

COCEPT PLAN

Project Site

The proposed development has been planned in an area of 22251.54 SQM.

Land area and Built-up area:

The site is almost even in topography and possesses in the area of 22251.54 SQM. The site currently functions as an office complex and is now proposed for extension of Built up Area. The extension of the existing office Complex will be constructed as per defined building by-laws of the Delhi Development Authority. After the proposed extension of the existing Office Complex, it will have total built-up area of 34113.36 SQ M and the complete area statement for the (existing and proposed) Office Complex is as follows:

AREA STATEMENT

Total Plot Area	=22251.54 SQM
Permitted Ground Coverage =30%	= 6675.48 SQM
Permitted FAR=200%	=44503.8 SQM
Permitted Height – As per AAI	=39.0 M

Existing

Phase I

Existing Building (A) =2587.09+2198.68=4785.77 SQM (G+1)
+(Basement)= 512.83 SQM=5298.6 SQM

Phase II

Existing building (B) = 5565.30
(G+3)

Phase III

Proposed Expansion on (A) = 11992.9SQM
(Second to 7th floor) FAR

FOR EC

Total Proposed FAR of Phase I , II, III = 22305.22 SQM

Multilevel parking &

Services Buildings & Non FAR Areas = 11808.14

Total Built –up = 34113.36 sqm

ECS

Required =22305.22 x 1.8 / 100=401.49 – SAY 401

Provided =401

Water Consumption:

During the construction stage, water will be sourced primarily through treated water from Dwarka STP /tankers arranged by the contractor. It is estimated that water demand during the construction phase may vary from 10 to 15 KLD for drinking purpose and toilets

During the project operational stage, water will be supplied by DJB, It is estimated to be 76.8 KLD, balance shall be from STP). This would be supplied by DJB through command tanks.. The water demand estimated for the proposed Office Complex in initial stage will be 123 kld

Waste water:

During the Construction stage, For construction work total anticipated labour to be employed will be 50

& labour camps will be made for site. The waste water shall be generated from the following : Details of labor camp including all facilities.

- Temporary houses for the labours.
- Temporary canteen facilities for construction labours.
- Toilet with septic tank facilities/mobile toilets provided for construction labours during the whole construction period.

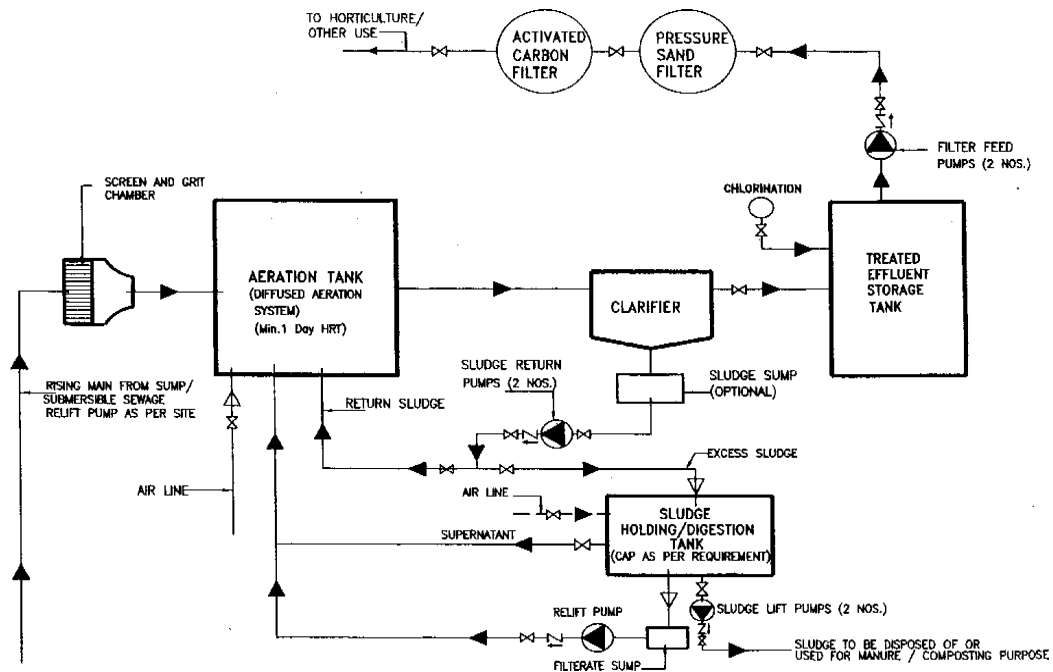
During the operation stage,

It has been estimated that approx. 87.6 KLD of sewage will be generated from the project. The entire sewage will be treated in STP of 100 kld., 44.7 KLD of water requirement will be met through recycling of STP treated water

Sewage treatment plant shall be provided based on FAB & MBBR/SAFF process for treatment of sewage & sullage water The treated effluent shall be of a quality suitable for flushing & horticulture for external areas.

SCHEMETIC DIAGRAM FOR PROPOSED STP

Parameters	Inlet Water Characteristics	Outlet water Characteristics
P H	7.5-8.5	6.0-8.0
B OD 5 day, 21OC	200-250 mg/l	Less than 10 mg/l
S uspended Solids	200-400 mg/l	Less than 5 mg/l
C OD	500-600 mg/l	Less than 30 mg/l
R Oil & Grease	20 mg/l	Less than 2 mg/l
T emperature	Ambient	



Power Requirement

The total connected load as per BRPL is calculated to be around 2200 KW and after considering diversity etc. the transformer rating shall be 3200 KVA for this Office Complex.

Power will be supplied by BRPL

For emergency purposes backup is provided with DG Sets of Total capacity of 2150KvA

HSD (low Sulphur variety) will be used for DG set .

RAIN WATER HARVESTING CALCULATION FOR THE OFFICE COMPLEX DWARKA, NEW DELHI

Run Off Calculation

(Q = 10 x C x I x A) cum/hr Total runoff for roof area, Q1

$$\begin{aligned} Q1 &= 10 \times 0.90 \times 35 \times 0.4525 \\ &= 141.75 \text{ cum /hr} \end{aligned}$$

Total runoff for Green area, Q2

$$\begin{aligned} Q2 &= 10 \times 0.10 \times 35 \times 1.1 \\ &= 38.5 \text{ cum /hr} \end{aligned}$$

Total runoff for paved/Road area, Q3

$$\begin{aligned} Q3 &= 10 \times 0.80 \times 35 \times 0.66 \\ &= 184 \text{ cum /hr} \end{aligned}$$

Total Run Off to be recharged = Q1 + Q2 + Q3

= 364.25. cum / hr Total Run Off to be harvested for 15 Minutes, i.e. 91.0 cum
Volume of 1 No. Harvesting pit of size 3.0M diameter and 3.5 M water depth
= 24.75 cum / hr

No. of Pits = 3.67

Total No. of Harvesting pits required = 4 Nos.

Table 9: Estimated Quantities of Solid Waste Generated during Operational Phase

Description	Population	Per capita Solid Waste generation (Kg/capita/day)	Total Solid Waste (Kg/Day)
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Office staff and visitors	2200	0.1	220
			110 kg of biodegradable will be composed/handed to MCD Recyclable will be handed over to recycle
E Waste		10	Handed over to registered recycler

Construction Phase

During the construction, considerable amount of construction waste such as earth, debris, malba, etc will be generated. However the construction waste here shall be approx 30% less than the regular construction sites as the entire structural work shall be done with pre fab technology which will have almost no in-situ casting and no shuttering work.

- Construction debris will be managed either within project site or they will be sent to areas designated by Delhi Govt.

Operation Phase

During the operation only domestic waste is expected to be generated. It has been estimated that approx.220 kg/day of solid waste will be generated from the proposed complex during commissioning of the project.- **please review as office will have more of recyclable waste like paper etc**

Energy Conservation Measures & Management Plan:

In the Operational Phase, appropriate energy conservation measures & management plan will be adopted in order to minimize the consumptions of non- renewable fuel. The following measures are suggested to be adopt

- Provision of window openings on recessed faces helps in reducing the heat gain in units.
- Photovoltaic cells based devices will be used for common area lighting as per
- Overall glazing area has been maintained at around 25% of the Façade area.
- Use of LED lights in common areas.
- DG sets shall be PLC controlled to optimize their usage based on the actual load requirements.
- Use of fly ash made bricks and cement will be used in common area i.e. pathway & pavement area
- Use of Building Management System to regulate the Services
- Use of VRV system for air conditioning

S.N.	Material	U-Value (BTU/ft ² /°F)	W/M ² /°C
1	Walls (4'''' ,9'' Prefab)	-	1.36/1.00
2	Normal glass	1.1	6.25
4	Internal ceiling/floor unexposed	0.41	2.33
5	Slab exposed to sun and insulated with burnt brick coba	0.12	0.68

The water supply pumping system shall be provided with variable speed drive to conserve energy at part load.

Roof insulation shall be planned to conserve energy.
Capacitor banks shall be planned for improving the power factor of the power supply.

After testing the viability, solar energy can also be used to meet electricity requirements as it would reduce dependence on non-renewable sources of energy and make environment cleaner.

These measures will effectively cut down the electricity/ diesel consumption

EMP Budget

EMP budget during construction,

S. No.	Item	Amount
1	Air pollution ,suppression of dust,air monitoring	5 lacs
2	Water pollution Provision for Sewage Treatment Plant	100 lacs
3	Provision of Storm Water Drainage System	Included in project cost*
4	Provision of solid Waste Managemen,t	5lacs
5	Health and Safety measures and other ,safety facilitiestoilets to construction workers	1lacs
6	Environmental quality Monitoring and six monthly report submission	5lacs
7	Green Area Development	10 lacs
	Total	116lacs

EMP budget during operation,

S. No.	Item	Amount per year, Rs. In lacs
1	Provision for Rain Water Harvesting	0.5
3	Provision of Storm Water Drainage System	0.5
4	Provision for Green Area Development	5.0
5	Provision of Waste Management	10.0
6	Health Environment and Safety measures and maintenance of STP	10.0
7	Environmental Monitoring	2.0
	Total	23