APPENDIX II

FORM-1A

(Only for construction projects listed under item 8 of the Schedule)

1 LAND ENVIRONMENT

1.1 Will the existing land use get significantly altered from the project that is not consistent with the surroundings?(proposed land use must conform to the approved master plan/ development plan of the area. change of land use if any and the statutory approval from the competent authority be submitted). Attach maps of (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.

The proposed site is located in Sholinganallur Village, Sholinganallur Taluk, Kancheepuram District of Tamil Nadu State. Proposed construction of IT park falls in SNO 449/1A, 450/1,450/2A and 450/2B which is zoned as general industrial use zone as per CMDA land use maps. Relevant maps and other documents are attached in annexure; the details are shown in the table below.

S.No	List of Annexure	Details
1.	Annexure 1	Land use certificate
2.	Annexure 2	Planning Permission from CMDA
3.	Annexure 7	Satellite Image Surrounding features – 10 Km radius
4.	Annexure-8	500 m radius map
5.	Annexure-9	Location Map
6.	Annexure 10	Site plan as approved by CMDA
7.	Annexure 11	Contour map

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.

<table>
<tr><th>Item</th><th>Details</th></tr>
<tr><td>Project Name</td><td>“Divya Sree Point IT Park”</td></tr>
<tr><td>Location</td><td>SNO 449/1A, 450/1,450/2A and 450/2B</td></tr>
<tr><td>Type of project</td><td>Commercial Development</td></tr>
<tr><td>Total Plot area</td><td>15060 sq.m</td></tr>
<tr><td>Built up area</td><td>75282.21 sq.m</td></tr>
<tr><td>Ground coverage</td><td>5796.75 sq.m</td></tr>
<tr><td>Road & Pavements</td><td>3200 sq.m</td></tr>
<tr><td>Surface parking area</td><td>1322.4 sq.m</td></tr>
<tr><td>Green Belt</td><td>2148 sq.m</td></tr>
<tr><td>Open area</td><td>109.31 sq.m</td></tr>
<tr><td>OSR area</td><td>1496.54 sq.m</td></tr>
<tr><td>Number of floors</td><td>Double Basements + Stilt floor part +Ground floor part+ 1st floor (parking) +2nd to 10th floor</td></tr>
<tr><td>No. of. blocks</td><td>1 Block</td></tr>
<tr><td>Building Height</td><td>Maximum 53 m</td></tr>
<tr><td>Approach Road Width</td><td>30m Old Mahabalipuram Road</td></tr>
<tr><td>Parking facilities</td><td>
<table>
<tr><td>Parking provided</td><td>Car parks</td><td>Two wheeler parks</td></tr>
<tr><td>Surface</td><td>90</td><td>47</td></tr>
<tr><td>Stilt parking ground floor</td><td>68</td><td>165</td></tr>
<tr><td>Stilt parking 1st floor</td><td>99</td><td>57</td></tr>
<tr><td>2nd</td><td>106</td><td>251</td></tr>
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</td></tr>
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	Basement		
	1st Basement	90	241
	Total	**453**	**761**
Power requirement	7114 kVA with 3x2500 kVA transformer		
Source of power	TANGEDCO		
Power backup	6 x 1500 KVA DG Sets		
Water requirement	Total water requirement – 355 KLD; Fresh water- 237 KLD; Flushing water –118 KLD		
Water Source	CMWSSB		
Estimated population to step-in	7890 persons per day		
Project cost	Rs. 4390 lakhs		
Connectivity	Old Mahabalipuram road		

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, disturbance to the local ecology)

Since the proposed project is a residential development, there will be a permanent influx of 7890 people due to the proposed activity.

Local community

The operation of project and other allied facilities will provide direct and indirect employment opportunities for a large section of society. The employment will have positive impact thereby increasing the quality of life.

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

The existing terrain is retained. Cutting and filling is required. No land disturbance resulting in erosion, subsidence & instability is anticipated. Proper greening & paving

of area will help in preventing soil erosion problem and subsidence. The Soil testing report is enclosed as **Annexure-3**

The area under study falls in Zone-III, according to the Indian Standard Seismic Zoning Map. Suitable seismic coefficients in horizontal and vertical directions respectively, will be adopted while designing the structures to mitigate the seismic impacts.

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

There will be no alteration to natural drainage system and there will be a well planned storm water drain network. The contour of the project site is enclosed as **Annexure –10.**

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.)

Excavated earth quantity generated will be around 96142 cum. Excavated earth will be used for Backfilling & Soft landscaping (57685 cu.m). Excess soil 38456.8 cu.m will be disposed to authorized vendors.

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

The water requirement during construction phase is 25 KLD, including water used for curing purposes, which will be outsourced. The effluent generated will be treated with Septic tank with soak pit. The construction debris will be recycled to the maximum possible and the wastes will be disposed through authorized vendors.

Waste Handling:

- Soil excavated will be reused for backfilling and the fertile topsoil will be reused for horticultural purpose.
- Excess soil will be used for road construction and will be dumped at the designated site.

- For spillage of oil from the machinery, the oil (lubricating oil or fuel) is collected in a tray kept especially for this purpose and it can be reused. If possible filtration can also be done.
- For cement residual from concrete mixer plants, it is discharged into the Mixing Drum from the soil through air tight pipeline. This minimizes the chances of pollution, and is also a space saving affair.
- For construction workers, toilets will be provided with septic tank and soak pits for sewerage treatment purpose. Wash areas and drinking water will be provided.
- Solid waste generated from the site will be collected, segregated and disposed at municipal solid waste collection sites.

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)

There will be no alteration to natural drainage system/low lying area/wetland and there will be a well-planned storm water drain network.

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

The construction debris will be segregated viz., steel, metal, plastics, papers etc. Maximum effort will be taken to recycle the wastes and other wastes will be sold to scrap dealers. The approximate quantity of construction debris generated will be 5.6 cum. There will not be any health hazard due to this debris.

2 WATER ENVIRONMENT

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

The daily requirement of water will be 355 KLD. Fresh water demand is 237 KLD & recycle water is 272 KLD. After treatment of wastewater, treated water will be reused for flushing, HVAC green belt. The source of water is from CMWSSB.

The sewage of 320 KLD generated from domestic & flushing during the operation phase will be treated up to the tertiary level in a Sewage Treatment Plants (STP) of 340 KLD.

After treatment, recycled water will be used for toilet flushing (118KLD) and gardening (6 KLD). HVAC make up water (88KLD) Excess water (60 KLD) will be disposed to CMWSSB sewer line. Detailed Water balance is enclosed as **Annexure-5**

2.2 What is the capacity (dependable flow or yield) of the proposed source of water?

Fresh water demand for the project has been calculated to be about 237 KLD. During operational phase, water will be primarily sourced from CMWSSB, which is highly dependable.

2.3 What is the quality of water required, in case, the supply is not from a municipal source? (Provide physical, chemical, biological characteristics with class of water quality)

The fresh water will be sourced from CMWSSB and site groundwater quality has been checked and report stated in below table:

S. No.	Parameters	Units	Results	Method of Analysis	IS:10500-1991	
					Desirable limit	Permissible limit
1	pH (at 25 ºC)	-	7.12	4500 H_+-B APHA 21st Edition 2005	6.5	8.5
2	Electrical conductivity	Micromhos/cm	2640	IS 3025; (part 14): 1983	--	--
3	Colour	Hazen Unit	(<5)	2120B APHA 21st Edition 2005	5	25
4	Turbidity	NTU	1	2130 APHA 21st Edition 2005	5	10
5	Total Hardness	mg/l as $CaCO_3$	400	IS 3025(part 21): 1983	300	600
6	Calcium	mg/l as Ca	100	IS 3025(part 40): 1991	75	200
7	Silica	mg/l as SiO_2	15.95	IS 3025(part 35): 1988	--	--
8	Total Alkalinity	mg/l as CaCo3	610	IS 3025,1 (part 23): 1986	200	600
9	Chloride	mg/l as Cl	308.65	IS 3025(part 32): 1988	250	1000
10	Magnesium	mg/l as Mg	36.45	IS 3025(part 46): 1994	30	100
11	Total Dissolved Solid	mg/l	1564	IS 3025:1 (part 16): 1984	500	2000
12	Sulphate	mg/l as SO_4	117.4	4500 SO_4^{2-} E APHA 21st Edition 2005	200	400
13	Iron	mg/l as Fe	BDL<0.01	3500 Fe^- B APHA 21st Edition 2005	0.3	1.0

14	Total suspended solid	mg/l	2	2540 D APHA 21st Edition 2005	--	--

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

Out of the 355 KLD of total water requirement, 118 KLD water will be met from recycle water and will be reused for toilet flushing. 88 KLD will be used to make up for HVAC. 6 KLD of treated water will be used for gardening.

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

There will not be any diversion of water from the other users. Since the water source is from CMWSSB.

2.6 What is the incremental pollution load from wastewater generated from the proposed activity? (Give details of the quantities and composition of wastewater generated from the proposed activity)

During operation, 320 KLD of wastewater will be generated which will be treated in the Sewage treatment plant (340 KLD). Treated sewage will be utilized for flushing, & gardening purposes. The expected characteristics & pollution load of wastewater are as given in the following table Characteristics of Treated Water

Parameter	Expected Sewage Wastewater Characteristics	Treated Wastewater Characteristics
pH	7.5 – 8.5	6-9
BOD_5 at 20°C (mg/L)	250-300	<10
TSS (mg/L)	200-350	<10
Oil and grease (mg/L)	10	<5

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

Rain water from roof tops will be drained through rain water vertical down take pipes. These vertical down take pipes shall be located at suitable locations inside the shafts or periphery of the building. The terrace will be sloped. The down take pipes will be connected to the storm water network and then Rainwater Harvesting sump of 150 cum sump. Rainwater harvesting calculation is enclosed in **Annexure- 12.** The plan showing the Storm water drain and location of rainwater harvesting sump is given in **Annexure 13.**

2.8 What would be the impact of the land use changes occurring due to the proposed project on the runoff characteristics (quantitative as well as qualitative) of the area in the post construction phase on a long-term basis? Would it aggravate the problems of flooding or water logging in any way?

No adverse impacts are envisaged due to proposed project on the runoff characteristics of the area as adequate arrangements have been made to trap the rainwater and suitable storm water drainage system has been provided. During the post-construction phase, runoff from the project shall not be allowed to stand or enter into the roadside or nearby drain. Adequate measures shall be taken to collect such run off and directed to recharging pits.

2.9 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)

Water required for the proposed project will be met from CMWSSB. Hence tapping of ground water is avoided. Also roof top run off will be collected & reused as water source. Run off from Roads/paved & gardening will be recharged through nos of recharging pits. Hence it increases ground water table.

2.10 What precautions/measures are taken to prevent the run-off from construction activities polluting land & aquifers? (Give details of quantities and the measures taken to avoid the adverse impacts)

No runoff will be disposed outside the project site.

2.11 How is the storm water from within the site managed? (state the provisions made to avoid flooding of the area, details of the drainage facilities provided along with a site layout indication contour levels)

The storm water from the site is collected by means of storm water drainage network. It is proposed to provide storm water manholes, desilting chambers and percolation pits for management of storm water. The storm water drainage system is enclosed as **Annexure- 13.**

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

No, the deployment of construction workers will not lead to unsanitary conditions at project site. Proper sanitary facilities will be provided to construction workers and treatment of the sewage will be done using septic tank and soak pits.

2.13 What on-site facilities are provided for the collection, treatment & safe disposal of sewage? (Give details of the quantities of wastewater generation, treatment capacities with technology & facilities for recycling and disposal)

Sewage Treatment and Reuse:

The details of quantity of sewage, sewage collection, treatment, reuse and disposal are given in the Table below. The design parameters, process description of the STP is given in **Annexure -14.**

Sewage Quantity, Treatment, Reuse & Disposal

Quantity of sewage	320 KLD
STP Capacity	340 KLD
Collection of sewage & effluent	Waste water generated during the operation phase will be collected through sewerage system (pipe drain) for treatment in STP.
Treatment of sewage	Sewage will be treated up to the tertiary level in a Sewage Treatment Plant based on Activated sludge process. The secondary treated sewage will be treated in UF plant.
Reuse / recycle of treated sewage	Out of 272 KLD of treated water, 118 KLD will be recycled for toilet flushing 6 KLD for gardening, 88KLD for HVAC make up and excess 60 KLD will be disposed to CMWSSB sewer line

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

A separate tank is provided to store treated domestic sewage and shall then be connected to the toilet flushing of the building. Schematic representation of Dual plumbing system and external coordination drawing is enclosed in **Annexure 15.**

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)

There is no biodiversity threat as the major land use is for industrial, commercial & residential purposes.

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

Very few wild shrubs are present which have to be cleared. There will be no cutting of trees involved in the proposed project.

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)

It is proposed to have tree plantation along the periphery of the site and also to develop lawn and greenery inside the project area. Vegetation for the greenbelt will be selected from the native species adapted to the local environment. About 2148 Sq.m of green area will be provided.

Landscaping has been taken care of in view of the environment and aesthetics of the surrounding areas. Stress has been laid on providing ample green areas in close conjugation to the hard areas in a manner, that the overall harmony and ambience is maintained. Landscaping takes into account the various aspects of the architectural design. Trees are proposed to be planted to form an integral part of the landscape plantation and their selection is based on their ability to provide shade, flowers and fragrance apart from their high-yielding growth pattern. The addition of shrubs, hedges and ground cover will add to the aesthetics and softness to the hard building surfaces.

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.

Due to the permanent influx of people there will be marginal increase in traffic on the adjacent road, which will have marginal increase in noise. But adequate greenery will act as noise barrier & adequate onsite facilities are provided for management of waste generated due to the project. Hence, there will not be any type of displacement or any other effect on the local fauna due to proposed project activities.

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

Within the proposed project site, green areas will be developed to achieve a blend between modern building and various species of plants to create a clean, healthy and aesthetic environment. Common native variety of trees and ornamental flowering species will be planted in the green space. Landscaping can have direct positive impact on the local avifauna, as this will provide shelter to local birds.

4.3 Prescribe measures such as corridors, fish ladders etc. to mitigate adverse impacts on fauna.

These measures are not applicable for the proposed project.

5 AIR ENVIRONMENT

5.1 Will the project increase atmospheric concentration of gases & result in heat islands? (Give details of background air quality levels with predicted values based on dispersion models taking into account the increased traffic generation as a result of the proposed constructions)

Background Ambient Air Quality in the Study Area

S. No.	Parameter	Base line data	Standard for Res. & Rural Area
1	PM_{10} (μg/m^3)	89	100 μg/m^3
2	$PM_{2.5}$ (μg/m^3)	55	60 μg/m^3
3	Sulphur dioxide (SO_2) (μg/m^3)	28	80 μg/m^3
4	Oxides of nitrogen (NO_2) (μg/m^3)	45	80 μg/m^3

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.

During operation smoke arising will be released through chimney. Both during construction & operation phase no significant impact on visibility and any other meteorological parameters.

Mitigation measures for dust:

- All fine earth materials must be covered during transportation to the site to prevent spillage and dusting. Trucks used for that purpose on the project should be fitted with tailgates that close properly and with tarpaulins to cover the materials.
- The transportation of lubricants and fuel to the site should only be done in the appropriate vehicles and containers, i.e. fuel tankers and sealed drums.
- As far as possible, transport of construction materials should be scheduled for off-peak traffic hours. This will reduce the risk of traffic congestion and of road accidents on the access roads to the site.
- All loose material either stocked or transported shall be provided with suitable covering such as tarpaulin, etc.
- Water sprinkling shall be done at the location where dust generation is anticipated.

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 & exit to the project site.

Adequate car parking is provided for smooth movement of vehicles within the site.

Proposed Parking Facilities:

Car and Two wheeler Parking

Area	**Cars**	**Two wheelers**
Surface parking	90	47
Stilt parking ground floor	68	168
Stilt parking 1st floor	99	57
1st Basement parking	90	241
2nd basement parking	106	251
Total	**453**	**761**

Traffic Management Plan at the Entry & Exit to the Project Site:

The project will have access to OMR. Internal roads of 6 m wide will be provided within the site for smooth movement of vehicles. The parking plan showing the entry and exit and the internal circulation is given as **Annexure 16**.

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

The internal roads, pedestrian pathways, entry/ exits and traffic circulation plan have been shown in the traffic circulation plan enclosed. In the circulation plan of the project, there will be proper entry and exit points for systematic control of the vehicular movement within the site.

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.

There will be permanent influx of 7890 people due to the proposed project, so there will be marginal increase in traffic on the adjacent road that will have marginal increase in noise and vibrations.

Baseline Noise Environment:

S.No	**Sampling Locations**	**Results dB(A)**
1	At Site	62
2	Site Entrance	70

5.6 What will be the impact of DG sets & other equipment on noise levels & vibration in & ambient air quality around the project site? Provide details.

Since it is a residential project, impact level is minimum. Proper mitigation measures will be provided.

Mitigation Measures

- DG will be acoustically enclosed to minimize noise levels.
- DG sets will be used only during power failure.
- During operation stage, monitoring of emissions from DG sets and ambient air quality will be carried out as per norms.
- Where feasible, incorporate low-noise systems, such as ventilation systems, pumps, generators, compressors, and fans.
- Locate all stationary equipment (i.e., compressors and generators) as far as practicable from nearby residences and other sensitive receptors.
- Install sound control devices (baffles, silencers) to limit noise levels of facility equipment wherever possible.
- Adequate greenery which acts as noise barrier will be provided.

6 AESTHETICS

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

As the proposed site does not have any scenic amenity or landscaping in its surroundings, there is no issue of obstruction of above-mentioned conditions. Moreover the approval of the architectural plan of the building was taken from CMDA.

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

Construction work will be carried out within the designated area and will not cause any obstruction to nearby existing structures. Hence no impact is envisaged.

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

The architectural plan of the building will confirm with the CMDA norms.

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 such sites are located in the vicinity.

6.5 SOCIO ECONOMIC ASPECTS

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

There will be permanent influx of 7890 numbers of people upon completion of the project. Since the project is proposed residential development, this will result in addition of people for ancillary workers viz., watchmen, electrician, plumber, vegetable/ fruits seller, commercial/ fancy, Business etc.

6.7 Give details of the existing social infrastructure around the proposed project.

The details given in item 9 of Form 1.

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

Since the project related activities are confined within the premises, the proposed project will not have adverse effects on local communities.

7 BUILDING MATERIALS

7.1 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)

Conventional construction material will be used. Energy efficient building materials will be used as specified in the Energy Conservation Building Code.

7.2 Transport and handling of materials during construction may result in pollution, noise & public nuisance. What measures are taken to minimize the impacts? Mitigation Measures for Air Pollution during Construction Stage

Air Quality

Air Quality around the project site will have impact during construction stage. Various construction activities especially related to handling of loose material like to cause generation of fugitive dust, that adversely impact the air quality of the surrounding area of the project site. To minimize such impact following measures shall be taken:

- All the loose material either stacked or transport shall provide with suitable covering such as tarpaulin, etc.
- Water sprinkling shall be done at the location where dust generation is anticipated.
- To minimize the occupational health hazard, proper personal protective gears i.e. mask shall be provided to the workers who are engaged in dust generation activity.

Mitigation Measures for Noise Pollution during Construction Stage

It has been estimated that the average noise level resulting from construction activities and traffic movement in the adjacent road will be around 80-85 dB (A) during peak hours, which will decrease with increase in distance as per the Inverse Square Law. 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 or operating plant and machinery emitting high noise levels.
- Use of plant or machinery emitting high noise shall not be allowed during night hour.
- Careful planning of machinery operation and scheduling of operations shall be done to minimize such impact.

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

Waste from construction like excavated earth, iron rods etc. will be recycled as far as possible. 10 % of the construction materials will be saved by reusing the debris and clay which was excavated.

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

Solid Waste

About 5050 kg/ day of solid wastes are likely to be generated due to the proposed project.

Waste	Quantity (kg/day)	Treatment method
Organic	2236	Treated in Bio Gas plant and used for Electricity
STP Sludge	80	Composted and used as manure
Inorganic	2734	Sold to authorised recyclers

Hazardous Wastes:

Name of the waste	Quantity	Mode of disposal	Area of land earmarked for storage and disposal
Used Oil	5550 KL/A	Disposed to TNPCB Approved Vendor	Waste storage area - 75sqm
Waste / residue containing oil	1.0 T/A		
E-Waste	6.1 T/A		

The details of solid wastes collection recycle and disposals are given in the Table below.

Solid Wastes Collection, Recycle & Disposal

Construction debris	The approximate quantity will be 7665.58 cum. Maximum care will be taken to reuse the same. Scrapes will be sold to authorized vendors
Quantity of solid waste during operational Phase	5050 Kg / day (Organic waste – 2236 Kg/day, Inorganic Waste –2734 kg/day; Sludge – 80 Kg/day)
Nature of solid wastes	Organic waste: Waste vegetables, foods, leaves, STP Sludge etc. Inorganic waste: Plastics, polythene bags, glass etc.
Collection and disposal of solid wastes	The solid wastes generated will be segregated into organic and inorganic components and collected in separate bins. The organic biodegradable wastes (waste vegetables, foods etc.) will treated in biogas plant and used to generate gas for DGs
Recycling of solid wastes	The inorganic wastes comprising recyclable materials, such as plastic, glass etc., will be sold by promoter to prospective buyers.

8 CONSERVATION

8.1 Give details of the power requirements, source of supply, backup source etc. What is the energy consumption assumed per square foot of built-up area? How have you tried to minimize energy consumption?

The details of power requirement, source, backup power arrangement (i.e. generators) are given in the Table below. Locations of Transformers and DG sets and the power line to different units are attached in site plan**.**

Power Requirement, Source and Backup Arrangement

Power requirement	7114 KW with 3×2500 kVA transformers
Source of power	TANGEDCO
Backup power supply arrangement	1500 KVA x 6 nos will be provided by DG sets for power backup in case of power failure. DGs will be placed in the DG yard away from building.

8.2 What type of, and capacity of, power back-up you plan to provide?

DG of 1500 KVA x 6 nos are provided for power backup.

8.3 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?

Clear float glass depending upon the panel size to keep the U value as per the requirement of ECBC

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

Solar lighting systems will be provided.

8.5 Does the layout of streets & buildings maximize the potential for solar energy devices? Have you considered the use of street lighting, emergency lighting and solar hot water systems for use in the building complex? Substantiate with details?

Solar energy will be used for lighting.

8.6 Is shading effectively used to reduce cooling/heating loads? What principles have been used to maximize the shading of walls on the east and the west and the roof? How much energy saving has been effected?

Shading options wherever feasible will be used for energy saving

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

Energy-efficient space conditioning, lighting and mechanical systems will be provided. HVAC is proposed in this project. Energy efficient measures are attached in **Annexure 17**.

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

The building will use energy efficient and environmental friendly designs that will control formulation of heat island effect. There will be also green cover at the site to

reduce formation of heat island. Passive design concepts have been used to minimize energy consumption and maximize the energy efficiency.

8.9 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-values or the R values of the individual components.

Project with brick wall, aluminum windows, normal weathering course and tiles on the terrace.

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

Since the proposed building have double basement + Stilt part + Ground part + 10 floors having a height of 53 m, hazards Emergency Preparedness & Response plan will be in place.

NOC From Fire & Rescue Department is attached as **Annexure 18.**

8.11 If you are using glass as wall material provides details and specifications including emissivity and thermal characteristics.

Glass is used as wall material, Clear float glass depending upon the panel size to keep the U value as per the requirement of ECBC.

8.12 What is the rate of air infiltration into the building? Provide details of how you are mitigating the effects of infiltration.

Adequate provisions are provided to mitigate the effects of air infiltration.

8.13 To what extent the non-conventional energy technologies are utilized in the overall energy consumption? Provide details of the renewable energy technologies used.

Solar energy will be used for heating and street lighting purposes.

9 ENVIRONMENT MANAGEMENT PLAN

9.1 The environment management plan would consist of all mitigation measures for each item wise activity to be undertaken during the construction, operation and the entire life cycle to minimize adverse environmental impacts as a result of the activities of the project. It would also delineate the environmental monitoring plan for compliance of various environmental regulations. It will state the steps to be taken in case of emergency such as accidents at the site including fire.

The Environmental Management Plan is explained briefly in **Annexure-19**.