Validity expires on 14.03.2025

सत्यमेव जयते

Proceedings of the State Environment Impact Assessment Authority Kerala

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

Sub: SEIAA- Environmental clearance for the Proposed Expansion of Ernakulam Medical College in Sy.No. 321 Part 1 at Thrikkakara North Village, Kanayannur Taluk, Ernakulam District, Kerala of K. Mohammed.Y.Safirulla I.A.S., District Collector & District Magistrate - Granted-Orders issued

STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY, KERALA

No.1144/EC/SEIAA/KL/ 2017 ***dated, Thiruvananthapuram 15.03.2018***

Ref: 1. Application received on 05.08.2017 from K. Mohammed.Y.Safirulla I.A.S., District Collector & District Magistrate.

2. Minutes of the 79th meeting of SEAC held on 25th& 26th September 2017.

3. Minutes of the 82nd meeting of SEAC held on 25th November 2017.

4. Minutes of the 83rd meeting of SEAC held on 20th& 21st December 2017.

5. Minutes of the 79th meeting of SEIAA held on 09.01.2018.

6. Affidavit received on 21.02.2018 from K. Mohammed.Y.Safirulla I.A.S, District Collector & District Magistrate.

ENVIRONMENTAL CLEARANCE NO. 31/2018

K. Mohammed.Y.Safirulla I.A.S. , District Collector & District Magistrate,Civil station, Echamuku, Thrikkakara, Kakkanad, Kerala-682030, vide his application received online, has sought Environmental Clearance under EIA Notification, 2006 for the proposed expansion of Ernakulam Medical College in Sy.No.321 Part 1 at Thrikkakara North Village, KanayannurTaluk, Ernakulam 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

Name of the project		**Proposed Expansion of Govt. Medical College, Ernakulam.**	
Brief description of the project		The Health and Family Welfare Department, Govt. of Kerala, proposes to expand the Existing Medical College, Ernakulam, with a Super Specialty Block and other allied facilities such as Indoor Stadium, Common Amenities Center, PG Hostel, and Staff Quarters. The total built up area of the proposed Super Specialty Block and Common Amenities Centre is 59657.998 sq.m. and the built up area of other Components (Staff Quarters, PG Quarters, and Indoor Stadium) is 30964.32 sq. m. As per the OM of MoEF & CC dated 22.12.2014, schools, colleges, hostels of educational institutions are exempted from the purview of EIA notification, 2006. Thus, the proposed Super Specialty Block and Common Amenity Centeral one comes under the purview of EIA Notification, 2006.	
Category/Subcategory & Schedule		Category B, Schedule 8(a)	
Location Survey no/ district, Taluk/ village etc.		Location	Kalamassery
		Survey No.	321 Part 1
		Village	Thrikkakara North Village
		Taluk	Kanayannur Taluk
GPS co-ordinates		Latitude (N)	10° 3'11.50"N
		Longitude (E)	76°21'10.33"
Mining projects	Extent of area (in hectares)	NA	
	Minimum and maximum height of excavation (MSL)		
	Life of mine proposed		
	Ultimate depth of mining (in MSL)		
	Distance from the adjacent quarry		
	Capacity of production		
	Details of project cost		

	Financial statement including funding source and details of insurance		
Construction project	Built up area (in m^2)	Proposed Super Specialty Block & Common amenity Center	59657.998 sqm
		Educational Facilities	30,964.32 sqm
		As per the **OM of MoEF & CC dated 09.12.2016,** schools, colleges, hostels of educational institutions are exempted from the purview of EIA notification, 2006. Thus, the proposed Super Specialty Block and Common Amenity Center alone comes under the purview of EIA Notification, 2006.	
	No. of floors	LG3, LG2, LG1,G+4	
	Maximum height from ground level	26.55 m	
	Facilities proposed	The proposed project is the expansion of the existing Govt. Medical College, Ernakulam. Health and Family Welfare Department, Government of Kerala is proposing to develop a Super Speciality Block, Indoor Stadium, Common Amenity Center, PG Hostel and staff quarters. The other support facilities proposed for the project includes STP for the treatment of sewage generated from the proposed facilities and two rain water harvesting tanks each of capacity 350 KLD for the collection of rooftop rainwater.	
	Details of project cost	Rs. 368.74Crores (as per the Administrative Sanction)	
	Financial statement including funding source and details of insurance	The project shall be funded by the **Kerala Infrastructure Investment Fund Board (KIIFB)**	
	Activity schedule of the project	Under Preparation	
CRZ recommendations		NA	
Forest clearances		NA	
Does it attract violation proceedings		No	
EnvtMgmt plan/ Eco restoration plan (brief details)	**MANAGEMENT PLAN**		
		Construction Phase ▪ The site shall be isolated by installing tall fabric	

	Air pollution	fences to obstruct noice and dust. ▪ Sprinkling water to minimise dust generation ▪ Pollution- under -check (PUC) shall be made mandatory for all vehicles used for consruction activities. ▪ Regular maintenace and inspection of the machineries shall be conducted. ▪ The excavaters, loaders, vehicles and cranes shall bc opertaed onlywithin the fenced area of the project site. ▪ Personnel masks shall be provided to workers. ▪ The tyres of the transport vehicles shall be washed before leaving the construction site. ▪ The material transport vehicles shall be coveredproperly ▪ The stack height of the DG set shall be in conformance with the CPCB guidelines. **Operation Phase** ▪ Open burning of the waste particularly if it contains plastics/polyethylene will be strictlly banned since it produces dioxins in addition to other toxic gases. ▪ A thick vegetation belt which involve evergreen trees and pollution supressing plants will be maintained in the plot in order to minimise the airpollution from the pollutant emissions. ▪ DG sets comply with MoEF norms of emisssions will be used
	Water pollution	**Construction Phase** ▪ The construction machineries and vehicles shall be inspected periodically for the detection of leaks and spillages. ▪ The maintanenace and inspection of vehicles shall be confined to designated paved areas only. The surface run off from this area shall be collected for treatment and disposed off. ▪ Excavated earth shall be stored properly and re used for levelling and filling. ▪ The surplus earth is proposed to be stored under plastic membrane. ▪ Proper waste disposal facility will be provided at site **Operation Phase** ▪ Storm water will be mananged with well connected drain layout ▪ Storm water will be collected in RWH tank which shall be reused.

		▪ A well managed waste disposal scheme will be adopted ▪ Wastewater generated during operational activities will be connected to STP
	Noise pollution	**Construction Phase** ▪ Well maintained drilling equipments will be used ▪ Diesel generator shall have noise control measures ▪ Workers shall not be exposed to sound more than 85 – 90 dB for more than eight hours a day and shall be provided with personal protective equipment (ear plugs). ▪ Noise quality monitoring shall be conducted as per Environmental Monitoring Plan to detect noise pollution. ▪ Construction contract shall clearly specify the use of equipment emitting noise of not greater than 90 dB (A) for the eight hour operation shift. ▪ All the machines would comply with the norms set by CPCB. ▪ Machines will be maintained periodically to meet CPCB standard ▪ Appropriate fencing will be provided between construction site and existing activity area to reduce the propagation of sound **Operation Phase** ▪ DG sets will be provided with acoustics enclosure ▪ DG sets will be palced in acoustically treated room ▪ DG sets would be incompliance for acoustics and air quality. ▪ Low sulphur diesel would be used in DG ▪ Thick vegetation cover incorporating trees and shrubs to cut off the noise propagation to hospital and sensitive areas will be provided.
		Construction Phase **Type of waste** | **Mode of disposal**

	Solid Waste Management	**generated**	
		Construction waste	• Shall be used on site use for filling • Shall send to vendors for recycling • Shall be used for levelling of the access yards.
		Solid waste	• **Bio degradable**– Shall be collected in designated bins and composted in the site. • **Non bio degradable**– Shall be collected in designated bins and send to vendors/Recycling yard
		Liquid waste	Will be diverted to septic tank
		E waste	Will be send to Authorized E Waste disposers
		Operation Phase	
		Solid waste	• **Bio degradable**– Shall be collected in designated bins and composted in the site. • **Non bio degradable** – Shall be collected in designated bins and send to vendors/Recycling yard • **Biomedical Wastes** – Shall be collected in designated color-coded bins and send to authorized biomedical waste management agency
		Sewerage	STP
		E waste	Shall be stored in secondary storage area and send to Authorized E Waste disposers
Eco restoration		It is recommended to develop landscape area in the project site.	
ABOUT THE PROJECT			
Environmental parameters considered		**Description**	
WATER			
Water requirement & sources		The total water requirement for the entire facilities is estimated to be 670KLD. The water requirement will be	

	met form the KWA supply.
RWH proposed	Two rainwater harvesting tanks each of capacity 350KLD is proposed to collect the rainwater falling on the roof of the proposed buildings. The rainwater falling on the roof top will be transported through down take pipes/gutters to the drainage which shall be directed to the RWH tanks.
Facilities for liquid waste treatment	The wastewater generated from the proposed facilities is around 580 KLD which will be treated in the STP and the treated water will be utilized for flushing and landscape purposes
Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers?	Nil
Water quality meeting requirements	During the construction phase, the water supplied has to meet the potable water quality and the domestic water requirement at site for the construction labours and execution staff has to meet the drinking water quality which will be sourced from the approved suppliers. During the operation phase, the water requirement will be met from the KWA water supply.
Does it have provisions for use of recycled water	Yes. The treated water will be reused for flushing and gardening, as per the standards stipulated by the pollution control board.
LAND	
Proximity to forest lands	Nil
Access road to the site –Width & Condition	The proposed site is situated along the HMT road of 15 meters wide. The site has internal roads and entry and exit points. The width of the internal road is 12meters.
Storage of explosives /hazardous substances	Nil
Facility for Solid Waste Management	**Construction Phase** **Type of waste generated** | **Mode of disposal**

	Construction waste	• Shall be used on site use for filling • Shall send to vendors for recycling • Shall be used for levelling of the access yards.
	Solid waste	• **Bio degradable**– Shall be collected in designated bins and composted in the site. • **Non bio degradable** – Shall be collected in designated bins and send to vendors/Recycling yard
	E waste	Send to Authorized E Waste disposers
	Operation Phase	
	Solid waste	• **Bio degradable**– Shall be collected in designated bins and composted in the proposed biogas plant. • **Non bio degradable** – Shall be collected in designated bins and send to vendors/Recycling yard.
	Bio Medical waste	Shall be sent to authorized biomedical waste management agency.
	E-waste	Will be stored in secondary storage area and Send to Authorized E-Waste disposers
Topographic features/ slope	The site is on the South-Western upper slope of a North West –South East trending valley just behind the Nursing College and Hostel Complex. The slope is very steep , with the South Western and North Eastern peripheries of the proposed building indicating an altitudinal difference of over 10 m.	
Proneness of the area for landslides	The proposed site is quite steep. Slope management is essential at this stretch to avoid slips.	
Significant land disturbance resulting in erosion, subsidence & instability	Nil	
Top soil, overburden etc.	Nil	
AIR		
Air quality meeting requirements	Ambient Air quality of the site was monitored at three locations. The quality of the ambient air is well within the limits of NAAQ set by Central Pollution Control Board	

Noise level meeting requirements	Ambient Noise quality of the site was monitored at three locations. The quality of the ambient noise level is well within the limits of NAAQ set by Central Pollution Control Board.
Likely emissions affecting environment	Severe emissions are not expected since the building space is proposed for green & white categories of industries as per CPCB guidelines.
ENERGY	
Energy requirement	4 Nos of 1500 KVA transformer is proposed for meeting the power requirement.
Energy sources	Will be supplied from KSEB
Extent of usage of alternative energy resources	3 Nos of 1000 kVA.
BIODIVERSITY	
Presence of any endangered species or red listed category	No significant threat to the biodiversity is anticipated from the project execution since the proposed development site is situated within an active zone of urban and infrastructure development. The vegetation cover is composed mostly of planted trees, other ornamental species and weeds.
Loss of native species and genetic diversity	Nil
Likely displacement of fauna	Impacts on fauna is insignificant, as the species found in the project site and surroundings are common to the region with no species figuring in the rare/exceptional category.
Any introduction of alien / invasive species	Nil
SOCIAL ASPECTS	
Proximity to nearest habitation	The proposed site is part of existing Govt. Medical College, Ernakulam which is already under the ownership of the Dept. of Health and Family Welfare, Government of Kerala. Hence,any kind of rehabilitation and resettlement is not required. The location is devoid of any kind of dwellings such as tribals, migrants or nomadic groups.

CSR related to the project/ allocation/ time frame (details mandatory)	The proposed project is hospital expansion and it is an undertaking of Dept. of Health and Family Welfare, Govt. of Kerala. Hence, no CSR activities are anticipated at present.
GENERAL	
Does it propose environment management plan	Yes
Does it have eco restoration programmes	Yes
Biomedical waste management	Yes
E-waste management	Yes
Sufficiency of parking spaces/ traffic management	Yes
Litigation/court cases, if any, against the project (provide details)	Nil
Right & nature of ownership of land	Land is under the possession of Health and Family Welfare Department, Government of Kerala.
Is the property forest land/govt. land/own land	Government Land
Details of Authorised Signatory	Shri. K. Mohammed Y. Safirulla I.A.S., District Collector& District Magistrate Civil station, Kakkanad, Kerala - 682030
Details of NABET approved EIA consultant organisation	**Name of the EIA Consultant Organization**: KITCO Ltd. **NABET Certificate No. & Issue Date**: NABET/EIA/SA/338 dated 23.12.2015

2. The proposal was placed in the 79th meeting of SEAC held on 25th& 26th September 2017. Further to the intimation of SEAC, the representative of the proponent and engineer attended the meeting and the engineer made a power point presentation about the salient features of the project briefly. The Committee appraised the proposal based on Form 1, Form I A , conceptual plan and other connected documents.

The existing area of the hospital building is 44,709 sq.m. Break-up of this built up area need to be obtained from the proponent. The proposed construction comprise of 59,657.998 sq.m for super speciality block & common amenity centre and 30,964.32 sq.m for educational facilities.

The Committee decided to defer the item for field inspection. The committee also directed the proponent to submit a detailed parking plan and that of internal roads.

Accordingly Inspection was conducted by a sub committee consisting of Sri Gopinathan V, Chairman, Sri S Ajayakumar and Sri John Mathai on 07/11/2017.The report is as follows;

Officers of the consultants were present. The proposal is for the construction of a super speciality block, PG Hostel, staff quarters, auditorium and other ancillary buildings as an extension of the existing medical college and hospital. The existing hospital complex consists of several independent buildings constructed without proper planning resulting in inefficient use of land. Parking is haphazard, vehicle movements clashes with pedestrian movement, internal roads are narrow and lack geometrical design. Such a design reduces precious open spaces necessary for a hospital. Construction of additional buildings will only worsen the situation because the entry to the new buildings is through the existing entry, passing through the already congested central area and parking lot. This is not at all advisable and alternate entry shall be identified. Therefore it is essential to consider the whole campus as a single unit and improve the circulation, increase the landscaped area by constructing multi-storey buildings instead of low rise buildings. However, to be practical, existing buildings shall be removed only in a phased manner after alternate facilities are positively in place. Therefore a master plan for the whole campus should be prepared.

a. Submit a master plan for the campus as a whole showing all buildings, its areas and date of grant of building permit issued by the local body, and all internal roads with adequate width as per Kerala Municipal Building Rules. If necessary some small low rise buildings may be replaced by high rise building in a phased manner. Parking shall be rearranged and streamlined. Patient and bystander facilities should be marked in the master plan.

The plot is adjacent to the proposed Cancer Hospital and Research Centre (File No 1150/EC/SEIAA/2017) also proposed by the District Collector himself albeit in a different capacity. The proposed site is along the HMT – NAD road. This road is having adequate width divided by median. At present both sides are sparsely developed. However, this width will become inadequate once the proposed development on both sides of the road, including the proposed expansion of medical college and proposed cancer centre, is commissioned.

Entry to the medical college and cancer hospital is from the same HMT-NAD road. Entry to the cancer hospital is directly from this road. It is unsafe to provide direct entry to this road having speeding vehicle. It is ideal to have a new road between the medical college and cancer hospital and entry to the cancer hospital and new super speciality block can be provided from this new road. Parking for the medical college and cancer hospital can be located without creating problems for the pedestrian and vehicular entry of patients and bystanders. Public transport stops can also be provided along HMT- NAD road taking land from the cancer centre/ medical college or both. Matters regarding a master plan combining adjacent proposal for Medical College and Cancer research centre shall be discussed in detail in the SEAC meeting.

3. The proposal was placed in the 82nd meeting of SEAC held on 25th November 2017. The Committee decided to defer the item for the submission of master plan as suggested by the Subcommittee.

4. The proponent submitted the Master Plan as suggested by 82nd SEAC. The proposal was placed in the 83rd meeting of SEAC held on 20th& 21st December 2017. The proposal was appraised by SEAC considering Form I, Form IA, Conceptual plan, field visit report and all other documents and details provided by the proponent. SEAC observed that the Subcommittee of the SEAC conducted an inspection of the proposed sites for the expansion of the Kochi Medical College and for the proposed Kochi Cancer Centre. Both the sites are adjoining and proposed to be developed by two separate entities, however functioning under the chairman ship of the District Collector, Ernakulam. The sites are adjoining and served by the same road which leads to Navel Armament Depot. This road is separated by a median and has a curved alignment near the proposed entry of Cancer Centre. Once traffic volume picks up such nature of the road may be a source for accidents. The terrain of both the plot is undulating and there is possibility of blocking storm water and contaminating the fresh water with the leachates flowing from other side. These issues necessitate a holistic outlook considering both the plots together. Therefore the consultants and project proponents were asked to take a review of their proposal considering the issues of developing both institutions together and present their new proposal which will be reviewed by a Subcommittee of SEAC. The proponent of both projects did such a review and prepared a plan taking into account the requirements of both the proposals. They presented it before the SEAC Subcommittee on 4.12.2017. The Subcommittee agreed to the proposal put forward by the proponents. The proponent subsequently submitted the revised plan. Considering all aspectsof the proposals the Committee decided to **recommend to issue EC** subject to the following specific conditions over and above the general conditions.

1. *Existing internal circular road shall be redesigned with a right of way of 18 m with at least 2m wide footpath on both sides*

2. *Existing buildings are constructed in a haphazard and clustered manner resulting in inefficient land use, crisscross movements of people and may create traffic accidents when the super speciality hospital also starts functioning. Considering the future development needs, a master plan for the entire area shall be prepared giving optimum coverage with preference for high rise buildings. The low rise buildings shall be eased out in a phased manner.*

3. *Alternate source of water shall also be provided.*

4. *Parking should be enhanced and streamlined while preparing the master plan.*

5. *PWD road passing along the outside boundary of the hospital shall be provided with adequate and continuous footpath from bus stop to main entrance. Land required for this shall be surrendered by the Medical College Hospital to the appropriate authorities.*

5. The proposal was placed in the 79th meeting of SEIAA held on 09.01.2018. Authority accepted the recommendation of SEAC and decided to issue EC subject to general condition in addition to the specific conditions as suggested by SEAC. A notarised affidavit agreeing all the general and specific conditions should be submitted before the issuance of EC and also specify the alternate source of water required.

6. The proponent has submitted the affidavit on 21.02.2018 vide reference 6 above, 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 Ernakulam Medical College by K. Mohammed.Y.Safirulla I.A.S., District Collector & District Magistrate in Sy.No. 321 Part 1 at Thrikkakara North Village, Kanayannur Taluk, Ernakulam District, Kerala subject to the specific conditions mentioned in para 4 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 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, K. Mohammed.Y.Safirulla I.A.S., District Collector & District Magistrate, Civil station, Echamuku, Thrikkakara, Kakkanad, Kerala-682030.

Sd/-

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

To,

K. Mohammed.Y.Safirulla I.A.S.
District Collector & District Magistrate,
Civil station, Echamuku, Thrikkakara,
Kakkanad, Kerala-682030

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, Ernakulam District
6. The Member Secretary, Kerala State Pollution Control Board
7. The Director, Dept. of Environment and Climate Change, Govt. of Kerala, Tvm-24
8. The Secretary, Kalamassery Municipality, Changampuzha Nagar P.O., Kalamassery- 682030
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, Banglore 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