maintain the power factor above or equal to 0.95 (Refer Annexure III for capacitor bank sizing).
- EFF1/ EFF2 class energy efficient motors are considered for the HVAC system and plumbing system.
- 57.12 kW solar PV Panel is proposed for the commercial building to reduce the fossil fuel consumption.
- BTU meters will be installed by the project for the chiller, at the inlet and outlet of the chilled water pipe.

- Energy Metering will be provided by the project as recommended by ECBC: (Refer Annexure IV for electrical SLD)
  - For Services exceeding 1000 kVA - Metering must be done to record demand (kVA), energy (kWh), and total power factor. The metering shall also display current (in each phase and the neutral), voltage (between phases and tween Apart from above metering, following metering has to be done, each phase and neutral), and Total Harmonic Distortion (THD) as a percentage of total current.

5. WHOLE BUILDING ENERGY PERFORMANCE ANALYSIS

5.1. METHODOLOGY

The project has been modeled using the e-QUEST energy simulation software which is able to model energy flows on hourly basis for the entire year. This simulation tool has the capability to model hourly variations, lighting, HVAC equipment, daylight control and thermal zones. e-QUEST uses the DOE 2.2 simulation engine. The SLD has been created so that the single line rests on the interior side of the external walls and in the middle of the interior walls. For representing the weather conditions, project has used the ISHRAE weather file database to represent the external weather conditions. Provided below the chart indicating the steps flow of 'Whole Building Energy Performance Process',

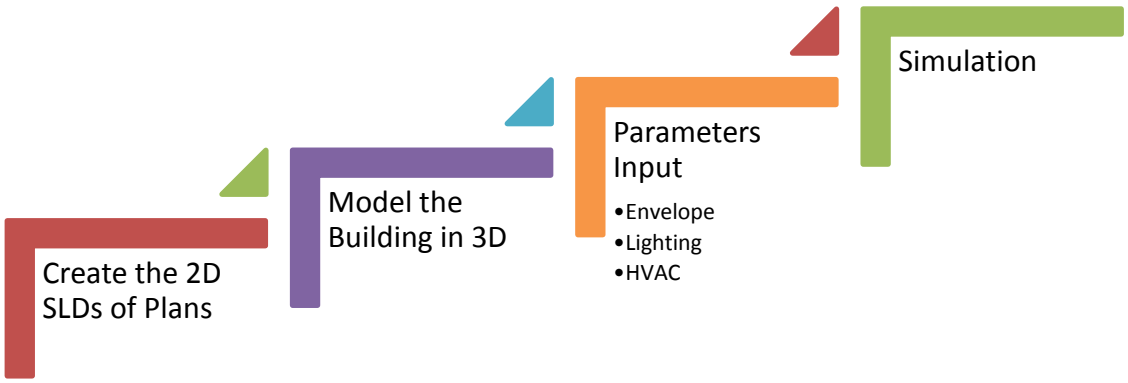


Figure 10: Whole Building Performance Process

6. PROPOSED BUILDING END USE CHARACTERIZATION

Provided below the parameters considered for proposed and standard design,

Table 1: Input Parameter- Retail and office

Input Parameter	Standard Design	Proposed Design	Units
Wall material	As per ECBC	230 mm AAC block + 25mm internal plaster + 15mm external plaster	
Wall U-value	0.077	0.09	Btu/hr sq ft F
Roof material	As per ECBC	RCC 150 mm + 50 mm EPS insulation	
Roof U-value	0.072	0.1	Btu/hr sq ft F
Glazing U Value	0.581	Office - 0.28 Shop - 0.95	Btu/hr sqft F
Glazing Shading Coefficient	0.23	Office - 0.21 Shop - 0.72	
Cooling Sizing Ratio	1.15	1	
Heating Sizing Ratio	1.25	1	
Cooling System	As per ECBC	Retail : Water cooled DX unit Office:350 TR water cooled centrifugal chiller	
Lighting Power Density	As per ECBC	As per the Lighting drawings for corridor, stair case, lift & toilet. Other areas as per ECBC	W/ m^2
Schedule	Office: 10am to 6pm; Retail: 9am to 9pm	Office: 10am to 6pm; Retail: 9am to 9pm	
Zone Cooling set point	74	74	deg F
Zone Heating set point	70	70	deg F

6.1. 3D View Simulation Model

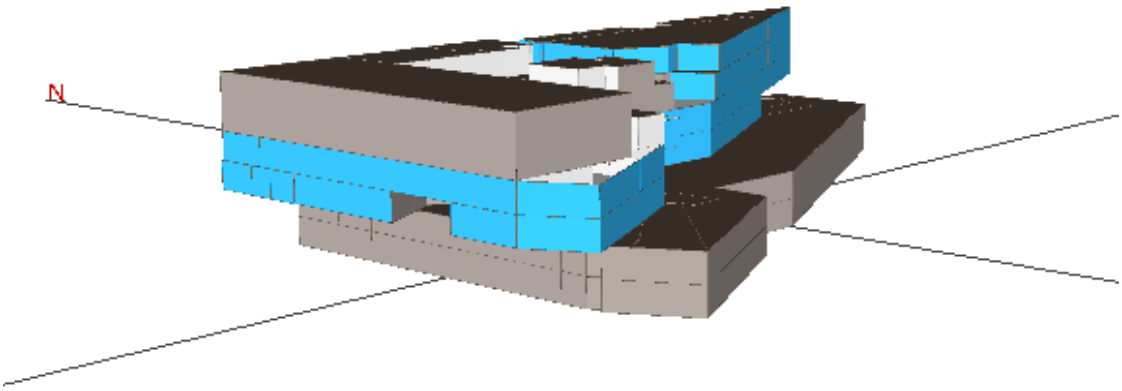


Figure 11 : South West View

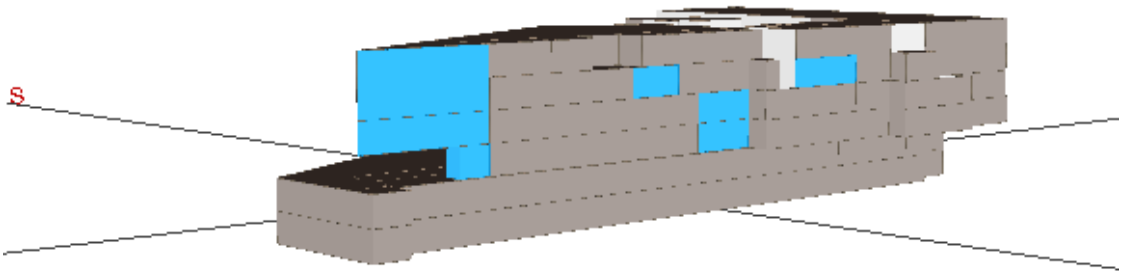


Figure 12: North East View

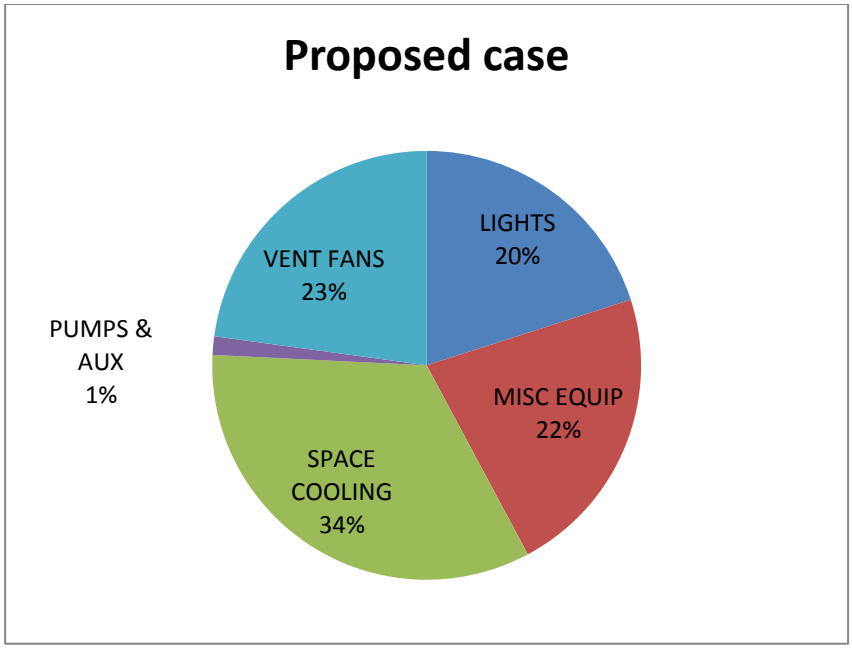


Figure 13: Proposed Energy End Use Characterization

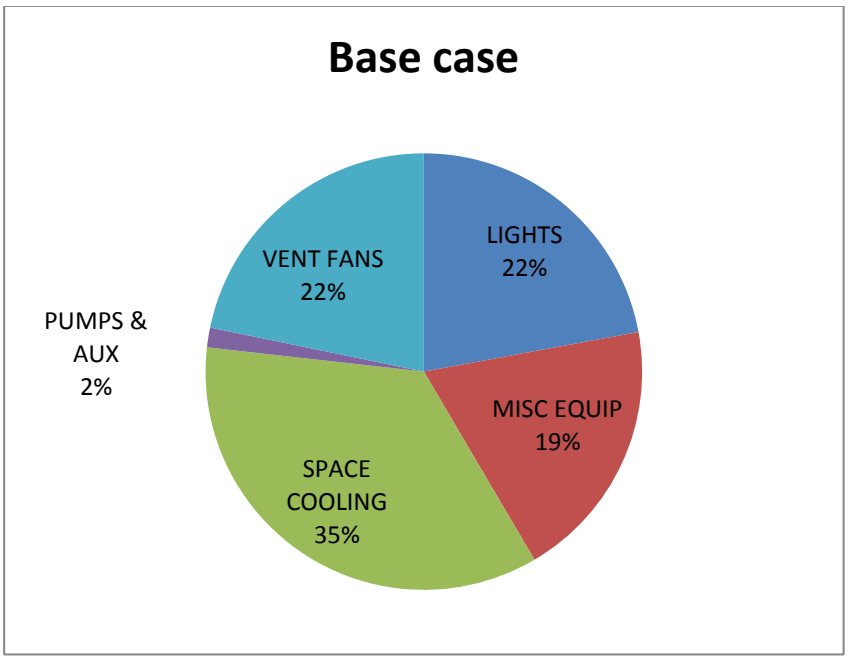


Figure 14: Standard design Energy End Use Characterization

6.2. BASEMENT PARKING LIGHTING CALCULATION

Table 2: Basement parking lighting load

Type	No. of fixtures	Wattage	Total Wattage
LED Linear Light Fixture	275	20	5500
LED Lamp	26	13	338
Bulkhead light	33	10	330
Total			**6168**

Total parking garage area	= 23437.897 m^2
Total lighting load	= 6168 W
Proposed - Light power density (LPD)	= 0.26 W/m^2
Standard design - LPD (as per ECBC)	= 3.2 W/m^2
Standard design Basement Parking Lighting	= (23437.897x3.2x24x365)/1000
Standard design Energy Consumption	= 657011.1 kWh/yr
Propose design Basement Parking Lighting	= (6168x24x365)/1000
Proposed design Energy Consumption	= 54031.68 kWh/yr
Total savings	= 91.78 %

Project consists of three basements with total area of 23437.897 m^2. Light power density (LPD) of the basement is calculated to be 0.26 W/m^2 and achieves savings of 91.78% over the ECBC standard design LPD i.e, 3.2 W/m^2.

7. OVERALL ENERGY CONSUMPTION

Table 3: Overall Energy consumption in kWh (excluding basement lighting energy consumption)

DESCRIPTION	UNITS	LIGHTS	MISC EQUIP	SPACE COOLING	PUMPS & AUX	VENT FANS	TOTAL
PROPOSED	**kWh**	**1032844**	**1139993**	**1730883**	**71663**	**1176420**	**5216626**
BASELINE - 0 DEG	kWh	1295309	1139993	2066833	85295	1278222	6054242
BASELINE - 90 DEG	kWh	1295309	1139993	2060558	86566	1272261	6047902
BASELINE - 180 DEG	kWh	1295309	1139993	2068784	85296	1275083	6059019
BASELINE - 270 DEG	kWh	1295309	1139993	2066831	85295	1278223	6054240
BASELINE - AVG	**kWh**	**1295309**	**1139993**	**2065752**	**85613**	**1275947**	**6053851**

Based on basement lighting energy consumption calculation indicated in Section 6 of the report, proposed and standard design basement lighting energy consumption are as follows,

- Proposed basement lighting energy consumption = 54031.68 kWh/yr.
- Standard design basement lighting energy consumption = 657011.1 kWh/yr.

Therefore, overall proposed and standard design energy consumption including basement lighting are indicated in below table

Table 4: Total energy consumption in kWh with basement lighting energy consumption

Description	Energy Consumption Excluding Basement Lighting (kWh)	Energy Consumption of Basement Lighting (kWh)	Total Energy Consumption (kWh)
Proposed design	5216626	54031.68	5270657.68
Standard design	6053851	657011.1	6710861.9

From the above table following parameters are analyzed, proposed design energy consumption of the commercial part of the project is estimated to be 5270657.68kWh, which is less than the Standard design energy consumption i.e., 6710861.9 kWh.

Further, project has proposed 57.12 kW of solar photovoltaic system and the detailed calculation of the solar PV sizing is as follows,

Total Commercial area	= 19833 m^2
Considering @ 16kW/100 m^2 load for commercial	= 3173.425 kW
Overall diversity @ 60%	= 1904 kW

As Per HAREDA Norms, 3% of Total Load shall be produced by Solar Photovoltaic Power Plant for Load above 1000 KW. Thus 3% of total load i.e., 1904 kW is calculated to be 57.12 kW.

Energy generated from the 57.12 kW_p solar photovoltaic system is estimated from RET Screen software as indicated below,

	Unit	Climate data location	Project location
Latitude	°N	28.6	28.6
Longitude	°E	77.1	77.1
Elevation	m	233	233
Heating design temperature	°C	7.2	
Cooling design temperature	°C	42.0	
Earth temperature amplitude	°C	23.7	

Month	Air temperature °C	Relative humidity %	Daily solar radiation - horizontal kWh/m²/d	Atmospheric pressure kPa	Wind speed m/s	Earth temperature °C	Heating degree-days °C-d	Cooling degree-days °C-d
January	13.3	75.1%	3.80	98.7	2.2	14.1	146	102
February	17.0	63.0%	4.68	98.4	2.4	18.2	28	196
March	23.5	48.7%	5.80	98.1	2.6	26.0	0	419
April	30.2	33.6%	6.30	97.7	2.8	32.8	0	606
May	34.1	35.3%	6.42	97.2	3.5	36.3	0	747
June	33.4	50.0%	6.07	96.9	3.3	36.1	0	702
July	31.1	70.9%	5.22	97.0	3.1	31.3	0	654
August	30.7	70.4%	4.81	97.2	2.8	29.2	0	642
September	29.9	68.3%	5.06	97.6	2.3	28.0	0	597
October	26.7	58.8%	4.83	98.1	1.6	25.1	0	518
November	21.1	53.2%	4.18	98.5	1.5	20.1	0	333
December	14.9	69.1%	3.52	98.7	1.6	15.2	96	152
Annual	25.5	58.1%	5.06	97.8	2.5	26.1	270	5,667
Measured at	m				10.0	0.0		

Photovoltaic			
Type		mono-Si	
Power capacity	kW	57.12	
Manufacturer		BP Solar	
Model		mono-Si - BP 590F	1135 unit(s)
Efficiency	%	14.3%	
Nominal operating cell temperature	°C	45	
Temperature coefficient	% / °C	0.40%	
Solar collector area	m²	400	
Miscellaneous losses	%	5.0%	
Inverter			
Efficiency	%	95.0%	
Capacity	kW	102.1	
Miscellaneous losses	%	5.0%	
Summary			
Capacity factor	%	16.6%	
Electricity exported to grid	MWh	82.828	

Therefore, overall energy generated from solar power system is 82.828 MWh (82828 kWh).

Table 5: Overall savings calculation

Proposed design energy consumption (kWh)	**5270657.68**
Solar PV energy generated (from RET screen) (kWh)	**82828**
Proposed design energy consumption after deducting solar PV generation (kWh)	**5187829.68**
Standard design energy consumption (kWh)	**6710861.9**
Savings %	**22.7 %**

Therefore, project achieves energy saving of 22.7 % when compared with ECBC standard design. Thereby, project is meeting the ECBC compliance by 'Whole Building Performance' approach.

8. eQUEST OUTPUT SCREENSHOTS

8.1. STANDARD DESIGN 0 DEG

Urbana_Premium_R5_2017_01_30 DOE-2.2-48r 6/28/2017 13:38:10 BDL RUN 17

REPORT- BEPU Building Utility Performance WEATHER FILE- EPW New Delhi,Delhi,

		LIGHTS	TASK LIGHTS	MISC EQUIP	SPACE HEATING	SPACE COOLING	HEAT REJECT	PUMPS & AUX	VENT FANS	REFRIG DISPLAY	HT PUMP SUPPLEM	DOMEST HOT WTR	EXT USAGE	TOTAL
EM1	ELECTRICITY													
	KWH	1295309.	0.	1139993.	163406.	2066833.	25189.	85295.	1278222.	0.	0.	0.	0.	6054242.
FM1	NATURAL-GAS													
	THERM	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

TOTAL ELECTRICITY 6054242. KWH 27.314 KWH /SQFT-YR GROSS-AREA 27.314 KWH /SQFT-YR NET-AREA

8.2. STANDARD DESIGN 90 DEG

Urbana_Premium_R5_2017_01_30 DOE-2.2-48r 6/28/2017 13:38:41 BDL RUN 18

REPORT- BEPU Building Utility Performance WEATHER FILE- EPW New Delhi,Delhi,

		LIGHTS	TASK LIGHTS	MISC EQUIP	SPACE HEATING	SPACE COOLING	HEAT REJECT	PUMPS & AUX	VENT FANS	REFRIG DISPLAY	HT PUMP SUPPLEM	DOMEST HOT WTR	EXT USAGE	TOTAL
EM1	ELECTRICITY													
	KWH	1295309.	0.	1139993.	167334.	2060558.	25885.	86566.	1272261.	0.	0.	0.	0.	6047902.
FM1	NATURAL-GAS													
	THERM	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

TOTAL ELECTRICITY 6047902. KWH 27.286 KWH /SQFT-YR GROSS-AREA 27.286 KWH /SQFT-YR NET-AREA

8.3. STANDARD DESIGN 180 DEG

Urbana_Premium_R5_2017_01_30 DOE-2.2-48r 6/28/2017 13:39:15 BDL RUN 19

REPORT- BEPU Building Utility Performance WEATHER FILE- EPW New Delhi,Delhi,

	LIGHTS	TASK LIGHTS	MISC EQUIP	SPACE HEATING	SPACE COOLING	HEAT REJECT	PUMPS & AUX	VENT FANS	REFRIG DISPLAY	HT PUMP SUPPLEM	DOMEST HOT WTR	EXT USAGE	TOTAL
EM1 ELECTRICITY													
KWH	1295309.	0.	1139993.	168750.	2068784.	25809.	85296.	1275083.	0.	0.	0.	0.	6059019.
FM1 NATURAL-GAS													
THERM	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

TOTAL ELECTRICITY 6059019. KWH 27.336 KWH /SQFT-YR GROSS-AREA 27.336 KWH /SQFT-YR NET-AREA

8.4. STANDARD DESIGN 270 DEG

Urbana_Premium_R5_2017_01_30 DOE-2.2-48r 6/28/2017 13:39:55 BDL RUN 20

REPORT- BEPU Building Utility Performance WEATHER FILE- EPW New Delhi,Delhi,

	LIGHTS	TASK LIGHTS	MISC EQUIP	SPACE HEATING	SPACE COOLING	HEAT REJECT	PUMPS & AUX	VENT FANS	REFRIG DISPLAY	HT PUMP SUPPLEM	DOMEST HOT WTR	EXT USAGE	TOTAL
EM1 ELECTRICITY													
KWH	1295309.	0.	1139993.	163405.	2066831.	25189.	85295.	1278223.	0.	0.	0.	0.	6054240.
FM1 NATURAL-GAS													
THERM	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

TOTAL ELECTRICITY 6054240. KWH 27.314 KWH /SQFT-YR GROSS-AREA 27.314 KWH /SQFT-YR NET-AREA

8.5. PROPOSED DESIGN

Urbana_Premium_R5_2017_01_30 DOE-2.2-48r 6/28/2017 13:28:53 BDL RUN 1

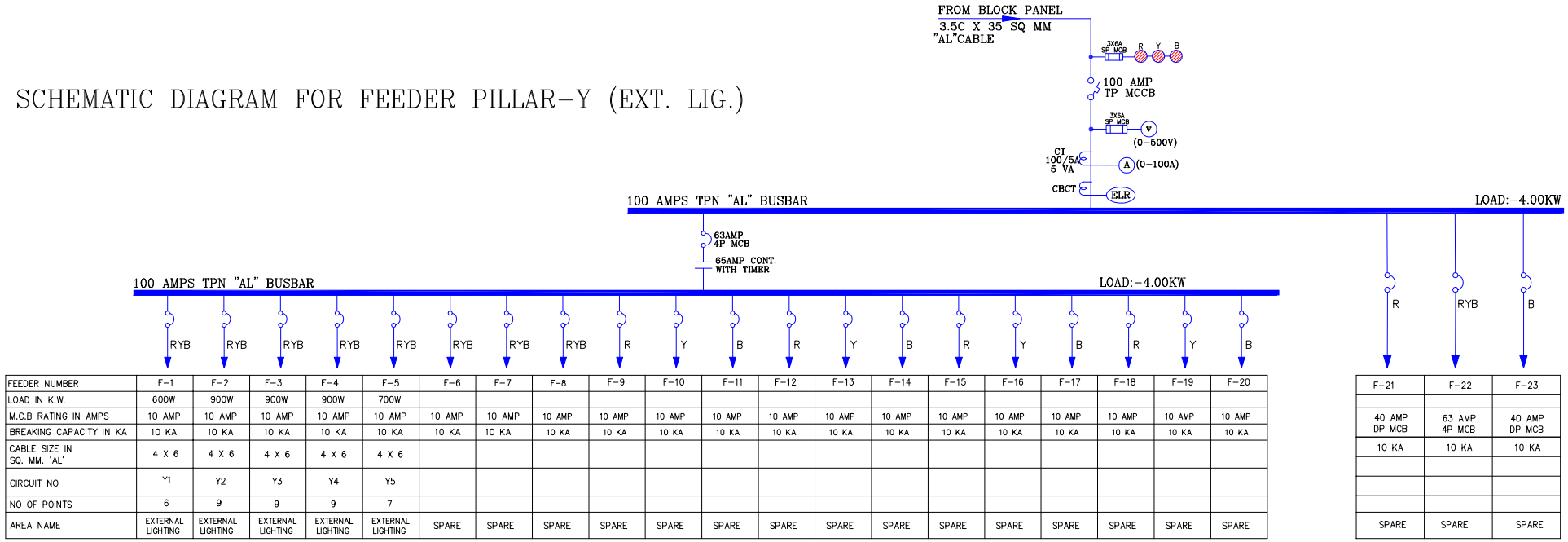
REPORT- BEPU Building Utility Performance WEATHER FILE- EPW New Delhi,Delhi,

	LIGHTS	TASK LIGHTS	MISC EQUIP	SPACE HEATING	SPACE COOLING	HEAT REJECT	PUMPS & AUX	VENT FANS	REFRIG DISPLAY	HT PUMP SUPPLEM	DOMEST HOT WTR	EXT USAGE	TOTAL
EM1 ELECTRICITY													
KWH	1032844.	0.	1139993.	37959.	1730883.	26868.	71663.	1176420.	0.	0.	0.	0.	5216626.
FM1 NATURAL-GAS													
THERM	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

TOTAL ELECTRICITY 5216626. KWH 23.535 KWH /SQFT-YR GROSS-AREA 23.535 KWH /SQFT-YR NET-AREA

ANNEXURE-I

SCHEMATIC DIAGRAM FOR FEEDER PILLAR-Y (EXT. LIG.)



FEEDER NUMBER	F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8	F-9	F-10	F-11	F-12	F-13	F-14	F-15	F-16	F-17	F-18	F-19	F-20
LOAD IN K.W.	600W	900W	900W	900W	700W															
M.C.B RATING IN AMPS	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP
BREAKING CAPACITY IN KA	10 KA	10 KA	10 KA	10 KA	10 KA	10 KA	10 KA	10 KA	10 KA	10 KA	10 KA	10 KA	10 KA	10 KA	10 KA	10 KA	10 KA	10 KA	10 KA	10 KA
CABLE SIZE IN SQ. MM. 'AL'	4 X 6	4 X 6	4 X 6	4 X 6	4 X 6															
CIRCUIT NO	Y1	Y2	Y3	Y4	Y5															
NO OF POINTS	6	9	9	9	7															
AREA NAME	EXTERNAL LIGHTING	EXTERNAL LIGHTING	EXTERNAL LIGHTING	EXTERNAL LIGHTING	EXTERNAL LIGHTING	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE

F-21	F-22	F-23
40 AMP DP MCB	63 AMP 4P MCB	40 AMP DP MCB
10 KA	10 KA	10 KA
SPARE	SPARE	SPARE

ANNEXURE-II

ELECTRICAL LOAD CALCULATION

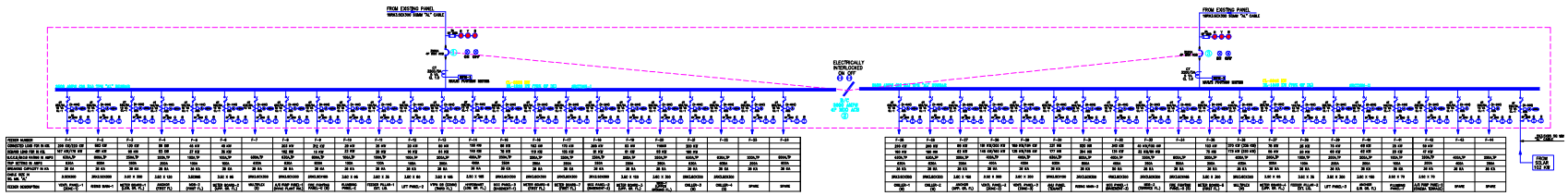
S.NO.	DESCRIPTION	CONNECTED LOAD
1	TOTAL CONNECTED LOAD (19833.904 SQ. MT. @ 16 KW / 100 SQ MT)	3173.425 kW
2	TOTAL DEMAND LOAD AFTER 60 % DIVERSITY	1904.1 KW
	Overall Maximum Demand in KVA at 0.9 Power Factor	2115.62 KVA
	Rating of Transformer at 80% Loading	2644.52 kVA

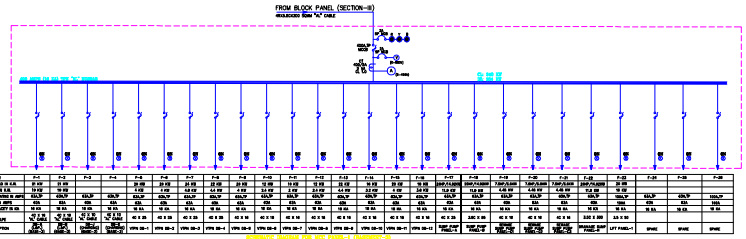
HENCE SELECT 2 NOS 1600 KVA ,33 KV/433V OIL FILLED TRANSFORMER WITH OFF LOAD TAP CHANGER

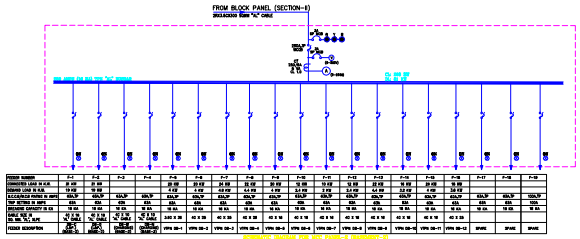
ANNEXURE-III

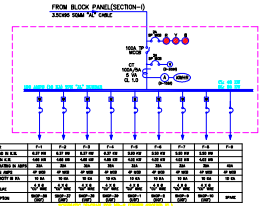
S. NO.	DESCRIPTION	LOAD	POWER FACTOR	LOAD
1	Total Connected Load	3173.425 KW	0.80	2538.74 KW
	TOTAL	**3173.425 KW**		**2538.74KW**
	SELECTION OF SIZE OF CAPACITOR BANK			
	AVERAGE POWER FACTOR			0.80
	DESIRED POWER FACTOR			0.95
	MULTIPLING FACTOR FROM CHART			0.421
	CAPACITOR REQUIRED TO IMPROVE POWER FACTOR **= KW Maximum x Multiping factor**			**1336.012**KVAR
	OVERALL DIVERSITY @60%			801.61 KVAR
	HENCE SELECT 850 KVAR CAPACITOR BANKS			

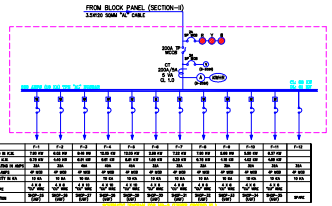
ANNEXURE-IV

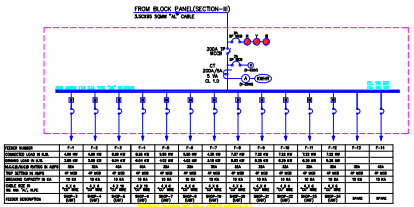


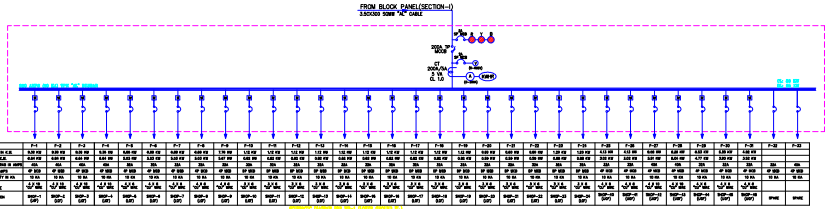


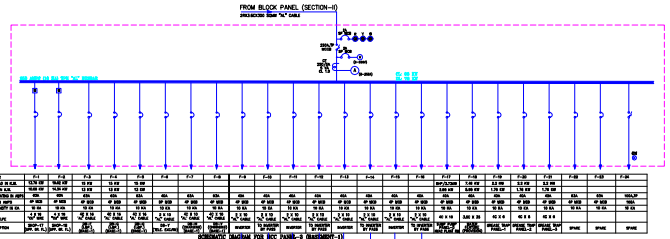


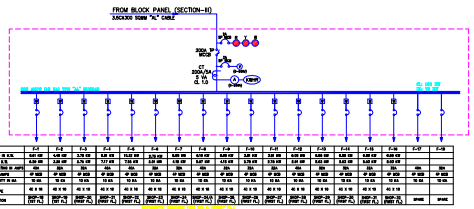


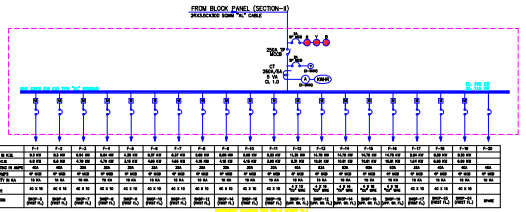


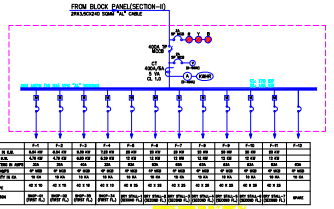












LEGEND

S.NO.	DESCRIPTION	SYMBOLS
1	AMMETER	A
2	AMMETER SELECTOR SWITCH	ASS
3	VOLTMETER	V
4	VOLTMETER SELECTOR SWITCH	VSS
5	POWER FACTOR METER	PF
6	FREQUENCY METER	HZ
7	TIME DELAY EARTH FAULT RELAY	SIN
8	CURRENT TRANSFORMER	CT
9	UNDER/OVER VOLTAGE RELAY	27/59
10	POTENTIAL TRANSFORMER	PT
11	TIMER	2
12	TRIP NEUTRAL CLOSE	T N C
13	INDICATING LAMP	
14	DRAWOUT TYPE	
15	MULTI FUNCTION METER (KW, KWh, KVAR, MDI, PF, V, A, Hz, THD) (EQUIVALENT TO EM6400)	MFM-1
16	MCCB	
17	REVERSE POWER RELAY	RPR
18	AUTOMATIC POWER FACTOR CORRECTION RELAY	APFCR
19	ANTIPUMPING RELAY	AP
20	MASTER TRIP RELAY	MR
21	AUXILIARY RELAY	XR
22	TRIP CIRCUIT HEALTHY	TCH
23	BREAKER OFF GREEN	
24	BREAKER ON RED	
25	BREAKER CONTROL SWITCH	BCS
26	ELECTRICAL DRAW OUT TYPE	EDO
27	AIR CIRCUIT BREAKER	ACB
28	DIGITAL TRIVECTOR METER WITH MAXIMUM DEMAND INDICATOR	TVM
29	PHASE INDICATING LAMP	R Y B
30	SPRING CHARGED, RED	L1
31	DC CONTROL SUPPLY HEALTHY, RED	L2
32	DG START PUSH BUTTON, GREEN	S1
33	DG STOP PUSH BUTTON, RED	S2
34	TRIP/RESET ILLUMINATED PUSH BUTTON, RED	S3
35	EMERGENCY STOP PUSH BUTTON	EM
36	DC AMMETER	A
37	DC VOLTMETER	V
38	HOOTER	H
39	ANN. TEST PUSH BUTTON	T
40	ANN. ACCEPT PUSH BUTTON	A
41	ANN. RESET PUSH BUTTON	R
42	CHANGE OVER SWITCH	C.O.S
43	NEUTRAL ISOLATION CONTACTOR	NIC
44	ANNUNCIATOR	ANN
45	RESTRICTED EARTH FAULT PROTECTION	64R
46	DIFFERENTIAL PROTECTION RELAY	87T
47	INSTANTANEOUS OVER CURRENT RELAY	50
48	TIME DELAY OVER CURRENT RELAY	51
49	INSTANTANEOUS E/F RELAY	ISN
50	TIME DELAY E/F RELAY	SIN
51	DUAL READING ENERGY METER	DMVD
52	ENERGY METER	M
53	EARTH LEAKAGE RELAY	ELR
54	CORE BALANCE CURRENT TRANSFORMER	CBCT

GreenTree
Define . Design . Deliver

- ✓ Green Buildings Certification(LEED IGBC, LEED USGBC, ESTIDAMA, GRIHA, ECBC)& Documentation
- ✓ ECBC Conformance Analysis & Documentation
- ✓ Energy Auditing & ESCO Implementation
- ✓ Third Party Commissioning Services
- ✓ Energy, Daylight & CFD Simulation
- ✓ Energy Solutions Design & Implementation
- ✓ Bespoke Services:
  - Energy Software development (ECOnirman, ECObench)
  - Policy Assistance to ULBs, SDAs, International Agencies
  - Capacity Building

Experience:

Its team of Architects and Engineers are well versed with the Energy Policies and Sustainability Frameworks available in the market. The extensive experience as a service provider of Green Building Services extends a continuous advisory support to the organizations wishing to implement these frameworks in their existing/new buildings on their own. It also has extensive experience in building energy simulation tools and has building technology exposure by working in South Korea, Vietnam, and Kuwait. **GT (GreenTree) has worked on more than 250 projects across the globe.**

GT has been involved in the adaption of ECBC guidelines prescribed on the basis of the local climatic and geographical conditions of the Uttar Pradesh and Uttarakhand states. GreenTree, as a member of ECBC drafting committee, introduced adequate alterations and specifications related to locally available materials and technologies in the draft undergoing notification protocol. It is anticipated that the inclusion of 'easy to implement' guidelines shall help the SDA (State designated agency)/ ULBs (Urban local bodies) in implementing the energy code across the state. GT has been engaged in a study by Swiss Agencies for "Mapping & Assessment of Sustainable Building Rating Systems in India". The overall objective of the study was to get an overview of rating systems and their response to the energy efficiency challenge in India from the market and the institutional perspective. This study will further lead to exploring the potential of a simple energy-efficient rating system for the residential building sector.

GreenTree has developed ECOnirman: a code compliance tool which makes it easier for the user to find out if their proposed or existing building meets the compliance requirements as set by the Indian Government in the Energy Conservation Building Code (ECBC). It is intended as a self-contained tool that addresses the Envelope, Air-conditioning, Service hot water system, lighting system, and Electrical Power requirements. It also has developed ECObench: Building Energy Benchmarking Tool which helps building owners/designers in evaluating performance of their buildings by comparing energy consumption of their building with similar buildings. USAID ECO-III Project in partnership with Bureau of Energy Efficiency (BEE) launched an online building energy data collection and benchmarking tool. The building level data collected has been analyzed and used to compute energy consumption benchmarks and comparative performance based rating of the building among its peer group.

Supported capacity building programs at state level, GT has organized workshops focused on capacity building of SDAs and other Government departments such as CPWD, LDA (Lucknow Development Authority), and PEDA (Punjab Renewable Energy Development Agency) etc.

Associations with:

HARYANA GOVERNMENT

RENEWABLE ENERGY DEPARTMENT

Order

Dated 14th March, 2016

No.22/52/2005-5Power:- In exercise of the powers conferred by section 18 of the Energy Conservation Act, 2001 (Central Act 52 of 2001), the Governor of Haryana hereby makes the following amendment in the Haryana Government, Renewable Energy Department, Order No.22/52/05-5Power, dated the 29th July 2005, namely:-

Amendment

In the Haryana Government, Renewable Energy Department, Order No. 22/52/05-5Power, dated the 29th July 2005, **Para 1, " Mandatory use of Solar Water Heating Systems"** shall be omitted.

Ankur Gupta,
Principal Secretary to Government Haryana,
Renewable Energy Department.

Helpline :-
1800-180-2132 , hepc[dot]helpdesk[at]gmail[dot]com

Department of Industries & Commerce, Haryana
Haryana Enterprises Promotion Center

Welcome, Satyapal Singh !

Single Roof Clearances System

Facilitates prospective investors to obtain regulatory clearances online through Haryana Enterprises Promotion Center under Haryana Enterprise Promotion Board and Empowered Executive Committee.

Search..

#	CAF Pin	RM Info	Total Project Cost	Proposed Employment	Business Entity	District	
1	2715230207		291.03	4000	Martial Buildcon Pvt. Ltd.	Gurugram	Details

MARTIAL BUILDCON PRIVATE LIMITED

CIN – U45400DL2007PTC170267
martialbuildcon@yahoo.com
Regd: Office No. 1221 A, Devika Tower, 12th Floor, 6 Nehru Place, New Delhi-110019

4th June, 2018

To,
The Advisor (S)
Northern Regional Office
Ministry OF Environment, Forest & Climate Change (MoEF & CC)
Bays No. 24-25, Sector 31-A, Dakshin Marg
Chandigarh

Subject: **Submission of Six-monthly Compliance Report of Stipulated Conditions of Environmental Clearance for the Commercial Complex in (2.71+2.68) 5.39 Acres at Sector-67, Village- Maidawas & Badshahpur, Gurgaon, Haryana for the period of October 2017 to March 2018.**

Sir,
In accordance with the conditions of Environmental Clearance received from State Environment Impact Assessment Authority for the above said project vide letter No. SEIAA/HR/2012/120 dated 11.07.2012; we are submitting herewith Six Monthly Compliance report of stipulated conditions of Environmental Clearance (hard and soft copies) for the period of October 2017 to March 2018.

Thanking you

Yours Sincerely,

For M/s Martial Buildcon Pvt. Ltd.

Amar Nath Ichhpujani/ Satya Pal Singh
(Authorized Signatories)

State Environment Impact Assessment Authority, Panchkula
Receipt No.
Date 8-6-18

Copy to:

1. Chairman, Haryana State Pollution Control Board (HSPCB), C-11, Sector-6, Panchkula, Haryana.
2. The Member Secretary, State Environment Impact Assessment Authority (SEIAA), Haryana, Bay no. 55-58, Prayavan Bhawan, Sector-2, Panchkula, Haryana

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For M/s Martial Buildcon Pvt. Ltd.

Amar Nath Ichhpujani/ Satya Pal Singh
(Authorized Signatories)

6/6/18
Har State Pollution Control Board
C-11, Sector-6, Panchkula

Copy to:

1. Chairman, Haryana State Pollution Control Board (HSPCB), C-11, Sector-6, Panchkula, Haryana.
2. The Member Secretary, State Environment Impact Assessment Authority (SEIAA), Haryana, Bay no. 55-58, Prayavan Bhawan, Sector-2, Panchkula, Haryana

MARTIAL BUILDCON PRIVATE LIMITED

CIN – U45400DL2007PTC170267
martialbuildcon@yahoo.com
Regd: Office No. 1221 A, Devika Tower, 12th Floor, 6 Nehru Place, New Delhi-110019

4th June, 2018

To,
The Advisor (S)
Northern Regional Office
Ministry OF Environment, Forest & Climate Change (MoEF & CC)
Bays No. 24-25, Sector 31-A, Dakshin Marg
Chandigarh

Subject: **Submission of Six-monthly Compliance Report of Stipulated Conditions of Environmental Clearance for the Commercial Complex in (2.71+2.68) 5.39 Acres at Sector-67, Village- Maidawas & Badshahpur, Gurgaon, Haryana for the period of October 2017 to March 2018.**

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Thanking you

Yours Sincerely,

For M/s Martial Buildcon Pvt. Ltd.

Amar Nath Ichhpujani/ Satya Pal Singh
(Authorized Signatories)

प्राप्त किया/Received
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Min. of Environment, Forests & Climate Change
उत्तर क्षेत्रीय कार्यालय/Northern Regional Office
चण्डीगढ़/Chandigarh

Copy to:

1. Chairman, Haryana State Pollution Control Board (HSPCB), C-11, Sector-6, Panchkula, Haryana.
2. The Member Secretary, State Environment Impact Assessment Authority (SEIAA), Haryana, Bay no. 55-58, Prayavan Bhawan, Sector-2, Panchkula, Haryana

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martialbuildcon@yahoo.com
Regd: Office No. 1221 A, Devika Tower, 12th Floor, 6 Nehru Place, New Delhi-110019

4th June, 2018

To,
The Advisor (S)
Northern Regional Office
Ministry OF Environment, Forest & Climate Change (MoEF & CC)
Bays No. 24-25, Sector 31-A, Dakshin Marg
Chandigarh

Subject: **Submission of Six-monthly Compliance Report of Stipulated Conditions of Environmental Clearance for the Proposed Commercial Complex measuring 2.81875 Acres at Village- Maidawas, Sector-67, Gurgaon, Haryana for the period of October 2017 to March 2018.**

Sir,
In accordance with the conditions of Environmental Clearance received from State Environment Impact Assessment Authority for the above said project vide letter No. SEIAA/HR/2013/484 dated 12.07.2013; we are submitting herewith Six Monthly Compliance report of stipulated conditions of Environmental Clearance (hard and soft copies) for the period of October 2017 to March 2018.
Thanking you

Yours Sincerely,

For **M/s Martial Buildcon Pvt. Ltd.**

Amar Nath Ichhpujani/ Satya Pal Singh
(Authorized Signatories)

State Environment Impact Assessment Authority, Panchkula, Haryana
Date Received
Rec. No.
8-6-18

Copy to:

1. Chairman, Haryana State Pollution Control Board (HSPCB), C-11, Sector-6, Panchkula, Haryana.
2. The Member Secretary, State Environment Impact Assessment Authority (SEIAA), Haryana, Bay no. 55-58, Prayavan Bhawan, Sector-2, Panchkula, Haryana

MARTIAL BUILDCON PRIVATE LIMITED

CIN – U45400DL2007PTC170267
martialbuildcon@yahoo.com
Regd: Office No. 1221 A, Devika Tower, 12th Floor, 6 Nehru Place, New Delhi-110019

4th June, 2018

To,
The Advisor (S)
Northern Regional Office
Ministry OF Environment, Forest & Climate Change (MoEF & CC)
Bays No. 24-25, Sector 31-A, Dakshin Marg
Chandigarh

Subject: **Submission of Six-monthly Compliance Report of Stipulated Conditions of Environmental Clearance for the Proposed Commercial Complex measuring 2.81875 Acres at Village- Maidawas, Sector-67, Gurgaon, Haryana for the period of October 2017 to March 2018.**

Sir,
In accordance with the conditions of Environmental Clearance received from State Environment Impact Assessment Authority for the above said project vide letter No. SEIAA/HR/2013/484 dated 12.07.2013; we are submitting herewith Six Monthly Compliance report of stipulated conditions of Environmental Clearance (hard and soft copies) for the period of October 2017 to March 2018.
Thanking you

Yours Sincerely,

For **M/s Martial Buildcon Pvt. Ltd.**

Amar Nath Ichhpujani/ Satya Pal Singh
(Authorized Signatories)

Har State Pollution Control Board
C-11, Sector-6, Panchkula

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प्राप्त किया/Received
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Min. of Environment, Forests & Climate Change
उत्तर क्षेत्रीय कार्यालय/Northern Regional Office
चण्डीगढ़/Chandigarh

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2. The Member Secretary, State Environment Impact Assessment Authority (SEIAA), Haryana, Bay no. 55-58, Prayavan Bhawan, Sector-2, Panchkula, Haryana

Commercial colony on part area measuring 2.8187 Acres in the revenue estate of village -Maidawas, Sector-67, Gurugram, Haryana.

Environmental Audit Report
[2018]

Date of Environment Audit

September-2018

Prepared by:
IND TECH HOUSE CONSULT
G-8/6, Ground Floor, Sector-11, Rohini,
Delhi-110085
Tel: +91 11 2757 1410/2241

For and on behalf of:	**Ind Tech House Consult**
Approved by:	**Mr. Soumya Dwivedi**
Signed:	
Position:	**EIA Co-Ordinator**

1. Introduction

M/S Martial Buildcon Pvt. Ltd. is developing a Commercial Colony on part area measuring 2.8187 Acres in the revenue estate of village Maidawas, Sector-67, Gurugram. In order to identify the required environmental statutory compliance and understand environmental performance, the company has engaged Ind Tech House Consult for conducting Environmental Audit for it's above said commercial colony project.

2. Scope

As per the mandate of the assignment, the Commercial Colony on total area measuring 11.1375 Acres in the revenue estate of village Maidawas, Sector-67, Gurugram, is to be audited twice through site visit in the perspective of legal compliance of environmental regulations, identifying the gaps against conditions imposed by the environmental statutory authorities and review of environmental parameters.

3. Methodology

The mandate for coverage of the review at the plant included assessment of environmental facilities, procedures and management practices with respect to legal compliance as well as good practices. The deliverable in this assessment is a report covering findings on significant environmental issues with special emphasis on the conditions of the Environmental Clearance granted to the project.

Step I - Finalizing the work plan

At the outset of the audit conducted, a detail discussion meeting was conducted between Mr. Satya pal Sing , Manager Environment and the audit team of Ind Tech House Consult to understand the project details. Having done that, the audit team went through detail verification of all the documents maintained towards compliance with environmental regulations.

Step II – Physical Verification of the Project Site and the Facilities Used

The audit team had physically visited the project site to verify the actual status of construction and the facilities installed at site. Information was collected through interviews of key official, verification of documents and records on environmental compliances. Compliance against current legislation as well as good practice was also examined during the site visit.

Step III– Identifying key issues and discussion with M/S Martial Buildcon Pvt. Ltd.

The key issues that emerged during the review were discussed with the company representative at site and views were noted, which are actually assimilated in preparation of this report.

Step IV– Preparation of report and submission

In this report, the major environmental issues along with regulatory references wherever applicable and corrective action/recommendation have been reported.

4. Key Observations –

4.1 General Project Overview

4.1.1 General Environmental Setting of Project Site

The Commercial Colony project site of Martial Buildcon Pvt. Ltd. is located at Village Maidawas, Sector-67, Gurgaon. The Site is abutting 60 m wide Sector road through 12m wide service road.

The project site falls under commercial land use (*Commercial Colony Project)* as per the Gurgaon-Manesar Master Plan 2021.

4.1.2 Land Use

The total plot area of the project site is 11407.075 (2.81875 acres). The Commercial Colony is to be developed as Part Development with the 2.8187 acres to be developed as Phase-I development. The zoning plan for the project has been approved by the DTCP.

4.1.3 Project Approvals

Environmental Clearance

The project was accorded Environmental Clearance by the State Environment Impact Assessment Authority, Haryana vide letter no. SEIAA/HR/2013/484 dated 12/07/2013.

Consent to Establish

Consent for Establishment under the Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 for the project has been obtained from Haryana State Pollution Control Board (HSPCB) vide letter no. HSPCB/Consent/: 2821214GUNOCTE742241 dated 14/05/2014.

4.1.4 Project Salient Features

The proposed total built up area in Phase I shall be 11407.075 sq m. In Phase I, the project proponent has proposed to construct commercial building of 3 Basement + Stilt + Ground Floor + 16 Floors. The maximum height of the building is 63.05 mts. The salient features of the project are tabulated below –

The salient environmental features of the proposed project are as follows –

Sl. No.	Description	Details	Unit
1	Plot Area	11407.075	sq m
2	Proposed Built Up Area (Phase I)	39398	sq m
3	Height of tallest tower	63.05	m
4	Maximum no. of floors	3B+ST/GF+16	nos.
5	Total Water Requirement	201	KLD
6	Fresh water requirement	168	KLD
7	Waste water Generation	60	KLD
8	STP Capacity	80	KLD
9	No of RWH of Pits Proposed	2	nos.
10	Parking proposed	481	ECS
11	Green area provided	30	%
12	Municipal Solid Waste Generation	599	Kg/day
13	Total Power Requirement	1600	KW

Status of Construction

The project was started the construction activity on May 2014 as obtained all necessary approvals. The site visit was conducted September 2018 and the construction has been completed.

4.2 Resource Utilization

4.2.1 Water Recycling, Conservation and Rain Water Harvesting

The water requirement for construction purpose will be fulfilled through tanker supply from nearby common STP of HUDA. The semi treated water from STP will be further treated onsite before use in construction activities.

The total fresh water requirement during operation phase has been estimated as 168 KLD which will be sourced through HUDA. Necessary assurance from HUDA will be obtained for fresh water supply during operation phase. At present for the abatement of fugitive dust emission generated during excavation and earth handling activity water sprinkling is being done and the water requirement is met through tankers.

As per the proposal submitted to the Haryana State Environment Impact Assessment Authority (SEIAA), entire wastewater generated from the project during the operation phase, will be treated in onsite STP of capacity 500 KLD.

The treated wastewater from the STP will be passed through dual media filter and then through UV system to make it odour free. This treated wastewater will be recycled and reused in flushing and gardening purpose to the extent possible and thereby **saving around 49%** of the total water demand.

Moreover, for a sustainable development, the project proponent has proposed a total of 2 recharge wells through collection of rain water at the project site.

4.2.2 Power

During the operation phase, the power demand has been estimated as 1600 KW.

Energy conservation measures

- Energy conservation measures proposed as per ECBC guideline.
- Solar lights would be provided in the external lighting.
- CFL will be used in basements and toilets.
- Solar water heating system will be installed as per HAREDA norms.

4.3 Compliance with Stipulated Conditions of Environmental Clearance

Operation Phase:

S. No	Conditions of Environmental Clearance	Status of Compliance	Remarks
a)	"Consent to operate" shall be obtained from Haryana State Pollution Control Board under air and water act and a copy shall be submitted to the SEIAA, Haryana.	Copy of "Consent to operate" has not been provided and same was not apply during site visit.	
b)	The STP should be installed for the treatment of sewage generated to be prescribed standards including odors and treated effluent will be recycled to achieve zero discharge. The installation of STP should be certified by an independent expert and a report in this regard should be submitted to SEIAA, Haryana before the project is commissioned for operation. Discharge of treated sewage shall confirm to the norms and standards of HSPCB. Panchkula. The project proponent shall implement such STP technology which does not require filter back wash.	It is observed & submitted that 500 KLD STP has been installed in second basement in compliance with the Environmental Clearance Letter No. SEIAA/HR/2013/484 dated 12.07.2013 & Environmental Clearance Letter No. SEIAA/HR/2012/120 dated 11.07.2012.	
c)	Separation of black and grey water should be done by use of dual plumbing line. Treatment of 100% grey water by decentralized treatment should be done ensuring that the recirculated water should have BOD maximum 10 ppm and the recycled water will be used for flushing,	Yes, separation of gray and black water will be done by the use of duel plumbing line. However, grey water as well as black water will be treated in STP. The recycled water will be within the permissible limits and will be used for flushing and gardening. It is also confirmed that UV system will be provided with STP.	

S. No	Conditions of Environmental Clearance	Status of Compliance	Remarks
	gardening and HVAC makeup and DG set cooling etc.		
d)	For disinfections of treated waste water ultra violation radiation or ozonization should be used.	STP installation is in progress. Agreed to comply as submitted by project incharge.	
e)	The solid waste generated should be properly collected and segregated. Biodegradable waste shall be decomposed at site and dry /inert solid waste should be disposed off to approve sites for land filling after recovering recyclable materials.	The project is in initially operation phase.	
f)	Diesel power generating sets proposed as source of backup power for lifts, common areas illumination and for domestic use should be of enclosed type and confirm to the rule made under Environment Protection Act , 1986. The location of DG sets should be in the basement as promised by the project proponent with appropriate stack height i.e above the roof level as per the CPCB norms. The diesel used for DG should be low sulphur content (maximum 0.05% sulphur), instead of low sulphurdiesel.	Two acoustic type of DG Sets (1000 KVA & 1500 KVA) are at project site & have been installed in second basements. Stack height was maintained above the roof level of height tower as per CPCB norms.	
g)	Ambient Noise level should be controlled to ensure that it does not exceed the prescribed standards both within and at the boundary of proposed commercial complex	Yes, Ambient noise levels are being carried out at project site near main gate. Noise level data submitted with June 2018 compliance report were found within CPCB limit as 53.8 dB(A) & 44.3 dB(A) day & night respectively.	
h)	The project proponent should maintain at least 30% as green cover area for tree plantation especially all around the periphery of the project site and on the road sides preferably with local species so as to provide protection against particulates and noise. The open space inside the plot should be preferably land scaped and covered with vegetation/grass. Herbs & shrubs. Only locally available species shall be used.	Green cover area for tree plantation has been started at fast pace. However more than 950 trees have been planted so far. The open spaces inside the plot will be covered with herbs and shrubs.	Green belt development is in under progress
i)	The project proponent shall strive to minimize water in irrigation by minimizing the grass area, using native verity, xeriscaping and mulching, utilizing efficient irrigation system, scheduling irrigation only after checking evaporation data.	Agreed to comply as submitted by Project Incharge	
j)	Rain water harvesting for runoff and surface runoff, as plan submitted should be implemented. Before recharging the surface runoff, pretreatment must be done to remove suspended matter, oil and greases. The bore well for rain water recharging should be kept at least 5 mts above the highest ground water table. Efforts will be made by the project proponent to utilize the water runoff during the construction phase for recharging by providing water harvesting system simultaneously.	8 Nos. of Rain water Harvesting pits have implemented. It is submitted that bore well for rain water recharging has kept at 5 mts. above the highest ground water table as submitted Project Incharge.	
k)	The ground water level and its quality should be monitored regularly in	Ground water will not be extracted at project site.	

S. No	Conditions of Environmental Clearance	Status of Compliance	Remarks
	consultation with CGWA.		
l)	There should be no traffic congestion near the entry and exit point from the roads adjoining the proposed project site. Parking should be fully internalized and no public space should be utilized.	It was observed that proper separate entry and exit points have been made for no traffic congestion. Parking was fully internalized and no public space was utilized.	
m)	A report on energy conservation measures conforming to energy conservations norms finalize by bureau of energy efficiency should be prepared incorporating details about building materials & technology, "R & U factors etc" and submit to IA division of environment and forest department, Haryana in three months time.	A report on the energy conservation measures to be taken in the building incorporating, building materials and technology and R & U Factors etc. will be submitted as early as possible. And ECBC report has been submitted to SEIAA Haryana at the time of presentation.	
n)	Energy conservation measures like installation of LED for lighting the areas outside the building should be integral part of the project design & should be place in before project commissioning. Use of solar panel must be adapted to the maximum energy conservation.	LED's are using in open and internal areas of the project and total 234 KW solar panels have installed on roof top for maximum energy conservation.	
o)	The project proponent shall use zero ozone depleting potential material in the insulation, refrigeration, air-conditioning and adhesive. The project proponent shall also provide Halon free fire suppression system.	Zero ozone depleting potential materials in insulation refrigeration air conditioning and adhesive; also provide halon free fire suppression system in construction as well as operation phase.	
p)	The solid waste generated should be properly collected and segregated as per requirements of MSW rules, 2000. the biodegradable waste should be composted by vermin composting at the site ear marked with in the project area and dry/inert solid waste should be disposed off to the approved sites for land filling after recovering recyclable materials.	Yes, the practice of segregating biodegradable waste and non-bio-degradable waste will be adopted and then the waste will be disposed off to municipal Committee's approved vendors. However, proper compliance of this condition will be done during operational phase.	
q)	The provision of the solar water heating system shall be as per the norms specified by HAREDA and shall be made operational in each building block.	Appropriate provisions will be provided as per norms specified by HAREDA.	
r)	The traffic plan and the parking plan proposed by the PP should be adhered to meticulously with further scope of additional parking for future requirement. There should be no traffic congestion near the entry and exit points from the road adjoining the proposed project site. Parking should be fully internalized and no public space should be used	It was observed that proper separate entry and exit points have been made for no traffic congestion. Parking was fully internalized and no public space was utilized.	
s)	The project shall be operational zed only once HUDA will provide domestic water supply system in the area.	The project will be made operational only after obtaining water supply connection from HUDA. HUDA have assured water supply during operational phase.	
t)	Operation and maintenance of STP, solid waste management and electrical infrastructure, pollution control measures shall be ensured even after the completion of sale.	Agreed to comply as submitted by Project Incharge.	
u)	Different type of wastes should be disposed off as per provisions of municipal solid	Agreed to comply as submitted by Project Incharge.	

S. No	Conditions of Environmental Clearance	Status of Compliance	Remarks
	waste, biomedical waste, hazardous waste, e waste, battery shall be disposed off as per existing E waste Management rules 2011 and batteries management rules 2001. The project proponent should maintain a collection center for e waste and it should be disposed of to only registered and authorized dismantler/recycler.		
v)	Standards for discharge of environmental pollutants as enshrined in various schedules of environmental protection rules 1986 shall be strictly complied with.	Yes, Standards for discharge of environmental pollutants as enshrined in various schedules of environmental protection rules 1986 shall be strictly complied with.	
w)	The project proponent shall make provisions for guard pond and other provisions for safety against failure in operations of waste water treatment facilities. The project proponent shall also identify acceptable outfall for treated effluent.	Agreed to comply as submitted by Project Incharge.	
x)	The project proponent shall ensure that the stack height of DG sets is as per the CPCB guidelines and also ensure that emission standards of noise and air are within the CPCB prescribed limits. Noise and emission level of DG sets are greater than 800 KVA shall be as per the CPCB latest standards for high capacity DG sets.	Two acoustic type of DG Sets (1000 KVA & 1500 KVA) are in use currently & have been installed in second basements. Stack height was maintained above the roof level of height tower as per CPCB norms.	
y)	All electric supply exceeds 100 amp, 3 phase shall maintain the power factor between 0.98 lag to 1 at the point of connection.	Same will be complied.	
z)	The project proponent shall minimize heat Iceland effect through shading and reflective or previous surface instead of hard surface.	Yes we will minimize heat Iceland effect through shading and reflective or previous surface instead of hard surface.	
aa)	The project proponent shall use maximum treated water instead of fresh water for HVAC & DG cooling. The project proponent shall also use evaporating cooling technology and double stage cooling system for HVAC in order to reduce water consumption. Further temperature, relative humidity during summer and winter season should be kept at optimal level. Variable speed drive, best co-efficient of performance, as well as optimal integrated point load value and minimum outside fresh air supply may be resorted for conservation of water and power. Coil type cooling DG sets shall be used for saving cooling water consumption for water cooling DG sets.	Yes we will use maximum treated water (STP) instead of fresh water for HVAC & DG cooling. We will also use evaporating cooling technology and double stage cooling system for HVAC in order to reduce water consumption. We will also use advance technology to reduce water consumption.	
ab)	The project proponent shall ensure that the transformer is constructed with high quality grain oriented. Low loss silicon steel and virgin electrolyte grade copper. The project proponent shall obtain manufacturers certificate also for that.	Project Incharge was submitted that treated water is using in HVAC & DG cooling. Agreed to comply as submitted by Project Incharge.	
ac)	Water supply shall be metered among	Agreed to comply as submitted by Project	

S. No	Conditions of Environmental Clearance	Status of Compliance	Remarks
	different utility users.	Incharge.	
ad)	The project proponent shall provide E waste collection center in the building.	Agreed to comply as submitted by Project Incharge.	
ae)	The project proponent shall ensure regular monitoring of electrical points and shall appoint expert electrician for fire prevention.	Agreed to comply as submitted by Project Incharge.	
af)	The project proponent shall ensure that fire staircase shall be kept pressurized by mumty installed pressurization fans and dedicated ventilation shafts adhering fire fighting norms.	Agreed to comply as submitted by Project Incharge.	
ag)	The project proponent shall ensure that exit velocity from the stack should be sufficiently high. Stack shall be designed in such a way that there is no stack down-water under any metrological condition.	Agreed to comply as submitted by Project Incharge.	

PART B – GENERAL CONDITIONS

S. No.	Conditions of Environmental Clearance	Status of Compliance	
I	The project proponent shall ensure the commitments made in Form-1, Form-1A, EIA/EMP and other documents submitted to the SEIAA for the protection of environment and proposed environmental safeguards are compiled with in letter and spirit. In case of contradiction between two or more documents or any point, the most environmentally friendly commitment shall be taken as commitment by the project proponent.	We have assured to comply most of the environmental safeguards stipulated in the environmental clearance letter satisfactorily.	
ii	Six monthly compliance reports should be submitted to the HSPCB and regional office. MoEF. GOI, Northern region, Chandigarh and a copy to regulatory authority of Haryana.	Six monthly compliance reports are being regularly filed to the concerned authorities. Same will be done in the future also.	
iii	Noise STP outlet and stack emission shall be monitored daily. Other environmental parameters shall be monitored on monthly basis. After every 3 months the project proponent shall conduct environmental audit, and shall take corrective measures, If required, without any delay.	Same will be complied.	
iv	The SEIAA, Haryana and reserve the right to add additional safeguards measures subsequently, If found necessary. Environmental clearance granted will be revoked if it is found that false information has been given for getting approval of this project. SEIAA reserves the right to revoke the clearance if conditions stipulated are not implemented to the 10 satisfaction of SEIAA / MoEF.	Yes, the Ministry reserves the right to add additional safeguard measures subsequently, if found necessary and to take action including revoking of the environment clearance under the provisions of the Environment (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time bound and satisfactory manner.	
V	The Project proponent will not violate any judicial orders /pronouncements issued by Hon'ble Supreme court/High court.	Noted and Agreed by the Project Proponent as submitted.	
vi	All other statutory clearance such as approval for storage of diesel from Chief Controller of Explosives, Fire Department,	Yes, we are following the instructions and NOC of Height Clearance from Civil Aviation Department, NOC from Forest Department.	

S. No.	Conditions of Environmental Clearance	Status of Compliance	
	Civil Aviation Department ,Forest Conservation Act,1980, and Wildlife (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponent from the respective authorities prior to construction of project.	The approval for storage of diesel from Chief Controller of Explosives is not necessary at the moment. The NOC from MOEFCC under the Forest Conservation Act, 1980 and the Wildlife (Protection) Act, 1972 are not required.	
vii	The project proponent should inform the public that the project has been in accorded Environmental clearance by SEIAA and copies of the clearance letter are available with the State Pollution Control Board & SEIAA. This should be advertised within 7 days from date of issue of clearance letter at least in two local newspapers that are widely circulated in the region and copy of the same should be forwarded to SEIAA Haryana. A copy of environmental clearance conditions shall also be put on the project proponent's website for public awareness.	Same has been informed/published in two local newspapers that are widely circulated in the region and copy of the same has been forwarded to SEIAA Haryana with last six monthly reports. A copy of Environment Clearance conditions also be put on project proponent's website for public awareness.	
viii	Under the provision of Environment (Protection) Act, 1986, Legal action shall be initiated against the project proponents if it was found that construction of the projects has been started before obtaining environmental clearance.	All Statutory clearance has been obtained from respective departments.	
ix	Any appeal against this Environmental Clearance shall lie with the National Green Tribunal, If preferred with in a period of 30 days as prescribed under section 16 of the National Green Tribunal Act, 2010.	Noted	
x	The project proponent shall put in place corporate environment policy as mentioned in MoEF, GoI OM No. J-11013/41/2006-IA II (I) dated 26.4.2012 within 3 months period. Latest Corporate environment policy should be submitted to SEIAA within 3 months of issuance of this letter.	Yes, the company has already corporate environment policy in place and as per company laws sizable budged has been spend on implementing as per above said policy.	
xi	The fund ear-marked for environment protection measures should be kept in separate account and should not be diverted for other purposes and year wise expenditure report shall be submitted to the SEIAA/RO MoEFGoI under rules prescribed for environmental audit.	Same has been ear-marked for environment protection measures.	
xii	The project proponent shall obtain NOC under Aravali Notification from CEC ofHon'ble Supreme Court regarding coverage under Aravali Notification	NOC under Aravali Notification has been obtained.	
xiii	The project proponent shall ensure that no vehicles during construction/ operation phase enter the project premises without valid 'Pollution Under Control' certificate from competent authority.	The same has been informed & monitored during construction phase & same will be followed during operational phase.	
xiv	The project proponent is responsible for compliance of all conditions in environment condition letter and project proponent can not absolve himself for the responsibility by shifting it to any contractor engaged by the project proponent.	Noted & agreed.	

S. No.	Conditions of Environmental Clearance	Status of Compliance	
xv	The project proponent shall seek fresh environment clearance if at any stage there is change in the planning of the project proposed.	Noted	

4.4 Identifications of Gaps

4.4.1 Non compliance with respect to environmental laws –

- The Corporate Environmental Policy has not yet submitted to the SEIAA.
- Records regarding water sprinkling at the site are not maintained.

5. Overall Findings

The audit has been conducted according to the requirement as per the condition imposed in the Environmental Clearance issued by the SEIAA, Haryana. The audit was conducted with involvement of the official of the Martial Buildcon Pvt. Ltd.

The audit team has verified the documentation part and found it to be well documented.

Overall housekeeping at the project site was very good. As said by the official, water sprinkling is regularly carried out to suppress dust emissions due to vehicular traffic movement at the site.

6. Recommendations

Immediate action on the non- compliances observed during the audit should be taken and reported.

M/s Martial Buildcon Private Limited- Corporate Social /Environment Responsibility Policy

The Martial Buildcon Corporate Social/ Environment Responsibility is intrinsic to our company principles. This initiative not only facilitates monitory donations to social causes, but also provides physical volunteering opportunities. As a part of this policy we also believe in supporting other NGOs and initiatives. We, at Martial Buildcon take initiative to contribute to harmonious and sustainable development of society and we conduct our business operations with honesty and integrity. We endeavour to build and maintain sound relationships with community as a whole.

CER Purpose Statement:-

Drawing from the vision and mission statement, the CER Purpose Statement of ' Martial Buildcon Private Limited' is:

- Our Motto - Serving the Community
- Our Effort - Ensuring sustainable business process- financially, environmentally and socially
- Our Aim- Using our expertise and technology to reach the Community.
- Our Endeavour - Enhancing human excellence and improving quality of life
- Main Activities To Be Undertaken As A Part Of The Policy

Health Care

- Health awareness campaigns on serious/chronic disease.
- Organizing periodic health camps.
- Organising Blood Donation Camps
- Organizing periodic Eye care Camps

Environment Protection, Promotion & Sustainability

- Promoting tree plantation at Organisational level

Eradicating Hunger & Poverty

- Tie up with various NGOs dealing with issues related to Senior Citizens tasks like distribution of woollen clothes during winters.
- Relief supplies and monetary aid to victims of floods, famines and other natural calamities.

Board Level CER Committee

- Our CSR initiatives will be headed by a CSR Committee. The broad terms of reference of the said Committee shall be

Members

- Members of the Committee shall be appointed by the Board. The Committee shall be made up of at least 3 members
- The members of the Committee shall be on rolls of the Company.
- Appointments to the Committee shall be for a period of up to three years, which may be extended for further periods of up to three years.
- The Board shall appoint the Committee Chairman. In the absence of the Committee Chairman, the remaining members present shall elect one of themselves to chair the meeting.

Meeting of Committee

- The Committee shall meet at least twice per a year at appropriate times in the year.

Quorum

- The quorum necessary for the transaction of business shall be 2 members. A duly convened meeting of the Committee at which a quorum is present shall be competent to exercise all or any of the authorities, powers and discretions vested in or exercisable by the Committee.

Duties of Committee

The Committee should carry out the duties below.
Oversee Corporate/Environment Social Responsibility ("ESR") activities in following areas:

1 Education

- Promote computer literacy.
- Provision of uniforms, books, stationery, computer, etc., to schools.
- Scholarship to deserving students to encourage education.
- Promotion of adult education with focus on women's education etc.

2 Health Care

- Health awareness campaigns on serious/chronic disease.
- Organizing periodic health camps.

3 Entrepreneurship

- Skill development training for unemployed youth for better employability & to promote self-employment.
- Vocational/ technical/professional training for youth.

4 Initiatives for physically and mentally challenged

- Offering specialized support services to the physically handicapped and mentally challenged people.

5 Water Management - Provide safe drinking water

6 Women Empowerment, Girl Child Development, Gender sensitive projects (Gender Equality)

7 Environment protection, promotion & Sustainability

8 Eradicating hunger & poverty

9 Reducing Child mortality

10 Contribution to PM's National Relief Fund

Monitoring and Reporting

The Committee shall:

- Determine the appropriate ways of monitoring the Group's CSR performance.
- Monitor such performance in the Group
- Determine the reporting of such performance
- Review the CSR Report in the Company's Annual Report.

Reporting Responsibilities

- The Committee Chairman shall report to the Board on its proceedings after each meeting on all matters within its duties and responsibilities;
- The Committee shall make suitable recommendations to the Board it deems appropriate on any area within its remit;
- The Committee shall produce a report on its activities to be included in the company's annual report.
- Oversee any investigation of activities which are within its terms of reference; and
- Arrange for periodic reviews of its own performance and review its constitution and terms of reference to ensure it is operating at maximum effectiveness and recommend any changes it considers necessary to the Board for approval.

Authority

The Committee is authorised to

- To seek any information it requires from any employee of the company in order to perform its duties;
- To obtain, at the Company's expense, outside legal or other professional advice on any matter within its terms of reference;

Budget for CER Activities

Budget for CSR activities shall be decided by the board every year. The actual budget shall be prepared on the basis of recommendations of CSR Committee pertaining to CSR programmes planned and approved by the Board for that year.

Audit

All CER activities and expenses made thereon in a year will be subject to audit by the Company's Internal Audit Team.

ENVIRONMENTAL MANAGEMENT COST

COMPONENT	CAPITAL COST (RS IN LACS)	RECURRING COST (RS IN LACS/Annum)
Sewage Treatment Plant	250.0	19.5
Rain Water Harvesting System	44.0	4.0
Solid Waste Management	9.0	5.0
Environmental Monitoring	10.0	5.0
Green Area	25.0	4.5
OTHERS (energy saving devices, miscellaneous)	70.0	6.0
Total	480.0	44.0