



To,
Director
Ministry of Environment, Forest & Climate Change,
Regional Office (Southern Zone)
Kendriya Sadan, IVth Floor, E&F wings,
17th Main Road,
IInd Block, Koramangala,
Banglore – 560 034

Subject: Submission of Six monthly compliance reports for the period of Oct 2017- March 2018 for our project Astoria located at Carenzalem, Panaji, Goa

Reference: 1. EC letter No. 21-542/2007-IA.III dated 12th June 2008

Dear Madam

As a part of environment clearance compliance please find enclosed herewith six monthly compliance report for the period of Oct 2017- March 2018 for our project Astoria located at Carenzalem, Panaji, Goa in hard and soft copy.

Enclosures

1. Monitoring Report Data Sheet
2. Pointwise compliance of EC conditions
3. Relevant Annexures



Kindly acknowledge the receipt of the same.

Yours Faithfully,

For Gera Developments Pvt. Ltd



Authorized Signatory

- Copy to: 1. The Member Secretary, Goa- SEIAA, Dempo towers, EDC Patto Plaza, Panaji, Goa-403001
2. The Member Secretary, Goa State Pollution Control Board, Dempo tower, 1st Floor, Patto Plaza, Goa 403001

Gera Developments Pvt. Ltd.

200, Gera Plaza, Boat Club Road, Pune - 411001 | Tel.: + 91 20 2616 5580 / 81 | www.gera.in | CIN - U70102PN1988PTC049303

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GOVERNMENT OF INDIA
 Ministry of Environment and Forests
 (Regional Office, Southern Zone)
 Bangalore-34
 MONITORING REPORT
PART – I

1	Project type	Construction project																																				
2	Name of the project	Construction of residential project 'Astoria' at Chalta No. 94, PTS No. 159 of Caranzalem, Panaji, Goa by M/s. Gera Developers (P) Ltd., - reg.,																																				
3	Clearance letter No. & date	MoEF&CC. Lr. No. 21-542/2007-IA.III, dated: 12.06.2008 (Annexure 1)																																				
4	Location: District & State / UT	Goa																																				
5	Address for correspondence:	200, Gera Plaza, Boat Club road, Pune 411001																																				
6	<u>Financial Details:</u>																																					
a.	Project cost as originally planned and subsequent revised estimates and the years of price reference	Originally planned cost of project=Rs.35 cr. Revised estimate= Rs.52cr																																				
b.	Allocations made for environmental management plans, with item wise and year wise breakup	<table border="1"> <thead> <tr> <th>S.no.</th> <th>Description</th> <th>Capital Cost</th> <th>Recurring cost per annum</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>STP</td> <td>1,500,000.00</td> <td>50,000.00</td> </tr> <tr> <td>2</td> <td>DG</td> <td>1,200,000.00</td> <td>60,000.00</td> </tr> <tr> <td>3</td> <td>OWC</td> <td>1,000,000.00</td> <td>200,000.00</td> </tr> <tr> <td>4</td> <td>Swimming pool</td> <td>3,000,000.00</td> <td>400,000.00</td> </tr> <tr> <td>5</td> <td>Mobile toilets</td> <td>2,500,000.00</td> <td></td> </tr> <tr> <td>6</td> <td>Monitoring</td> <td></td> <td>70,000.00</td> </tr> <tr> <td>7</td> <td>Gardening</td> <td>500,000.00</td> <td>15,000.00</td> </tr> <tr> <td></td> <td>Total</td> <td>9,700,000.00</td> <td>795,000.00</td> </tr> </tbody> </table>	S.no.	Description	Capital Cost	Recurring cost per annum	1	STP	1,500,000.00	50,000.00	2	DG	1,200,000.00	60,000.00	3	OWC	1,000,000.00	200,000.00	4	Swimming pool	3,000,000.00	400,000.00	5	Mobile toilets	2,500,000.00		6	Monitoring		70,000.00	7	Gardening	500,000.00	15,000.00		Total	9,700,000.00	795,000.00
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C	Total expenditure on the Project so far	Actual expenditure= Rs.54cr																																				
D	Actual expenditure incurred on the environmental management plans so far	Actual Expenditure incurred = Rs.20lacs																																				
7.	<u>Status of construction:</u>	Construction of project was complete in 2012 and project is in operation phase. Environmental Infrastructure namely Sewage treatment plant, Organic waste converter and DG sets are functioning smoothly.																																				
a.	Date of commencement	July, 2008																																				

b.	Date of completion (actual and/or planned)	June, 2012
8	<u>Date of site visit :</u>	
a.	The dates on which the project was monitored by the Regional Office on previous occasions, if any	29/1/2016
b.	Date of site visit for this monitoring report	----

Project Information

Project Name	Astoria
Building configuration	One building with four blocks, A, B, C D
Number of Tenements	224 Flats
Total built up area,	21,966 Sqm
Number of car parking spaces	350 Cars
Date of beginning of occupancy	June 2012
Type and capacity of STP	MBBR Technology with secondary and tertiary treatment, Capacity of STP 110 kld
Waste Treatment	Organic waste Converter for treatment of biodegradable waste
DG sets	180 KVA*2 Nos for power back up at time of power failure
Contact information (Person responsible for submission of report and related matters)	Kshitija Bidwai (Project coordinator) Contact Number:+91 9822020899

PART A – SPECIFIC CONDITIONS

I. Construction Phase

- i) Consent to Establish shall be obtained from Goa Pollution Control Board under Air and Water Act and a copy shall be submitted to the ministry before start of any construction work at the site

Complied.

- ii) All required sanitary and hygienic measures should be in place before starting construction activities and to be maintained throughout the construction phase

Complied.

- iii) A first aid room will be provided in the project both during construction and operation of the project

Complied.

- iv) Adequate drinking water and sanitary facilities should be provided for construction workers at the site. Provision should be made for mobile toilets. The safe disposal of wastewater and solid wastes generated during the construction phase should be ensured

Complied.

- v) All the topsoil excavated during construction phase should not be stored for use in horticulture/landscape development within the project site

Complied.

- vi) Disposal of the muck during the construction phase should not create any adverse effect on the neighboring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with approval of competent authority

Complied.

- vii) Soil and ground water samples will be tested to ascertain that there is no threat to ground water quality by leaching of heavy metals and other toxic contaminants

Complied.

- viii) Construction spoils, including bituminous material and other hazardous materials, must not be allowed to contaminated water courses and the dump sites for such material must be secured so that they should not leach into the ground water.

Complied.

- ix) Any hazardous waste generated during construction phase, should be disposed off as per applicable rules and norms with necessary approvals of the goa pollution control board

Complied.

- x) The Diesel generator sets to be used during construction phase should be low sulphur diesel type and should conform to Environment (Protection) Rules prescribed for air and noise emission standards

Complied.

- xi) The diesel required for operating DG sets shall be stored in underground tanks and if required, clearance from chief controller of explosives shall be taken

Complied.

- xii) Vehicles hired for bringing construction material to the site should be in good condition and should have a pollution check certificate and should conform to applicable air and noise level during construction phase, so as to conform to the stipulated standards by CPCB/Goa PCB

Complied.

- XIII) Ambient noise level should conform to residential standards both during day and night. Incremental pollution loads on the ambient air and noise quality should be closely monitored during construction phase. Adequate measures should be made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB /Goa PCB.

Complied.

- xiv) Fly ash should be used as building material in the construction as per the provision of Fly ash notification of September, 1999 and amended as on 27th August, 2003 (The condition is applicable only if project lies in 100 Km of thermal power stations)

Complied.

- xv) RMC must be used in building construction

Complied.

- xvi) Storm water control and its re-use as per CGWB and BIS standards for various application

Complied.

- xvii) Necessary arrangement shall be made for the drainage of storm water from internal and external area considering the direction of flow and slopes

Complied.

- xviii) Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred

Complied.

- xix) Permission to draw ground water shall be obtained from competent authority prior to construction/operation of the project
- Complied.
- xx) Separation of grey and black water should be done by the use of dual plumbing line for separation of grey and black water
- Complied.
- xxi) Fixtures for showers, toilet flushing and drinking should be of low flow either by use of aerators or pressure reducing devices or sensor based control
- Complied.
- xxii) Use of glass may be reduced by up to 40% to reduce the electricity consumption and load on air-conditioning. If necessary, use high quality double glass with special reflective coating in windows
- Complied.
- xxiii) Roof should meet prescriptive requirement as per Energy conservation building code by using appropriate thermal insulation material to fulfill requirement
- Complied.
- xxiv) Opaque wall should meet prescriptive requirement as per Energy Conservation Building code which is proposed to be mandatory for all air conditioned spaces while it is aspirational for non-air-conditioned spaces by use of appropriate thermal insulation material to fulfill requirement
- Complied.
- xxv) The approval of the competent authority shall be obtained for structural safety of the buildings due to earthquake, adequacy of fire fighting equipments etc. as per NBC including protection measures from lightening etc.
- Complied.
- xxvi) Regular supervision of the above and other measures for monitoring should be in place all through the construction phase so as to avoid disturbances to the surroundings
- Complied.
- xxvii) Under the provisions of EPA, 1986 legal action shall be initiated against the project proponent if it was found that construction of the project has been started without obtaining environmental clearance
- Complied.

II. OPERATION PHASE

- i) The installation of the sewage treatment plant (STP) should be certified by an independent expert and a report in this regard should be submitted to the ministry before the project is commissioned for operation. Treated effluent emanating from STP shall be recycled/reused to the maximum extent possible. Treatment of 100% grey water by decentralized treatment should be done. Discharge of unused effluent shall conform to the norms and standards of the Goa PCB. Necessary measures should be made to mitigate the odour problem from STP.

STP of 110 KLD has been installed. The same has been certified by Deccan Enviro. The unit has been granted Consent to Operate and authorization by Goa State Pollution Control Board bearing reference no. 5/502410-PCB/12122 dated 12.02.2014 valid till 01.08.2017. Treated effluent for reused is 60 KLD (avg. approx.) out of which 30 KLD (avg. approx.) is recycled back for flushing and 30 KLD (avg. approx) is used for gardening (Garden Area = 786 m²). We have installed UV treatment for disinfection of treated sewage. **Ref Annexure II STP analysis reports enclosed.**

- ii) Solid waste generated should be properly collected and segregated. Wet garbage should be composted and dry/inert solid waste should be disposed off to the approved sites for landfilling after recovering recyclable material

Solid waste generated is segregated into Biodegradable waste and Non Biodegradable waste. Biodegradable waste is treated in Organic waste convertor of capacity 250 Kg/day. What is the quantum of waste generated == 224kg/day. What about E-Waste == E waste is not generated as the project comprises of only residential buildings. Log sheet of solid waste generation and treatment is maintained at site.

- iii) Diesel power generating sets proposed as source of back-up power for elevators and common area illumination during operation phase should be of enclosed type and conform to rules made under the EPA, 1986. The height of stack of DG sets should be equal to the height needed for the combined capacity of all proposed DG sets. use of low sulphur diesel. The location of the DG sets may be decided with in consultation with Goa PCB

DG sets (180 X 2 nos.) have acoustic enclosures. The DG monitoring has been carried out as per the frequency stated in Consent granted by Goa PCB. The reports of the monitoring are regularly submitted and uploaded on the website of Goa State Pollution. **Ref Annexure III for DG stack monitoring reports.**

- iv) Noise should be controlled to ensure that it does not exceed the prescribed standards. During night time the noise levels measured at the boundary of the building shall be restricted to the permissible levels to comply with the prevalent regulations

DG sets are only source of noise during operation phase. We have installed DG sets with acoustic enclosures as per CPCB norms. DG sets are operated only at time of power failure for back up of emergency services.

- v) The green belt of the adequate width and density preferably with local species along the periphery of the plot shall be raised so as to provide protection against particulates and noise

Green belt area of 786 m² has been maintained in the premises. Total Area under green belt is 2597 sq. m. Some of the trees planted are Areca nut, & Shrubs like, Tagar, Jaswand, Ixora, Bird of Paradise, Russelia, Bamboo Grass, Acacia, Kardal, Allamanda

- vi) Weep holes in the compound walls shall be provided to ensure natural drainage of rain water in catchment area during the monsoon period

Weep holes in the compound walls are provided with to ensure natural drainage of rainwater.

- vii) Rain water harvesting for roof run-off and surface run-off as plan submitted should be implemented. Before recharging the surface run-off, pre-treatment must be done to remove suspended matter, oil and grease. The borewell for rainwater recharging should be kept atleast 5 mts above the highest ground water table.

No provision for recharging the ground water has been made. Drainage system for surface run-off has been provided which ultimately connects the municipal rain water harvesting drain.

- viii) The ground water level and its quality should be monitored regularly in consultation with Central Ground water authority

No Borewells provision for source of drinking water. All tap have aerator to control the water pressure.

- ix) Traffic congestion near the entry an exit points from the roads adjoining the proposed project site must be avoided. Parking should be fully internalized and no public space should be utilized

Adequate in house parking facilities is provided. No public space is utilized for parking.

- x) A report on the energy conservation measures confirming to energy conservation norms finalize by Bureau of Energy Efficiency should be prepared incorporating details about building materials and technology, R & U factors etc. and submit to the ministry in three months time

We didn't submit a separate report on the same, but were following maximum energy conservation measures

1. CFL has been provided for lighting the areas outside the building.
2. Solar panel provided for water heater.
3. The drive type for all Elevators are of Close loop - Gearless, which is resulting in energy saving.

Energy saved using energy conservation measures as below. The percentage of saving is approximately 15-18% against use of conventional equipments.

Use of Solar water heater	446kw/hr/day
Use of CFL lamps	123.6kw/hr/day

- xi) Energy conservation measures like installation of CFLs/TFLs for the lighting the areas outside the building should be integral part of the project design and should be in place before the project commissioning. Use CFLs and TFLs should be properly collected and disposed off/sent for recycling as per the prevailing guidelines/rules of the regulatory authority to avoid mercury contamination. Use of solar panels may be done to extent possible

1. CFL has been provided for lighting the areas outside the building.
2. Solar panel provided for water heater.
3. The drive type for all Elevators are of Close loop - Gearless, which is resulting in energy saving.

The percentage of saving is approximately 15-18% against use of conventional equipments.

- xii) Adequate measures should be taken to prevent odour problem from solid waste processing plant and STP

There is no odour problem from solid waste processing plant and STP. **Enclose photo of solid waste processing unit.**



- vxiii) The building should have adequate distance between them to allow movement of fresh air and passage of natural light, air and ventilation.

The project is of single building with four blocks A, B, C, D. So not point not applicable.

B. GENERAL CONDITIONS

- i) The environmental safeguards contained in the EIA report should be implemented in letter and spirit

All the environmental safeguards are implemented. The summary of the environmental safeguards & their impact same has been submitted along with the last Six monthly compliance report.

- ii) Provision should be made for supply of kerosene or cooking gas and pressure cooker to the laborer's during construction phase

Provided during the construction phase.

- iii) Six monthly monitoring reports should be submitted to the ministry and its regional office, Bangalore

Yes we have submitted six monthly compliance reports to Regional Office Bangalore and will comply with the same till handover of project to Society

- 4.) Officials from Regional office of MoEF, Bangalore who would be monitoring the implementation of environment safeguards should be given full cooperation, facilities and documents/data by the project proponents during their inspection. A complete set of all the documents submitted to MoEF should be forwarded to the CCF, Regional office of MoEF, Bangalore

Complied

- 5.) In case of any changes in the scope of the project the project would require a fresh appraisal by this ministry

No change in scope of project

- 6.) The ministry reserves the right to add additional safeguard measures subsequently if found necessary and to take action including revoking of the environment clearance under the provisions of the EPA, 1986 to ensure effective implementation of the suggested safeguard measures in a time bound and satisfactory manner

Not applicable.

- 7.) All other statutory clearances such as the approvals for storage of diesel from Chief controller of explosives, Fire Department, Civil Aviation Department, Forest Conservation act, 1980 and wildlife(Protection) act, 1972 etc. shall be obtained as applicable by project proponents from the respective competent authorities

Not applicable.

- 8.) These stipulations would be enforced among others under the provisions of water (Prevention and Control of Pollution) Act, 1974 , Air (prevention and control of pollution) Act, 1981, Environment (Protection) act, 1986 and the public liability (Insurance) act, 1991 and EIA notification, 2006

Noted.

- 9.) EC is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs Union of India writ petition (Civil) no. 460 of 2004 as may be applicable to this project

Not applicable.

- 10.) Any appeal against the EC shall lie with National Environment Appellate Authority, if preferred within a period of 30 days as prescribed under Sec 11 of the National Environment Appellate Act, 1997

Not applicable.