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Proceedings of the State Environment Impact Assessment Authority Kerala

*Present: Prof. (Dr.) K.P. Joy, Chairman, Dr. J. Subhashini, Member &
Sri. James Varghese I.A.S Member Secretary.*

Sub: SEIAA-Environmental Clearance for the proposed expansion of the existing Residential complex project in Survey No. 111/11A, at Edappally South Village, Cochin Corporation, Kanayannur Taluk, Ernakulam District, Kerala by M/s Civil Service Officers Housing Co-operative Society Ltd – Granted - Orders issued

State Environment Impact Assessment Authority, Kerala

No. 1080/EC3/SEIAA/2015

dated, Thiruvananthapuram 20.11.2017

- Ref: 1. Application dated 24.02.2016 from Shri.Rahul R, Secretary, M/s Civil Service Officers Housing Cooperative Society Ltd., "The Lantern", Thaliparambu Jn., Vennala P.O., Ernakulam, Kerala-682028
2. Minutes of the 70th meeting of SEAC held on 04th & 05th April 2017
 3. Minutes of the 72nd meeting of SEAC held on 8th & 9th May 2017
 4. Minutes of the 71st meeting of SEIAA held on 20th July 2017
 5. Minutes of the 73rd meeting of SEIAA held on 15th September 2017
 6. Minutes of the 74th meeting of SEIAA held on 09th October 2017
 7. Affidavit received on 04.11.2017 from Sri.Rahul.R

ENVIRONMENTAL CLEARANCE NO.82/2017

Shri.Rahul R, Secretary, M/s Civil Service Officers Housing Cooperative Society Ltd., "The Lantern", Thaliparambu Jn., Vennala P.O., Ernakulam, Kerala-682028, vide his application dated 24.02.2016 has sought Environmental Clearance under EIA Notification, 2006 for the expansion of the existing Residential complex project in Survey No. 111/11A at Edappally South Village, Cochin Corporation, Kanayannur Taluk, Ernakulam District, Kerala. The total plot area of the proposed project is 0.5949 ha. and the total built-up area of about 23,855.09 sq.m. (Existing 18,427.22 sq.m. + Proposed 5,427.87 sq.m.) with 95 residential units with supporting infrastructure facilities. The total project cost is 70 Crores.

It is inter alia, noted that the project comes under the Category B, 8(a) of Schedule of EIA Notification 2006.

Details as provided the project proponent

BASIC INFORMATION OF BUILDING PROJECT

Project details		
1.	File No	1080/EC3/SEIAA/2015
2.	Name /Title of the project	Proposed Expansion of Residential Project at Edappally South, Ernakulam, Kerala. Construction of residential project in plot area of about 0.5949 ha. The total built-up area of about 23,855.09 sq.m. and 95 residential units with supporting infrastructure facilities.
3.	Name and address of project proponent.	Mr. Rahul R., (Secretary) M/s Civil Service Officers Housing Cooperative Society Ltd., "The Lantern", Thaliparambu Jn., Vennala P.O., Ernakulam, Kerala – 682028
4.	Owner of the land	Own Land (M/s Civil Service Officers Housing Cooperative Society Ltd.)
5.	Survey Nos. District/ Taluk / and Village etc.	Survey No. 111/11A, Edappally South Village, Cochin Corporation, Kanayannur Taluk, Ernakulam District, Kerala
6.	Date of submission of Application	24.02.2016
7.	Total Built up Area	23,855.09 sq. m.
8.	No of apartments	95 residential apartments
9.	Height of the building	45 m
10.	Brief description of the project.	Construction of residential project in plot area of about 0.5949 ha. The total built-up area of about 23,855.09 sq.m. and 95 residential units with supporting infrastructure facilities.
11.	Is it a new Project or expansion /modification of an existing project?	Expansion of existing residential project With existing built-up area 18,427.22 sq. m.. As per the decision of Govt. of Kerala, the FAR is increased and wherein additional built-up area is made possible.
12.	Details of the Project Cost	About Rs. 70 Crores
13.	Distance from nearby habitation	Several houses and residential / commercial projects are located near the project site.
14.	Distance from nearby forest, if applicable	None within 15 km radius

15.	Distance from protected area, Wildlife Sanctuary, National Park etc.	Mangalavanam Bird Sanctuary, about 5.50 km away from the project site.
16.	Distance from nearby streams /rivers /National Highway Roads and Airport	Drain = abutting the project site Ernakulamkayal = 6 km, Edappallythodu = 0.3 km, Arabian Sea = 11 km
17.	Is ESA applicable? If so distance from ESA limit	Not in ESA area
Impact on water		
18.	Details of water requirement per day in KLD	The total domestic water requirement of about 67 KLD (which includes daily fresh water requirement of about 44 KL). Treated water from STP to be used for flushing of toilets (about 23 KLD) and horticulture (9 KLD) requirement.
19.	Water source/sources.	Stored Rain water, Wells, KWA water supply and treated water from STP
20.	Details of water requirements met from water harvesting.	About 265 KL capacity rain water storage tanks will be proposed to collect the rain water for non-flushing water requirement.
21.	What are the impacts of the proposal on the ground water?	As a standby source of water (during failure of public supply and non availability of stored roof rain water) ground water will be used to meet the non flushing water demand.
WASTE MANAGEMENT		
22.	Explain the facilities for Liquid waste Management	Provision of STP for treatment of sewage and treated water from STP will be used for meeting the water requirement for flushing & horticulture water requirement within the site. The total domestic water requirement of about 67 KLD (which includes daily fresh water requirement of about 44 KL). Treated water from STP will be used for flushing of toilets (about 23 KLD) and horticulture (9 KLD) requirement.
	Solid Waste Management	Solid waste generation will be about 178 Kg/day and which will be collected separately as Bio-degradable and Non-biodegradable waste as per the MSW Rules, 2000. The non-biodegradable and recyclable waste would be sold to the vendors. The biodegradable waste would be sent to the bio-bin facility.
	E-Waste Management	E-waste generated from the project will be stored in a separate earmarked place and disposed off through CPCB / MoEF / KSPCB norms.
	Facilities for Sewage Treatment Plant	The project has provision of STP to treat the sewage during operation phase. The technology for the treatment of the sewage is up to tertiary level treatment technology. The treated water will be used for meeting the flushing & horticulture water requirement within the project premises.

23.	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 will be 67 KLD (which includes daily fresh water requirement of about 44 KL). Treated water from STP will be used for flushing of toilets (about 23 KLD) and horticulture (9 KLD) requirement.
24.	What is the incremental pollution load from waste water generated from the proposed activities?	Nil, the whole waste water from the project will be treated through STP within the project site and treated water will be used for flushing and horticulture water requirement.
25.	How is the storm water from within the site managed?	The roof run-off from the site will be appropriately channelized to the storm water collection tank to be constructed within the site and the excess runoff from the site will be properly channelized to the drain and will be discharged only after de-siltation & oil removal.
26.	Will the deployment of construction labourers particularly in the peak period lead to unsanitary conditions around the project site (Justify with proper explanation)	The construction project has provision of labor colony and the domestic sewage will be channelised to the mobile STP for treatment of sewage during the construction period to handle the sewage. Also, it is proposed to have the food waste disposal from labor colony through the microbial bio-bin facility. Also, it is proposed to have a dedicated staff for good housekeeping to the construction site premises and the labor colony premises. These measures will ensure good hygienic conditions around the labor colony.
27.	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)	Details are provided in the point No. 22 & 23 above.
28.	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
Energy Conservation		
29.	Details of power requirement and source of supply, backup source etc. What is the energy consumption assumed per square foot of built-up area? How have you tried to minimize energy consumption?	<p>The total power requirement is estimated 630 kW and it will be supplied by Kerala State Electricity Board. The project will make provision of D.G. Sets (200 kVA x 2 + 125 kVA x 1 nos.) as standby arrangement of electricity. The proposed project will have provision of power saving and maximum natural light will be provided to minimize energy consumption. Other measures are:</p> <ul style="list-style-type: none"> ➤ Savings in energy by the use of LED lamps. ➤ Solar operated street lights.

		<ul style="list-style-type: none"> ➤ Appropriate setbacks are proposed in the buildings for getting natural lighting to the interior areas of the building. ➤ It is also proposed to have charging provision for battery operated vehicles in the parking areas. ➤ Total energy saving is expected to be about 23%
30.	What type of, and capacity of power back-up to you plan to provide?	The project has provision of D.G. Sets (200 kVA x 2 + 125 kVA x 1 nos.) as standby arrangement of electricity.
31.	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?	GLASS (Single Clear 4 mm Glass) 4.20 W / m ² K (U Value) Neutral Colour, Clear (non reflective) Make : M/s Asahi India (AIS)
32.	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, natural lighting & ventilation etc in the planning stage.
33.	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. The project proponent shall made provision for solar panel system (hot water purpose) in apartment block area and solar energy devices will be used for street lighting, emergency lighting in the proposed project.
34.	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. Total energy saving achieved due to use of energy efficient fixtures, building orientation & ventilation system is expected to be about 23%.
35.	Do the structure use energy-efficient space conditioning, lighting and mechanical systems? Provide technical details. Provide details of transformers and motor efficiencies, lighting intensity and air-conditioning load assumption? Are you using CFC and HCFC free chillers? Provide specifications.	Residential building project and no HVAC / CFC / HCFC proposed. 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 lamps have been avoided and energy efficient LED lamps will be used for all common area.
36.	What are the likely effects of the building activity in altering the micro-climates? Provide a self	More open spaces are proposed within the site to creation of any heat islands. The roads and parking spaces would be with concrete slabs

	assessment on the likely impacts of the proposed construction on creation of heat island & inversion effects?	intermittent with grass on surrounding.
37.	What are the thermal characteristics of the building envelope? (a) roof (b) external walls; and (c) fenestration? Give details of the materials used.	<p>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.</p> <p>The glass used will be low with low emissivity and the other specifications of the glass will comply with the norms as per ECBC</p>
38.	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.	<p>The use of non-conventional source of energy in the construction project are as follows: -</p> <p>a. Solar Water Heater: - The proposed project would install solar panels for hot water requirements in the apartments (top most floors) and hence the dependency on electricity for hot water generation can be minimized. This would conserve lot of coal which produces the electricity through public supply and also load on D.G. sets also would be reduced and there by conserve diesel.</p> <p>b. Solar Street Light: - It is also suggested to use solar cell powered street lights within the proposed project site for conservation of electricity.</p> <p>c. Use of LED Lamps: - The project proponent would use LED Lamp which conserve less electricity.</p> <p>d. 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.</p>
39.	Details of renewable energy (non - conventional) used.	Details are provided in point No. 38 above
IMPACT ON AIR ENVIRONMENT		
40.	What are the mitigation measures on generation of dust, smoke , odours, fumes or hazardous gases	<p>During construction phase, there will be generation of dust & smoke due to this project. 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</p>

		be vented out through stack of appropriate height.
41.	Details of internal traffic management of the site.	The proposed project would provide vehicle parking facilities within the project premises. The parking plan for this project would follows KMBR guidelines. The total number of parking proposed is 120 Cars + 145 T.W. The site development will provide minimum drive way as per KMBR at all around the building blocks for easy & smooth vehicular movement.
42.	Details of noise from traffic, machines and vibrator and mitigation measures	<p>The proposed project is a housing 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.</p> <p>During construction, the machinery used for construction will be of highest standards and will be of reputed make and will adhere to international standards. These standards itself take care of noise generated from these machines. The construction involved is residential building, no heavy machinery is required. Hence insignificant impacts due to construction machinery are envisaged.</p> <p>Apart from this, the construction activity will be restricted to day time only.</p> <p>Noise will be created from operation of D.G. sets but all the D.G. sets shall be silent generators to restrict the noise within the permissible limit.</p>
43.	Air quality monitoring in detail	<p>The project is housing project and it will not increase atmospheric concentration of gases, the project has provision of D.G. Sets for standby arrangement of electricity and will run only during power failure. The stack attached to the proposed D.G. Sets will follow all the rules and regulations of State Pollution Control Board and Central Pollution Control Board.</p> <p>The ambient air quality of the site carried out through an accredited laboratory and the ambient air quality report is already submitted with EC Application.</p>
44.	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 would provide vehicle parking facilities within the project premises. The parking plan for this project would follows KMBR guidelines. The total number of parking proposed is 120 Cars + 145 T.W. The conceptual plan (submitted with EC Application) clearly shows the internal traffic management with entry and exit to

	the project site.	the proposed project site. The proposed site development will provide minimum drive way as per KMBR at all around the building blocks for easy & smooth vehicular movement.
45.	Provide details of the movement patterns with internal roads, bicycles tracks, Pedestrian pathways, footpaths etc., with areas under each category	The conceptual plan submitted with EC Application 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 is made for the easy access to the building for physically challenged persons.
46.	Will there be significant increase in traffic noise & vibrations? Give details of the sources and the measures proposed for mitigation of the above.	The project is a housing 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.
47.	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.

SOCIO-ECONOMIC ASPECTS

48.	Will the proposal result in any change to the demographic structure of local population ? Provide the details.	The proposed project is a housing project. During operation phase, on full occupancy of the project, the maximum population expected is 445 persons (residents) and hence there will be influx of people (fixed) to the project area and surrounding.
49.	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 offices, hospitals which are located around the proposed project. The vicinity map showing the surrounding details of the project site is submitted with EC Application.
50.	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 multistoried apartment 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		
51.	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 project is a housing project and the buildings are not a centrally air conditioned building, 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.
52.	Transport and handling of materials during construction may result in pollution, noise & public nuisance. What measures are taken to minimize the impacts?	All vehicles which bring construction material to the site would possess Pollution Under Control Certificates (PUC). All vehicles would be of close 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
53.	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.
54.	Give details of the methods of collection, segregation & disposal of the garbage generated during the operation phases of the project.	<p>The details are given below :-</p> <p>Solid Waste</p> <ul style="list-style-type: none"> ✓ The proposed project will generate about 178 Kg/day from the proposed project. ✓ The solid waste from the proposed project will be segregated into two categories at source itself as per Municipal Solid Waste Rules, by providing appropriate colored bins i.e., Bio-degradable (green bins) & non-biodegradable (blue bins). ✓ The biodegradable waste would be sent to the bio-bin system.

		<p>Hazardous Waste</p> <p>✓ As per Hazardous Waste (Management & Handling Rules), the hazardous waste i.e., the used oil from D.G. sets, discarded oil filters and discarded batteries and stored separately and will be disposed to CPCB / SPCB authorized vendors only. M/s Pefect Alloys, Chengannur, M/s Peejay Enterprises, Thiruvalla, M/s Excel Petrochemicals, Kochi and M/s CeeJee Lubricants, Aluva are the approved recyclers for discarded batteries & used oil located in Kerala.</p>
		Risk Management
55.	Are there sufficient measures proposed for risk hazards in case of emergency such as accident at the site during construction & post construction phase.	<p>The project is a residential project. The chances of explosions, spillages, fire are minimal.</p> <p>During construction all the labours will be provided with suitable personal protective equipment (PPE) as required under the health & safety norms. Training and awareness about the safety norms will be provided to all supervisors and labours involved in construction activity.</p> <p>An agreement will be signed with the contractor which will clearly deals with the safety aspects during construction.</p> <p>No major hazardous waste is being stored within the project site. No Industrial or process activity is involved in this project hence chances of chemical hazards and accidents are minimal. However, suitable fire fighting measures will be provided.</p>
56.	Storage of explosives/hazardous substance in detail	<p>Used Oil from the D.G. Sets will be stored in HDPE drums and will be kept at a separate place and sold to CPCB approved recyclers. Therefore there is no risk of contamination due to used oil. The storage of used oil will be in such a way that no spillage of hazardous materials.</p>
57.	What precautions & safety measures are proposed against fire hazards? Furnish details of emergency plans	<p>This is a housing project and no storage of hazardous chemicals (as per MSIHC Rules) will be done, apart from diesel storage for D.G. Sets which will be operated only during emergency and suitable arrangement will be adopted for the same. It will be stored in HDPE drums and kept in covered rooms under lock and key.</p>
		AESTHETICS
58.	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?	There is no scenic beauty near the project site.

59.	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. The south direction there is access road to the site. Also, there are individual houses with plantations. There will be no any adverse impacts due to the development of the proposed project.
60.	Whether there are any local considerations of urban form & urban design influencing the design criteria? They may be explicitly spelt out.	The proposed project would be constructed in conformity with the Kerala Municipal Building Rules (KMBR). The site is falling in corporation limits. The external infrastructural services viz. water supply, electricity supply, storm water drainage, road connectivity, fire fighting and health & educational institutions are available within the vicinity of the project site. 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.
61.	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 Corporation limits of Kochi. The vicinity map showing the site & surrounding area is provided with EC application.
62.	Details of CSR activity and the amount set apart	Proposed common CSR Budget The project proponent earmarked an amount of about Rs. 12 lakhs (non-recurring) and 14 Lakhs annually (recurring) for implementing the activities under Corporate Social Responsibility.
63.	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, JanakPuri, New Delhi. Branch Office:- C-306, Kanchanjunga Apartments, Palarivattom P.O., Kochi, Kerala.
64.	Details of Authorized Signatory and address for correspondence	Mr. RAHUL R, Secretary, M/s Civil Service Officers Housing Cooperative Society Ltd. "The Lantern", Thaliparambu Jn., Vennala P.O., Ernakulam, Kerala-682028.
Summary and Conclusion		
65.	Overall justification for implementation of the project.	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.
66.	Explanation of how adverse impact have been mitigated.	The residential project would not cause any adverse effects on local communities, disturbance to sacred sites or other cultural values. The project is a multistoried apartment 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, malls, transport facilities etc. attached to the project which will benefit the local people and change their living condition

2. The proposal was considered in the 70th meeting of SEAC held on 04th & 05th April 2017 and decided to defer the item for field inspection and for submission of the proof for having applied for Wild Life Clearance.

Accordingly, the Subcommittee of SEAC consisting of Dr KG Padma Kumar and Sri S Ajayakumar conducted the site visit on 03/05/2017. The report is as follows;

The proposal is an expansion of an existing residential building having a valid building permit having an area below the requirement of EC. After the expansion, the proposal requires EC. Work is progressing

The proposal abuts the Vennala - Palachuvadu road having adequate width and therefore do not have any problem with access or manoeuvring of vehicles. Adequate parking is available at site. Adequate space is available at the front and sides of the building for assembly and evacuation in case of emergency. A drain is passing along the two boundaries of the plot and drains into an open lowland field which subsequently drains in a stream which is 90 m away. Adjacent plot owners are also draining their storm water and household waste water into this drain which is maintained by the corporation. Storm water can be drained along this drain or along the road to the stream mentioned above. However there is no roadside drain now but space is available. The proponent will ensure developing the drain presently seen in a dilapidated condition.

The proponent has also submitted the documents sought by 70th SEAC.

3. The proposal was considered in the 72nd meeting of SEAC held on 8th and 9th May 2017. The proposal was appraised by the Committee considering Form I, Form IA, Conceptual plan, field visit report and all other documents and details provided by the proponent. The Committee verified the additional documents submitted by the proponent and found satisfactory. The Committee decided to **Recommend for issuance of EC** subject to the general conditions in addition to the following specific condition.

i) *The drain passing along the boundary which is in a disused condition should be maintained properly for ensuring proper hygiene.*

4. The proposal was again placed in the 71st meeting of SEIAA held on 20th July 2017. Since the Inspection team reported that the proposal is an expansion of the existing building and the work is progressing, Authority decided to defer the item for detailed examination to ascertain whether there is violation and place in the next meeting.

5. The proposal was placed in the 73rd meeting of SEIAA held on 15th September 2017. Authority decided to authorise the Chairman to ascertain whether the construction already carried out attract violation proceedings and report at the earliest and place in the next meeting.

As per the decision of the 73rd meeting of SEIAA Chairman visited the site on 16.09.2017 and reported that the construction, as per the details provided by the proponent started in 2014. The construction of the proposed building is based on the building permit obtained for 12 storey building with a total built up area of 18,427.22 sq.mt in Survey No. 111/11A, Edappally South Village, Cochin Corporation, Kanayannur Taluk, Ernakulam District. As per the decision of the Government of Kerala, the FAR is increased and they have proposed for an expansion of existing residential complex with a total built up area of 23,855.09 sq.m (Existing 18,427.22 sq.m + Proposed 5,427.87 sq.m) However, it was verified that the construction stopped since January 2017 and presently there is no work going on and that they have constructed only upto 19,904.32 Sq.mts as per the details provided by them. Since they have not exceeded the permissible limit of 20,000 sq.mts the project will not attract violation and hence EC may be granted.

6. The Authority finally considered the proposal in its 74th meeting held on 09th October 2017 and after examining the matter in detail, accepted the recommendation of SEAC and decided to issue EC subject to general conditions in addition to the following specific condition.

a) *The drain passing along the boundary which is in a disused condition should be maintained properly for ensuring proper hygiene .*

A notarised affidavit agreeing all the general and specific conditions should be submitted before the issuance of EC. The proponent has submitted the affidavit vide reference 7th cited.

7. Environmental Clearance as per the EIA Notification 2006 is therefore granted for the expansion of the existing Residential complex project in Survey No. 111/11A at Edappally South Village, Cochin Corporation, Kanayannur Taluk, Ernakulam District, Kerala by Shri.Rahul R, Secretary, M/s Civil Service Officers Housing Cooperative Society Ltd., "The Lantern", Thaliparambu Jn., Vennala P.O., Ernakulam, Kerala-682028, subject to the specific

conditions mentioned in para 6 above, the usual general conditions for projects other than mining appended hereto and the following green conditions should be strictly adhered to.

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.
8. 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.
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9. 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.
10. 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, Shri.Rahul R, Secretary, M/s Civil Service Officers Housing Cooperative Society Ltd., "The Lantern", Thaliparambu Jn., Vennala P.O., Ernakulam, Kerala-682028.

Sd/-

JAMES VARGHESE.I.A.S,
Member Secretary (SEIAA)

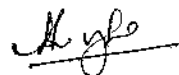
To,

Shri.Rahul R, Secretary,
M/s Civil Service Officers Housing Cooperative Society Ltd.,
"The Lantern", Thaliparambu Jn.,
Vennala P.O., Ernakulam,
Kerala-682028,

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. The District Collector, Ernakulam
4. The District Town Planner, Ernakulam
5. The Tahsildhar, Kanayannur Taluk
6. The Member Secretary, Kerala State Pollution Control Board
7. The Secretary, Koehi Corporation, Edapally Zone, Anchumana, Edapally, Ernakulam
8. Chairman, SEIAA, Kerala
9. Website
10. Stock file
11. 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



