FORM 1

w.r.t.

EXPANSION OF GROUP HOUSING PROJECT "THE MELIA"

At

VILLAGE-MOHAMMADPUR GUJJAR SECTOR-35, SOHNA GURGAON, HARYANA

For

M/S. DSS BUILDTECH PRIVATE LIMITED

May, 2018

Schedule: 8 (b), Category: B

QCI Certificate no. NABET/EIA/1619/RA 0064

Prepared By

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CONTENTS

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FORM- I

(I) Basic Information

S. No.	Item	Details
1.	Name of the project/s	Expansion of Group Housing Project
2.	S. No. in the schedule	8 (b)
3.	Capacity/area/length/tonnage to be handled/command area/lease area/number of wells to be drilled	Total Plot Area = 70,455.77m^2 (17.41acres) Built Up Area = **1,57,562.486** m^2
4.	New/Expansion/Modernization	Expansion
5.	Existing Capacity/Area etc.	Existing Built-up area = 1,52,000 m^2 (as per accorded EC)
6.	Category of Project i.e. 'A' or 'B'	Category B
7.	Does it attract the general condition? If yes, please specify.	No
8.	Does it attract the specific condition? If yes, please specify.	No
9.	Location Plot/Survey/Khasra No. Village Tehsil District State	**Latitude:** 28 16 55.59 N **Longitude:** 77 03 26.64 E Mohammadpur Gujjar Gurugram Gurugram Haryana

10.	Nearest railway station/airport along with distance in kms.	**Nearest Railway Station:** Garhi Harsaru Railway Station is about 21.80km (NW) **Nearest Airport:** IGI Airport (Approx. 29 km, N) **(Source of information: - Google Earth Image).**
11.	Nearest Town, city, District Headquarters along with distance in kms.	Project site lies in Sector 35, Gurugram, Haryana
12.	Village Panchayats, Zilla Parishad, Municipal Corporation, Local body (complete postal addresses with telephone nos. to be given)	C-1,Info city sector 34 NearHero Honda Chowk, Gurugram , Haryana
13.	Name of applicant	M/s DSS Buildtech Pvt. Ltd.,
14.	Registered Address	506, Time Square Building, B block, Sushant Lok, Phase 1, Gurgaon
15.	Address for correspondence : Name Designation (Owner/Partner/CEO) Address Pin Code Telephone No. Fax No. E-mail	 Paras Kumar Jain Director, M/s DSS Buildtech Pvt. Ltd., 506, Time Square Building, B block, Sushant Lok, Phase 1, Gurgaon 9810605575 parasjain@silverglades.com
16.	Details of Alternative Sites examined, if any. Location of these sites should be shown on a toposheet.	No

17.	Interlinked Projects	No
18.	Whether separate application of interlinked project has been submitted?	No
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?	No No No
22.	Whether there is any Government Order/Policy relevant/relating to the site?	1. NBC Guidelines, 2016 2. Haryana Bye Laws
23.	Forest land involved (hectares)	No Forest Land
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 relevance	No

	with the project.	

(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**	Land has been issued by DTCP for Group Housing purpose according to Gurugram Master Plan-2031.
1.2	Clearance of existing land, vegetation and buildings?	**No**	The construction of project does not require any clearance of existing Land, Vegetation & Building.
1.3	Creation of new land uses?	**No**	Project is an Expansion to the earlier EC, hence no new creation of land uses
1.4	Pre-construction investigations e.g. bore houses, soil testing?	**Yes**	Soil investigation has been done during the study.
1.5	Construction works?	**Yes**	All construction activities will be confined within the project premises; there will be no physical changes outside the project boundary.
1.6	Demolition works?	**No**	Project site is vacant land. Demolition is not required.
1.7	Temporary sites used for construction works or housing of construction workers?	**Yes**	All the construction activity including stocking of raw materials will be confined within the project site only. No temporary

			labour hutments are proposed. Local labors from nearby area will be hired. Sanitation facilities will be developed at site.
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations	**Yes**	Excavation will be carried out for foundation of buildings and basements. The excavated soil will be used in backfilling and other area development activities.
1.9	Underground works including mining or tunneling?	**No**	No underground works including mining/ tunneling will be undertaken except excavation of earth.
1.10	Reclamation works?	**No**	No reclamation work required.
1.11	Dredging?	**No**	No dredging required.
1.12	Offshore structures?	**No**	No offshore structures required.
1.13	Production and manufacturing processes?	**No**	No production/manufacturing process involved as the project is Group Housing Project
1.14	Facilities for storage of goods or materials?	**Yes**	Raw material will be stored at site in a covered area. Cement will be separately stored under cover in bales. Sand will be stacked neatly under tarpaulin cover. Bricks and steel will be laid in open.
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	**Yes**	**Solid Waste:** The solid waste generated from the project will be in the form of: **Construction Waste:** Left over cement and mortars, cement

			concrete blocks, aggregate, sand and other inorganic material were recycled and reused as granular subbase (GSB) layer of pavement. Earth rendered surplus from the excavation will be utilized in the embankment works. **Operational Phase:** The total solid waste (EC accorded + Expansion) generated from Group Housing project is estimated to be approx. 3537.862 kg per day (@ 0.25 kg per capita per day for office staff, operation/maintenance staff/security staff and workers, 0.5 kg per capita per day for residents and Landscape waste (@ 0.2 kg/acre/day). Solid wastes generated will be segregated into biodegradable (waste vegetables and foods etc.) and non-biodegradable (papers, cartons, thermocol, plastics, glass etc.) components and collected in separate bins. The biodegradable organic wastes will be disposed by local vendors. Recyclable and non-recyclable wastes will be disposed through Govt. approved agency. **<u>Liquid Effluents:</u>**

			Construction Phase: During construction phase, sewage will be treated and disposed through septic tanks with soak pits. **<u>Operational Phase:</u>** The waste water in operation phase will be treated in an onsite STP and treated effluent will be reused for flushing, horticulture etc
1.16	Facilities for long term housing of operational workers?	**No**	Local labourers will be hired from nearby areas during construction phase. So, there will be no facilities for long-term housing of operational workers.
1.17	New road, rail or sea traffic during construction or operation?	**No**	The project site is well connected through SH-8 which is 0.60 km (NW) away from project site. Only internal roads; paths will be developed for vehicular movements for transportation of construction material during construction phase whereas internal tracks and paths will be developed for traffic circulation (to avoid any congestion) during operational phase.
1.18	New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc?	**No**	The project site is well connected through SH-8 which is 0.60 km (NW) away from project site. Only internal roads; paths will be developed for vehicular movements for transportation of construction material during construction

			phase whereas internal tracks and paths will be developed for traffic circulation (to avoid any congestion) during operational phase.
1.19	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?	**No**	There will be no need for diversion or closure of existing traffic routes.
1.20	New or diverted transmission lines or pipelines?	**No**	There will not be any new/diverted transmission lines or pipelines around the project.
1.21	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers?	**No**	No impoundment, damming, culverting, realignment or other changes to the hydrology of surface watercourses.
1.22	Stream crossings?	**No**	There are no streams running across the site.
1.23	Abstraction or transfers of water form ground or surface waters?	**Yes**	No Ground water extraction will be done
1.24	Changes in water bodies or the land surface affecting drainage or run-off?	**Yes**	Runoff will increase due to increased paved surface. However, increased runoff will be managed by well-designed rainwater harvesting system and storm water management plan.
1.25	Transport of personnel or materials for construction, operation or decommissioning?	**Yes**	During the construction phase, about **15-**20 trucks are estimated per week. Adequate parking space nearby the project site for loading and unloading of materials will be provided. Adequate parking space (1760 ECS) will be provided for operational phase to the residential occupants and commercial

			purpose in the premises.
1.26	Long-term dismantling or decommissioning or restoration works?	**No**	No Long term dismantling or decommissioning or restoration works will be involved.
1.27	Ongoing activity during decommissioning which could have an impact on the environment?	**No**	None
1.28	Influx of people to an area in either temporarily or permanently?	**No**	Local labourers from nearby area will be employed during the construction phase. In the operation phase, most of the occupants will be from the surrounding areas. Hence, the project led to a redistribution of occupants within the city. Thus, there will be no significant influx of people was envisaged.
1.29	Introduction of alien species?	**No**	The landscaping will be carried out with mainly local species with a few ornamental varieties of flora that are well suited to the local conditions like *Grevillea robusta*, *Cassia fistula*, *Bauhinia varieagata*, etc.
1.30	Loss of native species or genetic diversity?	**No**	There will be no significant impact on the native species or genetic diversity.
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):**

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**	The residential project is as per the Master Plan 2031 issued by HUDA Development Authority.
2.2	Water (expected source & competing users) unit: KLD	**Yes**	During construction phase 854ML of treated water will be provided by STP of HUDA. During operation phase, water supply will be provided through the HUDA. About 415 KLD of fresh water will be required during operation phase of the project.
2.3	Minerals (MT)	**Yes**	Minerals such as sand and aggregates will be required during the construction phase.
2.4	Construction material – stone, aggregates, and / soil (expected source – MT)	**Yes**	All materials for construction will be arranged through select suppliers.
2.5	Forests and timber (source – MT)	**No**	Forest products such as timber produce are not required.
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)	**Yes**	The total demand load is estimated at 6063 KW. Power will be supplied by Dakshin Haryana Bijli Vitran Nigam (DHBVN). Power backup for the Expansion of Group Housing Project will be through 2 no. of DG sets of total capacity 1635 (1 x 1010kVA & 1 x 625 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**	Diesel for DG set will be stored in closed HDPE drums in earmarked locations. It shall also be handled as per The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 and its further amendments.
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 such that there will be no stagnation of water or accumulation of waste. 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**	Socio-economic standard of people will improve due to increased direct and secondary employment opportunities provided by this project. This will lead to better quality of life and will also set a standard for future developments in the area.
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.	**No**	Impacts of this type are not expected.

3.5	Any other causes	**No**	Not Applicable

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**	No such spoil, overburden or mine wastes will be generated
4.2	Municipal waste (domestic and or commercial wastes)	**Yes**	The total solid waste to be generated is approx. 3,537.862 kg/day. Biodegradable waste @60% — 2122.71 kg/day (Waste vegetables and foods and landscape waste, and etc.) Recyclable waste @30% — 1061.35 kg/day (cartons, thermocol, plastics, glass etc.) Inert waste @10% — 353.786 kg/day Total — 3537.862 kg/day
4.3	Hazardous wastes (as per Hazardous Waste Management Rules)	**Yes**	The hazardous wastes along with other wastes in the project will be used oil from DG sets, which is classified as per The Hazardous Waste Category 5.1 as per The Hazardous Wastes (Management, Handling & Transboundary Movement) Rules, 2016.

			Used oil from DG set will be stored in HDPE drums in isolated covered facility. This used oil will be sold to authorized recyclers. Suitable care will be taken so that spills/leaks of used oil from storage are avoided.
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	**No**	The waste water generated from the project site will be treated in an onsite STP.
4.7	Construction or demolition wastes	**Yes**	The construction waste will consist of excess earth and construction debris along with cement bags, steel in bits and pieces, insulating and packaging materials etc. Recyclable waste construction materials will be sold to recyclers. Unusable and excess construction debris will be disposed at designated places in tune with the local norms.
4.8	Redundant machinery or equipment	**No**	Redundant machinery will not be generated.
4.9	Contaminated soils or other materials	**No**	Contaminated soils or other materials will not be generated.
4.10	Agricultural wastes	**Yes**	Landscape wastes of 1.012 kg/day will be generated.
4.11	Other solid wastes	**No**	Not Applicable

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**	The project does not envisage any major air pollution sources except operation of DG set during power failure and vehicular traffic.
5.2	Emissions from production processes	**No**	No production processes involved. Hence, there will be no such emissions.
5.3	Emissions from materials handling including storage or transport	**Yes**	Small quantities of fugitive emissions will be envisaged during transport and handling of materials. Such emissions will be temporary and controlled by the use of sprinkling and other viable techniques.
5.4	Emissions from construction activities including plant and equipment	**Yes**	This will be restricted to the construction phase and the construction site only.
5.5	Dust or odours from handling of materials including construction materials, sewage and waste	**Yes**	Dust will be anticipated during loading and unloading of construction material and excavation of upper earth surface. These will be temporary in nature, which will be controlled by providing water sprinklers. Tarpaulin cover will be provided on stored loose materials to reduce the dust emission.
5.6	Emissions from incineration of waste	**No**	No incineration of wastes is proposed.
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 on site.

5.8	Emissions from any other sources	**No**	Not Applicable

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
6.1	From operation of equipment e.g. engines, ventilation plant, crushers	**Yes**	Source of noise in the operational phase will be from backup DG set (which will be in operation only during power failure) and pumps & motors. All the machinery will be of highest standard of reputed make and will comply with standard.
6.2	From industrial or similar processes	**No**	No industrial processes will be carried out in the project.
6.3	From construction or demolition	**Yes**	Due to various construction activities, there will be short-term noise impacts in the immediate vicinity of the project site. The construction activities included the following noise generating activities: • Concreting, mixing & operation of DG set. • Construction plant and heavy vehicle movement.
6.4	From blasting or piling	**No**	No blasting or mechanized piling will be done.
6.5	From construction or operational traffic	**Yes**	Some noise will be generated from vehicular movement in the construction and operational phase but that will be

			mitigated with green belt.
6.6	From lighting or cooling systems	**No**	No significant noise impact will result from lighting or cooling systems.
6.7	From any other sources	**No**	Not Applicable

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 used oil from DG set will be carefully stored in HDPE drums at isolated storage, and periodically sold to authorized recyclers. All precautions will be taken to avoid spillage from storage as per The Hazardous Wastes (Management, Handling & Transboundary Movement) Rules, 2016.
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of Discharge)	**No**	There wastewater will be treated in an onsite STP and treated effluent will be reused for Flushing, Horticulture & DG Set.
7.3	By deposition of pollutants emitted to air into the land or into water	**No**	The DG Set will be provided with stack of adequate height. Hence dispersion will be achieved and avoid deposition of pollutants in significant concentrations at any single location.
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	**No**	Not Applicable

	sources?		

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**	To deal with any fire related accident, fire fighting facility of single handed hydrant valve, long hose reel, and portable fire extinguisher will be provided.
8.2	From any other causes	**No**	Not Applicable
8.3	Could the project be affected by natural disasters causing environmental damage (e.g. floods, earthquakes, landslides, cloudburst etc.)	**Yes**	The project falls under seismic active Zone IV indicating High damage risk zone. The building will be designed as earthquake resistant and comply with the required IS specifications.

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. utilities, ancillary development or development	**Yes**	Appropriate infrastructure like roads, power supply, waste management and sullage treatment will be developed

	stimulated by the project which could have impact on the environment e.g.: • Supporting infrastructure (roads, power supply, waste or sullage treatment, etc.) • Housing development • Extractive industries • Supply industries • Other	 **No** **No** **No** **No**	within the project site. The project will be developed as per the license obtained from Directorate of Town & Country Planning, Haryana Not Applicable
9.2	Lead to after-use of the site, which could have an impact on the environment	**No**	Not Anticipated
9.3	Set a precedent for later developments	**Yes**	The project will provide good infrastructure and better life style and will set an example for later developments in the areas.
9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects	**No**	Not Applicable

(III) Environmental Sensitivity

S. No.	**Areas**	**Name/ Identity**	**Aerial distance (within 15 km) Proposed project location boundary**
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	**None**	There is no such area within 15 km of project site.

2	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	**Damdama Lake** **Mahendwari Nadi** **Raipur PF**	7 km (ENE) 3 km (E) 5.65 km (S)
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration	None	There is no such area within 15 km of project site.
4	Inland, coastal, marine or underground waters	**Ground Water**	Over exploited category
5	State, National boundaries	**No state boundary exists**	
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	**SH-13**	0.60 km (E) away from the project site.
7	Defense installations	**No**	Not Applicable
8	Densely populated or built-up area	**Mohammadpur Gujjar**	0.75 km (SW)
9	Areas occupied by sensitive man-made land uses *(hospitals, schools, places of worship, community facilities)*	**Civil Hospital** **G.D. Goenka School** **K R Mangalam University** **Signature International School** **Maa Karunamai Mandir** **Devi Mandir** **Govt. Boys Secondary School**	3.40 km (SSE) 1.55 km (S) 1.60 km (SE) 1.75 km (SE) 1.85 km (S) 3.45 km (S) 3.95 km (SSE)
10	Areas containing important, high quality or scarce resources. *(ground water resources, surface*	**Ground Water**	Over exploited category

	resources, forestry, agriculture, fisheries, tourism, minerals)		
11	Areas already subjected to pollution or environmental damage *(those where existing legal environmental standards are exceeded)*	**None**	There are no areas within 15 km which are subjected to pollution or environmental damage.
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*)	**Earthquakes**	The site falls under the zone IV as per the Seismic Zone Map of India and is thus prone to high damage risk zone. Adequate measures will be taken during the construction of the project.

(IV) Terms of Reference for EIA studies Applicable for 8 (b) category Project

The scope of work for preparation of EIA report for the project comprises various steps. The scope of study includes characterization of various components of the existing environmental parameters/variables area namely air, water, land, noise, biological and socio-economic etc. in a study area of 500 m radius in an angular distance from the construction site. The various steps involved in the EIA Study are followings:

- Project description.
- Description of the Environment of the land, air, water, noise and socio-economic components of environment.
- Anticipated Environmental Impacts and Mitigation Measures.
- Preparation of Environmental Management and Monitoring Plan.
- Preparation of Emergency Preparedness Plan.
- Summary and Conclusion.

(I) Project Description

Project description will cover following aspects:

- Location and layout map of the project.

- A map of the study area 500 m from the boundary of the project site delineating the major topographic features such as landuse, drainage location of habitats, major roads, railways industries will be prepared. Approved master plan of the area will be provided.
- A map covering aerial distance of 15 km from the project site delineating environmental sensitive areas as specified in Form-I has been prepared.
- Details of project development, sewage treatment facilities, solid waste disposal facilities, recreational facilities, water supply, DG Set and project implementation schedule.
- Manpower requirement in skilled, semiskilled, unskilled workers, technician, engineers and managers during construction and operation phases.

(II) Description of Environment

Present status of environment covering land, air, water, noise, demography and socio-economic components shall be established through field monitoring and secondary data sources.

(1) Land environment

a) Study of existing land use pattern with respect to habitation, agriculture, forest/plantation cover, habitation, environmentally sensitive areas etc. based on satellite Imagery, ground truth verification and secondary data. These features will be depicted on a map.
b) Topography of the area including slope, landforms and terrain analysis.
c) Physico-chemical characteristics of soil including soil type, porosity, permeability, and primary/nutrients.

(2) Meteorological data

a) Collection of climatological data from IMD for a year.
b) Micrometeorological data with respect to Wind speed, wind direction, temperature, relative humidity, atmospheric pressure and rainfall will be measured and recorded.
c) Preparation of monthly wind roses for one season.

(3) Air environment

a) Data for the air environment for one season (except monsoon) shall be collected with the help of appropriate field studies in an area of 500 m from the project site.
b) Data for ambient air quality shall be collected at four locations. The locations will be selected based on the CPCB norms and local geographical settings. These locations will be shown on a map.
c) Monitoring of ambient air quality shall be carried out for 2.5 µm and 10 µm particulates, SO_2, NO_2, and CO as per Gazette Notification on AAQ.

(4) Noise environment

a) Assessment of noise level at the project site and around the site during daytime and nighttime.

(5) Water environment

a) Assessment of quality of ground water, surface water and municipal water in the study area and comparison with drinking water standard and state PWD specification for construction water.
b) Study of water resources with respect to quantity and preparation of ground water budget including rainwater harvesting.
c) Quantification of water requirement and identification of source for the project.
d) Quantity of Wastewater generated, wastewater treatment requirements as well as reuse and recycling of treated wastewater.

(6) Biological environment

a) Collection of data on existing flora and fauna of the study area.
b) Location of National park and Wildlife sanctuary within 10 km radius from project boundary, if any.
c) Identification of rare and endangered species in the study.

(7) Socioeconomic and health aspects

a) Study of sociological and cultural environment of study area with respect to demographic structure, literacy, average household size, sex ratio and social structure.
b) Study of infrastructure facilities in the study area.
c) Study of economic status of population and assessment of economic contribution by the construction.

(III) Anticipated Environmental Impacts and Mitigation Measures:-

Anticipated Environmental Impacts and Mitigation Measures impact of proposed activities on various components of the environment shall be assessed.

a) Land Environment: Impact will be assessed with respect to natural drainage, soil erosion, loss of productive soil etc. Mitigation measures will include soil erosion control plan, details related to preservation of top soil.

b) Air Environment: Impact on ambient air quality during construction and operation of the project will be predicted using suitable model. Mitigative measures for air pollution control including fugitive dust control, DG set stack height, greenbelt development will be described.

c) Water Environment: Impact of construction and operation on surface and ground water will be assessed. Details of waste water treatment facilities, reuse of waste water, water conservation and rainwater harvesting to recharge ground water will be included.

d) Noise Environment:

- Assessment of Impact of noise generated from construction equipments during construction phase and due to increased traffic during operation phase of the project will be done.
- Necessary mitigative measures will be suggested.

e) Biological Environment:

- Assessment of impact of construction activities on biological environment will be done.
- Details of landscaping and plantation will be given.

(IV) Environment Management Plan

Environment management plan (EMP) shall be drawn after identification and prediction of the significant impacts and their evaluation. The proposed Environmental Management Plan will describe safeguards and monitoring on following aspects:

- Measures to control air and surface water pollution due to proposed activity. Details of sewage treatment plan, DG set.
- Measures to minimize generation of noise as well as personal protective equipments.
- Solid waste management plan
- Integration of energy conservation measures.
- Environmental monitoring, implementation, organization of setup and feedback mechanism to affect mid-course corrections

Emergency preparedness plan

The emergency preparedness plan shall be incorporated in the report, which will include analysis of risk probability, zone of influence etc. The plan will cover on-site emergency response, establishment setup of emergency control and manpower requirements in emergency operations, details of fire detection, alarm and control system.

EIA Report Format

The EIA Report has been prepared as per prescribed format described in the Gazette Notification, 2006 and amendments.

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 at our risk and cost.

Date 18.05.2018

Place Gurugram

Signature of the Applicant
With Name and Full Address
(Project Proponent/ Authorized Signatory)

NOTE:

1. The Projects involving under Coastal Regulation Zone Notification, 1991 shall submit with the application a C.R.Z map duly demarcated by one of the authorized agencies showing project activities, w.r.t C.R.Z (at the stage of TOR) and the recommendations of the State Coastal Zone Management Authority (at the stage of EC . Simultaneous action shall be taken to obtain the requisite clearance under the provisions of C.R.Z Notification, 1991 for the activities to be located in the CRZ.

2. The Projects to be located within 10 km of the National parks . Sanctuaries, Biosphere Reserves, Migratory Corridors of Wild Animals, the project proponent shall submit the map duly authenticated by Chief Wildlife Warden showing these features vis-à-vis the project location and the recommendations or the comments of the Chief Wildlife Warden thereon (at the stage of EC).

3. All correspondence with the Ministry of Environment And Forests including the submission of application for TOR/ Environmental Clearance, subsequent clarifications, as may be required from time to time, participation in the EAC Meeting on behalf of the project proponent shall be made by the authorized signatory only. The authorized signatory should also submit a document in support of his claim of being an authorized signatory for the specific project.

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FORM 1A

w.r.t.

EXPANSION OF GROUP HOUSING PROJECT "THE MELIA"

At

VILLAGE-MOHAMMADPUR GUJJAR SECTOR-35, SOHNA GURGAON, HARYANA

For

M/S. DSS BUILDTECH PRIVATE LIMITED

May, 2018

Schedule: 8 (b), Category: B

QCI Certificate no. NABET/EIA/1619/RA 0064

Prepared By

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(Accredited by NABL, Recognized by MoEFCC, GoI)

A unit of GRC India

Parvez Kumar Jain

CONTENTS

Parvas Kumar Jain

FORM IA

CHECK LIST OF ENVIRONMENTAL IMPACTS

SECTION 1- LAND ENVIRONMENT

1.1 Will the existing land use get significantly altered from the project that is 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 are submitted). Attach Maps of (i) site location, (ii) surrounding features of the proposed site (within 500 meters) and (iii) the site (indicating levels & contours) to appropriate scales. If not available attach only conceptual plans.

- **No**

The site is earmarked for residential development. It is anticipated that the construction activities of the project will not have an adverse effect on the land use activities in the project area. The development of green belt and other landscaping will enhance the visual aesthetics of the area.

The Nearest Highway is SH-8 which is 0.60 km (E) away from project site. The nearest Railway Station being Garhi Harsaru Railway Station is about 21.80km (NW) away from the project site. The nearest Airport is Indira Gandhi International Airport at 29 km (N) from project site.

The project site is located at Village-Mohammadpur Gujjar, Sector-35, Sohna, District-Gurugram, Haryana. The geographical co-ordinates of project site are 28 16 55.59 N and 77 03 26.64 E.

Google Earth map of 500 m radius around project site are attached as **Annexures** respectively.

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.

- **LAND REQUIREMENT**

The total area of project site is 70,455.77 m^2 (17.41 acres). The detailed area statement along with brief details of the project is provided below in Table 1 to 2:

Table 1: Detailed Area Statement

S. No.	Particulars	Existing (EC Accorded) (m^2)	Expansion (m^2)	Total (Existing, EC accorded +Expansion) (m^2)
1.	Total Plot Area	70,455.77	--	70,455.77
	Net Plot Area	67,915.15	--	67,915.15
2.	Permissible Ground Coverage	23,770.30 (@ 35% of net plot area)	--	23,770.30 (@ 35% of net plot area)
3.	Proposed Ground Coverage	11278.45 (@16.6% of net plot area)	527.76	11,806.21 (@16.75% of net plot area)
4.	**Total Permissible FAR**	**11,8851.51 (@1.74 of net plot area)**	**--**	**1,18,851.51 (@1.75 of net plot area)**
6.	**Total Proposed FAR**	**1,13,522.75 (@1.67 of net plot area)**	**5085.68**	**1,18,608.43 (@1.74 of net plot area)**
7.	**Non FAR**	**38,477.21**	**476.846**	**38,954.056**
	• Services (Balcony, Mumty & Machine Room, etc.)	1,680.756	423.874	2104.63
	• Stilt Area	2,882.664	**52.972**	2,935.636
	• Basement Area	33,913.79	**----**	33,913.79
8.	**Total Built Up Area (6+7)**	**1,52,000**	**5805.566**	**1,57,562.486**
9.	Green Area Proposed	18,882.14 (@26.8% plot area)	1,612.52	20,494.66 (@30.17%)
10.	Maximum Height of the Building (meter)	44.9m	--	44.9m

BUILT-UP AREA BREAK-UP

Table 2: Built-up area break-up

S. No.	Particulars	Existing (EC Accorded) (m^2)	Expansion (m^2)	Total (Existing, EC accorded +Expansion) (m^2)
1.	Total Proposed FAR	**1,13,522.75 (@1.67 of net plot area)**	**5085.68**	**1,18,608.43 (@1.74 of net plot area)**

2.	Non FAR	**38,477.21**	**476.846**	**38,954.056**
	Total Built Up Area	**1,52,000**	**5805.566**	**1,57,562.486**

- **WATER REQUIREMENT**

During operation phase, the source of water supply will be HUDA. The total water requirement is approx. 709 KLD, out of which total domestic water requirement is 563 KLD. The fresh water requirement is approx. 415 KLD and the one time fresh water requirement will be 709 KLD.

- **POWER REQUIREMENT**

The power supply will be supplied by Dakshin Haryana Bijli Vitran Nigam (DHBVN). The total maximum load demand for the Expansion of Group Housing Project will be approx. 6063 kW.

- **POWER BACK UP**

There is provision of 2 no. of DG sets of total capacity 1635 kVA (1 x 1010kVA & 1 x 625 kVA) for power back up in the Expansion of Group Housing Project. The DG sets will be equipped with acoustic enclosure to minimize noise generation and adequate stack height for proper dispersion.

- **CONNECTIVITY**

The Nearest Highway is SH-8 which is 0.60 km (E) away from project site. The nearest Railway Station being Garhi Harsaru Railway Station is about 21.80km (NW) away from the project site. The nearest Airport is Indira Gandhi International Airport at 29 km (N) from project site.

- **PARKING FACILITIES**

Adequate parking 1760 ECS provision will be kept for vehicles parking in the project. Besides this, internal road of sufficient width within the project will facilitate smooth traffic movement.

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 project being a well planned activity will result in organized open spaces and green areas. About 20,484.66 m^2 of the area is earmarked for landscaping i.e. 30.6 % of the total plot area. The biodiversity in the area will increase due to the proposed green areas. The project will have an overall positive impact on the existing land use and will not cause any disturbance to the local ecology. Proposed activity shall have no impact on surroundings.

1.4 Will there be any significant land disturbance resulting in erosion, subsidence & instability? (Detail of soil type slope analysis, vulnerability to subsidence, seismicity etc may be given).

There will be no land disturbance resulting in erosion, subsidence and instability as it is a flat land. The site falls under the zone IV as per the seismic zone map of India and indicating High damage risk zone. The project will be earthquake resistant taking into account the latest provisions of Indian Standards Codes.

1.5 Will the proposal involve alteration of natural drainage system? (Give details on a contour map showing the natural drainage near the project site).

The project will not intersect any natural drainage route. Urbanized stretch and well planned storm water drainage will be designed for internal storm water drainage. Thus, no impact on the natural drainage system is anticipated.

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?)

The earthwork included soil excavation and cutting of the earth will be moved. The cut and fill material in the project site is nearly at par and hence the need for movement of soil to and from the site will not be anticipated.

1.7 Give details regarding water supply, waste handling etc. during the construction period.

Water requirement during construction phase will be met from recycled water from STP of HUDA. Sullage generated during the construction phase will be disposed -off through soak pits. Waste handling during the construction phase will be done by the site contractor whose responsibility lies with collection and storage of construction and demolition waste generated on the site. All construction wastes generated during construction will be used within the site itself for filling the floors, roads, aggregate for mortar etc. to the extent feasible. Remaining will be sent to the agency for proper disposal.

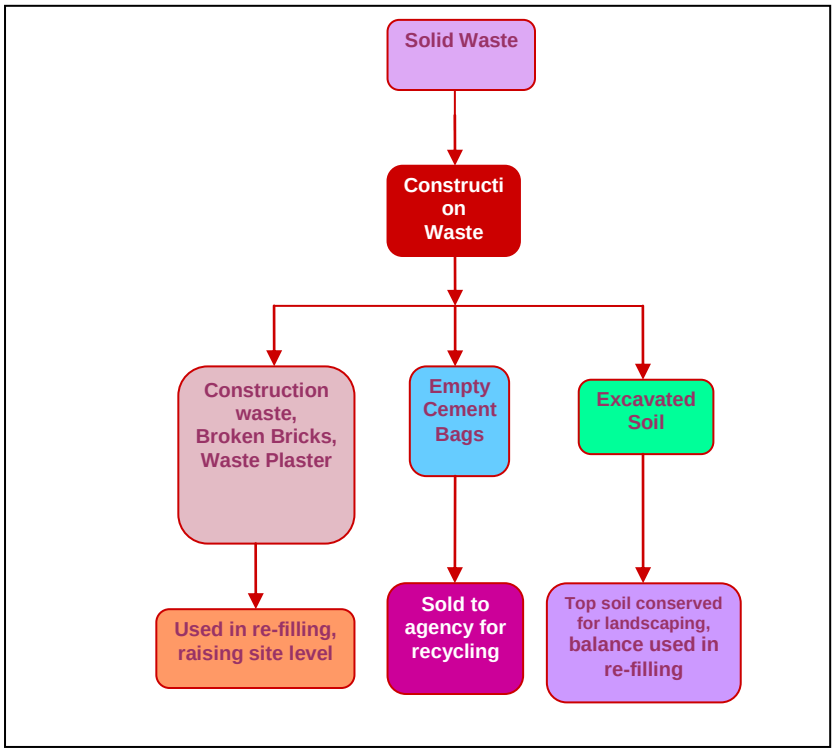


Figure 1: Solid Waste Management Scheme (Construction Phase)

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. The site area is a flat land and the surroundings are characterized by an urbanized stretch. No low lying areas or wetlands are found in the region.

1.9 Whether construction debris & waste during construction cause health hazard? (Give quantities of various types of wastes generated during construction including the construction labor and the means of disposal).

No health hazards are expected during the construction phase. The laborers will be provided with face masks to minimize dust inhalation.

A significant portion of the construction waste and wood scrap generated will be used on the site. The quantity of domestic waste generated was very little, as mostly local laborers will be employed. However, the wastes generated will be collected and disposed by an authorized agency.

SECTION 2- WATER ENVIRONMENT

2.1 Give the total quantity of water requirement for the project with the breakup of requirements for various uses. How will the water requirement be met? State the sources & quantities and furnish a water balance statement.

During operation phase, the source of water supply will be HUDA. The total water requirement is approx. 707 KLD, out of which total domestic water requirement is 563 KLD. The fresh water requirement is approx. 415 KLD and the one time fresh water requirement will be 707 KLD.

Comparative water calculation as per the previous EC and after Expansion is shown in Table 3.

Table 3: Comparative water calculation (EC Accorded + Expansion)

S. No.	Particulars	Value as per EC Accorded (KLD)	Expansion (KLD)	Total (EC Accorded + Expansion) (KLD)
1	Total water Requirement	863	-156	707
2	Domestic Water	492	71	563
3	Fresh Water	512	-97	415
4	Waste Water Generated	643	-225	418

5	**STP**	800	75	875

The daily water requirement calculation is given below in Table 4:

Table 4 : Calculations for Daily Water Demand (EC Accorded + Expansion)

S. No.	Description	Occupancy	Rate of water demand (lpcd)		Total Water Requirement (EC Accorded + Expansion)		
A.	**Domestic Water**						
	Residents:		**Fresh**	**Flushing**	**Fresh**	**Flushing**	**Total**
	•Main Units	4975	@ 65 lpcd	@ 21 lpcd	323	105	**428**
	•EWS Units	880	@ 65 lpcd	@ 21 lpcd	57	19	**76**
	•Service Units	200	@ 65 lpcd	@ 21 lpcd	13	4	**17**
	•Staff (Maintenance, Schools, Commercial, facilities)	688	@15 lpcd	@15 lpcd	10	10	**20**
	•Visitors (Community facilities etc)	2171	@ 5 lpcd	@5 lpcd	11	11	**22**
					414 KLD	**149 KLD**	**563 KLD**
Total Domestic Water = 563 KLD							
B.	**Horticulture**	20,494.66 m^2	7 l/sqm		143 KLD		
C.	**Make up Water for Swimming (127 sqm) Pool**				1 KLD		
Grand Total (A+B) = 707 KLD							

TABLE 5: WASTE WATER CALCULATIONS (EC Accorded + Expansion)

DOMESTIC WATER REQUIREMENT	563 KLD
• Fresh	414 KLD
• Flushing	149 KLD
Waste water generated [@80% fresh + 100% flushing]	331 + 87 = 418 KLD
STP Capacity	505 KL

The water balance diagrams for different seasons are shown below:

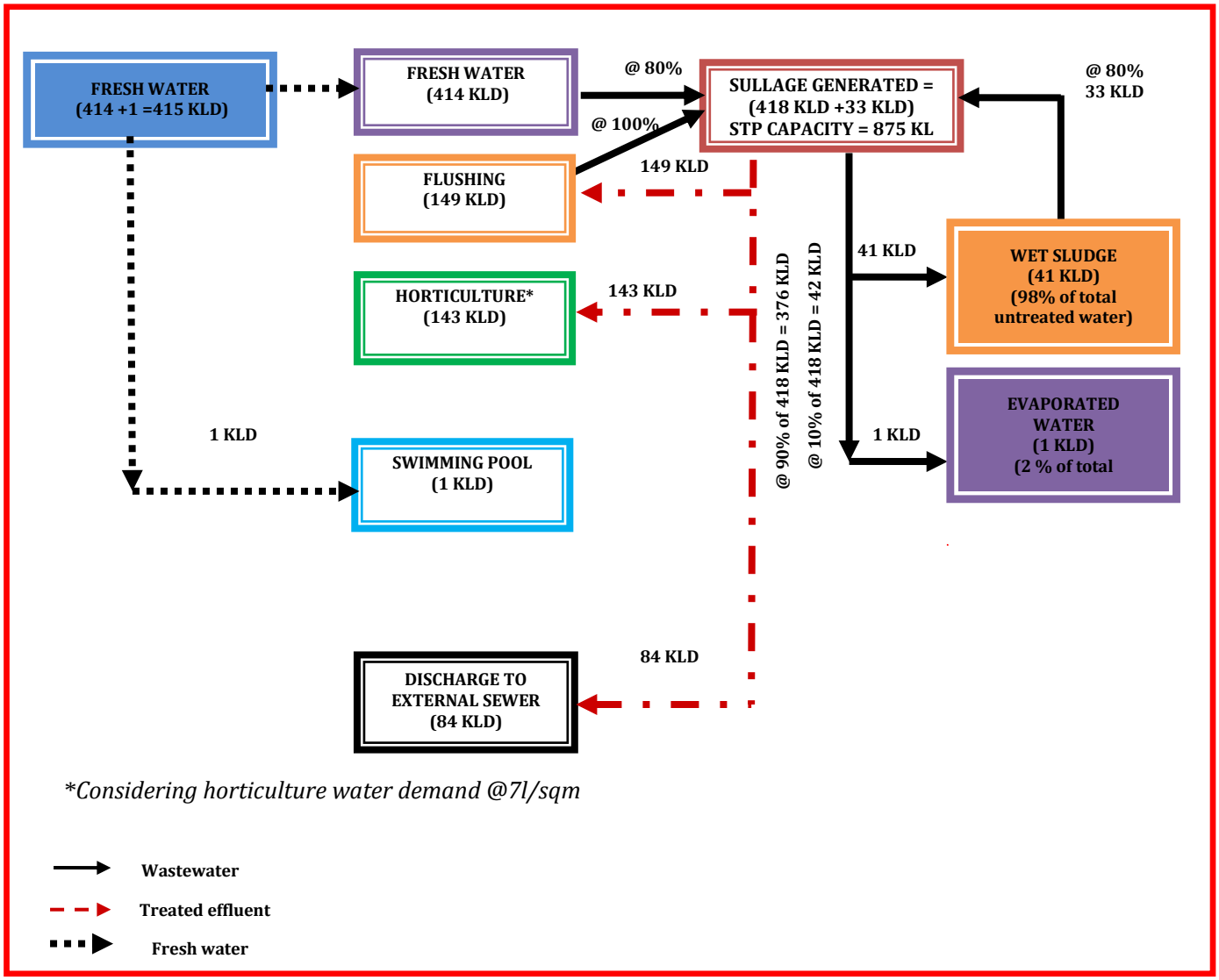


Figure 2: Water Balance Diagram (Summer Season)

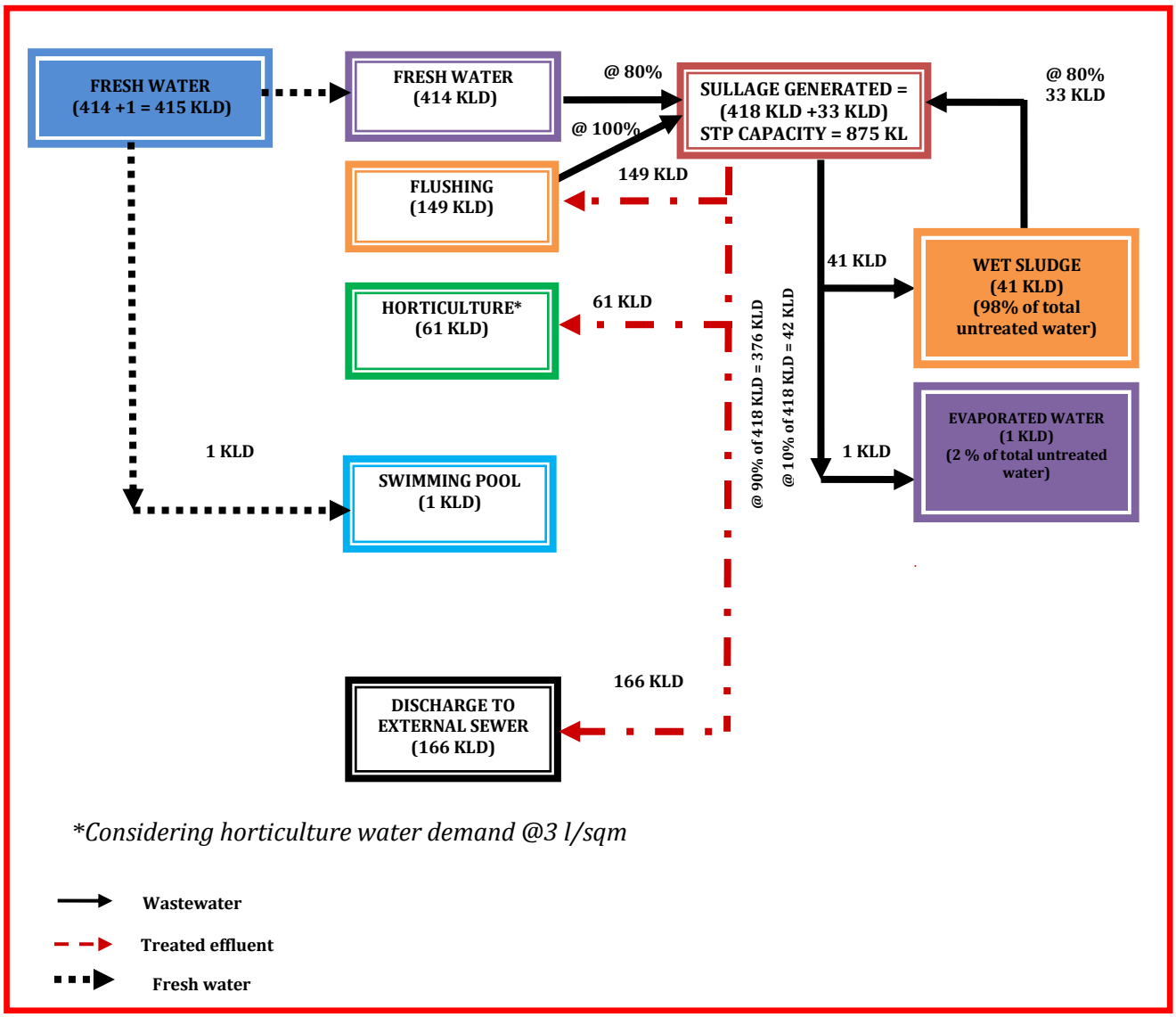


Figure 3: Water Balance Diagram (Monsoon Season)

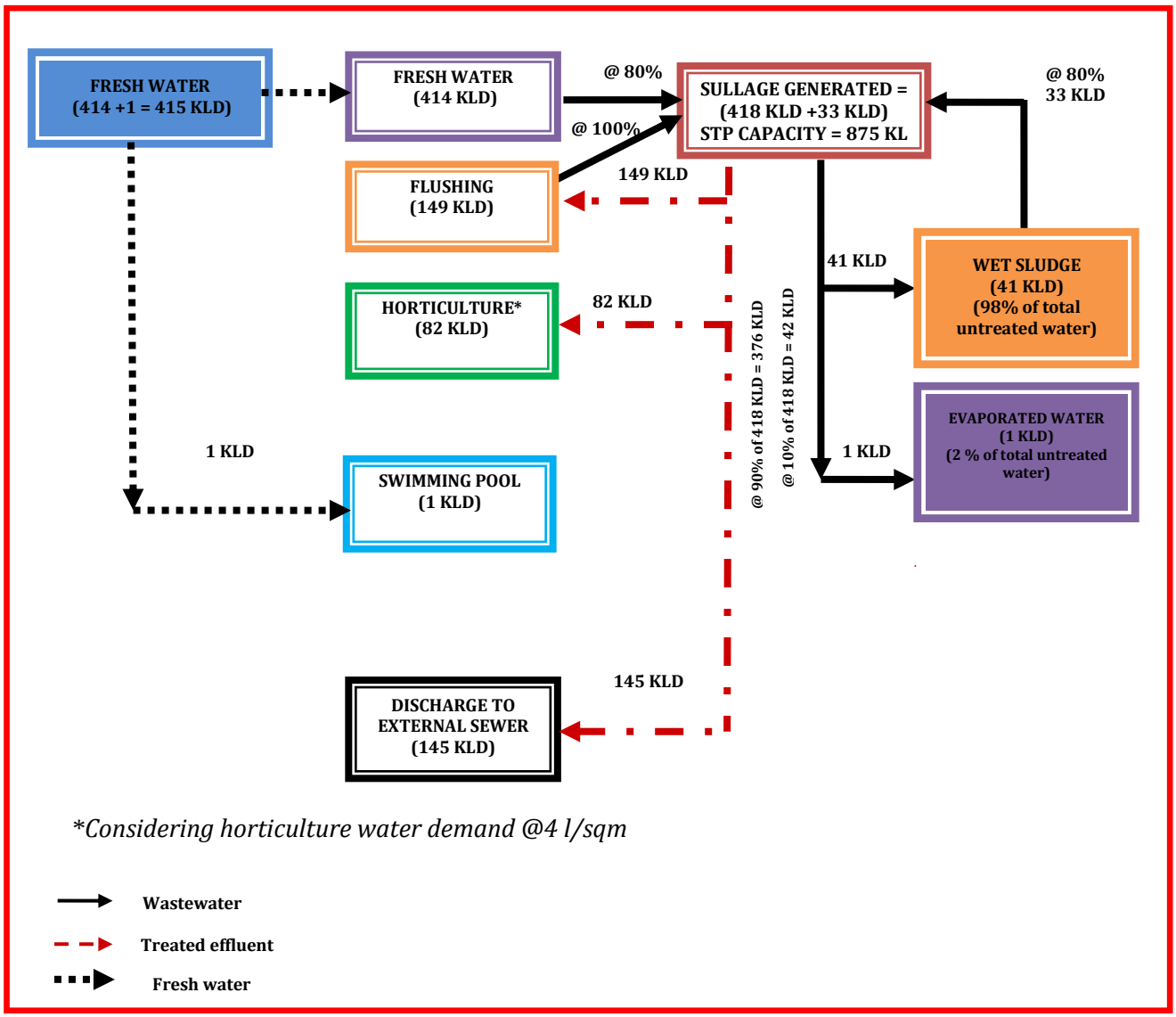


Figure 4: Water Balance Diagram (Winter Season)

Sullage Generation & Treatment

It is expected that the project will generate approx. 418 KLD of wastewater. The wastewater will be treated in onsite STP of 875 KL capacity. The treated effluent will be reused for flushing & horticulture. Surplus treated effluent will be discharged to external sewer.

- 10% of the waste water that is to be treated is removed from the STP in form of sludge as well as vapors.

• Out of this 10%, approx. 98% of the untreated waste water is removed as wet sludge, which is then dewatered by passing through a filter press and extracted water is added back to the collection chamber of the STP. Somewhat around 40% of the moisture of the sludge is retained, and the sludge thus generated is further processed by drying the same on a non-permeable bed, which upon drying can be used as manure in the green area provided within the project site. The wet sludge is generally removed during the processes of primary treatment, secondary treatment and tertiary treatment or scrubbed off of the collection tank.

• Remaining 2% of waste water is evaporated from the system during treatment process and thus cannot be converted into sewage.

2.2 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).

The required water will be met through the HUDA. The total water requirement is approx. 709 KLD.

MBBR TECHNOLOGY

An external sewage network shall collect the sewage from all units, and flow by gravity to the sewage treatment plant.

Following are the benefits of providing the Sewage Treatment Plant in the present circumstances:

- The process has long retention time and can absorb shock load situation.
- Reduced net daily water requirements, source for Flushing and Horticultural purposes by utilization of the treated waste water.
- Reduced dependence on the public utilities for water supply and sewerage systems.
- The process produces a well-oxidized sludge in small quantities only, which can be removed and used as manure.

a. Wastewater Details

(a) Daily load : 418 KLD

(b)	Duration of flow to STP	:	24 hours
(c)	Temperature	:	Maximum 32^{o}C
(d)	pH	:	6.5-8.5
(e)	Colour	:	Mild
(f)	T.S.S. (mg/l)	:	250-400 mg/l
(g)	BOD_5 (mg/l)	:	300-400 mg/l
(h)	COD (mg/l)	:	600-700 mg/l

b. Treated effluent

(a)	pH	:	6.0 to 8.5
(b)	B.O.D.	:	<20 mg/l
(c)	C.O.D.	:	<100 mg/l
(d)	Total Suspended Solids	:	<20mg/l

c. Treatment Technology

MBBR TECHNOLOGY

Moving bed biofilm reactor technology is based on the principle of attached growth process. Raw sewage will be collected under gravity into the equalization tank after allowing to pass through the bar screen. Screens will be provided in screen chambers and it will be manually cleaned by going down to a platform. The bar screen, by removing coarse solids from the sewage help in protecting the raw sewage pump.

Fully submersible centrifugal non clog sewage handling pump will be provided in the collection cum equalization tank to pump the collected waste water to the next MBBR tanks. Automatic level controller will be provided in the tank to turn the pump off at the low water level in the tank and to start the pump when water level is high automatically. Air will be introduced in this tank to prevent any potential foul smell problem & to provide the mixing of wastewater to avoid the sedimentation of solids in this tank. Air Grid used for aeration purpose shall be non-clog.

The sewage collected in equalization tank is pumped the moving bed bioreactor. There shall be two nos. of bioreactors in series for the efficient working and removal of BODs for the

required retention time. The process inside the moving bed bioreactors consists of adding small cylindrical-shaped polyethylene/polypropylene carrier elements in aerated basins to support biofilm growth. The small cylinders are provided with a cross inside the cylinder and longitudinal fins on the outside. The biofilm carriers are maintained in the reactor by the use of a perforated plate with appropriate slot at the tank outlet. Air agitation or mixers are applied in a manner to continuously circulate the packing. The packing may fill 25 to 50 percent of the tank volume. Specific surface area of the packing is about 450-500m^2/m^3 of bulk packing volume. The waste water from first bioreactor flows by gravity through the perforated plate/mesh to the next bioreactor kept in series. Inside the bioreactors, aerobic bacteria grow in an attached growth from around the moving plastic media inside the reactors. The bacteria have to reduce BOD & COD of waste water in the presence of oxygen provided through the air grids located at the bottom of the reactors. The Process does not require any return activated sludge flow or backwashing.

From the bio-reactors, the effluent passes by gravity into the clarifier (Tube Settling Tank). Clarifier will be a hopper bottom sedimentation tank provided with appropriate size PVC tube deck media. The suspended solids will settle at the bottom of the tank & clear supernatant will overflow to filter feed tank through outlet launder. The collected sludge at bottom shall be transferred through pumps to sludge holding tank.

The clear supernatant after clarifier will be collected in to filter feed tank. This tank will act as housing tank for filter feed pumps. The clarified & dis-infected water will be then fed to filtration unit.

Filtration unit consisting of Dual Media sand filter, activated carbon filter and ultra-filtration system (optional) will remove the residual impurities such as odor/color, suspended solids, BOD/COD. The treated water after the filtration unit will be collected in Irrigation cum Flushing water storage tank from where it is transferred to flushing water tank at terrace & Irrigation System.

Excess sludge from the bottom of the settling tank will be removed and transferred to sludge holding tank. Air grid shall be provided in this tank to avoid conversion into anaerobic conditions, thickening of sludge and keep sludge in homogenous condition. The digested &

thickened sludge shall be further thickened through Sludge Dewatering System (Filter press with screw pump) and disposed-off periodically through closed tanker or can be reused as manure.

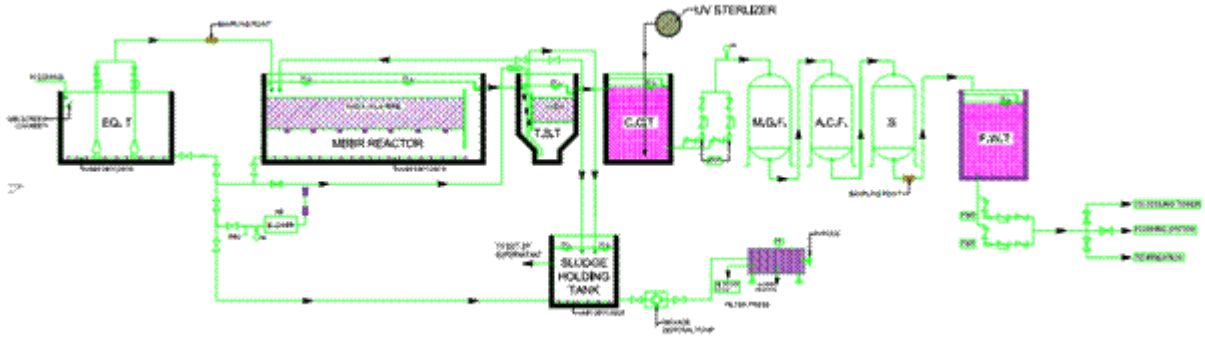


Figure 5: Schematic Diagrams for STP Based on MBBR Technology

2.3 How much of water requirement can be met from the recycling of treated wastewater? (Give the details of quantities, sources and usage)

It is expected that the project will generate approx. 418 KLD of wastewater. The wastewater will be treated in onsite STP of 505 KL capacity. The treated effluent will be reused for flushing & horticulture. Surplus treated effluent will be discharged to external sewer.

2.4 Will there be diversion of water from other users? (Please assess the impacts of the project on other existing uses and quantities of consumption).

No. There will not be any diversion of water from other users. Rise in water demand is a local phenomenon but the project would only involve spatial shifting of water demand within a region.

2.5 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)

418 KLD of sullage generated which will be treated through onsite STP of 875 KL capacity.

2.6 Give details of the water requirements met from water harvesting? Furnish details of the facilities created.

The storm water collection system for the premises shall be self-sufficient to avoid any collection/stagnation and flooding of water. The amount of storm water run-off depends upon many factors such as intensity and duration of precipitation, characteristics of the tributary area and the time required for such flow to reach the drains. The drains shall be located near the carriage way along either side of the roads. Taking the advantage of road camber, the rainfall run off from roads shall flow towards the drains. Storm water from various plots/shall be connected to adjacent drain by a pipe through catch basins. Therefore, it has been calculated to provide 18 rainwater harvesting pits at selected locations, which will catch the maximum run-off from the site.

1) Since the existing topography is congenial to surface disposal, a network of storm water pipe drains is planned adjacent to roads. All building roof water will be brought down through rain water pipes.
2) Proposed storm water system consists of pipe drain, catch basins and seepage pits at regular intervals for rain water harvesting and ground water recharging.
3) For basement parking, the rainwater from ramps will be collected in the basement storm water storage tank. This water will be pumped out to the nearest external storm water drain.
4) The peak hourly rainfall of 45 mm/hr shall be considered for designing the storm water drainage system.

Rain water harvesting has been catered to and designed as per the guideline of CGWA. Peak hourly rainfall has been considered as 45 mm/hr. The recharge pit of 5 m diameter and 4 m depth is constructed for recharging the water. Inside the recharge pit, a recharge bore is constructed having adequate diameter and depth. The bottom of the recharge structure will be kept 5 m above this level. At the bottom of the recharge well, a filter media is provided to avoid choking of the recharge bore. Design specifications of the rain water harvesting plan are as follows:

- Catchments/roofs would be accessible for regular cleaning.
- The roof will have smooth, hard and dense surface which is less likely to be damaged allowing release of material into the water. Roof painting has been avoided since most paints contain toxic substances and may peel off.

- All gutter ends will be fitted with a wire mesh screen and a first flush device would be installed. Most of the debris carried by the water from the rooftop like leaves, plastic bags and paper pieces will get arrested by the mesh at the terrace outlet and to prevent contamination by ensuring that the runoff from the first 10-20 minutes of rainfall is flushed off.
- No sewage or wastewater would be admitted into the system.
- No wastewater from areas likely to have oil, grease, or other pollutants has been connected to the system.

Table 6: Comparative Rain Water Harvesting Pits Distribution (EC Accorded +Expansion)

S. No.	Particulars	Value as per EC Accorded	Expansion	Total (EC Accorded +Expansion)
1	Rain Water Harvesting Pits	17	1	18

Calculations for storm water load:

Net Plot Area = 67,915.15m^2

Roof-top area = Ground Coverage = 11,806.21m^2

Green Area = 20,494.66 m^2

Paved Area = Plot Area – (Roof-top Area + Green Area)

= 67,915.15 – (11,806.21 + 20,494.66)

= 67,915.15 – 32,300.87

= 35,614.28m^2

Roof-top area = 67,915.15 × 0.045 × 0.90

= 2750.56 m^3/hr

Green Area = 20,494.66 × 0.045 × 0.20

= 184.45m^3/hr

Paved Area = 35,614.28 × 0.045 × 0.70

= 1121.84m^3/hr

Total Runoff Load = 2750.56 + 184.45 + 1121.84

= 4056.85m^3/hr

Taking 20 minutes retention time, volume of storm water = 4056.85/3 = 1352.28 m^3

Capacity of Recharge pit = $\pi r^2 h$ = 3.14 × 2.5 × 2.5 × 4 = 78.5 m^3

Hence No. of pits required = 1352.28/78.5 = 17.22 pits/18 pits

Total of 18 Rain Water Harvesting pits are proposed for artificial ground water recharge.

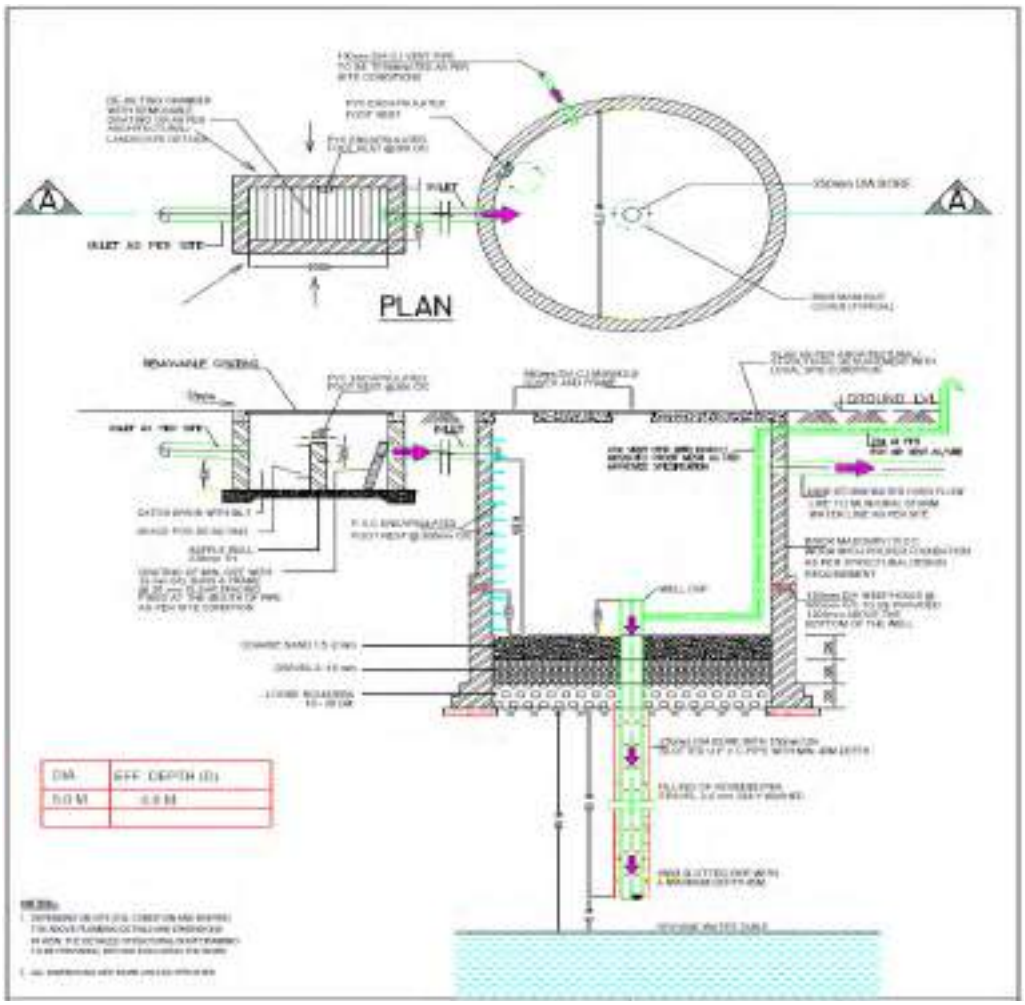


Figure 6: Rain Water Harvesting Pit Design

2.7 What would be the impact of the land use changes occurring due to the 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?

The project will include paved areas and thus the runoff from the plot is expected to increase due to reduced infiltration. However, the increased runoff will not cause flooding or water logging as a well designed storm water drainage will be provided. The runoff will finally be collected into rainwater harvesting pits for groundwater recharging. The quality of the runoff is expected to improve due to paved areas.

2.8 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).

Project will not use ground water during construction and operation phase; however rain water recharge pit will improve the ground water table so overall impact on ground water will be positive.

2.9 What precautions/ measures have been proposed to check the surface run-off, as well as uncontrolled flow of water into any water body?

The following management measures are suggested to protect the water quality during construction phase.

- Care would be taken to avoid soil erosion.
- Community toilets shall be constructed on the site during construction phase and the wastewater will be channelized to the septic tank in order to prevent wastewater from entering the water bodies.
- Any area with loose debris within the site shall be planted.
- To prevent surface and ground water contamination by oil/grease, leak proof containers would be used for storage and transportation of oil/grease. The floors of oil/grease handling area would be kept effectively impervious.

- Collection and settling of storm water, prohibition of equipment wash downs, and prevention of soil loss and toxic release from the construction site will be adhered to minimize water pollution.

2.10 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).

Most of the storm water produced on site will be harvested for ground water recharge. Thus proper management of this resource is a must to ensure that it is free of contamination. A detailed Storm Water Management Plan will be developed which will consider the sources of storm water. The plan will incorporate best management practices which will include the following:

- Regular inspection and cleaning of storm drains.
- Installation of clarifiers or Oil/Water separators system of adequate capacity around parking areas and garages as per requirement.
- Cover waste storage areas.
- Avoid application of pesticides and herbicides before wet season.
- Conducting routine inspections to ensure cleanliness.
- Preparation of spill response plans, particularly for fuel and oil storage areas.
- Good housekeeping in the above areas.

2.11 Will the deployment of construction laborers particularly in the peak period lead to unsanitary conditions around the project site (Justify with proper explanation).

No, mostly local laborers will be employed during the construction phase and thus negligible quantities of wastes will be generated. Mobile toilets will be provided and the sullage generated will be collected in septic tanks.

2.12 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).

It is expected that the project will generate approx. 418 KLD of wastewater. The wastewater will be treated in onsite STP of 875 KL capacity. The treated effluent will be reused for flushing & horticulture. Surplus treated effluent will be discharged to external sewer.

2.13 Give details of dual plumbing system if treated waste used for flushing of toilets or any other use.

Dual plumbing system that utilizes separate piping systems for freshwater and recycled sullage will be adopted for the project. The recycled water system shall utilize this treated sullage and serve for non-contact uses such as flushing and horticulture.

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).

No ecologically sensitive area falls within the project site. Hence, no ecological/ biological threat will be anticipated.

3.2 Will the construction involve extensive clearing or modification of vegetation? (Provide a detailed account of the trees & vegetation affected by the project)

The project does not support any significant vegetation. It is to develop a peripheral greenbelt of native plant species to enhance the aesthetic value of the region and also provide an excellent habitat for various faunal groups. Evergreen tall and ornamental trees like *Cassia Fistula, Delonix Regia, &* the Shrubs like *Bauhinia purpurea, B. Variegata etc.* have been proposed to be planted inside the premises.

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?)

Green belt will be developed along the periphery of the project premises along with the internal parks and lawns. Total green area measures 20,484.66 m^2 i.e. 30.17% of the total plot area i.e. 70,455.77m^2.

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.

No. The existing land use around the site is urban and does not provide a habitat for wild species. A few species of butterfly, avifauna and reptiles were recorded during the course of survey, which are common and found abundantly in this region. The proposed peripheral greenbelt will provide an excellent habitat for the native fauna.

4.2 Any direct or indirect impacts on the avifauna of the area? Provide details.

The project will not have any direct or indirect impacts on the avifauna of the area. However, planting of fruit bearing trees in the proposed greenbelt will be an attraction to the local bird population.

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 construction).

Ambient air monitoring will be carried out at the project site during the environmental assessment.

During the post construction phase, cars, scooter/motorcycle will be owned by the residents of group housing Project. Vehicular emissions will be major source of air pollution in addition to DG set. Quantum and dispersion of pollutants form vehicular emission will depend upon the following:

- Volume of traffic on the roads,
- Meteorological conditions.
- Emission sources from D.G. Sets.

From vehicular emissions, PM, NOx and CO are pollutants of primary concern. The dispersion of vehicular emissions would be confined within 100 m from the road and concentration will decrease with the increase in distance from road. It is anticipated that the contribution of vehicular emissions in ambient air quality will be marginal but well within the stipulated National Ambient. At higher wind speed dispersion will be faster.

Air Quality Modeling:

The only source of emissions from the project is the operation of backup generator during grid power failure. Detailed air quality modeling has been carried out for predicting the concentration of different pollutants contributed by the project during operation of the backup generators.

Air Environment

Impact: During the post construction phase, cars, scooter/motorcycle will be owned by the Affordable Housing residents. Vehicular emissions will be major source of air pollution in addition to DG set. Quantum and dispersion of pollutants form vehicular emission will depend upon the following:

- Volume of traffic on the roads,
- Meteorological conditions.
- Emission sources from D.G. Sets.

From vehicular emissions, PM, NO_x and CO are pollutants of primary concern. The dispersion of vehicular emissions would be confined within 100 m from the road and concentration will decrease with the increase in distance from road. It is anticipated that the contribution of vehicular emissions in ambient air quality will be marginal but well within the stipulated National Ambient. At higher wind speed dispersion will be faster.

2 no. of DG sets of total capacity 1635 kVA (1 x 1010kVA & 1 x 625 kVA) for power back up in the Expansion of Group Housing Project. This will cause emission of PM, SO_2, NO_2 and CO. However, since the D.G. sets will be operational only during power failure and low sulphur diesel will be used; therefore, pollutants incremental load in the ambient air environment will be expected to be minimal. However, an adequate stack height of D.G. Sets will be provided as per

the stipulated guidelines of Central Pollution Control Board (CPCB) to facilitate proper dispersion of exhaust gases as given below considering height of the building.

Mitigation Measures: It is proposed to develop a green belt inside the premises of the project site and along the internal roads, which will work as barrier for the movement of pollutants and help in pollution control.

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.

Source of pollution:-

As per dispersion modeling of pollutants from DG set using ISCST3 software, predicted resultant GLC for various air pollutants are found insignificant within the NAAQS norms.

5.3 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 and exit to the project site.

Adequate provision will be made for car/vehicle parking at the project site. Parking details are provided below:

Table 7: Comparative Parking Distribution (EC Accorded +Expansion)

S. No.	Particulars	Value as per EC Accorded	Expansion	Total Parking (EC Accorded +Expansion)
1	**Parking**	1758	2	1760

Parking Required:

As per MoEFCC norms

For Residential facilities = 1 ECS/ 100 m2 FAR area

= 1, 18,626.44/100

= 1186 ECS

Total parking required as per MoEFCC norms = 1186 ECS

As per Haryana Bye laws:

Required parking for residential = 1.5 ECS/ DU = 1.5 x 995

= 1492 ECS

For EWS @ 5% of residential parking = 75 ECS

Total Required Parking = 1492+75

= 1567 ECS

PARKING PROPOSED (EC Accorded +Expansion):

Area proposed for Stilt parking = 2040

Area proposed for 1 ECS of Stilt parking = 30 m²

Parking proposed for Stilt parking = 68 ECS

Area proposed for Surface Parking = 9875 m^2

Area proposed for 1 ECS of Surface Parking = 25 m²

Parking proposed for Surface Parking = 395 ECS

Area proposed for Upper Basement Parking = 15067.17 m^2

Area proposed for 1 ECS of Upper Basement Parking = 35 m²

Parking proposed for Upper Basement Parking = 431 ECS

Total Parking proposed for Upper Basement Parking = 431 ECS + 431 (Mechanical Parking)

= **862 ECS**

Area proposed for Lower Basement Parking = 15,221.72 m^2

Area proposed for 1 ECS of Lower Basement Parking = 35m²

Parking proposed for Lower Basement Parking = 435 ECS

Total Basement Parking = 1297 ECS

TOTAL PARKING PROPOSED = 68 + 395 + 1297= 1760 ECS

5.4 Provide details of the movement patterns with internal roads, bicycle tracks, pedestrian pathways, footpaths etc, with areas under each category.

Internal roads of adequate width, footpaths/pedestrian pathways have been well planned for the project.

5.5 Will there be significant increase in traffic noise & vibrations? Give details of the sources and the measures proposed for mitigation of the above.

Significant impact of noise has been carried out within and outside of the project site. Noise, due to the traffic, within site, will result in a marginal increase in the noise levels because noise control measures shall be provided in vehicles & DG sets as mentioned below, which will cause slight increase in noise level.

5.6 What will be the impact of D.G. set and other equipment on noise levels and vibration in ambient air quality around the project site? Provide details.

During operation, vehicular movement and operation of DG set are the major sources of noise pollution. But both these activities- DG set and vehicular movement will not have any significant impact on the people residing in the area. Since DG set will not be operational continuously and moreover it will be placed away from residential settlements and will be enclosed with suitable enclosures, hence no or minimal impact will be anticipated. It is envisaged that the movement of the motor vehicles will be restricted to designated carriageways only.

Impacts on Air Quality due to DG Set:

- Impacts on ambient air during operation phase would be due to emissions from the stacks attached to backup DG set only during grid power failure.

Mitigation Measures for Impacts of DG Set on Ambient Air Quality:

- Back up DG set will comply with the applicable emission norms.
- Adequate stack height for DG set will be provided as per norms.
- Back up DG set will be used only during power failure.

- Monitoring of emissions from DG set and ambient air quality will be carried out as per norms.

Noise Control Measures for DG set:

- DG room will be provided to insure 75 dB (A) insertion loss as per the regulations.
- Adequate exhaust mufflers will be provided as per norms to limit the noise.

6. AESTHETICS

6.1 Will the proposed construction in any way result in the obstruction of a view, scenic amenity or landscapes? Are these considerations taken into account by the proponents?

The site lies in an urbanized settlement and is well planned. Thus, no obstruction of view or scenic beauty or landscape is anticipated. Furthermore, the construction will be planned in such a way that the organized open spaces and landscaped areas will render the plot aesthetically appealing.

6.2 Will there be any adverse impacts from new constructions on the existing structures? What are the considerations taken into account?

No impacts anticipated.

6.3. Whether there are any local considerations of urban form & urban design influencing the design criteria? They may be explicitly spelt out.

The project will strictly follow the Area Building Regulation of NBC. All norms on Ground Coverage, FAR, Height, Setbacks, Fire Safety Requirements, Structural Design and other parameters will be strictly adhered to.

6.4 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?

No anthropological or archaeological sites or artifacts will be found near the site area.

7. SOCIO-ECONOMIC ASPECTS

7.1 Will the proposal result in any changes to the demographic structure of local population? Provide the details.

No such changes anticipated.

Construction phase: Since local labourers will be engaged during construction phase, alteration to the existing demographic profile of the area is not anticipated.

Operation phase: The changing demography in the area is another impact that needs attention. The project will mainly lead to spatial redistribution of local population and hence no considerable influx of population is envisaged owing to the project.

7.2 Give details of the existing social infrastructure around the project.

The area around the project is surrounded by local land area. Areas occupied by sensitive man-made land uses like **Civil Hospital**, G.D**. Goenka School**, K **R Mangalam University, Signature International School, Maa Karunamai Mandir, Devi Mandir, Govt. Boys Secondary School,** community facilities including the good infrastructure facilities.

7.3 Will the project cause adverse effects on local communities, disturbance to sacred sites or other cultural values? What are the safeguards proposed?

Construction phase: There are no religious sites or archeological monuments of historical significance on the project site. Hence, no adverse impact in this regard is anticipated. Rather, this phase will generate jobs that relate to unskilled, semi skilled as well as skilled labour category. Few supervisory positions will also open up, for which local candidates will be considered based on merit.

Operation phase: The project will provide goods storage facility in the area, thereby provide the jobs opportunity. A project of such scale will also boost the local economy.

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)

In order to reduce the embodied energy, it is proposed to use following energy efficient construction material:

- Fly ash bricks
- PPC (Fly ash based cement)

PPC can contain up-to 37% fly ash as per BIS Norms

Conventionally, 1kg of cement production releases 900gm of CO_2 in the atmosphere. Thus use of PPC helps to reduce CO_2 emission.

On the other hand, conventional bricks create smoke and use high energy.

Following are the advantages of using flyash as a construction material:

- The flyash bricks are lighter in weight by 10 per cent compared to clay bricks, hence reduce load of the building.
- Fly ash bricks absorb less water compared to clay bricks (10 to 12 per cent as against to 15 to 20).
- Fly ash bricks are stronger and less susceptible to scratches/breakage. Thus they can be used for courtyards, pathways and are most suitable for footpaths.

Since PPC consume fly-ash produced from thermal power plant. It is therefore environment friendly.

Additionally fly-ash as based cement (PPC) requires less water for curing.

8.2 Transport and handling of materials during construction may results in pollution, noise and public nuisance. What measures are taken to minimize the impacts?

Mitigation Measures for Air Pollution during Construction Stage:

- Construction materials will be suitably covered with tarpaulin cover etc during transportation.
- Water sprinkling shall be done on haul roads where dust generation is anticipated.
- Raw material storage and handling yard will be enclosed from all sides.
- To minimize the occupational health hazard, proper personal protective gears i.e. mask shall be provided to the workers working in the dust prone areas.

Mitigation Measures for Noise Pollution during Construction Stage:

- Administrative as well as engineering control of noise will be implemented.
- Isolation of noise generation sources and temporal differentiation of noise generating activities will ensure minimum noise at receiver's end.
- To prevent any occupational hazard, earmuff / earplug shall be given to the workers working around construction plant & machinery emitting high noise levels.
- Use of such plant or machinery shall not be allowed during night time. Careful planning of machinery operation and scheduling of operations shall be done to minimise such impact.

8.3 Are recycled materials used in roads and structures? State the extent of savings achieved?

As per the Fly Ash Notification 14th September 1999 and its amendments, we will be using Fly Ash based bricks for construction purpose at project site to the maximum level.

We would utilize fly ash based bricks/Pavement tiles to the maximum extent possible.

8.4 Give detail of the methods of collection, segregation & disposal of the garbage generated during the operation phases of the project.

The solid waste of the project will be segregated into biodegradable waste and non-biodegradable. Biodegradable waste and non-biodegradable waste will be collected in separate coloured bins. The recyclable wastes will be sent off to recyclabers. Proper guidelines for segregation, collection and storage will be prepared as per Municipal Solid Wastes (Management and Handling) Rules, 2016

9. ENERGY CONSERVATION

9.1 Give details of the power requirements, source and 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?

The power supply will be supplied by Dakshin Haryana Bijli Vitran Nigam (DHBVN). The maximum load demand for the Expansion of Group Housing Project will be approx. 6063 kW.

Details of D.G Sets

There is provision of 2 no. of DG sets of total capacity 1635 kVA (1 x 1010kVA & 1 x 625 kVA) for power back up in the Expansion of Group Housing Project. The DG sets will be equipped with acoustic enclosure to minimize noise generation and adequate stack height for proper dispersion.

Effective measures have been incorporated to minimize the energy consumption in following manners:

- Solar street lights.
- Solar power packs/inverters.
- All external lighting shall be BEE star rated.
- All internal lighting shall be BEE star rated.
- All common spaces including street lights (where there is no use of light for reading purposes), shall be of "LED".
- Solar street light controllers will be used for automatic dusk to dawn operation of street lights.
- Traffic light, blinkers, direction signage, based on LEDs shall be powered by solar.
- Integration of automated system to operate electrical equipment as per load requirement to save energy.
- HAREDA norms will be followed for use of solar energy.

9.2 What type and capacity of power backup do you plan to provide?

Backup power units will be provided by 2 DG set of total capacity of 1635 kVA (1 x 1010kVA & 1 x 625 kVA) for power back up in the Expansion of Group Housing Project. The DG set will be operated only during power failure.

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?

The project, being an Group Housing will involve limited use of clear & tinted glass having U-value less than 3.11w/m^2-^oC.

9.4 What passive solar architectural features are being used in the building? Illustrate the applications made in the project.

Passive solar design refers to use of the sun's energy for the heating and cooling of living spaces. Pergolas, projections, façade elements, metal louvers will be provided for sun shading to reduce the heat influx into the building and thus reduce the air conditioning loads.

9.5 Does the layout of street & building 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 complex? Substantiate with details.

We shall be abiding by HAREDA guidelines and will install solar power generation system of the capacity Minimum 40 Kilo Watt peak (KWp).

Solar energy will be utilized for street lighting, solar blinkers and signages to reduce electricity consumption.

9.6 Is the shading effectively used to reduce cooling/heating lands? 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?

Shading by Overhangs, Louvers and Awnings:

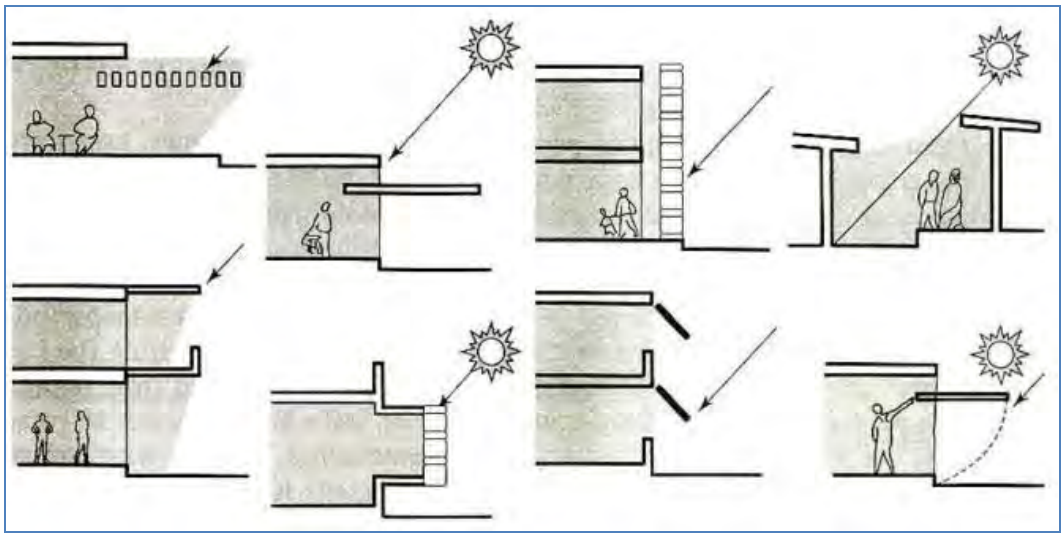
Well-designed sun control and shading devices are proposed to reduce building peak heat gain and cooling requirements and improve the natural lighting quality of building interiors (Please refer figure below).

The design of shading devices will include simple fixed overhangs which are very effective at shading south-facing windows in the summer when sun angles are high.

The other shading devices which will be explored are as given below:

1) Movable opaque: Roller blind curtains, awnings etc. reduce solar gains but impede air movement and cut the view.

2) Louvers: They are adjustable or can be fixed. To a certain extent impede air movement and provide shade to the building from the solar radiation.



9.7 Do the structures use energy-efficient space conditioning, lightening and mechanical systems? Provide technical details. Provide details of the transformers and motor efficiencies, lightening intensity and air conditioning load assumption? Are you using CFC and HCFC free chillers? Provide specifications.

HVAC system is not proposed hence there is no involvement of chillers.

Following measures are proposed for lightening efficiency in accordance with ECBC norms:

- Timer based on/off control shall be provided for landscape area lighting.
- 100% external lighting shall meet efficacy value of 60lm/W.
- The internal lighting inside the flats is not in the developer's scope. However, the tenant and occupant guideline shall be provided by the developer specifying the maximum permissible LPD of 7.5 W/sqm as per ECBC.

9.8 What are the likely effects of the building activity in altering the micro-climates? Provide a self assessment on likely impacts of the proposed construction on creation of heat island & inversion effects?

Heat emissions from the construction may be from the following sources:

- Heat absorbed from the paved and concrete structures
- Heat generated from equipment/appliances
- Heat increase due to population increase in the project.

However, the heat generated will not be significant and will be dissipated in the greens and open areas provided within the project area.

9.9 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 value or the R values of the individual components.

The roof tops of the buildings will be planned with puffing/bricks bat coba for water proofing and reflective tiles.

External wall-external opening will have regular door windows with slightly tinted glass. Regular walls have some cladding/fixture paints.

S. No.	Component	U-value (W/m^2-°C)	R-value (m^2-^{0}C/W
(a)	Roof	< 0.409	R-2.1
(b)	External wall	< 0.352	R-2.35

9.10 What precautions & safety measures are proposed against fire hazards? Furnish details of emergency plans.

Firefighting measures will be adopted as per the guidelines of NBC. External yard hydrants will be installed around all buildings in the complex in galvanized steel fire house cabinet (weather proof). All external yard hydrants shall be at one meter height from finished ground level as per NBC at a distance of 60 m along the road. External fire hydrants shall be located such that no portion of any building is more than 45 m from a hydrant and the external hydrants are not vulnerable to mechanical or vehicular damage.

Fire hydrant system will be provided within the buildings, fire escape staircases and refuge areas will be provided and the building structures will be planned as per NBC, 2016. In addition, 10 kg fire extinguishers will be provided for class A, B, and C fires. CO_2 extinguishers will also be provided

Disaster Management Plan

PRECAUTION & MITIGATORY METHODS TO PREVENT DISASTERS:

- Complex is planned to reduce the impact of disasters and to encourage recovery.
- A disaster management cell would be established which will take care of post disaster scenario.
- It would be a volunteer kind of set-up and professionals can also be hired in case of eventuality.
- Complex management and maintenance agency will prepare an integrated, comprehensive management plan.

PRECAUTION & MITIGATORY METHODS TO PREVENT DISASTERS:

(Earthquake Management)

- At the time of designing and constructing the building due care would be taken to have earthquake resistant structures which will conform to IS 1983.
- New systems and devices using non-conventional civil engineering materials would be developed to reduce the earthquake forces acting on structure.

PRECAUTION & MITIGATORY METHODS TO PREVENT DISASTERS:

(Fire Hazard)

- Fire safety would be taken into account and would follow all the safety norms and regulations as per the NBC and other related Indian Standards.
- All electrical cables would be underground and sophisticated modern electrical distribution system to reduce risk of fire.
- Special firefighting equipment's like Automatic Fire Detection and alarm system, automatic Sprinkler System etc. would be installed as per the NBC standards.
- Risk assessment with onsite disaster management plan will be specified to fire, smoke and other emergency conditions.

9.11 If you are using glass as wall materials, provide details and specifications including emissivity and thermal characteristics.

The project being an Affordable Group Housing Colony will not involve use of much glass as wall material. All fenestration with U-factors, SHGC, or visible light transmittance determined, certified and labeled in accordance ISO 15099 shall be adopted.

9.12 What is the rate of air infiltration in to the building? Provide details of how you are mitigating the effects of infiltration.

There will be provisions for ample natural ventilation.

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 variedly used as:

- Solar street lights.
- CFLs will be used to minimize the energy consumption.
- Green area is provided along with tree plantation which will result in natural air cooling and will reduce the load on conventional energy sources.

10. ENVIRONMENT MANAGEMENT PLAN

The Environment Management Plan (EMP) would consist of all mitigation measures for each component of the environment due to the activities increased during the construction, operation and the entire life cycle to minimize adverse environmental impacts resulting from 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 sites including fire. The detailed EMP for the complex is given below.

10.1 Environmental Management Plan

The Environment Management Plan (EMP) is a site specific plan developed to ensure that the project is implemented in an environmental sustainable manner where all contractors and subcontractors, including consultants, understand the potential environmental risks arising from the project and take appropriate actions to properly manage that risk. EMP also ensures that the project implementation is carried out in accordance with the design by taking appropriate mitigation actions to reduce adverse environmental impacts during its life cycle. The plan

outlines existing and potential problems that may adversely impact the environment and recommends corrective measures where required. Also, the plan outlines roles and responsibility of the key personnel and contractors who will be in-charge of the responsibilities to manage the project site.

10.1.1 The EMP is generally

- Prepared in accordance with rules and requirements of the MoEF and CPCB/ SPCB
- To ensure that the component of facility are operated in accordance with the design
- A process that confirms proper operation through supervision and monitoring
- A system that addresses public complaints during construction and operation of the facilities and
- A plan that ensures remedial measures is implemented immediately.

The key benefits of the EMP are that it offers means of managing its environmental performance thereby allowing it to contribute to improved environmental quality. The other benefits include cost control and improved relations with the stakeholders.

EMP includes four major elements:

- Commitment & Policy: The management will strive to provide and implement the Environmental Management Plan that incorporates all issues related to air, water, land and noise.
- Planning: This includes identification of environmental impacts, legal requirements and setting environmental objectives.
- Implementation: This comprises of resources available to the developers, accountability of contractors, training of operational staff associated with environmental control facilities and documentation of measures to be taken.
- Measurement & Evaluation: This includes monitoring, counteractive actions and record keeping.

It is suggested that as part of the EMP, a monitoring committee would be formed by M/s DSS Buildtech Pvt. Ltd., comprising of the site in-charge/coordinator, environmental group

representative and project implementation team representative. The committee's role would be to ensure proper operation and management of the EMP including the regulatory compliance.

The components of the environmental management plan, potential impacts arising, out of the project and remediation measures are summarized below in **Table 8**

TABLE 8: SUMMARY OF POTENTIAL IMPACTS AND REMEDIAL MEASURES

S. No.	Environmental components	Potential Impacts	Potential Source of Impact	Controls Through EMP & Design	Impact Evaluation	Remedial Measures
1.	Ground Water Quality	Ground Water Contamination	Construction Phase • Wastewater generated from temporary labor tents.	• No surface accumulation will be allowed.	No significant impact as majority of labors would be locally deployed	
			Operation Phase • Discharge from the project	• Sewage will be disposed through soak pits.	No negative impact on ground water quality envisaged. Not significant.	
2.	Ground Water Quantity	Ground Water Depletion	Construction Phase • Ground water will not be used for construction activity.	• No impact	No significant impact on ground water quantity envisaged.	
			Operation Phase	• Rain water harvesting	No significant	In an unlikely event of

			• The source of water during operation phase is HUDA water supply.	scheme. • Storm water collection for water harvesting. • Percolation well to be introduced in landscape plan. • Awareness Campaign to reduce the water consumption	impact on surface/ground water quantity envisaged.	non-availability of water supply, water will be brought using tankers.
3.	Surface Water Quality	Surface water contamination	<u>Construction Phase</u> • Surface runoff from site during construction activity.	• Silt traps and other measures such as additional on-site diversion ditches will be constructed to control surface run-off during site development	No off-site impact envisaged as no surface water receiving body is present in the core zone.	
			<u>Operation Phase</u> • Discharge of	• Sewage will be disposed through septic tanks and	No off-site impact envisaged	CPCB guidelines will be followed for disposal

			domestic wastewater to Septic tank & Soak pits.	soak pits.		of sewage.
4.	Air Quality	Dust Emissions	Construction Phase • All heavy construction activities	• Suitable control measures will be adopted for mitigating the $PM_{2.5}$ & PM_{10} level in the air as per air pollution control plan.	Not significant because dust generation will be temporary and will settle fast due to dust suppression techniques.	During construction phase the contractors are advised to facilitate masks for the labors. Water sprinklers will be used for suppression of dust during construction phase.
		Emissions of $PM_{2.5}$ & PM_{10}, SO_2, NOx and CO	Construction Phase • Operation of construction equipment and vehicles during site development.	• Rapid on-site construction and improved maintenance of equipment	Not significant.	Regular monitoring of emissions and control measures will be taken to reduce the emission levels.

			• Running D.G. set (back up)			
			<u>Operation Phase</u> • Power generation by DG Set during power failure • Emission from vehicular traffic in use	•Use of low sulphur diesel if available •Providing Footpath and pedestrian ways within the site Green belt will be developed with specific species to help to reduce $PM_{2.5}$ & PM_{10} level •Use of equipment fitted with silencers •Proper maintenance of equipment	Not significant. DG set would be used as power back-up (approx 4 hours) No significant increase in ambient air quality level is expected from the project's activities. There are no sensitive receptors located within the vicinity of site.	• Use of Personal Protective Equipment (PPE) like earmuffs and earplugs during construction activities. • Stack height of DG set above the tallest building as per CPCB standards
5.	Noise Environment					

			<u>Operation Phase</u> • Noise from vehicular movement • Noise from DG set operation	• Green Belt Development • Development of silence zones to check the traffic movement • Provision of noise shields near the heavy construction operations and acoustic enclosures for DG set. • Construction activity will be limited to day time hours only • DG set room will be equipped with acoustic enclosures	No significant impact due to suitable width of Greenbelt.	

6.	Land Environment	Soil contamination	Construction Phase • Disposal of construction debris	Construction debris will be collected and suitably used on site as per the solid waste management plan for construction phase	No significant impact. Impact will be local, as waste generated will be reused for filling of low lying areas etc.	
			Operation Phase • Generation of municipal solid waste • Used oil generated from D.G. set	• It is proposed that the solid waste generated will be managed as per MSW Rules, 2016. • Collection, segregation, transportation and disposal will be done as per MSW Management Rules, 2016 by the authorized agency	Since solid waste is handled by the authorized agency, waste dumping is not going to be allowed. Not significant. Negligible impact.	

				• Used oil generated will be sold to authorized recyclers		
7.	Biological Environment (Flora and Fauna)	Displacement of Flora and Fauna on site	<u>Construction Phase</u> • Site Development during construction	• Important species of trees, if any, will be identified and marked and will be merged with landscape plan	The proposed site has shrubs as vegetation	
			<u>Operation Phase</u> • Increase in green covered area	• Suitable green belts will be developed as per landscaping plan in and around the site using local flora	Beneficial impact.	
8.	Socio-Economic Environment	Population displacement and loss of income	<u>Construction Phase</u> • Construction activities	• The project will be developed as per the license obtained from Directorate of Town &	No negative impact.	

			leading to relocation	Country Planning, Haryana (DTCP).		
			<u>Operation Phase</u> • Site operation	• Project will provide employment opportunities to the local people in terms of labor during construction and service personnel (guards, securities, gardeners etc) during operations • Providing quality-Integrated infrastructure.	Beneficial impact	
9.	Traffic Pattern	Increase of vehicular traffic	<u>Construction Phase</u> • Heavy Vehicular movement during	• Heavy Vehicular movement will be restricted to daytime only and adequate parking facility will be provided	No negative impact	

			construction			
			<u>Operation Phase</u> • Traffic due to vehicles once the project is operational	• Vehicular movement will be regulated inside the project with adequate roads and parking lots in the project.	No major significant impact as green belt will be developed which will help in minimizing the impact on environment.	

10.2 ENVIRONMENT MANAGEMENT PLAN

An Environmental Management Plan (EMP) will be required to mitigate the predicted adverse environmental impacts during construction and operation phase of the project and these are discussed in later subsections.

10.2.1 EMP for Air Environment

Construction Phase

To mitigate the impacts of PM_{10} & $PM_{2.5}$ during the construction phase of the project, the following measures are recommended for implementation:

- A dust control plan
- Procedural changes to construction activities

Dust Control Plan

The most cost-effective dust suppressant is water because water is easily available on construction site. Water can be applied using water trucks, handled sprayers and automatic sprinkler systems. Furthermore, incoming loads could be covered to avoid loss of material in transport, especially if material is transported off-site.

Procedural Changes to Construction Activities

Idle time reduction: Construction equipment is commonly left idle while the operators are on break or waiting for the completion of another task. Emission from idle equipment tends to be high, since catalytic converters cools down, thus reducing the efficiency of hydrocarbon and carbon monoxide oxidation. Existing idle control technologies comprises of power saving mode, which automatically off the engine at preset time and reduces emissions, without intervention from the operators.

Improved Maintenance: Significant emission reductions can be achieved through regular equipment maintenance. Contractors will be asked to provide maintenance records for their fleet as part of the contract bid, and at regular intervals throughout the

life of the contract. Incentive provisions will be established to encourage contractors to comply with regular maintenance requirements.

Reduction of On-Site Construction Time: Rapid on-site construction would reduce the duration of traffic interference and therefore, will reduce emissions from traffic delay.

Operation Phase

To mitigate the impacts of pollutants from DG set and vehicular traffic during the operational phase of the project, following measures are recommended for implementation:

- DG set emission control measures
- Vehicular emission controls and alternatives
- Greenbelt development

Diesel Generator Set Emission Control Measures

Adequate stack height will be maintained to disperse the air pollutants generated from the operation of DG set to dilute the pollutants concentration within the immediate vicinity. Hence no additional emission control measures have been suggested.

Vehicle Emission Controls and Alternatives

During construction, vehicles will be properly maintained to reduce emission. As it is a Group Housing project, vehicles will be generally having "PUC" certificate.

Footpaths and Pedestrian ways: Adequate footpaths and pedestrian ways would be provided at the site to encourage non-polluting methods of transportation.

10.2.2 EMP FOR NOISE ENVIRONMENT

Construction Phase

To mitigate the impacts of noise from construction equipment during the construction phase on the site, the following measures are recommended for implementation.

Time of Operation: Noisy construction equipment would not be allowed to use at night time.

Job Rotation and Hearing Protection: Workers employed in high noise areas will be employed on shift basis. Hearing protection such as earplugs/muffs will be provided to those working very close to the noise generating machinery.

Operation Phase

To mitigate the impacts of noise from diesel generator set during operational phase, the following measures are recommended:

- Adoption of Noise emission control technologies
- Greenbelt development

Greenbelt Development

The following species can be used, as in a greenbelt, to serve as noise breakers:

- *Cassia Fistula,*
- *Delonix Regia*
- *Bauhinia purpurea*
- *B. Variegata*
- *Polyalthia longifolia*

10.2.3 EMP FOR WATER ENVIRONMENT

Construction Phase

To prevent degradation and to maintain the quality of the water source, adequate control measures have been proposed. To check the surface run-off as well as uncontrolled flow

of water into any water body check dams with silt basins are proposed. The following management measures are suggested to protect the water source being polluted during the construction phase:

- Avoid excavation during monsoon season
- Care would be taken to avoid soil erosion
- Common toilets will be constructed on site during construction phase and the wastewater would be channelized to the septic tanks in order to prevent wastewater to enter into the water bodies
- Any area with loose debris within the site shall be planted
- To prevent surface and ground water contamination by oil and grease, leak-proof containers would be used for storage and transportation of oil and grease. The floors of oil and grease handling area would be kept effectively impervious. Any wash off from the oil and grease handling area or workshop shall be drained through imperious drains.
- Collection and settling of storm water, prohibition of equipment wash downs and prevention of soil loss and toxic release from the construction site are necessary measure to be taken to minimize water pollution
- All stacking and loading area will be provided with proper garland drains, equipped with baffles, to prevent run off from the site, to enter into any water body.

Operation Phase

In the operation phase of the project, water conservation and development measures will be taken, including all possible potential for rain water harvesting. Following measures will be adopted:

- Water source development.
- Minimizing water consumption.

Water Source Development

Water source development shall be practiced by installation of scientifically designed Rain Water Harvesting system. Rainwater harvesting promotes self-sufficiency and fosters an appreciation for water as a resource.

Minimizing Water Consumption

Consumption of fresh water will be minimized by combination of water saving devices and other domestic water conservation measures. Further, to ensure ongoing water conservation, an awareness program will be introduced. The following section discusses the specific measures, which shall be implemented:

Domestic and Commercial Usage

- Use of water efficient plumbing fixtures (ultra flow toilets and urinals, low flow sinks, water efficient dishwashers and washing machines). Water efficient plumbing fixtures uses less water with no marked reduction in quality and service
- Leak detection and repair techniques.
- Sweep with a broom and pan where possible, rather than hose down for external areas.
- Meter water usage: Implies measurement and verification methods.

Monitoring of water uses is a precursor for management.

Horticulture

- Drip irrigation system shall be used for the lawns and other green area. Drip irrigation can save 15-40% of the water, compared with other watering techniques.
- Plants with similar water requirements shall be grouped on common zones to match precipitation heads and emitters.
- Use of low-angle sprinklers for lawn areas.
- Select controllers with adjustable watering schedules and moisture sensors to account for seasonal variations and calibrate them during commissioning.

- Place 3 to 5 inches of mulch on planting beds to minimize evaporation.

Storm Water Management

Most of the storm water produced on site will be harvested for ground water recharge in future. Thus proper management of this resource is a must to ensure that it is free from contamination.

Contamination of Storm Water is possible from the following sources:

- Diesel and oil spills in the diesel power generator and fuel storage area
- Waste spills in the solid / hazardous waste storage area
- Oil spills and leaks in vehicle parking lots
- Silts from soil erosion in gardens

A detailed storm water management plan will be developed which will consider the possible impacts from above sources. The plan will incorporate best management practices which will include following:

- Regular inspection and cleaning of storm drains
- Clarifiers or oil/separators will be installed in all the parking areas. Oil / grease separators installed around parking areas and garages will be sized according to peak flow guidelines. Both clarifiers and oil/water separators will be periodically pumped in order to keep discharges within limits
- Covered waste storage areas
- Avoid application of pesticides and herbicides before wet season
- Secondary containment and dykes in fuel/oil storage facilities
- Conducting routine inspection to ensure cleanliness
- Provision of slit traps in storm water drains
- Good housekeeping in the above areas

10.2.4 EMP FOR LAND ENVIRONMENT

Construction Phase

The waste generated from construction activity includes construction debris, biomass from land clearing activities, waste from the temporary make shift tents for the labors and hazardous waste. Following section discuss the management of each type of waste. Besides waste generation, management of the topsoil is an important area for which management measures are required.

Construction Debris

Construction debris is bulky and heavy and re-utilization and recycling is an important strategy for management of such waste. As concrete and masonry constitute the majority of waste generated, recycling of this waste by conversion to aggregate can offer benefits of reduced landfill space and reduced extraction of raw material for new construction activity. This is particularly applicable to the project site as the construction is to be completed in a phased manner.

Mixed debris with high gypsum, plaster, shall not be used as fill, as they are highly susceptible to contamination, and will be send to designated solid waste landfill site.

Metal scrap from structural steel, piping, concrete reinforcement and sheet metal work shall be removed from the site by construction contractors. A significant portion of wood scrap will be reused on site. Recyclable wastes such as plastics, glass fiber insulation, roofing etc shall be sold to recyclers.

Hazardous waste

Construction sites are sources of many toxic substances such as paints, solvents wood preservatives, pesticides, adhesives and sealants. Hazardous waste generated during construction phase shall be stored in sealed containers and disposed off as per The Hazardous Wastes (Management, Handling & Trans boundary Movement) Rules, 2016.
Some management practices to be developed are:

- Herbicides and pesticide will not be over applied (small-scale applications) and not applied prior to rain.

- Paintbrushes and equipment for water and oil based paints shall be cleaned within a contained area and will not be allowed to contaminate site soils, water courses or drainage systems.
- Provision of adequate hazardous waste storage facilities. Hazardous waste collection containers will be located as per safety norms and designated hazardous waste storage areas will be away from storm drains or watercourses.
- Segregation of potentially hazardous waste from non-hazardous construction site debris.
- Well labeled all hazardous waste containers with the waste being stored and the date of generation.
- Instruct employees and subcontractors in identification of hazardous and solid waste.

Even with careful management, some of these substances are released into air, soil and water and many are hazardous to workers. With these reasons, the best choice is to avoid their use as much as possible by using low-toxicity substitutes and low VOC (Volatile Organic Compound) materials.

Waste from Temporary Makes Shift Tents for Labors

Wastes generated from temporary make shift labor tents which will be managed by the contractor of the site. The wastewater generated will be channelized to the septic tank.

Top Soil Management

To minimize disruption of soil and for conservation of top soil, the contractor shall keep the top soil cover separately and stockpile it. After the construction activity is over, top soil will be utilized for landscaping activity. Other measures, which would be followed to prevent soil erosion and contamination include:

- Maximize use of organic fertilizer for landscaping and green belt development

- To prevent soil contamination by oil/grease, leaf proof containers would be used for storage and transportation of oil/grease and wash off from the oil/grease handling area shall be drained through impervious drains and treated appropriately before disposal
- Removal of as little vegetation as possible during the development and re-vegetation of bare areas after the project.
- Working in a small area at a point of time (phase wise construction)
- Construction of erosion prevention troughs/berms.

Operational Phase

The philosophy of solid waste management at the proposed complex will be to encouraging the four R's of waste i.e. **R**eduction, **R**euse, **R**ecycling and **R**ecovery (materials & energy). Regular public awareness meetings will be conducted to involve the public in the proper segregation and storage techniques. The Environmental Management Plan for the solid waste focuses on three major components during the life cycle of the waste management system i.e., collection and transportation, treatment or disposal and closure and post-closure care of treatment/disposal facility.

Collection and Transportation

- During the collection stage, the solid waste of the project will be segregated into biodegradable waste and non-biodegradable. Biodegradable waste and non biodegradable waste will be collected in separate bins. Biodegradable waste will be treated in the project premises by Organic waste convertor. The recyclable wastes will be sent off to recyclabers. Proper guidelines for segregation, collection and storage will be prepared as per MSW Rules, 2016.
- To minimize littering and odour, waste will be stored in well-designed containers/ bins that will be located at strategic locations to minimize disturbance in traffic flow

- Care would be taken such that the collection vehicles are well maintained and generate minimum noise and emissions. During transportation of the waste, it will be covered to avoid littering.

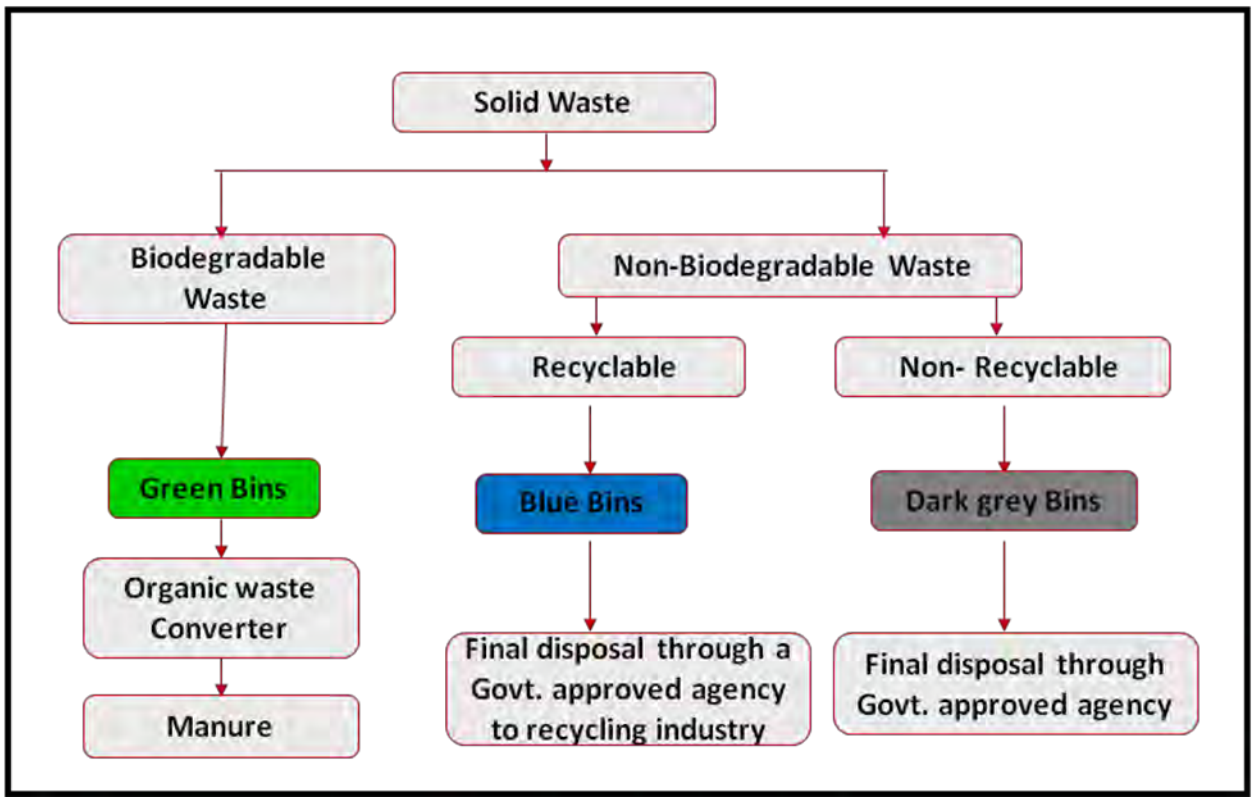


Figure 7: Waste Management Flow Diagram

Organic Waste Converter

A waste converter is a machine used for the treatment and recycling of solid and liquid refuse material. A converter is a self-contained system capable of performing the following functions: pasteurization of organic waste; sterilization of pathogenic or biohazard waste; grinding and pulverization of refuse into unrecognizable output; trash compaction; dehydration.

Benefits of organic waste converter:

1. Large quantity of solid waste is converted to manure in a very short period
2. Manure can be used as compost for gardening
3. Machine requires less space and the efficiency is high
4. Manpower and maintenance is very less
5. This is one of the latest techniques of managing biodegradable solid waste.

Operation cost of OWC:

Organic Waste Converter - 300 (Dim. 3m × 4m) is proposed to be used for composting waste 120kg/batch or 3000 kg/day & it requires electricity of about 13.5 HP.

No. of batches /day = 3000/120 = 25

No. of batches to convert 2123 kg/day = 2123 /120 = 17.69 say 18 batches

Operation Cost-monthly per capita:

The operating cost of OWC - 300 = 1, 80,000 INR/month

Cost/day = 1, 80,000/30

= 6000/-

1 batch/day cost = 6000/25

= 240 INR

Cost for 18 batch/day = 18 × 240/-

= 4320/-

Monthly operating cost = 30 × 4320

= Rs. 1, 29,600 /- per month

Disposal

With regards to the disposal/treatment of waste, the management will take the services of the authorized agency for waste management and disposal of the same on the project site during its operational phase.

10.2.5 EMP FOR ECOLOGICAL ENVIRONMENT

Construction activity changes the natural environment. The project requires the implementation of following choices exclusively or in combination.

Construction Stage

- Restriction of construction activities to defined project areas, which are ecologically sensitive
- Restrictions on location of temporary labor tents and offices for project staff near the project area to avoid human induced secondary additional impacts on the flora and fauna species
- Cutting, uprooting, coppicing of trees or small trees if present in and around the project site for cooking, burning or heating purposes by the labors will be prohibited and suitable alternatives for this purpose will be made
- Along with the construction work, the peripheral green belt would be developed with suggested native plant species, as they will grow to a full-fledged covered at the time of completion.

Operation Stage

Improvement of the current ecology of the project site will entail the following measures:

- Plantation and Landscaping
- Green Belt Development
- Park and Avenue Plantation

The section below summarizes the techniques to be applied to achieve the above objectives:

Plantation and landscaping

Selection of the plant species would be done on the basis of their adaptability to the existing geographical conditions and the vegetation composition of the forest type of the region earlier found or currently observed.

Green Belt Development Plan

The plantation matrix adopted for the green belt development includes pit of 0.3 m × 0.3 m size with a spacing of 2 m x 2 m. In addition, earth filling and manure may also be required for the proper nutritional balance and nourishment of the sapling. It is also recommended that the plantation has to be taken up randomly and the landscaping aspects could be taken into consideration.

Peripheral plantation comprising of medium height trees (7 m to 10 m) and shrubs (5 m height) are proposed for the green belt. In addition creepers will be planted along the boundary wall to enhance its insulation capacity.

Selection of Plant Species for Green Belt Development

The selection of plant species for the development depends on various factors such as climate, elevation and soil. The plants would exhibit the following desirable characteristics in order to be selected for plantation

1. The species should be fast growing and providing optimum penetrability
2. The species should be wind-firm and deep rooted
3. The species should form a dense canopy
4. As far as possible, the species should be indigenous and locally available
5. Species tolerance to air pollutants like SO_2 and NO_2 should be preferred
6. The species should be permeable to help create air turbulence and mixing within the belt
7. There should be no large gaps for the air to spill through
8. Trees with high foliage density, leaves with larger leaf area and hairy on both the surfaces
9. Ability to withstand conditions like inundation and drought
10. Soil improving plants (Nitrogen fixing rapidly decomposable leaf litter)
11. Attractive appearance with good flowering and fruit bearing

12. Bird and insect attracting tree species
13. Sustainable green cover with minimal maintenance.

10.2.6 EMP for Socio-Economic Environment

The social management plan has been designed to take proactive steps and adopt best practices, which are sensitive to the socio-cultural setting of the region. The Social Management Plan for project focuses on the following components:

- **Income Generation Opportunity during Construction and Operation Phase**

  The project would provide employment opportunity during construction and operation phase. There would also be a wide economic impact in terms of generating opportunities for secondary occupation within and around the complex. The main principles considered for employment and income generation opportunities are out lined below:

  - Employment strategy will provide for preferential employment of local people
  - Conditions of employment would address issues like minimum wages and medical care for the workers. Contractors would be required to abide to employment priority towards locals and abide by the labor laws regarding standards on employee terms and conditions.

- **Improved Working Environment for Employees**

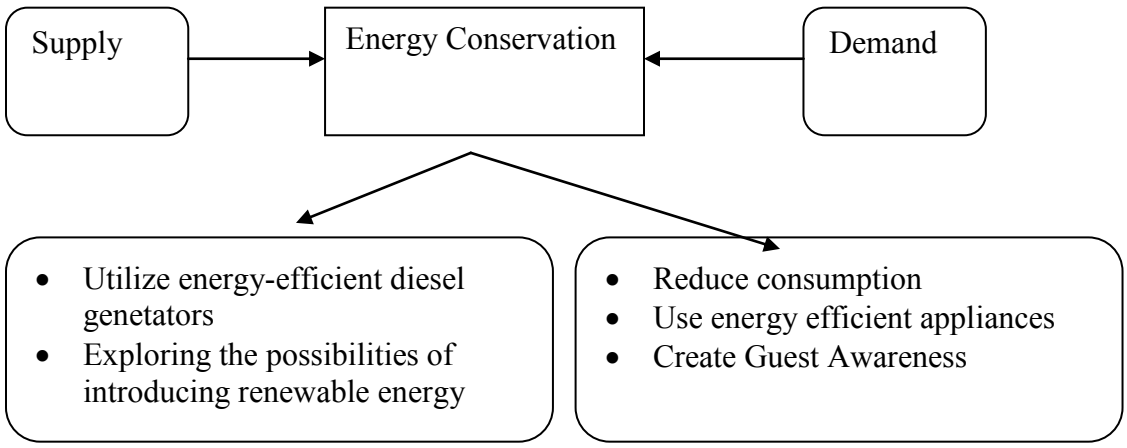
  The project would provide safe and improved working conditions for the workers employed at the facility during construction and operation phase. With the proposed ambience and facilities provided, the complex will provide a new experience in living and recreations. Following measures would be taken to improve the working environment of the area:

  - Less use of chemicals and biological agents with hazard potential
  - Developing a proper interface between the work and the human resource through a system of skill improvement

- Provision of facilities for nature care and recreation e.g. indoor games facilities
- Measures to reduce the incidence of work related injuries, fatalities and diseases
- Maintenance and beautifications of the complex and the surrounding roads

10.2.7 EMP FOR ENERGY CONSERVATION

Energy conservation program will be implemented through measures taken both on energy demand and supply.



Energy conservation will be one of the main focuses during the complex planning and operation stages. The conservation efforts would consist of the following:

❖ **Architectural design**

- Maximize the use of natural lighting through design.
- The orientation of the buildings will be done in such a way that maximum daylight is available.
- The green areas will be spaced, so that a significant reduction in the temperature can take place.

❖ **Energy Saving Practices**

- Energy efficient lamps will be provided within the complex.
- Constant monitoring of energy consumption and defining targets for energy conservation.
- Adjusting the settings and illumination levels to ensure minimum energy used for desired comfort levels.

❖ **Behavioral Change on Consumption**

- Promoting public awareness on energy conservation
- Training staff on methods of energy conservation and to be vigilant to such opportunities.

10.3 ENVIRONMENTAL MANAGEMENT SYSTEM AND MONITORING PLAN

For the effective and consistent functioning of the complex, an Environmental Management system (EMS) would be established at the site. The EMS would include the following:

- An Environmental management cell.
- Environmental Monitoring.
- Personnel Training.
- Regular Environmental audits and Correction measures.
- Documentation – standards operation procedures Environmental Management Plan and other records.

10.3.1 ENVIRONMENTAL MANAGEMENT CELL

Apart from having an Environmental Management Plan, it is also proposed to have a permanent organizational set up charged with the task of ensuring its effective

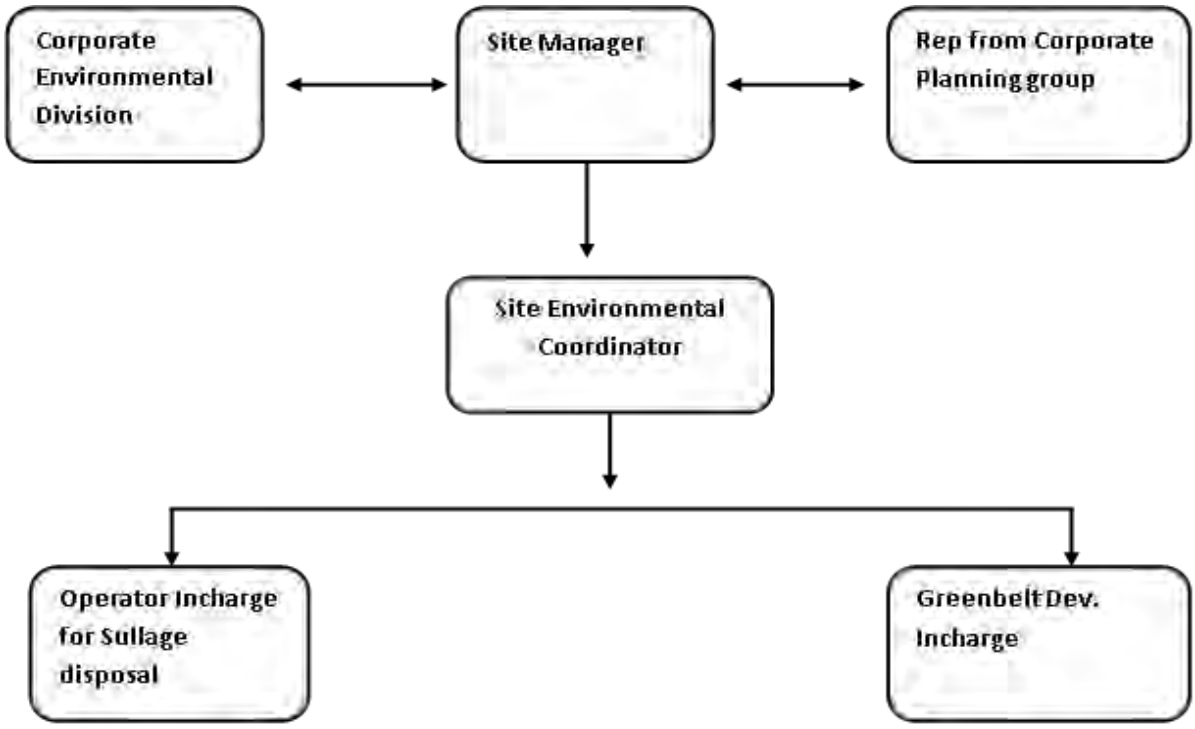
implementation of mitigation measures and to conduct environmental monitoring. The major duties and responsibilities of Environmental Management Cell shall be as given below:

- To implement the environmental management plan.
- To assure regulatory compliance with all relevant rules and regulations.
- To ensure regular operation and maintenance of pollution control devices.
- To minimize environmental impact of operations as by strict adherence to the EMP.
- To initiate environmental monitoring as per approved schedule.
- Review and interpretation of monitored results and corrective measures in case monitored results are above the specified limit.
- Maintain documentation of good environmental practices and applicable environmental laws for a ready reference.
- Maintain environmental related records.
- Coordination with regulatory agencies, external consultants, monitoring laboratories.
- Maintenance of log of public complaints and the action taken.

Hierarchical Structure of Environmental Management Cell

Normal activities of the EMP cell would be supervised by a dedicated person who will report to the site manager/coordinator of the Affordable Group Housing Project. The hierarchical structure of suggested Environmental Management Cell is given in following **Figure 8.**

Figure 8: Environment Management Cell Structure



10.3.2 ENVIRONMENTAL MONITORING

The purpose of environmental monitoring is to evaluate the effectiveness of implementation of Environmental Management Plan (EMP) by periodic monitoring. The important environmental parameters within the impact area are selected so that any adverse affects are detected and time action can be taken. The project proponent will monitor ambient air Quality, Ground Water Quality and Quantity, and Soil Quality in accordance with an approved monitoring schedule.

Table 9: Suggested Monitoring Program for Project

S. No.	Type	Locations	Parameters	Period and Frequency
1.	Ambient Air Quality	Project Site	Criteria Pollutants: SO_2, NO2, PM10, PM2.5, CO	Twice in a Year as per EIA Notification 2006.

2.	Groundwater (Portability testing)	Project site	Drinking water parameters as per IS 10500.	Twice in a Year as per EIA Notification 2006
3.	Ambient Noise	Project site	dB (A) levels	Twice in a Year as per EIA Notification 2006
4.	Soil quality	Project site	Organic matter, C.H., N, Alkalinity, Acidity, heavy metals and trace metal, Alkalinity, Acidity.	Twice in a Year as per EIA Notification 2006
5.	Waste Characterization	Commercial	Physical and Chemical composition	Twice in a Year as per EIA Notification 2006

10.3.3 Awareness and Training

Training and human resource development is an important link to achieve sustainable operation of the facility and environment management. For successful functioning of the project, relevant EMP would be communicated to:

Contractors

Contractors must be made aware of the importance of waste segregation and disposal, water and energy conservation. The awareness can be provided by periodic Integrated Society meetings. They would be informed of their duties.

10.3.4 Environmental Audits and Corrective Action Plans

To assess whether the implemented EMP is adequate, periodic environmental audits will be conducted by the project proponent's Environmental division. These audits will be

followed by Correction Action Plan (CAP) to correct various issues identified during the audits.

Minutes of the 175th Meeting of the State Expert Appraisal Committee, constituted for considering Environmental Clearance of Projects (B category) under Government of India Notification dated 14.09.2006 and amendments thereof held on 13th and 14th August, 2018 under the Chairmanship of Sh. G.R. Goyat, Chairman, SEAC at Panchkula

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List of participants is annexed as ***Annexure-A*.**

At the outset the Chairman, SEAC welcomed the Members of the SEAC and advised the Secretary to give brief background of this meeting. The minutes of the 174th Meeting were discussed and approved without any modification.

It was informed that in this meeting 18 number projects are to be taken up for scoping, appraisal and grading as per agenda circulated and 09 more cases are taken up as additional agenda items and 03 number cases which were deferred for 13.08.2018 and 01 case whose site visit report submitted by the Sub-Committee is also taken up as additional agenda item.

Besides these, 02 project proponents whose projects had earlier been appraised attended the meeting and requested the Chairman as well as Members of the Committee to take up their case in this meeting as there were only one or two observations observed in the previous meetings. Therefore, the request of the project proponents was considered and accepted unanimously by the Committee.

Further, SEIAA vide its note advised the SEAC as under:

> The MoEF & CC, GOI in exercise of the powers conferred by sub-section (1) and sub-clause (a) of clause (i) and clause (v) of section (2) of section 3 of the Environment (Protection) Act, 1986 issued EIA Notification No. S.O. 804 (E) dated 14.03.2017, which directs that the project and activities or the expansion or modernization of existing projects or activities requiring prior Environmental Clearance under the EIA Notification, 2006 entail capacity additional with change in process or technology or both undertaken in any part of India without obtaining prior environmental clearance from the competent authority constituted under the said act, shall be considered a case of violation of the EIA, Notification 2006 and will be dealt strictly in accordance with the procedure prescribed in the Notification dated 14.03.2017 and subsequent amendment 08.03.2018.
>
> It is advised that the cases undertaken as per notification cited above, SEAC should ensure that prosecution should be initiated simultaneously if not done already in all the violation cases.

175.01 EC for Modification & Expansion of IT & ITES SEZ project located at Village-Dundahera, Sector-21, District Gurugram, Haryana by M/s Gurgaon Inforspace Ltd.

Project Proponent : Sh. Ashok Choudhary

Consultant : Gaurang Enviro

The project was submitted to the SEIAA, Haryana on 19.07.2018. The project proponent submitted the case to the SEIAA as per check list approved by the SEIAA/SEAC. Thereafter, the case was taken up for appraisal in the 175th meeting of the SEAC held on 13.08.2018 wherein PP requested for deferment for 14.08.2018. Thereafter, the case was taken up on 14.08.2018.

During presentation, the Committee was informed that it is an IT/ITES SEZ (Modification & Expansion) Project at Village-Dundahera, Sector-21, Gurugram, Haryana. The total estimated cost of the

175.18(S7) EC for Expansion of Group Housing Project "The Melia" at Village Mohammadpur Gujjar, Sector-35, Sohna, District Gurugram, Haryana by M/s DSS Buildtech Pvt. Ltd.

Project Proponent : Sh. Paras Jain
Consultant : Grass Roots Research and Creation India Pvt. Ltd.

The project was submitted to the SEIAA, Haryana on 21.05.2018. The project proponent submitted the case to the SEIAA as per check list approved by the SEIAA/SEAC.

Thereafter the case was taken up for approval of Terms of Reference in the 170th meeting of the SEAC held on 05.06.2018.

During discussions, it was noticed that the terms of reference were approved by the Environment Appraisal Committee, Ministry of Environment, Forest & Climate Change, Government of India in its 150th meeting held on 29.07.2015 and project proponent has obtained Environment Clearance from SEIAA Haryana vide letter No. SEIAA/HR/2016/807 dated 20.09.2016. The total plot area of the project was 70455.77 Sq. Meters and builtup area was 152000 Sq. Meters.

The Committee further deliberated that it is a fit case for appraisal whereas PP has applied for approval of Terms of Reference.

The Committee is of the unanimous view that PP should obtain the certified compliance report of Regional Director, MoEF, GoI/HSPCB which is prerequisite for expansion projects as per MoEF Circular dated 30.05.2012 and 29.08.2017 and submit the same to the SEAC so that their case could be taken up for appraisal.

The observations of 170th meeting were conveyed to the PP vide letter No. 2899 dated 18.06.2018 . The PP submitted the reply on 18.07.2018. Thereafter, the case was taken up in the 174th meeting of the SEAC held on 08.08.2018.

During discussions, following shortcomings were observed:

1. The PP should submit Structure Stability Certificate from reputed institute/consultant.

The observations of 174th meeting were conveyed to the project proponent vide letter dated 13.08.2018. The project proponent submitted the reply of the shortcomings in the meeting. Thereafter this case was taken up for appraisal in the 175th meeting of the SEAC held on 14.08.2018 as supplementary agenda item.

During presentation, the Committee was informed that it is a proposed Expansion of Group Housing Project "The Melia" at Village Mohammadpur Gujjar, Sector-35, Sohna, District Gurugram, Haryana by M/s DSS Buildtech Pvt. Ltd.. The estimated cost of the project is Rs.430 Crores. Total Plot area is 17.41 Acres (70,455.77 m^2) and net plot area is 16.78 acres (67,915.15 m^2). Total built up area will be approximately 1, 57,562.486 Meters. The project will comprise of Residential Units, Commercial facilities, Community Centers & Schools. The maximum height of the building is approx. 44.9meters. It was also informed that the green area development has been kept as 30.17% (i.e.20,494.66 Sq. Meter approximately) of the net plot area. The total water requirement for the project will be 707 KLD (i.e. 414KLD of fresh water & 376 KLD of recycled treated water). The waste water generation will be 418KLD which will be treated upto tertiary level in STP having total capacity of 875 KL. The STP treated water will be used for flushing, horticulture and other misc. purposes.

The Air quality data shows exceeding baseline in respect of PM_{10} and $PM_{2.5}$ parameters which ranges approximately from 86.25-98.12 and 40.76-47.85 respectively. Incremental air pollution in respect of $PM_{2.5}$ is 0.070 µg/m^3. PP has submitted special mitigative measures for controlling air pollution for construction phase and operation phase which includes 5 meters high barricade wall at the periphery,

broad leafy trees would be planted as green belt, trees with heavy foliage would be planted on both side of carriage way, ultra-low sulpher Diesel (5 ppm) would be used as fuel in DG Sets, Stack height of DG set would be as per CPCB norms. These measures would minimize the impact on air environment.

It was informed by the project proponent that the power requirement for the project will be 6063 KW. Parking requirement for the project as per Haryana Bye Laws is 1567 ECS but the parking proposed to be provided in the project is 1760ECS. There will be total solid waste generation of 3537.876 Kg/day. Out of this the bio-degradable waste 2123 Kg/day will be composted in 1 Nos. of Organic Waste Convertor provided within the project premises and the manure produced will be used for horticulture and green development. The calculations of the same are in accordance with the prescribed norms. It was pointed out that the required water for the project will be provided through HUDA.

Detailed discussions were held about Solid Waste Management, rain water harvesting, fire fighting plan, noise and vibration plan, health and welfare of the laborers, electrical hazard plan, environment monitoring plan, energy conservation measures and environment management plan. There will be 18 numbers of rain water harvesting structures as approved by the Central Ground Water Authority (CGWA). The mitigation measures were found in order by the Committee.

After deliberations the Committee rated this project with **"Gold Rating"** and was of the unanimous view that this case for granting Environmental Clearance under EIA Notification dated 14.9.2006 issued by the Ministry of Environment and Forest, Government of India should be recommended to the SEIAA with the following stipulations:

PART A-
SPECIFIC CONDITIONS:-
Construction Phase:-

[1] "Consent for Establish" shall be obtained from Haryana State Pollution Control Board under Air and Water Act and a copy shall be submitted to the SEIAA, Haryana before the start of any construction work at site.

[2] A first aid room as proposed in the project report shall be provided both during construction and operational phase of the project.

[3] Adequate drinking water and sanitary facilities shall be provided for construction workers at the site. Provision should be made for mobile toilets. Open defecation by the laboures is strictly prohibited. The safe disposal of waste water and solid wastes generated during the construction phase should be ensured.

[4] All the topsoil excavated during construction activities shall be stored for use in horticulture/landscape development within the project site.

[5] The project proponent shall ensure that the building material required during construction phase is properly stored within the project area and disposal of construction waste should not create any adverse effect on the neighboring communities and should be disposed of after taking necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.

[6] Construction spoils, including bituminous material and other hazardous materials, must not be allowed to contaminate watercourses and the dump sites for such material must be secured so that they should not leach into the ground water and any hazardous waste generated during construction phase, should be disposed off as per applicable rules and norms with necessary approval of the Haryana State Pollution Control Board.

[7] The diesel generator sets to be used during construction phase shall be of ultra-low sulphur diesel type and should conform to Environment (Protection) Rules prescribed for air and noise emission standards.

[8] The diesel required for operating DG sets shall be stored in underground tanks and if required, clearance from Chief Controller of Explosives shall be taken.

[9] Ambient noise levels shall conform to the residential standards both during day and night. Incremental pollution loads on the ambient air and noise quality should be closely monitored during construction phase. Adequate measures should be taken to reduce ambient air pollution and noise level during construction phase, so as to conform to the stipulated residential standards of CPCB/MoEF.

[10] Fly ash shall be used as building material in the construction as per the provisions of Fly Ash Notification of September 1999 and as amended on 27th August 2003.

[11] Storm water control and its re-use as per CGWB and BIS standards for various applications should be ensured.

[12] Water demand during construction shall be reduced by use of pre-mixed concrete, curing agents and other best practices.

[13] In view of the severe constrains in water supply augmentation in the region and sustainability of water resources, the developer will submit the NOC from CGWA specifying water extraction quantities and assurance from HUDA/ utility provider indicating source of water supply and quantity of water with details of intended use of water – potable and non-potable. Assurance is required for both construction and operation stages separately. It shall be submitted to the SEIAA and RO, MOEF, Chandigarh before the start of construction.

[14] Roof must meet prescriptive requirement as per Energy Conservation Building Code by using appropriate thermal insulation material.

[15] Opaque wall must meet prescriptive requirement as per Energy Conservation Building Code which is proposed to be mandatory for all air conditioned spaces while it is desirable for non-air-conditioned spaces by use of appropriate thermal insulation material to fulfill requirement.

[16] The approval of the competent authority shall be obtained for structural safety of the building on account of earthquake, adequacy of firefighting equipment's, etc. as per National Building Code including protection measures from lightening etc. If any forest land is involved in the proposed site, clearance under Forest Conservation Act shall be obtained from the competent Authority.

[17] Overexploited groundwater and impending severe shortage of water supply in the region requires the developer to redraw the water and energy conservation plan. Developer shall reduce the overall footprint of the proposed development. Project proponent shall incorporate water efficiency /savings measures as well as water reuse/recycling within 3 months and before start of construction to the SEIAA, Haryana and RO, MOEF, GOI, Chandigarh.

[18] The Project Proponent as stated in the proposal shall construct total 18 rain water harvesting pits for recharging the ground water within the project premises. Rain water harvesting pits shall be designed to make provisions for silting chamber and removal of floating matter before entering harvesting pit. Maintenance budget and persons responsible for maintenance must be provided. Care shall also be taken that contaminated water do not enter any RWH pit.

[19] The project proponent shall provide for adequate fire safety measures and equipments as required by Haryana Fire Service Act, 2009 and instructions issued by the local Authority/ Directorate of fire from time to time. Further the project proponent shall take necessary permission regarding fire safety scheme/NOC from competent Authority as required.

[20] The Project Proponent shall obtain assurance from the DHBVN for supply of power before the start of construction. In no case project will be operational solely on generators without any power supply from any external power utility.

[21] Detail calculation of power load and ultimate power load of the project shall be submitted to DHBVN under intimation to SEIAA Haryana before the start of construction. Provisions shall be made for electrical infrastructure in the project area.

[22] The Project Proponent shall not raise any construction in the natural land depression / Nallah/water course and shall ensure that the natural flow from the Nallah/water course is not obstructed.

[23] The Project Proponent shall keep the plinth level of the building blocks sufficiently above the level of the approach road to the Project. Levels of the other areas in the Projects shall also be kept suitably so as to avoid flooding.

[24] Construction shall be carried out so that density of population does not exceed norms approved by Director General Town and Country Department Haryana.

[25] The Project Proponent shall submit an affidavit with the declaration that ground water will not be used for construction and only treated water should be used for construction.

[26] The project proponent shall not cut any existing tree and project landscaping plan should be modified to include those trees in green area.

[27] The project proponent shall provide 3 meter high barricade around the project area, dust screen for every floor above the ground, proper sprinkling and covering of stored material to restrict dust and air pollution during construction.

[28] The project proponent shall construct a sedimentation basin in the lower level of the project site to trap pollutant and other wastes during rains.

[29] The project proponent shall provide proper rasta of proper width and proper strength for the project before the start of construction.

[30] The project proponent shall ensure that the U-value of the glass is less than 3.177 and maximum solar heat gain co-efficient is 0.25 for vertical fenestration.

[31] The project proponent shall adequately control construction dusts like silica dust, non-silica dust and wood dust. Such dusts shall not spread outside project premises. Project Proponent shall provide respiratory protective equipment to all construction workers.

[32] The project proponent shall develop complete civic infrastructure of the Expansion of Group Housing Project "The Melia" including internal roads, green belt development, sewerage line, Rain Water recharge arrangements, Storm water drainage system, Solid waste management site and provision for treatment of bio-degradable waste, STP, water supply line, dual plumbing line, electric supply lines etc. and shall offer possession of the units/flats thereafter.

[33] The project proponent shall provide one refuge area till 24 meter and one till 39 meter each, as per National Building Code. The project proponent shall not convert any refuse area in the habitable space and it should not be sold out/commercialized.

[34] The project proponent shall provide fire control room and fire officer for building above 30 meter as per National Building Code.

[35] The project proponent shall obtain permission of Mines and Geology Department for excavation of soil before the start of construction.

[36] The project proponent shall seek specific prior approval from concerned local Authority/HUDA regarding provision of storm drainage and sewerage system including their integration with external services of HUDA/ Local authorities beside other required services before taking up any construction activity.

[37] The project proponent shall submit the copy of fire safety plan duly approved by Fire Department before the start of construction.

[38] The project proponent shall discharge excess of treated waste water/storm water in the public drainage system and shall seek permission of HUDA before the start of construction.

[39] The project proponent shall maintain the distance between STP and water supply line.

[40] The project proponent shall ensure that the stack height is 6 meter more than the highest tower.

[41] The project proponent shall ensure that structural stability to withstand earthquake of magnitude 8.5 on Richter scale.

Operational Phase:

[a] "Consent to Operate" shall be obtained from Haryana State Pollution Control Board under Air and Water Act and a copy shall be submitted to the SEIAA, Haryana.

[b] The Sewage Treatment Plant (STP) shall be installed for the treatment of the sewage to the prescribed standards including odour and treated effluent will be recycled to achieve zero exit discharge. The installation of STP shall be certified by an independent expert and a report in this regard shall be submitted to the SEIAA, Haryana before the project is commissioned for operation. Tertiary treatment of waste water is mandatory. The project proponent shall remove not only Ortho-Phosphorus but total Phosphorus to the extent of less than 2mg/liter. Similarly total Nitrogen level shall be less than 2mg/liter in tertiary treated waste water. Discharge of treated sewage shall conform to the norms and standards of CPCB/ HSPCB, whichever is environmentally better. Project Proponent shall implement such STP technology which does not require filter backwash. The project proponent shall essentially provide two numbers of STPs preferably equivalent to 50% of total capacity or as per the initial occupancy as the case may be.

[c] Separation of the grey and black water should be done by the use of dual plumbing line. Treatment of 100% grey water by decentralized treatment should be done ensuring that the re-circulated water should have BOD level less than 5 mg/litre and the recycled water will be used for flushing, gardening and DG set cooling etc. to achieve zero exit discharge.

[d] For disinfection of the treated wastewater ultra-violet radiation or ozonization process should be used.

[e] Diesel power generating sets proposed as source of back-up power for lifts, common area illumination and for domestic use should be of enclosed type and conform to rules made under the Environment (Protection) Act, 1986. The location of the DG sets shall be in the open as promised by the project proponent with appropriate stack height above the highest roof level of the project as per the CPCB norms. The diesel used for DG sets shall be ultra-low sulphur diesel (35 ppm sulphur), instead of low sulphur diesel.

[f] Ambient Noise level should be controlled to ensure that it does not exceed the prescribed standards both within and at the boundary of the the Expansion of Group Housing Project "The Melia".

[g] The project proponent as stated in the proposal should maintain at least 30.17% as green cover area for tree plantation especially all around the periphery of the project and on the road sides preferably with local species which can provide protection against noise and suspended particulate matter. The open spaces inside the project shall be preferably landscaped and covered with vegetation/grass, herbs & shrubs. Only locally available plant species shall be used.

[h] The project proponent shall strive to minimize water in irrigation of landscape by minimizing grass area, using native variety, xeriscaping and mulching, utilizing efficient irrigation system, scheduling irrigation only after checking evapo-transpiration data.

[i] Rain water harvesting for roof run-off and surface run-off, as per plan submitted should be implemented. Before recharging the surface run off, pre- treatment through sedimentation tanks must be done to remove suspended matter, oil and grease. The bore well for rainwater recharging shall be kept at least 5 mts. above the highest ground water table. Care shall be taken that contaminated water do not enter any RWH pit. The project proponent shall avoid Rain Water Harvesting of first 20 minutes of rain fall. Roof top of the building shall be without any toxic material or paint which can contaminate rain water. Wire mess and filters should be used wherever required.

[j] The ground water level and its quality should be monitored regularly in consultation with Central Ground Water Authority.

[k] A report on the energy conservation measures conforming to energy conservation norms finalized by Bureau of Energy Efficiency should be prepared incorporating details about building materials & technology, R & U Factors etc and submitted to the SEIAA, Haryana in three months time.

[l] Energy conservation measures like installation of LED only for lighting the areas outside the building and inside the building should be integral part of the project design and should be in place before project commissioning. Use of solar panels must be adapted to the maximum energy conservation.

[m] The Project Proponent shall use zero ozone depleting potential material in insulation, refrigeration, air-conditioning and adhesive. Project Proponent shall also provide Halon free fire suppression system.

[n] The solid waste generated should be properly collected and segregated as per the requirement of the MSW Rules, 2016 and as amended from time to time. The bio-degradable waste should be treated by appropriate technology (proposed OWC) at the site ear-marked within the project area and dry/inert solid waste should be disposed off to the approved sites for land filling after recovering recyclable material.

[o] The provision of the solar water heating system shall be as per norms specified by HAREDA and shall be made operational in each building block.

[p] The traffic plan and the parking plan proposed by the Project Proponent should be adhered to meticulously with further scope of additional parking for future requirement. There should be no traffic congestion near the entry and exit points from the roads adjoining the proposed project site. Parking should be fully internalized and no public space should be used.

[q] The Project shall be operationalized only when HUDA/local authority will provide domestic water supply system in the area.

[r] Operation and maintenance of STP, solid waste management and electrical Infrastructure, pollution control measures shall be ensured even after the completion of project.

[s] Different type of wastes should be disposed off as per provisions of municipal solid waste, biomedical waste, hazardous waste, e-waste, batteries & plastic rules made under Environment Protection Act, 1986. Particularly E-waste and Battery waste shall be disposed of as per existing E-waste Management Rules 2011 and Batteries Management Rules 2001. The project proponent should maintain a collection center for E-waste and it shall be disposed of to only registered and authorized dismantler / recycler.

[t] Standards for discharge of environmental pollutants as enshrined in various schedules of rule 3 of Environment Protection Rule 1986 shall be strictly complied with.

[u] Water supply shall be metered among different users and different utilities.

[v] The project proponent shall ensure that the of DG sets is more than the highest tower and also ensure that the emission standards of noise and air are within the CPCB latest prescribed limits. Noise and Emission level of DG sets greater than 800 KVA shall be as per CPCB latest standards for high capacity DG sets.

[w] All electric supply exceeding 100 amp, 3 phase shall maintain the power factor between 0.98 lag to 1 at the point of connection.

[x] The project proponent shall not use fresh water for HVAC and DG cooling. Air based HVAC system should be adopted and only treated water shall be used by project proponent for cooling, if it is at all needed. The Project Proponent shall also use evaporative cooling technology and double stage cooling system for HVAC in order to reduce water consumption. Further temperature, relative humidity during summer and winter seasons should be kept at optimal level. Variable speed drive, best Co-efficient of Performance (CoP), as well as optimal Integrated Point Load Value and minimum outside fresh air supply may be resorted for conservation of power and water. Coil type cooling DG Sets shall be used for saving cooling water consumption for water cooled DG Sets.

[y] The project proponent shall ensure that the transformer is constructed with high quality grain oriented, low loss silicon steel and virgin electrolyte grade copper. The project proponent shall obtain manufacturer's certificate also for that.

[z] The project proponent shall ensure that exit velocity from the stack should be sufficiently high. Stack shall be designed in such a way that there is no stack down-wash under any meteorological conditions.

[aa] The project proponent shall provide water sprinkling system in the project area to suppress the dust in addition to the already suggested mitigation measures in the Air Environment Chapter of EMP.

[ab] The project proponent shall ensure proper Air Ventilation and light system in the basements area for comfortable living of human being and shall ensure that number of Air Changes per hour/(ACH) in basement never falls below 15. In case of emergency capacity for increasing ACH to the extent of 30 must be provided by the project proponent.

[ac] The project proponent shall ensure drinking/ domestic water supply as per prescribed standards till treated water supply is made available by HUDA.

[ad] The project proponent shall install solar panel for energy conservation.

PART-B. GENERAL CONDITIONS:

[i] The Project Proponent shall ensure the commitments made in Form-1, Form-1A, EIA/EMP and other documents submitted to the SEIAA for the protection of environment and proposed environmental safeguards are complied with in letter and spirit. In case of contradiction between two or more documents on any point, the most environmentally friendly commitment on the point shall be taken as commitment by project proponent.

[ii] The project proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both in hard copies as well as by e-mail) to the northern Regional Office of MoEF, the respective Zonal Office of CPCB, HSPCB and SEIAA Haryana.

[iii] STP outlet after stabilization and stack emission shall be monitored monthly. Other environmental parameters and green belt shall be monitored on quarterly basis. After every 3 (three) months, the project proponent shall conduct environmental audit and shall take corrective measure, if required, without delay.

[iv] The SEIAA, Haryana reserves the right to add additional safeguard measures subsequently, if found necessary. Environmental Clearance granted will be revoked if it is found that false information has been given for getting approval of this project. SEIAA reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of SEIAA/MoEF.

[v] The Project proponent shall not violate any judicial orders/pronouncements issued by any Court/Tribunal.

[vi] All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wildlife (Protection) Act, 1972, Forest Act, 1927, PLPA 1900, etc. shall be obtained, as applicable by project proponents from the respective authorities prior to construction of the project.

[vii] The Project proponent should inform the public that the project has been accorded Environment Clearance by the SEIAA and copies of the clearance letter are available with the Haryana State Pollution Control Board & SEIAA. This should be advertised within 7 days from the date of issue of the clearance letter at least in two local newspapers that are widely circulated in the region and the copy of the same should be forwarded to SEIAA Haryana. A copy of Environment Clearance conditions shall also be put on project proponent's web site for public awareness.

[viii] Under the provisions of Environment (Protection) Act, 1986, legal action shall be initiated against the Project Proponent if it was found that construction of the project has been started before obtaining prior Environmental Clearance.

[ix] Any appeal against the this Environmental Clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

[x] The project proponent shall put in place Corporate Environment Policy as mentioned in MoEF, GoI OM No. J-11013/41/2006-IA II (I) dated 26.4.2012 within 3 months period. Latest Corporate Environment Policy should be submitted to SEIAA within 3 months of issuance of this letter.

[xi] The fund ear-marked for environment protection measures should be kept in separate account and should not be diverted for other purposes and year wise expenditure shall be reported to the SEIAA/RO MOEF GOI under rules prescribed for Environment Audit.

[xii] The project proponent shall ensure the compliance of Forest Department, Haryana Notification no. S.O.121/PA2/1900/S.4/97 dated 28.11.1997.

[xiii] The Project Proponent shall ensure that no vehicle during construction/operation phase enter the project premises without valid 'Pollution Under Control' certificate from competent Authority.

[xiv] The project proponent is responsible for compliance of all conditions in Environmental Clearance letter and project proponent cannot absolve himself /herself of the responsibility by shifting it to any contractor engaged by project proponent.

[xv] The project proponent shall seek fresh Environmental clearance if at any stage there is change in the planning of the proposed project.

[xvi] Besides the developer/applicant, the responsibility to ensure the compliance of Environmental Safeguards/conditions imposed in the Environmental Clearance letter shall also lie on the licensee/licensees in whose name/names the license/CLU has been granted by the Town & Country Planning Department, Haryana.

[xvii] The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; $PM_{2.5}$, PM_{10}, SO_X NO_X, Ozone, Lead, CO, Benzene, Ammonia, Benzopyrine, arsenic and Nickel. (Ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the project shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.

[xviii] The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the HSPCB Panchkula as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of the EC conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail.

[xix] The project proponent shall conduct environment audit at every three months interval and thereafter corrected measures shall be taken without any delay. Details of environmental audit and corrective measures shall be submitted in the monitoring report.

[xx] Corporate Environment and Social Responsibility (CSER) shall be laid down by the project proponent (2% shall be earmarked) as per guidelines of MoEF, GoI Office Memorandum No. J-11013/41/2006-IA.II (I) dated 18.05.2012 and Ministry of Corporate Affairs, GoI Notification Dated 27.02.2014. A separate audit statement shall be submitted in the compliance. Environment related work proposed to be executed under this responsibility shall be undertaken simultaneously. The project proponent shall select and prepare the list of the work for implementation of CSER of its own choice and shall submit the same before the start of construction.

175.18(S8) Environment Clearance for expansion of Group Housing Project at Sector-35, Village Jatheri, Sonepat, Haryana by M/s Maxheight Township & Projects Pvt. Ltd.

Project Proponent : Mr. K.C. Ahuja
Consultant : Aplinka Solutions Pvt. Ltd.

The project was submitted to the SEIAA, Haryana on 14.11.2017. The project proponent submitted the case to the SEIAA as per check list approved by the SEIAA/SEAC. The case was taken up for appraisal in the 161st meeting of the SEAC held on 29.11.2017.

The Project Proponent requested for adjournment and the same was discussed in the meeting. The Committee acceded to the request and decided to list the project in the 162nd meeting of the SEAC to be held on 13.12.2017. It was also made clear to the Project Proponent that no separate letter will be issued for attending the meeting of the SEAC.

Thereafter, the case was taken up in 162nd held on 13.12.2017. The Project Proponent requested for adjournment and the same was discussed in the meeting. The Committee acceded to the request and decided to list the project in the 163rd meeting of the SEAC. It was also made clear to the Project Proponent that no separate letter will be issued for attending the meeting of the SEAC.

Thereafter, the case was taken up in the 163rd meeting of the SEAC held on 08.01.2018.The Project Proponent requested for adjournment and the same was discussed in the meeting. The Committee acceded to the request and decided to issue 30 days notice to the project proponent.

The show cause notice was issued to the project proponent vide letter No. 2462 dated 23.01.2018. The PP requested vide letter dated 19.02.2018 for taking up of their case. Thereafter, the case was taken up in the 165th meeting of the SEAC held on 13.03.2018.