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Proceedings of the State Environment Impact Assessment Authority Kerala

*Present: Prof. (Dr.) K.P. Joy, Chairman; Dr. J. Subhashini, Member and
Sri. P.H. Kurian, I.A.S., Member Secretary.*

Sub: SEIAA- Environmental clearance for proposed Housing Project titled 'Sobha Silver Sand' in Sy.No.492, 492 pt, 493, 495/1, 2, 3, 4, 496, 497, 498, 498 pt, 500, 504/1, 504/2, at Nadama Village, Kanayannur Taluk, Ernakulam District, Kerala by Sri.Majo Joseph, Asst.General Manager, Head, Commercial operations, M/s Sobha Ltd.- Granted- Orders issued

STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY, KERALA

No.412/SEIAA/KL/2912/2014

dated, Thiruvananthapuram 19.03.2018

- Ref:
1. Application dated 10.06.2014 from Deputy Managing Director, M/s Sobha Developers Ltd.
 2. Minutes of the 33rd meeting of SEAC held on 02nd & 03rd September, 2014.
 3. No Objection Certificate from Airports Authority of India dated 18.12.2014
 4. Minutes of the 39th meeting of SEAC held on 14th & 15th May, 2015.
 5. Minutes of the 42nd meeting of SEAC held on 02nd July, 2015.
 6. Minutes of the 40th meeting of SEIAA held on 03rd & 04th August, 2015.
 7. Fire Safety Clearance from the Department of Fire & Rescue Services, Govt. of Kerala dated 27.05.2016
 8. Letter No.4814/A2/15/KCZMA dated 05.10.2017 issued by Kerala Coastal Zone Management Authority.
 9. Minutes of the 75th meeting of SEIAA held on 28.10.2017.
 10. Minutes of the 78th meeting of SEIAA held on 15.12.2017.
 11. Minutes of the 84th meeting of SEAC held on 22nd & 23rd January, 2018.
 12. Minutes of the 85th meeting of SEAC held on 12th February 2018.
 13. Minutes of the 81st meeting of SEIAA held on 08.03.2018.
 14. Letter No.4814/A2/15/KCZMA dated 19.03.2018 issued by Kerala Coastal Zone Management Authority.
 15. Affidavit dated 17.03.2018 from Sri. Majo Joseph, Asst.General Manager- Head, Commercial operations, M/s Sobha Ltd. , 5th Floor, Jomer Symphony, Ponnurunni North, Vytilla P.O., Kochi, Ernakulam- 682019.

ENVIRONMENTAL CLEARANCE NO. 55/2017

Sri. Ramakrishnan Prabhakaran, Deputy Managing Director, M/s Sobha Developers Ltd., "Sobha" Sarjapur – Marathahallil, Outer Ring Road, (ORR), Devarabisanahallil, Bellandur Post, Bangalore, Karnataka- 560103, (now the authorized signatory has been changed to Sri. Majo Joseph, Asst.General Manager) vide his application received on 10.06.2014 seeking environmental clearance under the EIA Notification, 2006 for housing project in Sy.No.492, 492 pt, 493, 495/1, 2, 3, 4, 496, 497, 498, 498 pt, 500, 504/1, 504/2, at Nadama Village, Kanayannur Taluk, Ernakulam District, Kerala. It is interalia, noted that the project comes under the Category B, 8(a) of Schedule of EIA Notification 2006.

Details of the project as furnished by the applicant are as follows :-

BASIC INFORMATION OF BUILDING PROJECT

PART A

PROJECT DETAILS		
File No.	412/SEIAA/KL/2912/2014	
Name /Title of the project	Environmental Clearance for the Proposed Housing Project ("Sobha Silver Sand") by M/s Sobha Limited.	
Name and address of project proponent.	Mr. Majo Joseph, (AGM - Head, Commercial Operations) M/s Sobha Ltd. 5 th floor, Jomer Symphony, Ponnurunni North, Vytilla P.O., Kochi, Ernakulam, Kerala-682019.	
Owner of the land.	Private own land and ownership is with M/s Sobha Ltd.	
Survey Nos. District/Taluk/ and Village etc.	Survey Nos. 492, 492 pt., 493, 495/1, 495/2, 495/3, 495/4, 496, 497, 498, 498 pt., 500, 504/1, 504/2, Nadama Village, Kanayannur Taluk, Ernakulam District, Kerala.	
Category/Sub Category and Schedule	Category 'B', Schedule 8 (a)	
Date of submission of Application	19.06.2014	
Total Built up Area & No. of floors	1,04,730.79 sq. m. Ground + 27 floors	
No. of apartments	384 Residential units, Club house with supporting infrastructure facilities	
Height of the building from the ground level	95.95 m.	
GPS Co-ordinate	Latitude (N)	09°57'46.79" to 09°57'41.94"
	Longitude (E)	76°19'31.43" to 76°19'22.70"
Proposed Construction of Residential project with		

Brief description of the project.	total plot area 1.8991 ha. (18,991.55 sq.m.) and total built-up area about 1,04,730.79 sq. m. which consists of 384 Apartments, club house, swimming pool & other supporting infrastructure facilities.
Is it a new Project or expansion / modification of an existing project?	New project
Details of the Project Cost	About Rs. 500 Crores
If CRZ recommendation applicable?	Yes. The project site is located in backwater Island and the CRZ regulation is upto 50 m. from HTL. The proposed constructions are beyond 50 m. and free from CRZ regulations. In this connection, CRZ recommendation from KCZMA is already submitted.
Distance from nearby habitation	The project site is in Nadama Village and is falling in Municipal limits of Thripunithura and several houses located within the 500 m. radius.
Distance from nearby forest, if applicable	None within the study area
Distance from protected area, Wildlife Sanctuary, National Park etc.	Mangalavanam Bird Sanctuary – at about 6 km. (application for Wildlife Clearance submitted).
Distance from nearby streams/rivers/ National Highway Roads and Airport	Water bodies – Chempakkara canal (abutting to the site) Highway Road : N.H. 66 – about 0.7 km. (W) Airport – Cochin Int. Airport – about 30 km. (N)
Is ESA applicable? If so, distance from ESA limit	Not applicable
IMPACT ON WATER	
Details of water requirement per day in KLD	About 269 KL/day (which includes daily fresh water req. of about 181 KLD)
Water source/sources.	Source :- Stored Rain water (Tanks), Wells, KWA water supply and treated water from STP.
Details of water requirements met from water harvesting.	The project has provision for rain water storage tanks which will be used as source of water during rainy days (concurrent use) & non-rainy days.
What are the impacts of the proposal on the ground water?	The project has provisions for well waters supply as standby arrangement during non rainy days. The ground water abstraction will be of permissible limit of yield of the well. Therefore, no impact on the ground water.
WASTE MANAGEMENT	
Explain the facilities for Liquid waste Management	Sewage will be treated in STP and treated water will be used for meeting the water requirement for flushing & horticulture water requirement within the site.
Solid Waste Management	Provision of OWC system / bio-bin system within the project site for disposal of the bio-degradable solid waste
E-Waste Management	Not applicable
Facilities for Sewage	Yes.

Treatment Plant	Sewage will be treated in STP and treated water will be used for meeting the water requirement for flushing & horticulture water requirement within the site.
How much of the water requirement can be met from the recycling of treated waste water? (Facilities for liquid waste treatment)	The total domestic water requirement of about 269 KLD (which includes daily fresh water requirement of about 181 KL). Treated water from STP to be used for flushing of toilets, Horticulture requirement.
What is the incremental pollution load from waste water generated from the proposed activities?	Disposal of excess treated water from STP (with BOD level as per KSPCB norms) will be only after providing additional aeration in the final treated water storage tank.
How is the storm water from within the site managed?	Provision of roof rain water storage tanks. The excess runoff from the site will be channelized through drain to de-siltation cum screen arrangement before it is discharged from the site.
Will the deployment of construction labourers particularly in the peak period lead to unsanitary conditions around the project site (Justify with proper explanation)	No
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 project has provision of mobile STP for the treatment of sewage during construction phase and STP within the project premises to treat the sewage during operation phase. The technology for the treatment of the sewage is up to tertiary level. The total quantity of sewage generation will be 215 KL/day. The treated water will be partially recycled for meeting the flushing & horticulture water requirement. There will be minimal sewage discharge from the proposed project premises after development of the proposed project.
Give details of dual plumbing system if treated waste is used for flushing of toilets or any other use.	The treated waste water from the proposed Sewage Treatment Plant during the operation phase of the project will be used for flushing & horticulture purposes and for which dual plumbing system is proposed.
TRAFFIC MANAGEMENT	
Sufficiency of parking space (explain)	Parking required as per KMBR norms.
Width of access road	The access road is from 11 m. wide
ENERGY CONSERVATION	
Details of power requirement and source of supply, backup source etc. What is the energy consumption assumed per square foot of built-up	The total power requirement is estimated to be about 3,974 kW and will be from by Kerala State Electricity Board. The project will make provision of D.G. Sets (750 kVA x 3 nos.) as standby arrangement of

area ? How have you tried to minimize energy consumption?	<p>electricity. The proposed project will have provision of power saving and maximum natural light will be provided to minimize energy consumption.</p> <p>Other measures are:</p> <ul style="list-style-type: none"> ➤ Building design to have maximum lighting in the inside portion of the building so as to minimize the energy requirement for lighting. ➤ Use of LED lamps which consume less energy would be adopted in the common areas. ➤ Centralized solar PV panel provision is provided ➤ The roof will be insulated to minimize heat gain with 50 mm expanded polystyrene or equivalent insulation. ➤ Installation of Solar panels as back up for common area (stair and lobby) lighting. ➤ Use of gear less lifts, CU wound transformer, electronic ballast etc.
What type of, and capacity of power back-up to you plan to provide?	The project proponent has made provision of D.G. Sets (750 kVA x 3 nos.) as standby arrangement of electricity
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?	The glass used will be with low emissivity and the other specifications of the glass will comply with the norms as per ECBC.
What passive solar architectural features are being used in the building? Illustrate the applications made in the proposed project	All the relevant features are incorporated like the orientation of the building, shading effect etc.
Does the layout of streets & buildings maximize the potential for solar energy devices ? Have you considered the use of street lighting, emergency lighting and solar hot water systems for use in the building complex ? Substantiate with details	Due consideration has been taken for maximum use of the solar energy while preparation of layout plan. Provision solar energy devices will be used for street lighting, emergency lighting in the proposed project.
Is the shading effectively used to reduce cooling/heating loads? What principles have been used to maximize the shading of Walls on the East and the West and the Roof ? How much energy saving has been effected?	All the relevant features are incorporated like the orientation of the building, shading effect etc.
Do the structure use energy-efficient space conditioning , lighting and mechanical systems? Provide technical details. Provide details of transformers and motor efficiencies,	Suitable energy optimization will be adopted during the calculation of energy load of the proposed project. The space heating load will be minimized using passive solar structure and suitable buildings envelop material. Uses of incandescent lamp and halogen

lighting intensity and air-conditioning load assumptions ? Are you using CFC and HCFC free chillers? Provide specifications.	lamps have been avoided and energy efficient LED lamps will be used for all common area. The diesel generator sets shall be automatically controlled to optimize their usage based on the actual load requirements at any time. Variable frequency drive systems would be adopted for the lifts, etc to maximize the energy saving.
What are the likely effects of the building activity in altering the micro-climates ? Provide a self assessment on the likely impacts of the proposed construction on creation of heat island & inversion effects?	More open spaces are proposed within the site to creation of any heat islands. The roads and parking spaces would be with concrete slabs intermittent with grass on surrounding.
What are the thermal characteristics of the building envelope? (a) roof (b) external walls; and (c) fenestration? Give details of the materials used.	The building construction material namely bricks, concrete and steel are being used in the construction. U-factor, also known as Thermal Transmittance, is heat transmission in unit time through unit area of a material or construction and the boundary air films, induced by unit temperature difference between the environments on each side. The glass used will be with low emissivity and the other specifications of the glass will comply with the norms as per ECBC.
What is the rate of air non-conventional energy technologies are utilized in the overall energy consumption? Provide details of the renewable energy technologies used.	The use of non-conventional source of energy in the proposed construction project are as follows: - Solar Street Light: - It is also suggested for Centralized solar PV panel provision is provided within the proposed project site for conservation of electricity. Use of LED Lamps: - The project proponent would use LED Lamp which conserve less electricity. Lighting: - All buildings of the proposed project is designed with natural ventilation and natural light so that the use of lights during day time can be minimized.
Details of renewable energy (non – conventional) used.	Provision for centralized solar PV panel is provided
IMPACT ON AIR ENVIRONMENT	
What are the mitigation measures on generation of dust, smoke , odours, fumes or hazardous gases	The dust generation during construction phase will be controlled by enclosures at appropriate locations and also by sprinkling of water for suppression of dust. The gas/smoke generation expected is from D.G. sets only and the gases will be vented out through stack of appropriate height.
Details of internal traffic management of the site.	The internal road width will be of 6 m. wide for the smooth vehicular movement. It is proposed to have 10 wide entry / exit to the project for the smooth movement of vehicles.

Details of noise from traffic, machines and vibrator and mitigation measures	The proposed project is a residential building construction project and there would be some increase in noise and vibration due to the vehicular movement within the project site. The project has provision of large area for the parking for the vehicles and the parking arrangement which is planned, that there would be easy movement of vehicles within the project area and smooth movement is provided for the vehicles to reduce the traffic congestion.
Air quality monitoring in detail	The ambient air quality of the site carried out through an accredited laboratory which is well within the standard limit.
Will the proposal create shortage of parking space for vehicles? Furnish details of the present level of transport infrastructure and measures proposed for improvement including the traffic management at the entry & exit to the project site.	No shortage of parking space. Parking provisions would be made as per the KMBR requirements. The parking arrangement will be made at Ground floor, 1 st floor, 2 nd floor & 3 rd floor level within the site. The access road is from 11 m wide and this road is join to Ettumanoor-Ernakulam Road which is well connected to entire city.
Provide details of the movement patterns with internal roads, bicycles tracks, Pedestrian pathways, footpaths etc., with areas under each category	The conceptual plan clearly shows the internal traffic management with entry and exit to the proposed project site, all internal roads with width, pedestrian path ways etc. Further provision of ramps are proposed for the easy access to the building for physically challenged persons.
Will there be significant increase in traffic noise & vibrations? Give details of the sources and the measures proposed for mitigation of the above.	The proposed project is a residential project and there would be some increase in noise and vibration due to the vehicular movement within the project site. The project has provision of large area for the parking for the vehicles and the parking arrangement which is planned, that there would be easy movement of vehicles within the project area and smooth movement is provided for the vehicles to reduce the traffic congestion.
What will be impact of DG sets & other equipments on noise levels & vibration in & ambient air quality around the project site? Provide details	The D.G. sets which would be used for the project will be with sound proof acoustic enclosures and hence there will be no impact to the surroundings. The D.G. sets would be attached with proper anti vibration pads to reduce any vibration impact to the site surrounding. The flue gases from the D.G. sets will be vented out through stack of appropriate height as per C.P.C.B. norms to reduce the impacts on air quality around the project site. The ambient noise level of the site is carried out through an accredited laboratory and the ambient noise level is well within the standard limit.
IMPACT ON BIODIVERSITY AND ECO RESTORATION PROGRAMMES	
Will the project involve extensive clearing or modification of	There are some of native species of trees and different varieties of shrubs, herbs, grass & climbers at site.

vegetation (Provide details)	For the development of the proposed project, existing trees, different varieties of shrubs, herbs, grass & climbers will be cleared.
What are the measures proposed to minimize the likely impact on vegetation (details of proposal for tree plantation/ landscaping)	Due to the proposed development, some of the existing trees will be cut from the proposed site. As part of the eco restoration, large number of saplings of native species would be planted. Due to the eco restoration, the impact to floral and faunal ecology will be short term.
Is there any displacement of fauna – both terrestrial and aquatic. – If so what are the mitigation measures ? Presence of any endangered species or red listed category (in detail)	There will be no displacement of fauna due to the construction of the proposed project. There is no presence of endangered species or red listed category.
SOCIO- ECONOMIC ASPECTS	
Will the proposal result in any change to the demographic structure of local population ? Provide the details.	The proposed project is a residential project. During operation phase, on full occupancy of the project, the maximum population expected is about 1920 persons and hence there will be influx of people (fixed) to the project area and surrounding.
Give details of the existing social infrastructure around the proposed project	There are several schools, colleges, religious places, commercial and residential buildings, Govt. and private establishments which are located around the proposed project. The vicinity map showing the surrounding details of the proposed project is provided.
Will the project cause adverse effects on local communities, disturbances to sacred sites or other cultural values? What are the safeguards proposed?	The project would not cause any adverse effects on local communities, disturbance to sacred sites or other cultural values. The proposed project is a residential project and thereby the living index of the people around the project site will definitely improve. Also there will be various ancillary activities like convenient shops, transport facilities etc. attached to the project which will benefit the local people and change their living condition.
BUILDING MATERIALS	
May involve the use of building materials with high –embodied energy. Are the construction materials produced with energy efficient process? (Give details of energy conservation measures in the selection of building materials and their energy efficiency)	The proposed housing project and the selection of building materials plays a major role in the energy consumption. The proposed project will make all attempts to use to avoid building materials with high embodied energy. Cement blocks & hollow blocks will be replaced with country made red bricks. Further, the river sand will be replaced by manufactured sand from stone crushers. The glass used will be low emissivity and having U value as per ECBC norms.
Transport and handling of materials during construction may result in pollution, noise & public nuisance.	All vehicles which bring construction material to the site would possess Pollution Under Control Certificates (PUC). All vehicles would be of close

What measures are taken to minimize the impacts?	body to avoid spread of dust from the loose materials, and vehicles which bring sand, stone dust, etc. would ensure that the above mentioned material are properly wetted during transportation to avoid dust generation. Pucca Road to be made in the construction site for the vehicle movement so that the dust generation due to the vehicular movement within the project site can be minimized. Stacking of construction material shall be confined to the project site only. All the D.G. Sets would have attached with Acoustic Enclosure for the sound pollution control and all sound generating construction activity to be minimized. Further barricading of the site with GI sheets of 10 ft height in the side abutting the public road during construction phase.
Are recycled materials used in roads and structures? State the extent of savings achieved?	The plastic (non-biodegradable solid waste) will be used along with coal tar during the construction of internal roads. This will increase the life of roads.
Give details of the methods of collection, segregation & disposal of the garbage generated during the operation phases of the project.	<ul style="list-style-type: none"> ➤ The Solid Waste Management Rules, 2016 will be followed in the Solid Waste Disposal Mechanism at the site during operation phase. ➤ Collection & segregation within the site (bio-degradable waste (green bins), non-biodegradable waste (blue bins) and domestic hazardous waste (yellow bins). ➤ The recyclable waste like packaging material, paper etc. would be sold through vendors. ➤ The Bio-degradable waste would be disposed through the organic waste converter (OWC)/bio bin system to be installed within the site. ➤ The domestic hazardous waste which includes discarded painted drums, pesticide cans, CFL bulbs, tube lights, expired medicines, broken mercury thermometers, used batteries, used needles and syringes and contaminated gauge etc. generated at the household level will be collected in yellow bins and to be handed over to authorized waste pickers or waste collectors.
RISK MANAGEMENT	
Are there sufficient measures proposed for risk hazards in case of emergency such as accident at the site during construction & post construction phase.	<p><i>Risk hazard from fire - List of equipments proposed for Fire Fighting Measures:-</i></p> <p><i>A. The major equipments proposed for Fire Fighting Measures are Main Hydrant Pump, Sprinkler Pump, Diesel Engine Pump, Jockey Pump.</i></p> <p><i>B. Capacity of Fire Water Storage Tanks & Number:-</i></p> <p><i>It is proposed to have Fire Water Storage Tank of appropriate capacity of overhead tank for fire fighting provided at the tower.</i></p>

	<p>C. Fire Detecting Equipments: - The Fire Detecting Equipments would be as per BIS and NBC norms.</p> <p>D. Other Fire Fighting Measures: - The other Fire Fighting Measures proposed includes, an Emergency Control Room, Separate Fire exit during emergency, all rooms with Fire Detector / Smoke Detector, Fire Extinguishers at each entry and exit point on each floor, (5 Kg, 10 Kg and 9 Ltr. capacity), Public address system etc. The Fire Fighting Measures are backed by Electrical supply from D.G. sets in case of emergency. The nearest fire station is at <i>Thripunithura</i> Fire Station, which is about 5.5 km. away from the project site</p>
Storage of explosives/hazardous substance in detail	Yes, all precautionary measures in the storage & handling of HSD will be followed.
What precautions & safety measures are proposed against fire hazards? Furnish details of emergency plans	Details already provided above.
Litigation/court cases if any	No any litigation/court case pending.
AESTHETICS	
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?	No.
Will there be any adverse impacts from new constructions on the existing structures? What are considerations taken into account?	The surrounding area is residential / offices / institutional developments. In west direction there is access road to the site. Also, there is back water in the south & north-east direction and in north direction there is vacant land. There will be no any adverse impacts due to the development of the proposed project.
Whether there are any local considerations of urban form & urban design influencing the design criteria? They may be explicitly spelt out.	<p>The proposed project would be constructed in conformity with the Kerala Municipality Building Rules (KMBR).</p> <p>As per seismic classification, the project site falls in Zone-III. No reported cloudburst in the area. Also, there is no hilly area around the project site, there is no chance of landslide. Structural design aspects as per the seismic codes – IS 1893 (2002), IS 13920 (1993) and IS 456 (2000) as applicable would be incorporated in our project.</p> <p>The proposed constructions are beyond 50 m. and free from CRZ regulations.</p>

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 is no report of existence of any anthropological or archaeological site nearby the project area. The proposed project is located in Municipal limits of Thripunithura. The vicinity map showing the site & surrounding area is provided.
Details of CSR activity and the amount set apart per year	The CSR activities for the welfare of local community will be carried out in consultation with the <i>Thripunithura</i> Municipality.
Details of NABET approved EIA Consultant engaged-Their name, address and accreditation details	M/s Environmental Engineers & Consultants Pvt. Ltd. (NABET Accredited Consultant Organization) Head Office :- A1-198, Janak Puri, New Delhi. Branch Office:- C-306, Kanchanjunga Apartments, Palarivattom P.O., Kochi, Kerala.
Details of Authorized Signatory and address for correspondence	Mr. Majo Joseph, (AGM - Head, Commercial Operations) M/s Sobha Ltd. 5 th floor, Jomer Symphony, Ponnuranni North, Vytilla P.O., Kochi, Ernakulam, Kerala-682019.
SUMMARY AND CONCLUSION	
Overall justification for implementation of the project.	The proposed project is a construction of residential project and the total implementation / completion period for the construction is about 60 months from the start of the construction.
Explanation of how adverse impact have been mitigated.	It is predicted that socio-economic impact due to this project will positively increase the chance of more employment opportunities for local inhabitants. There are no Resettlement and Rehabilitation issues involved in this project. The project infrastructures will be of use to people of the area. The revenue of the State Govt. will be definitely increase due to the proposed activity. The entire project area is devoid of any endemic / endangered flora and fauna. As part of the eco restoration with native species to a maximum possible extent. Also, rain water tanks are proposed for storage of rain water and for its subsequent use so as to conserve fresh water consumption. The municipal solid waste will be handled and disposed as per norms. Thus the proposed project is not likely to affect the environment or adjacent ecosystem adversely and will ensure a sustainable development.

2. The 33rd SEAC meeting held on 2nd & 3rd September, 2014 analysed the proposal. The Committee was informed that the Kochi Metro project is coming in front of the present project site and the electricity facility for the project will be done through underground. It is apprehended that if sewage from the project site reaches the nearby thodu, which is a navigable one, it may create eutrophication. The committee was apprehensive of the

occurrence of mangrove in the Silver Sand Island area and the item was *deferred for site visit* and verify the following additional clarifications/documents from the proponent for further consideration of the proposal:

1. Revised proposal on CSR activities extending the same to the vicinity of the project site, especially concentrating on the BPL families. The area (locating) and the institutions to which the same shall be extended should be clearly specified. The amount set aside towards the same should be mentioned specifically with respect to each activity.

2. Details on the measures taken to prevent sewage flow into the nearby water body and the measures taken for catering to the water requirements of the present project.

The additional clarifications sought for were submitted by the proponent on 16-03-2015.

The field inspection to the proposed building project site was conducted on 23.09.2014 by Dr. N G K Pillai, Sri. Eapen Varughese and Sri. John Mathai and reported as follows:

The project is proposed on the southern side of an island called Silver Island in Nadama Village, Kanayannur Taluk. The area is a level land with very gentle slope to the south. The soil is mostly sandy clay. The land is partly filled with dredged sandy material from the adjacent tidal channel. Water is seen at the surface in the depressions. The water level is nominally influenced by the tidal waters of adjacent water body. The ground water inside the island is saline with a TDS of 2550 mg/l. One of the important observation is the presence of mangrove trees and shrubs along the southern boundary. Avicinea and Rhizophora varieties are seen indicating high salinity in the tidal channel and the need to regulate the area under CRZ.

Hence before considering any other aspect, clearance from KCZMA is mandatory. Necessary setbacks may have to be provided and activities may have to be regulated too. The project can be considered after the receipt of the recommendations of KCZMA.

3. The 39th SEAC meeting appraised the proposal on the basis of the application, conceptual plan, documents submitted and field visit report. The Committee noticed that proposed areas is on the southern side of an island called 'Silver Island' which is normally influenced by tidal water and presence of typical mangrove species indicates that the area falls under CRZ. The Committee also found that a dependable source of water should be provided by the proponent since the reported TDS value of ground water is high. The waste

water treatment facility mentioned in the application is not so clear and hence may provide a detailed plan to be adopted for waste water treatment.

Based on the above, the Committee decided to direct the proponent to produce approved building and connected plans from the concerned authorities incorporating the suggestions noted below so as to recommend to SEIAA for according final EC.

1. CRZ clearance from KCZMA.
 2. Based on the reported TDS value saline intrusion is noticed. Hence provision for dependable source of water should be provided.
 3. The facilities to be adopted for waste water treatment should be adequate so as not to cause contamination in the nearby water bodies.
 4. Should provide sufficient setback from the extra high tension line passing through the proposed area
4. The proposal was placed in the 42nd meeting of SEAC held on 2nd July, 2015. In view of the amendment to Para (3) of appendix V of 2006 notification issued vide SO 3067 dtd 1.12.2009 the Committee reviewed its decision taken in its 39th meeting in its 42nd meeting held on 2nd July, 2015.

The Committee observed that even though the applicant in the Application indicated that the area is outside CRZ area, the area support mangroves and the salinity is also on the higher side indicating tidal activity and hence SEIAA may obtain recommendations from the KCZMA before issuance of EC. After detailed discussions the Committee decided to **recommend for issuance of EC** along with following specific conditions over and above the recommendations, if any, by the KCZMA.

1. Since the area is subjected to saline intrusion provision for dependable source of water should be provided.
2. The facilities to be adopted for waste water treatment should be adequate so as not to cause contamination in the nearby water bodies.
3. Should provide sufficient setback from the extra high tension line passing through the proposed area.
4. Adequate precautions for disaster management should be inbuilt in the plan.
5. Carbon foot print of the project should be reduced to the maximum extent possible.

Member of SEAC suggested a reappraisal based on the revised conceptual plan incorporating the recommendation of KCZMA. Committee considered the suggestion but it was observed that even if the recommendation of the KCZMA is to downsize the project there will not be any reason to dilute the specific conditions prescribed above. Hence the above suggestion was overruled by a majority.

In cases under CRZ is applicable, the KCZMA has to furnish recommendations on CRZ, based on which an integrated EC is to be issued. Proponent has to submit CRZ clearance.

5. The proposal was placed in the 40th meeting of SEIAA held on 03rd & 04th August 2015. The Authority examined the case with reference to rules and observed that the Proponent has to obtain CRZ clearance of KCZMA and submit to SEIAA.

KCZMA vide letter No.4814/A2/15/KCZMA dt.05.10.2017, has informed that KCZMA in its 88th meeting vide agenda no.88.04.14 discussed the matter in detail and decided to recommend the proposal of M/s Sobha Ltd "Sobha" to SEIAA for considering the CRZ Clearance to put up plinth area of 1,04,730.79 sq.m, (total Built Up area), proposed Dwelling Units = 384 apartments subject to prevalent FSI/FAR norms, subject to the condition that no permanent construction including vehicle parking area be built in the CRZ region of the site.

6. The proposal was placed in the 75th Meeting of SEIAA, held on 28.10.2017. Authority accepted the recommendation of SEAC and decided to issue EC subject to the general conditions along with the following specific conditions over and above the recommendations, if any, by the KCZMA.

1. Since the area is subjected to saline intrusion provision for dependable source of water should be provided.
2. The facilities to be adopted for waste water treatment should be adequate so as not to cause contamination in the nearby water bodies.
3. Should provide sufficient setback from the extra high tension line passing through the proposed area.
4. Adequate precautions for disaster management should be inbuilt in the plan.
5. Carbon foot print of the project should be reduced to the maximum extent possible.

The proponent should submit the proof for having applied for Wild Life Clearance Certificate. 2% of the total project cost should be set apart for CSR activities in consultation with the local panchayat. A notarised affidavit for the commitment of CSR activities and

also agreeing all the general and specific conditions should be submitted before the issuance of EC.

As the project has a height of 92.8 m sanction from the Airport Authority and Fire Safety Department should be obtained before the issuance of EC.

The proponent had submitted No Objection Certificate dated 18.12.2014 from Airport Authority of India and also Fire Safety Clearance dated 27.05.2016 from Department of Fire & Rescue Services, Govt. of Kerala and proof of having applied for Wild Life Clearance.

7. The proposal was placed in the 78th meeting of SEIAA held on 15.12.2017. Since the built up area of the project was downsized by KCZMA as per their letter No.4814/A2/15/KCZMA dt.05.10.2017, Authority decided to return the proposal to SEAC for reappraisal.

8. The proposal was placed in the 84th meeting of SEAC held on 22nd & 23rd January, 2018. The Committee examined the details and found that the revised Conceptual Plan is not appended with the revised Form I application. Hence the proposal was **deferred** for the submission of Conceptual Plan and other documents and their presentation before the Committee.

The Authorized signatory of M/s Sobha Developers has been changed to Sri. Majo Joseph, Asst.General Manager- Head, Commercial operations, M/s Sobha Ltd. , 5th Floor, Jomer Symphony, Ponnuranni North, Vytilla P.O., Kochi, Ernakulam- 682019. The proponent had submitted revised form-1, Form-1A and conceptual plan dated 25.01.2018.

9. The proposal was placed in the 85th meeting of SEAC held on 12th February 2018. Further to the intimation of SEAC, the proponent and the Engineer presented the conceptual plan and other details revised in accordance with the recommendation of CZMA. The Committee appraised the proposal based on Form 1, Form I A , conceptual plan and other connected documents. The Committee found that the modification effected are acceptable, hence decided to **recommended to issue Environmental Clearance** subject to the general conditions in addition to the following specific conditions.

1. *Since the area is subjected to saline intrusion provision for dependable source of water should be provided.*
2. *The facilities to be adopted for waste water treatment should be adequate so as not to cause contamination in the nearby water bodies.*
3. *Should provide sufficient setback from the extra high tension line passing through the proposed area.*

4. *Adequate precautions for disaster management should be inbuilt in the plan.*
5. *Carbon foot print of the project should be reduced to the maximum extent possible.*

The proponent also consented to spend Rs.3 crores towards the welfare of local community in consultation with the local body. The Committee also decided to point out that the decision of SEIAA to insist on 2% of project cost towards CSR activity is not legally tenable because the quantum of CSR provision is automatically regulated by the provisions of the Companies Act. However, if the proponent is voluntarily agreeing to set apart funds for the welfare of activities of the local community then that can be specifically noted in the EC.

10. The proposal was placed in the 81st meeting of SEIAA held on 08.03.2018. The Authority accepted the recommendation of SEAC and decided to issue EC subject to general conditions in addition to the above specific condition as suggested by SEAC. Before the commencement of operation the proponent should obtain allocation of dependable source of water from Kerala Water Authority.

As per the landmark judgment dated 3rd September 2017 of the Principal Bench of National Green Tribunal (NGT), developers should give a satisfactory explanation on the facilities provided for open space, recreational grounds and parking facilities at the project site as they have an important bearing on the life of people. The above direction has to be complied by the Proponent.

2% of the total project cost should be set apart for CSR activities for taking up welfare activities of the local community in consultation with the local body. The CSR amount should be utilized before the completion of the project and should be included in the annual account of the company and the expenditure statement should be submitted to SEIAA along with the compliance report after getting certified by a Chartered Accountant. A notarised affidavit for the commitment of CSR activities and also agreeing all the above specific and general conditions should be submitted before the issuance of EC.

The proponent has submitted a letter from KCZMA (letter No.4814/A2/15/KCZMA), which considered the proposal in its 92nd meeting and had informed that KCZMA decided to consider the omitted Survey Nos. 498/pt, 500, 504/1 & 504/2 (Nadama Vilage, Tripunithura Municipality) for the plinth area 1,04,730.79 sq.m for the CRZ clearance.

11. The proponent has submitted the affidavit vide ref (15) above and stating that all the specific and general conditions shall be strictly implemented. In the above circumstances, Environmental Clearance as per the EIA notification 2006 is therefore granted to the Housing Project titled 'Sobha Silver Sand' by Sri. Majo Joseph, Asst.General Manager- Head, Commercial operations in Sy.No.492, 492 pt, 493, 495/1, 2, 3, 4, 496, 497, 498, 498 pt, 500, 504/1, 504/2, at Nadama Village, Kanayannur Taluk, Ernakulam District, Kerala subject to the specific conditions mentioned in para 4 & 6 above, the usual general conditions for projects other than mining appended hereto and the following green conditions should be strictly adhered to. All the conditions imposed by KCZMA vide Letter referred 8 & 14 are also to be strictly implemented.

Green Conditions.

1. Adequate rain water harvesting facilities shall be arranged for.
2. Technology and capacity of the STP to be indicated with discharge point (if any) of the treated effluent.
3. Effluent water not conforming to specifications shall not be let out to water bodies.
4. Maximum reuse of grey water for toilet flushing and gardening and construction work shall be ensured.
5. Dual plumbing for flushing shall be done.
6. Provisions for disposal of e-wastes, solid wastes, non-biodegradables and separate parking facility for the buildings shall be provided.
7. Generation of solar energy to be mandatory for own use and/or to be provided to the grid.
8. There shall be no compromise on safety conditions and facilities to be provided by the project proponent, which shall be ensured for occupation, regularisation or consent to operate.

12. The clearance will also be subject to full and effective implementation of all the undertakings given in the application form, all the environmental impact mitigation and management measures undertaken by the project proponent in the documents submitted to SEIAA, and the mitigation measures and waste management proposal as assured in the Form - 1 and Form-1A, Environment Management Plan as submitted. The assurances and clarifications given by the proponent in the application and related documents will be deemed to be part of these proceedings as conditions as undertaken by the proponent, as if incorporated herein.

13. Validity of the Environmental Clearance will be seven years from the date of issuance of E.C, subject to inspection by SEIAA on annual basis and compliance of the conditions, subject to earlier review of E.C in case of violation or non-compliance of any of the

conditions stipulated herein or genuine complaints from residents within the scrutiny area of the project.

14. Compliance of the conditions herein will be monitored by the State Environment Impact Assessment Authority or its agencies and also by the Regional Office of the Ministry of Environment and Forests, Govt. of India, Bangalore.

- i. Necessary assistance for entry and inspection by the concerned officials and staff should be provided by the project proponents.
- ii. Instances of violation if any shall be reported to the District Collector, Ernakulam to take legal action under the Environment (Protection) Act 1986.
- iii. The given address for correspondence with the authorized signatory of the project is, Sri. Majo Joseph, Asst.General Manager- Head, Commercial operations, M/s Sobha Ltd. , 5th Floor, Jomer Symphony, Ponnuranni North, Vytilla P.O., Kochi, Ernakulam- 682019.

Sd/-

P.H.KURIAN.I.A.S,
Member Secretary (SEIAA)

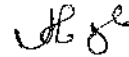
To,

Sri. Majo Joseph,
Asst.General Manager- Head,
Commercial operations, M/s Sobha Ltd. ,
5th Floor, Jomer Symphony,
Ponnuranni North, Vytilla P.O.,
Kochi, Ernakulam- 682019.

Copy to:

1. MoEF Regional Office, Southern Zone, Kendriya Sadan, 4th Floor, E&F Wing, II Block, Koramangala, Bangalore-560034
2. The Additional Chief Secretary to Government, Environment Department
3. Member Secretary, KCZMA
4. The District Collector, Ernakulam
5. The District Town Planner, Ernakulam
6. The Tahsildhar, Kanayannur Taluk, Ernakulam District
7. The Member Secretary, Kerala State Pollution Control Board
8. The Director, Dept. of Environment and Climate Change, Govt. of Kerala, Tvm-24
9. The Secretary, Thripunithura Municipality, Thripunithura P.O, Ernakulam-682301
10. Chairman, SEIAA, Kerala
- ✓ 11. Website
11. Stock file
12. O/c

Forwarded/By Order



Administrator, SEIAA

GENERAL CONDITIONS *(for projects other than mining)*

- (i) Rain Water Harvesting capacity should be installed as per the prevailing provisions of KMBR / KPBR, unless otherwise specified elsewhere.
- (ii) Environment Monitoring Cell as agreed under the affidavit filed by the proponent should be formed and made functional.
- (iii) Suitable avenue trees should be planted along either side of the tarred road and open parking areas, if any, inclusive of approach road and internal roads.
- (iv) The project shall incorporate devices for solar energy generation and utilization to the maximum possible extent with the possibility of contributing the same to the national grid in future.
- (v) Safety measures should be implemented as per the Fire and Safety Regulations.
- (vi) STP should be installed and made functional as per KSPCB guidelines including that for solid waste management.
- (vii) The conditions specified in the Companies Act, 2013 should be observed for Corporate Social Responsibility.
- (viii) The proponent should plant trees at least 5 times of the loss that has been occurred while clearing the land for the project.
- (ix) Consent from Kerala State Pollution Control Board under Water and Air Act(s) should be obtained before initiating activity.
- (x) All other statutory clearances should be obtained, as applicable, by project proponents from the respective competent authorities including that for blasting and storage of explosives.
- (xi) In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by this Authority.
- (xii) The Authority 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 Environment (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time bound and satisfactory manner.
- (xiii) The stipulations by Statutory Authorities under different Acts and Notifications should be complied with, including 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.
- (xiv) The environmental safeguards contained in the EIA Report should be implemented in letter and spirit.
- (xv) Provision should be made for supply of kerosene or cooking gas and pressure cooker to the labourers during construction phase.
- (xvi) Officials from the Regional of MOEF, Bangalore who would be monitoring the implementation of environmental safeguards should be given full co-operation, 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.
- (xvii) These stipulations would be enforces among others under the provisions of Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control Pollution) at 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification, 2006.

- (xviii) Environmental Clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs. Union of India in Writ Petition (Civil) No.460 of 2004 as may be applicable to this project.
- (xix) Any appeal against this Environmental Clearance shall lie with the National Environment Appellate Authority, if preferred, within a period of 30 days as prescribed under section 11 of the National Environment Appellate Act, 1997.
- (xx) The project proponent should advertise in at least two local newspapers widely circulated in the region, one of which (both the advertisement and the newspaper) shall be in the vernacular language informing that the project has been accorded Environmental Clearance and copies of clearance letters are available with the Department of Environment and Climate Change, Govt. of Kerala and may also be seen on the website of the Authority at www.seiaakerala.org. The advertisement should be made within 10 days from the date of receipt of the Clearance letter and a copy of the same signed in all pages should be forwarded to the office of this Authority as confirmation.
- (xxi) A copy of the clearance letter shall be sent by the proponent to concerned GramaPanchayat/ District Panchayat/ Municipality/Corporation/Urban Local Body and also to the Local NGO, if any, from whom suggestions / representations, if any, were received while processing the proposal. The Environmental Clearance shall also be put on the website of the company by the proponent.
- (xxii) The proponent shall submit half yearly reports on the status of compliance of the stipulated EC conditions including results of monitored data **(both in hard copies as well as by e-mail)** and upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the respective Regional Office of MoEF, Govt. of India and also to the Directorate of Environment and Climate Change, Govt. of Kerala.
- (xxiii) The details of Environmental Clearance should be prominently displayed in a metallic board of 3 ft x 3 ft with green background and yellow letters of Times New Roman font of size of not less than 40.
- (xxiv) The proponent should provide notarized affidavit (*indicating the number and date of Environmental Clearance proceedings*) that all the conditions stipulated in the EC shall be scrupulously followed.

SPECIFIC CONDITIONS

I. Construction Phase

- i. "Consent for Establishment" shall be obtained from Kerala State 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.
- ii. All required sanitary and hygienic measures should be in place before starting construction activities and to be maintained throughout the construction phase.
- iii. A First Aid Room will be provided in the project both during construction and operation of the project.
- 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.
- v. All the topsoil excavated during construction activities should be stored for use in horticulture/landscape development within the project site.

- vi. 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 sites with the approval of competent authority.
- 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.
- viii. Construction spoils, including bituminous material and other hazardous materials, must not be allowed to contaminate watercourses and the dump sites for such material must be secured so that they should not leach into the ground water.
- ix. Any hazardous waste generated during construction phase, should be disposed off as per applicable rules and norms with necessary approval of the Kerala State Pollution Control Board.
- x. The diesel generator sets to be during construction phase should be low sulphur diesel type and should conform to Environment (Protection) Rules prescribed for air and noise emission standards.
- 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.
- 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 the applicable air and noise emission standards and should be operated only during non-peak hours.
- xiii. Ambient noise levels 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/KSPCB.
- xiv. Fly ash should be used as building material in construction as per the provisions of Fly Ash Notification of September, 1999 and amended as on 27th August 2003. (The above condition is applicable Power Stations).
- xv. Ready mixed concrete must be used in building construction.
- xvi. Storm water control and its re-use per CGWB and BIS standards for various applications.
- xvii. Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred.
- xviii. Permission to draw ground shall be obtained from the Computer Authority prior to construction/operation of the project.
- xix. Separation of grey and black water should be done by the use of dual plumbing line for separation of grey and black water.
- xx. 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.
- xxi. Use of glass may be reduced by upto 40% to reduce the electricity consumption and load on airconditioning. If necessary, use high quality double glass with special reflective coating in windows.
- xxii. Roof should meet prespective requirement as per Energy Conservation Building Code by using appropriate thermal insulation material to fulfil requirement.
- xxiii. Opaque wall should meet perspective requirement as per energy Conservation Building Code which is proposed to be mandatory for all airconditioned spaces while it is aspirational for non-airconditioned spaces by use of appropriate thermal insulation material to fulfil requirement.

- xxiv. 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 National, Building Code including protection measures from lightening etc.
- xxv. Regular supervision of the above and other measures for monitoring should be in place all through the construction phase, so as to avoid disturbance to the surroundings.
- xxvi. Under the provisions of Environment (Protection) Act, 1986, legal action shall be initiated against the protect proponent if it was found that construction of the project has been started without obtaining environmental clearance.

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 affluent emanating from STP shall be recycled / reused to the maximum extent possible. Treatment of 100% grey water by decentralised treatment should be done. Discharge of unused treated affluent shall conform to the norms and standards of the Kerala State Pollution Control Board. Necessary measures should be made to mitigate the odour problem from STP.
- ii. The 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 land filling after recovering recyclable material.
- 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 Environment (Protection) Act, 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 low sulphur diesel. The location of the DG sets may be decided with in consultation with Kerala State pollution Control Board.
- 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.
- 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.
- vi. Weep holes in the compound walls shall be provided to ensure natural drainage of rain water in the catchment area during the monsoon period.
- 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 at least 5 mts.above the highest ground water table.
- viii. The ground water level and its quality should be monitored regularly in consultation with Central Ground Water Authority.
- ix. Traffic congestion near the entry and exit points from the roads adjoining the purposed project site must be avoided. Parking should be fully internalized and no public space should be utilized.
- x. A Report on the energy conservation measures confirming to energy conservation norms finalise by Bureau of Energy Efficiency should be prepared incorporating details about building materials & technology, R & U Factors etc and submit to the Ministry in three months time.

- 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 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 the extent possible.
- xii. Adequate measures should be taken to prevent odour problem from solid waste processing plant and STP.
- xiii. The building should have adequate distance between them to allow movement of fresh air and passage of natural light, air and ventilation.

III Post Operational Phase

Environmental Monitoring Committee with defined functions and responsibility should foresee post operational environmental problems e.g. development of slums near the site, increase in traffic congestion, power failure, increase in noise level, natural calamities, and increase in suspended particulate matter etc. solve the problem immediately with mitigation measures




For Member Secretary, SEIAA

