

GOA STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY

EIA-Goa State Secretariat,

1stFloor, Dempo Towers, Patto, Panaji, Goa – 403 001

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No: 3 – 181 – 2010/STE-DIR/118

Date: 12th June 2018

To,

✓ M/s Mahadhan Real Estates LLP,

Salgaocar House,

F.L. Gomes Road,

Vasco da Gama, Goa.

Sub.: Environmental Clearance for Proposed residential cum commercial complex with hotel at survey no. 28/0 at Chimbhel, Tiswadi, North Goa. -reg.

I am directed to refer to your application (*i.e. Form-1, Form-1A*) dated 02/06/2016 seeking prior Environmental Clearance (EC) as mandated in the EIA Notification, 2006 (*as amended till date*) for proposed building construction project proposed at survey no. 28/0 of Village Chimbhel, Tiswadi, Goa. Accordingly, the above proposal has been appraised by Goa State Expert Appraisal Committee (*Goa-SEAC - hereinafter referred as 'Committee'*) under '**8(a) – B2 category**': *Building and construction project*. Subsequently, Goa-SEAC conducted the site-inspection on 9th June 2016 and was followed by project-specific presentation by the NABET/QCI-accredited environmental consultant M/s Aditya Environmental Services, Mumbai., on behalf of Project proponent during its 77th SEAC meeting held on 20th October 2016 Thereafter, the PP submitted the post-presentation compliance. These compliances were taken up for discussions during 78th SEAC meeting held on 3rd November 2016 and was recommended to Authority for grant of prior EC with additional compliance to be submitted by the PP w.r.t. structural details of the impounding reservoir as proposed.

1. Project details and salient features of the proposed developmental activity, as submitted by the proponent, is as under –

- a. Total plot area – 1,66,300.00 sq. mt.
- b. Area under road acquisition – 27,245.00 sq. mts.
- c. Area in road widening – 7351.00 sq. mts.
- c. Effective plot area – 1,31,704.00 sq. mts.

d. Total built-up area – 75,277.11 sq. mt.

e. Permissible covered area –40% = 52681.60 sq.mt

f. Proposed covered area – 28,185.05 sq.mt

g. Proposed open space– 33,207.80 sq.mt

h. Expected total occupancy – Total : 2,062 (Residential : 1,603 people and Commercial : 459 people)

i. Parking proposed –626 cars (555nos. Parking slots plus 71 additional parking for visitors)

k. Water requirement:

During Construction phase – 20cmd.

During operational phase –Total water requirement for the project is 450 cmd. (Fresh water requirement is 244cmd through PWD supply and recycled water is 206cmd through STP).

Water demand for firefighting:100cu.m of underground sump near the Hotel block which is the common sump for the entire campus and the hotel. Overhead tank of 10cu.m for the hotel block.

l. Total waste-water generated –250cmd.

m. Total quantity of sludge produced is about 1.5cum/day approximately.

n. Power requirement:

Construction phase – 50 KVA from Goa Electricity Dept.

Operation phase – 2,718 KVA, from Goa Electricity Dept.

o. Back-up power through DG sets. Back power provided is 0.8KWfor 2 BHK and 1 KW for 3BHK, 6KW & 12 KW for Type 1 & Type 2 Villas.

p.Municipal Solid waste generated: Solid waste generated is 836 Kg/day. Biodegradable waste: 418 Kg/day & Non-biodegradable waste: 418Kg/day

Accordingly the said proposal was taken up by the Goa-SEIAA for discussion during its 41st meeting held on 05th February 2018. The Authority decided to carry out site inspection of the proposed site. The Authority conducted project specific site inspection on 7th March 2018. The Authority during its 43rd meeting held on 20th April 2018 after detailed discussion and deliberation

decided to recommend the said proposal for grant of Environmental Clearance (EC) under the provision of EIA notification 2006 (as amended) with following specific conditions :

- a. The approach road leading to the site should be constructed prior to commencement of any construction activity at site as per the regulations of the Town & Country Planning Department.
- b. PP should prioritize the issues related to health and hygiene in complying with the matters related to waste disposal and treatment / air and water pollution / waste-water management.
- c. PP needs to ensure that no treated water or any waste sewage shall be discharged into any water body. E-waste shall be disposed through Authorized vendor as per E-waste (*Management and Handling*) Rules, 2011.
- d. Project Proponent (PP) should necessarily make appropriate provision while constructing the roof-tops at the time of construction stage only to enable installation of solar panels towards south facing walls as and when made applicable in future.
- e. The Project Proponent shall utilise fly ash bricks in masonry works.
- f. The PP shall use construction debris for land filling wherever applicable.
- g. At least 20% of the open spaces as required by the local building bye-laws shall be pervious. Use of Grass pavers, paver blocks with at least 50% opening, landscape etc. would be considered as pervious surface.
- h. Compliance with the Energy Conservation Building Code (ECBC) of Bureau of Energy Efficiency shall be ensured. Buildings in the States which have notified their own ECBC, shall comply with the State ECBC. Outdoor and common area lighting shall be LED. Concept of passive solar design that minimize energy consumption in buildings by using design elements, such as building orientation, landscaping, efficient building envelope, appropriate fenestration, increased day lighting design and thermal mass etc. shall be incorporated in the building design. Wall, window, and roof u-values shall be as per ECBC specifications.
- i. Use of water saving devices/ fixtures (viz. low flow flushing systems; use of low flow faucets tap aerators etc) for water conservation shall be incorporated in the building plan.
- j. Installation of dual pipe plumbing for supplying fresh water for drinking, cooking and bathing etc and other for supply of recycled water for flushing, landscape irrigation, car washing, thermal cooling, conditioning, etc. shall be done.

- k. Separation of grey and black water should be done by the use of dual plumbing system. In case of single stack system separate recirculation lines for flushing by giving dual plumbing system be done.
- l. Solar based electric power shall be provided to each unit for at least two bulbs/light and one fan. As proposed, central lighting and street lighting shall also be based on solar power.
- m. The project proponent will provide landscape bed of 600mm wide X 600mm deep along the periphery of the plot to carry out plantation of trees. The treated water from the sewage treatment plant will be pumped through high flow drips on these beds to prevent outflow of treated sewage water outside the premises.
- n. Areas which are marked as **No Development Zone (NDZ)** should be earmarked on site and no construction shall be carried out in the said NDZ. Land Profile of NDZ shall not be altered.
- o. No construction shall be carried out in the property which is identified as private forest, if any.
- p. PP should obtain all the requisite permissions/NOCs/Licenses etc from all the competent authorities before commencement of any activity at site.
- q. Sewage Treatment Plant (STP) contract should be for minimum period of 5 years with operation and maintenance contract after commissioning /completion of project.
- r. PP shall make provision for charging points for electric vehicles in the parking area.

2. Project Proponent should implement Dust mitigation measures for construction activities such as:

- a. Roads leading to or at construction sites must be paved and blacktopped (i.e. metallic roads).
- b. No excavation of soil shall be carried out without adequate dust mitigation measures in place.
- c. No loose soil or sand or Construction & Demolition Waste or any other construction material that causes dust shall be left uncovered.

- d. Wind-breaker of appropriate height i.e. 1/3rd of the building height and maximum up to 10 meters shall be provided.
- e. Water sprinkling system shall be put in place.
- f. Dust mitigation measures shall be displayed prominently at the construction site for easy public viewing.
- g. New serial number '107' has been inserted which relates to Mandatory Implementation of Dust Mitigation Measures for all Construction and Demolition Activities:
- h. Grinding and cutting of building materials in open area shall be prohibited.
- i. Construction material and waste should be stored only within earmarked area and road side storage of construction material and waste shall be prohibited.
- j. No uncovered vehicles carrying construction material and waste shall be permitted.
- k. Construction and Demolition Waste processing and disposal site shall be identified and required dust mitigation measures be notified at the site.

Further, progress will be reviewed after six months (*minimum 3 times in a year*) depending upon *progress of the work*. Further, the compliance to these conditions as and when submitted by PP will be verified /ascertained by the authority to propose additional conditions if any.

3. Further, the Authority has decided that PP needs to comply to the following “**General Conditions**”:-

- a. The PP should use Ready-Mixed Concrete (RMC) to minimize air / water / land pollution and water usage during the construction phase.
- b. **Solar power generation** - Every major consumer of conventional power will have to generate and opt for certain percentage of power generation from the non-conventional sources. In this context, Project Proponent (PP) should necessarily make appropriate provision while constructing the roof-tops at the time of construction stage only to enable installation of solar panels as and when made applicable in future. In addition, south-facing walls to be utilized to install solar panels to harness optimum solar energy. Use of solar panels may be done to the extent possible like installing solar street lights, common solar water heater system. PP should install, after checking feasibility, solar-plus-hybrid non-conventional source as source of energy.
- c. PP should adopt roof-top rainwater harvesting / conservation measures to optimally utilize the water availability by constructing sumps for collection of rainwater as per the site-specific location details provided.

- d. PP should prioritize the issues related to health and hygiene in complying with the matters related to waste disposal and treatment / air and water pollution / waste-water management.
- e. PP should not disturb the natural drainage and as far as possible and maintain the original topography while designing for landscape development by planting local plant species and which are not alien to the prevailing environment.
- f. PP should clarify any issue related to public objections, if any, and should not conceal the scientific facts in light of the proposed developmental activity vis-à-vis its landuse categorization / zoning.
- g. PP should submit half-yearly compliance report(s) in hard as well as soft copy format to the Authority for the period upto project completion.
- h. This environmental clearance is issued subject to land use verification. Local authority / planning authority should ensure this with respect to Rules, Regulations, Notifications, Government Resolutions, Circulars, etc. issued if any, from time to time. Judgements / Orders issued by Hon'ble High Court, NGT, Supreme Court regarding DCR provisions, environmental issues applicable in this matter should be verified by the competent authorities.
- i. PP should ensure and ascertain that '**civil plans**' which were submitted to the Committee/ Authority during the process of project appraisal be submitted to other line Departments / agencies concerned while seeking NOC / Consents/ Permissions, as applicable. If any discrepancy is found in the plans submitted or details provided may be reported to this Authority. This environmental clearance is issued with respect to the environmental considerations and it does not mean that Goa-SEIAA approved the proposed land.
- j. This environmental clearance is issued subject to obtaining NOC from the Forestry & Wildlife angle including clearance from the Standing Committee of the National Board for wildlife, if applicable. The grant of environmental clearance does not necessarily imply that Forestry & Wildlife clearance has been granted to the project, which has to be dealt separately by the competent authorities in accordance with law.
- k. The height, construction gross built up area of proposed construction is – 75,277.11 sq. mts. shall be in accordance with the existing FSI/ FAR norms of the local body and planning authorities and it should ensure the same along with survey number before approving layout

plan and before according commencement certificate to proposed work, Plan approving authority should also ensure the zoning permissibility for the proposed project as per the approved development plan of the area.

k. All required sanitary and hygienic measures should be in place before starting construction activities and to be maintained throughout the construction phase.

4. Further, the PP is required to comply with the following **“General Conditions” during construction phase:-**

a. ‘Consent to Establish’ shall be obtained from the Goa State Pollution Control Board (GSPCB) under Air Act and Water Act, as applicable and a copy shall be submitted to the Authority within 30 days of starting construction work at site.

b. Permission to draw groundwater, as applicable, shall be obtained from the Groundwater Cell of the Water Resources Department (WRD) government of Goa.

c. Project proponent shall not make any change in the Surface Layout Plan / Civil Plan submitted to the Authority without its prior permission. **In case of any change(s) in the scope of the project and/or otherwise, the project proponent needs to inform this Authority.**

d. Project proponent shall make suitable provisions for sewage / wastewater disposal and storm water release independently.

e. The diesel generator sets (D.G. set) to be used during construction / after commissioning should be low-sulphur diesel type and should conform to Environment (*Protection*) Rules prescribed for air and noise emission standards as laid down by the Goa State Pollution Control Board (GSPCB).

f. The installation of the Sewage Treatment Plant (STP) if any should be certified by the GSPCB and a report in this regard should be submitted to the Authority before the STP is commissioned.

g. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche and first aid room etc.

- h. 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 waste water and solid waste generated during the construction phase should be ensured.
- i. The solid waste generated should be properly segregated. Dry /inert solid waste should be disposed off to the approved sites for land filling after recovering recyclable material.
- j. Disposal of muck during construction phase should not create any adverse effect on the neighbouring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved site with the approval of competent authority.
- k. Arrangements shall be made that waste water and storm water do not get mixed.
- l. All the top soil excavated during construction activities should be stored if or use in horticulture/landscape development within the project site.
- m. Additional soil for levelling of the proposed site shall be generated within the sites (to the extent possible) so that natural drainage system of the area is protected and improved.
- n. Green-belt development shall be carried out considering CPCB guidelines including selection of plant species and in consultation with the State Forest / Agriculture Department.
- o. 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.
- p. Construction spoils, including bituminous material and other hazardous materials must not be allowed to contaminate water courses and the dump sites for such materials must be secured so that they should not leach into ground water.
- q. Any hazardous waste generated during construction phase should be disposed off as per applicable rules and norms with necessary authorisation of the GSPCB.

- r. The diesel required for operating DG sets shall be stored in underground tanks and if required, Clearance from concerned authority shall be taken.
- s. 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 emission standard and should be operated during non-peak hrs.
- t. Ambient noise levels should conform to residential standards both during day and night. Incremental pollution load 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 construction phase, so as to conform to the stipulated standard by CPCB/ GSPCB.
- u. The approval of competent authority shall be obtained for structural safety of the buildings due to any possible earthquakes, adequacy of fire fighting equipments etc. as per National Building Code (NBC) including measures from lighting.
- v. Storm water controlled and its re-use as per Central Ground Water Board (CGWB) and Bureau of Indian Standards (BIS) for various applications.
- w. Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred.
- x. The groundwater level and its quality should be monitored regularly in consultation with ground water authority of the Water Resources Department (WRD), Government of Goa.
- y. 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 GSPCB before the project is commissioned for operation. Treated effluent released from STP shall be recycled / reused to the maximum extent possible. Discharge of this unused treated effluent, if any should be discharged in the sewer line. Treatment of 100% grey water through the centralised treatment should be done. Necessary measures should be adopted to mitigate the odour problem from STP.
- z. Use of glass may be reduced upto 40% to reduce electricity consumption and load on air-conditioning. If necessary, use high quality double glass with special reflective coating in windows.

- aa. Roof should meet prescriptive requirement as per energy conservation building code by using appropriate thermal insulation material.
- bb. Energy conservation measures like installation of LEDs' for the lighting the areas outside the building should be integral part of the project design and should be in place before project commissioning. Use of CFLs / TFLs, if any, should be properly collected and disposed off / sent for recycling as per the prevailing guidelines / rules of the regulatory authority to avoid mercury contamination.
- cc. Diesel power generating sets proposed as source of backup power for elevators and common area illumination during operation phase should be of enclosed type and conform to rules made under the environment (protection) Act 1986. The height of stack of DG sets should be equal to the height needed for the combine capacity of all proposed DG sets.
- dd. 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.
- ee. Traffic congestions near the entry and exit points from the roads adjoining the proposed project site must be avoided. Parking should be fully internalised and no public place should be utilised.
- ff. opaque wall should meet prescriptive requirement as per energy conservation board which is proposed to mandatory for all air conditioned spaces while it is aspiration for non- air conditioned spaces by use of appropriate thermal insulation material to fulfil requirement.
- gg. The buildings should have adequate distance between them to allow movement of fresh air and passage of natural light, air and ventilation.
- hh. Regular supervision of the above and other measures for monitoring should be in placed all through the construction phase, so as to avoid disturbance to the surroundings.
- ii. Under the provisions of Environment Protection Act 1986, legal action shall be initiated against the PP if it was found that construction of the project has been started without obtaining EC.
- jj. Six monthly compliance reports should be submitted to the MOEF with copy to the Goa-SEIAA and GSPCB.

5. Further, the Authority decided to direct the PP to comply with the following **“General Conditions” during post-construction phase:-**

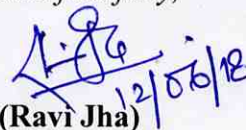
- a. PP shall ensure completion of STP, MSW disposal facility, green belt development prior to occupation of the buildings. The PP to explore possibility of utilising excess treated water in the adjacent area for gardening before discharging into sewer line. No physical occupation of allotment will be given unless all above said environmental infra-structure is installed and made functional including water requirement prior certification from appropriate authority shall be obtained.
- b. Wet garbage should be treated by organic waste convertor and treated waste (manure) should be utilise in the existing premises foe gardening. And no wet garbage will be disposed outside the premises. Local authority should ensure compliance to this.
- c. A complete set of all the documents submitted to Goa-SEIAA should be forwarded local authority, GSPCB and Planning authority.
- d. In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by the Goa-SEIAA.
- e. Separate funds shall be allocated for implementation of environmental protection measures /EMP along with item wise breaks-up. The funds earmarked for the environment protection measures shall not be diverted for other purposes.
- f. A copy of the environmental clearance letter shall be sent by PP to the concerned Village Panchayat and planning authority as applicable, from which suggestions / representation, if any, were received while processing the proposal. The EC letter shall also be put on the company’s website by PP within one week time period from date of issue of environmental clearance.
- g. The PP shall upload the status of the compliance of the stipulated EC conditions, including results of monitoring data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the MoEF&CC, the respective Zonal office, CPCB and the GSPCB. The pollutant levels in respect of SPM, RSPM, SO₂ and NO_x (*ambient levels as well as D.G. stack emissions*) shall be monitored.

- h. The environmental statement for each financial year ending 31st March in Form-V is to be submitted to the GSPCB as prescribed under the Environment (*Protection*) Rules 1986 (as amended) and subsequently shall also be put on the company's website along with the status of the compliance of the EC conditions and shall also be sent to the respective Regional Office of the MoEF&CC.
- i. Consent to Operate shall be obtained from GSPCB before operation, failing which the Environmental Clearance herein shall be deemed to be withdrawn.
- j. Sewage Treatment Plant (STP) shall be installed at site. The STP should be certified by an independent expert and adequacy report in this regard should be submitted to GSPCB before the project is commissioned for operation. Necessary measures should be made to mitigate the odour problem from STP.
- k. The solid waste (dry as well as wet garbage) generated should be properly collected and segregated. Organic Waste Converter shall be installed by RWA for the treatment of biodegradable (wet) garbage generated within the housing complex. Non-Biodegradable waste should be outsourced properly after recovery of recyclable material. Adequate measures should be taken to prevent odour problem.
- l. Utilization of Diesel power generating sets is subject to power failure condition only. The DG sets proposed as a source of power back up during operation phase should be of enclosed type, low sulphur diesel run and conform to rules made under the Environment (Protection) Act, 1986. The DG sets should be subjected to periodic noise and stack monitoring in consultation with GSPCB. Waste/used diesel should be stored and managed as per the Hazardous and other Wastes (*Management & Transboundary Movement*) Rules, 2016 as amended.
- m. Noise should be controlled to ensure that it does not exceed the prescribed standards both during day & night time.
- n. The ground water drawn from existing/proposed bore wells if any should be done only with the prior permission of Ground Water Board. The ground water level and its quality should also be monitored regularly both during construction and operation phase in consultation with Ground Water Board.
- o. Traffic congestion near the entry and exit points from the roads adjoining the project site must be avoided. Parking should be fully internalized and no public space should be utilized.

- p. Energy Conservation measures such as solar lighting for common area, solar water heating system, CFLs/TFLs for lighting of areas, LED lights for signage, solar inverters on the etc should be adopted.
 - q. Used CFLs/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.
 - r. A Report on energy conservation measures conforming to energy conservation norms finalized by Bureau of energy Efficiency should be prepared incorporating details about building materials and technology, R & U factors etc and submit to the State Expert Appraisal Committee and a copy to GSPCB in three months time.
6. Further this EC is issued without prejudice to the action initiated in the Environment (*Protection*) Act or any court case pending in the court of law. As such, it does not mean that the PP has not violated any environmental laws in the past and whatever decision under the said Act by the Hon'ble Court will be binding on the PP. **Hence, this environmental clearance does not give immunity to the PP in the case complaint is filed against, if any, or action initiated under the said Act.**
7. In case of submission of false document and non-compliance to any of the stipulated conditions, this Authority will revoke or suspend the EC without any intimation and initiate appropriate legal action under the Environment (*Protection*) Act, 1986 (*as amended till date*).
8. E-waste generated in the complex should be managed as per CPCB guidelines on E-waste management.
9. The Goa-SEIAA reserves their right to add any stringent condition or to revoke the environmental clearance, if conditions stipulated above are not implemented to the satisfaction of the Authority or for that matter, for any other administrative reasons.
- 10. In addition**, the following conditions shall be specifically complied with:
- 1. Project proponent shall advertise at least in two local newspapers widely circulated in the region around the project, one of which shall be in the Konkani or Marathi language within **seven days** of receipt of this communication, informing that the proposed project has been accorded prior Environmental Clearance (EC) and the copies of the clearance letter will be available on the PP website.

2. **Validity of the Environmental Clearance (EC) accorded shall be for a period of 07 (seven) years from the date of its issue.**
3. These stipulations would be enforced among others under the provisions of Water (*Prevention and Control of Pollution*) Act, 1974, the Air (*Prevention and Control of Pollution*) Act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification, 2006.
4. In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by State Environment Impact Assessment Authority.
5. Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website.
6. Any appeal against this prior environmental clearance shall lie with the National Green Tribunal (NGT), if preferred, within 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010 (*Central Act 19 of 2010*).

Yours faithfully,


(Ravi Jha) 12/06/18

**Director Environment &
Member Secretary, Goa-SEIAA**

Copy for favour of information to:

1. **Shri.Vivekanand Sawkar**, (Chairman), Goa-SEIAA,F-2 Soares Enclave, Near Basilo's Health Club, St. Inez, Panaji, Goa.
2. **Shri. Suhas Godse**, (Chairman), Goa-SEAC,H.No. 5258, Faket, Nr. Pandurang Temple, Opp. Workshop Taleigao, Goa
3. **P. A. to Principal Secretary (Environment)**, Secretariat, Porvorim, Goa.
4. **P. S. to Additional Secretary**, Ministry of Environment & Forests (MoEF), ParyavaranBhavan, C.G.O. Complex, Lodhi Road, New Delhi – 110 510.
5. **Member Secretary**, Goa State Pollution Control Board (GSPCB), 1st Floor, Dempo Towers, Patto, Panaji, Goa – 403 001.