FORM-1

(I) Basic Information

<table>
<tr><th>Sr. No.</th><th>Item</th><th>Details</th></tr>
<tr><td>1</td><td>Name of the Project</td><td>“Runwal Forests”</td></tr>
<tr><td>2</td><td>S. No. in the Schedule</td><td>8 (b)</td></tr>
<tr><td></td><td>Proposed capacity/area /length/tonnage to be handled/command area/lease area/ number of wells to be drilled</td><td>Total plot area : 61,665.60 Sq.m
<table>
<tr><th>DESCRIPTION</th><th>As per earlier MOEF obtained on 26th Dec 2014</th><th>Proposed amendment / Modification for Revised MOEF as per 1991</th></tr>
<tr><td>FSI AREA</td><td>1,10,746.21 Sq.m.</td><td>1,21,256.43 Sq.m.</td></tr>
<tr><td>Non FSI area</td><td>1,55,196.25 Sq.m.</td><td>1,66,691.84 Sq.m</td></tr>
<tr><td>TOTAL CONSTRUCTION AREA</td><td>2,65,942.46 Sq.m.</td><td>2,87,948.27 Sq.m.</td></tr>
</table></td></tr>
<tr><td>4</td><td>New/Expansion/Modernization</td><td>Amendment</td></tr>
<tr><td>5</td><td>Existing Capacity/Area etc.</td><td>Not applicable</td></tr>
<tr><td>6</td><td>Category of Project i.e. ‘A’ or ‘B’</td><td>‘B’</td></tr>
<tr><td>7</td><td>Does it attract the general condition? If Yes, Please specify</td><td>No</td></tr>
<tr><td>8</td><td>Does it attract the specific condition? If yes, Please specify</td><td>No</td></tr>
<tr><td>9</td><td>Location</td><td>Lal Bahadur Shastri Marg</td></tr>
<tr><td></td><td>Plot/Survey/Khasra No.</td><td>At Plot bearing CTS No. 596, 596/1-6, 597, 597/1-7, 598, 598/1-3, 599A, 599A/1-81, 601, 602, 602/1-9, 603, 604, 605,605/1-17, 606, 606/1-83, 607A, 607/1-31 and 607D of Village – Kanjur, Mumbai.</td></tr>
<tr><td></td><td>Village</td><td>Kanjur</td></tr>
<tr><td></td><td>Tehsil</td><td>Kurla</td></tr>
<tr><td></td><td>District</td><td>Mumbai</td></tr>
<tr><td></td><td>State</td><td>Maharashtra</td></tr>
<tr><td>10</td><td>Nearest railway station/airport along with distance in kms.</td><td>Railway Station: Bhandup Railway Station (0.75 Km) ; Kanjur Railway Station (.87 Km)
Air Port: Chahtrapati Shivaji International Airport (8km)</td></tr>
<tr><td>11</td><td>Nearest Town, City, District Headquarters along with distance in kms.</td><td>Mumbai</td></tr>
<tr><td>12</td><td>Village Panchayats, Zilla Parishad, Municipal Corporation, Local body (complete postal addresses with telephone nos. to be given)</td><td>Municipal Corporation of Greater Mumbai (MCGM)
Municipal Head Office Building, Mahapalika Marg; Postal Code: 400 001.
Mumbai</td></tr>
<tr><td>13</td><td>Name of the applicant</td><td>Wheelabrator Alloy Castings Ltd</td></tr>
</table>

14	Registered Address	Lal Bhadur Shashtri Marg, opp. Mangatram Petrol Pump, Bhandup (W), Mumbai 400078.
15	Address for Correspondence:	Runwal Omkar Esquare, 5th Flr., Eastern Express Highway Opp. Sion-Chunabhatti Signal Sion (East), Mumbai - 400 022
	Name	Mr Subodh Runwal Director
	Designation(Owner/Partner/CEO)	
	Address	Runwal Omkar Esquare, 5th Flr., Eastern Express Highway Opp. Sion-Chunabhatti Signal
	Pin code	
	E-mail	subodhrunwal@runwal.com
	Telephone No.	022 61133000
	Fax No.	022 24033702
16	Details of Alternative Sites examined, If any. Location of these sites should be shown on a topo sheet	None
17	Interlinked Projects	No
18	Whether separate application of interlinked project has been submitted?	Not applicable
19	It yes, date of submission	Not applicable
20	If no, reason	Not applicable
21	Whether the proposal involves approval/clearance under: if yes, details of the same and their status to be given. (a) The Forest (Conservation) Act, 1980? (b) The Wildlife (Protection) Act, 1972? (c) The C.R.Z. Notification, 1991?	No
22	Whether there is any Government Order/Policy relevant/relating to the site?	Not Applicable
23	Forest land involved (hectares)	No
24	Whether there is any litigation pending against the project and/or land in which the project is propose to be set up? (a) Name of the Court (b) Case No. (c) Orders/directions of the Court, if any and its	No

	Relevance with the proposed project.	

** Capacity corresponding to sectoral activity (such as production capacity for manufacturing, mining lease area and production capacity for mineral production, area of mineral exploration, length for linear transport infrastructure, generation capacity for power generation etc.)*

(II) Activity

1. Construction, operation or decommissioning of the Project involving actions, which will cause physical changes in the locality (topography, land use, changes in water bodies, etc.)

<table>
<tr><th>Sr. No.</th><th>Information/Checklist Confirmation</th><th>Yes/ No</th><th>Details thereof (with approximate quantities/ rates, wherever possible) with source of information data</th></tr>
<tr><td>1.1</td><td>Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan)</td><td>Yes</td><td>Presently, there is one existing factory building. The proposed project is a residential project. The proponent has proposed a residential building on the land with area 61,665.60 Sq.M.
• Number of proposed buildings: 12 Nos.
• Number of existing buildings: Factory and ancillary building (will be demolished by earlier owner)
• Configuration of Buildings:
<table>
<tr><th>DESCRIPTION</th><th colspan="2">As per earlier MOEF obtained on 26th Dec 2014</th><th colspan="2">Proposed amendment / Modification for Revised MOEF as per 1991</th></tr>
<tr><th>BUILDING CONFIGURATION</th><th>Building Nos.</th><th>Configuration</th><th>Building Nos.</th><th>Configuration</th></tr>
<tr><td></td><td>Tower 1,2,3,4</td><td>3B + stilt +21 flrs</td><td>Tower 1,2,3,4</td><td>3B + Gr /stilt +podium (p1)/ Garden 1evel +1st to 35th + 1 fire check floor</td></tr>
<tr><td></td><td>Tower 5,6,7</td><td>3B + stilt+29 flrs +1 firecheck floor</td><td>Tower 5,6,7</td><td>3 B + Gr/stilt + podium (p1)/Garden1 evel +1st to 35th + 1 fire check floor</td></tr>
<tr><td></td><td>Tower 8 &10</td><td>3B + stilt + 1st to 46th + 2 fire check floor</td><td>Tower 8</td><td>3 B + Gr/stilt + podium (p1)/ Garden 1evel + 1st to 47th + 2 fire check floor</td></tr>
<tr><td></td><td>Tower</td><td>3B + stilt +</td><td>Tower</td><td>3 B + Gr+</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Sr. No.</th><th>Information/Checklist Confirmation</th><th>Yes/ No</th><th>Details thereof (with approximate quantities/ rates, wherever possible) with source of information data</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><td></td><td>9 &11</td><td>1st to 40th + 1 fire check floor</td><td>9,</td><td>podium (p1)/ Garden1evel + 1st to 30th + 1 fire check floor</td></tr>
<tr><td></td><td></td><td></td><td>Tower10,</td><td>3 B + Gr/stilt + podium (p1)/ Garden 1evel + 1st to 6th</td></tr>
<tr><td></td><td></td><td></td><td>Tower 11,</td><td>3 B + Gr/stilt + podium (p1)/ Garden 1evel + 1st to 5th</td></tr>
<tr><td></td><td colspan="2"></td><td>Tower 12,</td><td>3 B + Gr/stilt + podium (p1)/ Garden1evel + 1st to 5th</td></tr>
</table>
After the completion of the project the land use will be residential.
</td></tr>
<tr><td>1.2</td><td>Clearance of existing land, vegetation and building?</td><td>Yes</td><td>The plot had some structure related to the previous industry which had already being closed. It is proposed to be demolished after getting appropriate permission from concerned authority.
Construction of three buildings 5,6 and 7 has been started as per previous EC</td></tr>
<tr><td>1.3</td><td>Creation of new land uses</td><td>Yes</td><td>Land use of the project site is Special Industrial Zone (I3) as per DP. The proposed development involves residential development on an Industrial plot.
I to R is obtained for the said plot dated 15th Jan,2014</td></tr>
<tr><td>1.4</td><td>Pre-construction investigations e.g. bore houses, soil testing?</td><td>Yes</td><td>Geotechnical Report is prepared for the proposed project.</td></tr>
<tr><td>1.5</td><td>Construction works?</td><td>Yes</td><td>Proposed Construction:
12 residential Tower Wings with total construction area of 2,87,948.27Sq. m.</td></tr>
<tr><td>1.6</td><td>Démolition Works?</td><td>Yes</td><td>Demolition will be done for the existing structure.</td></tr>
<tr><td>1.7</td><td>Temporary sites used for construction works or housing of construction workers?</td><td>Yes</td><td>Part of the project site will be used for temporary housing for 100 workers. The housing will be purely temporary. A small area will be reserved for material storage.</td></tr>
<tr><td>1.8</td><td>Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations</td><td>Yes</td><td>The above ground structures will comprise of 12 residential wings.
The site is having almost flat terrain which has been retained accordingly.
<table>
<tr><td>EXCAVATION AT SITE</td><td>QUANTITY ((cubic meter)</td><td>MANAGEMENT</td></tr>
<tr><td>Excavated</td><td>387600 cum</td><td>90% Excavated soil</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Sr. No.</th><th>Information/Checklist Confirmation</th><th>Yes/ No</th><th>Details thereof (with approximate quantities/ rates, wherever possible) with source of information data</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><td>material generated</td><td></td><td rowspan="3">and rubble will be used in backfilling .</td></tr>
<tr><td>Material used in backfilling of project 1</td><td>170000cum</td></tr>
<tr><td>Material sent for backfilling of project 2</td><td>168250 cum</td></tr>
<tr><td>Excavated Top Soil (1.5m)</td><td>49,350 cum</td><td>Disposal to the CHWTSDF.</td></tr>
</table>
</td></tr>
<tr><td>1.9</td><td>Underground works including mining or tunneling?</td><td>No</td><td>No underground works including mining/ tunneling is required except excavation of earth for foundation, basement lay down of pipes, underground storage tank, electric cables, soak pits, septic tanks etc.</td></tr>
<tr><td>1.10</td><td>Reclamation works?</td><td>No</td><td>Not Applicable</td></tr>
<tr><td>1.11</td><td>Dredging?</td><td>No</td><td>Not Applicable</td></tr>
<tr><td>1.12</td><td>Offshore structures?</td><td>No</td><td>Not Applicable</td></tr>
<tr><td>1.13</td><td>Production and manufacturing Process?</td><td>No</td><td>Not Applicable</td></tr>
<tr><td>1.14</td><td>Facilities for storage of goods or materials?</td><td>Yes</td><td>Temporary sheds will be constructed for the storage of construction materials during construction phase as per the material requirement. Details of area provided for material storage during construction phase is being provided in EIA report.</td></tr>
<tr><td>1.15</td><td>Facilities for treatment or disposal of solid waste or liquid effluents?</td><td>Yes</td><td><u>SOLID WASTE</u>:
<u>Construction phase</u>: During the construction phase soak pits and septic tanks will be provided for disposal of waste water. Temporary sanitary toilets will be provided. All construction derbies will be disposed as per MCGM guidelines. Detailed Debris management plan and Standard Operating procedures shall be provided

<u>Operation phase:</u> Total 3955 kg/ day solid wastes will be generated in the project during operation phase. Bio–degradable waste is 2373 kg/day is generated will treated in OWC for manure. Non – Biodegradable waste: 1582 kg/day is generated which will be handed over to Local authorities.
Garden Waste: 15 kg/day

<u>Treatment & Disposal :</u>
• The biodegradable waste (2373 Kg/Day) will be processed in OWC (1582 Kg/Day; 80%)</td></tr>
</table>

Sr. No.	Information/Checklist Confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
			amount of manure will be converted with conversion rate of 60% • Non - Biodegradable waste will be handed over to authorized recyclers. **Sludge Quantity:** 20 Kg/Day Dry sewage sludge will be used as manure for gardening. • 1048 KLD wastewater will be treated in STP Treated water will be utilized for greenbelt development and flushing. **Flushing** | **521 KLD**
1.16	Facilities for long term housing of operational workers?	No	No long-term housing facilities proposed as most of the skilled/ unskilled manpower required for the construction/operation activities will be hired from the nearby areas.
1.17	New road, rail or sea traffic during construction of operation?	No	The project site is having connectivity through 30.5 mt wide LBS road.
1.18	New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc.?	No	No new rail/ road are required. The entire essential infrastructure is already available.
1.19	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?	No	There will be no diversion or closure of the existing transport routes and infrastructure. Applicable for large projects.
1.20	New or diverted transmission lines or pipelines?	No	Not Envisaged
1.21	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers?	No	Not Envisaged.
1.22	Stream crossings?	No	There is no stream passing through the site.
1.23	Abstraction or transfers of water from ground or surface	No	Water requirement in the construction phase will be fulfilled by taking Recycled water from other own project or MCGM tanker water and for the labour

Sr. No.	Information/Checklist Confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
	waters?		camp will be from MCGM water supply connection.
1.24	Changes in water bodies or the land surface affecting drainage or run-off	No	There will not be any change in the natural drainage pattern.
1.25	Transport of personnel or materials for construction, operation or decommissioning?	Yes	The existing 30.5 mt. LBS road near by the site will be utilized for the transportation of material and personal.
1.26	Long-term dismantling or decommissioning or restoration works?	No	Not envisaged
1.27	Ongoing activity during decommissioning which could have an impact on the environment?	Yes	Noise pollution due to machineries and air pollution because of dust.
1.28	Influx of people to an area in either temporarily or permanently?	Yes	***Construction Phase:*** During the construction phase 100 persons will be deployed on the site from nearby places. Influx of these people will be temporary in nature. ***Operation Phase:*** On completion of the project, residents will occupy their property. Total occupancy of the project will be approx. 7910 Nos.
1.29	Introduction of alien species?	No	Not envisaged
1.30	Loss of native species or genetic diversity?	No	Not envisaged
1.31	Any other actions?	No	-------

2. Use of Natural resources for construction or operation of Project (such as land, water, materials or energy, especially any resources which are non-renewable or in short supply).

Sr. No.	Information/Checklist Confirmation	Yes/No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
2.1	Land specially undeveloped or agricultural land (ha)	No	The proposed project is the conversion of industrial to residential land use.

2.2	Water (expected source & competing users) unit KLD	Yes	***Construction Phase:*** Total water requirement is expected to be 30 KLD. The water demand for construction will be met by recycled water taken from other project or MCGM tanker water and for the labour camp will be from MCGM water supply connection. ***Operation Phase:*** **Total water demand** of the project is expected to be 1310 KLD approximately and the water requirement will be met by the **MCGM/ Recycled Water/ RWH**
2.3	Minerals (MT)	No	Not Applicable
2.4	Construction material – stone, aggregates, and/soil (expected source-MT)	Yes	The construction materials, which will be used in the project site, will be obtained from authorized local dealer.
2.5	Forests and timber (source-MT)	Yes	Apartments will use timber for doors etc. and to be used as mentioned below **Material** Dense woods (19 mm) Softwoods (19 mm) Plywood (12 mm)
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)	Yes	**Construction Phase:** **Maximum Demand :** 750 KW **Source: MSEDCL** 1 DG set of capacity 100 KW will be provided for backup power to emergency facilities. **Operation Phase:** **Maximum Demand : 8.4** MW **Source: MSEDCL** DG set will be provided for backup power to emergency facilities.
2.7	Any other natural resources (use appropriate standard units)	No	Not envisaged

3.0 Use, storage, transport, handling or production of substances or materials, which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health

Sr. No.	Information/Checklist Confirmation	Yes/No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data

3.1	Use of substances or materials, which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna, and water supplies)	No	Each DG set shall be provided with proper acoustic enclosure. Oil spillage from construction machinery & vehicles, discarded containers of paints solvents etc, tarpaulins, etc. Detailed Debris management plan and Standard Operating procedures shall be provided. Hazardous waste management will be done as per the rules.
3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)	No	During the entire construction phase adequate precaution will be taken to avoid stagnation of water giving rise to mosquito breeding. Proper housekeeping practices will be adopted.
3.3	Affect the welfare of people e.g. by changing living conditions?	Yes	Positive impact due to enhanced and hygienic living conditions generation. Aesthetic value of area will be improved. It will provide employment opportunities to the local people in terms of skilled and unskilled labor during construction and service personnel during operational phase.
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.,	No	There are no vulnerable areas within 500 mts from the site. Noise and vibrations from the construction activities will be minimized through implementation of a detailed EMP.
3.5	Any other causes	No	No other causes identified.

4.0 Production of solid wastes during construction or operation or decommissioning (MT/month)

Sr. No.	Information/Checklist Confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
4.1	Spoil, overburden or mine wastes	No	Not Applicable

4.2	Municipal waste (domestic and or commercial wastes)	Yes	There would be both degradable and non-degradable solid waste produced during the operational phase, which will be as follows: Total MSW: 3955 kg/ day Biodegraded able waste: 2373 kg/ day Non-Biodegraded able waste:1582kg/day Garden Waste: 15 kg/day STP Sludge : 20 Kg/day Inert Waste and E waste: shall be treated as per standard guidelines
4.3	Hazardous wastes (as per hazardous waste management rules)	Yes	Waste oil shall be stored at separate location duly marked and will be sold to the CPCB authorized recyclers. Hazardous Waste management plan is Prepared.
4.4	Other industrial process wastes	No	Not Applicable
4.5	Surplus product	No	Not Applicable
4.6	Sewage sludge or other sludge from effluent treatment	Yes	Dewatered / dried sludge from STP will be used as manure for gardening/landscaping.
4.7	Construction or demolition wastes	Yes	Waste generated through demolition will be partly reused like Steel (both Reinforced & Structural) will be sold in scrap market for rerolling & reuse. Doors & Windows, Cement roof sheets to be sold in scrap market for reuse. And rest will be disposed for landfill as per the debris Management plan which will be obtained from Municipal Corporation.
4.8	Redundant machinery or equipment	No	All Equipments used for construction will be of standard quality and maintained on regular basis.
4.9	Contaminated soils or other materials	May be	Since there was an non ferrous industry soil may be polluted however the soil chemical parameters during monitoring is found the presence of heavy metals therefore the top soil up to the depth of 1.5 m shall be excavated and disposed off in CHWTSDF.
4.10	Agricultural wastes	No	Not Applicable
4.11	Other solid wastes	No	Not Applicable

5.0 Release of pollutants or any hazardous, toxic or noxious substances to air (kg/hr)

Sr. No.	Information/Checklist Confirmation	Yes/No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
5.1	Emissions from combustion of fossil fuels from stationary or mobile sources	Yes	Emissions from DG set when it is operated in case of emergency. Emissions from Automated construction Machinery and Heavy vehicles during Construction Phase. Emissions from light vehicles during Operations Phase.
5.2	Emission from production processes	No	There is no production as the proposed project is a residential development.
5.3	Emissions from materials handling including storage or transport	Yes	Fugitive emissions will be generated, while handling and transportation of materials to site, this will be temporary in nature.
5.4	Emissions from construction activities including plant and equipment	Yes	The project may cause rise in dust levels during construction phase. Precautions would be taken to reduce dust generation during construction phase: • RMC use will reduce the handling of cement, sand and concrete thus dust emission will be minimized. • RMC use will also reduce the trucks trips. • Tarpaulins will be used to cover trucks carrying debris. • Water sprinkling will be done at regular intervals to reduce control of dust generation on unpaved roads.
5.5	Dust or odours from handling of materials including construction materials, sewage and waste	Yes	***Construction Phase:*** Fugitive dust emissions will be generated due to movement of vehicles and material handling. ***Operation Phase:*** During Operation Phase, emissions will be generated from operation of DG sets in emergency cases. Minimal emissions will be generated from movement of vehicles as fugitive dust as the roads will be paved roads.

Sr. No.	Information/Checklist Confirmation	Yes/No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
			Odors can be from STP. However, the STP working on appropriate technology, so as to minimize odour problems, will be strategically located so that no adverse impact is caused.
5.6	Emissions from incineration of waste	No	If applicable, the wastes shall be sent to *secured land fill (*SLF)
5.7	Emissions from burning of waste in open air (e.g. slash materials, construction debris)	No	Not Applicable
5.8	Emissions from any other sources	No	Not Applicable.

6.0 Generation of Noise and vibration, and emissions of Light and heat

Sr. No.	Information/Checklist Confirmation	Yes/No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data

1	From operation of equipment e.g. engines, ventilation plant, crushers	Yes	Noise generation from construction equipments used for drilling, cutting operations. During Operation Phase, Noise will be generated due to operation of DG sets. This will be about 75 dB (A) at the source boundary. All DG sets will be acoustically enclosed as per rules and will confirm to noise standards. It is likely that noise will affect the residents in operation phase being located at the major road. However, after the completion of the project, there will be smooth traffic and the impacts would be lessened. For control of noise following measures shall be adopted: • Properly maintained equipments with mufflers will be used. • High noise generating construction activities would be carried out only during day time. • Workers working near high noise construction machinery would be supplied with ear muffs/ear plugs.
6.2	From industrial or similar processes	No	Not Applicable
6.3	From construction or demolition	Yes	Anti-vibration machineries will be used to avoid vibration and noise prevention adequate measures will be taken care. Following precautions shall be taken to control noise pollution : • High noise generating construction activities would be carried out only during day time. • Installation, use and maintenance of mufflers on equipment. • Workers working near high noise construction machinery would be supplied with ear muffs/ear plugs.
6.4	From blasting or piling	No	Not Applicable.

6.5	From construction or operational traffic	Yes	***During Construction phase:*** There will be transport of materials for Construction work. Precautions will be taken to reduce the impact of the vehicular movement such as vehicular trips will not be at peak traffic hours. ***During Operation Phase :*** The vehicular parking will be restricted only in the adequate parking area provided, which would help in reducing noise pollution due to traffic congestion. Adequate tree plantation will also help to reduce the noise level and enhance air quality. All the workmen in noise area will be provided with proper PPEs. (Personal Protective Equipment)
6.6	From lighting or cooling systems	Yes	Cooling System
6.7	From any other sources	No	Not Envisaged.

7.0 Risks of contamination of land or water from releases of pollutants into the ground or into sewers, surface waters, groundwater, coastal waters or the sea

Sr. No.	Information/Checklist Confirmation	Yes/No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
7.1	From handling, storage, use or spillage of hazardous materials	No	Not Applicable.
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge)	No	Waste water generated from domestic uses of will be 1048 KLD. Treated water 943 KLD will be generated from STP. Treated water will be utilized for greenbelt development, car washing & flushing and surplus water will be supplied to adjacent amenity plot for greenbelt development.
7.3	By deposition of pollutants emitted to air into the land or into water	No	Dust will be generated during construction phase from earthworks and movement of vehicles. Appropriate fugitive dust control measures, including water sprinkling of exposed areas and dust covers for trucks, will be provided to minimize any impacts. DG exhaust will be discharged at stipulated height by providing adequate stack height to the DG sets.
7.4	From any other sources	No	Not Applicable
7.5	Is there a risk of long term build	No	no

Sr. No.	Information/Checklist Confirmation	Yes/No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
	up of pollutants in the environment from these sources?		

8.0 Risk of accidents during construction or operation of the project, which could affect human health or the environment

Sr. No.	Information/Checklist Confirmation	Yes/No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
8.1	From explosions, spillages, fires etc from storage, handling, use or production of hazardous substances.	No	Each DG set shall be provided with proper acoustic enclosure**.** Fire Fighting System will be provided.
8.2	From any other causes	No	Not Envisaged
8.3	Could the project be affected by natural disasters causing environmental damage (e.g. floods, earthquakes, landslides, could burst etc)?	No	The project falls under seismic zone-III as per IS1893 (Part-1):2002, care will be taken in designs to withstand earthquake of maximum Richter scale in that area.

9.0 Factors which should be considered (such as consequential development) which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality

Sr. No.	Information/Checklist Confirmation	Yes/No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
9.1	Lead to development of supporting utilities, ancillary development or development stimulated by the project which could have impact on the environment e.g.:	Yes	Supporting and ancillary development will take place. The project provides a well designed residential housing area for the occupants.
	Supporting infrastructure (roads, power supply, waste or waste water treatment, etc)	Yes	Internal road, Rain Water Harvesting, STP, RG etc. will be provided.
	Housing development	Yes	The project provides a well designed residential housing area for the occupants.
	Extractive industries	No	Not Applicable

Sr. No.	Information/Checklist Confirmation	Yes/No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
	Supply industries Other	No No	
9.2	Lead to after use of the site, which could have an impact on the environment	No	Not Applicable.
9.3	Set a precedent for later developments	No	Similar projects are being carried out in the entire region.
9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects	No	Not envisaged

(iii) Environmental Sensitivity

Sr. No.	Areas	Name/ Identity	Aerial distance (with 15-km) Proposed project location boundary
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	No	Not Applicable
2	Areas which are important or sensitive of ecological reasons – wetlands, water courses or other water bodies, coastal zone, biospheres, mountains, forests	No	Not Applicable
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration	No	Not Applicable
4	Inland, coastal, marine or underground waters	No	Not Applicable
5	State, national boundaries	No	The project is located within Municipal limits.
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	No	Not Applicable.
7	Defense installations	No	No defense installation in the neighborhood.
8	Densely populated or built-up area	Yes	The concerned land is conversion of land use industrial to residential.

Sr. No.	Areas	Name/ Identity	Aerial distance (with 15-km) Proposed project location boundary
			Proposed project site is located in densely populated area.
9	Areas occupied by sensitive man made land uses *(hospitals, schools, places of worship, community facilities)*	Yes	**1) Nearest Hospital**:- Central Hospital – 0.32 km – West **2) Nearest School:-** St. Xavier's High School – 0.27 – West **3) Nearest College :-** St. Xavier's Junior college – 0.27km – West **4) Nearest Garden**: - Paranjape Garden – 0.41 km – East **5) Nearest Worship place**: -St. Fracis Xaviers' Church – 0.59 km - East
10	Areas containing important, high quality or scarce resources *(ground water resource, surface resources, forestry, agriculture, fisheries, tourism, minerals)*	No	The project will tap MCGM water for its use after proper permissions are obtained.
11	Areas already subjected to pollution or environmental damage. *(those where existing legal environmental standards are exceeded)*	No	Not in immediate vicinity of the area.
12	Areas susceptible to natural hazard which could cause the project to present environmental problems *(earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)*	No	The area falls in Seismic Zone III which is low seismic activity zone as per IS 1893:1984.

(b)

The following shall be inserted at the end, namely:-

"I hereby given undertaking that the data and information given in the application and enclosures are true to the best of my knowledge and belief and I am aware that if any part of the data and information submitted is found to be false or misleading at any stage, the project will be rejected and clearance give, if any to the project will be revoked at our risk and cost."

Date: 15/10/2015
Place: Mumbai

FORM-1A
(Only for Construction Projects listed under Item 8 of Schedule)
Checklist of Environmental Impacts

1. Land Environment

<table>
<tr><th>Requirement</th><th>Compliance</th></tr>
<tr><td>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 form the competent authority are submitted). Attach Maps of (i) site location, (ii) surrounding features of the proposed site (within 500 meters) and (iii) the site (indicating levels & contours) to appropriate scales.</td><td>• The proposed land use is in conformation with the approved Municipal Master Plan/Development Plan.
• The site is under the jurisdiction of which local authority; MCGM.
• The project is in the residential zone of high urban infrastructure region.</td></tr>
<tr><td>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.</td><td>
A. Name & Location: “Runwal Forests”

Plot bearing : CTS No. 596, 596/1-6, 597, 597/1-7, 598, 598/1-3, 599A, 599A/1-81, 601, 602, 602/1-9, 603, 604, 605, 605/1-17, 606, 606/1-83, 607A, 607/1-31 and 607D of Village – Kanjur, Mumbai.

B. Area Statement:
Total plot area : 61,665.60 Sq.m
<table>
<tr><th>DESCRIPTION</th><th>As per earlier MOEF obtained on 26th Dec 2014</th><th>Proposed amendment / Modification for Revised MOEF as per 1991</th></tr>
<tr><td>FSI AREA</td><td>1,10,746.21 Sq.m.</td><td>1,21,256.43 Sq.m.</td></tr>
<tr><td>Non FSI area</td><td>1,55,196.25 Sq.m.</td><td>1,66,691.84 Sq.m</td></tr>
<tr><td>TOTAL CONSTRUCTION AREA</td><td>2,65,942.46 Sq.m.</td><td>2,87,948.27 Sq.m.</td></tr>
</table>
RG provided : 10,793.98sq mts

C. Water consumption:
Source: Tanker (during construction)/MCGM/ Recycled water/ RWH
Construction Phase : 30 KLD
Operation Phase: 1310 KLD

D. Power requirement:
</td></tr>
</table>

<table>
<tr><td></td><td>Operation Phase: Maximum Load: 8.4 MW
• Source: MSEDCL

E. Parking requirement:
<table>
<tr><th>DESCRIPTION</th><th>As per earlier MOEF obtained on 26th Dec 2014</th><th>Proposed amendment / Modification for Revised MOEF as per 1991</th></tr>
<tr><td rowspan="2">PARKING DETAILS</td><td>Total Parking required: nos. 2456</td><td>Total Parking required: 2040 nos</td></tr>
<tr><td>Total Parking provided: 2456</td><td>Total Parking provided: nos. 2550</td></tr>
</table>
F. Occupancy load: 7910 Nos.

G. Solid Waste : 3955 kg/day</td></tr>
<tr><td>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 landuse, disturbance to the local ecology)</td><td>The proposed activity will improve the basic infrastructure facilities of the area. Open spaces, community facilities are simultaneously being augmented in the surroundings.</td></tr>
<tr><td>1.4. Will there is any significant land distribution resulting in erosion, subsidence & instability? (Details of soil type, slope analysis, vulnerability to subsidence, seismicity etc may be given)</td><td>Terrain retained, it is a slightly sloping with little undulations. Soil investigation is done.</td></tr>
<tr><td>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)</td><td>No alteration of natural drainage. Proper storm water drainage will be provided to prevent flooding. Water storage tanks also proposed</td></tr>
<tr><td>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.)</td><td>Quantification of excavation and filling
<table>
<tr><th>EXCAVATION AT SITE</th><th>QUANTITY ((cubic meter)</th><th>MANAGEMENT</th></tr>
<tr><td>Excavated material generated</td><td>387600 cum</td><td rowspan="3">90% Excavated soil and rubble will be used in backfilling .</td></tr>
<tr><td>Material used in backfilling of project 1</td><td>170000cum</td></tr>
<tr><td>Material sent for backfilling of project 2</td><td>168250 cum</td></tr>
<tr><td>Excavated Top Soil (1.5m)</td><td>49,350 cum</td><td>Disposal to the CHWTSDF.</td></tr>
</table></td></tr>
</table>

1.7. Give details regarding water supply, waste handling etc. during the construction period.	It is expected to house about 100 labours at site during construction phase. The total water requirement will be around 30 KLD during construction phase. The waste water generated from human settlements will be collected in a septic tank and soak pits.
1.8. Will the low lying areas & wetlands get altered? (Provide details of how low lying and wetlands are getting modified from the proposed activity)	No low lying area, no wetlands within & around the site.
1.9. Whether construction debris & waste during construction cause health hazards? (Give quantities of various types of wastes generated during construction including the construction labour and the means of disposal)	Detailed description of wastes and quantities includes: **Construction wastes** • Debris: Debris generated will be used for filling in substrate work within the site. • Metal Scrap: Sold to Recyclers. **Hazardous wastes**: Paints, Used oil, Thinner **Demolition wastes**: ➢ Concrete Debris – 8340 cum, to be used in backfilling at Runwal Garden City site, Balkum, Thane. ➢ Bricks of masonry – 7862 cum, to be sold in market for brickbat waterproofing purpose. ➢ Steel (both Reinforced & Structural) – 953.5 MT, to be sold in scrap market for rerolling & reuse. ➢ Doors & Windows – 2265 sqm, to be sold in scrap market for reuse. ➢ Cement roof sheets – 20904 sq mt, shall be disposed off in CHWTSDF as per HW Rules,2008. **Domestic wastes**: Total MSW: 3955 kg/day Biodegraded able waste:2373 kg/ day Non-Biodegraded able waste: 1582 kg/day Garden Waste: 15 kg/day STP Sludge 20 Kg/day

2. Water Environment

Requirement	Compliance

<table>
<tr>
<td>2.1. Give the total quantity of water requirement for the proposed project with the break-up of requirements for various uses. How will the water requirements met? State the sources & quantities and furnish a water balance statement.</td>
<td>Source: MCGM/Recycled Water
Construction Phase : 30KLD
Operation Phase:
Total water demand of the project is expected to be 1310 KLD for approximately and the water requirement will be met by the MCGM/Recycled Water.
Total water- 1310 KLD
MCGM Domestic water- 789 KLD
STP recycled water- 521 KLD (Flushing + Landscaping)

Sewage Generation :
<table>
<tr><th>Description</th><th>Quantity of Sewage generated (KLD)</th><th>Treatment/ Disposal</th></tr>
<tr><td>Operational Phase</td><td>1048 KLD</td><td>Treated sewage will be used for Flushing and gardening.
Excess treated sewage will be Disposed to existing sewer line.</td></tr>
</table>
(Source: Manual on norms and standards for EC of construction projects MoEF)</td>
</tr>
<tr>
<td>2.2. What is the capacity (dependable flow or yield) of the proposed source of water?</td>
<td>For water supply the project will be dependent on MCGM, STP recycled water. Recycled water & RWH will be used for gardening, flushing and car washing purpose.</td>
</tr>
<tr>
<td>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)</td>
<td>Water supply from the MCGM.</td>
</tr>
<tr>
<td>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)</td>
<td>Total Recycled water is 943 KLD. 521 KLD will be used for flushing & Gardening and surplus water will be supplied to adjacent amenity plot for greenbelt development.</td>
</tr>
<tr>
<td>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)</td>
<td>No</td>
</tr>
<tr>
<td>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</td>
<td>Wastewater generated from domestic uses of Rental and sale sections will be treated in STP

Treated water combined will be utilized for greenbelt development, car washing & flushing.</td>
</tr>
</table>

proposed activity)	*Sewage Specification:* • Raw Sewage Quantity : 1048 KLD • Expected average BOD of Raw Sewage : 250-300 mg/L • Expected pH of Raw Sewage:6 to 8.5 *Treated Sewage Standards:* • Treated Sewage pH : 7.1 to 7.3 • Treated Sewage BOD_5 : <10 mg/L • Turbidity (NTU) : <2 • E.Coli : None
2.7. Give details of the water requirements met from water harvesting? Furnish details of the facilities created.	Runoff will be collected into recharge pits. Also runoff from the paved area shall be diverted to recharge pits provided at 25 locations in the plot for the ground water recharging.
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?	This will be detailed in the RWH plan.
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)	This run off will be chanelised properly through storm water drain and will be diverted to Infiltration wells.
2.10. What precautions/measures are taken to prevent the run-off from construction activities polluting land and aquifers? (Give details of quantities and the measures taken to avoid the adverse impacts)	Run off from the construction will be diverted through slope to an artificial pit where settling can be done. Overflow will be connected to the municipal storm water drain. Proper sanitation facilities will be provided at site for construction labours and staff. Temporary toilets with septic tank and drainage connection with city drain will be provided. The city MSW management department is providing facility for garbage disposal.
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)	Storm water drain of adequate size will be provided to manage storm water from within the site. Proper rainwater harvesting structure will be developed and storm water will be used for recharging ground water.

2.12. Will the deployment of construction labourers particularly in the peak period lead to unsanitary conditions around the project site (Justify with proper explanation)	During construction phase the sewage generated will be treated in septic tank and soak pit. Hence it will not lead to unsanitary conditions around the project site.
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)	The quantity of wastewater 1048 KLD generated from the project will be treated in STP and recycled water is used for gardening, flushing purpose. The remaining treated water will be sent to amenity plot for green belt development.
2.14. Give details of dual plumbing system if treated wastewater is used for flushing of toilets or any other use.	Recycling of treated sewage use for flushing, gardening & Cooling tower makeup Color coding for dual plumbing system shall be done as per standard practices.

3. Vegetation

Requirement	Compliance
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)	The project site is in highly urbanised area and surrounded by developed roads. The local ecosystem and biodiversity will not be hampered because of this development as it is a residential project.
3.2. Will the construction involve extensive clearing or modification of vegetation? (Provide a detailed account of the trees & vegetation affected by the project)	• RG area other than green belt (please specify for playground, etc.) • RG area under green belt: 7925.50 Sq.mt. RG area on ground = 10793.98 Sq.mt. RG area on podium: NA
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)	RG area under green belt: 10793 sq.m of area for landscaping on ground. Trees to be retained: 292 Trees to be cut/ transplanted: 302 Trees to be proposed: 1130 Trees to be transplanted: -- Total No of trees :1375

4. Fauna

Requirement	Compliance
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.	The site is within the Municipal limits of Mumbai and the surrounding area is well developed by infrastructure and construction. Being an area of low ecological importance it

	does not harbour any significant flora or fauna
4.2. Any direct or indirect impacts on the avifauna of the area? Provide details.	There will be no negative impact on the avifauna (birds) of the area.
4.3. Prescribe measures such as corridors, fish ladders etc. to mitigate adverse impacts on fauna.	The project is located on landmass and there is no need to provide corridors and fish ladders etc.

5. Air Environment

Requirement	Compliance
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)	The proposed project activity will not increase any atmospheric concentration of gases and result in heat islands.
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.	Generation of dust, smoke, & gases will be temporary during construction phase but during operation phase emission of gasses will be permanent due to increased number of vehicles in the complex. To mitigate this greenbelt is proposed and regular air monitoring is proposed. Acoustic DG Sets are proposed with stack height.
5.3. Will the proposal create shortage of parking space for vehicles? Furnish details of the present level of transport infrastructure and measures proposed for improvement including the traffic management at the entry and exit to the project site.	No. The project design will be providing sufficient parking for the area. Necessary arrangements will be made for smooth entry and exit of vehicles. Parking will be provided as required by D.C rules. Roads of adequate width will be provided for smooth entry and exit. Sufficient No. of parking will be provided.
5.4. Provide details of the movement patterns with internal roads, bicycle tracks, pedestrian pathways, footpaths etc., with areas under each category.	Adequate provisions have been made in the internal roads, for smooth vehicles entry and exit and as well as pedestrian movements.
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.	The project proponents have proposed to provide well organized parking arrangement, which would help in reducing noise levels due to vehicular movement in the parking area. The mitigation is proposed through a detailed EMP that has been planned to reduce the noise and vibration impacts during the construction phase.
5.6. What will be the impact of	D.G. Sets will be operated only for emergency services in case

D.G. sets & other equipment on noise levels & vibration in & ambient air quality around the project site? Provide details.	of power failures during operational phase. The pollutants like SPM, SO_2 that may arise from emissions from D.G. Sets will be discharged through vent of adequate stack height (as per CPCB guidelines).

6. Aesthetics

Requirement	Compliance
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?	The proposed project increases the beautification of the surrounding area.
6.2. Will there be any adverse impacts from new constructions on the existing structures? What are the considerations taken into account?	There will be negligible adverse impact due to new constructions on the existing structures. Height of building and spread of building structure is taken into account.
6.3. Whether there are any local considerations of urban form & urban design influencing the design criteria? They may be explicitly spelt out.	The design of the project is influenced by the regulation set out by local authority and needs of the society.
6.4. Are there any anthropological or archaeological sites or artefacts nearby? State if any other significant features in the vicinity of the proposed site have been considered.	There are no anthropological or archaeological sites or artefacts nearby proposed site.

7. Socio-Economic Aspects

Requirement	Compliance
7.1 Will the proposal result in any changes to the demographic structure of local population? Provide the details.	Influx of people due to project. Resulting changes like market, transportation, community hall, reading hall etc.
7.2. Give details of the existing social infrastructure around the proposed project.	Proposed project is located within residential zone of high urban infrastructure region which is located in Bhandup, Mumbai. I to R has already been approved
7.3. Will the project cause adverse effects on local communities, disturbance to sacred sites or other cultural values? What are the safeguards proposed?	The proposed project will not cause any adverse effects on local communities, disturbance to sacred sites or other cultural values.

8. Building Materials

Requirement	Compliance
8.1. May involve the use of building materials with high-	The basic engineering materials like aggregate, cement, sand and bricks/blocks will be purchased locally. However,

embodies 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)	finishing materials will be purchased keeping in mind the energy conservation aspect. Energy conservation measures in the selection of building materials and their energy efficiency: Pozzalona Portland cement shall be used which already contains Fly ash Construction materials from nearest source are chosen to minimize energy consumption for transportation.
8.2. Transport and handling of materials during construction may result in pollution, noise & public nuisance. What measures are taken to minimize the impacts?	The material required for construction activities shall be procured from company's authorized / approved vendors only. The vendor's performance is monitored periodically. In case of urgency or non-availability of materials from authorized/approved vendors, it will be procured from the open market to maintain the pace of the work. The mode of transport for above materials will be by trucks and / or by trailers. • The construction material will be carried in properly covered vehicles. • All the contractors / Vendors will be instructed to use vehicles having PUC certificates. • Security staff presents at site will supervise loading and unloading of material at site. • Construction material will be stored at identified site/ temporary godowns at site • Internal roads will be maintained in good conditions with regular sprinkling of water to curb the dust nuisance to the surrounding. • 5-meter high tin sheets will barricade the periphery of the plot. • Tree plantation.
8.3. Are recycled materials used in roads and structures? State the extent of savings achieved?	Yes. Demolished debris and construction material will be recycled in the same or other development site. Inert demolished material will be used in road filling to maximum extent. Centring material will be reused from other projects of the same contractor. A target of minimum 5% savings will be kept.
8.4. Give details of the methods of collection, segregation & disposal of the garbage generated during the operation phases of the project.	The solid waste management facility will be proposed as per MSW rules. • Garbage will be collected manually from each of the building in the garbage collection room. • The garbage collected from area will be segregated into wet and dry garbage. • The wet garbage (biodegradable waste) is used as manure for gardening/landscaping which required and rest will be handed over to vendors. • The dry garbage (non biodegradable waste) will handed over to MCGM for further disposal.

9. Energy Conservation

Requirement	Compliance
9.1. Give details of the power requirements, source of supply, backup source etc. What is the energy consumption assumed per square foot of build-up area? How have you tried to minimize energy consumption?	**Power requirement:** **Construction Phase**: 750 KW Source : MSEDCL 01 DG of 100 KW will be provided for backup power to emergency facilities. **Operation Phase: 8.4 MW** Source: MSEDCL DG sets will be provided for backup power to emergency facilities. **Each DG shall be provided with proper acoustic enclosure.** To minimise energy consumption, solar energy will be used for street lighting and for landscape lighting.
9.2. What type of, and capacity of, power back-up to you plan to provide?	DG set will be provided for backup power to emergency facilities.
9.3. What are the characteristics of the glass you plan to use? Provide specifications of its characteristics related to both short wave and long wave radiation?	Project will use only glass as per IGBC recommendation for windows.
9.4. What passive solar architectural features are being used in the building? Illustrate the applications made in the proposed project.	Building orientation, wall to window ratio and thermal properties of envelop are being looked into to reduce solar heat gain and provide natural light and ventilation in areas where there is no AC.
9.5. Does the layout of streets and 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?	Yes. • Solar energy will be used specially for street & garden lighting. • Maximize the use of natural lighting though design. • The roof shall be insulated so that there will not be direct heat gain due to sunlight.
9.6. Is shading effectively used to reduce cooling/heating loads? What principles have been used to maximize the shading of Walls on the East and West and the Roof? How much energy saving has been effected?	Depending upon the site condition location, efforts will be made by the Architects to maximize the shading of walls on the East and West and the Roof.
9.7. Do the structures use energy-efficient space conditioning, lighting and mechanical systems? Provide technical details. Provide details of the transformers and motor efficiencies, lighting	As it is a residential & commercial complex with no built provision for space cooling. Energy efficiency in lighting and mechanical systems will be achieved by: 1. Purchase of energy efficient appliance. 2 Adjusting the settings and illumination levels to ensure

intensity and air-conditioning load assumptions? Are you using CFC and HCFC free chillers? Provide specifications.	minimum energy used for Desired comfort levels. 3. Installing programmable on/ off timers and sensors for low occupancy areas 4. Use of compact fluorescent lamps and low voltage lighting. 6. Use of common lights with CFL & LED luminary in landscaping area.
9.8. What are the likely effects of the building activity in altering the microclimates? Provide a self assessment on the likely impacts of the proposed construction on creation of heat islands & inversion effects?	DG set will be provided for backup power to emergency facilities.
9.9. What are the thermal characteristics of the building envelope? (a) roof; (b) external walls; and (c) Fenestration? Give details of the material used and the U-values or the R-values of the individual components.	• Mosaic tiled roof will be provided to reduce roof heating • External wall will be painted with high reflective paints • Single glass window panel will be provided
9.10. What precautions & safety measures are proposed against fire hazards? Furnish details of emergency plans.	Proper precautions and safety measures will be taken according to Chief Fire Officer, of the MCGM. Moreover proper fire detection/ extinguishing system, exit facilities, etc. will be installed for safety purpose. Refuse area will be provided as per norms.
9.11. If you are using glass as wall material, provide details and specifications including emissivity and thermal characteristics.	Glass will be used only for windows.
9.12. What is the rate of air infiltration into the building? Provide details of how you are mitigating the effects of infiltration.	• Fenestration type: U-Value : 1.00 Btu./hr. ft^{20} F SC : 0.64 VLT : 51% (ST 150 by Saint Gobain)
9.13. To what extent the non-conventional energy technologies are utilised in the overall energy consumption? Provide details of the renewable energy technologies used.	As per previous EC energy saving was achieved upto 13.88 %.

ENVIRONMENT MANAGEMENT PLAN

(The Environment Management Plan shall consist of all mitigation measures for each activity to be undertaken during the construction, operation and the entire life cycle to minimise adverse environmental impacts. It would also include the environmental monitoring plan for compliance of various environmental regulations and conditions in the EC. It will also state the steps that shall be taken in case of emergency such as accidents at the site including fire.)