Application for Environmental Clearance

for

PROPOSED OFFICES FOR MINISTRY OF DEFENCE WITH PRE-ENGINEERED TECHNOLOGY

(TO RELOCATE EXISTING OFFICES IN HUTMENTS NEAR SOUTH BLOCK & NORTH BLOCK FOR REDEVELOPMENT OF CENTRAL VISTA)

At

Old Curzon road barracks, adjacent to Asia House, KG Marg, New Delhi

BEING DEVELOPED BY:

Central Public Works Department
Room No. 140, Vidyut Bhawan near Shankar Bhawan, New Delhi

PREPARED BY:

Environmental Consultant

M/s PERFACT ENVIRO SOLUTIONS PVT. LTD.

(NABET Registered wide list of accredited consultants organizations/ Rev 83/ 20 January, 2020 at S. No-120)
NN Mall, Sector-3, Rohini, New-Delhi-85; Phone: 011-49281360

सत्यमेव जयते

भारत सरकार
पुर्नविकास परियोजना मंडल- I
केंद्रीय लोक निर्मा.ा विभाग
विद्युत् भवन,प्रथम तल
नई दिल्ली - 110001.

Govt. of India
Redevelopment Project Division-I
Central Public Works Department
Vidyut Bhawan, First Floor
New Delhi - 110001.

CPWD

दूरभाष: 011-23412902, फैक्स: 011-23411742, ईमेल: deleerpd1.cpwd@gov.in

फाइल संख्या 28(61b)/सेंट्रल विस्टा/स्टील स्ट्रक्चर/ के लो नि वि /2019-20/25 दिनांक: 06.03.2020

To,

The Member Secretary,
Infrastructure & Miscellaneous Projects & CRZ Committee (Infra-2)
Ministry of Environment, Forests & Climate Change,
Government of India,
Indira Paryavaran Bhawan,
Jor Bagh Road, New Delhi-110003

Sub: Environmental Clearance of Project- Proposed Offices for Ministry of Defence with pre- engineered technology (to relocate existing offices in hutments near South Block & North Block for redevelopment of Central Vista), Old Curzon road barracks, adjacent to Asia House, KG Marg, New Delhi.

Dear Sir,

In reference to the above mentioned project, we have proposed Offices for the Ministry of Defence at Old Curzon road barracks campus, adjacent to Asia House, KG Marg, New Delhi. The total plot area of the project will be 22569.68 m^2 and the total built-up area will be 43423.79 m^2.

Since the total built-up area of the project is less than 1,50,000 m^2, the project falls under Activity 8(a), Category B as per schedule of EIA Notification,2006 and its subsequent amendments.

We are thereby submitting the following documents-:

1. Form-1
2. Form-1A
3. Conceptual Plan
4. Environment Management Plan with other annexures.

We would be obliged if the process of grant of Environmental Clearance will be initiated at the earliest.

Thanking You,

(Akhelesh Kumar)
Executive Engineer & SM-I
RPD

Table of Contents		
Sections	Documents	Page No.
A	Form I	A-1 to A-18
B	Form IA	B-1 to B-23
C	Conceptual Plan	C-1 to C-12
D	Environment Management Plan	D-1 to D-24
E	Risk Assessment	E-1 to E-13
F	Enclosures	
F-1	Disclosure of Consultant	F-2
F-2	Consultant Authorization	F-5
F-3	Proof of Change in Land Use	F-7
F-4	Documentary Proof of Land Ownership (from L&DO)	F-10
F-5	Traffic Assessment Report	F-13
F-6	Electrical Assurance	F-50
F-7	Soil Investigation Report	F-52
F-8	Layout Plan	F-118
F-9	Environment Management Plan	F-120
F-10	Section & Elevation	F-122
F-11	Topographical Map	F-125

SECTION A: FORM 1

Form-1

I. Basic Information

S. No.	Item	Details
1.	Name of the project/s	Proposed Offices for Ministry of Defence with pre-engineered technology (to relocate existing offices in hutments near South Block & North Block for redevelopment of Central Vista), Old Curzon Road Barracks, adjacent to Asia House, KG Marg, New Delhi
2.	S. No. in the schedule	8 (a)
3.	Proposed capacity/ area/length/ tonnage to be handled/ command area/ lease area/ number of wells to be drilled	Total Plot area – 22569.68 m^2 Total Built up Area – 43423.79 m^2
4.	New/ Expansion/ Modernization	New
5.	Existing Capacity/ Area etc.	Not Applicable
6.	Category of Project i.e. 'A' or 'B'	B
7.	Does it attract the general condition? If yes, please specify.	Not Applicable
8.	Does it attract the specific condition? If yes, please specify.	Not Applicable
9.	Location	Latitude: 28°37'10.81"N Longitude: 77°13'31.56"E
	Plot/ Survey/ Khasra No.	Old Curzon Barracks Campus, Opposite Bhartiya Vidya Bhawan adjacent to Asia House, New Delhi
	Village	Connaught Place
	Tehsil	Connaught Place
	District	Delhi
	State	New Delhi
10.	Nearest railway station/ airport along with distance in kms.	**Nearest Highway:** NH-24-3.79 km SE **Nearest Railway Station:** Shivaji Bridge Railway Station -1.44 km N **Nearest Airport:** Safdarjung Airport-4.18 km SSW **Nearest Metro Station:** Mandi House Metro Station: 1.03 km NE

11.	Nearest Town, city, District Headquarters along with distance in kms.	The project is in Delhi city itself.
12.	Village Panchayats, Zilla Parishad, Municipal Corporation, Local body (complete postal addresses with telephone nos. to be given)	New Delhi Municipal Council Contact Address: Palika Kendra Parliament Street, New Delhi, Delhi 110001
13.	Name of the applicant	CPWD (Central Public Works Department)
14.	Registered Address	Room no 140, Vidyut Bhawan near Shankar Bhawan New Delhi
15.	Address for correspondence:	
	Name	Mr. Akhelesh Kumar
	Designation (Owner/Partner/CEO)	Executive Engineer and Senior Manager-1
	Address	Room no 140, Vidyut Bhawan near Shankar Bhawan New Delhi
	Pin Code	110001
	E-mail	delaeec-rpd1@cpwd.gov.in
	Telephone No.	9990055028
	Fax no.	23411742
16.	Details of Alternative Sites examined, if any. Location of these sites should be shown on a topo sheet.	No alternative site has been examined
17.	Interlinked Projects	Not applicable
18.	Whether a separate application of interlinked project has been submitted?	Not Applicable
19.	If yes, date of submission	Not Applicable
20.	If no, reason	No, it is not an interlinked project.
21.	Whether the proposal involves approval/clearance under: if yes, details of the same and their status to be given. The Forest (Conservation) Act, 1980? The Wildlife (Protection) Act, 1972? The C.R.Z. Notification, 1991?	 Not Applicable Not Applicable Not Applicable
22.	Whether there is any Government Order/ Policy relevant/ relating to the site?	No

23.	Forest land involved (hectares)	Not applicable
24.	Whether there any litigation pending against the project and/ or land in which the project is proposed to be set up? Name of the Court Case No. Orders/ directions of the Court, if any and its relevance with the proposed project.	No Not applicable Not applicable Not applicable

II. Activity

1. Construction, operation or decommissioning of the Project involving actions, which will cause physical changes in the locality (topography, land use, changes in water bodies, etc.)

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
1.1	Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan)	**Yes**	As per notification by Ministry of Urban Development, Govt. of India dated 13.06.2016, the land use of the proposed project has been changed from Residential use to Government (Government Office). The land has been handed over by the Land & Development Office, Govt. of India to CPWD vide letter no. L&DO/L-II-A/11(1158)/2019/162 dated 25.02.2020 for the development of the proposed offices. Proof of the same has been annexed in Section-F. Hence, there will be no change in land use. However the land cover will change from vacant land to government offices.
1.2	Clearance of existing land, vegetation and buildings?	**No**	No, there will be no clearance of existing land, vegetation and buildings. There are several trees present on the site but the building design has been planned so that no tree will be cut.
1.3	Creation of new land uses?	**No**	No creation of new land uses.
1.4	Pre-construction investigations e.g. bore houses, soil testing?	**Yes**	Pre-construction soil investigation will be done.
1.5	Construction works?	**Yes**	Construction will be done as per Master Plan of Delhi.
1.6	Demolition works?	**No**	No demolition will be required.

1.7	Temporary sites used for construction works or housing of construction workers?	**No**	During the construction phase workers will be hired from the nearby areas hence there will be no need of providing housing.
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations	**Yes**	The building height will be elevated upto height of 38 m. Approx. 15000 m^3 soil will be excavated for foundation. Out of which, topsoil will be preserved at designated places to use for landscaping purposes while the rest of it will be reused to extent possible and excess to be sent to C&D facility.
1.9	Underground works including mining or tunneling?	**No**	It is a construction project, hence no underground works including mining or tunneling works will be required. Neither any further excavation work will be done.
1.10	Reclamation works?	**No**	Not applicable
1.11	Dredging?	**No**	Not applicable
1.12	Offshore structures?	**No**	Not applicable
1.13	Production and manufacturing processes?	**No**	It is an office complex so no manufacturing or production should be carried out.
1.14	Facilities for storage of goods or materials?	**Yes**	**During Construction Phase:** ● Separate raw material yards will be made within the project site. ● Cement will be separately stored under cover bales. ● Sand will be stacked nearby under tarpaulin cover. **Operational Phase:** As it is an office complex , the raw materials used will be stationary goods, food items etc. which will be stored in respective storage rooms.
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	**Yes**	**During Construction phase:** Solid waste during the construction phase will be 15 kg/day that will be disposed of to the Municipal Solid Waste Disposal Site. Brick work wastage will be used for waterproofing for terrace, toilets, etc. and rest construction debris will be sent to the Construction and Demolition facility. Approx. 4 KLD wastewater generated will be discharged to septic tanks that will be cleaned regularly. **During Operation Phase:**

			762 kg/day of total waste will be generated from the complex. Out of which, 304 kg/day of biodegradable waste will be treated in Organic Waste Convertor to get converted to manure. 229 kg/day non-biodegradable waste and 229 kg/day recyclable waste will be sent to authorised recycler. 205 KLD wastewater will be generated that will be treated in STP of capacity 250 KLD. 185 KLD treated wastewater will be completely reused in the complex for purposes like flushing , gardening and cooling purposes. Details of solid waste management and waste water management are given in Section-D.
1.16	Facilities for long term housing of operational workers?	**No**	**During Construction phase:** The workers during the construction phase will be hired from the nearby areas and hence there is no need of providing long term housing. Only temporary day rest area will be provided. **During Operation Phase:** As this is an office complex, staff will be hired for offices. No housing will be required.
1.17	New road, rail or sea traffic during construction or operation?	**No**	No new road, rail etc. will be proposed however, existing transportation facilities will be used during construction or operation phase.
1.18	New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc.?	**No**	**Nearest Highway**: NH-24-3.79 km SE **Nearest Railway Station**: Shivaji Bridge Railway Station-1.44 km N **Nearest Airport:** Safdarjung Airport-4.18 km SSW
1.19	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?	**No**	Not Applicable
1.20	New or diverted transmission lines or pipelines?	**No**	Not Applicable
1.21	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers?	**No**	Not Applicable

1.22	Stream crossings?	**No**	Not Applicable
1.23	Abstraction or transfers of water from ground or surface waters?	**No**	**No groundwater abstraction is proposed.** **During Construction Phase:** Treated wastewater from STP will be taken. **During Operation Phase:** The ultimate source of water will be New Delhi Municipal Council (NDMC).
1.24	Changes in water bodies or the land surface affecting drainage or run-off?	**No**	There will be no change in water bodies or the land surface effective drainage or run-off.
1.25	Transport of personnel or materials for construction, operation or decommissioning?	**Yes**	**During Construction phase:** Materials during the construction phase will be transported by truck, trolley etc. **During Operation Phase:** Trucks, cars, two-wheelers, etc. will be used for transport.
1.26	Long-term dismantling or decommissioning or restoration works?	**No**	Not Applicable
1.27	Ongoing activity during decommissioning which could have an impact on the environment?	**No**	Not Applicable
1.28	Influx of people to an area in either temporarily or permanently?	**Yes**	**During Construction phase:** Temporarily influx of people in the form of labor during the construction phase will be envisaged. Approx. 100 no. of local labor will be employed during the construction phase. **During Operation Phase:** Influx of 5080 nos. of people per day (Visitors: 240 and Staff: 4840) has been envisaged.
1.29	Introduction of alien species?	**No**	Not Applicable
1.30	Loss of native species or genetic diversity?	**No**	There will not be any loss of native species at the site. However, plantation of native plants will be proposed within the site which will have positive impacts.
1.31	Any other actions?	**No**	Not Applicable

2. Use of Natural resources for construction or operation of the Project (such as land, water, materials or energy, especially any resources which are non-renewable or in short supply):

<table>
<tr><th>S. No.</th><th>Information/checklist confirmation</th><th>Yes/ No</th><th>Details thereof (with approximate quantities /rates, wherever possible) with source of information data</th></tr>
<tr><td>2.1</td><td>Land especially undeveloped or agricultural land (ha)</td><td>Yes</td><td>Presently, the land is an undeveloped land.Land belongs to the Directorate of Estates.
Hence, there will be development of office complexes from undeveloped land.</td></tr>
<tr><td>2.2</td><td>Water (expected source & competing users) unit: kLD</td><td>Yes</td><td>During Construction phase: Water will be sourced from treated wastewater from nearby STP as per the requirement.

During Operation Phase: The ultimate source of water is New Delhi Municipal Council (NDMC). The total water requirement of the project will be 307 KLD. Out of which, 122 KLD fresh water supply will be sourced by NDMC.

Detailed Water Management & Water Balance are given in Section-D.</td></tr>
<tr><td>2.3</td><td>Minerals (MT)</td><td>No</td><td>Not applicable</td></tr>
<tr><td>2.4</td><td>Construction material – stone, aggregates, sand / soil (expected source – MT)</td><td>Yes</td><td>Steel Building using Pre Engineered construction technology shall be constructed. Pre Engineered building using bare minimum wet construction, RCC foundation as per design. The list of some of the material are given below:

<table>
<tr><th>Sr. No.</th><th>Material</th></tr>
<tr><td>1.</td><td>Glass</td></tr>
<tr><td>2.</td><td>Pipe & Steel</td></tr>
<tr><td>3.</td><td>Cement</td></tr>
<tr><td>4.</td><td>Insulation Material</td></tr>
<tr><td>5.</td><td>RMC</td></tr>
<tr><td>6.</td><td>ACP</td></tr>
<tr><td>7.</td><td>Aluminum Work</td></tr>
<tr><td>8.</td><td>Tiles</td></tr>
<tr><td>9.</td><td>Granite</td></tr>
<tr><td>10.</td><td>Gypsum</td></tr>
<tr><td>11.</td><td>Hardwood door frames/MDF/Ply</td></tr>
</table>
</td></tr>
</table>

			The building will be G+8 constructed using Pre-Engineered Building technology in which steel sections are fully fabricated in a controlled environment in the factory after designing and shipped to site in completely knocked down (CKD) condition; and all components are assembled and erected at site with nut-bolts, thereby reducing the time of completion.
2.5	Forests and timber (source – MT)	**Yes**	Steel for doors & windows to be used will be procured from the local nearby market.
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)	**Yes**	**Source of Electricity –** New Delhi Municipal Council (NDMC) **Total Power Load**- 4500 kVA **G.G. Sets (For Power Back-up purposes) -**3 x 500 kVA
2.7	Any other natural resources (use appropriate standard units)	**No**	Not applicable

3. Use, storage, transport, handling or production of substances or materials, which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health.

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
3.1	Use of substances or materials, which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna, and water supplies)	**No**	Since the project is an office complex. Hence, no hazardous substance/materials will be used.
3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)	**No**	Suitable drainage and waste management measures will be adopted that will restrict stagnation of water or accumulation of water. This will effectively restrict the reproduction and growth of disease vectors.
3.3	Affect the welfare of people e.g. by changing living conditions?	**Yes**	**During Construction phase:** Employment opportunities will be generated in the area due to the project which will lead to better quality of life. Moreover, this project will provide employment to about 100 local laborers during the construction phase.
3.4	Vulnerable groups of people who could be affected by the	**No**	No vulnerable group of people will be affected by the project.

	project e.g. hospital patients, children, the elderly etc.		
3.5	Any other causes	**No**	None

4. Production of solid wastes during construction or operation or decommissioning (MT/month)

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
4.1	Spoil, overburden or mine wastes.	**No**	Not applicable
4.2	Municipal waste (domestic and or Residential wastes)	**Yes**	**During Construction phase:** Solid waste during construction phase will be 15 kg/day which will be disposed of to Municipal Solid Waste Disposal Site. **During Operation Phase:** Total 762 kg/day of solid waste will be generated from the complex. Out of which, 304 kg/day biodegradable waste will be treated in Organic Waste Convertor to get converted to manure. 229 kg/day non-biodegradable waste and 229 kg/day plastic waste will be sent to authorised recycler. Detailed Solid Waste Management is given Section-D.
4.3	Hazardous wastes (as per Hazardous Waste Management Rules)	**Yes**	**During Construction phase:** Used oil whenever generated from GG Sets will be kept in a leak proof container in an isolated area and given to the approved recycler. **During Operation Phase:** There will be no used oil generation because gas based generators will be used.
4.4	Other industrial process wastes	**No**	Not Applicable
4.5	Surplus product	**No**	Not applicable
4.6	Sewage sludge or other sludge from effluent treatment	**Yes**	15 kg/day of dried sludge will be generated from STP within the complex and this sludge will be passed through filter press where it will be dewatered/ dried to form a cake and then used as manure in green areas.
4.7	Construction or demolition wastes	**Yes**	Construction waste will be used for flooring & back-filling of roads, etc.
4.8	Redundant machinery or equipment	**No**	Not applicable

4.9	Contaminated soils or other materials	**No**	Not applicable
4.10	Agricultural wastes	**No**	Not applicable
4.11	Other solid wastes	**Yes**	E-waste of 2 kg/month will be collected and given to approved recycler of CPCB.

5. Release of pollutants or any hazardous, toxic or noxious substances to air (kg/hr)

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
5.1	Emissions from combustion of fossil fuels from stationary or mobile sources	**Yes**	**During Construction phase:** The only source of emissions from combustion of fossil fuel from the DG Sets of capacity 1x125 kVA. Hence, to avoid the emissions, appropriate stack height will be maintained as per norms. **During Operation Phase:** There will be least emissions as gas based generator sets will be used. For GG Sets, Stack height of 30 m above ground level will be maintained to avoid emissions.
5.2	Emissions from production processes	**No**	Not applicable
5.3	Emissions from materials handling including storage or transport	**Yes**	Dust will be generated during construction from movement of transport vehicles & other construction activities. The material will be covered during transportation to reduce the impact of emissions. The effect will be restricted to the construction phase only.
5.4	Emissions from construction activities including plant and equipment	**Yes**	● Pre Engineered building has been designed using bare minimum wet construction, RCC foundation. ● The floor system shall consist of galvanized steel deck system overlaid with reinforced concrete. ● Movement of trucks will be restricted to construction areas. They will bring raw material with tarpaulin cover. Trucks will leave the site after getting types washed. ● Sprinkling will be done at every three-hour interval during summers. During winter the interval of sprinkling will be once a day. ● As the machines operate 12 hours a day hence it will be weekly maintained to reduce air emissions from it. ● GG sets of 3 × 500 kVA (having stack height 30 m above ground level) will be installed at the surface. Presently on road opposite the site the existing traffic density is 770 PCU/day on 7 m wide road. Parking provision of 192 ECS has been proposed on the surface. Hence, there will be no shortage of parking space for vehicles. Apart from this separate entry and exit gates

			will be provided to regulate smooth traffic movement in the complex.
5.5	Dust or odors from handling of materials including construction materials, sewage and waste	**Yes**	During loading & unloading of construction material dust is likely to be generated during the construction phase. Water will be sprinkled and tarpaulin cover will be provided over stored raw material to reduce dust emission. Toilets will be provided during construction phase & waste water will be discharged to septic tanks that will be cleaned regularly.
5.6	Emissions from incineration of waste.	**No**	No incineration has been proposed at the site. Hence, no emissions from incineration of waste will be generated.
5.7	Emissions from burning of waste in open air (e.g. slash materials, construction debris).	**No**	Open burning of biomass/ other material will be prohibited.
5.8	Emissions from any other sources.	**No**	None

6. Generation of Noise and Vibration, and Emissions of Light and Heat:

S.No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data with source of information data
6.1	From operation of equipment e.g. engines, ventilation plant, crushers	**Yes**	**During Construction phase:** GG sets of capacity 1×125 kVA will be the source of noise & vibration. The equipment such as mixer machines, and cranes, will be used which will be of the highest standard of reputed make and adhere to international standards. Hence, an insignificant impact due to construction machinery is envisaged. Apart from this, the construction activities will be restricted to daytime only and timely maintenance of machinery will be ensured. **During Operation Phase:** The source of noise will be G.G. Sets of capacity 3×500 kVA. The G.G. Sets will be bought acoustically enclosed and kept on the surface. They will be used during power failure only. Stack Height of 30 m above ground level will be provided. Ambient Noise Level when GG sets lies between 80-100 dB (A).
6.2	From industrial or similar processes	**No**	Not applicable

6.3	From construction or demolition	**Yes**	Due to the various activities there are short-term noise impacts in the immediate vicinity of the project site. These will be restricted to day time only. It has been estimated that during the construction period the average noise level will be 80-100 dB (A) during peak construction hours. However, embankment will be done to further prevent the noise pollution.
6.4	From blasting or piling	**No**	No blasting or piling will be done.
6.5	From construction or operational traffic	**Yes**	Some amount of noise 70 – 75 dB (A) will be generated from vehicular movement in the construction and operational phase. Plantation around the boundary wall will be done to reduce noise from traffic.
6.6	From lighting or cooling systems	**No**	None
6.7	From any other sources	**No**	None

7. Risks of contamination of land or water from releases of pollutants into the ground or into sewers, surface waters, groundwater, coastal waters or the sea:

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
7.1	From handling, storage, use or spillage of hazardous materials	**No**	There will be no generation of used oil as gas based generators will be used for power backup.
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge)	**No**	The total wastewater generated will be 205 KLD which will be treated in STP of capacity 250 KLD. 185 KLD treated wastewater will be completely reused in the complex for flushing, gardening and cooling. It will be a Zero-Liquid Discharge Complex.
7.3	By deposition of pollutants emitted to air into the land or into water	**No**	None
7.4	From any other sources	**No**	Not applicable
7.5	Is there a risk of long-term buildup of pollutants in the environment from these sources?	**No**	Not applicable

8. Risk of accidents during construction or operation of the Project, which could affect human health or the environment.

S. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
8.1	From explosions, spillages, fires etc. from storage, handling, use or production of hazardous substances	**Yes**	**During Construction Phase:** There will be no production of hazardous waste except generation of used oils from DG sets is anticipated. Proper management of used oils will be done. Besides, all appropriate measures will be taken to avoid accidents. **During Operation Phase:** There will be no generation of used oil as gas based generators will be used.
8.2	From any other causes	**Yes**	**During Construction Phase:** All the laborers will be provided with suitable personal protective equipment (PPE) as required under the health & safety norms. Training and awareness about the safety norms will be provided to all supervisors and laborers involved in construction activity.
8.3	Could the project be affected by natural disasters causing environmental damage (e.g. floods, earthquakes, landslides, cloudburst etc.)?	**No**	The area under study falls in Seismic zone IV, according to the Indian Standard Seismic Zoning Map. Suitable seismic coefficients in horizontal and vertical directions respectively, will be adopted while designing the structure.

9. Factors which should be considered (such as consequential development) which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality.

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
9.1	Lead to development of supporting cities, ancillary development or development stimulated by the project which could have impact on the environment e.g.:	**No**	Not applicable
	• Supporting infrastructure (roads, power supply, waste or waste water treatment, etc.)	**No**	Not Applicable
	• Housing development	**No**	Not Applicable

	• Extractive industries • Supply industries • Other	 **No** **No** **No**	 Not Applicable Not Applicable Not Applicable
9.2	Lead to after-use of the site, which could have an impact on the environment	**No**	The proposed project will be implemented as per the proposed Environment Management Plan. Hence, no environmental adverse impact will be anticipated from the project.
9.3	Set a precedent for later developments	**Yes**	Not applicable
9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects	**No**	No impact

III. Environmental Sensitivity

S. No	**Areas**	**Name/ Identity**	**Aerial distance (within 15 km.) from Proposed project location boundary**
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	ASI Monuments List Attached Separately Okhla Bird Sanctuary Asola Wildlife Sanctuary ESZ	ASI Monuments List Attached Separately 9.79 km SE 12.23 km SSE
2	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	**Water Bodies** Old Fort Lake Bangla Sahib Sarover Yamuna River Drain near Pant Nagar Drain near Pandav Nagar Sanjay Lake Eastern Yamuna Canal Deer Park Pond Najafgarh Drain Hauz Khas Tank Pond near Seelampur Pond near Usman Nagar Drain near Himmatpuri Drain near Usman Nagar	 1.60 km SE 1.71 km NW 2.87 km E 4.25 km SSE 5.20 km E 6.29 km SEE 7.29 km NE 7.42 km SSW 7.76 km NNW 7.76 km SSW 7.85 km NE 7.90 km NNE 8.17 km SEE 8.18 km NNE

		Hinden Cut Drain near Nayabas Pond near Shyam Nagar **Forest** Central Ridge Reserve Forest Northern Ridge Reserve Forest	8.36 km SEE 8.66 km SE 9.40 km SSE 3.03 km NNW 5.70 km NNW
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, overwintering, migration	Okhla Bird Sanctuary Asola Wildlife Sanctuary ESZ	9.79 km SE 12.23 km SSE
4	Inland, coastal, marine or underground waters	None	None
5	State, National boundaries	U.P. State Boundary Haryana State Boundary	9.77 km SE 14.30 km SSE
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	**Road** NH-24 NH-2 NH-8 NH-10 NH-236 **Railway/Metro Station** Central Secretariat Metro Station Tilak Bridge Railway Station Shivaji Bridge Railway Station Pragati Maidan Metro Station Shivaji Stadium Metro Station Indraprastha Metro Station NewDelhi Railway Station Hazrat Nizamuddin Railway Station Sadar Bazar Railway Station Old Delhi Junction Railway Station Sarai Rohilla Railway Station Okhla Railway Station Delhi Cantonment Railway Station Sakur Basti Railway Station **Airport** Safdarjung Airport Indira Gandhi International Airport	 3.79 km SE 6.11 km SE 6.40 km SW 10.24 km NW 13.49 km SW 1.30 km SW 1.35 km NE 1.44 km N 1.58 km NE 1.60 km NW 2.26 km E 2.72 km NNW 4.30 km SE 4.35 km NNW 4.52 km N 6.06 km NW 7.68 km SE 10.66 km SWW 11.21 km NW 4.18 km SSW 14.05 km SW
7	Defense installations	Indian Airforce Headquarter	1.56 km SW

8	Densely populated or built-up area	Mandi House	0.78 km NE
9	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	**Hospital**	
		Shroff Eye Centre, Connaught Place, Surya Kiran Building, K,G,Marg, New Delhi	0.86 km NNW
		Freemason's Polyclinic, Janpath, Connaught Place ,New Delhi.	0.97 km NW
		General Williams Hospital, Atul Grove Road,Janpath,Connaught Place, New Delhi	0.98 km NW
		Post Office	
		e-Post Office, Sansad Marg, Head Post Office, New Delhi	1.15 Km NW
		India Post, Dak Bhawan, Sansad Marg, New Delhi	1.17 km NW
		New Delhi GPO, Gol Dak Khana Building, near Gurudwara Bangla Sahib, New Delhi	1.91 km NW
		Place of Worship	
		Shri bangla Sahib Gurudwara, Hanuman Road Area, Connaught Place, New Delhi	1.62 km NW
		Jesus Calls Prayer Tower, CNI Building, 16, Pandit Pant Marg, New Delhi	1.73 km NWW
		Dargah Sharif Hazrat Baba Sayyad Nanhe Chisti, Mandi House, New Delhi	0.85 km NE
		School	
		Bhartiya Vidya Bhavan's Mehta Vidyalaya, K.G.Marg, New Delhi	0.08 km NEE
		JawaharLal Nehru Academy of language, K.G.Marg, Mandi House, New Delhi	0.34 km NNW
		P&T Senior Secondary School, Atul Grove Road, Connaught Place, New Delhi	0.54 km NNW
		Bank	
		Kotak Mahindra Bank. K.G.Marg, Janpath, Barakhanba, New Delhi.	0.77 km NNW
			0.86 km NNW

		IDBI Bank, Surya Kiran Building, Kasturba Gandhi Marg, New Delhi. Bank of Baroda, K.G.Marg, Janpath, Connaught Place, New Delhi	0.87 km NNW
10.	Areas containing important, high quality or scarce resources (Ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	ASI Monuments List Attached Separately **Water Bodies** Old Fort Lake Bangla Sahib Sarover Yamuna River Drain near Pant Nagar Drain near Pandav Nagar Sanjay Lake Eastern Yamuna Canal Deer Park Pond Najafgarh Drain Hauz Khas Tank Pond near Seelampur Pond near Usman Nagar Drain near Himmatpuri Drain near Usman Nagar Hinden Cut Drain near Nayabas Pond near Shyam Nagar **Forest** Central Ridge Reserve Forest Northern Ridge Reserve Forest	ASI Monuments List Attached Separately 1.60 km SE 1.71 km NW 2.87 km E 4.25 km SSE 5.20 km E 6.29 km SEE 7.29 km NE 7.42 km SSW 7.76 km NNW 7.76 km SSW 7.85 km NE 7.90 km NNE 8.17 km SEE 8.18 km NNE 8.36 km SEE 8.66 km SE 9.40 km SSE 3.03 km NNW 5.70 km NNW
11	Areas already subjected to pollution or environmental damage. (Those where existing legal environmental standards are exceeded)	Anand Parvat Naraina Okhla Wazirpur	6.91 km NW 8.47 km NWW 8.95 km SE 10.51 km NW
12	Areas susceptible to natural hazard which could cause the project to present environmental problems (Earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)	-	Area falls in seismic zone IV.

"I hereby given undertaking that the data and information given in the application and enclosures are true to the best of my knowledge and belief and I am aware that if any part of the data and information submitted is found to be false or misleading at any stage, the project will be rejected and clearance given, if any to the project will be revoked at our risk and cost".

(Akhelesh Kumar)
Executive Engineer & SM-I
RPD

SECTION B: FORM 1A

FORM-1 A

CHECK LIST OF ENVIRONMENTAL IMPACTS

(Project proponents are required to provide full information and wherever necessary attach explanatory notes with the Form and submit along with proposed environmental management plan & monitoring programme)

1. LAND ENVIRONMENT

1.1	Will the existing land use get significantly altered from the project that is not consistent with the surroundings? (Proposed land use must conform to the approved Master Plan / Development Plan of the area. Change of land use if any and the statutory approval from the competent authority be submitted). Attach Maps of	As per notification by Ministry of Urban Development, Govt. of India dated 13.06.2016, the land use of the proposed project has been changed from Residential use to Government (Government Office).Hence, there will be no change in land use.
	i. Site location	The site location shown on Google Maps is enclosed in Section C**.**
	ii. Surrounding features of the proposed site (within 500 meters)	Map showing the vicinity around the site is enclosed as Section C.
	iii. The site (indicating levels & contours) to appropriate scales. If not available, attach only conceptual plans.	The conceptual plan is enclosed as Section C.

1.2	List out all the major project requirements in terms of the Land area, Built-up area Water consumption Power requirement Connectivity Community facilities Parking needs etc.	 22569.68 m^2 43423.79 m^2 307 KLD 4500 kVA **Nearest Highway:** KG Marg- Adjacent to the proposed site (In the Right side to entry of the site) NH-24-3.79 km SE **Nearest Railway Station:** Shivaji Bridge Railway Station -1.44 km N **Nearest Airport:** Safdarjung Airport-4.18 km SSW **Nearest Metro Station:** Mandi House Metro Station: 1.03 km NE - **Parking Requirement** : 542 ECS **Parking Provision** : 550 ECS
1.3	What are the likely impacts of the proposed activity on the existing facilities adjacent to the proposed site? (Such as open spaces, community facilities, details of the existing land use, and disturbance to the local ecology).	The entire project influenced area will be developed as per Master Plan, thus no induced development will be foreseen due to the proposed project. The proposed project will generate additional direct and indirect employment opportunities for local people. The employment will have a positive impact thereby increasing the quality of life.

1.4	Will there be any significant land disturbance resulting in erosion, subsidence & instability? (Details of soil type, slope analysis, vulnerability to subsidence, seismicity etc. may be given).	Since the proposed project is a non-basement office complex. Minimum excavation of soil for foundation will only be done. Hence, there will not be any land disturbance which could result in erosion, subsidence & instability. **Soil Type:** Silt Clay Loam **Slope Analysis:** The project area possesses fairly plain terrain. **Erosion / Subsidence:** Proper greening & paving of the area will not cause any soil erosion problem and subsidence. **Seismicity:** The area under study falls in Seismic zone IV according to the Indian Standard Seismic Map.
1.5	Will the proposal involve alteration of natural drainage systems? (Give details on a contour map showing the natural drainage near the proposed project site)	The proposed project will not cause any alteration of the natural drainage system.
1.6	What are the quantities of earthwork involved in the construction activity cutting, filling, reclamation etc. (Give details of the quantities of earthwork involved, transport of fill materials from outside the site etc.)	Approx. 15000 m^3 will be excavated for foundation purposes for development of the same.

1.7	Give details regarding water supply, waste handling etc. during the construction period.	**Water Supply:** During the construction stage, water will be sourced through nearby STP as per requirement. **Waste Generation/Handling:** Spillage of oil from the machinery or cement residual from concrete mixer plants will be properly collected and reused at the construction site. For construction labor, toilet facilities will be provided.
1.8	Will the low-lying areas & wetlands get altered? (Provide details of how low lying and wetlands are getting modified from the proposed activity)	No low-lying and wetlands area is present in and around the project site.
1.9	Whether construction debris & waste during construction cause health hazard? (Give quantities of various types of wastes generated during construction including the construction labour and the means of disposal)	The construction waste generated from the project will not cause any health hazards to associate and nearby populations. Waste concrete will be reused as aggregate in the construction process. Mobile Toilets will be used by laborers during the construction. The sewage and wastewater generated will be discharged to septic tanks that will be cleaned regularly.

2. WATER ENVIRONMENT

2.1	Give the total quantity of water requirement for the proposed project with the breakup of requirements for various uses. How will the water requirement met? State the sources & quantities and furnish a water balance statement.	The total quantity of water requirement will be 307 KLD out of which 122 KLD fresh water will be met by New Delhi Municipal Council (NDMC) and 185 KLD treated wastewater generated from the STP of capacity 250 KLD will be used to meet the requirement. Domestic : 122 KLD Flushing : 100 KLD Gardening : 5 KLD Cooling : 80 KLD **Total Water Requirement: 307 KLD** **Fresh Water requirement: 122 KLD** **Waste Water Generation: 205 KLD** Details have been given in Section D
2.2	What is the capacity (dependable flow or yield) of the proposed source of water?	New Delhi Municipal Council (NDMC) will supply water to the Office Complex and it will be a dependable source of water.
2.3	What is the quality of water required, in case, the supply is not from a municipal source? (Provide physical, chemical, biological characteristics with class of water quality)	In case, NDMC supply is not made or the supply is inadequate then the water complying with IS – 10500 standards shall be arranged.
2.4	How much of the water requirement can be met from the recycling of treated wastewater? (Give the details of quantities, sources and usage)	185 KLD treated wastewater generated from STP (250 KLD) will be completely reused within the complex for flushing, gardening and cooling. It will be a Zero-Liquid Discharge Project.

2.5	Will there be diversion of water from other users? (Please assess the impacts of the project on other existing uses and quantities of consumption)	There will not be any substantial effect on water demand of this region as the development will be as per the development plan.
2.6	What is the incremental pollution load from wastewater generated from the proposed activity? (Give details of the quantities and composition of wastewater generated from the proposed activity)	185 KLD treated wastewater generated from STP (250 KLD) will be completely reused within the complex for flushing, gardening and cooling. It will be a Zero-Liquid Discharge Project.
2.7	Give details of the water requirements met from water harvesting? Furnish details of the facilities created.	5 number of rainwater harvesting pits will be provided in the complex for recharge of underground water. (Details of RainWater Harvesting has been given in Section-D)
2.8	What would be the impact of the land use changes occurring due to the proposed project on the runoff characteristics (quantitative as well as qualitative) of the area in the post construction phase on a long-term basis? Would it aggravate the problems of flooding or water logging in any way?	There will be no change in land use due to the project as there will be provision of 5 no. of rainwater harvesting pits for recharging of groundwater. Hence, there will be no change in run-off characteristics as ample recharge provisions will be given to prevent the same. No, it will not aggravate problems of flooding or water logging in any way.
2.9	What are the impacts of the proposal on the ground water? (Will there be tapping of groundwater; give the details of ground water table, recharging capacity, and approvals	No ground-water extraction is required. However ground-water recharging will be done through 5 no. of rain water harvesting pits (Capacity- 3.5m x 3.5m x 4 m). So, there will be a positive impact on ground-water level.

	obtained from competent authority, if any)	
2.10	What precautions/measures are taken to prevent the run-off from construction activities polluting land & aquifers? (Give details of quantities and the measures taken to avoid the adverse impacts)	During the construction phase, runoff from the construction site will be collected in tanks using garland drains which will then be reused in the complex for construction purposes.
2.11	How is the storm water from within the site managed? (State the provisions made to avoid flooding of the area, details of the drainage facilities provided along with a site layout indication contour levels)	Storm water from within the site will be channelized to 05 no. of rain water harvesting pits to recharge the ground-water.
2.12	Will the deployment of construction laborers particularly in the peak period lead to unsanitary conditions around the project site (Justify with proper explanation)	Unsanitary conditions are probable due to labourers during construction phase. To prevent such circumstances, proper disposal of municipal solid waste and wastewater will be done. Mobile toilets will be provided for the same. Approx. 10 kg/day of municipal solid Waste will be sent to the Municipal Solid Waste Disposal Site. 4 KLD wastewater will be discharged to septic tanks that will be cleaned regularly. .
2.13	What on-site facilities are provided for the collection, treatment & safe disposal of sewage? (Give details of the quantities of wastewater generation, treatment capacities with technology & facilities for recycling and disposal)	**During Construction Phase:** Mobile toilets will be provided at the site for construction labourers. 4 KLD of sewage generated will be discharged to septic tanks that will be cleaned regularly. **During Operation Phase:** 205 KLD wastewater will be treated in STP (Capacity-250 KLD). 185 KLD treated wastewater generated from STP

		will be reused completely within the premises for flushing, gardening and cooling. It will be a Zero-Liquid Discharge Project.
2.14	Give details of the dual plumbing system if treated waste used is used for flushing of toilets or any other use.	Dual Plumbing lines will be provided in the complex.

3. VEGETATION

<table>
<tr>
<td>3.1</td>
<td>Is there any threat of the project to biodiversity?
(Give a description of the local ecosystem with its unique features, if any)</td>
<td>
Core Zone:
There are following species in the proposed site:
<table>
<tr><td>Whistling Pine</td><td>Drumstick</td><td>Amaltas</td><td>Neem</td></tr>
<tr><td>Peepal</td><td>Bombax</td><td>Banyan</td><td>Mango</td></tr>
<tr><td>Teak</td><td>Terminalia</td><td>Siris</td><td>Ashoka</td></tr>
<tr><td>Chinaberry</td><td>Kusum</td><td>Silk Cotton</td><td>Indian Rosewood</td></tr>
</table>
Buffer Zone:
There are the following wildlife sanctuaries within a 15 km radius of the project site.
1. Okhla Bird Sanctuary- 9.79 Km SE
2. Asola Wildlife Sanctuary ESZ - 12.23 km SSE
Major species found in the buffer area are-:
<table>
<tr><td>Shisham</td><td>Champak</td><td>Chhota</td><td>Gulmohar</td></tr>
<tr><td>Pilkhan</td><td>Arjun</td><td>Champa</td><td>Ashoka</td></tr>
<tr><td>Ficus</td><td>Dhayti</td><td>Madhu</td><td>Roheda</td></tr>
</table>
The proposed government office complex will be developed taking into consideration the biodiversity of nearby wildlife sanctuary.
</td>
</tr>
</table>

3.2	Will the construction involve extensive clearing or modification of vegetation? (Provide a detailed account of the trees & vegetation affected by the project)	There will be no clearing/modification of vegetation in the proposed site as the building has been designed taking in consideration to the substantial amount of trees present on the site.
3.3	What are the measures proposed to be taken to minimize the likely impacts on important site features? (Give details of proposal for tree plantation, landscaping, creation of water bodies etc. along with a layout plan to an appropriate scale)	There will not be any adverse impact of this project on site features. The Shelter belt for the proposed project will be provided for a clean, healthy and beautiful green environment for the people to live in within the proposed project site. The green belt will be developed at the site with a total green area of 4513.94 m² (20 % of the total plot area).

4. FAUNA

4.1	Is there likely to be any displacement of fauna- both terrestrial and aquatic or creation of barriers for their movement? Provide the details.	**Core Zone:** Since the project site is an undeveloped land with substantial amounts of trees, several burrowing animals like rats, mongoose etc. were observed with a range of insects like ants, spiders, bugs, butterflies, fleas etc. Building design has been made in such a way that no tree will be cut/transplanted. **Buffer Zone:** There are the following wildlife sanctuaries within a 15 km radius of the project site. 3. Okhla Bird Sanctuary- 9.79 km SE 4. Asola Wildlife Sanctuary ESZ - 12.23 km SSE The proposed government office complex will be developed taking into consideration the biodiversity of nearby wildlife sanctuary.
4.2	Any direct or indirect impacts on the fauna of the area? Provide details.	Proper landscaping will be planned to provide a clean, healthy and beautiful green environment for the population. Green area of 4513.94 m² (20 % of the total plot area) will be developed.

		Common native varieties of trees and ornamental flowering species will be planted in the green space which attract avifauna & hence, have a direct positive impact on the local avifauna and provide shelter to local birds.
4.3	Prescribe measures such as corridors, fish ladders etc. to mitigate adverse impacts on fauna	Not applicable

5. AIR ENVIRONMENT

5.1	Will the project increase atmospheric concentration of gases & result in heat islands? (Give details of background air quality levels with predicted values based on dispersion models taking into account the increased traffic generation as a result of the proposed constructions)	The present air quality along due to project is as follows-: **Particulars** / **Unit** / **Baseline Data** $PM_{2.5}$ / **µg/m³** / 129.7 PM_{10} / **µg/m³** / 215.6 NO_2 / **µg/m³** / 39.5 SO_2 / **µg/m³** / 10.1 CO / **mg/m³** / 0.97 Since, gas based generators will be used. There will be no incremental load due to the same. The present traffic density near the site is about 1191 PCU/hr. The traffic will increase due to the operation of the proposed Office Complex. Increased traffic generation of vehicles due to the project will not cause an increase in atmospheric concentration of gases and do not result in heat island formation. G.G. Sets of capacity 3 x 500 kVA will be installed in the office complex which will be used for power backup and only operated during power failure..

5.2	What are the impacts on generation of dust, smoke, odorous fumes or other hazardous gases? Give details in relation to all the meteorological parameters.	Dust from vehicles, odour from STP etc. might be generated from the site. Smoke may be generated from the operation of GG sets. Proper emission standards will be maintained as per CPCB guidelines with stack height of maximum 30 m above ground level. .Regular water sprinkling will be done for dust mitigation and proper ventilation will be provided in STP room for measurement of odour generation.
5.3	Will the proposal create a shortage of parking space for vehicles? Furnish details of the present level of transport infrastructure and measures proposed for improvement including the traffic management at the entry & exit to the project site.	Presently on the road opposite the site the existing traffic density is 1191 PCU/day on 18 m wide road. Parking provision of 550 ECS has been proposed on the surface against the requirement of 542 ECS. Hence, there will be no shortage of parking space for vehicles. Apart from this 4 separate entry and exit gates will be provided to regulate smooth traffic movement in the complex.
5.4	Provide details of the movement patterns with internal roads, bicycle tracks, pedestrian pathways, footpaths etc., with areas under each category.	The project being an office complex will require space for parking of two-wheelers and four-wheelers. Roads within the site along each block will be made for better access in the premises. Separate pedestrian pathways/footpaths of width 1 m will be provided for on-foot access in the site.
5.5	Will there be a significant increase in traffic noise & vibrations? Give details of the sources and the measures proposed for mitigation of the above.	During construction, noise barriers will be installed to reduce traffic noise & vibrations and green belt developed within the project site will mitigate the traffic noise. Proper care will be taken during design that there will not be any increase in traffic noise, hence no conjunction will cause. No honking within the office complex will be maintained.

5.6	What will be the impact of DG sets & other equipment on noise levels & vibration in & ambient air quality around the project site? Provide details.	There would be a slight impact of G.G. Sets on noise levels, vibration and in ambient air quality around the project site. 1. G.G. Sets will be acoustically enclosed. 2. Stack height as per C.P.C.B. norms to reduce the impacts on air quality around the project site is provided. 3. The noise from G.G. Sets meet the desired standard as per CPCB guidelines. 4. Vibration pads will be used in GG sets to minimize the vibration effect. Ambient Noise Level in Leq when GG sets are operational lies between 80 dB(A) to 100 dB (A).

6. AESTHETICS

6.1	Will the proposed constructions in any way result in the obstruction of a view, scenic amenity or landscapes? Are these considerations taken into account by the proponents?	No, the proposed construction will not lead to any obstruction of a view, scenic amenity or landscape. Yes, all considerations have been taken by the proponents
6.2	Will there be any adverse impacts from new constructions on the existing structures? What are the considerations taken into account?	The construction of the office Complex will be done as per Master Plan of Delhi taking in consideration of the existing infrastructure, Hence no adverse impact is anticipated. Also, the complex will be provided with the proper boundary. Hence, no adverse impact on the existing structures is anticipated.

6.3	Are there any local considerations of urban form & urban design influencing the design criteria? They may be explicitly spelt out. Are there any anthropological or archaeological sites or artifacts nearby? State if any other significant features in the vicinity of the proposed site have been considered.	There are no typical urban form & urban design influencing the design criteria. The archaeological site in vicinity to the project site is Red Fort which is at a distance of 2.66 km, NE All significant features will be considered.

7. SOCIO-ECONOMIC ASPECTS

7.1	Will the proposal result in any changes to the demographic structure of the local population? Provide the details.	The proposed project will provide temporary employment to approx. 100 local labourers for construction of the office complex. Hence, there will be change in the demographic structure of the area.	
7.2	Give details of the existing social infrastructure around the proposed project.	The proposed project falls within the Delhi city which has all the social infrastructure facilities in the form of education health & work centers etc.	
		Hospital	
		Shroff Eye Centre, Connaught Place, Surya Kiran Building, K,G,Marg, New Delhi	0.86 km NNW
		Freemason's Polyclinic, Janpath, Connaught Place ,New Delhi.	0.97 km NW
		General Williams Hospital, Atul Grove Road,Janpath,Connaught Place, New Delhi	0.98 km NW
		Post Office	
		e-Post Office, Sansad Marg, Head Post Office, New Delhi	1.15 km NW
		India Post, Dak Bhawan, Sansad Marg, New Delhi	1.17 km NW
		New Delhi GPO, Gol Dak Khana Building, near Gurudwara Bangla Sahib, New Delhi	1.91 km NW

		Place of Worship Shri bangla Sahib Gurudwara, Hanuman Road Area, Connaught Place, New Delhi Jesus Calls Prayer Tower, CNI Building, 16, Pandit Pant Marg, New Delhi Dargah Sharif Hazrat Baba Sayyad Nanhe Chisti, Mandi House, New Delhi **School** Bhartiya Vidya Bhavan's Mehta Vidyalaya, K.G.Marg, New Delhi JawaharLal Nehru Academy of language, K.G.Marg, Mandi House, New Delhi P&T Senior Secondary School, Atul Grove Road, Connaught Place, New Delhi **Bank** Kotak Mahindra Bank. K.G.Marg, Janpath, Barakhanba, New Delhi. IDBI Bank, Surya Kiran Building, Kasturba Gandhi Marg, New Delhi. Bank of Baroda, K.G.Marg, Janpath, Connaught Place, New Delhi	1.62 km NW 1.73 km NWW 0.85 km NE 0.08 km NEE 0.34 km NNW 0.54 km NNW 0.77 km NNW 0.86 km NNW 0.87 km NNW
7.3	Will the project cause adverse effects on local communities, disturbance to sacred sites or other cultural values? What are the safeguards proposed?	The office complex is located within the designated site and constructed as per the defined building by-laws. There are following sacred site or cultural heritage site within the vicinity of the office complex :- 1. Shri bangla Sahib Gurudwara, Hanuman Road Area, Connaught Place, New Delhi- 1.62 km NW 2. Jesus Calls Prayer Tower, CNI Building, 16, Pandit Pant Marg, New Delhi-1.73 km NWW 3. Dargah Sharif Hazrat Baba Sayyad Nanhe Chisti, Mandi House, New Delhi- 0.85 km NE	

		All the construction will be done taking in consideration of the above mentioned sites so that no negative impact is envisaged.

8. BUILDING MATERIALS

8.1	May involve the use of building materials with high-embodied energy. Are the construction materials produced with energy efficient processes? (Give details of energy conservation measures in the selection of building materials and their energy efficiency	Steel Building using Pre Engineered construction technology shall be constructed. Pre Engineered building using bare minimum wet construction, RCC foundation as per design. The major materials required for construction of the project will be steel, cement, bricks, flooring tiles/ stones, sanitary and hardware items, electrical fittings etc. Pre-Engineered Steel Buildings use a combination of built-up sections, which provide the basic steel frame work. The external walling shall be of heavy-duty fiber cement board. These walls shall be strong enough for the loads applicable such as wind load etc. The internal wall system shall be fixed on Light gauge steel frame work. The high-quality Mineral Wool Insulated prefabricated walls panels to be used as external wall shall be sandwich wall panels/ sheets. Energy efficient building material shall be used. Energy conservation measures have been given Section-D
8.2	Transport and handling of materials during construction may result in pollution, noise & public nuisance. What measures are taken to minimize the impacts?	Yes, transportation and handling of material will result in air & noise pollution; however, these will be minimized by covering material by tarpaulin and proper barricading of construction area. Guidelines as per MoEF&CC Govt. of India Notification (Dust Mitigation Norms) dated 25.01.2018 will be followed. The construction material will be bought by local nearby market thereby transportation will be reduced.

8.3	Are recycled materials used in roads and structures? State the extent of savings achieved?	The debris of construction material will be used in backfilling, levelling of roads etc.
8.4	Give details of the methods of collection, segregation & disposal of garbage generated during the operation phases of the project.	Solid waste will be segregated at source in coloured bins into wet & dry waste at each floor level. The organic waste will be treated in Organic Convertor Waste into manure, generated manure will be used as manure for plants. Details are given in Section-D.

9. ENERGY CONSERVATION

9.1	Give details of the power requirements, source of supply, backup source etc. What is the energy consumption assumed per square foot of built-up area? How have you tried to minimize energy consumption?	**Power Requirement** – 4500 kVA (4050 kW) **Source of Power**: New Delhi Municipal Council (NDMC) **Back-up Source**: G.G. Sets of 3 x 500 kVA (During power failure only). **Energy Consumption:** 0.0086 kW per square foot of built-up area. To minimize energy consumption, following measures will be adopted:- 1. LEDs will be used in place of incandescent lamps in offices, common areas and parking. 2. Lighting and switching of common areas will be designed keeping in mind daylight integration. 3. Roof insulation will be planned to conserve energy. 4. Water supply pumping systems will be provided with variable speed drive to conserve energy at part load. 5. External street lighting will be provided by a standalone solar panel. 6. Solar water heaters will be used to meet the hot water requirement . 7. Motors used by pumps proposed in the project will be energy efficient complying with the ECBC norms. 8. 485 kW solar panels will be installed over the terrace area and surface parking area which will

<table>
<tr><td></td><td></td><td>conserve app. 12 % of the energy of total electric load.
Approximately 20 % of energy saving has been proposed using energy conservation measures in the proposed office complex. Out of which, 12 % of total power load will be conserved using solar energy measures.</td></tr>
<tr><td>9.2</td><td>What type of and capacity of power back-up do you plan to provide?</td><td>During Construction Phase:
DG Sets:- 1x125 kVA
During Operation Phase:
GG Sets : 3x500 kVA
GG sets will be acoustically enclosed and installed at surface with stack height of 30 m above ground level in order to avoid emissions as per CPCB norms.</td></tr>
<tr><td>9.3</td><td>What are the characteristics of the glass you plan to use?
Provide specifications of its characteristics related to both shortwave and long wave radiation?</td><td>Buildings using pre Engineered construction technology will be constructed.
The roof shall be accessible having parapet with SS railing of minimum 1000 mm height
<table>
<tr><th>Building Material</th><th>“R” Values (in sqm deg C/Watts)</th><th>“U” Values (in Watts/sq m deg C)</th></tr>
<tr><td>Double reflective Glass</td><td>0.33</td><td>3.03</td></tr>
</table>
The external walling shall be of heavy-duty fiber cement board. These walls shall be strong enough for the loads applicable such as wind load etc. The internal wall system shall be fixed on Light gauge steel frame work. The high-quality Mineral Wool Insulated prefabricated walls panels to be used as external wall shall be sandwich wall panels/ sheets
The insulation shall be done using rock wool to ensure thermal comfort at minimal energy consumption.
External Façade: Terracotta Ventilated Rainscreen Façade Tiles shall be provided in a horizontal direction on the building facade. The extruded hollow clay tile cladding material shall be rigid and of adequate strength .The tiles shall be installed using the ventilated rainscreen</td></tr>
</table>

		principle, with provision for natural ventilation of the space between the façade tiles and the structural wall.
9.4	What passive solar architectural features are being used in the building? Illustrate the applications made in the proposed project.	Building design and envelope has been optimized through selection of appropriate wall and roof construction and through adoption of solar measures.
9.5	Does the layout of streets & buildings maximize the potential for solar energy devices? Have you considered the use of street lighting, emergency lighting and solar hot water systems for use in the building? Substantiate with details.	Yes, the layout of buildings has been designed to maximize the potential for use of solar lighting per day devices. Solar lights will be used for street lighting and common areas.
9.6	Is shading effectively used to reduce cooling/heating loads? What principles have been used to maximize the shading of Walls on the East and the West and the Roof? How much energy saving has been affected?	Solar Measures will be adopted to provide shading devices for windows and roof which would effectively reduce heating up of building envelopes. Louvers and sunshades will be used around windows in order to protect from direct sunlight.
9.7	Do the structures use energy-efficient space conditioning, lighting and mechanical systems? Provide technical details. Provide details of the transformers and motor efficiencies, lighting intensity and air-conditioning load assumptions?	Suitable energy optimization will be adopted during the calculation of energy load of the proposed project. The space heating load will be minimized using solar structure and suitable buildings envelope material. Uses of incandescent lamps and halogen lamps have been avoided and energy efficient LEDs will be used for all common areas. The diesel generator sets will be automatically controlled to optimize their usage based on the actual load requirements at any time. Space conditioning will be provided as per norms of National Building Code – Part 8; Building Services Section

<table>
<tr><td></td><td>Are you using CFC and HCFC free chillers? Provide specifications</td><td>3–Mechanical Ventilation. Lighting intensity will be done as per the National Building Code Guidelines.
CFC and HCFC free chillers will be used.</td></tr>
<tr><td>9.8</td><td>What are the likely effects of the building activity in altering the micro-climates?
Provide a self-assessment on the likely impacts of the proposed construction on creation of heat island & inversion effects?</td><td>No significant effect is envisaged on the surrounding environment of the project. Increased traffic generation and use of diesel generators sets in the project will not cause significant increase in atmospheric concentration of gases and will not result in heat island formation.</td></tr>
<tr><td>9.9</td><td>What are the thermal characteristics of the building envelope? (a) roof; (b) external walls; and (c) fenestration?
Give details of the material used and the U-values or the R values of the individual components.</td><td>Buildings using pre Engineered construction technology will be constructed.
The roof shall be accessible having parapet with SS railing of minimum 1000 mm height
<table>
<tr><th>Building Material (U&R Value)</th><th>“R’ values (in sqm. Deg C/watts)</th><th>“U” Values (in Watts/sqm. Deg C)</th></tr>
<tr><td>Double reflective Glass</td><td>0.33</td><td>3.03</td></tr>
</table>
</td></tr>
<tr><td>9.10</td><td>What precautions & safety measures are proposed against fire hazards? Furnish details of emergency plans.</td><td>The basic system of Fire Fighting has been designed as per the provisions of the National Building Code (SP7: 1993 Part IV amendment No. 3 of January, 1977)
The fire classification for this Commercial Complex is as per the NBC 2016.
For the fire protection purposes provision of Fire water storage tank of adequate capacity is made. Water from these reserve tanks are drawn by an electrically driven fire pump and supplied into the hydrant ring main and wet riser system. The system is always kept pressurized in order to ensure instant availability of water at all</td></tr>
</table>

		points. An on-line jockey pump makes-up minor line losses. A diesel engine driven fire pump is also provided as a standby. Sprinkler System: Sprinkler system is provided for all floors of the building. The building confirms the provisions of the National Building Code as well as the provisions of State Fire Safety by-laws and is provided with adequate arrangement to overcome fuel hazards to the satisfaction of authority. Fire Safety: The building materials are as per appropriate fire resistance standards. Adequate fire-fighting requirements have been considered while designing the electrical distribution system.The electrical systems will be provided with automatic circuit breakers activated by the rise of current as well as activated by over current. ● Fire detection system. ● Fire alarm system at appropriate places. ● Means of escape ● Access for fireman ● Adequate fire-fighting requirements will be taken into account while designing the electrical distribution system. ● Emergency Lighting The emergency lights operated on battery power will be provided at appropriate locations such as corridors, common area, staircase, exit and entrance doors, parking etc. Emergency Lighting:

<table>
<tr><td></td><td></td><td>The emergency lights operated on battery power has been provided at appropriate locations such as corridors, common areas, staircase, exit and entrance doors, parking etc.
The structural steel shall be made 2 hour fire rated by using intumescent fire paint.</td></tr>
<tr><td>9.11</td><td>If you are using glass as wall material provides details and specifications including emissive and thermal characteristics.</td><td>Double reflective glass will be used for windows.
<table>
<tr><th>Building Material (U&R Value)</th><th>“R’ values (in sqm. Deg C/watts)</th><th>“U” Values (in Watts/sqm. Deg C)</th></tr>
<tr><td>Double reflective Glass</td><td>0.33</td><td>3.03</td></tr>
</table></td></tr>
<tr><td>9.12</td><td>What is the rate of air infiltration into the building?
Provide details of how you are mitigating the effects of infiltration.</td><td>All the windows and doors will be airtight; hence there is no air infiltration.</td></tr>
<tr><td>9.13</td><td>To what extent the non-conventional energy technologies are utilized in the overall energy consumption?
Provide details of the renewable energy technologies used.</td><td>Solar energy will be used inside the office complex in the form of Solar water heater and Solar lights.
Approx. 12 % of energy load will be conserved using solar energy.</td></tr>
</table>

10. ENVIRONMENT MANAGEMENT PLAN

10.1	The Environment Management Plan would consist of all mitigation measures for each item wise activity to be undertaken during the construction, operation and the entire life cycle to minimize adverse environmental impacts as a result of the	Environment Management Plan is given in Section D.

	activities of the project. It would also delineate the environmental monitoring plan for compliance of various environmental regulations. It will state the steps to be taken in case of emergency such as accidents at the site including fire.	

SECTION C: CONCEPTUAL PLAN

1. Introduction

The proposed project titled "Proposed Offices for Ministry of Defence with pre-engineered technology (to relocate existing offices in hutments near South Block & North Block for redevelopment of Central Vista) will be located at Old Curzon road barracks, adjacent to Asia House, KG Marg, New Delhi to be developed by the Central Public Works Department. The land has been handed over by the Land & Development Office, Govt. of India to CPWD vide letter no. L&DO/L-II-A/11(1158)/2019/162 dated 25.02.2020 for the development of the proposed offices. The total plot area of the project will be 22569.68 m^2 and the built-up area of the project will be 43423.79 m^2.

Since the total built-up area of the project is less than 1,50,000 m^2 , the project falls under Activity 8(a), Category B as per schedule of EIA Notification,2006 and its subsequent amendments.
Due to unavailability of SEAC (Delhi), we are applying at MoEF&CC for grant of Environmental Clearance.

1.2 Type of Project

The proposed project titled "Proposed Offices for Ministry of Defence with pre-engineered technology (to relocate existing offices in hutments near South Block & North Block for redevelopment of Central Vista) at Old Curzon road barracks, adjacent to Asia House, KG Marg, New Delhi " is the construction of offices for Ministry of Defence. The total plot area of the project will be 22569.68 m^2 and the built-up area of the project will be 43423.79 m^2. Since, the built up area is less than 1,50,000 m^2, thus the project falls under Category B, activity 8(a), in accordance with the EIA Notification dated 14th September 2006 & its amendments**.**

1.3 Project Details

The total plot area of the project will be 22569.68 m^2 and the built-up area of the project will be 43423.79 m^2. The total FAR area of the proposed project will be 43333.79 m^2 and the Non-FAR Area will be 90.00 m^2. The maximum no, of floors will be G + 8. The maximum height of the building will be 38 m.

1.4 Activities/ Amenities

The activities proposed in the complex are government office complexes.

1.5 Site Location

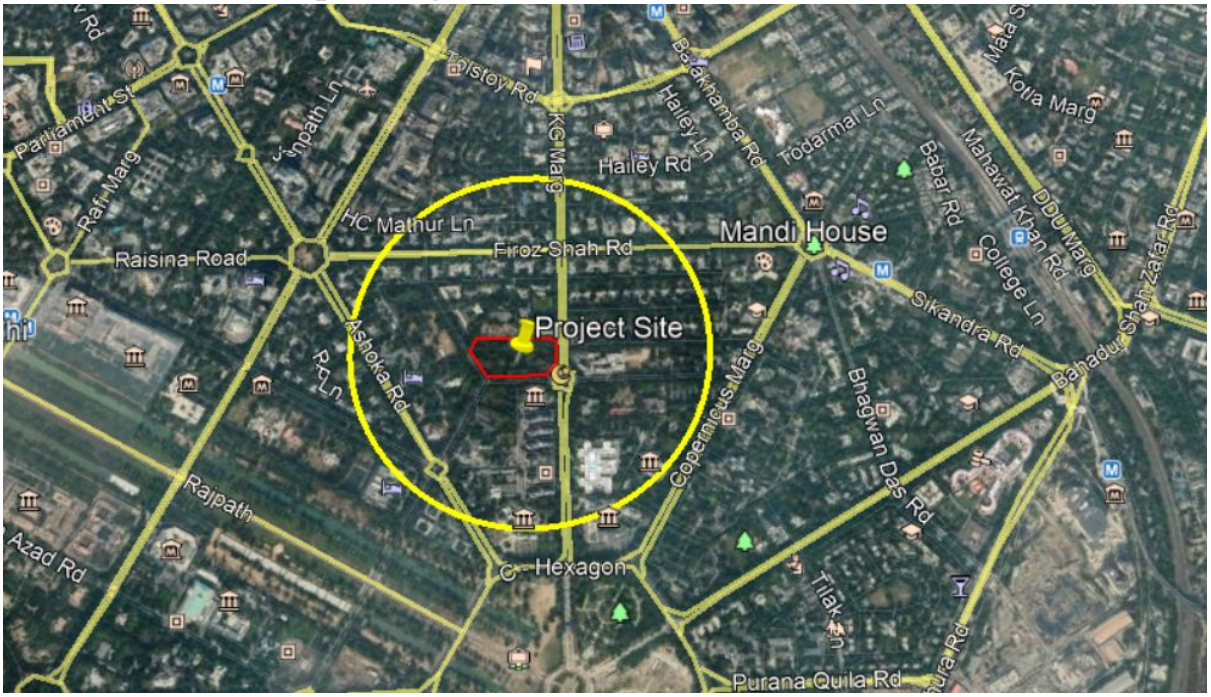
The project site is located at Old Curzon road barracks, adjacent to Asia House, nearby Masjid Circle, KG Marg, New Delhi-110001.

Geographical details of the site are shown below:

Table: Geographical details

Latitude	Longitude	Elevation
28°37'10.81"N	77°13'31.56"E	212 m

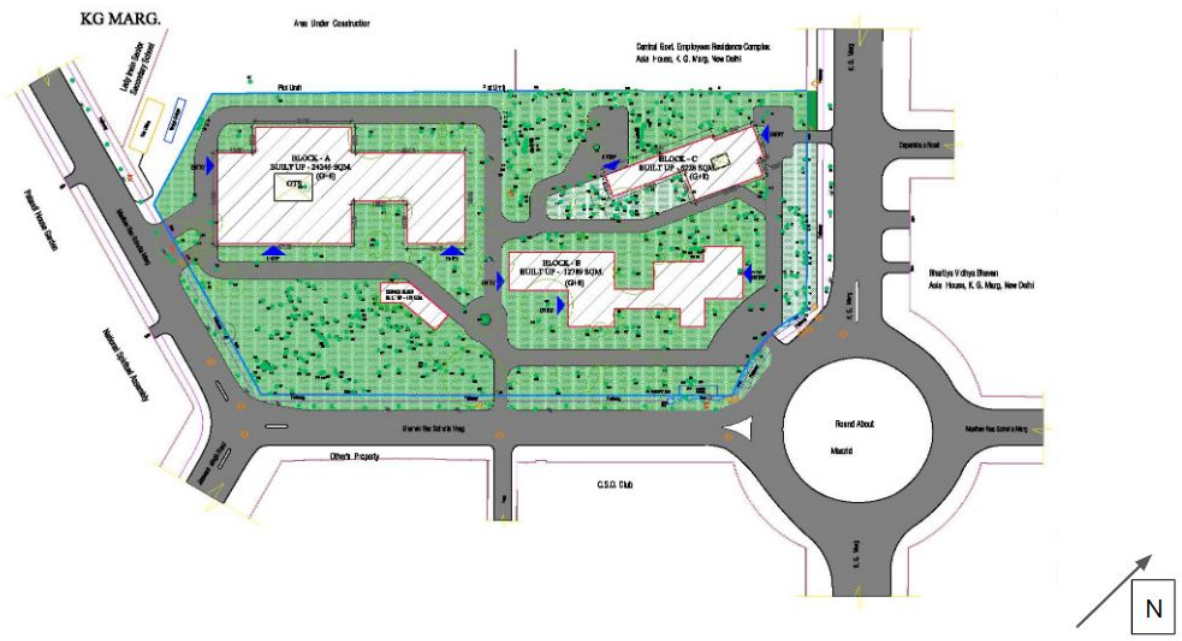
1.6 Location Map (along with 500m radius)



Google Image (Radius 500 m)

1.7 Topographical Map

1.8 Layout Plan



1.9 List of Centrally Protected Monuments

Name of Monument	Locality	District	Distance & Direction
Fortification Wall AsadBurj, Watergate, Delhi Gate, Lahori Gate, Jahangiri Gate, Chhatra Bazar, Baoli	Red Fort	Central	2.66 km NE
LakharwalGumbad (Tomb)	Near Humayun's Tomb	South East	2.94 km SE
SunderwalaBurj	Near Humayun's Tomb	South East	3.19 km SE
Sunderwala Mahal	Near Humayun's Tomb	South East	3.26 km SE
Bara Khamba outside north entrance to shrine	Nizamuddin	South East	3.39 km SSE
The NilaChhatri or SubazBurj, once used as a Police Station at Nizam-ud-Din.	Nizamuddin	South East	3.39 km SSE
Tomb of Mirza Muzaffer, ChotaBatasha	Nizamuddin	South East	3.43 km SE
Baoli	Nizamuddin	South Eas	3.43 km SSE
Tomb of Tagah or Atgah Khan	Nizamuddin	South East	3.47 km SE
Tomb of Nizamuddin AUliya	Nizamuddin	South East	3.47 km SSE

Tomb of Amir Khusro	Nizamuddin	South East	3.49 km SSE
The Grave of Jahanara Begum	Nizamuddin	South East	3.49 km SSE
The Grave of Mirza Jahangir	Nizamuddin	South East	3.49 km SSE
Tomb of Mirza Muzaffer, Bara Batasha	Nizamuddin	South East	3.52 km SE
Mazar of Mirza Ghalib	Nizamuddin	South East	3.52 km SE
The ChausathKhamba and tomb of Mirza Aziz Kokaltash	Nizamuddin	South East	3.54 km SSE
The tomb of Isa Khan with its surrounding enclosure walls and turret, garden, gateways and mosque.	Nizamuddin	South East	3.61 km SE
The Afsah-wala-ki-Masjid situated outside the west gate of Humayun's tomb with its dalans and paved court.	Nizamuddin	South East	3.63 km SSE
The Tomb of Afsah-wala immediately near and to the south of Afsah-wala-ki-Masjid	Nizamuddin	South East	3.68 km SE
Remaining Gateways of Arab Sarai and of Abadi-Bagh-Buhalima	Near Humayun’s Tomb	South East	3.72 km SE
The Gateway of Arab Sarai facing North towards PuranaQila	Near Humayun’s Tomb	South East	3.73 km SE
Humayun's tomb, its platforms, garden, enclosure walls and gateways Khasra No. 258 bounded on the east by Khasra No.180&181&244 of Miri Singh and on west by Kh. No. 268&253 on the north by Khasra No. 266, on the south by Kh No. 245 of Miri Singh &Kh. No. 248 & 249 of Sayyed Mohammad	Nizamuddin	South East	3.75 km SE
Arab Sarai	Near Humayun’s Tomb	South East	3.80 km SE
The Gate way of Arab Sarai facing East towards the tomb of Humayun	Near Humayun’s Tomb	South East	3.83 km SE
Nila Gumbad outside the south corner of the enclosure of Humayun's tomb.	Nizamuddin	South East	4.06 km SE
Tomb of Khan-i-Khana	Nizamuddin	South East	4.10 km SE

Delhi fort or Lal Qila, NaubatKhana, Diwan-i-am, Mumtaz Mahal' Rang Mahal, Baithak,MaseuBurj, diwan-i-Khas' Moti Masjid, sawanBhadon ,Shah Burj, Hammam with all surrounding including the gardens, paths, terraces and water courses.	Red Fort	North	4.16 km NNE
Salimgarh Fort, comprising the main gate on North, Ancient structure near the main gate and the entire fortification wall	Red Fort	Central	4.73 km NNE
Bara Pulah bridge near Nizamuddin	Nizamuddin	South East	4.73 km SSE
Tombs of Bade-Khan, and MubarakpurKotla, Kotla	KotlaMubrakpur Village	South	5.11 km SSW
Tombs of Chote Khan, Mubarakpur, Kotla	KotlaMubrakpur Village	South	5.13 km SSW
Tomb of Mubarik Shah in Mubarakpur, Kotla	KotlaMubrakpur Village	South	5.14 km SSW
Mosque attached to Mubarak shah Tomb	KotlaMubrakpur Village	South	5.18 km SSW
Tomb of Bhura Khan	KotlaMubrakpur Village	South	5.19 km SSW
Moth-ki-Masjid	Behind South Extension-II	South	6.30 km SSW
Tin Bhurji Wala Gumbad, MohammadPur Village	Mohammad Pur Village	South	6.88 km SSW
Biran-Ka-Gumbad-282	HauzKhas	South	7.37 km SSW
Kali Gumti	HauzKhas	South	7.40 km SSW
Ashokan Rock Edict at Bahapur	East of Kailash	South East	7.42 km SSE
Bagh-i-AlamGumbad with a Mosque	Humayunpur Village (HauzKhas)	South	7.44 km SSW
Nili Mosque	HauzKhas Enclave	South	7.47 km SSW
Bandi or PotikaGumbad III-280	HauzKhas	South	7.57 km SSW
Biwi aur Dadi-ka-Gumbad-281	HauzKhas	South	7.58 km SSW
ChotiGumti	HauzKhas	South	7.63 km SSW

Sakri Gumti-284	HauzKhas Enclave near Green Park	South	7.64 km SSW
BaraKhamba-285	HauzKhas	South	7.68 km SSW
Ruined line of walls, bastions & gateways of siriKh. No. 88, 265 &447 of village ShahpurJat	ShahpurJat Village	South	7.69 km SSW
Munda Gumbad, Munirka	Munirka	South	7.85 km SW
TohfewalaGumbad	Humayunpur Village (HauzKhas), ShahpurJat	South	7.86 km SSW
Wazir Pur-ki-Gumbad, Munirka 312	Munirka	South	7.93 km SW
HauzKhas:- Group of Building at HauzKhas consisting of the following i. The tomb of Feroz Shah ii. Domed Building to the west of No.1 iii. Dalan between 1&2 iv. Domed Building & its court to the south of No. 3, v. Dalans and all ruined Buildings to the north of no. 1 and existing upto No.10 vi. Five Chhatris to the East of No. 1& No.5 vii. Old Gate to the north of No.6 viii. Three Chhatris to the north-west of No.7 ix. Ruined courtyard and its Dalans with the Domed building to the north-west to the No.8 x. Old wall running east from No.4 xi. 2.23 Acres of land surrounding the above monuments and bounded on the North by house of Change and Mehra Chand sons of Hansram and house of Udairam, son of Kushla South Ghairahkan Rasta East By village site belonging to village community. Others West By field no. 185 & 186.	HauzKhas	South	7.95 km SSW
Baoli, Munirka	Munirka	South	7.98 km SW
Idgah of Kharehra	HauzKhas Enclave	South	8.04 km SSW
ChorMinar No. 289 Vol III	HauzKhas	South	8.13 km SSW

Internal buildings of:Siri Mohammadiwali-Kh.No.14shahpurJat Makhdumki Kh No.-255 ShahpurJat Thana Wala ShahpurJat	ShahpurJat Village	South	8.14 km SSW
Group of monuments at Sarai Shahji	Malviya Nagar	South	8.79 km SSW
Tomb of Sheikh Kaburuddin also known as RakabwalaGumbad in field no.84 min. situated at sarai Shah 31 property of Thok Shahpur and Adhehini	Malviya Nagar	South	8.82 km SSW
Lal Gumbad, Chirag Delhi	Chirag Delhi	South	8.83 km SSW
Bijay Mandal, neighbouring domes, buildings and dalan to north of Begumpur	Malviya Nagar	South	8.89 km SSW
Tomb of Bahlol Lodi	Chirag Delhi	South	8.90 km SSW
Wall of Rai Pithora's Fort and Jahan panah at the point where they meet together	Hauz Rani Village	South	8.99 km SSW
Bastion, where a wall of Jahan panah meets the wall of Rai Pithora's fort, Adchini	Adchini	South	9.00 km SSW
Begumpuri Masjid	Begumpur	South	9.04 km SSW
Tomb of Usuf-Quttal situated at Khirki	Khirki Village near Malviya Nagar	South	9.45 km SSW
Satpula-III –216	Khirki Village near Malviya Nagar	South	9.68 km SSW
Khirkee Masjid	Khirki Village near Malviya Nagar	South	9.71 km SSW
Ramp and gateways of Rai Pithora's Fort, Adchini	Adchini	South	10.49 km SSW
Walls of Lal Kot and Rai Pithora's fort from Sohan Gate to Adham Khan's tomb including the ditch where there is an outer wall	Mehrauli	South	10.59 km SSW
Iron Pillar, Hindu remains	Mehrauli (Qutb Complex)	South	11.16 km SSW

Badaun Gates,	Lado Sarai Village	South	11.17 km SSW
The Qutab Archaeological area as now fenced in, including the Mosque, Iron Pillar, Minar of Qutub Ud-din, unfinished Minar, all colonnades, screen arches, tomb of Altamash, college, buildings of Alaud-Din, Tomb of Imam Zamin and all carved stones in the above area with gardens, paths and water channels, and all gateways including the Alai-Darwaza , also all graves in the above area	Mehrauli Village	South	11.19 km SSW
Unknown tomb said to be of Azim Khan	Lado Sarai Village	South	11.30 km SSW
Tomb of Adham Khan (Rest House)	Mehrauli	South	11.45 km SSW
Area between Balban Khan's Tomb Jamali Kamali	Lado Sarai	South	11.61 km SSW
Tomb and Mosque of MaulanaJamaliKamali	Mehrauli	South	11.64 km SSW
Rajon-ki-Bain with Mosque and Chatri	Lado Sarai Village	South	11.68 km SSW
Old Baoli known as Dividing Wall in Mouza locally known as (Gandhak-ki-baoli), Mehrauli	Mehrauli	South	11.68 km SSW
Moti Masjid	Mehrauli Village	South	11.91 km SSW
Old Palace of Bahadur Shah II alias Lal Mahal in Mehrauli	Mehrauli Village	South	11.93 km SSW
Walls, gateways bastions and internal buildings of both inner and outer citadels of Tughlaqabad Fort	Tughlaqabad	South East	12.07 km SSE
Mandi Mosque	Lado Sarai Village	South	12.19 km SSW
Nai-ka-kot in Tughlakabad	Tughlaqabad	South East	12.39 km SSE
Jahaz Mahal in Mehrauli	Mehrauli Village	South	12.48 km SSW
HauzShamsi, with central red stone pavilion situated at Mehrauli in field Nos. 1574-81, 1588-97, 1614, 1623 & 1624, owner Government	Mehrauli	South	12.57 km SSW

Mosque known by the name of ShamsiTallab together with both platform entrance gates.	Mehrauli Village	South	12.59 km SSW
Tomb of GhiyasuddinTughlakabad. walls and bastions, gates and cause way including the tomb of Dad Khan	Tughlaqabad	South East	12.66 km SSE
Tomb of Sultan Ghari	Malikpur Kohi opposite Vasant Kunj	South	12.82 km SW
Walls, gate and bastions of Adilabad (Mohammadabad) and causeway leading there to from Tughlakabad.	Tughlaqabad	South East	13.26 km SSE
Ancient Mosque (Babur's Period) together with adjacent area comprised in part of Survey plot No. 177	Palam Village	South West	14.61 km SWW

1.10 Population Details

1.10.1 During Construction Phase-

Approximately 100 Nos. of local labour will be employed for the construction of the project.

1.10.2 During Operation Phase-

The total population of the project will be 5080 persons (comprising Staff- 4840 ; Visitors-240)

The population details are given in Table:

Type	Total Population
Staff	4840
Visitors	240
TOTAL	**5080**

1.11 Air Management

During Construction Phase- DG set of capacity 1x125 kVA will be used for construction works. To suppress the dust generated during construction phase hourly sprinkling of water will be done. Green belt will also be maintained around the boundary site to prevent dust spreading.

During Operation Phase- The total power load of the project will be 4500 kVA which will be met by NDMC. In case of power failure, power backup will be provided through GG sets of capacities of 3x 500 kVA that will be enclosed at surface only. To prevent the impact of air emissions, stack height of 30 m above ground level will be installed in accordance with CPCB norms.

1.12 Noise Management

During Operation Phase: The main source of noise will be DG Sets of capacity 3 × 500 kVA which will be used only during a power failure.

GG sets will be enclosed acoustically and kept on the surface. Plantation of trees at the boundary of the project has been done to reduce the noise level within the project site.

1.13 Water Management

During Construction Phase: 4 KLD treated water will be arranged through nearby STP treated wastewater by tanker suppliers.

During Operation Phase: The total water requirement of the project 307 KLD. Out of which 122 KLD fresh water will be met by NDMC and 185 KLD treated wastewater generated from the STP of capacity 250 KLD will be used to meet the requirement for flushing, gardening and cooling. It will be a Zero-Liquid Discharge Project.

1.14 Rainwater Collection Details

Total 05 nos. of Rain Water harvesting pits will be provided on the project site.

1.15 Solid & Hazardous Waste Management

1.15.1 During Construction Phase-

Since the proposed project is a non-basement office complex. Minimum excavation of soil for foundation will only be done. Total 15 kg/day of waste will be generated from labourers.

1.15.2 During operation phase-

762 kg/day of total waste will be generated from the complex. Out of which, 304 kg/day of biodegradable waste will be treated in Organic Waste Convertor to get converted to manure. 229 kg/day non-biodegradable waste and 229 kg/day recyclable waste will be sent to authorised recycler.

There will be no generation of used oil as gas based generator sets will be used.

E-waste of 2 kg/month will be collected and given to approved recycler of CPCB.

1.16 Parking Management

1.16.1 During construction phase:

Proper parking provisions of trucks and other construction vehicles will be made. Proper spaces for loading and unloading will be defined.

1.16.2 During operation phase:

The parking of 550 ECS will be provided at the site against the requirement of 542 ECS.

1.17 Green Area Development

The Shelter belt for the proposed project will be provided for a clean, healthy and beautiful green environment for the people to live in within the proposed project site. The green belt will be developed at the site with a total green area of 4513.94 m² (20 % of the total plot area).

Total No. of trees = Plot Area/80

= 22569.68/80

= 282

Total No. of trees proposed = 290

SECTION D:

ENVIRONMENT MANAGEMENT PLAN

1. INTRODUCTION

The proposed project titled "Proposed Offices for Ministry of Defence with pre-engineered technology (to relocate existing offices in hutments near South Block & North Block for redevelopment of Central Vista) will be located at Old Curzon road barracks, adjacent to Asia House, KG Marg, New Delhi to be developed by the Central Public Works Department. The land has been handed over by the Land & Development Office, Govt. of India to CPWD vide letter no. L&DO/L-II-A/11(1158)/2019/162 dated 25.02.2020 for the development of the proposed offices. The total plot area of the project will be 22569.68 m^2 and the built-up area of the project will be 43423.79 m^2.

Since the total built-up area of the project is less than 1,50,000 m^2 , the project falls under Activity 8(a), Category B as per schedule of EIA Notification,2006 and its subsequent amendments.
Due to unavailability of SEAC (Delhi), we are applying at MoEF&CC for grant of Environmental Clearance.

1.1 Land Ownership of the Site

The land has been handed over by the Land & Development Office, Govt. of India to CPWD vide letter no. L&DO/L-II-A/11(1158)/2019/162 dated 25.02.2020 for the development of the proposed offices. The total plot area of the project will be 22569.68 m^2 and the built-up area of the project will be 43423.79 m^2.

As per notification by Ministry of Urban Development, Govt. of India dated 13.06.2016, the land use of the proposed project has been changed from Residential use to Government (Government Office). Hence, there will be no change in land use. Proof of the same has been annexed in Section-F.

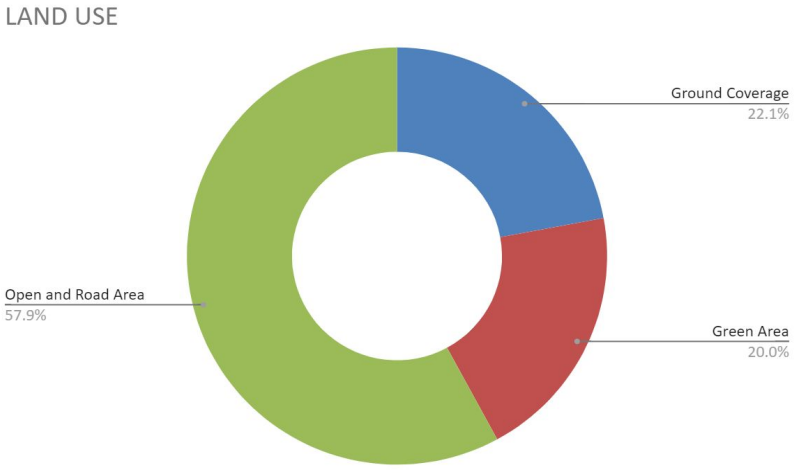
1.2 Area Details

Particulars	Unit	Details
Cost of the Project	Rs.	262 Crores
Plot Area	m^2	22569.68
G.C (Permissible)	m^2	6770.904
G.C (Proposed)	m^2	4985.6
FAR Permissible	m^2	45139.36
Proposed FAR(A)	m^2	**43333.79**
NON FAR AREA(B)	m^2	**90.00**
Built-up Area (FAR + Non FAR)	m^2	**43423.79**
Total Green Area	m^2	4513.94
Total Open & Road Area	m^2	13070.14
No of Towers / blocks	No.	3
Maximum No. of Floors	No.	G+8
Max. height of building (upto terrace level)	m	38
POPULATION		
Staff	No.	4840

Visitors	No.	240
Total Population	No.	**5080**
SERVICE DETAILS		
Total Power Load	kVA	4500
No. of GG sets	No.	3x500 kVA
No. of Rain water Harvesting pits	No.	5
Total water requirement	KLD	307
Fresh water requirement	KLD	122
Wastewater Generation	KLD	205
Treated Wastewater reuse	KLD	185
STP Capacity	KLD	250
STP TECHNOLOGY	-	MBBR
Total Solid Waste	kg/day	762
Biodegradable Waste	kg/day	304
Non-Biodegradable Waste	kg/day	229
Plastic Waste	kg/day	229
Parking Required (FAR/80)	ECS	542
Parking Provision	ECS	550

1.3 Land Use

Land Use	Area (m^2)	Percentage
Ground Coverage	4985.6	22.1
Green Area	4513.94	20.0
Open and Road Area	13070.14	57.9
Total	22569.68	100



1.4 Construction Status

No Construction has been commenced on site as of now.

1.5 Site Photographs




1.6 Population Details

During construction phase: 100 nos. of local labour will be employed for the construction of the proposed office complex.

During operation phase: The total population of the project will be 5080 persons (comprising Staff- 4840 ; Visitors-240)

The population details are given in Table:

Type	Total Population
Staff	4840
Visitors	240
TOTAL	**5080**

1.7 Parking Details

The parking of 550 ECS will be provided at the site against the requirement of 542 ECS.

1.8 Water Management

1.18.1 Source of Water

The source of water supply will be New Delhi Municipal Council (NDMC).

Table: Water Management Details of the complex

Description	Unit	Details
Total Water Requirement	KLD	307
Total Freshwater Requirement	KLD	122
Total wastewater generation	KLD	205
Total Treated Wastewater reuse	KLD	185
STP Capacity	KLD	250

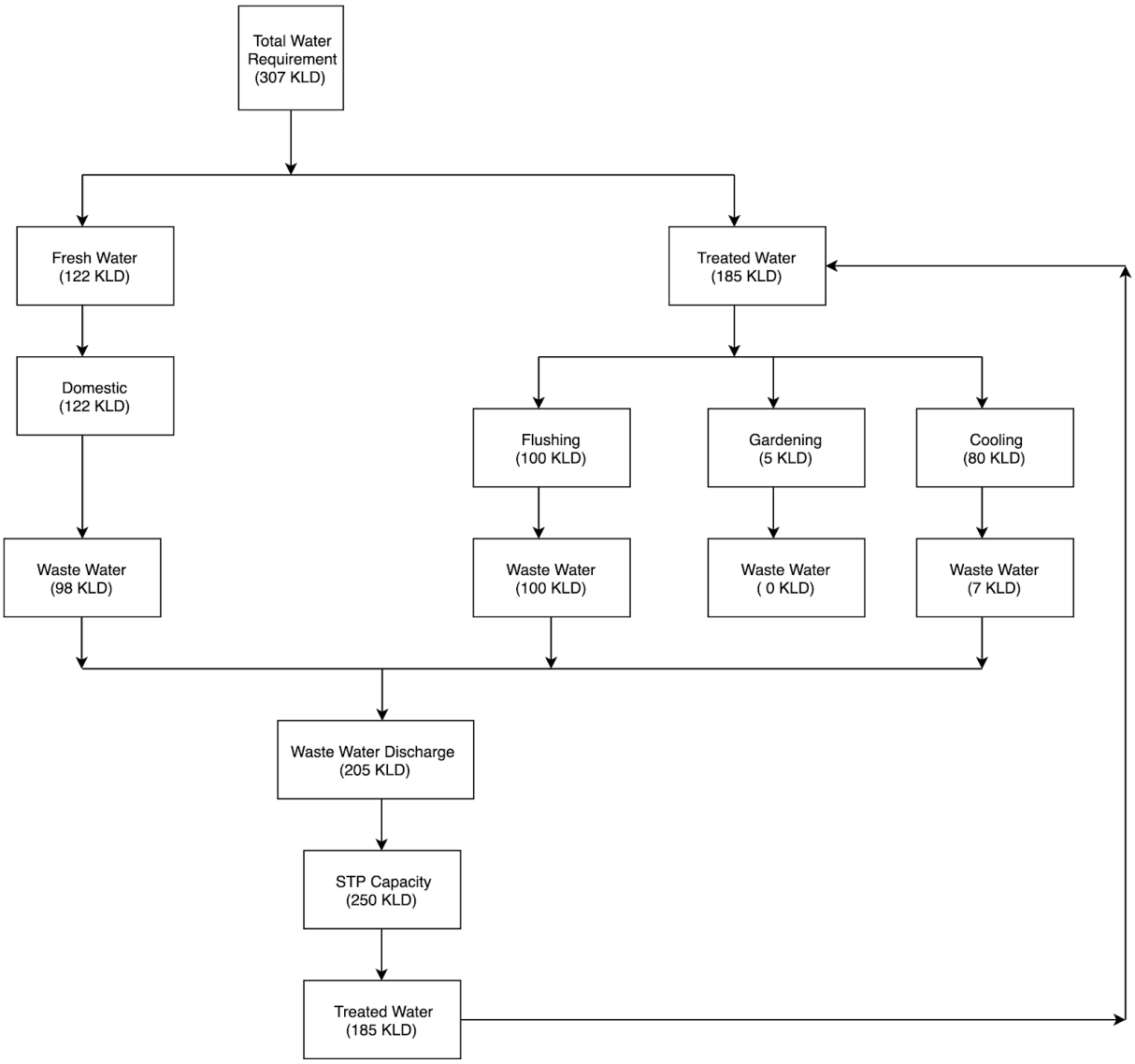
Particulars	Population	Factor	Water requirement (in KLD)	Domestic (in KLD)	Flushing (in KLD)	Wastewater Generation (in KLD)
Domestic						
Staff	4840	45	218	121	97	
Visitors	240	15	4	1	3	
Sub total	5080		222	122	100	

Waste water				98	100	198
Gardening			5			0
Cooling			80			7
Total			**307**			**205**

1.18.2 Water Balance

Water balance flow diagram of the office complex is shown below.

Water Balance



1.18.3 Waste Water Treatment Technology

In the office complex, the wastewater generated from the existing project will be 205 KLD that will be treated in STP of capacity 250 KLD based on Moving Bed Biofilm Reactor (MBBR) Technology.

Table: Raw Sewage Characteristics

Flow	m^3 / day	205 KLD
pH	-	7.5-8.0
BOD	mg/l	200-350
COD	mg/l	400-500
TSS	mg/l	100

Table: Treated sewage Characteristics

pH	-	7.5-8.0
BOD	mg / l	<10
COD	mg / l	<50
TSS	mg / l	<20

1.18.4 Treatment Process:

The sewage treatment plant (**MBBR)** will be installed to treat the raw sewage having the following characteristics:

TECHNOLOGY OF MBBR PROCESS:

- Biofilm Carrier element.
- Stay in suspension in the reactor.
- Provide very large effective biofilm surface area, where the treatment takes place
- Standard waste water treatment plant configuration is two or more reactors in series, followed by a settling chambers and/ or tertiary treatment unit.
- It is an advanced High rate wastewater treatment process.
- High Treatment Efficiency

- Low capital, Operation, Maintenance and replacement cost.

MBBR PROCESS WORKS

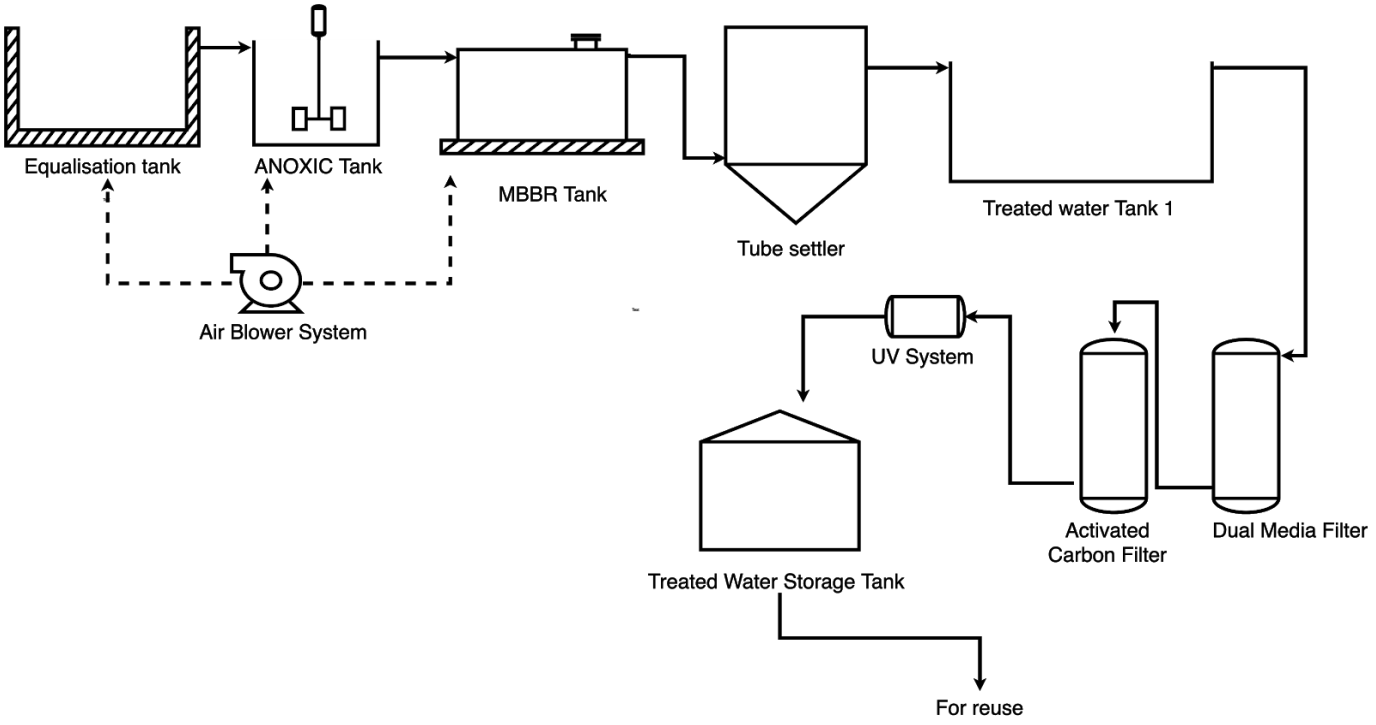
MBBR Process is a process that treats the sewage / wastewater in the smallest possible reactor with the help of free floating media which occupies active biomass. The salient feature of MBBR Process offered by us includes:

- Small footprint area
- Suits perfectly with any shape of reactor
- High surface area media used in the process last for a long period
- Low energy requirement due to the use of high efficiency advanced diffused aeration system

BENEFITS

- Compact footprint
- Expandable
- Durable non-clogging media
- Stable process
- Lower sludge volume with DAF Clarifier
- Lower power consumption
- Ease of operation

Hydraulic Flow Diagram of STP based on MBBR Technology



1.18.5 Disposal Method

Total quantity of wastewater generated from the office complex will be 205 KLD that will be treated in STP of capacity 250 KLD. 185 KLD of treated wastewater will be completely reused within the premises for purposes like flushing, gardening and cooling. It will be a Zero-Liquid Discharge Complex.

1.18.6 Rain Water Harvesting

The main source of ground water recharging in the study area is rainwater, which infiltrates into the ground through various lithological units present in the study area. 5 nos. of RWH structures will be constructed on the site to recharge the groundwater. The runoff from the rooftop and storm water go to the recharge structures.

- **Scheme for Ground Water Recharging**

The rainwater will be diverted from the rooftop using rain water pipes to the surface/underground drainage network. The entire complex will be subdivided for recharging structures. The rainwater will be diverted into the desilting tank to remove inorganic impurities and the outflow of the desilting tank will be taken into the recharge well.

- **Desilting Tank**

The desilting tanks will be used to remove silt and other floating impurities from rainwater. Desilting tank is like an ordinary container having provision for the inflow, outflow and overflow. Apart from removing silt it holds the excess amount of water till it is soaked up by the recharge structure. The bottom of the tank will have unpaved surface (layers of coarse sand) to allow standing water to percolate into the soil. The rainwater collected in these desilting chambers will be utilized for horticulture.

- **Recharge well**

The recharge well consists of percolation pits with boreholes in the middle of the pit. UPVC pipe perforated will be lowered in the middle of the boreholes and the pit will be filled with gravel and pebbles in three layers consisting of boulders, gravel and coarse sand. The mouth of the UPVC pipe will be protected to avoid silt getting into it. The depth of the bore will depend on the soil condition/water strata. The schematic diagram is enclosed.

It should be therefore concluded that there will be no significant impact on surface water quality & hydrology of the area. The proposed rainwater-harvesting scheme will stabilize the groundwater table in the area.

1.18.7 Rainwater Harvesting pits calculation:

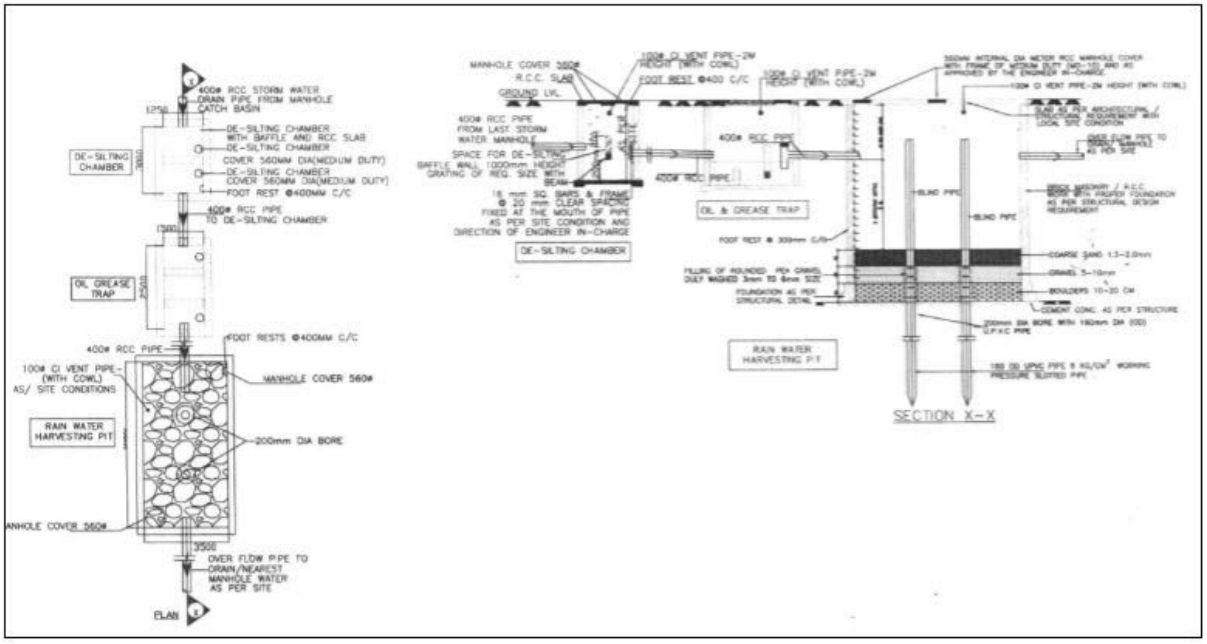
Soil Quality	Silt clay Loam
Annual Average Rainfall	698 mm
Peak Hourly Rainfall	90 mm/hr
Ground Water Level	>30 m BGL
No. of Pits Proposed	5
Size of Pits	3.5 m × 3.5 m x 4 m

Table: Rain water calculation

SNo	Description of Area	Area Considered (m^2)	Harvesting Factor/Collection efficiency per Area	Retention time Capacity of recharge tank in 20 min	Total Volume of water available for rain water harvesting (m^3/20 min)
1	Roof Area	4985.6	0.85	30	127

2	Green Area	4513.94	0.15	30	20
3	Open and Road Areas	13070.14	0.8	30	314
Grand Total		22569.7			461

RWH Pit diagram



Maintenance Plan: -

1. Rain water harvesting pits should be checked and cleaned before and after the rainy season. Cleaning procedure consists of scrubbing of inner walls and floors. Cover and ventilate the tank also.
2. Chlorine solution can be used for cleaning purposes followed by thorough rinsing.
3. Cleaning the filter is done before and after the rainy season.
4. Cleaning of the desilting tank is done before and after the rainy season.
5. Regular cleaning of oil and grease traps will be done and maintained.
6. Provisions of weekly cleaning of the pits during the rainy season.

1.19 Air Management

1.19.1 Air Quality at Site

The present quality of the air has been accessed. The test Report of Air quality assessed is given below:

Indian Meteorological Data

The meteorological Conditions of the project area can be summarised in the table below :

S No.	Particulars	Unit	Details
1	Temperature	^{o}C	21.1 to 29.3
2	Relative Humidity	%	43
3	Average Annual Rainfall	mm	698 mm
4	Wind direction	-	North east to South West
5	Predominant wind direction	-	East to West

1.19.2 During Construction Phase

Air quality around the project will be impacted during the construction stage. Various construction activities especially related to loosen material may cause generation of dust that can adversely impact the air quality of the surrounding area.

To minimize such impact, following measures will be taken:

- All loose soil or sand or Construction & Demolition Waste or any other construction material that causes dust will be kept covered.
- Wind-breakers of appropriate height will be provided around the area where construction is proposed..
- Water sprinkling systems will be put in place using spraying Nozzles.
- Sprinkling will be done using a fixed sprinkling system.
- Grinding and cutting of building materials will be done in the covered area.
- Construction material and waste will be stored within earmarked area
- No road side storage of construction materials and waste will be allowed.
- Only covered vehicles carrying construction material and waste will be permitted inside the complex.
- Construction and Demolition Waste will be collected in the covered area and will be sent to C & D waste recycling site.
- Wheel washing arrangement of construction vehicles will be provided at the site.
- Dust mitigation measures will be taken as per (Environment (Protection) Dust & mitigation measures Amendment Rules, 2018).

- C&D Waste will be sent to the approved C&D waste site.

1.19.3 During Operation Phase

Total power load of the office complex will be 4500 kVA (4050 kW) to be supplied by New Delhi Municipal Council (NDMC). GG sets of Capacity 3 × 500 kVA will already be installed for power back up at surface. The Stack height of D.G Sets will be 30 m above ground level in accordance with CPCB norms.

1.20 Noise Environment:

1.20.1 Noise Quality at Site

The present quality of the air has been accessed.

1.20.2 During construction stage:

Due to the construction activities undertaken for the project, there will be some noise generation due to the movement of vehicles carrying construction materials and as this will be only a temporary phenomenon, it will be managed by properly regulating the movement of vehicular traffic so that the ambient noise quality will not be adversely affected.

Expected noise levels will be in the range of 80-100 dB(A), which will decrease with increase in distance. All the construction activities will be carried out during the daytime.

Furthermore, following measures will also be adopted:

- All the machinery and equipment will be regularly maintained to reduce the noise level.
- DG sets of capacity 1x125 kVA will be installed acoustically enclosed.
- Noise barriers will be installed to reduce traffic noise & vibrations.
- Ear muff / ear plug will be given to the workers working around or operating the plant and machinery emitting high noise levels.
- Careful planning of machinery operation and scheduling of operations will be taken to minimize such impact.
- Plantation has been developed along the periphery of the site.

1.20.3 During Operation stage:

Sources of Noise Pollution during Operation Phase will be Working of GG Set of 3×500 kVA and movement and honking of Traffic.

- GG Set of 3×500 kVA will be acoustically enclosed by the manufacturer. It will be ensured that the insertion loss of 25 dB(A) is attained.
- No honking zone will be maintained.
- Tree plantation will be around the boundary of the office complex.

1.21 Solid Waste Management:

1.21.1 During construction stage:

During the construction, no soil will be excavated. The debris and demolition wastes will be kept under tarpaulin cover and will be reused for back filling purpose and road construction, etc.

1.21.2 During operation stage:

762 kg/day of total waste will be generated from the complex. Out of which, 304 kg/day of biodegradable waste will be treated in Organic Waste Convertor to get converted to manure. 229 kg/day non-biodegradable waste and 229 kg/day recyclable waste will be sent to authorised recycler.

Municipal Waste Management

Type of Waste	Colours of Bins	Category	Disposal Method	Total Waste (kg/ day)
Biodegradable	Green	Biodegradable	The biodegradable waste will be treated in an organic waste converter and converted to manure. The manure will be used in green areas Same will be followed in future also	304 (112 TPA)
Non-Biodegradable	Blue	Recyclable	Recycler	229 (83 TPA)
Plastic	Yellow	Recyclable	Recycler	229 (83 TPA)
Total				**762 (278 TPA)**

DETAILS OF ORGANIC WASTE CONVERTER

Tentative details of the organic waste converter are as follows

Specification of OWC

No. of OWC Provision	Capacity per batch	Power	Dimension (l x w x h)
1 No.	124 kg/batch	13.5 HP	1.98 m x 1.40 m x 1.47 m

Biodegradable Waste	Batch Capacity	Curing Capacity	Time taken	No of Batches

304 kg/day	124 kg/batch	100 kg/day	Machine Time- 15-20 m Total Time- 1 hr	3 batches/day

Source :- ***http://excelind.co.in/Excel_ENBT/wasteTreatment.html***

- No. of Organic Waste Convertor = 1 no.
- Volume of Waste = 0.608 m^3/day
- Capacity of curing for 1 day = 0.608 m^3
- Capacity of curing for 10 days = 6.08 m^3
- Space Area for Curing = 20.26 m^2
- Space for Organic Waste Convertor- 1.98 m x 1.40 m = 2.77 m^2
- Area designated for Storage and Management of Solid Waste = 23.03 m^2
- Space allocated in the Project = 100 m^2

Standard Operating Procedure for OWC

Segregate the waste as organic and inorganic.

⇩

Feed organic waste in OWC.

⇩

Add Bioculum 1gm/kg of organic waste.

⇩

Add 20% sawdust / dry grass / dry leaves.

⇩

Switch ON OWC

⇩

Pull the lever after 10 minutes.

⇩

OWC will stop after 15 minutes of process.

⇩

Pull trolley. Treated waste gets collected in crates kept in trolley.

⇩

Place the crates in the Curing system.

⇩

Repeat the feeding batches until material finishes.

Collect crushed pulp in a tray for aeration and drying.

Empty out the machine at the end of operation.

1.21.3 Other waste Management: Used Oil , E-Waste & Battery Waste Management

Type of Waste	Disposal Method	Total Waste
E-waste	E-Waste (Management & Handling) Rules, 2016	2-3 kg/month
Battery waste	Batteries (Management & Handling) Rules 2001	2-3 kg/month

1.22 Plantation:

1.22.1 During Construction Phase

There will be no clearance of existing land, vegetation and buildings. Building design has been made in such a way that no tree will be cut/transplanted.

1.22.2 During Operation Phase:

Green belt planning will be with ecological perspectives for the project taking into consideration and availability of space and other aspects. This helps in increasing the aesthetic effect of the environment.

Since tree trunks are devoid of foliage, scrub should form there to give coverage to the trunks. The trees will maintain the regional ecological balance and conform to soil and hydrological conditions. Indigenous species will be preferred during plantation.

Green belt/greenery will be developed along most of the periphery of the project area. There are few trees inside the premises too which will be retained at the site. Details of the flora species given below. Area under plantation/greenery will be 4513.94 m^2 (20 % of the plot area). The trees of adequate height will be planted.

The Shelter belt for the proposed project will be provided for a clean, healthy and beautiful green environment for the people to live in within the proposed project site.

The green belt will be developed at the site with a total green area of

Total No. of trees = Plot Area/80

= 22569.68/80

= 282

Total No. of trees proposed = 290

Details of flora species already present at the site

S.No	*Botanical Name*	Common Name	Family	Number
1	*Alstonia scholaris*	Devil's tree	Apocynaceae	2
2	*Cassia fistula*	Amaltas	Fabaceae	8
3	*Punica granatum*	Anar	Lythraceae	1
4	*Terminalia arjuna*	Arjun	Combretaceae	1
5	*Saraca asoca*	Ashoka	Fabaceae	9
6	*Ficus benghalensis*	Banyan	Moraceae	54
7	*Ziziphus mauritiana*	Ber	Rhamnaceae	1
8	*Casuarina equisetifolia*	Whistling Pine	Casuarinaceae	16
9	*Ficus racemosa*	Cluster fig	Moraceae	12
10	*Azadirachta indica*	Neem Tree	Meliaceae	52
11	*Ficus religiosa*	peepal	Moraceae	27
12	*Cascabela thevetia*	Kaner	Apocynaceae	1
13	*Artocarpus heterophyllus*	Jackfruit	Moraceae	1
14	*Mangifera indica*	Mango	Anacardiaceae	5
15	*Haplophragma adenophyllum*	Marod Phali	Bignoniaceae	244
16	*Ficus virens*	Pilkhan	Moraceae	3
17	*Tectona grandis*	Teak	Lamiaceae	4
18	*Morus nigra*	Black mulberry	Moraceae	36

19	*Moringa oleifera*	Drumstick tree	Moringaceae	2
20	*Bombax ceiba*	Silk cotton tree	Malvaceae	134
21	*Terminalia catappa*	Indian-almond	Combretaceae	14
22	*Dalbergia sissoo*	Indian rosewood	Fabaceae	27
23	*Albizia lebbeck*	Siris	Fabaceae	24
Total				678

1.23 Energy Saving and Conservation:

1.23.1 Details of Construction Material

- These buildings shall be G+8 constructed using Pre-Engineered Building technology in which steel sections are fully fabricated in a controlled environment in the factory after designing and shipped to site in completely knocked down (CKD) condition; and all components are assembled and erected at site with nut-bolts, thereby reducing the time of completion.
- Pre-Engineered Steel Buildings use a combination of built-up sections, which provide the basic steel frame work. The structural steel shall be made 2 hour fire rated by using intumescent fire paint
- The floor system shall consist of galvanized steel deck system overlaid with reinforced concrete.
- The external walling shall be of heavy-duty fiber cement board. These walls shall be strong enough for the loads applicable such as wind load etc. The internal wall system shall be fixed on Light gauge steel frame work. The high-quality Mineral Wool Insulated prefabricated walls panels to be used as external wall shall be sandwich wall panels/ sheets
- The insulation shall be done using rock wool to ensure thermal comfort at minimal energy consumption.
- **External Façade**: Terracotta Ventilated Rainscreen Façade Tiles shall be provided in a horizontal direction on the building facade. The extruded hollow clay tile cladding material shall be rigid and of adequate strength .The tiles shall be installed using the ventilated rainscreen principle, with provision for natural ventilation of the space between the façade tiles and the structural wall.

1.23.2 Energy Conservation Measures

In the operational phase, appropriate energy conservation measures and management plan will be adopted in order to minimize the consumption of non-renewable fuel.

- LEDs will be used in place of incandescent lamps in offices, common areas and parking.
- Lighting and switching of common areas will be designed keeping in mind daylight integration.
- Roof insulation will be planned to conserve energy.
- Water supply pumping systems will be provided with variable speed drive to conserve energy at part load.
- External street lighting will be provided by a standalone solar panel.
- Solar water heaters will be used to meet the hot water requirement .
- Motors used by pumps proposed in the project will be energy efficient complying with the ECBC norms.
- 485 kW solar panels will be installed over the terrace area and surface parking area which will conserve app. 12 % of the energy of total electric load.

15.3. Quantification of Energy Saved

Approximately 20 % of energy saving has been proposed using energy conservation measures in the proposed office complex. Out of which, 12 % of total power load will be conserved using solar energy measures.

1.24 SUMMARY

1.24.1 During Construction Phase

S.No	Description	Impacts	Mitigation Measures
1.	Air & Noise Environment	♦ Emissions may be generated due to vehicles and machinery/equipment etc. ♦ Loading and unloading of construction materials like cement, sand, stones, bricks, etc. will result in dust generation. ♦ Procurement and transport of construction materials such as sand, cement etc. will also result in dust generation.	♦ Proper Barricading will be done to reduce the dust during construction of buildings. Also, barricading will cut off some of the noise due to construction activities. ♦ Water sprinkling will be done to reduce the dust during construction of buildings. ♦ Raw material, construction debris will be kept covered during storage as well as during transportation.

			♦ D.G set of 1× 125 kVA will be provided with adequate stack height to avoid emissions. ♦ No loose soil or sand or Construction & Demolition Waste or any other construction material that causes dust will be left uncovered. ♦ Guidelines as per MoEF&CC Govt. of India Notification (Dust Mitigation Norms) dated 25.01.2018 will be followed.
2.	Water Environment	♦ Soil runoff from the site leading to off – site contamination (Particularly during rainy season). ♦ Improper disposal of construction debris leading to off-site contamination of water resources. ♦ Disposal of domestic waste water from temporary labour rest rooms. ♦ Spillage of oil and grease from the vehicle and waste water stream generated from on-site activities.	♦ Water will be taken from STP and tanker suppliers. ♦ Disposal of debris will be done as per C & D waste will be disposed off as per applicable rules. ♦ Mobile toilets will be provided for construction labourers.
3.	Solid Waste	♦ The waste from labour rest rooms/sheds would be mainly household domestic waste ♦ Construction and demolition waste.	♦ Approx. 15 kg/day municipal solid waste will be generated from 100 labours which will be converted into compost in existing organic waste converter. ♦ Construction debris generated from site will be used in backfilling & levelling purposes to the extent possible. Rest of the waste will be sent to the C & D facility.

1.24.2 During Operation Phase

S. No.	Description	Impacts	Mitigation Measures

1.	Air & Noise Environment	♦ GG sets of capacity 3 × 500 kVA during power failure will result in air emissions.	♦ GG sets will be acoustically installed on the surface. Stack height of 30 m above ground level will be provided to reduce air emissions. Installation and maintenance of GG sets and stack height will be done in accordance with CPCB norms
2.	Water Environment	♦ Fresh Water requirement will be met by NDMC. ♦ Water will be used for domestic use, flushing, gardening and cooling. Therefore, wastewater generation will be 205 KLD sewage.	♦ Fresh water requirements will be reduced by using 185 KLD STP treated wastewater. ♦ It will be a Zero-Liquid Discharge Complex. ♦ 185 KLD treated wastewater will be reused completely in flushing, gardening and cooling. ♦ Rain water will be recharge into the ground through 5 RWH pits.
3.	Solid Waste	♦ Biodegradable and recyclable waste from Commercial complex. ♦ Used oil from DG sets. ♦ E- waste & battery waste generation.	♦ Bio-degradable waste of 304 kg/day will be generated which will be treated in organic waste converter and converted to manure will be used in gardening. ♦ Recyclable waste of 229 kg/day and Plastic waste of 229 kg/day will be sent to approved recycler. ♦ There will be no generation of used oil as GG sets will be used. ♦ The generated E-waste will be given to authorized vendors. ♦ Battery waste will be treated as per the Batteries (Handling & Management) Rules, 2001.

1.25 ENVIRONMENT MONITORING PLAN

1.25.1 During Construction Phase

Sr. No.	Type of Monitoring	Frequency of Monitoring	Parameter	Location

1	**Ambient Air Quality**	Six Monthly	Particulate Matter (PM2.5)Particulate Matter (PM10)Sulphur Dioxide (SO2)Nitrogen Oxides (NO2)	Two Locations in and around the project site
2	**Water Quality Monitoring for drinking water**	Six Monthly	All parameters mentioned in IS:10500	One drinking water sample
3	**Water Quality Monitoring for Construction purpose**	Six Monthly	All parameters mentioned in IS:456	One construction water sample
4	**Noise Level Monitoring**	Six Monthly	Day and Night noise level	Two locations
5	**Soil Quality Monitoring**	Six Monthly	All parameters to check soil Fertility	Two Locations in and around the project site

1.25.2 During Operation Phase

Sr. No.	Type of Monitoring	Frequency of Monitoring	Parameter	Location
1	**Ambient Air Quality**	Six Monthly	Particulate Matter (PM 2.5), Particulate Matter (PM 10), Sulphur Dioxide (SO2), Nitrogen Oxides (NO2)	Two Locations in and around the project site
2	**Water Quality Monitoring for drinking water**	Six Monthly	All parameters mentioned in IS:10500	One drinking water sample
3	**Sewage Treatment Plant Monitoring**	Six Monthly	COD, BOD, TSS, Oil and Grease and pH	Inlet and Outlet of STP
4	**Ambient Noise Level Monitoring**	Six Monthly	Day and Night noise level	Two locations
5	**GG Set Room Noise Monitoring**	Six Monthly	Inside and Outside of GG Set Enclosure	One Locations

6	**Soil Quality Monitoring**	Six Monthly	All parameters to check soil Fertility	Two Locations in and around the project site

17.1. ENVIRONMENT MANAGEMENT COST

17.1.1. CAPITAL COST

S. No.	Description	Total Capital Cost (Rs In Lacs)
01.	Landscaping	15
02.	STP	40
03.	GG Stack & Acoustic Treatment	25
04.	Solid Waste Management	20
05.	RWH	10
06.	Miscellaneous	5
	Total	**Rs. 115 lacs**

17.1.2. Recurring Cost

S No.	Description	Total Recurring Cost (Rs In Lacs/ year)
01.	Landscaping	1.5
02.	Water Management	5.0
03.	Air Management	2.0
04.	Environment Monitoring	1.0
05.	Solid Waste Management	4.0
06.	Miscellaneous	2.0
	Total	**Rs. 15.5 lacs/year**

18. Corporate Environment Responsibility

As per CER office memorandum of MOEF dated 1.5.2018, the total cost for the project is ₹ 262 Cr . Hence the industry has to spend 1.5% of the cost of the project (₹ 3.93 Cr.) on CER activities.

Activity	Provisions	1st Year (Rs. in Lakhs)	2nd Year (Rs. in Lakhs)	3rd Year (Rs. in Lakhs)	4th Year (Rs. in Lakhs)	5th Year (Rs. in Lakhs)	Total (Lakhs)
Waste Management	Provision of OWC in NDMC parks		-	50.0	40.0	40.0	130
Solar Provision	4 no of solar tree at Masjid near round about	-	15.0	15.0	15.0	15.0	60.0
Solar Provision	Provision of standalone solar lights crossing at kushak road near Lady Irwin school	8.0	12.0	12.0	15.0	15.0	62.0
Landscaping	Provision 30 trees and planters around footpath near KG Marg	20.0	20.0	20.0	20.0	-	80.0
Sanitation	Public Toilet provision (2 no)at Shrimant Madhavrao Scindia Marg	-	20.0	20.0	-	21.0	61.0
TOTAL		**28.0**	**67.0**	**117.0**	**90.0**	**91.0**	**393**

SECTION E: RISK ASSESSMENT

1. RISK ASSESSMENT

Risk is a potential action or activity that leads to a loss of human or property.

Risk assessment is a step for Risk Management. Risk assessment is determination of qualitative and quantitative value of risk related to a situation or hazard.

Hazard is a situation that poses a level of threat to life, health or environment.

Risk assessment involves the following:

- Hazard Identification
- Vulnerability Analysis
- Risk Analysis
- Emergency Preparedness Plan

1.1 HAZARD IDENTIFICATION

The project is a commercial complex and there may be following types of hazards:

1.1.1 Natural Hazard

- Earthquake
- Flooding

1.1.2 Man Made hazard

- Health injuries
- Fire & explosion
- Electrical
- Mechanical
- Radiation
- Thermal
- Chemical

1.2 VULNERABILITY ANALYSIS

This is a Commercial complex hence staff & visitors are vulnerable to risks.

1.3 RISK ANALYSIS

The risk is the likelihood of harmful effect big or small due to hazard, together with severity of harm suffered. Risk also depends on the number of people exposed to hazards.

Risk analysis provides severity of harm from particular type of hazard.

1.3.1 Earthquake

The project is located in seismic zone IV where earthquake can occur from 4.0-7.0 Richter scale.

1.3.2 Flooding

The project site is located in an area where no natural river or drainage exists. However, flooding can occur due to excess rain.

Health Injuries

1. Safety nets will be provided at the appropriate level and various shafts/ openings will be covered to prevent falls, slips, trips, etc.
2. Necessary safety belts, helmets and eye-masks as required will be enforced at site.
3. Adequate guardrails are provided to the staircases and common areas.
4. Adequate guardrails/ fences are provided around the water storage spaces to prevent drowning accidents.
5. The machinery and equipment are regularly tested and maintained with the specific emphasis against accidents failures.
6. The deployed Safety officers is ensure that the personnel/ labour are kept at a safe distance from working machinery to avoid accidents/ injuries due to toxic gases/ chemical/ noise.
7. Moving parts of various parts of machineries/equipment shall be properly guarded
8. Required fire extinguishers are provided at the construction site.
9. Rest rooms and first aid facilities are made available for the workers.

Fire & Explosion

Since it is a Commercial Complex, fire can occur due to electrical spark or gas leakage from kitchens.

Fire is mainly caused due to carelessness, short circuits, and malfunctioning of gas regulator, tube, and such related products.

Electrical

The electrical current can pass to the floor & metals due to inadequate insulation or accidently.

Mechanical

The mechanical fault that can cause the risk & hazard include the elevators.

Thermal

Thermal heat can be generated from the D.G sets and the vehicles in the colony.

Chemical

Chemical use in the commercial complex limited to cleaning agents & medicines.

1.4 Onsite emergency plan

An onsite emergency is caused by an accident or hazard that takes place within the Commercial complex and the effects are confined to the staff and visitors.

The onsite emergency plan consists of the following key elements:

- Planning as per hazard analysis
- Preventive measures
- Emergency response procedure
- Recovery procedure

<u>Planning</u>

1. Mapping of hazard vulnerable areas has already been done in consultation with management.
2. There is Disaster Management Cell in place
3. The disaster management cell has the following members to share the responsibility
   - Site Controller (Administrator of commercial)
   - Incident Controller (Asstt. Administrator)
   - Personal Manager

- Communication Officer
- Officer
- Security Officer
- Engineering In-charge
- Fire pump attendant
- First Aid Team

Preventive Measures

Earthquake:

Since project are located at Seismic Zone IV, structural designing are done as per National Building Code 2016.

Flooding:

- Proper designing of drainage system for domestic as well as storm water.
- Rain water harvesting pits are have provision of storage for 20 minutes & peak rainfall.

Fire:

Reference: NBC-2016

FIRE STATIC STORAGE TANK:

Fire storage tank for covering the entire complex shall be provided with fire pumps like Hydrant Pumps, Jockey Pump, and Pressure Vessel & Diesel engine driver pump is proposed near the water storage tanks for the existing commercial complex.

- **Accessories:**

i) Suction manifold (in fire pump room) fed from fire water storage tanks.

ii) Delivery manifold (in fire pump room) fed by the pumps as explained above.

iii) An Air vessel shall be provided on delivery manifold of Hydrant system, to compensate for slight loss of pressure and to provide an Air cushion for counteracting pressure surges from the system. Separate delivery pipes are given for Hydrant system.

FIRE HYDRANT SYSTEMS:

Fire hydrant system consist of the following:

i) Each fire hose cabinet provided with

a) One single outlet landing valve

b) Two sets of canvas hose pipe with branch pipe

c) One first aid fire hose reel.

d) One fireman's Axe

e) 10 Nos fire Extinguishers

PORTABLE EXTINGUISHERS & FIRE SAFETY APPLIANCES:

Portable Extinguishers is located in prominent and easy to reach during fire emergency.

Type of Extinguishers:

Selection type and capacity of the Extinguishers shall be done as per I.S: 15683.

- Water-CO_2 Type
- Dry Chemical Power (DCP) Type
- CO_2 Type Extinguishers
- ABC (Power Type) Extinguisher:

Test Demonstration:

At least 1 extinguishers per floor shall be demonstrated at site in simulated fire conditions.

EXIT SIGNAGE

Exit Signage and evacuation instruction is displayed judiciously at prominent locations.

FACILITY OF FIRE MAN AT MAIN GATE

i) Fire brigade inlet connection to tank.

ii) Fire brigade draw out connection to tank

Electrical:

i) Planning Stage:

Safety parameters as indicated under Indian Electricity Rules 1956 and ECBC is compiled in existing complex. The following safety measurement is considered after expansion.

- Earthing system
- The earthing system shall comply with the requirement of IS: 3043, Indian Electricity rules and other applicable statutory regulations and safety codes in the locality of installation.
- GI plates earthing system shall be provided.
- One Earth Leakage Breaker sensitivity 30 mA are used per phase in all Distribution Boards
- In addition to that, the following measures are also adopted in existing commercial complex.
- There are colour coding and labelling of high voltage electrical wires.
- Sandbags/ wire bucket is placed near the electrical control/panel.
- Installation of electrical equipment are properly done like insulation, guarding and grounding.
- Work practices and handling of the electrical equipment are properly managed.
- Employees and workers are trained for awareness of safe work practices and systems.
- Properly maintained equipment and tools are used.
- Service of electrical equipment are done under the supervision of trained personnel.
- Temporary connections made for experimental reasons are safe and properly insulated.

- Live electrical terminals shall be shielded.

ii) Operation Stage:

- **Only licensed electricians install, repair and dismantle jobsite wiring.** In the existing commercial complex, everything has been completed according to electrical safety codes, ensuring greater protection for the workers who were using the wiring to power tools and equipment. Bringing in a professional electrician also prevents the injuries that result when less-qualified individuals attempt electrical jobs that they aren't properly trained to do.
- Check each extension cord before use. It ensures that insulation is completely intact (free from cracks, tears, or abrasion) and that power extension cables haven't been knotted, which can cause conductor damage and increase the risk of fire.
- A thorough check for electrical wiring before cutting through any wall, floor or ceiling is done. Any time that a tool inadvertently makes contact with an unseen electrical line, the person holding that tool is likely to be shocked or electrocuted.
- **Inspect power equipment on a regular basis.** Look over the tools' power cords and plugs for any sign of damage to the insulation, blades, or grounding pin. If you find signs of excessive wear and tear, take tools out of commission until they've been properly repaired. Maintain awareness during electrical tool use as well; if a tool starts to overheat, smoke, give off a burning smell, or shock you on contact, discontinue use immediately.
- **Check insulated tools for damage before each use.** Once the insulation layer of an insulated hand tool becomes nicked, cracked or cut, the tool is no longer effectively insulated – it actually becomes more of an electrical conductor, and can increase your risk of injury. If a tool has damaged insulation, it is no longer safe to use – destroy and replace it right away.
- **Never modify electrical plugs.** Under no circumstances should you ever file down the blades, remove the ground pin, or otherwise modify an electrical plug so that it is fit into a socket – doing so only increases the likelihood of shock, electrocution, and fire. Either have a certified electrician change the device's plug, or replace outdated two-prong receptacles with grounded outlets that can accommodate a ground pin.
- **Keep extension cords in a safe place where they won't be stepped on or driven over.** The force of a vehicle – or even repeated treading by pedestrians – can cause an extension cord's conductor to become misshapen or break, a problem that can lead to electrical fires. Because it occurs in the core of the cable, conductor damage isn't always obvious to the eye, so play it safe from the start by guarding jobsite extension cords with heavy-duty cord covers.
- **Ensure that all electrical components stay dry.** It's one of the cardinal rules of electrical safety: don't mix electricity and water. Store power tools and cables above water level when not in use, cover outdoor receptacles, and never use electrically powered tools in a wet environment.
- **Use the right extension cord for the job.** Before you plug in, make sure that the wattage rating of the extension cords you're using is greater than the pull (or power requirement) of the equipment it's

powering. Using an extension cord to supply more wattage than its rated for can cause conductor strain, overheating, and possibly even fire.

Chemicals:

This is a commercial complex so, no chemical container/tanker is allowed inside the complex.

The chemical hazard includes the following:

- Causing fire, explosion.
- Release of harmful /toxic gas or particles.
- Splashing of hot corrosive or toxic liquid.

To prevent chemical hazard following measures have been taken:

- Use of safer chemicals as far as possible.
- Keep material safety Data Sheet (MSDS) of all chemicals.
- Storage of chemical in appropriate container (which is safer for chemical)
- Storage of chemical at defined place is spillage control system.
- Proper environment like ventilation, temperature.
- Use of chemicals by qualified and trained personnel.
- Use of personal protective equipment (PPE) during handling of chemicals.
- Use of emergency procedures in case of leakage like

A. Firefighting – for fire
B. Spillage treatment
C. First aid
D. Evacuation of area

For commercial complex projects only, chemicals used are:

1. Cleaning agent (acid /caustic)
2. Insecticides

Cleaning agents can be treated by water.

Insecticides is contained with specified space during sand & cotton and waste sent to TSDF.

The spray of insecticide is done by using a gas mask.

Mechanical:

Mechanical hazards are created by powered operation of equipment or tools.

Mechanical hazards can occur at three locations:

1. Elevators
2. DG set room, Pump & motors room.

3. Vehicular Movement

Following preventive measures is taken.

- Elevators is properly maintained with record book of maintenance.
- Periodic replacement of critical components of elevator/ machine.
- Proper training to operators of machines.
- The protective is installed at fan & motors.
- There are safe distance demarcation on heavy machines like cranes (during construction)
- Sign of danger at the hazard places.

Thermal:

Thermal hazards are objects or substances that transfer energy as heat.

Typical building can have following points of thermal hazard.

- Open flame
- Boiling liquid
- Hot machines/ equipment

The thermal hazard can cause burn of skin, following preventive measures can be taken:

- The open flame area like mess is restricted.
- Water heaters are properly insulated and safe distance & guard is installed.
- D.G set room has restricted entry.
- Operators in the thermal hazard area is provided with protective gears like gloves, goggles etc.
- For emergency first acid room is maintained.

Emergency Response Procedure

After all the preventive measures for any emergency following infrastructure is already present in existing complex.

- Administrative office has an Emergency Control Room.
- Communication system is installed in the complex which includes intercom and public address system.
- Fire alarm is installed at vulnerable place.
- The evacuation plan is displayed at each floor of respective building.
- The safe zones (at the time of emergency) on map is displayed at different locations.
- First Aid facility is made available at Control room.

In case of emergency following action shall be taken.

1. The emergency shall be declared in case of following:

a. Fire alarm buzzing (Fire hazard)

b. Vibration/Earthquake feeling (Earthquake)

c. Water logging in the commercial complex above 30 cm (Flood)

d. Any unusual smell of gas or suffocating feeling (Chemical leakage)

e. Security alarm from main gate. (Security risk/Terrorism)

2. On declaration of emergency communication shall be made to Staff/Workers for any type of emergency

3. All the Staff/ Workers of the affected area shall be moved to a safe zone.

4. The control measures shall be done as per the emergency action plan for each type of hazard.

5. All the members of the disaster management cell shall take charge of their respective duties.

6. Outside help like fire tender, police ambulance etc. shall be called by site controller or Incident controller.

Recovery Procedure

The recovery procedure depends on the type of emergency. Recovery procedure shall be followed by engineering section to restore the essential services like electricity, water, telephone, food items.

Offsite Emergency Plan

If an accident takes place in the commercial complex and its effects are felt outside the complex, the situation thus created is called an offsite emergency. In this case off site emergency is not applicable.

Security plan

An ISO 27001 and 27002, which are the international best practice information security management standards, defining and guiding Information Security Management System (ISMS) development has been adopted for the existing operational complex. They provide the necessary benchmarking for individual users to know the type of cover and the responsibilities that are defined and provided by that institution for its guests. Most importantly, training, staff needs to be regularly imparted in dealing with such situations.

1. **Manual Checks**: At entry gate the visitors and staff are manually checked and asked for ID's.
2. **CCTV:** At all important location with a remote viewing facility and record back up. With highest resolution and picture quality. DVR being the backbone, its recording and replaying capabilities must be considered.
3. **Video Door Phone System:** VDP equipment with associated telephone wiring has been provided for complex having colour view screen.
4. **Central Control Room**: This control the security system from inside.
5. **Communication Systems:** Proper communication system to security staff help them to coordinate better during emergencies.

Training and Security Drills (including Surveillance System)

Disaster planning is the responsibility of all sections of the community. The police, fire brigade, civil defence, Home Guards, press, clergy, industrial groups, and community groups must participate in the pre-disaster planning. The community as a whole has the responsibility to teach first aid to groups in the community that could be utilized in disaster situations. The disaster may involve the normal communication network itself. Therefore, two-way radio systems and messenger systems must be included as backups in the event of a communication-system failure. Proper training, security drill and evacuation drill is conducted in a defined time period, so as to train the management people, security personnel, senior staff and all other staff in the commercial complex to take control of all odds what so ever come in the way. These trainings have been conducted for use of weapons and Arms by some trained agencies for the said training. The training will be done periodically.

Making of Standard Operating Procedures

A standard operating procedure manual has prepared, followed and maintained for all the eventualities due to attack by armed intruders.

Emergency Response Team

The disaster management cell acts as an emergency response team is formed in the warehouse which comprises of persons from Internal Control room personnel, security staff, trainers, Police Control, Army official, Nearest Hospital Management, Fire officer to take control of any eventuality if comes in the complex.

1.4 EVACUATION PLAN

Standard operating procedures is formulated and maintained for all eventualities due to attack by armed intruders in the existing complex.

Evacuation plan includes the evacuation due to

- Fire hazard in the commercial complex
- Armed Intrusion
- Flood
- Earthquake

During any of the above-mentioned hazards, the evacuation are as follows:

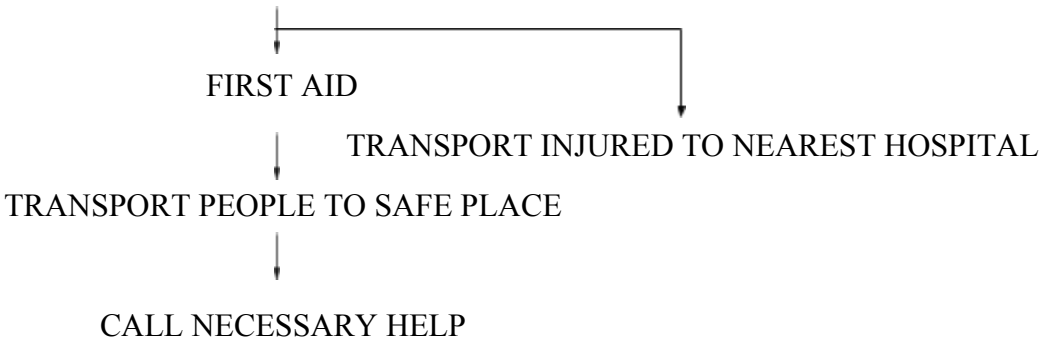
INFORM CONTROL ROOM → INFORM CONCERNED AGENCY

↓

SUGGEST EVACUATION PLAN

↓

SHIFTING STAFF/ WORKERS TO INTERNAL SAFE AREA



Communication

The communication system is useful for rapid notification to appropriate units and expeditious implementation of relief procedures. The fire brigade and metro police units are linked through a wireless communication network. Additional channels of communication are now available through personal cell phones. Use of personal cell phones is not restricted during disasters.

The following safety measures are adopted during the construction phase and during the operational phase the existing measures should be followed.

During construction Phase	**During Operation Phase**
• Safety nets shall be provided at appropriate level and various shafts/ openings would be covered to prevent falls, slips, trips etc. • Necessary safety belts, helmets and eye-masks as required are enforced at site. • Adequate guardrails shall be provided to the staircases and common areas. • Adequate guardrails/ fences shall be provided around the water storage spaces to prevent drowning accidents. • Adequate protection/ fence shall be provided around the excavated areas. • The machinery and the equipment shall be regularly tested and maintained with the specific emphasis against accidents failures. • The deployed Safety officers ensure that the personnel/ labour shall be kept at a safe distance from working machinery to	• The project is located in Seismic Zone IV. Structural designing will be done as per best structural engineering practices complying with all the applicable codes / standards. Also, we have received the structural stability certificate. • Proper designing of drainage system for domestic as well as storm water will be provided. • Rain water harvesting pits provision will be provided for storage of 20 minutes peak rainfall. • Fire Protection system will be designed as per the requirements of the National Building Code – 2016 • Proper Fire evacuation system will be provided.

avoid accidents/ injuries due to toxic gases/ chemical/ noise. • Moving parts of various parts of machineries/ equipment shall be properly guarded. • Required fire extinguishers shall be provided at the construction site. • Fire Protection system shall be designed as per requirements of National Building Code – 2016	• Safety parameters as indicated under Indian Electricity Rules 1956 and ECBC will be complied. • Periodic replacement of critical components of elevator/ machines.

SECTION F: ENCLOSURES

ENCLOSURE 1: Accreditation of Consultant

Quality Council of India

National Accreditation Board for Education & Training

Certificate of Accreditation

Perfact Enviro Solutions Pvt.Ltd.

505, 5th Floor, NM Mall, Mangalam Palace, Sector – 3, Rohini, New Delhi - 110085

***Accredited as Category - A** organization under the QCI-NABET Scheme for Accreditation of EIA Consultant Organizations: Version 3 for preparing EIA-EMP reports in the following Sectors:*

Sl.No	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1	Mining of minerals including Open cast/ Underground mining	1	1 (a) (i)	A
2	Thermal power plants	4	1 (d)	B
3	Mineral beneficiation including palletisation	7	2 (b)	A
4	Metallurgical industries (ferrous & non-ferrous)	8	3 (b)	B
5	Cement plants	9	3 (b)	A
6	Leather/skin/hide processing industry	15	4 (f)	A
7	Synthetic organic chemicals industry (dyes and dye intermediates; bulk drugs and intermediates excluding drug formulations; synthetic rubbers; basic organic chemicals, other synthetic organic chemicals and chemical intermediates)	21	5 (f)	A
8	Distilleries	22	5 (g)	A
9	Sugar Industry	25	5 (j)	B
10	Isolated storage & handling of hazardous chemicals (As per threshold planning quantity indicated in column 3 of Schedule 2 & 3 of MSIHC Rules 1989 amended 2000)	28	6 (b)	B
11	Airports	29	7(a)	A
12	Industrial estates/ parks/ complexes/ Areas, export processing zones(EPZs), Special economic zones (SEZs), Biotech parks, Leather complexes	31	7 (c)	A
13	Common hazardous waste treatment, storage and disposal facilities (TSDFs)	32	7(d)	B
14	Bio medical waste Treatment Facilities	32a	7(da)	B
15	Aerial ropeways	35	7 (g)	A
16	Common Municipal Solid Waste Management Facility (CMSWMF)	37	7 (i)	B
17	Building and construction projects	38	8 (a)	B
18	Townships and Area development projects	39	8 (b)	A

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in SA AC minute dated Sep 14, 2018, posted on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no. QCI/NABET/ENV/ACO/18/0845 dated Dec 19, 2018.The accreditation needs to be renewed before the expiry date by Perfact Enviro Solutions Pvt.Ltd following due process of assessment.

Sr. Director, NABET
Dated: Dec 19, 2018

Certificate No.
NABET/EIA/1619/ SA 078

Valid up to
May 27 ,2019

For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to QCI-NABET website.

National Accreditation Board
for Education and Training
(Member - International Accreditation Forum & Pacific Accreditation Cooperation)

QCI/NABET/EIA/ACO/19/1158

December 09, 2019

Perfact Enviro Solutions Pvt Ltd
5th Floor, NN Mall
Sector - 3, Rohini – 110085
New Delhi
(Kind Attention: **Mr. Nipun Bhargava)**

Sub: Validity of Accreditation

Dear Sir,

This has reference to the accreditation of your organization under QCI-NABET EIA Scheme, the validity of **Perfact Enviro Solutions Pvt Ltd, New Delhi** is hereby extended till March 08, 2020 or completion of assessment process, whichever is earlier.

The above extension is subject to the submission of required information/documents related to assessment on time to NABET.

You are requested not to use this letter after expiry of the above stated date.

With best regards,

09/12/2019

A.K Jha
Senior Director| NABET

ENCLOSURE 2: Consultant Authorization

To Whom It May Concern

We authorize M/s Perfact Enviro Solutions Pvt. Ltd. add. 505, 5th Floor, NN Mall, Mangalam Palace, Sector-3, Rohini, New Delhi – 100085, one of the approved consultants of Ministry of Environment, Forest & Climate Change, Govt. of India listed on MoEF&CC website for getting Environmental Clearance for Project - **Proposed Offices for Ministry of Defence with pre- engineered technology (to relocate existing offices in hutments near South Block & North Block for redevelopment of Central Vista), Old Curzon road, adjacent to Asia House, KG Marg, New Delhi.**

Barracks

(Akhelesh Kumar)
Executive Engineer & SM-I
RPD

ENCLOSURE 3: Proof of Change in Land Use

रजिस्ट्री सं० डी० एल०-33004/99

REGD. NO. D. L.-33004/99

भारत का राजपत्र
The Gazette of India

असाधारण
EXTRAORDINARY
भाग II—खण्ड 3—उप-खण्ड (ii)
PART II—Section 3—Sub-section (ii)
प्राधिकार से प्रकाशित
PUBLISHED BY AUTHORITY

सं. 1478] नई दिल्ली, सोमवार, जून 13, 2016/ज्येष्ठ 23, 1938
No. 1478] NEW DELHI, MONDAY, JUNE 13, 2016/JYAISTHA 23, 1938

शहरी विकास मंत्रालय

(दिल्ली प्रभाग)

अधिसूचना

नई दिल्ली, 13 जून, 2016

का.आ. 2086(अ) .— यत: उल्लिखित क्षेत्र के संबंध में दिल्ली मुख्य योजना-2021 में केन्द्र सरकार का जिन कतिपय संशोधनों का प्रस्ताव था, उन्हें दिल्ली विकास अधिनियम, 1957 (1957 का 61) की धारा-44 के उपबंधों के अनुसार दिल्ली विकास प्राधिकरण द्वारा दिनांक 07 अगस्त, 2014 की का.आ.सं. 2007(अ) के तहत सार्वजनिक सूचना के रूप में भारत के राजपत्र, असाधारण में प्रकाशित किया गया था जिसमें उक्त नोटिस की तारीख से तीस दिन के अंदर उक्त अधिनियम की धारा 11-क की उप-धारा (3) द्वारा यथा अपेक्षित आपत्तियां/सुझाव आमंत्रित किए गए थे।

2. यत: प्रस्तावित संशोधनों के संबंध में प्राप्त हुई आपत्तियों/सुझावों पर दिल्ली विकास प्राधिकरण द्वारा विचार किया गया है।

3. यत: केन्द्र सरकार ने इस मामले के सभी पहलुओं पर ध्यानपूर्वक विचार करने के बाद, दिल्ली मुख्य योजना-2021 में संशोधन करने का निर्णय लिया है।

4. अत: अब, उक्त अधिनियम की धारा 11-क की उप-धारा (2) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, केन्द्र सरकार एतद्वारा भारत के राजपत्र में इस अधिसूचना के प्रकाशित होने की तारीख से उक्त दिल्ली मुख्य योजना-2021 में निम्नलिखित संशोधन करती है :

संशोधन:

अवस्थिति	क्षेत्रफल	भूमि उपयोग (दि. मु. यो.- 2021)	भूमि उपयोग निम्नलिखित में परिवर्तित	सीमाएं
योजना क्षेत्र 'डी' में कर्जन रोड, कस्तूरबा गांधी मार्ग, नई दिल्ली में समर्पित कार्यालय भवन (डेडीकेटिड ऑफिस बिल्डिंग)	1.40 हेक्टेयर (3.462 एकड)	'आवासीय'	'सरकारी (सरकारी कार्यालय)'	उत्तर-पंडित रवि शंकर शुक्ल मार्ग। दक्षिण -राजस्व विभाग को आबंटित खाली भूमि एवं 24 मी. चौडा मार्गाधिकार कैनिंग रोड। पूर्व- एशिया हाऊस। पश्चिम-लेडी इर्विन स्कूल

[फा0 सं0 के-13011/1/ 2012-डीडी-I]

सुनील कुमार, अवर सचिव

MINISTRY OF URBAN DEVELOPMENT

(Delhi Division)

NOTIFICATION

New Delhi, the 13th June, 2016

S.O.2086(E).— whereas certain modifications which the Central Government proposed to make in the Master Plan for Delhi regarding the area mentioned hereunder were published in the Gazette of India, Extraordinary, as Public Notice S.O. 2007(E) dated 07.08.2014 by the Delhi Development Authority in accordance with the provisions of Section 44 of the Delhi Development Act, 1957 (61 of 1957) inviting objections/suggestions as required by sub-section (3) of Section 11-A of the said Act, within thirty days from the date of the said notice.

2. Whereas objections/suggestions received with regard to the proposed modifications have been considered by the Delhi Development Authority.

3. Whereas the Central Government have after carefully considering all aspects of the matter, decided to modify the Master Plan for Delhi-2021.

4. Now, therefore, in exercise of the powers conferred by sub-section (2) of Section 11-A of the said Act, the Central Government hereby makes the following modifications in the said Master Plan for Delhi-2021 with effect from the date of publication of this Notification in the Gazette of India.

MODIFICATION:

Location	Area	Land Use (MPD-2021)	Land Use Changed to	Boundaries
Dedicated Office building at Curzon Road, Kasturba Gandhi Marg, New Delhi in Planning Zone-D	1.40 ha. (3.462 acres)	'Residential'	'Government (Government Office)'	**North:** Pt. Ravi Shankar Shukla Marg **South:** Vacant land allotted to Deptt. of Revenue & 24m wide R/W Canning Road **East:** Asia House **West:** Lady Irwin School

[F.No. K-13011/1/2012-DD.I]

SUNIL KUMAR, Under Secy.

Uploaded by Dte. of Printing at Government of India Press, Ring Road, Mayapuri, New Delhi-110064
and Published by the Controller of Publications, Delhi-110054.

ENCLOSURE 4: Documentary Proof of Land Ownership (from L&DO)

NO. L&D / L-II-A/11(1158)/2019/163

Government of India

Ministry of Housing and Urban Affairs

Land & Development office

Nirman Bhawan, New Delhi

Dated: 27/02/2020

HANDING OVER/ TAKING OVER

With reference to the letter No. L&DO/L-II-A/11(1158)/2019/162 Dt.25-02-2020 the Possession of land Measuring 5.65 Acres at K.G Marg, New Delhi has been handed over to CPWD on "As is where is basis". The boundry of the site has been shown to CPWD. The site has been marked as red in the attached copy of part layout plan No L&DO 1475.The trees at site are Govt.property.

Note:-

The tool, plant and construction material of adjoining under construction building of "Gramin vikas Bhawan''is Existing upon this site. Two temporary sheds of Dhabas are also lying there.

Encl-1. As above.

Handed Over

JBBhagwan Dhaman
27/2/2020
(JAI BHAGWAN DHAMAN)
SURVEY OFFICER

Taken over

Rkumawat
27/2/2020
Rajesh Kumar Chumawat
A.E.(C)
RPD-1, CPWD

1. E/6
2. W/6

1. E/6
2. E/6

20.97

168.55M

25.85

EXISTING SERVICE

GOVT. OFFICES

GOVT. OFFICES

1. W/4
2. W/4

1. E/4
2. E/4

1. W/3
2. W/3

1. E/3
2. E/3

4-Z/A-11(818)06

SITE ALLOTTED TO MIN OF FINANCE
DEPTT OF REVENUE

22861.82 SQ MTS
TOTAL AREA = 5.65 ACS

1. W/2
2. W/2

1. E/2
2. E/2

1. W/1
2. W/1

1. E/1
2. E/1

259.1'

HANDED OVER

27/2/2020

(JAI BHAGWAN DHAMAN)

TAKEN OVER

27/2/2020

CANNOT

ROAD

F-12