



Validity expires on 16.03.2025

***Proceedings of the State Environment Impact Assessment Authority
Kerala***

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

Sub: SEIAA- Environmental Clearance for the Proposed expansion of Multistoried Residential Apartments "REGAL & ROYAL" in Survey Nos. 435/9-1, 435/9-2, 435/9, of Karakulam Village, Nedumagad Taluk & Thiruvananthapuram District, Kerala of Mr.Muralidharan Nair.V, M/s Sowparnika Projects & Infrastructure Private Ltd.- Granted-Orders issued.

STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY, KERALA

No. 1151/EC/SEIAA/KL/2017

dated, Thiruvananthapuram 17.03.2018

- Ref:
1. Application received on 08.09.2017 from Mr.Muralidharan Nair.V, AGM-Operations, M/s Sowparnika Projects & Infrastructure Private Ltd., Vettakulam Arcade,Opp. Mar Ivanios College Main Gate,Nalanchira (P.O.), Thiruvananthapuram – 695015.
 2. Minutes of the 82nd meeting of SEAC held on 25th November 2017.
 3. Minutes of the 84th meeting of SEAC held on 22nd & 23rd January, 2018.
 4. Minutes of the 87th meeting of SEAC held on 3rd March 2018.
 5. Minutes of the 82nd meeting of SEIAA held on 15.03.2018.
 6. Affidavit received dated 17.03.2018 from Mr.Muralidharan Nair.V, AGM-Operations, M/s Sowparnika Projects & Infrastructure Private Ltd.

ENVIRONMENTAL CLEARANCE NO. 49/2018

Mr.Muralidharan Nair.V, AGM- Operations, M/s Sowparnika Projects & Infrastructure Private Ltd., Vettakulam Arcade,Opp. Mar Ivanios College Main Gate,Nalanchira (P.O.), Thiruvananthapuram – 695015, vide his application received on 08.09.2017, has sought Environmental Clearance under EIA Notification, 2006 for the proposed expansion of Residential Project in Survey Nos., 435/9-1, 435/9-2, 435/9 of Karakulam Village, Nedumagad Taluk & Thiruvananthapuram District, Kerala. It is interalia, noted that the project comes under the Category B, 8(a) of Schedule of EIA Notification 2006. No forest land is involved in the present project.

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

BASIC INFORMATION OF BUILDING PROJECT
(To be filled in by the Project Proponent)
PART A

PROJECT DETAILS	
File No	1151/EC/SEIAA/KL/2017
Name/Title of the project	Environmental clearance for the Proposed construction of Multistoried Residential Apartment "Regal & Royal" by M/s. Sowparnika Projects and Infrastructure Pvt. Ltd.
Name and address of project proponent.	Sowparnika Projects and Infrastructure Pvt. Ltd. Vettakulam Arcade, Opp. Mar Ivanios College Main Gate, Nalanchira (P.O.), Trivandrum.
Owner of the land	Meehakshi Ramji
Survey Nos. District/Taluk/ and Village etc.	435/9-1, 435/9-2, 435/9, Karakulam village, Nedumangad Taluk, Thiruvananthapuram District, Kerala.
Category/Sub Category and Schedule	8(a) Category, B2
Date of submission of Application	24.08.2017
Total Built up Area & No. of Floors	23348.76 sq.m. Existing Building - 2 basements + G + 10 floors Proposed Building - 3 basements + G + 13 floors
No of apartments	166 Nos
Height of the building from the ground level	40.05
GPS Co-ordinate	Latitude (N) - 08°33'43.79"N
	Longitude (E) - 76°57'49.35"E
Brief description of the project.	Proposed construction of Multistoried Residential Apartment "Regal & Royal" at Karakulam Village, Nedumangad Taluk & Thiruvananthapuram District, Kerala Total Plot area – 4310.44 Sq.m. Total built-up area – 23348.76 sq. m.
Is it a new Project or expansion/modification of an existing project?	Expansion Project
Details of the Project Cost	41.60 Crore
If CRZ recommendation applicable?	No
Distance from nearby habitation	Aiyappankuzhy – 0.5 km N
Distance from nearby forest, if applicable	Not Applicable
Distance from protected area, Wildlife Sanctuary, National Park etc.	Not Applicable
Distance from nearby	Water Bodies:

streams/rivers/National Highway Roads and Airport	Killi River – 1.6 km, E Karmana river – 4.4 km, E Aakulam lake – 8.0 km, SW Arabian Sea – 10.5 km, SW Roads: NH-47(Salem-Kochi-Kanyakumari Highway) – 4.5 km, SW SH 1 (Kesavadasapuram - Angamaly) – 2.2, W SH 2 (Trivandrum - Thenmala) – 1.6 km, SE Trivandrum International Airport – 10Km, SW
Is ESA applicable? If so, distance from ESA limit	Not Applicable
IMPACT ON WATER	
Details of water requirement per day in KLD	113 KLD
Water source/sources.	Kerala Water Authority, Treated water from STP, Rain water harvesting sumps
Details of water requirements met from water harvesting.	Rain water harvesting sump will be provided. Fresh water will be sourced RWH sump during monsoon season.
What are the impacts of the proposal on the ground water?	Ground water will not be tapped for this project. Water requirement will be met from KWA/RWH Sumps.
WASTE MANAGEMENT	
Explain the facilities for Liquid waste Management	Sewage will be treated through Sewage Treatment Plant. Treated water will be used for toilet flushing and gardening purposes.
Solid Waste Management	Solid waste will incinerated through Incinerator Facility.
E-Waste Management	Not Applicable
Facilities for Sewage Treatment Plant	STP having capacity 102 KLD will be planned to treat the wastewater generated from this project.
How much of the water requirement can be met from the recycling of treated waste water? (Facilities for liquid waste treatment)	Treated waste water of 38 KLD for Toilet Flushing & 3 KLD for Gardening will be recycled.
What is the incremental pollution load from waste water generated from the proposed activities?	No incremental pollution load due to wastewater generation. Treated water will be used for Toilet flushing & Gardening Purposes.
How is the storm water from within the site managed?	Excess storm water will be diverted to RWH pits and drained to recharge well within the project site.
Will the deployment of construction labourers particularly in the peak period lead to unsanitary conditions around the project site(Justify with proper explanation)	Construction debris during construction phase will be sold to appropriate vendors. Excavated earth material will be used for refilling in the low lying areas. Solid waste will be disposed to the local vendors. Sewage will be disposed through septic tank followed by dispersion trench arrangement.

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 sewage generation will be about 98 KLD which shall be treated through STP of capacity 37 KLD & 65 KLD. The treated wastewater from the STP of 96 KLD will be reused for gardening 3 KLD, Flushing 38 KLD excess treated wastewater will be disposed through soak pit/recharge well within the campus.
Give details of dual plumbing system if treated waste is used for flushing of toilets or any other use.	Dual plumbing system will be provided to reuse the treated wastewater for toilet flushing & gardening purposes.
TRAFFIC MANAGEMENT	
Sufficiency of Parking Space (Explain)	160 No of Car parking & 181 No of Two wheelers parking will be provided in the open area & basement floors.
Width of access road	5m width road will be provided
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 area? How have you tried to minimize energy consumption?	<p>Total power requirement of the project is about 1200 KVA (450KVA-Existing, 750 KVA-Proposed) which will be sourced from Kerala State Electricity Board (KSEB). DG sets having capacity of 82.5 KVA & 100 KVA is used as backup power during power failure. Energy consumption will be minimized by through Conservation Measures like</p> <ul style="list-style-type: none"> • Use of energy efficient appliances • Use of solar lights in open areas / internal roads • Proposed to Ensure proper utilization of daylight glass for windows • Proposed to install the daylight sensors, CO2 sensors, lighting fixtures. • Energy efficient internal and external lighting luminaries (as applicable) which are at least three star rated under BEE labeling program.
What type of, and capacity of power back-up to you plan to provide?	DG sets having capacity of 82.5 KVA is provided as a power back up option in case of failure of power. It is proposed to provide a DG set of 100 KVA for expansion project.
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?	Since this is a residential development project, the use of glass is only for windows. It will be proposed to use High performance glass, which reduces the ingress of heat and at the same time allows higher penetration of daylight.
What passive solar architectural features are being used in the building? Illustrate the applications made in the proposed project	Windows, skylights and glazing will be provided to reduce both heating/ cooling energy consumption. Usage of a central courtyard within the building helps reduce the micro-climate. Use of exterior shading devices canopies and interior shading devices (roller blinds) Shrub planting helps in shading walls and windows.
Does the layout of streets & buildings	Layout of streets and buildings maximize the solar

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	energy devices. Solar Lights will be used for street lighting. Emergency lighting using high intensity LED's helps in reducing energy and maintenance cost. Solar water heaters use solar energy to heat water in residential building.
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?	Deciduous trees will be planted along the landscaping area. Shading outside will improve energy consumption in summer. Shade trees will save 40% on summer cooling costs when trees mature.
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 assumptions ? Are you using CFC and HCFC free chillers? Provide specifications.	It has been proposed to construct building considering natural ventilation, reducing dependent on electrical energy. Proper landscaping and green belt development will enhance aesthetics and reduce noise and vibration caused by traffic. Lighting will be mostly on fluorescent and Compact Fluorescent lamps which are energy efficient.
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?	As the proposed expansion project is a residential building, the air pollutants released into the atmosphere is very less and that too will be from vehicles and that too will be from vehicles / standby DG sets. There will not be major impacts on the micro-climates. Even though the proposed trees and bushes planted around the buildings will help in reducing ambient air temperature through evapo transpiration. The area will be dry and the warm air which is less dense rises up and helps in the dispersion of pollutants. Thus there will be no inversion effects.
What are the thermal characteristics of the building envelope? (a) roof (b) external walls; and (c) fenestration? Give details of the materials used.	The U value and the R value for roof, external walls and vertical fenestration will be designed as per the standards of Energy Building Code.
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.	This is a residential building with no significant pressure difference inside and outside of the building. Controlling infiltration is one of the measures to conserve energy. Infiltration will be reduced by sealing cracks and gaps and by properly placed plants near the buildings.
Details of renewable energy (non - conventional) used.	By using the Solar street lights and Solar water heaters there will be reduction in the overall energy consumption
IMPACT ON AIR ENVIRONMENT	

What are the mitigation measures on generation of dust, smoke, odours, fumes or hazardous gases	<p>There will not be any kind of generation of odorous fumes and hazardous gases as this is a residential project. Only little amount of dust from construction & transport activities which will be suppressed by sprinkling of water in the activity zone and insignificant level of smoke will arise from the construction equipment & vehicles which will be mitigated by proper maintenance.</p> <p>During operational phase, the only point source of emission is operation of DG set & incinerators which will be mitigated by adequate height of stack. Besides, the trees in the green belt development will help in the sorption of gaseous pollutants.</p>
Details of internal traffic management of the site.	Adequate parking will be provided in the basement floors & open areas.
Details of noise from traffic, machines and vibrator and mitigation measures	Equipment shall be designed to conform to noise levels prescribed by regulatory agencies. Green belt will also be developed for attenuating the noise.
Air quality monitoring in detail.	The proposed 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. The ambient air quality of the site carried out through an accredited laboratory
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.	Adequate parking spaces will be provided in the open area as well as basement floors of existing & proposed buildings. The site is well connected to the existing road network. The entry and exit points will be designed in such a way that will not disturb the existing traffic.
Provide details of the movement patterns with internal roads, bicycles tracks, Pedestrian pathways, footpaths etc., with areas under each category	All internal roads will be well planned in such a way to reach all places with ease. Access path has been provided all the buildings.
Will there be significant increase in traffic noise & vibrations? Give details of the sources and the measures proposed for mitigation of the above.	The noise level inside the site will be increased slightly due to the movement of vehicles and from the machines used in construction activities. The noise level will be reduced by the slow movement and properly well maintained vehicles. Installation of speed humps will reduce the speed of the vehicles.
What will be impact of DG sets & other equipments on noise levels & vibration in & ambient air quality around the project site? Provide	D.G. sets are installed with inbuilt acoustic enclosures. D.G. sets are placed on the raised platform to minimize the vibration.

details	
IMPACT ON BIODIVERSITY AND ECO RESTORATION PROGRAMMES	
Will the project involve extensive clearing or modification of vegetation (Provide details)	The proposed expansion site is an open vacant land and there are no trees. So, there will not be any loss in tress or vegetation. Only minor clearing activities will take place to clear the shrubs. However green belt will be improved around the site.
What ate the measures proposed to minimize the likely impact on vegetation (details of proposal for tree plantation/ landscaping)	The landscaping proposal will comprise of tree and shrubs plantation. This will be done as per CPCB guidelines on Greenbelt development.
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)	Proposed expansion project is neither displacing any terrestrial fauna nor displacing any aquatic fauna. The land is not coming in the migration route or does not intercept any corridor of fauna movement.
SOCIO- ECONOMIC ASPECTS	
Will the proposal result in any change to the demographic structure of local population ? Provide the details.	As the proposed expansion project is the construction of additional residential buildings adjacent to the existing campus, the nearby people will get better economic status will get improved.
Give details of the existing social infrastructure around the proposed project	Most of the basic infrastructure facilities like schools, colleges, etc available in the study area.
Will the project cause adverse effects on local communities, disturbances to sacred sites or other cultural values? What are the safeguards proposed?	No. The proposed expansion project will not cause any adverse effects on the local communities. There are no sacred sites or cultural values nearby.
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)	Standard list of building materials will be used and their use is inevitable. Some of them have high embodied energy like cement, steel, etc., however it will be seen that cement will have ingredients of pozolonic ash, steel will have some percent as scrap raw material recycled and use of glass is minimal. Selection of energy efficient material in the proposed project wherever feasible has been considered. Efforts have been taken to minimize the use of virgin wood and Building materials with high embodied energy, to the possible extent materials with high recycle content are proposed to be used in the project. Also the regionally available materials (Within 250 miles radius from the project site) are given priority.
Transport and handling of materials during construction may result in pollution, noise & public nuisance. What measures are taken to minimize	Use of well maintained vehicles for construction activities. Vehicles carrying construction materials shall be covered properly. Equipment like earmuffs, earplugs etc., will be used for hearing protection for

the impacts?	workers. Cover piles of building materials like cement, sand and other materials. Limitation of vehicle speeds. Control dust through fine water sprays.
Are recycled materials used in roads and structures? State the extent of savings achieved?	Excavated top soil will be used for landscaping in the site. Lower soil will be used for landscaping and in playgrounds. Broken concrete will be used for erosion control.
Give details of the methods of collection, segregation & disposal of the garbage generated during the operation phases of the project.	Solid waste generated from the project will be incinerated through incinerator facility
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.	Yes
Storage of explosives/hazardous substance in detail	No storage facility will be provided. Diesel will be bought and used on a need basis.
What precautions & safety measures are proposed against fire hazards? Furnish details of emergency plans	All precautions & safety measures are proposed against the fire hazards as per norms of Fire & Rescue Department, Govt. of Kerala.
Litigation/court cases if any	No
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?	The proposed expansion project will not affect obstruction of the view, scenic amenity or landscapes as there is no such activities around the project site. In fact this project will exhibit green belt development around the periphery of the project site which will enhance the asthetic view.
Will there be any adverse impacts from new constructions on the existing structures? What are considerations taken into account?	As the proposed expansion construction will be carried out within the confined area there will not be any adverse impacts on the existing structures.
Whether there are any local considerations of urban form & urban design influencing the design criteria? They may be explicitly spelt out.	No local considerations.
Are there any anthropological or archaeological sites or artefacts nearby? State if any other significant features in the vicinity of the proposed site have been considered	There are no anthropological, archaeological, artifact sites in the vicinity of the site.
Details of CSR activity and the amount set apart per year	The proposed CSR activity details are given in Annexure – 1

Details of NABET approved EIA Consultant engaged-Their name, address and accreditation details	Certificate No.: NABET/EIA/1619/RA/0048 ABC Techno Labs India Pvt. Ltd, No.400, 13th street, Sideo Industrial Estate, North Phase, Ambattur Chennai- 600 098 Ph: +91 -422 -2453737
Details of Authorized Signatory and address for correspondence	Mr. V. MURALIDHARAN NAIR AGM – Operations Vettakulam Arcade, Opp. Mar Ivanios College Main Gate, Nalanchira (P.O.), Trivandrum. 0471 – 2533383
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 36 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. Also, to construct ram water harvesting pits to recharge the ground level. 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 proposal was placed in the 82nd meeting of SEAC held on 25th November 2017 and decided to defer the item for field inspection. The Committee directed the proponent of submit a revised layout plan.

Accordingly inspection was conducted by a Sub committee consisting of Sri S Ajayakumar, Dr. Oommen V. Oommen, Sri John Mathai and Sri Sreekumaran Nair on

13.01.2018. The report is as follows;

In the absence of a responsible person to explain the details of the project, the committee could make only a cursory examination of the site.

Considering its steep to very steep disposition, absence of dependable source of water, limitation in area of plot, inadequate entry/exit, absence of approved waste management system, lack of proper drainage disposal etc; the site would need a detailed evaluation in the presence of the proponent and persons who are capable providing clarification at the site.

3. The proposal was placed in the 84th meeting of SEAC held on 22nd & 23rd January, 2018. Due to non co-operation of the proponent, the Sub Committee could not inspect the site. Hence the Committee decided to give one more chance to the proponent and defer the proposal.

Accordingly the second site inspection was conducted by a Sub committee consisting of Sri S Ajayakumar and Sri John Mathai on 05.03.2018. The report is as follows;

The proposal is for additional block to the existing block with a total area of 23,348.76 m². Existing block is having 62 units and 104 additional units are proposed in the new block. The proposal is for a 3B+ G + 13 storey building. Since the plot is having steep slope, three basements are feasible. Car parking facility of 166 covered parking and additional visitor parking is adequate. Traffic circulation is satisfactory. Storm water drainage is provided.

The proponents may be requested to

- 1. Construct adequate slope stabilising measures in the form of retaining wall of appropriate design.*
- 2. The proponents should set back the main gate about 5 m from the edge of the road so that traffic flow in the main road is not affected.*
- 3. Mechanical ventilation should be provided to the parking area in the basement.*
- 4. The storage capacity of RWH structure should be enhanced to 350 KL.*
- 5. Quality of the treated water that is to be let outside the premises must conform to the standards. The record of such periodic tests should be maintained.*

4. The proposal was placed in the 87th meeting of SEAC held on 3rd March 2018. The Committee appraised the proposal based on Form 1, Form I A, Conceptual Plan, field inspection report of the Sub Committee and all other documents submitted with the proposal. The Committee decided to **Recommend for issuance of EC** subject to general conditions in addition to the following specific conditions.

1. *Construct adequate slope stabilising measures.*
2. *The proponents should set back the main gate about 5 m from the edge of the road so that traffic flow in the main road is not affected.*
3. *Mechanical ventilation should be provided to the parking area in the basement.*
4. *The storage capacity of RWH structure should be enhanced to 350 KL.*
5. *Waste disposal arrangement should be in conformity with the Pollution Control Board guidelines.*

The proponent consented to set apart Rs.25 lakh per annum (recurring) for taking up local community welfare activities in consultation with the local Panchayat.

5. The proposal was placed in the 82nd meeting of SEIAA held on 15.03.2018. 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.

As per the landmark judgment dated 3rd September 2017 of the Principle 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. Assurance from Kerala Water Authority for dependable source of water should be obtained. 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.

6. The proponent has submitted the affidavit vide ref (6) above and stating that all the specific and general conditions shall be strictly implemented. Environmental Clearance as per the EIA notification 2006 is therefore granted to the proposed expansion of Multistoried Residential Apartments "REGAL & ROYAL" by Mr.Muralidharan Nair.V, M/s Sowparnika Projects & Infrastructure Private Ltd in Survey Nos. 435/9-1, 435/9-2, 435/9, of Karakulam Village, Nedumagad Taluk & Thiruvananthapuram District, Kerala subject to the specific conditions mentioned in para 4 & 5 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.
7. 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.
8. 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.
9. 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, Thiruvananthapuram to take legal action under the Environment (Protection) Act 1986.

- iii. The given address for correspondence with the authorized signatory of the project is,
Mr.Muralidharan Nair.V, AGM- Operations, M/s Sowparnika Projects & Infrastructure Private Ltd., Vettakulam Arcade, Opp. Mar Ivanios College Main Gate, Nalanchira (P.O.), Thiruvananthapuram - 695015.

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

To,

Mr.Muralidharan Nair.V,
AGM- Operations,
M/s Sowparnika Projects & Infrastructure Private Ltd.,
Vettakulam Arcade, Opp.
Mar Ivanios College Main Gate, Nalanchira (P.O.),
Thiruvananthapuram - 695015

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, Thiruvananthapuram
4. The District Town Planner, Thiruvananthapuram
5. The Tahsildhar, Nedumangad Taluk, Thiruvananthapuram District
6. The Member Secretary, Kerala State Pollution Control Board, Trivandrum
7. The Director, Dept. of Environment and Climate Change, Govt. of Kerala, Tvm-24
8. The Secretary, Karakulam Village Panchayat, Nedumangad, Kerala- 695564.
9. Chairman, SEIAA, Kerala
10. 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 enforced 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 prospective requirement as per Energy Conservation Building Code by using appropriate thermal insulation material to fulfil requirement.
- xxiii. Opaque wall should meet prospective 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 project 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 conforming 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



[Signature]
For Member Secretary, SEIAA