

# **VIVA PATIL REAL ESTATE**

**Date: 25.01.2017**

To,  
**The Director,**  
**Infrastructure and Miscellaneous Projects & CRZ**  
Indira Paryavaran Bhavan  
Jor Bagh Road,  
New Delhi - 110 003

**Sub:** Application for Prior Environmental Clearance Environmental Clearance of Proposed Residential Project with shopline at Gut. No. 50, Plot.No.2, Kambalgaon village, Taluka & District Palghar, Maharashtra. [F. No. 21-18/2016-IA-III]

**Ref:** Minutes of 11<sup>th</sup> EAC (Infra-II) meeting held on 25.11.2016 (Item no. 11.3.6) (File No. 21-18/2016-IA-III)

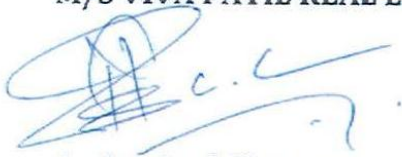
Dear Sir,

We are very much thankful to Expert Appraisal Committee (Infra-2) for appraising our above referred project in its 11<sup>th</sup> Meeting held on 25.11.2016 (Item no. 11.3.6)

As per the minutes of the meeting, we were asked to comply with certain points raised by committee. The point wise reply to the queries raised is enclosed herewith. We hope that reply is in line with your requirement.

Thanking you,  
Yours faithfully,

**M/S VIVA PATIL REAL ESTATE & M/S DREAMS REALTORS**



**Enclosures:**

1. As above

**POINTWISE COMPLIANCE TO QUIRIES RAISED DURING  
11<sup>th</sup> EAC (Infra-II) MEETING**

**Point No. 1:** Status of application of the project proposal in SEIAA, Maharashtra.

**Compliance:** The application is not considered at SEIAA, Maharashtra as the SEAC MMR's tenure is over and there is no committee for appraisal of projects. Hence, we have applied to MoEF&CC, Delhi on 28.10.2016.

**Point No. 2:** Copy of application submitted for clearance from NBWL.

**Compliance:** Our project does not come within the ESZ of Sanjay Gandhi National park and Tungreshwar wildlife sanctuary. Thus clearance from NBWL is not applicable to our project.

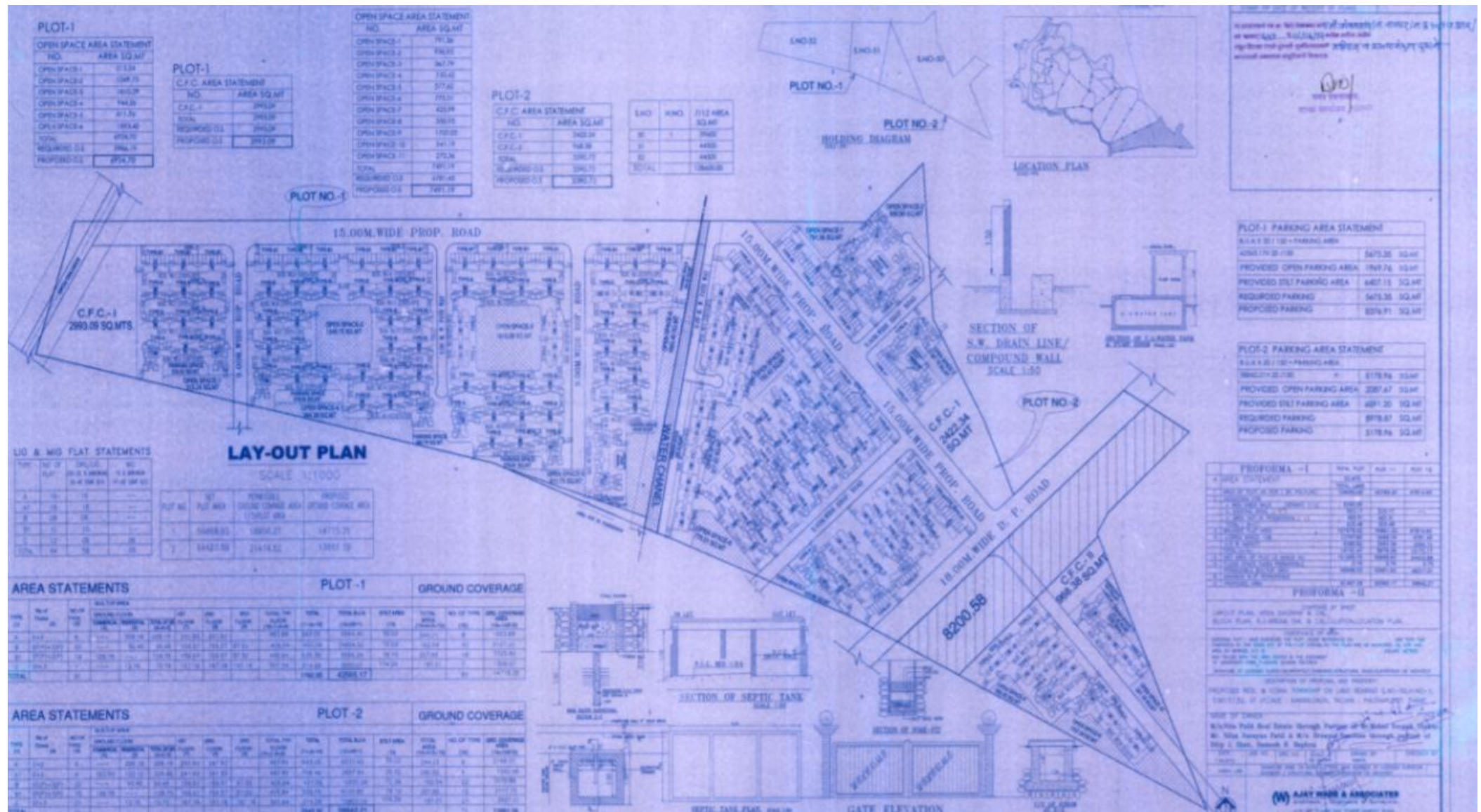
**Point No. 3:** Present landuse of the proposed project site.

**Compliance:** The layout for the project was approved by the Town Planning department, Palghar after obtaining NA from District Collector. The layout is planned as per the DCPR for regional planning area 2013.

**Point No. 4:** Building sanction plan.

**Compliance:** The plan was sanctioned by town planning department, Palghar on 08/06/2012. The copy of sanctioned plan is given in the following Figure 1:

Figure 1: Sanctioned plan dated 08/06/2012

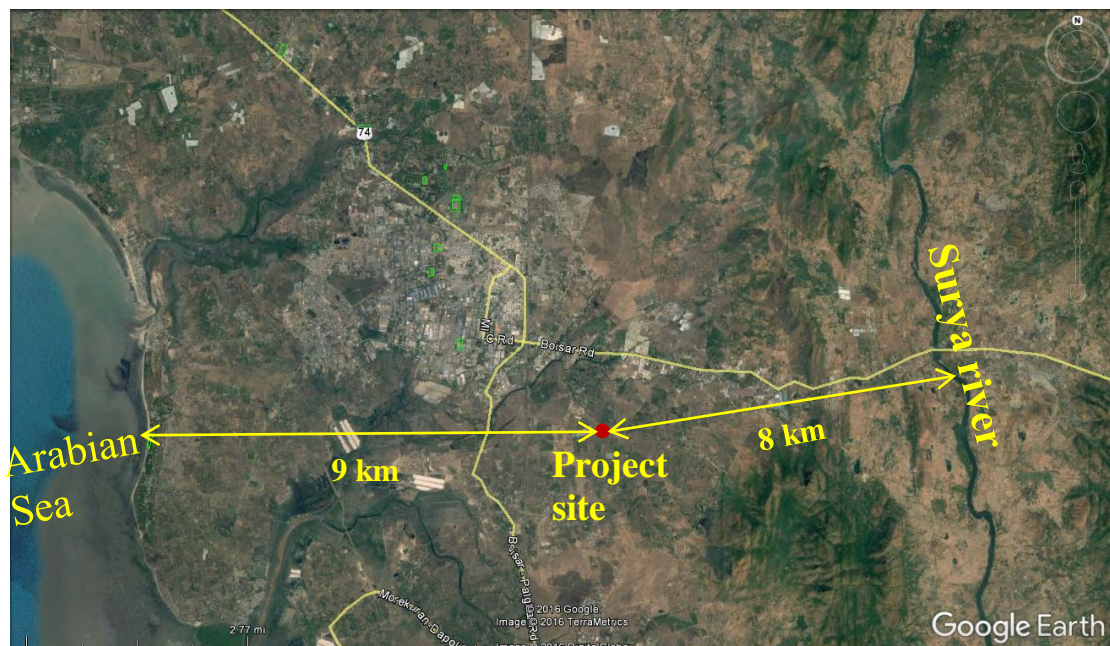




**Point No. 5:** As per form1, protected area, ecological sensitive areas and water bodies are located within 15 km distance from the project sites. Pl furnish details of protective area and ecological sensitive area.

**Compliance:** There are no eco sensitive areas within 15 km of the project site. The Google image showing the distance of water bodies from the project site is shown below. Surya River is at 8 km and Arabian sea is at 9 km from the project site from the project site. The location of site from Surya river is shown in Figure 2.

**Figure 2: Google image showing distance of project from Eco sensitive areas**



**Point No. 6:** Commitment that shops and other establishments in residential blocks with have to conform to residential area norms in terms of noise pollution and vehicular movements and shall not create a nuisance for residents of the Blocks.

**Compliance:** We hereby confirm that shops in the residential blocks will not create any nuisance due to noise pollution and vehicular movements.

**Point No. 7:** Layout plan indicating road, greenbelt, drainage, sewer line, STP, solid waste handling area, rain water harvesting structure, etc. in different colour to be furnished.

**Compliance:** Co-ordinated drawing showing Layout plan indicating road, greenbelt, drainage, sewer line, STP, solid waste handling area, rain water harvesting structure etc. with different colour codes is shown in the following Figure 3.

Figure 3: Coordinated layout with landscape, location of STP, SWM, RWH, SWD UG tanks and sewer line





**Point No. 8:** Layout of parking plan indicating entry and exit points of vehicular movement as well as traffic management plan. Highlight the fire tender pathway.

**Compliance:** Parking provision for the project is done as per the DCR. Parking statement is given in Table No. 1:

**Table No. 1: Parking Statement**

Occupancy	Carpet area m <sup>2</sup>	No. Of tenements	Reqd. Parkings (non congested area)	No. Of parkings
<b>4 WHEELER PARKING</b>				
Residential	Upto 50.00	2234	0 Parking	0
	50 to 100	0	0 Parking	0
	Above 100	0	1 Parking for every 2 Tenement	0
Commercial	Shops	942.65 m <sup>2</sup>	1 parking for every 100m <sup>2</sup> or fraction thereof	9
<b>Total</b>				<b>9</b>
<b>2 W PARKING</b>				
Residential	Upto 50	2234	5 parking for every 50 m <sup>2</sup> of remaining area	2793
Commercial	Shops	942.65 m <sup>2</sup>	3 parking for every 100m <sup>2</sup> or fraction thereof	27
<b>Total</b>				<b>2820</b>
<b>CYCLE PARKING</b>				
Residential	Upto 50.00	2234	5 parking for every 50 m <sup>2</sup> of remaining area	2793
Commercial	Shops	942.65 m <sup>2</sup>	3 parking for every 100m <sup>2</sup> or fraction thereof	27
<b>Total</b>				<b>2820</b>

The project location is in a sparsely populated area. The roads here are free flowing. The nearest major roads are MIDC Boisar Road and Boisar Palghar road. Considering this following traffic management points will be implemented and practiced on site:

- This being a sparsely developed area the traffic density in the project area is low. The roads in the immediate vicinity of the have

minimum traffic. There are 18m, 15m, 12m and 9m internal DP roads proposed for the project.

- Provision for 4 wheeler, 2 wheeler and cycle parking is done as per the DCPR. Being constructed as an affordable project has majority of 2 wheeler parking and cycle parking.
- Traffic signs will be provided to guide the incoming and outgoing traffic.
- Separate entries and exit are proposed for flexibility to enter and exit the proposed development.
- Speed humps/Speed Breakers will be provided for traffic calming and restricting the internal vehicular speed to 10 km/hr.
- Traffic wardens will be assigned to regulate the traffic flow during peak hours, especially at the entry and exit.
- Convex mirrors will be provided at blind corners to avoid accidents



Figure 4: Parking plan






Figure 5: Fire tender Movement plan



**Point No. 9:** Details of source of water supply alongwith permission to be submitted.

**Compliance:** The project will receive water supply from Maharashtra Jeevan Pradhikaran. The commitment letter is given in the following Figure 6.

**Figure 6: MJP Water commitment letter**

 **महाराष्ट्र जीवन प्राधिकरण**  
**जल व्यवस्थापन विभाग विरार.**

कार्यकारी अभियंता  
म.जी.प्रा.ज.व्य.वि.विभाग,  
विष्णू प्रतिभा हॉल, रसा मळा, विरार (पश्चिम)

दूरध्वनी क्रमांक :- ०२५०-२५०५८५२/२५०६४०८  
eeewm.virar@mjp.gov.in

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नावक पत्र क्र.मजीप्रा.ज.व्य.वि.विरार/तांसा./१५१६/ दिनांक : ०७/०९/२०१३

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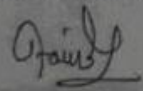
प्रति,  
प्रकल्प प्रमुख,  
महिंद्रा लाईफ स्पेसेस लि. मुंबई  
कांबळगांव, मान गुप ग्रामपंचायत,  
ता.पालघर, जि.ठाणे.

विषय :- गोवणे पाणी पुरवठा केंद्रातून महिंद्रा लाईफ स्पेसेस लि. कांबळगांव, मान गुप ग्रामपंचायत ता.पालघर जि.ठाणे करिता पिण्याच्या पाणी पुरवठ्यासाठी ना हरकत दाखला देणे बाबत..

संदर्भ :- १) आपले दिनांक २२/५/२०१३ रोजीचे मराठी व दि.५/९/२०१३ चे इंग्रजी पत्र  
२) उपविभागीय अभियंता (ज.व्य.) उपविभाग वाणगांव यांचे पत्र क्र.४९९ दि.७/९/२०१३ रोजीचा अहवाल.

उपरोक्त संदर्भित विषयाच्या अनुषंगाने आपण आपल्या माफक दरातील गृह संकूलाकरीता १ द.ल.लि. / दिनी पिण्याच्या पाण्याची मागणी केल्यानुसार म.जी.प्रा.च्या मालकीच्या गोवणे येथील जलशुद्धीकरण केंद्रामधून १ द.ल.लि. / दिनी शुध्द पाणी उपलब्ध होऊ शकेल. परंतु त्या करिता महिंद्रा लाईफ स्पेसेस लि. कंपनीने (१) सर्वेक्षण करणे (२) योजनेचा आराखडा व संकल्पन तयार करणे (३) सदर प्रकल्पासाठी शक्यता पडताळणी अहवाल (physibillity & assessment report) या पत्राच्या दिनांकापासून तीन महिन्यात सादर करणे आवश्यक आहे. तसेच नळ जोडणीसाठी स्वतंत्र प्रस्ताव सादर करून घरिष्ट कार्यालयाची परवानगी घेणे आवश्यक आहे.

वरील अटीच्या अधिन राहून आपल्या माफक दरातील गृह संकूलास पाणी उपलब्ध होऊ शकेल असा ना हरकत दाखला देण्यात येत आहे.

  
कार्यकारी अभियंता,  
म.जी.प्रा.ज.व्य.वि.विरार

प्रत :- अधीक्षक अभियंता, म.जी.प्रा.ज.व्य.मंडळ, नवीन पनवेल यांना माहितीसाठी सविनय सादर.  
प्रत :- उपविभागीय अभियंता, म.जी.प्रा.ज.व्य.उपविभाग, वाणगांव यांना माहिती व पुढील कार्यवाहीसाठी.

**Point No. 10:** Excess treated sewage disposal plan/scheme to be submitted.

**Compliance:** Excess treated water from our project will be to nearby Construction, MIDC and Agricultural use.

**Point No. 11:** Assessment of ground level concentration of pollutants due to DG set (1500 kVA).

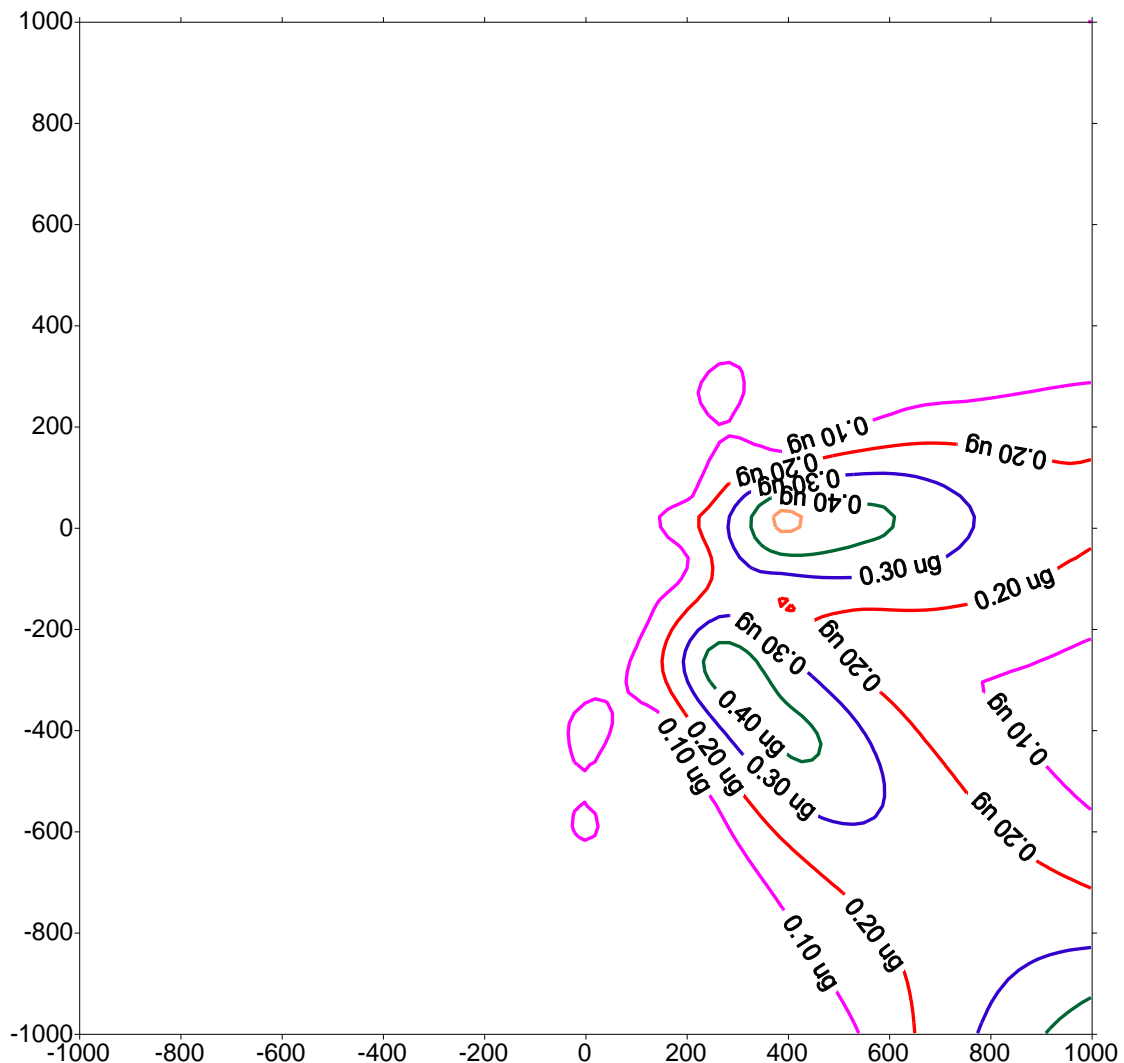
**Compliance:** Assessment of ground level concentration of pollutants due to DG set of 1500 kVA capacity is done using dispersion modelling for estimated concentrations of SO<sub>2</sub>. The DG set operation will contribute towards the air pollution. These DG sets have been provided to take care of power availability during power failure from MSEDCL. However in the project area 24 hrs electricity is supplied, but on a precautionary basis the above DG sets have been proposed in case of any emergencies arising out of routine power failure. The impact of the DG sets on the environment has also been studied using mathematical model for ascertaining the gaseous pollutant impact.

The results of the mathematical model indicate that the maximum incremental increase in the SO<sub>2</sub> concentration is 0.52 ug/m<sup>3</sup> at 400m in and around the project site. The isopleths of predicted SO<sub>2</sub> concentrations is given in Figure 7. This is confined to a small area of 1000 m in and around the project site. The predicted concentrations from the model will not lead to alter the baseline concentrations as it is well within the norms stipulated and also as the DGs will be used only during emergency.



**Figure 7: Isoplethes of predicted concentration of SO<sub>2</sub>**

## GLC: Total 1500 kVA DG SET



**Point No. 12:** Effort shall be made to reduce capacity of DG set upto 750 KVA and remaining standby power shall be met from solar energy.

**Compliance:** We will reduce capacity of DG set upto 340 KVA and remaining standby power of 1160 kVA will be met from solar energy i.e. Solar PV panels & Solar trees. Kindly refer point no. 18 for Solar power generation calculations.

**Point No. 13:** Treatment scheme for sewage and its recycling mode.

**Compliance:** Total sewage quantity generated from the project is 1416 KLD. We have proposed Phytorid technology for the treatment of sewage. Details of the phytorid system are as follows:

## **PHYTORID based Sewage Treatment and Reuse Implementation Project**

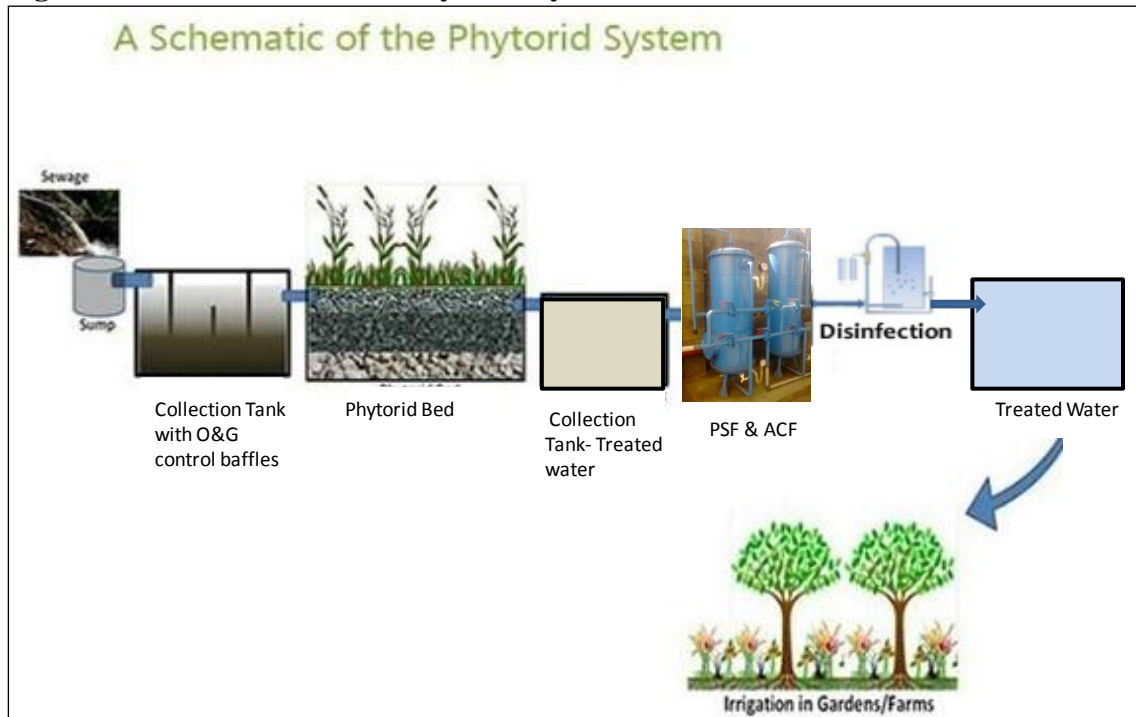
### **Introduction**

- The Phytorid technology can be constructed in series and parallel modules / cells depending on the land availability and quantity of wastewater to be treated
- The Phytorid technology treatment is a subsurface flow type in which wastewater is applied to cell / system filled with porous media such as crushed bricks, gravel and stones. The hydraulics is maintained in such a manner that wastewater does not rise to the surface retaining a free board at the top of the filled media
- The system consists of the following three zones: (i) inlet zone comprising of crushed bricks and different sizes of stones, (ii) treatment zone consisting of the same media as in inlet zone with plant species, and (iii) outlet zone

### **The Process Involves Following Steps**

- **Primary Settling Cell:** In this water is stored and sedimentation process is allowed to take place.
- **Secondary Advanced Filter Cell:** It consists of pebbles / stones of different sizes arranged in the form of layer through which waste water is allowed to pass. Thus it acts like natural filter. It consists of various baffles that allow the passage of water through the chamber.
- **Tertiary Biological Wetland Cell:** It consists of layer of gravel/stones/pebbles and layer of mud with plants planted like Elephant grass (*Pennisetum purpurem*), Cattails (*Typha Spp.*), Reeds (*Phragmites Spp.*), Cannas pp. Yellow flag iris (*Iris pseudocorus*) that are normally found in natural wetlands with filtration and treatment capability. Furthermore some ornamental as well as flowering plants species such as Golden Dhuranda, Bamboo, Nerium, colosia etc. can be used for treatment.
- **Sand filters:** wastewater be adequately treated with the help of this sand filters prior to disinfection in order for any disinfectant to be effective.
- **Disinfection:** for destruction of pathogenic organisms to prevent the spread of water borne disease to downstream user
- Clear water is collected & used accordingly demand.

**Figure 8: A Schematic of the Phytorid System**



**Merits:**

- STP plants cannot remove pollutants like nitrates and phosphates which penetrate the groundwater and pollute it, but Phytorid does the job. Phytorid also removes the fecal coliform from waste water.
- Cost-effective in terms of O&M is the most important factor
- Operation and maintenance expenses are negligible.
- Minimum electricity requirement nearly fossil energy free
- Smaller footprint (Retention time: Typically less than 24 hrs.)
- Facilitates recycle and reuse of water
- No Sludge Production, No foul odors and No Mosquito Nuisance.
- Tolerates fluctuations in operating conditions such as flow, temperature and pH
- No electricity required, No Chemicals required, No machines involved in process
- The total area required for the system is approximately 20 sq. m. for 10 m<sup>3</sup>/day.

**Demerits**

- In evaluation with conventional treatment technology, Phytorid Technology generally requires more land area for execution but comparing with all other benefits with respect to energy consumption, O & M etc.

**Various Plant Species:**

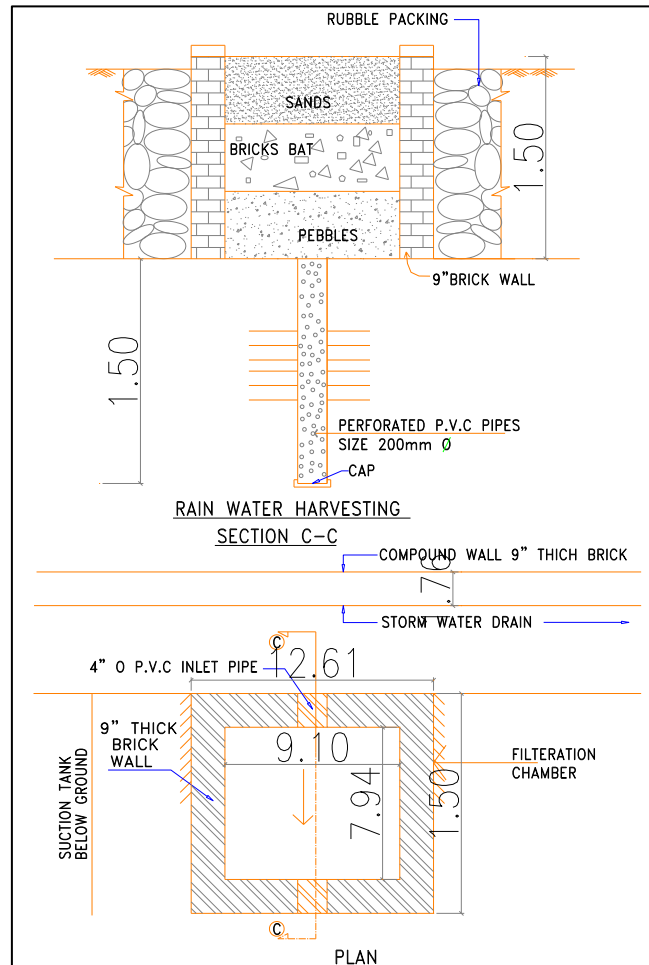
1. Forage	<i>Kochia Kochia app</i>
2. Poplat	<i>Trees Populas app</i>
3. Willow	<i>trees Salix app</i>
4. Alfalfa	<i>Medicago sativa</i>
5. Cattail	<i>Typha latifolia</i>
6. Coontail	<i>Ceratophyllum demersvm L</i>
7. Bullrush	<i>Scirpus spp</i>
8. Reed	<i>Phragmites spp.</i>
9. American pondweed	<i>Potamogeton nodosus</i>
10. Common Arrowhead	<i>Sagittaria latifolia</i>
11. Elephant grass	<i>Pennisetum purpurem</i>
12. Cattails	<i>Typha sp.</i>
13. Reeds	<i>Phragmite ssp.</i>
14. Kardal	<i>Canna Indica</i>
15. Yellow flag iris	<i>Iris pseudocorus</i>

**Point No. 14:** Details of rain water harvesting system to be furnished. Clarity on recharge pits, storage systems for rain water and use of appropriate filtration system for collected rain water to be detailed.

**Compliance:** The rooftop rainwater will be stored in Rain Water Harvesting tanks after filtration through coarse and fine sand. The roof top Rain water harvesting potential project is 370 m<sup>3</sup>/day & the provision of 9 Rainwater Harvesting tanks having total capacity 740 m<sup>3</sup> will be done. The overflow from the RWH tanks will be channeled to the groundwater recharge pits. The cross section of the recharge pit is given in the Figure 7.



**Figure 7: Cross section of recharge pits**



**Point No. 15:** Calculation on sizing of solar water heating systems to be furnished.

**Compliance:** We are not providing solar hot water panels as the terrace area will be utilized for provision of PV panels to provide energy for for 2 solar powered lights and one fan in each flat and emergency backup. The solar PV panel calculation is given in compliance point no. 16.

**Point No. 16:** A backup arrangement of at least 50% solar powered systems connected to the grid and at least two solar powered lights and one solar powered fan in each flat

**Compliance:** We have proposed solar panels to provide 2 solar powered lights and one fan for each of 2228 tenements. The calculations for PV panels are given below:

**Table 2: Solar PV Panel Calculation**

Total Terrace Area	18,451.20 m <sup>2</sup>
Potential of PV Power generation	1500 kW
Power requirement of 2 lights and 1 fan Connection for 2228 tenements	80 W x 2228= <b>178 kW</b> approx
Solar Power to Grid/DG Backup	1322 kW

**Point No. 17:** A management plan for excavation and dewatering to ensure compliance to the CGWA guidelines and regulation.

**Compliance:** There is no basement proposed for the project. Excavation will be done only for foundation purpose. In accordance with the CGWA guidelines and regulation we will provide settling tank of the size 3mx2mx3m for dewatering of the excavated soil if the groundwater table is intersected during the excavation. The dewatered quantity of water will be utilized for dust suppression on site and/or for construction activities.

**Point No. 18:** Solid waste management plan alongwith area earmarked for solid waste management scheme.

**Compliance:** The detailed outline of solid waste management plan alongwith area earmarked for solid waste management scheme is given below:

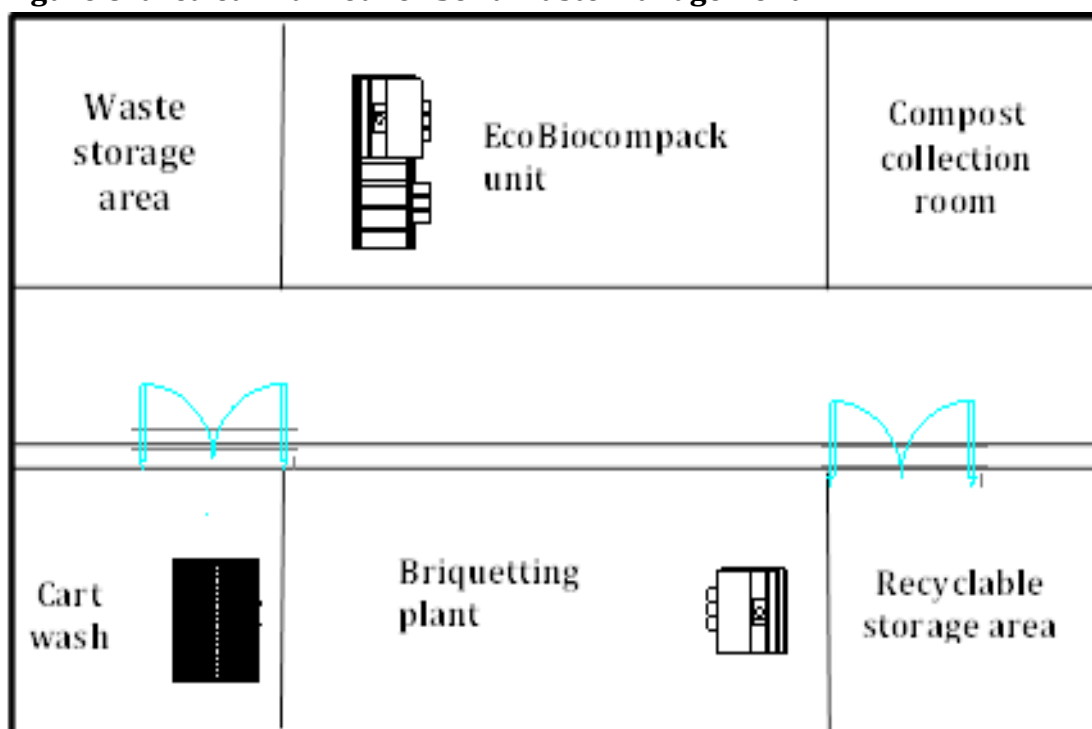
- Segregation of dry and wet garbage will be done at source
- Dry/recyclable waste (garbage) will be segregated and to recyclers and inert will be disposed to Landfill site
- Wet garbage/biodegradable matter as leftover food, vegetables will be composted by Mechanical Composting

**Table 3: Solid waste generation**

Details	Information
Total Waste generation	<b>5,615 kg/day</b>
Biodegradable waste (60%)	<b>3,369 kg/day</b> (Converted into manure)
Non Biodegradable waste (40%)	<b>2,246 kg/day</b> (to recyclers)

Details	Information
Sewage treatment Plant sludge	<b>14 m<sup>3</sup>/d</b>
Solid waste treatment technology	<b>Mechanical Composting Unit</b>
No. of unit SWM	<b>4 no.</b>
Capacity	<b>1000 kg/day :3 nos 500 kg/day : 1 no</b>
Total Machine floor area	<b>116 m<sup>2</sup></b>
Space provided	<b>170 m<sup>2</sup></b>

**Figure 8: area earmarked for Solid waste management:**



**Point No. 19:** Management of excavated soil. Pollution control measures to be taken to control fugitive emission during construction phase including marble /stone cutting.

**Compliance:** Excavated soil will be used for the Road pavement & site leveling. Fugitive emission during construction phase will be control by barricading & plantation along the plot boundary, water sprinkling at regular interval to arrest Air Bourne-dust, Use of Ready Mix concrete to avoid excessive movement of vehicles on the site. Use of PPE such as ear plugs and masks for labours will be made mandatory wherever there are excess emissions. Precut vitrified tiles will be used for flooring. Tiles cutting will be done within the building and will be done using water so there will not be any considerable fugitive emission.

**Point No. 20:** Details energy conservation measures to be taken. taken (all points mentioned in the proposal such as orientation to support reduced heat gain, use of ASHRAE 90.1, use of ECBC compliant envelope measures to be supported through drawings and details in the proposal.

**Compliance:** Internal and external lighting design will be provided as required by ECBC which will have Lighting Power Density as per space requirements.

The project would provide 20% lower LPD than as specified in ECBC, to achieve energy saving, while providing the required illumination levels, by using high efficacy lighting.

Tree plantation is proposed along the periphery of the site ensuring adequate buffer and reducing heat gain by the building so that the buildings will remain naturally ventilated.

The project design will use high energy performing building materials which would have low U value (Thermal Conductance) as compared to the conventional materials. The external wall of building would use fly ash blocks.

The building envelop proposed to comply with the ECBC guidelines. for the proposed project and its parameters are given in Table 4.

**Table 4: Building Envelop**

Wall assembly	'U' Value – 0.14 btu./sq.ft.Hr.F OR $0.79 \text{ W/m}^2 \text{ }^0\text{K}$ <i>Can be easily achieved by using 6" AAC blocks with lower thermal conductivity.</i>
Roof assembly	Roof insulation entirely above deck, 'U' Value – 0.275 btu./sq.ft.Hr.F OR $1.56 \text{ W/m}^2 \text{ }^0\text{K}$ <i>Can be easily achieved by using 4" brick bat koba.</i> <i>This is will be further improved by provision of Solar PV Panel on roof top for Electricity generation</i>
High performance fenestration	'U' Value - 0.97 btu./sq.ft.Hr.F OR $5.5 \text{ W/m}^2 \text{ }^0\text{K}$ S.H.G.C. - 0.56 V.L.T. - 51 % <i>Can be achieved by using Saint Gobain ST 150 6 mm high performance glass.</i>



**Point No. 21:** Layout plan indicating Greenbelt alongwith area earmarked to be provided.

**Compliance:** The layout plan indicating Greenbelt alongwith area earmarked for RG is given in the following Figure 9:

**Figure 9: Landscape plan**



**List and no of trees proposed to be planted.**

No.	Botanical name	Common name	Nos
1	Azadirachta indica	Neem	20
2	Albizia lebbeck	Shirish	22
3	Alstonia scholaris	Saptaparn	20
4	Bauhinea purpurea	Kanchan	25

No.	Botanical name	Common name	Nos
5	Erythrina indica	Pangara	21
6	Cassia fistula	Bahava / golden shower tree	20
7	Pongamia pinnata / glabra	Karanj.	25
8	Mimosops elengii	Bakul.	20
9	Plumeria alba	Chapha.	20
10	Anthocephallus cadamba	Kadamb	20
11	Nefium indicum	Kanher	25
12	Lagerstroemia flos-reginae	Tamhan	20
13	Murraya paniculata	Kunti	25
14	Acacia catechu	Khair	25
15	Mangifera indica	Mango	20
16	Syzygium cumini	Jamun	20
17	Butea monosperma	Palas	24
18	Carrisa congesta	Karwand	24
19	Justicia adhatoda	Adulasa	20
20	Asparagus racemosus	Shatawari	28
21	Crotalaria retusa	Dingala	20
22	Ixora coccinea	Dewhari	20
23	Nyctanthes arbor-tristis	Parijatak	24
24	Bombax ceiba	Katesavar	21
25	Putranjiva roxburghii	Putranjiva	24
26	Michelia champaca	Son chafa	20
27	Saraca asoka	Sita ashok	25
28	Ailanthus excels	Maharukh	27
29	Ficus retusa	Nandruk	25
	<b>Total</b>		<b>650</b>