

## ENCLOSURE 1. FORM 1 & 1A

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**FORM 1**

**I. Basic Information**

S.No.	Item	Details
1.	Name of the project/s	“Commercial cum Office Complex”
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: 15959.56 sqm Total Built-up area: 98935.114 sqm
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	Sector-42, Golf Course Road
	Plot/Survey/Khasra No.	Khasra No.-543/1, 542/545, 544/2
	Village	Chakkarpur
	Tehsil	-
	District	Gurugram
	State	Haryana
10.	Nearest railway station/ airport along with distance in kms.	<b>Nearest Railway Station:</b> 8.8 Km NW <b>Nearest Airport:</b> Indira Gandhi National Airport-11.0 Km N
11.	Nearest Town, city, District Headquarters along with distance in kms.	Gurugram
12.	Village Panchayats, Zilla Parishad, Municipal Corporation, Local body (complete postal addresses with telephone nos. to be given)	Municipal Corporation Gurugram
13.	Name of the applicant	M/s Munjal Hospitality Pvt. Ltd.
14.	Registered Address	Hero Cycles Ltd, Hero Nagar, GT Road, Ludhiana-141003
15.	Address for correspondence:	2-A-1001, 10th Floor, Two Horizon Centre, Sector-43, DLF Phase-V, Gurugram, Haryana-110095
	Name	Mr. Naveen Jain

	Designation (Owner/Partner/CEO)	President
	Address	2-A-1001, 10th Floor, Two Horizon Centre, Sector-43, DLF Phase-V, Gurugram, Haryana-110095
	Pin Code	110095
	E-mail	-
	Telephone No.	-
	Fax no.	-
16.	Details of Alternative Sites examined, if any. Location of these sites should be shown on a toposheet.	No alternate site has been examined as proposed project, as the project has taken in auction from bank.
17.	Interlinked Projects	No, it is not an interlinked project
18.	Whether separate application of interlinked project has been submitted?	Not Applicable
19.	If yes, date of submission	Not Applicable
20.	If no, reason	Not Applicable
21.	Whether the proposal involves approval/clearance under: if yes, details of the same and their status to be given. (a) The Forest (Conservation) Act, 1980? (b) The Wildlife (Protection) Act, 1972? (c) The C.R.Z. Notification, 1991?	Clarification regarding non-applicability of forest laws on project site. Not applicable Not applicable
22.	Whether there is any Government Order/ Policy relevant/ relating to the site?	1. Area restricted for ground water extraction 2. NCR master plan is applicable
23.	Forest land involved (hectares)	No
24.	Whether there is any litigation pending against the project and/ or land in which the project is propose to be set up? (a) Name of the Court (b) Case No. (c) Orders/ directions of the Court, if any and its	Not Applicable Not Applicable Not Applicable

	relevance with the proposed project.	
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## 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	The License No-25 of Area 3.4453 acre has been granted by DTCP Khasra No.-542/544Min/545 valid upto 20/4/2001 and license No-26 of Area 0.4984 has also been granted by DTCP Khasra No-543Min valid upto-20/4/2001 earmarked for Commercial Colony at village Chakkarpur, Sector-42, Gurgaon. Both the license are granted on the name of M/s Krishna Buildwell Pvt. Ltd. The land was auctioned by bank to M/s Munjal Hospitality Pvt. Ltd. After purchase of land, license has been transferred in the name of M/s Munjal Hospitality Pvt. Ltd. Renewed license for total plot area of 3.9427 sqm has been obtained by DTCP, Haryana which is valid upto 20.04.2019. Copy of License are enclosed as Annexure-VII.
1.2	Clearance of existing land, vegetation and buildings?	Yes	Basements exist on the land which will be partially vacant with few bushes, shrubs which will be cleared at the time of demolished construction.
1.3	Creation of new land uses?	Yes	The open land will be converted to Commercial Cum Office Complex.
1.4	Pre-construction investigations e.g. bore houses, soil testing?	Yes	Pre-construction geo-technical investigation report is done.

1.5	Construction works?	<b>Yes</b>	Construction will be done as per Building Sanction Plan & Master plan of Gurugram.
1.6	Demolition works?	<b>No</b>	Project was handed over to M/s Munjal Hospitality Pvt. Ltd. after demolition work. No further demolition required.
1.7	Temporary sites used for construction works or housing of construction workers?	<b>No</b>	Workers during construction phase will be hired from nearby areas and hence there is no need of providing housing. Only temporary shelters will be provided.
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations	<b>Yes</b>	Above ground, the building shall be upto maximum height of 105 m, G+21 no. of floors and will be excavated upto 4 basement level.
1.9	Underground works including mining or tunnelling?	<b>No</b>	Not applicable
1.10	Reclamation works?	<b>No</b>	No reclamation work will be done
1.11	Dredging?	<b>No</b>	Not Applicable
1.12	Offshore structures?	<b>No</b>	Not Applicable
1.13	Production and manufacturing processes?	<b>No</b>	It is a Commercial Cum Office Complex; hence no production or manufacturing processes shall be carried out.
1.14	Facilities for storage of goods or materials?	<b>Yes</b>	<p><b>During Construction Phase:</b></p> <ul style="list-style-type: none"> <li>◆ Separate raw material yard shall be made within the project site.</li> <li>◆ Cement Shall be separately stored under cover in bales.</li> <li>◆ Sand Shall be stacked nearby under tarpaulin cover.</li> <li>◆ Bricks and steel shall be laid in open.</li> </ul> <p><b>During Operation Phase:</b></p> <p>As the project is a Commercial Cum Office Complex, the raw material will be food, stationary, Computers and other items which will be stored in respective units &amp; shops only.</p>
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	<b>Yes</b>	<p><b>During Construction Phase:</b></p> <p>Total 150 labourers shall work during the construction phase and hence the solid waste generation is 23 kg/day which shall</p>

			<p>be disposed off at municipal solid waste site.</p> <p><b>During Operation Phase:</b> Approx. 1058 kg/day of solid waste shall be generated from the project.</p> <p>The total waste water generated from the project shall be 268 KLD which will be treated in STP capacity 320 of KLD.</p> <p>Details of Water Management and Solid Waste Management are given in Environment management plan.</p>
1.16	Facilities for long term housing of operational workers?	<b>No</b>	<p><b>During Construction Phase:</b> The workers during construction phase shall be hired from nearby areas.</p> <p><b>During operation phase:</b> As this is a Commercial Cum Office Complex, housing of operational workers will not require as staff will be from nearby areas.</p>
1.17	New road, rail or sea traffic during construction or operation?	<b>No</b>	No new road, rail etc are proposed. 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.?	<b>No</b>	<p>No new road, rail or sea traffic is proposed. The transportation measures already existing near site are as follows:</p> <p><b>Nearest Railway Station:</b> Gurgaon railway station 8.8 Km NW</p> <p><b>Nearest Airport:</b> Indira Gandhi National Airport-11.0 Km N</p> <p><b>Nearest Highway:</b> NH-8-3.8 Km W</p>
1.19	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?	<b>No</b>	No closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements will be made.
1.20	New or diverted transmission lines or pipelines?	<b>No</b>	No such closure or diversion of transmission lines is required.

1.21	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers?	<b>No</b>	No impoundment, damming, culverting, realignment or other changes to the hydrology of surface water courses is required.
1.22	Stream crossings?	<b>No</b>	No stream crossing
1.23	Abstraction or transfers of water from ground or surface waters?	<b>No</b>	No abstraction of ground water will be done. The water shall be supplied through Municipal Supply.
1.24	Changes in water bodies or the land surface affecting drainage or run-off?	<b>No</b>	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?	<b>Yes</b>	<b>During Construction phase:</b> Materials during construction phase shall be transported by truck, trolley etc. <b>During Operation Phase:</b> Car, two-wheeler, etc. will be used.
1.26	Long-term dismantling or decommissioning or restoration works?	<b>No</b>	Not Applicable
1.27	Ongoing activity during decommissioning which could have an impact on the environment?	<b>No</b>	Not Applicable
1.28	Influx of people to an area in either temporarily or permanently?	<b>No</b>	<b>During Construction Phase:</b> Temporary influx of people in the form of labours is envisaged. Approx. 150 no. of labours shall be employed.  <b>During Operation Phase:</b> The project will be a commercial Cum Office complex with following activities retail, offices, shops, restaurant, food Court, indoor games, seminars, exhibitions, events and other activities permissible in commercial Cum complex.
1.29	Introduction of alien species?	<b>No</b>	Not Applicable
1.30	Loss of native species or genetic diversity?	<b>No</b>	No tree exists at the site. However, by planting native plants within the project site, it will give positive impacts.
1.31	Any other actions?	<b>No</b>	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):**

S.No.	Information/checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data																				
2.1	Land especially undeveloped or agricultural land (ha)	Yes	Plot Area- 15959.56 sqm of land has been licensed by Town and Country Planning, Haryana for development of Commercial complex. Copy of Renewed license is enclosed as Annexure- VII.																				
2.2	Water (expected source & competing users) unit: KLD	Yes	<b>Source &amp; Quantity During Construction Phase:</b> Water shall be taken from tanker water supplier which supply treated water from STP of nearby area/HUDA STP. <b>Source &amp; Quantity During Operation Phase:</b> The ultimate source of water will be through Municipal supply to be arranged by HUDA. Fresh water required 167 KLD. Detailed water Management & water balance are given in Environment Management Plan.																				
2.3	Minerals (MT)	No	Not Applicable																				
2.4	Construction material – stone, aggregates, sand / soil (expected source – MT)	Yes	<div>The major materials required for construction of the project are steel, tiles, glass, cement, agate, bricks, flooring tiles/stones, sanitary and hardware items, electrical fittings etc.</div> <table><tr><td>Sr. No.</td><td>Material</td></tr><tr><td>1</td><td>Glass</td></tr><tr><td>2</td><td>Pipe &amp; 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>Aluminium Work</td></tr><tr><td>8</td><td>Tiles</td></tr><tr><td>9</td><td>Granite</td></tr></table>	Sr. No.	Material	1	Glass	2	Pipe & Steel	3	Cement	4	Insulation Material	5	RMC	6	ACP	7	Aluminium Work	8	Tiles	9	Granite
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			10	Gypsum
			11	Hardwood doorframes/MDF/ply
2.5	Forests and timber (source – MT)	Yes	Plywood for doors and windows shall be used which shall be procured from local market.	
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)	Yes	Source of electricity- Dakshin Haryana Bijli Vitran Nigam (DHBVN) Total Electrical Load- 13000 KW DG Sets- 4X500 KVA, 3X2000 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)	Yes	No storage of hazardous substances (as per MSIHC rules) will be done however, used oil from DG sets and e-waste will be generated. Proper management of used oil & e-waste shall be taken care of. Details are given in EMP.
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 in both the construction and operational phase which will restrict stagnation of water or accumulation of water. This will effectively restrict the reproduction and growth of disease vectors.

<b>3.3</b>	Affect the welfare of people e.g. by changing living conditions?	<b>Yes</b>	<p><b>During Construction Phase:</b> Employment opportunities will be provided due to the project will lead to better quality of life and will also set a standard for future developments in the area. Moreover, this project will provide employment to about 150 local labours during construction phase.</p> <p><b>During Operation Phase:</b> As it is a commercial Cum Office Complex, there shall be several services required which will generate direct &amp; indirect employment for the people of nearby area.</p>
<b>3.4</b>	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.,	No	No vulnerable group of people will be affected by the project.
<b>3.5</b>	Any other causes	No	None

#### 4. Production of solid wastes during construction or operation or

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 commercial wastes)	Yes	<p><b>During Construction phase:</b> Solid waste during construction phase will be 23 kg/day which shall be disposed off at municipal solid waste site. Excavated soil shall be used to the extent possible.</p> <p><b>During Operation Phase:</b> Approx. 1058 kg/day of solid waste shall be generated from the project during operational phase. Detailed Solid Waste Management is given in environment Management Plan.</p>

4.3	Hazardous wastes (as per Hazardous Waste Management Rules)	Yes	<p><b>During Construction Phase:</b></p> <p>Used oil whenever generated from the DG sets has been kept in an isolated area and in leak proof containers and sent to approved recycler.</p> <p><b>During Operation Phase:</b></p> <p>Used oil from diesel generators will be carefully stored in HDPE drums in isolated covered facility. The used oil will be sold to vendors authorized by Central Pollution Control Board for the treatment of the same.</p> <p>Suitable care will be taken so that spills / leaks of used oil from storage could be avoided.</p> <p>E-waste shall be given to approved recycler of SPCB.</p>
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	<p>The sludge generated will be generated from STP within the project site and this sludge passed through filter press where it will be dewatered/dried to form a cake and then will be used as manure in green areas. The unused sludge shall be given to farmers or nursery. About 13 Kg/day of dried sludge will be generated from STP within project during operation phase.</p>
4.7	Construction or demolition wastes	Yes	<p>Construction debris like concrete will be recycled and will be used in lean concrete, tiles will be used in creating pathways in the landscape area etc. and rest will be sent to the construction and demolition facility.</p>
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	No	<p><b>During Construction Phase:</b> No E-waste shall be generated.</p> <p><b>During operation Phase:</b> 5 kg/month E-waste shall be generated. It shall be given to approved recycler of SPCB. Battery waste shall be generated from inverters &amp; UPS which shall be disposed off as per the Batteries (Management &amp; Handling) Rules, 2011.</p>
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#### 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	<p><b>During Construction Phase:</b> DG sets of capacity 62.5 KVA shall be installed acoustically enclosed with adequate stack height.</p> <p><b>During Operation Phase:</b> The only source of emission from combustion of fuel will be DG set of 4 X 500 KVA, 3 X 2000 KVA. Hence, to avoid the emissions, stack height of 3m &amp; 4.5 m above roof level for the DG set shall be provided. The DG set shall meet all the norms prescribed by CPCB.</p>
5.2	Emissions from production processes	No	Not applicable

5.3	Emissions from materials handling including storage or transport	<b>Yes</b>	Dust shall be generated during construction from the movement of transport vehicles and other construction activities. The effect will be restricted to construction phase only. Water sprinklers shall be used for dust suppression. Material will be stored under Tarpaulin cover.
5.4	Emissions from construction activities including plant and equipment	<b>Yes</b>	RMC shall be used for the project. Dust and emissions are likely to be generated during demolitions construction activities which will be reduced by sprinkling of water in a specific time interval and timely maintenance schedule for machinery. Also, the machines shall be shut down during idle period.
5.5	Dust or odours from handling of materials including construction materials, sewage and waste	<b>Yes</b>	During loading and unloading of construction material dust is likely to be generated during demolition & construction activity. Water shall be sprinkled and tarpaulin cover shall be provided over stored raw material to reduce dust emission. Mobile toilets during construction phase are provided and waste water shall be disposed off in septic tank followed by soak pits.
5.6	Emissions from incineration of waste.	<b>No</b>	None
5.7	Emissions from burning of waste in open air (e.g. slash materials, construction debris).	<b>No</b>	Open burning of biomass/other material will be prohibited.
5.8	Emissions from any other sources.	<b>No</b>	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	No	<p><b>During construction phase:</b></p> <p>DG sets of capacity 62.5 KVA shall be installed acoustically enclosed. The equipment such as mixer machines, bulldozers, cranes, compactors and excavators will be used which of highest standard of reputed make and adhere to international standards. Hence an insignificant impact due to construction machinery is envisaged.</p> <p>Apart from this, the construction activities shall be restricted to daytime only and timely maintenance of machinery is ensured.</p> <p><b>During operation phase:</b></p> <p>Source of noise in the operational phase will be DG sets. The DG sets of capacity 4X500 KVA, 3X2000 KVA shall be installed with anti-vibration pads and will be used during Power failure only. They may generate noise level maximum upto 75 dB (A).</p>
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 is restricted to day time only. It has been estimated that during the construction period the average noise level is 70 dB(A) during peak construction hours.
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)) is generated from vehicular movement in the construction and operational phase. Plantation around the boundary wall shall be done to reduce noise from traffic.
6.6	From lighting or cooling systems	No	Not applicable
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	The hazardous waste generated will be used oil only and it will be stored in HDPE drums and kept in covered rooms under lock and key and will be sold to authorized vendors only. Special care will be taken to prevent leakages and spills. E-waste generated from Commercial Cum Office Complex shall be given to approved recycler of SPCB.
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge)	No	During operational phase STP capacity of 320 KLD will be installed for treating 268 KLD of waste water and 241 KLD of treated water will be reused in flushing, cooling, gardening purposes. It will be a zero-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 build-up 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	No	<p><b>During Construction Phase:</b> All appropriate measures will be taken during construction phase.</p> <p><b>During Operational Phase:</b> Proper Disaster management and firefighting system will be installed at site.</p>
8.2	From any other causes	No	During construction all the labours will be provided with suitable personal protective equipment (PPE) as required under the health and safety norms. Training and awareness about the safety norms will be provided to all supervisors and labours 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 auctioned 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 facilities, ancillary development or development stimulated by the project which could have impact on the environment e.g.: <ul style="list-style-type: none"> <li>Supporting infrastructure (roads, power supply, waste</li> </ul>	No	Infrastructure like road, power network exist in the area.
		Yes	



	or waste water treatment, etc.) • Housing development • Extractive industries • Supply industries • Other	No No No No	STP of 320 KLD will be installed for the treatment of wastewater.  Not applicable Not applicable Not applicable Not applicable
9.2	Lead to after-use of the site, which could have an impact on the environment.	No	Not applicable
9.3	Set a precedent for later developments	Yes	It will attract people to develop organized commercial Cum Office Complex.
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	Okhla Bird Sanctuary Asola Wildlife Sanctuary Sultanpuri National Park	22.7 Km NE 16.6 Km NE 20.03 Km NW
2	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	<b>Water Bodies</b> Najafgarh drain Drainage	12 km NW 100m N

3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration	None	None
4	Inland, coastal, marine or underground waters.	None	None
5	State, National boundaries	Delhi Boundary	1.8 Km NE
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	<b>Highways</b> NH-8  <b>Railway Station</b> Gurgaon Railway Station  <b>Airport</b> Palam Airport Delhi Indira Gandhi National Airport	3.8 Km NW   8.8 Km NW   11.0 Km N 11.0 Km N
7	Defense installations	Defence Area	13.35 Km NE
8	Densely populated or built-up area	Densely populated area	

9	Areas occupied by sensitive man-made land uses ( <i>hospitals, school, places of worship, community facilities</i> )	<b>Hospital</b> Paras Hospital Max Hospital Paras Hospital Medicity Hospital  <b>Colleges</b> School DLF Phase 1, Sector E DAV Public School  <b>Post Offices:</b> Post office at Sector 18 Post office at Wazirabad  <b>Banks:</b> ICCI Bank ATM sector 42-J & K Bank, Vijaya Bank Sector E	2.0 Km SW 2.0 km W 1.32 Km SW 6.09 Km W  1.0 Km NE 4.5 Km SW  4.0 Km NW 3.0 Km S  0.5 Km SW 0.5 Km NW
10	Areas containing important, high quality or scarce resources  ( <i>Ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals</i> )	<b>Water Bodies:</b> Najafgarh Drain Drainage	12 Km NW 100m N
11	Areas already subjected to pollution or environmental damage. ( <i>Those where existing legal environmental standards are exceeded</i> )	Already within a polluted area	
12	Areas susceptible to natural hazard which could cause the project to present environmental problems  ( <i>Earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions</i> )	Natural.	The project area falls in seismic zone –IV. There is no previous record of flooding in last 10 years in the area.

"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".

Date: 19 Mar 18

Place: Gurugram

For Munjal Hospitality Pvt. Ltd.

  
Authorized Signatory

**Authorized signatory**

## FORM 1A

### 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)**

#### I. LAND ENVIRONMENT

**(Attach panoramic view of the project site and the vicinity)**

1.1	<p>Will the existing landuse get significantly altered from the project that is not consistent with the surroundings? (Proposed landuse must conform to the approved Master Plan / Development Plan of the area. Change of landuse if any and the statutory approval from the competent authority be submitted). Attach Maps of</p> <p>(i) Site location</p> <p>(ii) Surrounding features of the proposed site (within 500 meters)</p> <p>(iii) The site (indicating levels &amp; contours) to appropriate scales. If not available attach only conceptual plans.</p>	<p>The proposed project site is located at village chakkarpur, Sector-42, Gurugram, Haryana, and the proposed site has been granted License from Town and Country Planning, Haryana for the development of Commercial complex. The development will also conform to the master plan of the area.</p> <p>The site location shown on Google Map is given in Environment Management Plan. Map showing vicinity around the site is given in Environment Management Plan. Conceptual plan is given in Environment Management Plan.</p>
1.2	<p>List out all the major project requirements in terms of the Land area,</p> <p>Built up area</p> <p>Water consumption</p> <p>Power requirement</p> <p>Connectivity</p> <p>Community facilities</p> <p>Parking needs etc.</p>	<p>Total Plot Area: 15959.56 sqm</p> <p>Total Built-up area: 98935.114 sqm</p> <p>Water Consumption= 408 KLD</p> <p>13000 KW</p> <p>NH-8-3.8 Km W</p> <p>Restaurant</p> <p><b>Parking requirements:</b> 1118 ECS</p> <p><b>Parking Provision:</b> 1145 ECS</p>

1.3	<p>What are the likely impacts of the proposed activity on the existing facilities adjacent to the proposed site?</p> <p>(Such as open spaces, community facilities, details of the existing land use, and disturbance to the local ecology).</p>	<p>The entire project influenced area will be developed as per the provision of Master Plan, thus no induced development is foreseen due to the proposed project. Also, the proposed development will be carried out as per the defined building by-laws; hence no impact is envisaged due to proposed development.</p> <p>Construction phase as well as operation Phase of the project, will generate direct and indirect employment opportunities for a large section of society. The employment will have positive impact thereby increasing the quality of life.</p>
1.4	<p>Will there be any significant land disturbance resulting in erosion, subsidence &amp; instability?</p> <p>(Details of soil type, slope analysis, vulnerability to subsidence, seismicity etc. may be given).</p>	<p>Yes, there will be disturbance due to excavation of basements. However, care will be taken so that no erosion, subsidence &amp; instability takes place.</p> <p><b>Soil Type:</b> Silt Sand</p> <p><b>Slope Analysis:</b> The project area possesses fairly plain terrain.</p> <p><b>Erosion / Subsidence:</b> Proper greening &amp; paving of area will not cause any soil erosion problem and subsidence.</p> <p><b>Seismicity:</b> The area under study falls in Seismic zone-IV according to the Indian Standard Seismic Map. Suitable seismic coefficients in horizontal and vertical directions respectively, will be adopted while designing the structure.</p>
1.5	<p>Will the proposal involve alteration of natural drainage systems?</p> <p>(Give details on a contour map showing the natural drainage near the proposed project site)</p>	<p>The proposed project activities will not cause any alteration of natural drainage system.</p>
1.6	<p>What are the quantities of earthwork involved in the construction activity cutting, filling, reclamation etc.</p> <p>(Give details of the quantities of earthwork involved, transport of fill materials from outside the site etc.)</p>	<p>During construction phase, soil has been excavated in order to provide foundation and basement. This excavated soil will be properly stacked within site under tarpaulin cover and will be reused for back filling purpose, road construction etc. The top soil will be preserved separately and will be used for landscaping purpose only. Hence, no adverse impacts on the land environment are envisaged.</p>

1.7	Give details regarding water supply, waste handling etc. during the construction period.	<p><b>Water Supply:</b> During Construction stage, water shall be sourced through nearby STP/ through tanker supplier.</p> <p><b>Waste Generation / Handling:</b> Spillage of oil from the machinery or cement residual from concrete mixer plants will be properly collected and reused in construction site. For construction labour, proper sanitary facilities &amp; wash areas shall be constructed such as mobile toilets and good hygienic conditions will be maintained.</p>
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 wetland area are 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)	<p>The construction demolitions waste generated from the project is common in nature and does not cause any health hazard to associate and nearby population. The construction debris will be used for land levelling /back filling. Waste concrete shall be reused as aggregate in construction process.</p> <p>Mobile toilets &amp; drinking water for construction labour shall be provided. The sewage and waste water generated will be disposed off to septic tank via soak pit.</p>

## 2. WATER ENVIRONMENT

2.1	<p>Give the total quantity of water requirement for the proposed project with the breakup of requirements for various uses.</p> <p>How will the water requirement met?</p> <p>State the sources &amp; quantities and furnish a water balance statement.</p>	<p>The <b>total quantity of water requirement</b> shall be 408 KLD &amp; shall be met by</p> <table><tr><td>Domestic</td><td>408 KLD</td></tr><tr><td>Flushing</td><td>134 KLD</td></tr><tr><td>Gardening</td><td>16 KLD</td></tr><tr><td>HVAC</td><td>80 KLD</td></tr><tr><td>DG cooling</td><td>11 KLD</td></tr><tr><td>Misc ( Filter backwash)</td><td>5 KLD</td></tr></table> <p><b>Total Water Requirement : 408 KLD</b> Fresh water : 167 KLD Treated Water Reuse : 241 KLD <b>Total Waste Water Generated: 268 KLD</b></p>	Domestic	408 KLD	Flushing	134 KLD	Gardening	16 KLD	HVAC	80 KLD	DG cooling	11 KLD	Misc ( Filter backwash)	5 KLD
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2.2	<p>What is the capacity (dependable flow or yield) of the proposed source of water?</p>	<p>HUDA will supply water to the project and it is a dependable source of water.</p>												
2.3	<p>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)</p>	<p>In case HUDA supply water is not made or the supply made is inadequate then the water shall be arranged through tankers.</p> <p>Total Water Requirement: 408 KLD</p>												
2.4	<p>How much of the water requirement can be met from the recycling of treated wastewater? (Give the details of quantities, sources and usage)</p>	<p>The total treated water of 241 KLD shall be generated from the STP which shall be reused in flushing, D.G &amp; HVAC Cooling, gardening &amp; misc. purposes within the project premises. Approx. 59.08% of total water requirement, will be met by recycled water.</p>												
2.5	<p>Will there be diversion of water from other users? (Please assess the impacts of the project on other existing uses and quantities of consumption)</p>	<p>There will not be any substantial effect on water demand of this region as the development will be done as per the development plan of the area.</p>												



2.6	<p>What is the incremental pollution load from wastewater generated from the proposed activity?</p> <p>(Give details of the quantities and composition of wastewater generated from the proposed activity)</p>	<p>The total waste water generation from the project will be 268 KLD which will be treated in in-house STP of capacity 320 KLD. 241 KLD of the treated water will be reused for flushing, gardening, DG cooling, HVAC cooling purposes. 100% of treated water generated will be recycled for reuse. This will be a zero-discharge complex.</p>
2.7	<p>Give details of the water requirements met from water harvesting? Furnish details of the facilities created.</p>	<p>4 number of rain water harvesting pits shall be provided at site. (Details of Rain Water harvesting pits are proposed given in given in Environment management plan).</p>
2.8	<p>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?</p>	<p>After construction of commercial Cum Office Complex, the surface run off will be used to recharge the ground water level.</p> <p>No, it will not aggravate the problem of flooding or water logging in any way, rather will reduce the same.</p>
2.9	<p>What are the impacts of the proposal on the ground water? (Will there be tapping of ground water; give the details of ground water table, recharging capacity, and approvals obtained from competent authority, if any)</p>	<p>No Ground water extraction will be done. However, ground water recharging is proposed through rain water harvesting scheme, so, there will be either no impact or a positive impact on ground water levels.</p>
2.10	<p>What precautions/ measures are taken to prevent the run-off from construction activities polluting land &amp; aquifers?</p>	<p>During the construction phase, runoff from the construction site is not allowed into the roadside. It is collected in a tank &amp; after pre-treatment it is reused for sprinkling, etc.</p>

	(Give details of quantities and the measures taken to avoid the adverse impacts)	
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)	During construction phase, Adequate measures will be taken to channelize such storm water and the same shall be collected in a tank & after pre-treatment it will be reused for sprinkling etc. During operation phase Storm water, will be channelized to 4 no. of rainwater harvesting pits proposed within the project site.
2.12	Will the deployment of construction labourers particularly in the peak period lead to unsanitary conditions around the project site (Justify with proper explanation)	Mobile toilets will be provided for labourers during construction period. The waste shall be disposed off to septic tank via soak pit.
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)	Waste water during construction phase from labours shall be discharged into septic tanks followed by soak pit.  During operation phase 268 KLD of waste water will be treated in the proposed STP. of 320 KLD of SAFF technology. 241 KLD of treated water, will be reused. 100% of treated water generated will be recycled for reuse. This will be a zero-discharge complex.
2.14	Give details of dual plumbing system if treated waste used is used for flushing of toilets or any other use.	Dual Plumbing line will be provided in the project for reuse of treated water.

### 3. VEGETATION

3.1	Is there any threat of the project to the biodiversity? (Give a description of the local ecosystem with its unique features, if any)	<u>Core Zone:</u> No vegetation exists at site. <u>Buffer Zone:</u> There are no wild life sanctuaries within 10 Km radius of the project site. Neither any rare or endangered species have been recorded in the project influence area.
3.2	Will the construction involve extensive clearing or modification of vegetation? (Provide a detailed account of the trees & vegetation affected by the project)	No vegetation exists at 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 kind of impact of this project on site features. The Shelter belt for the proposed project will be planned to provide a clean, healthy and beautiful green environment for the people to live in within the proposed project site. Within the proposed project site shelter belt area shall be designed to achieve a blend between modern building and various species of plants, shrubs to create a clean, healthy and aesthetic environment to the visitors of these buildings. To minimize the impact, the provision of plantation area of 3997.87 sq. m area, with lawns, ornamental plants and trees shall be provided.

### 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.	<u>Core Zone:</u> There will not be any type of displacement or any other effect on the local fauna due to proposed project activities. <u>Buffer Zone:</u> There are no wild life sanctuaries within 10 km radius of the project site.
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4.2	Any direct or indirect impacts on the avifauna of the area? Provide details.	As there is no distinct plantation at site, hence no avifauna exist at site hence, however, proper landscaping shall be plan to provide a clean, healthy and beautiful green environment for the population. Common native variety of trees and ornamental flowering species will be planted in the green space which will attract avifauna & hence will have direct positive impact on the local avifauna & this will 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	<p>Will the project increase atmospheric concentration of gases &amp; result in heat islands?</p> <p>(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)</p>	<p>The traffic will increase due to operation of project. Increased traffic generation of vehicles due to project will not cause significant increase in atmospheric concentration of gases and do not result in heat island formation.</p> <p>Tree plantation in the project will be provided such that the impact of air pollution shall be minimized.</p> <p>3 D.G. Sets of capacity 4X500 KVA, 3X2000 KVA will be installed in the project which will be operated during power cut only.</p>
5.2	<p>What are the impacts on generation of dust, smoke, odorous fumes or other hazardous gases? Give details in relation to all the meteorological parameters.</p>	<p>Fixed sprinkling system to control dust emissions from Construction &amp; Demolition. Smoke will be generated from the operation of DG sets. Proper emission standards will be maintained as per CPCB guidelines.</p>
5.3	<p>Will the proposal create 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 &amp; exit to the project site.</p>	<p>The optimum parking provision will be proposed at various levels. Hence, there will be no shortage of parking space for vehicles. Total parking provision of project is 1145 ECS.</p>
5.4	<p>Provide details of the movement patterns with internal roads, bicycle tracks, pedestrian pathways, footpaths etc., with areas under each category.</p>	<p>Maximum capacity of parking shall be provided on basement area, surface area and a proper route shall be provided for the traffic movement as well as pedestrian movement.</p>
5.5	<p>Will there be significant increase in traffic noise and vibrations? Give details of the sources and the measures proposed for mitigation of the above.</p>	<p>During construction, noise barriers shall be installed to reduce traffic noise &amp; vibrations and during operation Shelter belt shall be developed within the Complex that will mitigate the traffic noise. Proper care shall be taken during design that there will not be any increase in traffic</p>

		<p>noise by providing one-way traffic movement, hence no conjunction will cause, and hence, no honking within the Complex will be maintained.</p> <p>The foundation shall be made very hard and paved with rubber flooring to minimize the vibration, also all other measures shall be adopted during designing that there will not be any causes of vibrations during the traffic density.</p>
5.6	<p>What will be the impact of DG sets and other equipment on noise levels and vibration in and ambient air quality around the project site? Provide details.</p>	<p>There would be slight impact of D.G. Sets on noise levels, vibration and in ambient air quality around the project site.</p> <ol style="list-style-type: none"> <li>1. All the D.G. Sets of the proposed project would be acoustically enclosed.</li> <li>2. Stack height as per C.P.C.B. norms to reduce the impacts on air quality around the project site will be provided</li> <li>3. The noise from D.G. Sets will meet the desired standard as per C.P.C.B guidelines. Low Sulphur fuel will be used to run these D.G. Sets.</li> <li>4. Vibration pads will be used in DG sets to minimize the vibration effect.</li> </ol>

## 6. AESTHETICS

6.1	<p>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?</p>	<p>The open land does not have any scenic amenity or beauty. Construction of the project will increase the beauty of the area by having proper landscaping.</p> <p>Yes, all considerations have been taken by the proponents.</p>
6.2	<p>Will there be any adverse impacts from new constructions on the existing structures? What are the considerations taken into account?</p>	<p>No existing structure exists at the site so there is no need of any consideration.</p>

6.3	<p>Whether there are any local considerations of urban form &amp; urban design influencing the design criteria? They may be explicitly spelt out.</p> <p>Are there any anthropological or archaeological sites or artifacts nearby?</p> <p>State if any other significant features in the vicinity of the proposed site have been considered.</p>	<p>There are no typical urban form &amp; urban design influencing the design criteria.</p> <p>No there is no anthropological or archaeological site or artifacts near the site.</p> <p>All significant features will be consider.</p>
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## 7. SOCIO-ECONOMIC ASPECTS

7.1	<p>Will the proposal result in any changes to the demographic structure of local population? Provide the details.</p>	<p>The proposed project is a Commercial Cum Office Complex &amp; thus there will be influx of population in the form of hotel guests, staffs &amp; visitors. Thus, there will be some change in the demographic structure of the area.</p>
7.2	<p>Give details of the existing social infrastructure around the proposed project.</p>	<p><b>Hospital:</b></p> <p>Paras Hospital: 2.0 Km SW Max Hospital: 2.0 km W Paras Hospital: 1.32 Km SW Medicity Hospital: 6.09 Km W</p> <p><b>Places of worship:</b></p> <p>Temple at Chakkarpur : 2.0 Km NW</p> <p><b>Colleges:</b></p> <p>School DLF Phase 1, Sector E-1.0 Km NE DAV Public School-4.5 Km SW</p> <p><b>Post Offices:</b></p> <p>Post office at Sector 18-4.0 Km NW Post office at Wazirabad- 3.0 Km S</p>

		<b>Banks:</b> ICCI Bank ATM sector 42-0.5 Km SW J & K Bank, Vijaya Bank Sector E- 0.5 Km NW
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 proposed project will be constructed within the designated site as per the defined building by-laws of government authority. There is no sacred site or cultural heritage site within vicinity of proposed project; hence no adverse impacts are 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	Embodied energy is the energy consumed by all of the processes associated with the production of a building material, from the mining and processing of natural resources to manufacturing, transport and product delivery. Choices of materials and construction methods can significantly change the amount of energy embodied in the structure of a building, as embodied energy content varies enormously between products and materials.												
		<table><tr><th></th><th>Building Material</th><th>Energy Efficient Building material used along with other building material</th><th>Energy Embodied</th></tr><tr><td>Foundation</td><td>Concrete, Pillar, Beam, Concrete Block, Bricks and Stone</td><td><ul style="list-style-type: none"><li>• Use of lightweight concrete (aluminium powder added to lime produces a lightweight cementation material).</li><li>• Ready-mix concrete or high-volume fly ash concrete or pozzolana material Blended Portland cement (BPC) concrete for construction will be used.</li></ul></td><td><ul style="list-style-type: none"><li>• Low</li><li>• Low</li></ul></td></tr><tr><td>Wall</td><td>Bricks &amp; ACC blocks  Stone Cladding, Plaster, Bricks</td><td><ul style="list-style-type: none"><li>• Clay fly ash burnt bricks</li><li>• Fly ash sand lime bricks</li><li>• Precast stone blocks (waste stone pieces with lean cement concrete, obliterates plaster)</li><li>• Autoclave Cellular Concrete (ACC-a</li></ul></td><td><ul style="list-style-type: none"><li>• Low</li><li>• High</li><li>• Low</li><li>• High</li></ul></td></tr></table>		Building Material	Energy Efficient Building material used along with other building material	Energy Embodied	Foundation	Concrete, Pillar, Beam, Concrete Block, Bricks and Stone	<ul style="list-style-type: none"><li>• Use of lightweight concrete (aluminium powder added to lime produces a lightweight cementation material).</li><li>• Ready-mix concrete or high-volume fly ash concrete or pozzolana material Blended Portland cement (BPC) concrete for construction will be used.</li></ul>	<ul style="list-style-type: none"><li>• Low</li><li>• Low</li></ul>	Wall	Bricks & ACC blocks  Stone Cladding, Plaster, Bricks	<ul style="list-style-type: none"><li>• Clay fly ash burnt bricks</li><li>• Fly ash sand lime bricks</li><li>• Precast stone blocks (waste stone pieces with lean cement concrete, obliterates plaster)</li><li>• Autoclave Cellular Concrete (ACC-a</li></ul>	<ul style="list-style-type: none"><li>• Low</li><li>• High</li><li>• Low</li><li>• High</li></ul>
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				lightweight, precast building material) will be used. <ul style="list-style-type: none"> <li>• Plaster</li> </ul>	<ul style="list-style-type: none"> <li>• High</li> </ul>
		Roof	RCC Slab, Mud Phuska and Clay Tile.	<ul style="list-style-type: none"> <li>• Using roofing sheets, using recycled aluminium.</li> </ul>	<ul style="list-style-type: none"> <li>• Low</li> </ul>
		Finishing	Plaster, Paints,	<ul style="list-style-type: none"> <li>• Rice husk board</li> <li>• Jute stalk board panels</li> <li>• Cement bonded composite paneling</li> <li>• Products utilizing industrial waste, agricultural waste, such as fibrous gypsum plaster boards.</li> <li>• paint/epoxy resin paint for external surfaces.</li> </ul>	<ul style="list-style-type: none"> <li>• Low</li> <li>• Low</li> <li>• High</li> <li>• Low</li> <li>• high</li> </ul>
		Flooring	Stone, Marble	Tiles will be used  Particle boards will be used	Low  High
		Windows and doors	Wood	<ul style="list-style-type: none"> <li>• Aluminium will be used</li> <li>• Medium density fiberboard – doors and windows</li> <li>• Glass</li> </ul>	<ul style="list-style-type: none"> <li>• High</li> <li>• High</li> <li>• High</li> </ul>
		Footpath	Concrete,	Fly ash block and construction debris.	Low
		Boundary Wall	Bricks, Cement, Sand, POP	Fly ash blocks	Low
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, it will be minimized by covering material by the tarpaulin and ensuring PUC certificate of vehicles and good condition silencers. The construction material will be bought by local nearby market thereby transportation will be reduced. For noise, no honking zone will be maintained.			

8.3	Are recycled materials used in roads and structures? State the extent of savings achieved?	Yes, Following Recyclable waste will be used in roads <ul style="list-style-type: none"> <li>Cement jute bags, plastic bags etc. will be used in roads (Energy Saving: 15-20%)</li> <li>Construction debris like Concrete will be recycled and will be used in parking area and road area (Energy Saving: 20-30%).</li> <li>Sub Stratum removed during foundation &amp; excavation will be used for filling &amp; making pathways (Energy Saving: 20-30%).</li> <li>Brick work wastage will be used for pavements and parking area (Energy Saving: 40%).</li> <li>Cut Tiles &amp; chips will be used in creating pathways in the landscape area &amp; rest will be sent to the construction &amp; demolition facility (Energy Saving: 20-25%).</li> <li>Fly-ash mixed cement, concrete shall be used (Energy Saving: 5-10%).</li> </ul>
8.4	Give details of the methods of collection, segregation & disposal of the garbage generated during the operation phases of the project.	The solid waste will be disposed off as per Municipal Solid Waste (Management and Handling) Rules, 2016. Details are given in Environment Management Plan.

## 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- 13000 KW Source of Power- Dakshin Haryana Bijli Vitran Nigam (DHBVN) Back-Up sources- D.G. Sets of capacity 4X500 KVA, 3X2000 KVA Fuel-ultra- low sulphur To Minimize energy consumption following measures shall be adopted. <ul style="list-style-type: none"> <li>Energy Efficient Tube Lights (T-5) with high frequency ballast shall be used.</li> <li>All cables shall be debated to avoid heating during use. This also indirectly reduces losses and imposes reliability.</li> <li>Power factor shall be maintained 0.9 or higher. This will reduce electrical power distribution losses in the installation.</li> <li>Transformer will be having efficiencies as per ECBC Norms.</li> <li>Solar conservation measures shall be provided.</li> <li>1% of electric light shall be provided by Solar.</li> </ul>
9.2	What type of and capacity of power back-up do you plan to provide?	DG Sets: 4X500 KVA, 3X2000 KVA Type of power backup: Ultra Low Sulphur Diesel Generator.

9.3	What are the characteristics of the glass you plan to use? Provide specifications of its characteristics related to both short wave and long wave radiation?	Double reflective glass will be used.
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 shall be optimized thorough 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 shall be designed to maximize the potential for use of solar lighting per day devices. Yes, solar lights shall be used.
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 effected?	Solar Measures shall be adopted to provide shading devices for windows and roof which would effectively reduce heating up of building envelope. Louvers and sunshades will be used around windows in order to protect from direct sunlight. Roofs will be painted with reflective paints with solar reflectance ranging from 0.3-8.9. This will result in less absorption of sunlight causing 40% back reflection and less heating of building structure during summer season. This will effectively reduce the heat load of the building envelope.

9.7	<p>Do the structures use energy-efficient space conditioning, lighting and mechanical systems? Provide technical details.</p> <p>Provide details of the transformers and motor efficiencies, lighting intensity and air-conditioning load assumptions?</p> <p>Are you using CFC and HCFC free chillers? Provide specifications</p>	<p>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 envelop material. Uses of incandescent lamp and halogen lamps have been avoided and energy efficient LED light shall be used for all common area.</p> <p>The diesel generator sets shall 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 3–Mechanical Ventilation. Lighting intensity will be done as per the National Building Code Guidelines.</p> <p>Yes, we will use CFC and HCFC free chillers.</p>																								
9.8	<p>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 &amp; inversion effects?</p>	<p>No significant effect is envisaged on the surrounding environment of 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.</p>																								
9.9	<p>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.</p>	<table><thead><tr><th>S. No</th><th>BUILDING MATERIAL PROPOSED WITH U &amp; R VALUES</th><th>'R' Values (in Sq m. Deg C/ Watts)</th><th>'U' Values (in Watts/ Sq m. Deg C)</th><th>Solar Heat Gain Fctor</th></tr></thead><tbody><tr><td>1.</td><td><b>Wall</b> Brick &amp; ACC Blocks wall, both side thick sand cement plaster with insulation.</td><td>2.28</td><td>0.44</td><td>0.11</td></tr><tr><td>2.</td><td><b>Roof</b> RCC slab with mud phuska &amp; clay tiles with insulation.</td><td>2.04</td><td>0.49</td><td>0.11</td></tr><tr><td>3</td><td><b>Double reflective Glass</b></td><td>≥0.33</td><td>≤3</td><td>0.11</td></tr></tbody></table>	S. No	BUILDING MATERIAL PROPOSED WITH U & R VALUES	'R' Values (in Sq m. Deg C/ Watts)	'U' Values (in Watts/ Sq m. Deg C)	Solar Heat Gain Fctor	1.	<b>Wall</b> Brick & ACC Blocks wall, both side thick sand cement plaster with insulation.	2.28	0.44	0.11	2.	<b>Roof</b> RCC slab with mud phuska & clay tiles with insulation.	2.04	0.49	0.11	3	<b>Double reflective Glass</b>	≥0.33	≤3	0.11				
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9.10	<p>What precautions &amp; safety measures are proposed against fire hazards? Furnish details of emergency plans.</p>	<p>The basic system of Fire Fighting shall be designed as per the provisions of the National Building Code 2016</p>																								

		<p><b>Fire Safety:</b></p> <p>The building materials shall be of appropriate fire resistance standards. Further, design shall include provisions for the following:</p> <ul style="list-style-type: none"> <li>◆ The electrical systems shall be provided with automatic circuit breakers activated by the rise of current as well as activated by over current.</li> <li>◆ Fire detection system.</li> <li>◆ Fire alarm system at appropriate places.</li> <li>◆ Means of escape</li> <li>◆ Access for fireman</li> <li>◆ Adequate fire-fighting requirement shall be taken into account while designing the electrical distribution system.</li> <li>◆ Emergency Lighting:</li> <li>◆ The emergency lights operated on battery power should be provided at appropriate locations such as corridors, common area, staircase, exit and entrance doors, parking etc.</li> </ul>
9.11	If you are using glass as wall material provides details and specifications including emissive and thermal characteristics.	Double reflective glass will be used.
9.12	What is the rate of air infiltration into the building? Provide details of how you are mitigating the effects of infiltration.	All the windows and doors will be alright quality, hence we don't foresee any air infiltration.
9.13	To what extent the non-conventional energy technologies are utilized in the overall energy consumption? Provide details of the renewable energy technologies used.	Solar energy will be used inside the project in form of solar lights and solar water heaters.

## 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	Environment Management Plan is given in Annexure-III
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	<p>the construction, operation and the entire life cycle to minimize adverse environmental impacts as a result of the 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.</p>	
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