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CHAPTER 1: INTRODUCTION

1.1 Introduction

Proposed Expansion for Residential Commercial Project "GAGAN AVENCIA" S. No. 63/1/1, 63/2(Part) Kharadi, Tal. Haveli, Dist. Pune, Maharashtra by M/s. Onyx Promoters LLP. The proposed project is planned, sanctioned and in PMC jurisdiction.

The project has received 1st Environmental clearance from the State Environmental Impact Assessment Authority (SEIAA) Maharashtra EC SEIAA Maharashtra having file number SEIAA EC0000000345 date of Issue EC 15th June 2018.

The project has received 2nd Environmental clearance from the State Environmental Impact Assessment Authority (SEIAA) Maharashtra EC SEIAA Maharashtra having file number EC22B038MH173096 SIA/MH/MIS/229278/2021 Date of Issue EC 30th August 2022.

The Environmental Clearance grant for Total Plot Area is 14024.87 Sq.m, FSI- 51223.79 sq.mt. Non FSI 27594.38 Sq.mt. and Construction BUA 78,818.17 Sq.mt. The construction has been started with reference to the above mentioned Environment Clearance. Construction of the project was initiated after receipt of the earlier ECs from SEIAA time to time. Copy of Environmental Clearance is attached as **Annexure-I.**

Now, Project proponent has planned for change in plan and is proposing Expansion for Residential & commercial Project with a total built-up area of 87,870.78 Sq.m

As the total built-up area of the proposed Expansion for Residential & commercial Project to be developed is > 20,000 Sqm to <1,50,000 Sqm; as per the EIA Notification dated 14th September 2006 and its subsequent amendments thereof, the proposed project activity may falls under Category - B(B2) - 8(a) - 'Building and Construction Projects', which necessities to obtain Environmental Clearance from SEIAA Maharashtra. Due to absence of SEIAA/ SEAC in Maharashtra state, we are applying the proposal for Environmental Clearance to MoEF &CC, EAC for appraisal.

1.2 Identification of Project & Project Proponent

The project is proposed by Mr. Rahul Sureshchand Garg, Director of M/s Onyx Promoters LLP at Sr. No. 63/1/1, 63/2(part), Kharadi, Tal. Haveli, Dist. Pune, Maharashtra

1.3 Project cost

The estimated cost for the proposed project is 161.00 Crores.

1.4 Salient Features of the Project

The salient features of the project are given below

TABLE 1.1: SALIENT FEATURES OF THE PROJECT

Project details				
Name of Project	Proposed Expansion of Residential & Commercial Project "GAGAN AVENCIA" S. No. 63/1/1, 63/2(Part) Kharadi, Tal. Haveli, Dist. Pune, Maharashtra by M/s. Onyx Promoters LLP.			
Applied for	Expansion			
Details of previous EC	1st Environmental clearance from the State Environmental Impact Assessment Authority (SEIAA) Maharashtra EC SEIAA Maharashtra having file number SEIAA EC0000000345 date of Issue EC 15th June 2018 2nd Environmental clearance from the State Environmental Impact Assessment Authority (SEIAA) Maharashtra EC SEIAA Maharashtra having file number EC22B038MH173096 SIA/MH/MIS/229278/2021 Date of Issue EC 30th August 2022.			
Location of the project	S. No. 63/1/1, 63/2(part), Kharadi, Tal. Haveli, Dist. Pune, Maharashtra.			
Latitude and Longitude	Latitude - 18°33'28.61"N Longitude - 73°57'16.45"E			
Total Project Cost (Rs.)	161.00 Cr.			
Plot Area Details				
Total Plot Area (m^2)	14,024.87			
Deductions (m^2)	3015.48			
Net Plot area (m^2)	11,009.39			
Proposed FSI area (m^2)	58,228.93			
Proposed non-FSI area (m^2)	29,641.85			
Proposed TBUA (m^2)	**87,870.78**			
Water Requirements				
Water detail in dry & wet season	**Dry Season (CMD)**		**Wet Season (CMD)**	
	Fresh Water	259.00	**Fresh Water**	259.00
	Recycled (Gardening)	8.00	**Recycled (Gardening)**	8.00
	Recycled Flushing	129.00	**Recycled Flushing**	129.00

	Total	396.00	**Total**	396.00
	Waste water generation	362.00	**Waste water generation**	362.00

Power Requirement & Source		
Source of power supply	MSEDCL	
During Construction Phase (Demand Load)	103.80 KW	
During Operation phase (Connected load)	3835 kW	
During Operation phase (Demand load)	1817 kW	
Transformer	4 No. X 600 KVA	
DG set	1 No. X 600 KVA 1 No. X 320 KVA 1 No. X 100 KVA 1 No. X 25 KVA	
Fuel used	HSD	
Waste Generation& Management		
Dry waste	645.00	Will be handed over to authorized recycler
Wet waste	880.00	Will be treated in OWC
Hazardous waste	Negligible	Handed over to authorized recyclers
Biomedical waste	NA	NA
E-Waste	5.6	Will be handed over to authorized recycler
STP Sludge (dry)	57 kg/day	Will be used as manure for gardening purpose.

CHAPTER 2: PROJECT DESCRIPTION

2.1 Location details

"GAGAN AVENCIA" is Proposing to Expansion of Residential & Commercial Project located S. No. 63/1/1, 63/2(Part) Kharadi, Tal. Haveli, Dist. Pune, Maharashtra by M/s. Onyx Promoters LLP. The Net Plot Area is 11,009.39 Sqm. The Total Project Built-up Area is 87,870.78 Sqm.

2.2 Features of the Site

The proposed project sit area is falls in Survey of India Toposheet No.E43H14. The geographical co-ordinates of the project site are 18°33'28.61"N Latitude and 73°57'16.45"E Longitude.

Accessibility The old **and Existing Road Network**

The national highway 65 is passing at a distance of 0.80 km (N) from the project site The nearest major Railway station from the proposed project site is Pune Railway Station at 9.00 km and nearest Airport is Pune International Airport is at 5.3 km **2.2.2. Topography**

The general topography is plain topography.

The Topographical Map, Google Image and Site Plan of the project site are shown in Figure 2.1, Figure 2.2 and Figure 2.3 respectively.

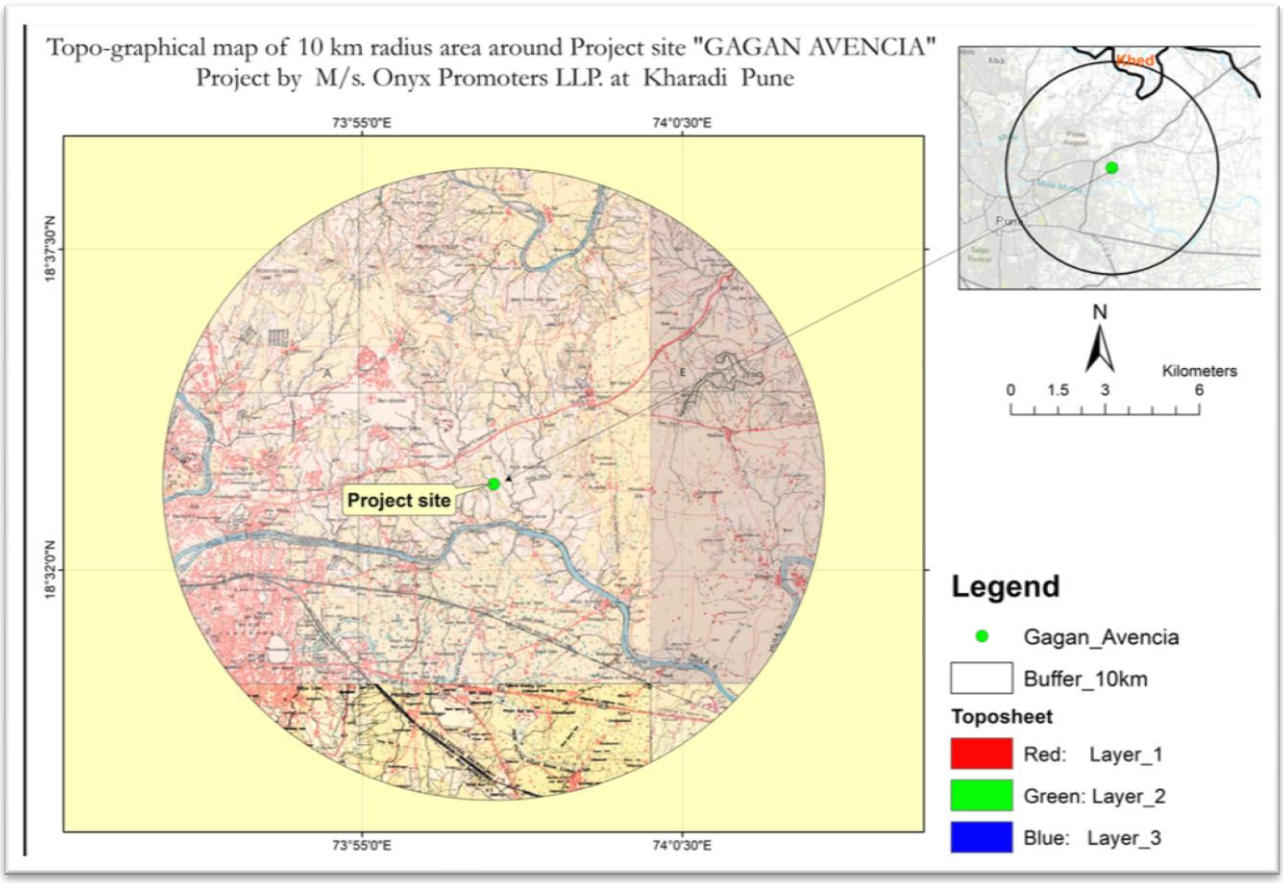


FIGURE 2.1: TOPOGRAPHICAL MAP SHOWING PROJECT SITE

FIGURE 2.2: GOOGLE IMAGE SHOWING PROJECT LOCATION

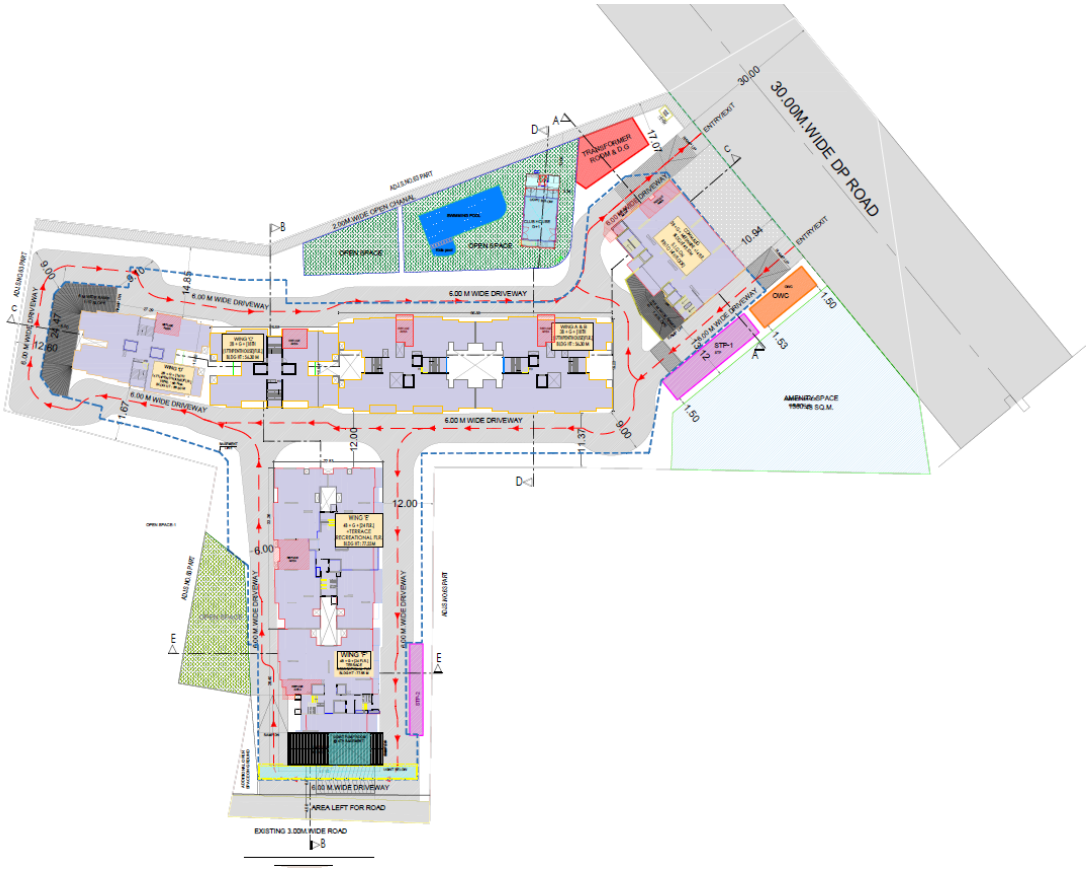


FIGURE 2.3: PROJECT SITE LAYOUT PLAN

TABLE 2.1: SALIENT FEATURES OF THE SITE

Ambient Temperature	Minimum 16°C Maximum 40°C
Humidity	20 – 80 %
Rainfall	-
Climate	Tropical & Semi-Arid
Type of soil	red soils
Distance from Nearest Airport	International Airport- 5.3 km
Distance from Nearest Railway Station	Pune Railway Station: - 8.97 km Pune
Distance from Nearest Fire Station	Kharadi Fire Station – 2.55 km
Reserved Forests within 10 KM radius	No any Reserved Forests within 10 KM Radius
Water Bodies within 10 KM radius	Mula-Mutha -1.23 km
Any Ecologically Sensitive areas within 10 KM radius	None

2.3 Building Configuration

The Building Configuration details of the Proposed Expansion for Residential & Commercial Project "Gagan Avencia" are provided in Table - 2.2 below.

TABLE 2.2: BUILDING CONFIGURATION

Previous EC / Existing Building			Proposed Configuration		
Building Name	**Configuration**	**Height (m)**	**Building Name**	**Configuration**	**Height (m)**
Wing A& B (Residential) In process	3B+G+18th (17 TH penthouse) Floors	56.30m	Wing A& B (Residential)	3B+G+18th (17 TH penthouse) Floors	56.30m
Wing C (Residential) In process	2B+ G +18th (17th penthouse) Floors	56.30m	Wing C (Residential)	2B+ G +18th (17th penthouse) Floors	56.30m
Wing D (Residential)	2B+ G +18th (17th penthouse) Floors	56.30m	Wing D (Residential)	2B+ G +18th (17th penthouse) Floors	56.30m

In process					
Wing E (Residential) In process	3B+ G +22nd Floors	67.9 m	Wing E (Residential) In process	4B+ Gr+ 1st to 24th Floors	77.55 m
Wing F (Residential) In process	3B +G +22nd Floors	67.9 m	Wing F (Residential) In process	4B+ Gr+ 1st to 24th Floors	77.55 m
Commercial + MHADA/LIG building (Residential and Commercial) In process	3B +G +Mezz +14th Floors (MHADA/LIG on 8th to 14th floor)	49.1m	Commercial + MHADA/LIG building (Residential) In process	3B +G +Mezz +14th Floors (MHADA/LIG on 8th to 14th floor)	49.1m

2.4 Parking Area

The parking area 24,925.15 m2 is provided. Required 4 wheeler parking required as per DCR is 427 nos. & Actual provided 640 no, 2 wheeler parking required as per DCR is 1119 nos. & Actual Provided 1544 nos.

TABLE 2.3: PARKING SATEMENT

Type	**Required as per DCR**	**Actual Provided**	**Area per parking (m^2)**
4-Wheeler	427	640	24,925.15 m2
2-Wheeler	1119	1544	

2.5 Population details

The total population considered for the proposed expansion project is 3397 persons (Residential & commercial).

2.6 Water Requirement

The total water requirement of the project during operation phase is 396 KLD, out of which, the freshwater requirement of 259 KLD will be sourced from PMC and the recycled water which will be sourced from treated water in STP. The total water requirement during operation phase is shown in table 2.4 below.

TABLE 2.4: WATER REQUIREMENT

Dry Season (CMD)		Wet Season (CMD)	
Fresh Water	259.00	**Fresh Water**	259.00
Recycled (Gardening)	8.00	**Recycled (Gardening)**	0.0
Recycled Flushing	129.00	**Recycled Flushing**	129.00
Total	396.00	**Total**	388.00
Waste water generation	362.00	**Waste water generation**	362.00

Water meters will be provided to measure the Domestic water consumption, raw sewage inlet to the STP, STP outlet i.e. treated water for recycling and reuse.

2.7 Power Requirement

The power requirement for the proposed project is estimated at connected load 3835 KW & demand load 1817 KW, which will besourced from the MSEDCL.

2.8 Back-up Power details

Entire power, Lighting, UPS power shall be on emergency supply through 1 No. X 600 KVA, 1 No. X 320 KVA, 1 No. X 100 KVA, 1 No. X 25 KVA D. G. Sets.

2.9 Fuel Requirement

The fuel requirement for the DG Sets. The fuel used in DG sets is HighSpeed Diesel (HSD).

2.10 Manpower Requirement

The maximum manpower required for the development of proposed project during construction phase is 100 persons.

2.11 Storm Water Drains

Rain water from the roofs/ terraces shall be collected by means of rain water roof outlets & conveyed through Rain water pipes to upper basement ceiling level. All the RW down takes shall be routed at upper basement ceiling for connection to external SW drainage system by providing bypass arrangement to connect the Rain water sump planned in UG sump level. It is proposed to provide for rain water harvesting recharge bores along this drainage route. Overflow of this drainage network shall be connected to the Municipal drain at hydraulically convenient locations.

2.12 Environmental Infrastructure

2.12.1 Wastewater generation

Total quantity of wastewater generated from this project during operation phase is 362 KLD. It is proposed to treat the sewage water in an STP of 385 KLD capacity. The treated wastewater is used for Flushing and remaining will be sent to Green belt development in

project Area. The water balance details are shown in table 2.5 below.

TABLE 2.5: WATER BALANCE

Dry Season (CMD)		**Wet Season (CMD)**	
Fresh Water	259.00	**Fresh Water**	259.00
Recycled (Gardening)	8.00	**Recycled (Gardening)**	0.0
Recycled Flushing	129.00	**Recycled Flushing**	129.00
Total	396.00	**Total**	388.00
Waste water generation	362.00	**Waste water generation**	362.00

2.12.2. Sewage treatment Plant

A sewage treatment plant of 385 KLD is proposed based on MBBR technology to treat 362KLD of sewage water generated in the proposed project. After treatment, the water will be used for Flushing & Gardening. The design of the STP shall be based on the parameters given in the below table.

TABLE 2.6: STP PARAMETERS

Sr. No.	**Parameters**	**At the Inlet Of STP**	**At the Outlet Of STP**
1.	PH	6 to 9	6.5 to 7.5
2.	COD, mg/l	500-650	Less than 30
3.	BOD, 5 days @ 20 deg.C, mg/l	400-500	Less than 10
4.	Suspended solids, mg/l	250	Less than 20
5.	Oil & grease, mg/l	Up to 20	Less than 5

It is important to note that to achieve this treated water quality

1. Inlet parameters & quality of sewage mentioned is at the inlet of collection/septic tank

2. No other pollutants other than the mentioned, will be present or exceeds the limits or which are hazardous in nature, which otherwise may affect the biological treatment process adapted in the system.

2.12.3 Sewage treatment process

To have eco-friendly & natural treatment, this plant is designed based on the biological treatment concept. This means naturally occurring microbes (which are present in sewage water itself)

removes or degrade the organic matter present in the sewage & at the end clean water is available for the non-potable usage or to dispose safely in the drainage or river bodies as per the norms.

1. Primary Treatment

Screening: This is the first units of the plant in which large or floating materials in the sewage gets arrested and blockage or choking of the downstream equipment's can be avoided. This arrested material will be removed manually and then will be disposed off suitably Oil & Grease trap: Domestic sewage sometimes gets waste water from pantries or kitchen which contains free oil. This oil if not removed then creates the problem of scum accumulation and affects the functioning of microbes.

To avoid this, oil & Grease trap is provided after the bar screen, where free floating oil is arrested prior to entry in the plant. Accumulated oil will be removed periodically and disposed off properly.

Equalization: To absorb variation in quantity and quality of sewage and to provide uniform flow at the downstream treatment process, a collection or equalization tank is provided. This will avoid shock loading and process upsets of the treatment plant. To avoid settling of suspended solids in this tank continues air agitation is provided.

If at site, septic tank is provided then collection tank as well as air agitation is not required.

2. Secondary Treatment

Anoxic tank: Here in this tank Nitrogen removed by the reaction of Denitrification and Nitrification which convert Ammonia in N2 gas it evolved in atmosphere .It is anaerobic treatment slow speed agitator provided in tank for slow and continuous stirring to carry reaction and avoid settling of sludge in tank and Phosphorous content in Sewage are consumed by Bacteria as an Nutrient, so there is no specific treatment for removal of Phosphorous from Sewage.

Biological Treatment: This is the main section of the plant where degradation of organic pollutants with the help of aerobic micro-organism takes place. To provide higher surface area for micro-organism, floating media is provided. On which microorganism growth takes place. This makes bioreactor is of hybrid concept in which both suspended growth as well as attached growth principal for micro-organism is achieved.

Due to higher population of micro-organism, effective volume of bioreactor reduced drastically as compared to conventional aeration tanks.

To maintain the aerobic condition in the bioreactor, air supply arrangement is provided by means of aeration equipment which has high oxygen transfer efficiency.

Tube Settler: Gravity overflow from the bioreactor is collected in the tube settler tank. In this settling tank, generated sludge from the bioreactor undergoes a gravity settling. Clear supernatant from settling tank will flow by gravity to a chlorine contact tank.

To reduce the plan area of settling tank, tube modules are placed in this tank to increase the settling area of the tank. Since this tank is a hopper bottom tank due to which there is no need of sludge scrapping mechanisms.

Intermediate Storage tank: Supernatant from Tube settler, flow by gravity to the

Intermediate storage tank. Here water is stored before pass through the Filtration plant.

Disinfection: Done by Using Ozonator where all bacteria killed using Ozone gas by circulation treated water through the system it mounted before Treated water tank.

Sludge disposal system: Settled sludge from tube settler will be removed by pumping to the sludge holding tank and from there it will go to filter press to dewater the sludge and use dry sludge as a manure.

3. Tertiary treatment

Secondary treated water will be further passed through sand media filter followed by activated carbon filter.

A. Pressure sand filter

The raw water is first passed through a Pressure sand filter to reduce the suspended solids present in the raw water. This filter is provided to keep a check on the suspended solids.

B. Activated carbon filter

Activated Carbon Filter shall be used to remove undesired color, odor & Organic matter.

Filtered water will be collected in the Treated water Storage tank from where it will be for desired non potable application. Backwashed water from filters will return back to equalization tank.

If sewage treated & operated properly this sewage treatment plant will give enormous benefits such as

- It will avoid the water pollution
- It will help us to give hygienic surrounding
- After required treatment, treated water can reduce your 60-70 % fresh water requirement, which otherwise we use for toilet flushing, gardening, construction etc. Thus we can save a lot on water expenditure as well as provide us a remedy on present water crises.
- Being a water recycling & conservation system, commercial establishment gets depreciation benefits for promoting green & eco-friendly development.

LEVEL OF AUTOMATION:

The plant is designed based on moving media aerobic process which needs no skilled manpower. The operations involved are ON / OFF of the pumps and air blower, sludge drain, filter backwash. These operations can be done by the security or gardener. The pumps are provided with level switch for ON /OFF based on PLC Program & the tank water level and to avoid dry run and mechanical damage. This is Semi-Automatic.

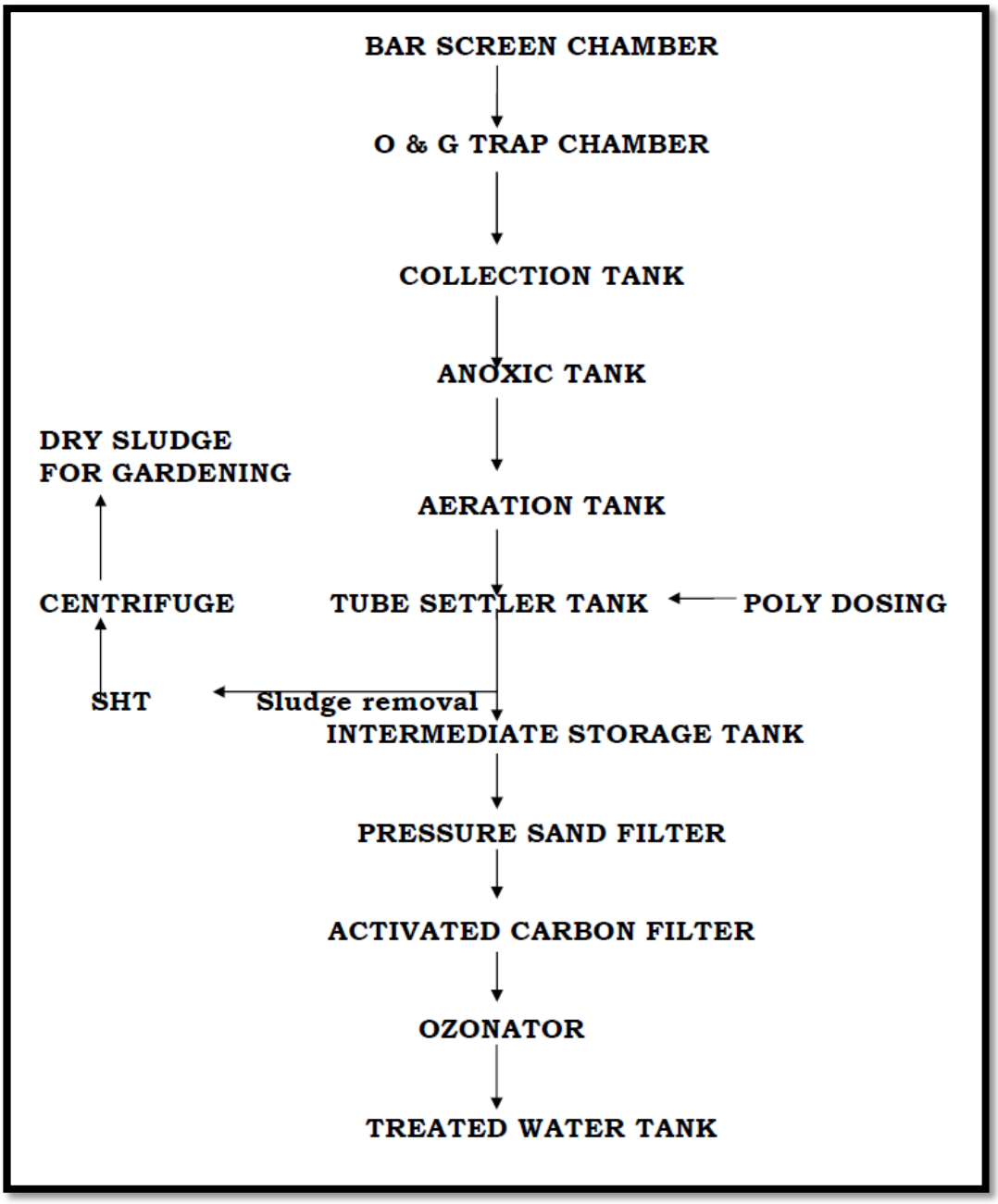


FIGURE 2.4: STP SCHEMATIC FLOW CHART

2.12.4 Solid and Hazardous waste details

Solid waste will be generated during both the construction and operation phases of the project. The following measure will be taken to manage this waste:

- Construction yards will be designated for the storage of construction materials within the site.
- Excavated materials such as topsoil and stones will be stacked for reuse during later stages of construction.
- Topsoil will be stored in a temporary soil bank and reused for landscape development.
- Remaining soil will be utilized for refilling, road work, or raising the site level at designated locations,

2.12.5 Waste management during operation

During the operation phase of the project, solid waste will be generated from residential sectors. This waste will be managed in accordance with the following steps:

- Waste segregation: Waste will be segregated into different categories, such as Biodegradable (Wet waste) and non- biodegradable (Dry waste).
- Dry waste: Will be handed over to authorized recycler.
- Wet waste: Will be treated in OWC
- E-Waste : Will be handed over to authorized recycler
- STP Sludge (dry): Will be used as manure for gardening purpose.

TABLE 2.7: QUANTITY OF SOLID/HAZARDOUS WASTE AND DISPOSAL DETAILS

Type	Quantity (kg/d)	Treatment / disposal
Dry waste	645.00	Will be handed over to authorized recycler
Wet waste	880.00	Will be treated in OWC
Hazardous waste	Negligible	Handed over to authorized recyclers
Biomedical waste	NA	NA
E-Waste	5.6	Will be handed over to authorized recycler
STP Sludge (dry)	57	Will be used as manure for gardening purpose.

2.12.6 Storm water management and Rainwater harvesting structures

Rain water from the roof shall be conveyed till the upper basement ceiling. All the rain water pipes shall then be connected to the external drainage network comprising of pipe & chambers. Surface runoff of storm water on the areas around the building is also collected in the same network. This building storm water drainage network shall be connected to the external storm drain at appropriate location in view of invert & high flood level.

Rain water harvesting is planned along the path of Site storm water drain.

- Rooftop Rain Water Harvesting is the technique through which rain water is captured from the

roof catchments.

- Usually the storm water that initially runs off an area will be more unclean than the storm water that runs off later, after the rainfall has 'cleansed' the catchment. The storm water containing this high initial load is called the 'first flush'.
- This unclean first flush should be discharged into main storm water drain.
- The excess or Overflow water shall be discharged to the external storm water drain through gravity.

TABLE 2.8: ESTIMATE OF RAINWATER HARVESTING

Level of the Ground water table	20-30 BGL
Quantity and size of recharge pits:	7 Nos. Size: 2 m x 2 m x 2 m

Rain water from the roof tops shall be carried up to storm water network outside the building. This rain water is proposed to be conveyed through storm water drainage network comprising of pipes & collection chambers and/or drain channel. Surface runoff of storm water on the areas around the building is also collected in the same network. Overflow is ultimately connected to the existing nalla / municipal storm water network at an appropriate level.

In our case with above scenario, it is proposed to provide on-line recharge pits along with the storm water network with duly study on report by hydro-geological consultant/ rain water harvesting consultant to decide on location, size & numbers.

7 nos of Recharge pits are considered to Harvest and Recharge the Rainwater.

CHAPTER 3: IMPACT ASSESSMENT AND MITIGATIVE MEASURES

3.1 Impact assessment

The potential impacts on the surrounding environment in the 10 km radial distance of proposed project site along with the mitigation measures during construction and operational stages are summarized in Table 3.1 and Table 3.2.

The construction phase is for a period of 36 months. Considering this to be a relatively short period, all construction impacts can be short term and temporary.

As for the operational phase, the project proponent shall ensure that impacts are minimized and are within applicable/ specified limits by SPCB & CPCB by providing relevant pollution control equipment and/ or mitigation measures discussed in the following tables.

TABLE 3.1: CONSTRUCTION PHASE - POTENTIAL IMPACTS AND MITIGATION MEASURES

S. No.	Environmental Components	Potential Impacts	Source of Impacts	Mitigation Measures	Remarks
1.	Water resources	Minor negative & temporary impact on surface & ground water resources.	Water requirement of 20-25 KLD for construction activities	Judicious use of water; minimization of water consumption by use of high-pressure hoses for dust suppression	Water requirement will be sourced from the bore wells & water tankers. However, the bore wells shall not be tapped beyond their yield.
2.	Surface water quality	No impact	Erosion and run-off due to excavation/ construction activities, especially in monsoon season. Discharge of wastewater, construction as well as domestic.	Avoiding excavation in monsoon season; providing appropriate measures for erosion and sediment control; providing adequate sanitation facilities for workers at site; avoiding discharge of untreated wastewater in the area.	-
3.	Ground water quality	No impact	Construction activities	Storage area for fuels, paints, thinners, etc. to be such to avoid chances of spillage. No discharge to ground water body.	-

4.	Air quality	Temporary negative impact	Construction equipment; operation of DG sets for construction power requirement; vehicular traffic; excavation; concreting; etc.	Carrying out construction activity in temporary enclosures, where feasible; water sprinkling for dust suppression; regular maintenance of construction equipment & vehicles; use of fuel of proper quality; use of state-of- the-art construction equipment & methods	-
5.	Noise	Medium negative & temporary	Various construction activities; material and vehicular movement	Use of low noise generates state- of-the-art construction equipment and construction techniques; providing personnel protective equipment to workers; providing temporary enclosure for DG set and other construction activities, where feasible; avoiding construction work in the night time.	-

6.	Land				
(i)	Land use/ requirement	No impact	The total plot area is 14,024.87 Sqm	No land conversion is required as land is NA and is designated for the "M/s.Onyx Promoters LLP.	Site Premises is designated for the Proposed Expansion for Residential & Commercial Project "Gagan Avencia"
(ii)	Solid wastes & land pollution	Temporary minor negative impact	Construction material handling; construction wastes handling and disposal	Maintaining proper inventory control for reduced waste generation; substitution of hazardous raw materials by non- hazardous materials, where feasible; providing proper facility for storage and handling of fuel oils; disposal of spent oils, classified as hazardous waste by sale to authorized third party; proper handling and disposal of construction wastes.	-
(iii)	Geology & Seismicity	No impact	Construction of Proposed Expansion for Residential & Commercial Project "Gagan Avencia"	No heavy structure planned as part of the project	All civil structures shall be constructed as per earthquake zone classification

7.	Ecology	No impact	The Site is already Residential Land and No major trees in the project site area.	Green belt will be developed all along the building boundary, roadside and lane divider. Water sprinkling during dust generation activities; erosion and sediment control; noise and fugitive dust control; restricting construction activity during night time.	No ecologically sensitive area such as forest/ agricultural land will be used for the project. Presently, the site has no trees.
8. Socio-economic					
(i)	Population and literacy rate	Minor negative and temporary	Increase in population due to possible temporary settling of construction workers from outside the study area for the project	Employing local people to the maximum extent possible	About 100 construction workers are expected to be employed.
(ii)	Employment	Minor positive & temporary impact	Availability of construction jobs	Employing local people to the maximum extent possible	About 100 construction workers are expected to be employed
(ii)	Amenities such as education, medical, water supply, sanitation, etc.	No impact	Needs of construction workers;	Employing local people to the extent possible for construction work; making adequate provision through the contractors to handle water,	-

				sanitary, medical and fuel Requirement of construction workers to ensure that the existing infrastructure is not strained.	
(iv)	Transportation	Temporary negative impact	Increased traffic load due to transportation of construction materials and workers	Ensuring that traffic is well regulated. Use of non-peak hours for material transportation	-

TABLE 3.2: OPERATIONAL PHASE - POTENTIAL IMPACTS AND MITIGATION MEASURES

Sr. No.	Environmental Components	Potential Impacts	Source of Impacts	Mitigation Measures	Remarks
1.	Water resources	Minor negative impact on surface water resources. Moderate negative impact on ground water resources due to consumption. Minor positive impact due to recharge by rainwater harvesting.	Total water requirement for the proposed project is 396 KLD.	Recycled water will be used for Flushing, Greenbelt.	The fresh water will be sourced from Local Authority-PMC

2.	Surface water quality	No impact	Discharge of sewage and wastewater from utilities.	Recycled water will be used for Flushing, Greenbelt, Washings and excess water will be used for Green belt development.	-
3.	Ground water quality	No impact	Discharge of sewage and wastewater from utilities	No discharge of wastewater to round water body; use of treated sewage water Flushing, Greenbelt, Washings and excess water will be used for Green belt.	Rainwater harvesting pits & Recharge pond will be proposed to Recharge ground water.
4.	Air quality	Minor negative impact (for SO2, NOX and HC emissions)	Fuel combustion in DG sets	All emissions will be well within the specified emissions standards. Stack height = building height + 3.5 m for safe dispersal of pollutants. HSD with 0.05% sulphur content in DG	All emissions well within the specified limits

				sets; periodic maintenance of DG sets for reduced emissions.	
5.	Noise	Minor negative impact	Noise generating rotating moving equipment	Proper equipment selection; mandatory acoustic enclosure for DG sets; regular maintenance of noise generating equipment; providing personnel protective equipment to persons working in noisy areas; suitable design and location of utility block; development of suitable green Belt and landscaping	
6. Land environment					
(i)	Population and literacy rate	No impact	Increase in population due to building construction Project and their families from	Employing personnel from Within the study area to the extent possible, subject to	Employment Generation and New Educational facilities will be established.

			outside the study area for the proposed project	availability of skilled manpower requisite to the job requirement	
(ii)	Employment	Medium positive impact	Direct employment of 50 Numbers for proposed project.	Employing personnel from within the study area to the extent possible, subject to availability of skilled manpower requisite to the job requirement	Approximately 50 persons Direct employment and indirect employment are expected to be employed for the project
(ii)	Amenities such as education, medical, water supply, sanitation, etc.	No impact	Requirement of various facilities for the children of personnel employed from outside the study area	Employing personnel from within the study area to the extent possible, subject to availability of skilled manpower requisite to the job requirement.	Various amenities in the study area are adequate.
iv)	Transportation	Medium negative impact	Burden on the existing road infrastructure due to the increased traffic from the proposed project	Ensuring that vehicular movement is controlled during peak traffic hours; providing bus services from the office	-

				to the nearest railway station; encouraging car-pools for office employees	

CHAPTER 4 ENVIRONMENTAL MANAGEMENT PLAN

4.1 Introduction

The Environmental Management Plan (EMP) is a site-specific plan developed to ensure that the project is implemented in an environmentally sustainable manner where all contractors and subcontractors, including consultants, understand the potential environmental risks arising from the proposed 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 preventive and 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 the roles and responsibility of the key personnel and contractors who are charged with the responsibility to manage the site.

The EMP is generally

- Prepared in accordance with rules and requirements of the MoEF and the Maharashtra state Pollution Control Board
- Ensures that the component of facility is operated in accordance with the design
- A process that confirms proper operation through supervision and monitoring
- A system that addresses public inconvenience during construction and operationof the facility; and
- A plan that ensures remedial measures are implemented immediately.

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

EMP includes four major elements

a) **Commitment & Policy**: Project proponents will strive to provide and implement the EMP that incorporates all issues related to air, land and water for the project.
b) **Planning**: This includes identification of environmental impacts, legal requirements and setting environmental objectives.
c) 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.
d) Measurement & Evaluation: This includes monitoring, corrective actions, and record keeping.

It is suggested that as part of the EMP, a Monitoring Team should be formed by the project proponent comprising of the site in-charge, project planning group representative and project implementation team representative. This committee's role is to ensure proper operation and management of the EMP including the regulatory compliance.

4.2 Environmental Management Plan

An Environmental Management Plan (EMP) will be required to mitigate the adverse environmental impacts during construction and operation phase of the project and these are as below.

4.2.1 EMP for Air Environment

4.2.1.1 Construction phase

To mitigate the impact of PM (dust) during the construction phase of the proposedproject, the following measures are recommended for implementation:

- a dust control plan; and
- Procedural changes to construction activities.

TABLE 4.1: DUST CONTROL PLAN

S. No.	Fugitive Dust Source Category	Dust Control Actions
1.	Earth-moving	▪ For any earth moving which is more than 30m from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100m in length in any direction.
2.	a) Disturbed surface areas (except completed grading areas)	▪ Apply dust suppression in a sufficient quantity and frequency to maintain a stabilized surface. ▪ Areas, which cannot be stabilized, as evidenced by wind driven dust, must have an application of water at least twice per day to at least 80 percent of the unstable area.
	b) Disturbed surface areas (completed grading areas)	▪ Apply water to at least 80 percent of all inactive accessible disturbed surface areas daily when there is evidence of wind driven fugitive dust.
3.	Inactive disturbed surface areas	▪ Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface.

4.	Unpaved roads	▪ Water all roads used for any vehicular traffic at least twice per day of active operations; OR ▪ Water all roads used for any vehicular traffic once daily and restrict vehicle speed to 25 kmph.
5.	Open storage piles	▪ Apply water to at least 80 percent of the surface areas of all open storage piles daily when there is evidence of wind driven fugitive dust.
6.	Track-out control	▪ Downwash of trucks (especially tyres) prior to departure from site.

The most cost-effective dust suppressant is water because a source of water tends to be readily available on a construction site. Water can be applied using water tankers, handheld sprays and automatic sprinkler systems. Furthermore, incoming loads could be covered to avoid loss of material in transport, especially if material is transported off-site.

4.2.1.2 Operation Phase

The proposed Expansion for Residential & Commercial Project "**Gagan Avencia** is a building construction projects so No major air emissions will be generated from the proposed project.

To mitigate the impact of pollutants from diesel generator sets during the operational phase of the site, the following measures are recommended for implementation.

- Diesel generator set emission control measures
- Greenbelt development.

4.2.1.2.1 Diesel Generator Set Emission Control Measures

The most important pollutant requiring further control is NOx, as the impact of SO_2 emission is minimal because of the use of low (~ 0.05%) Sulphur in diesel as fuel. The following mitigation measures are proposed for NOx reduction

- add-on emission control technologies and
- NOx retarder

Among the above-mentioned options, inherent low NOx emissions technologies (i.e. a temperature retarder) and better dilution through higher stack are preferred cost- effective mitigation measures. The add-on emission control technologies are not considered as it leads to pollution transfer to another media and shall require further mitigative measures.

4.2.1.2.2 Greenbelt Development

Increasing vegetation in the form of greenbelt is one of the preferred methods to mitigateair

pollution. Plants serve as a sink for pollutants, reduce the flow of dust and reduce noise pollution.

4.2.2 EMP for Noise Environment

4.2.2.1 Construction phase

To mitigate the impact of noise from construction equipment during the construction phase of the site the following measures are recommended for implementation

- Noise Shields - Construction equipment producing the most amount of noise should be fitted with noise shields. This shield is a physical barrier (composed of brick and mud, with a non-reflective internal plastering), approximately 3 meters in height, which will provide adequate noise attenuation.
- Time of Operation - Noisy construction equipment should not be permitted during night hours.
- Job Rotation and Hearing Protection - Workers employed in high noise areas will be rotated. Earplugs/muffs, or other hearing protective wear will be provided to those who works very close to the noise generating machinery.

4.2.2.2. Operation phase

To mitigate the impact of noise from diesel generator sets during the operational phase the following measures are recommended for implementation

- Noise emissions control technologies
- Greenbelt development.

4.2.2.2.1 Noise Emissions Control Technologies

All the diesel generators will be housed in a suitable acoustic enclosure so that noise levels at one meter do not exceed 75 dB (A) at 75% load (as per CPCB norms). The Equipment, related to construction activities will be meet the Noise Standards. The diesel generator set housing will be equipped with walls and ceilings lined with glass wool to acoustically treat the noise levels. This acoustic insulation shall be designed to meet the mandatory standards based on a 25 dB (A) insertion loss.

4.2.3 EMP for Water Environment

4.2.3.1 Construction phase

To prevent degradation and 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. Following management measures are suggested to protect the water quality during the construction phase.

- Avoid excavation during monsoon season.
- No discharge of treated wastewater to soil and ground water body.
- Wastewater channels from the site would be connected to septic tank during construction to prevent wastewater from entering the water bodies.
- To prevent surface and ground water contamination by oil/grease, leak proof containers should be used for storage and transportation of oil/grease. The floors of oil/grease handling area should be kept effectively impervious. Any wash off from the oil/grease handling area or workshop shall be drained through impervious drains, Clarifiers or oil/water separators shall be constructed and effluent should be treated appropriately before releasing it.
- Construction activities generate disturbed soil, concrete fines, fertilizer, oils and other wastes. On-site collection and settling of storm water, prohibition of equipment washes downs, and prevention of soil loss and toxic releases from the construction site are necessary to minimize water pollution.
- All stacking and loading areas should be provided with proper garland drains equipped with baffles to prevent run off from the site to enter any water body.

4.2.3.2 Operation phase

In the operation phase of the project, water conservation and development measures need to be taken including all possible potential for conservation of water, reuse, rainwater collection in reservoirs, and recycling of wastewater. Major Waste water generation is only from Domestic Activities. The Waste water generated from domestic activities will be sent to 385 KLD Capacity STP for treatment and treated water will be used for Flushing & Gardening and excess treated water will be used for Green belt development in Industrial estate.

These could be in the form of the following

- Water source Development
- Minimizing water consumption
- Promoting reuse of water after treatment and development of closed loop systems for different water streams.

4.2.4 EMP for land environment

4.2.4.1 Construction phase

Waste generated from construction activity includes construction debris, biomass from land clearing activities (if any), waste from the labour camp, and. other waste. The following

section discusses management of each type of waste. Besides management of topsoil is an important area for which management measures are required.

4.2.4.1.1 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. Recycled aggregate will be used for filler application, and as a sub-base for internal road construction. Mixed debris with high gypsum, plaster, shall not be used as fill, as they are highly susceptible to contamination, and will be given to recyclers. Construction contractors shall remove metal scrap from structural steel, piping, concrete reinforcement and sheet metal work from the site. A significant portion of wood scrap can be reused on site. Recyclable wastes such as plastics, glass fiber insulation, roofing etc. shall be sold to recyclers.

4.2.4.1.2 Solid and Other Waste

Construction sites are sources of many toxic substances, such as paints, solvents, wood preservatives, pesticides, adhesives and sealants. Such wastes generated during construction phase shall be stored in sealed containers, labeled, and disposed of as required by the Hazardous and other Wastes (Management and Transboundary 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 shall not be allowed to contaminate site soils, watercourses, or drainage systems.
- Adequate storage facilities for such waste shall be provided and the waste collection containers conveniently located. A separate designation to earmark such waste will be made so that the waste storage areas are away from storm drains or watercourses.
- Clearly label all such waste containers with the waste being stored and the date of generation.
- Educate employees and subcontractors on waste storage and disposal procedures.

4.2.4.2 Operational phase

The philosophy of solid waste management will be to encourage the four R's of waste i.e.

waste reduction, reuse, recycling, and recovery (materials & energy). Regular public awareness meetings will be conducted to involve the occupants and the employees to ensure proper segregation, storage and collection of waste as per the Solid Waste Management Rules 2016.

The Environmental Management Plan for the solid waste focuses on the Segregation, Storage at source and Collection of the waste management system.

4.2.4.2.1 Collection, Segregation and Storage of Waste at Source

Segregation of waste at source should be made mandatory for the activity. Segregation or sorting waste at its source should be practiced in order to encourage reuse/recycling.With segregation at source recyclables do not lose their commercial value due to cross contamination. Waste generated at the residential Building activity should be segregated as: Bio-Degradable waste & non - Bio-Degradable waste. The entire waste stream from the activity should be stored and collected separately.

4.2.4.2.2 Treatment of Waste

- Bio-Degradable waste
  - Bio-degradable waste will be subjected to composting by Organic WasteConverter and the compost will be used as manure.
  - STP sludge is proposed to be used for horticultural purposes as manure afterproper treatment.
  - Garden Waste is proposed to be composted and will be used for gardening purposes.

<u>Organic Waste Converter</u>

Organic Waste Converter (OWC) will be used to convert organic waste such as vegetable waste, meat waste, bakery waste, leaves, fruits and fruit skins, and flowers into valuable compost that can be used for organic farming activities.

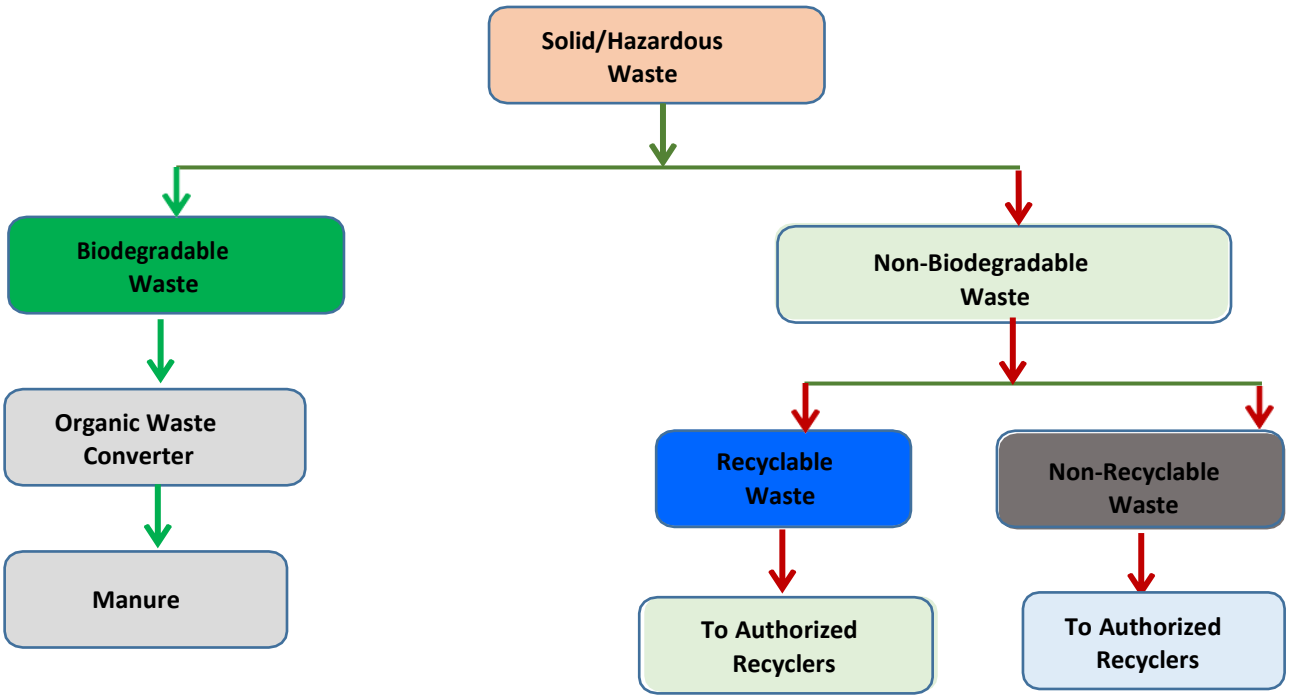
It is proposed to install 1000 Kg/day capacity OWC to treat Organic Waste generated from the proposed project.

- Non- Bio-Degradable waste
  - Recyclable wastes like paper, plastic, metals etc. will be sold off to recyclers.
  - The construction waste generated will be sent to Re-Cyclers/Re-Processors/Scrap Vendors.

Disposal

Recyclable and non-recyclable waste will be disposed through a local agency. Solid

waste management scheme is depicted in the following figure:



4.2.5 EMP for Biological Environment

Construction activities change the natural environment. But it also creates a built environment for the surrounding. The project requires the implementation of following choices exclusively or in combination.

Construction phase

- Restriction of construction activities to defined project areas, which areecologically less sensitive.
- Restrictions on location of labour camps 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 present in and around the project site for cooking, burning or heating purposes by the laborers will be prohibited and suitable alternatives for this purpose will be found.
- Along the major construction work the peripheral greenbelt should be developed, so that; it will grow to become a full-fledged green cover by the time the construction is over.

Operation phase

Enhancement of current ecology at the proposed project site will entail the following measures:

- Plantation & Landscaping
- Green Belt Development

The section below summarizes the techniques to be applied to achieve the aboveobjective

4.2.5.1 Plantation & Landscaping

Total green area proposed to is 1255.84 Sqm i.e. 10 % of the net plot area. No Existing trees on site. No tree will be cut or transplant. Number of trees to be planted =182 No's.

Selection of the plant species will be based on their adaptability to the existing geographical conditions and the vegetation composition of the forest type of the region. During the development of the green belt within the project area, it has to be emphasized that those native plant species should be planted which are having good ornamental values and fast growing with excellent canopy cover.

TABLE 4.2: SUGGESTED TREES FOR GREEN BELT DEVELOPMENT

Sr. No.	SCIENTIFIC NAME	NOS.
1	Azadirachta indica	25
2	Bauhinia racemosa	25
3	Anthocephallus cadamba	15
4	Lagerstroemia flosregineae	10
5	Erhyrlna Indica	10
6	Albizia lebbeck	10
7	Delonix regia	15
8	Nyctanthes arbortristis	9
9	Pongamia pinnata	6
10	Michelia champaca	9
11	Mangifera indica	15
12	Syzygium cumini	15
13	Punica granatum	6

14	Psidium guajava	6
15	Manilkar azapota	6
	Total No	**182**

4.2.6 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 the proposed project will focus on the following components.

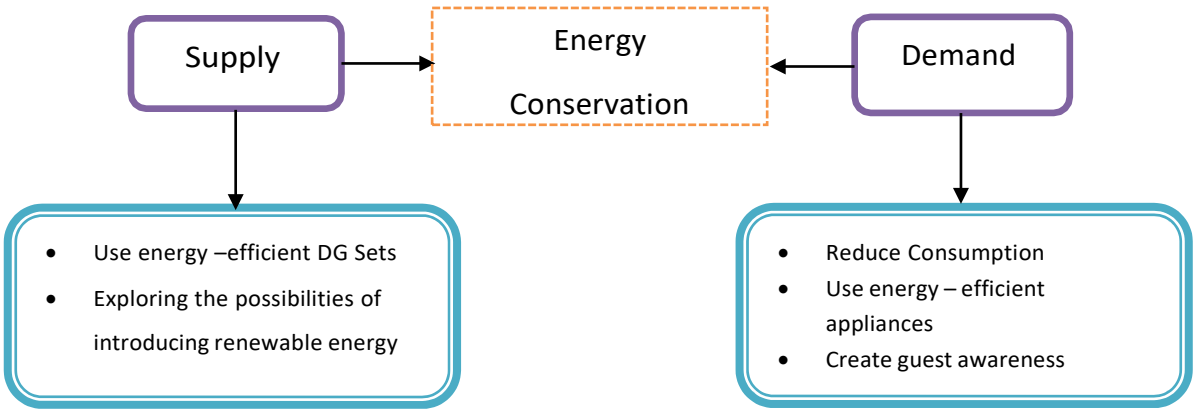
4.2.6.1 Opportunities during Construction and Operation phase

Proposed project would provide employment opportunity during construction and operation phase. There would also be a wider economic impact in terms of generating opportunities for secondary occupation within and around the activity. During Operation Phase the proposed project will generate employment to 3397 Numbers. The main principles considered for employment and income generation opportunities are out lined below.

- Employment strategy would prefer employment of local people.
- General recruitment procedures will be transparent, public, and open to all and recruitment should be publicized in advance.
- There will be no discrimination on basis of gender, caste or other factors.

4.2.7 EMP for Energy Conservation

Energy conservation program will be implemented through measures taken both on energy demand and supply as given in Figure Below.



Energy conservation will be one of the focuses during the residential Building Activity planning and operation stages. The conservation efforts would consist of the following

4.2.7.1 Energy saving practices

- Use of energy efficient equipment's, Lightings and Appliances.
- 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
- Use of LED in common areas and working Area in residential building
- Solar lighting for street lights
- High frequency ballast and HPF condensers in lighting fixtures
- Timer based lighting management in common areas.
- Campaign among employees about energy efficiency measures and energy conservation measures.
- Use of low loss transformers.
- Suitable rating and cable size selection.

	TOTAL MAXIMUM DEMAND	2018.79	KVA	
Sr. No	Total Energy Consumption of the Project in KWH/Annum	3846408		KWH
1	Energy Saved by Modern Energy efficient LED against Conventional CFL	0.00%	0.00	KWH
	Energy Saved by Modern LED with respect to Total Project	0.00%		
2	Energy saving using Low Loss Transformer Against Conventional Transformer	4.65%	14016	KWH
	Energy Saved byLow loss transformer with respect to Total Project	0.36%		
3	Energy Saved by Solar PV Cells	3.19%	104400.00	KWH
	Energy Saved by Solar PV Cells with respect to Total Project	2.71%		
4	Energy Saved by Automatic Timer logic controller for lighting Control Against No timer Control	43.75%	60314.79	KWH
	Energy Saved by Automatic Timer logic controller for lighting Control With respect to Overall Project	1.57%		
5	Energy Saved by Using VFD for Lift against convensional drive	8.00%	203232.00	KWH
	Energy Saved by Using VFD for Lift against convensional drive with respect to overall Project	5.28%		
6	Energy Saved by Solar Water Heating vs Electric Water Heating	75.34%	407550.00	KWH
	Energy Saved by Solar Water Heating vs Electric Water Heating with respect to total project	10.60%		
	Total Energy saved in Project by Energy saving masures	789513		
	Total % Energy saving in Project by Energy Saving measures	20.53%		

4.3 Environmental Management System and Monitoring Plan

Apart from having an Environmental Management Plan, it is necessary to have a permanent staff charged with the task of ensuring its effective implementation of mitigation measures and to conduct environmental monitoring. The major duties and responsibilities of the person – in - charge 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 impacts of operations by strict adherence to the EMP.
- To initiate environmental monitoring as per approved schedule.
- Review and interpretation of monitored results and corrective measures in casemonitored results are above the specified limit.
- Maintain documentation of good environmental practices and applicable environmental laws as ready reference.

- Maintain environmental related records.
- Coordination with regulatory agencies, external consultants, monitoring laboratories.
- Maintain of log of public inconvenience and the action taken

Environmental Monitoring

The purpose of environmental monitoring is to evaluate the effectiveness of implementation of Environmental Management Plan (EMP) by periodically monitoring the important environmental parameters within the impact area, so that any adverse effects are detected and timely action can be taken. The following areas will be monitored regularly.

1) Raw water quality of local Water Supply, tanker water (whenever used) will be monitored regularly to ensure suitability for drinking or other domestic usage.
2) The treated water quality shall also be checked on a regular basis particularly at the points of actual use.
3) Water consumption in various areas and for different users will be measured on a regular basis. Water measurement devices will be included in the design itself so that representative water consumption data can be obtained and measures of control instituted.
4) Raw and Treated Sewage will be monitored for general parameters like pH, SS, COD, BOD and Oil & Grease. Also, residual chlorine and coliforms will also be monitored for treated effluent.
5) Ambient air quality within the project area will be monitored quarterly in a year for PM2.5, PM10, SO_2, NO_x & CO.
6) Stack emissions with respect to PM, SO_x, and NO_x level will be regularly monitored from all stacks.
7) Noise levels will be checked at regular interval near service block with DG sets, near STP and other noise generating areas.
8) Quantity of solid waste generation will also be measured for the different types of solid waste.

4.3.1 Awareness and Training

Training and human resource development is an important link to achieve sustainable operation of the facility and environmental management. For successful functioning of the project, relevant EMP's should be communicated to the following groups of people.

Site Staff: Relevant personnel at site must be trained for the following

- Collection, Segregation and Storage of the solid and waste generated.

- Operation and maintenance of Sewage Treatment Plant and reclamation system
- Requirements of the Emergency Response Plan in case of an emergency.
- Techniques for waste minimization, water conservation and energy conservation
- Applicable environmental, health and safety regulations and compliancerequirements for the same.
- Functioning of the Environmental Management System including environmental monitoring, reporting and documentation needs.

4.3.2 Record keeping and Reporting

Records should be maintained for regulatory, monitoring and operational issues. Typical record keeping requirements for the project site is summarized in Table 4.3

TABLE 4.3: RECORD KEEPING REQUIREMENTS

Parameter	Particulars
Solid Waste Handling and Disposal	Daily quantity of waste generated and sent for disposal
Sewage Treatment	Daily quantity of raw and treated sewage Quantity and point of usage of treated wastewater quality
Monitoring and Survey	Records of all monitoring carried out as per the finalized Monitoring protocol.

4.3.3 Environmental Audits and Corrective action plans

To assess whether the implemented EMP is adequate, the project Management Committee will conduct periodic environmental audits. These audits will be followed by Corrective Action Plans (CAP) to correct various issues identified during the audits.

CHAPTER 5: BUDGET FOR IMPLEMENTATION OF EMP

5.1 Budget for EMP

Budget for EMP during Construction & Operation Phase is provided in tables below:

TABLE 5.1: BUDGET FOR ENVIRONMENTAL MANAGEMENT PLAN

A. DURING CONSTRUCTION PHASE

Sr. No.	Attributes	Parameter	Annual Cost (Rs. In Lakhs)
1.	Air	Water For Dust Suppression, air and noise monitoring	10.00
2.	Water	Tanker water for construction, water monitoring	15.00
3.	Land	Site Sanitation	15.0
4.	Biological	Gardening	5.00
5.	Socio-Economic	Safety, First Aid, Health Hygiene Facilities, Disinfection at site, Health Check Up, Crèches for children, Personal Protective Equipment, CFL lamps for labour hutments	25.00
		Total	**70.00**

B. DURING OPERATION PHASE

Component	Details	Capital (Rs.in Lacs)	O&M (Rs.in Lacs/Y)
Sewage treatment	STP	98.00	14.7
RWH and Strom water	Rain Water harvesting	3.50	1.00
Solid Waste	OWC	20.75	5.83
Green Development	---	25.00	5.00
Energy saving	Renewable energy Solar PV panel & solar hot water	62.40	1.3
Environmental Monitoring	From MoEF & CC approved Lab	-	6.00
Total		**209.65**	**33.83**

TOTAL ENVIRONMENTAL MANAGEMENT PLAN BUDGET

Sr. No	Description	Capital Cost (Lakhs)	Recurring Cost (Lakh/Annum)
1	During Construction Phase	70.00	0.00
2	During Operation Phase	209.65	33.83
	Total Budget	**279.65**	**33.83**

CHAPTER 6: BENEFITS OF THE PROJECT

6.1 Employment generation

The proposed project will generate employment opportunities for the local population during construction phase. The total manpower requirement during construction is about 100 people. This will last for approximately 36 months. Skilled, unskilled and semi-skilled labour will be preferably hired from nearby places.

Estimated manpower requirement during operation shall be 50 workers which will get Direct job opportunities. Indirect employment through contractors, like drivers, attendants, mechanics, daily wage labour, housekeeping, horticulture staff, etc would also be generated. This will positively impact the economic condition of the people in the surrounding area

6.2 Landscape Development

After implementation of the project, the green cover of the project area will be enhanced by beautifully landscaped and green cover plantation by native species. This will not only enhance the aesthetic beauty of the region but also nurture, regenerate and enhance the local ecology and biodiversity.

6.3 Economic improvement

After implementation of the project, the project will create employment to the local people in form of direct and indirect employment. Construction of residential & commercial building Project will also promote allied businesses and facilities in the area. This will result in considerable improvement in the economic condition of the surrounding area.

6.4 Improvement in infrastructure facility

New and better roads will be developed, and public transport facilities will improve. This will give rise to better infrastructure facilities in the proposed project and surrounding area.

CHAPTER 7: CONCLUSION

The proposed project will provide direct employment to a large number of personnel. This project will also generate indirect employment to a considerable number of families, who will render their services for the employees of the project.

The proposed project will have marginal impact on the local environment with proper mitigation measures and effective implementation of the environment management measures. The project has beneficial impact/effects in terms of growth in regional economy, increase Government earnings and revenues and accelerate the pace of residential development in the region.