सत्यमेव जयते

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 construction of New Building project within existing campus of Regional Cancer Centre in Re-survey No. 42 of Cheruvackal Village, Thiruvananthapuram Taluk, Thiruvananthapuram District, Kerala, by Dr. Paul Sebastian, Director, Regional Cancer Centre - Granted - Orders issued.

STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY, KERALA

File No. 1153/EC/SEIAA/KL/2017 Dated, Thiruvananthapuram 17/03/2018

Ref:
1. Application received on 07.10.2017 from Dr. Paul Sebastian, Director, Regional Cancer Centre , Thiruvananthapuram – 695 011.
2. Minutes of the 81st meeting of SEAC held on 30th & 31st October 2017.
3. Minutes of the 82nd SEAC meeting 25th November 2017
4. Minutes of the 78th meeting of SEIAA held on 15.12.2017
5. Minutes of the 81st meeting of SEIAA held on 8th March 2018
6. Minutes of the 82nd meeting of SEIAA held on 15th March 2018
7. Affidavit received on 17.03.2018 from Dr.Paul Sebastian, Director of RCC, Thiruvananthapuram.

Environmental Clearance No. 57/2018

Dr. Paul Sebastian, Director, Regional Cancer Centre, P.O Box No.2417, Medical College Campus, Thiruvananthapuram – 695011, vide his application dated 05/09/2017, has sought Environmental Clearance under EIA Notification, 2006 for the proposed construction of new building project within existing campus of Regional Cancer Centre in Re-survey No. 42 of Cheruvackal Village, Thiruvananthapuram 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 provided by the project proponent

BASIC INFORMATION OF BUILDING PROJECT

(To be filled in by the Project Proponent)

PART A

PROJECT DETAILS	
File No.	1153 / EC / SEIAA / KL / 2017
Name /Title of the project	Environmental Clearance for proposed construction of New Building Project within existing campus to be

	developed by REGIONAL CANCER CENTRE
Name and address of project proponent.	Dr. Paul Sebastian, Director Regional Cancer Centre, P.O. Box No. 2417, Medical College Campus, Thiruvananthapuram, Kerala-695011.
Owner of the land	Ownership of the land is with REGIONAL CANCER CENTRE
Survey Nos. District/Taluk/ and Village etc.	Re-survey no. 42, Cheruvackal Village, Thiruvananthapuram Corporation, Thiruvananthapuram Taluk & District, Kerala.
Date of submission of Application	05-09-2017
Total Built up Area & No. of floors	26,038.59 sq. m. Basement 1, 2 + Ground + 11 floors
No. of apartments	Not applicable. Construction of new buildings within the existing hospital campus.
Height of the building from the ground level	44.9 m.
GPS Co-ordinate	Latitude (N): 08°31'17.86"N to 08°31'08.30"N Longitude (E): 76°55'23.96"E to 76°55'32.58"E
Brief description of the project.	Construction of New Building Project within existing campus in plot area of about 2.7275 ha. The built-up area of about 26,038.59 sq.m. with proposed 250 bedded hospital building with accommodation facility for 84 nurses, 47 P.G. students & attendants/by-standards to in-patients (250 persons) with other additional supporting infrastructure facilities.
Is it a new Project or expansion / modification of an existing project?	Construction of New Building Project within existing campus.
Details of the Project Cost	About Rs. 187 Crores
If CRZ recommendation applicable?	Not applicable
Distance from nearby habitation	The project site is located at CheruvackalVillage and is falling in corporation limits of Thiruvananthapuram and several houses / buildings are located within the 500 m. radius.
Distance from nearby forest, if applicable	None within the study area
Distance from protected area, Wildlife Sanctuary, National Park etc.	None within the study area
Distance from nearby streams/rivers/ National Highway Roads and Airport	Water body –Amayizhanchanthodu , about 1 km. (SW) Highway Road - N.H.66, about 3 km. (SW) Airport - Trivandrum Int. Airport, about 6.5 km. (S)
Is ESA applicable? If so, distance from ESA limit	Not applicable
IMPACT ON WATER	
Details of water requirement per day in KLD	About 177 KL/day (which includes daily fresh water req. of about 142 KLD)
Water source/sources.	Source :- Stored Rain water (Tanks), KWA water

	supply and treated water from STP.
Details of water requirements met from water harvesting.	The project has provision for rain water storage tanks which will be used as source of water during rainy days (concurrent use) & non-rainy days.
What are the impacts of the proposal on the ground water?	The project has provisions for well water as standby arrangement during non rainy days. The ground water abstraction will be of permissible limit of yield of the well. Therefore, no impact on the ground water.
WASTE MANAGEMENT	
Explain the facilities for Liquid waste Management	Provision of STP/ETP for treatment of sewage/effluent and it's fully recycling for meeting the water requirement for flushing, horticulture, boiler & make-up water req. for cooling towers attached to HVAC system within the site.
Solid Waste Management	Provision of bio-gas generation plant / bio-bin system within the project site for disposal of the bio-degradable solid waste.
E-Waste Management	➢ Discarded computer parts, monitor, key boards etc. constitutes e-waste and this waste will be stored in an earmarked area. ➢ e-waste will be generated after 4-5 years latency period ➢ It will be stored in the service block building. ➢ e-waste will be disposed as per e-Waste (Management & Handling) Rules, 2016.
Facilities for Sewage Treatment Plant	Yes. Provision of STP/ETP for treatment of sewage/effluent and it's fully recycling for meeting the water requirement for flushing, horticulture, boiler & cooling water requirement within the site.
How much of the water requirement can be met from the recycling of treated waste water? (Facilities for liquid waste treatment)	The total domestic water requirement of about 177 KLD (which includes daily fresh water requirement of about 143 KL). Treated water from STP to be used for flushing of toilets, horticulture, boiler & cooling requirement.
What is the incremental pollution load from waste water generated from the proposed activities?	Treated water from STP (with BOD level as per KSPCB norms) will be only after providing additional aeration in the final treated water storage tank.
How is the storm water from within the site managed?	Provision of roof rain water storage tanks. The excess roof rain water and the surface runoff of the site will be chanalized through garland drain. Intermediate rain water harvesting pits will be constructed for ground water re-charge and excess runoff (if any) from the site will be chanalized to the drain (proposed to construct along the external road in south west direction). The excess run-off will be discharged only after de-siltation & oil removal.
Will the deployment of construction labourers particularly in the peak period lead to unsanitary conditions	Yes. The proposed project has provision of labor colony and the domestic sewage will be channelised to the mobile STP for treatment of sewage during the

around the project site (Justify with proper explanation)	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 house keeping of the construction site premises and the labor colony premises. These measures will ensure a good hygienic conditions around the labor colony.
What on- site facilities are provided for the collection, treatment & safe disposal of sewage ? (Give details of the quantities of wastewater generation, treatment capacities with technology & facilities for recycling and disposal)	The project has provision of mobile STP for the treatment of sewage during construction phase and STP/ETP within the project premises to treat the sewage during operation phase. The technology for the treatment of the sewage is up to tertiary level. The total quantity of sewage generation will be 142 KL/day. The treated water will be fully recycled for meeting the flushing, horticulture & cooling water requirement.
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 STP & ETP during the operation phase of the project will be used for flushing, horticulture, boiler & cooling purposes and for which dual plumbing system is proposed.
TRAFFIC MANAGEMENT	
Sufficiency of parking space (explain)	Parking required as per KMBR = 196 Cars + 370 T.W. Parking Proposed = 196 Cars + 370 T.W.
Width of access road	There three access road to the project site one is from 10 m. wide (at north-west side), second is from 7.5 m. (avg. width) (at north-east side) another access is from 7.5 m. wide (avg. width) (at south-east side) which are well connected to entire city.
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?	The total power requirement is estimated to be about 2,000 kWh and will be from by Kerala State Electricity Board. The project will make provision of D.G. Sets (1,500 kVA x 2 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: ➢ Proposed facility will have water cooled chillers in place of air cooled chillers which are energy intensive & the treated water available from STP would be used as make-up water attached to the water cooled chillers. ➢ Solar Energy operated Photovoltaic lighting for partial external areas lighting. ➢ Savings in energy by the use of LED lamps. ➢ Thermal insulation by styro-foam in the roof to reduce heat gain to the building. Also, the side walls of the building will be constructed with hollow block for reduction in heat gain.

	➢ Building Management System (BMS) through sensors for maximizing the energy conservation. ➢ Solar water heating system for the hot water requirement. ➢ Electrical fixtures & HVAC unit would be of 5 star series as per Bureau of Energy Efficiency (BEE) to achieve reduction in energy consumption. ➢ Total energy saving is expected to be of about 23%.
What type of, and capacity of power back-up to you plan to provide?	The project proponent has made provision of D.G. Sets (1,500 kVA x 2 nos.) as standby arrangement of electricity.
What are the characteristics of the glass you plan to use? Provide specifications of its characteristics related to both short wave and long wave radiation?	The glass used will be with low emissivity and the other specifications of the glass will comply with the norms as per ECBC. Coloured tinted float glass 6mm thick substrate with double low-e with reflective soft coating on face # 2, + 12mm Air gap + 6mm Heat Strengthened clear Glass of approved make having properties as visible Light transmittance (VLT) of 35 to 45 %, Light reflection internal 10 to 20%, light reflection external 10 to 20 %, shading coefficient (0.25- 0.28) and U value of 1.5 to 1.7 W/m2 degree K etc. The properties of performance glass shall be decided by technical sanctioning authority as per the site requirement.
What passive solar architectural features are being used in the building? Illustrate the applications made in the proposed project	All the relevant features are incorporated like the orientation of the building, shading effect etc.
Does the layout of streets & buildings maximize the potential for solar energy devices ? Have you considered the use of street lighting, emergency lighting and solar hot water systems for use in the building complex ? Substantiate with details	Due consideration has been taken for maximum use of the solar energy while preparation of layout plan. The project proponent shall made provision for solar panel system (hot water purpose) in building block area and solar energy devices will be used for street lighting, emergency lighting in the proposed project.
Is the shading effectively used to reduce cooling/heating loads? What principles have been used to maximize the shading of Walls on the East and the West and the Roof ? How much energy saving has been effected?	All the relevant features are incorporated like the orientation of the building, shading effect etc.
Do the structure use energy-efficient space conditioning , lighting and mechanical systems? Provide technical details. Provide details of transformers and motor efficiencies, lighting intensity and air-conditioning load assumptions ? Are you using CFC and HCFC free chillers? Provide	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. The diesel generator sets shall be automatically controlled to

specifications.	optimize their usage based on the actual load requirements at any time. Variable frequency drive systems would be adopted for the lifts, etc to maximize the energy saving.
What are the likely effects of the building activity in altering the micro-climates ? Provide a self assessment on the likely impacts of the proposed construction on creation of heat island & inversion effects?	Open spaces are proposed within the site to creation of any heat islands. The roads and parking spaces would be with concrete slabs intermittent with grass on surrounding.
What are the thermal characteristics of the building envelope? (a) roof (b) external walls; and (c) fenestration? Give details of the materials used.	The building construction material namely bricks, concrete and steel are being used in the construction. U-factor, also known as Thermal Transmittance, is heat transmission in unit time through unit area of a material or construction and the boundary air films, induced by unit temperature difference between the environments on each side. The glass used will be with low emissivity and the other specifications of the glass will comply with the norms as per ECBC.
What is the rate of air non-conventional energy technologies are utilized in the overall energy consumption? Provide details of the renewable energy technologies used.	The use of non-conventional source of energy in the proposed construction project are as follows: - Solar Water Heater:- The proposed project would install solar panels for hot water requirements in the building block 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. Solar Street Light: - It is also suggested to use solar cell powered street lights within the proposed project site for conservation of electricity. Use of LED Lamps: - The project proponent would use LED Lamp which consumesless electricity.
Details of renewable energy (non – conventional) used.	Solar water heating system for the hot water generation and solar power operated street lights.
IMPACT ON AIR ENVIRONMENT	
What are the mitigation measures on generation of dust, smoke , odours, fumes or hazardous gases	The dust generation during construction phase will be controlled by enclosures at appropriate locations and also by sprinkling of water for suppression of dust. The gas/smoke generation expected is from D.G. sets only and the gases will be vented out through stack of appropriate height.
Details of internal traffic management of the site.	The internal road width will be as per KMBR for the smooth vehicular movement. There are three access road available (in different direction) to the project site.

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

	existing at site as part of floral ecology. Some of the trees will be retained and the remaining will be cut for development of the proposed site. As part of the eco restoration, large number of saplings of native species would be planted. Due to the eco restoration, the impact to floral and faunal ecology will be short term.
What ate the measures proposed to minimize the likely impact on vegetation (details of proposal for tree plantation/ landscaping)	Due to the proposed development, some of the existing trees & various types of shrubs, herbs etc. will be cut from the site. As part of the eco restoration, large number of saplings of native species would be planted. Due to the eco restoration, the impact to floral and faunal ecology will be short term.
Is there any displacement of fauna – both terrestrial and aquatic. – If so what are the mitigation measures ? Presence of any endangered species or red listed category (in detail)	There will be no displacement of fauna due to the construction of the proposed project. There is no presence of endangered species or red listed category.
SOCIO- ECONOMIC ASPECTS	
Will the proposal result in any change to the demographic structure of local population ? Provide the details.	The proposed project is a construction of new hospital building within the existing hospital campus. The proposed building, during operation phase on full occupancy of the project, the maximum population expected is 1,981 persons (fixed/floating) and hence there will be influx of people (fixed) to the project area and surrounding. Some of the staff in the propose hospital building may reside within the project vicinity and hence there will be increase in demographic structure.
Give details of the existing social infrastructure around the proposed project	There are several hospitals, schools, colleges, religious places, commercial and residential buildings, Govt. and private offices, which are located within the project vicinity. The vicinity map showing the surrounding details of the proposed project is provided.
Will the project cause adverse effects on local communities, disturbances to sacred sites or other cultural values? What are the safeguards proposed?	The proposed project is a construction of new hospital building within the existing hospital campus. The project would not cause any adverse effects on local communities, disturbance to sacred sites or other cultural values. The proposed project is an hospital project and thereby the living index of the people around the project site will definitely improve. Also there will be various ancillary activities like convenient shops, transport facilities etc. attached to the project which will benefit the local people and change their living condition.
BUILDING MATERIALS	
May involve the use of building materials with high –embodied energy. Are the construction	The proposed project is a construction of new hospital building within the existing hospital campus. The hospital building will be of centrally air

materials produced with energy efficient process? (Give details of energy conservation measures in the selection of building materials and their energy efficiency)	conditioned building (except some portion), the selection of building materials plays a major role in the energy consumption. The proposed project will make all attempts to use to avoid building materials with high embodied energy. Cement blocks & hollow blocks will be replaced with country made red bricks. Further, the river sand will be replaced by manufactured sand from stone crushers. The glass used will be low emissivity and having U value as per ECBC norms.
Transport and handling of materials during construction may result in pollution, noise & public nuisance. What measures are taken to minimize the impacts?	The proposed project is a construction of new hospital building within the existing hospital campus. All measures are taken to minimize the impacts within the site & surroundings. 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.
Are recycled materials used in roads and structures? State the extent of savings achieved?	The plastic (non-biodegradable solid waste) will be used along with coal tar during the construction of internal roads. This will increase the life of roads.
Give details of the methods of collection, segregation & disposal of the garbage generated during the operation phases of the project.	**Solid waste** ➢ The Solid Waste Management Rules, 2016 will be followed in the Solid Waste Disposal Mechanism at the site during operation phase. ➢ Collection & segregation within the site (bio-degradable waste (green bins), non-biodegradable waste (blue bins) and domestic hazardous waste (yellow bins). ➢ The recyclable waste like packaging material, paper etc. would be sold through vendors. ➢ The Bio-degradable waste would be disposed through the bio-gas generation unit/bio bin system to be installed within the site. ➢ The bio-gas generated will be utilized in the kitchen/canteen area and the manure generated

	will be utilized for green area development within the premises. The domestic hazardous waste which includes discarded painted drums, pesticide cans, CFL bulbs, tube lights, expired medicines, broken mercury thermometers, used batteries, used needles and syringes and contaminated gauge etc. generated at the household level will be collected in yellow bins and to be handed over to authorized waste pickers or waste collectors. **Bio-medical waste** ➢ Bio-medical waste like infectious beddings, cotton, swabs, used syringes, discarded medicines, etc. from the hospital would be generated. Bio-medical waste Management & Handling Rules, 2016 will be followed. ➢ Collection & segregation at source by providing appropriate colour coded bins / containers as per the colour coding provided in the Bio-Medical Waste (Management & Handling) Rules. ➢ The bio-medical waste from the hospital outsourced through a Kerala State Pollution Control Board authorized agency (M/s *Indian Medical Association Goes Eco Friendly, IMAGE*)
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.	Risk hazard from fire - List of equipments proposed for Fire Fighting Measures:- A. The major equipments proposed for Fire Fighting Measures are Main Hydrant Pump, Sprinkler Pump, Diesel Engine Pump, Jockey Pump. B. Capacity of Fire Water Storage Tanks & Number:- It is proposed to have Fire Water Storage Tan appropriate capacity of overhead tank for fire fightin provided at the tower. C. Fire Detecting Equipments: - The Fire Detecting Equipments would be as per BIS and NBC norms. *D. Other Fire Fighting Measures:* - The other Fire Fighting Measures proposed includes, an Emergency Control Room, Separate Fire exit during emergency, all rooms with Fire Detector / Smoke Detector, Fire Extinguishes at each entry and exit point on each floor, (5 Kg, 10 Kg and 9 Ltr. capacity), Public address system etc. The Fire Fighting Measures are backed by Electrical supply from D.G. *sets in case of emergency.* *The nearest fire station is at Chacka Fire Station which is about 6.5 km. (S) away from the project site.*
Storage of explosives/hazardous	Yes, all precautionary measures in the storage & handling of HSD will be followed.

<table>
<tr><td>substance in detail</td><td></td></tr>
<tr><td>What precautions & safety measures are proposed against fire hazards? Furnish details of emergency plans</td><td>Details already provided above.</td></tr>
<tr><td>Litigation/court cases if any</td><td>No any litigation/court case pending.</td></tr>
<tr><td colspan="2">AESTHETICS</td></tr>
<tr><td>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?</td><td>No.
There is no any scenic beauty near the project site. Therefore, the proposed project in no way work as an obstruction of view.</td></tr>
<tr><td>Will there be any adverse impacts from new constructions on the existing structures? What are considerations taken into account?</td><td>The project site is within the Corporation limit area. The surrounding area is hospitals, schools, colleges, religious places, commercial and residential buildings, Govt. and private offices. There are three access road available to the project site. Also, in the south direction, there is vacant land of temple. There will be no any adverse impacts due to the development of the proposed project.</td></tr>
<tr><td>Whether there are any local considerations of urban form & urban design influencing the design criteria? They may be explicitly spelt out.</td><td>The proposed project would be constructed in conformity with the Kerala Municipality Building Rules (KMBR).
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.
There is topographical level difference where the new building to be construct. This level difference will made of use for parking & other facilities.</td></tr>
<tr><td>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</td><td>There is no report of existence of any anthropological or archaeological site nearby the project area. The proposed project is located in Corporation limits of Thiruvananthapuram. The vicinity map showing the site & surrounding area is provided.</td></tr>
<tr><td>Details of CSR activity and the amount set apart per year</td><td>Yes.
A detailed study on social status of the project site surroundings & need base study on proposed CSR activities were carried out. The summary of the report is given below :-
<table>
<tr><td>Sl. No.</td><td>Particulars</td><td>Amount (Rs. In lakhs)</td></tr>
<tr><td>1.</td><td>Health Care</td><td>Recurring - Rs. 8.4 Lakhs
Non-recurring – Nil</td></tr>
<tr><td></td><td>Total</td><td>Recurring - Rs. 8.4 Lakhs
Non-recurring – Nil</td></tr>
</table>
The project proponent set apart an amount of about Rs. 8.5 Lakhs every year for CSR activities for the welfare</td></tr>
</table>

	of local community in consultation with the Thiruvananthapuram Corporation.
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.
Details of Authorized Signatory and address for correspondence	Dr. Paul Sebastian, Director Regional Cancer Centre, P.O. Box No. 2417, Medical College Campus, Thiruvananthapuram, Kerala-695011.
SUMMARY AND CONCLUSION	
Overall justification for implementation of the project.	The proposed project is construction of new hospital building project within the existing hospital campus and the total implementation / completion period for the construction is about 24 months from the start of the construction.
Explanation of how adverse impact have been mitigated.	It is predicted that socio-economic impact due to this project will positively increase the chance of more employment opportunities for local inhabitants. There are no Resettlement and Rehabilitation issues involved in this project. The project infrastructures will be of use to people of the area. The revenue of the State Govt. will be definitely increase due to the proposed activity. The entire project area is devoid of any endemic / endangered flora and fauna. As part of the eco restoration with native species to a maximum possible extent. Also, rain water tanks are proposed for storage of rain water and for its subsequent use so as to conserve fresh water consumption. The municipal solid waste, bio-medical waste & e-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 81st meeting of SEAC held on 30th & 31st October 2017. The Committee appraised the proposal based on Form 1, Form I A, conceptual plan and other connected documents. The Committee decided to defer the item for field inspection.

Accordingly inspection was conducted by a sub committee consisting of Sri Gopinathan V, Chairman, Sri S Ajayakumar, Sri John Mathai and Sri Sreekumaran Nair on 4/11/2017. The report is stated that

The proposal is an extension of the existing Regional Cancer Centre. The building is proposed on the southern side behind the existing hospital in the same campus and is meant for a 250 bedded hospital with ancillary facilities. Proposed total built up is 26,038 sq.m. Several buildings exist in the campus having cumulative area of 40,304 sq.m (as per submitted Form 1 application).

3. The proposal was placed before 82nd SEAC meeting 25th November 2017. The Committee appraised the proposal based on Form 1, Form I A, 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.

a) Area of the existing building within the campus exceeds the limit fixed for exemption from EC. The proponent shall convincingly explain the reason for the above omission. Otherwise SEIAA may bring the violation to attention of the govt for suitable remedial action.

b) The height of the building is 44.9m. The proponent informed during the presentation as well as during the inspection that hospital use is limited up to 30 m height and the area above that height is used only for residential use only. This should be strictly followed. Moreover, for ease of evacuation in emergency cases, the exits shall be provided exclusive and separated from the exits meant for upper floors above the floors used as hospital.

c) There is a possibility of acquiring additional land for expansion of RCC in addition to some other institutions. This land shall be used for all the parking requirement of the present proposal by constructing new multi-storied parking facility. This will reduce parking and attendant safety issues in the main campus. The land thus available within the campus shall be used for soft landscaping to improve the microenvironment and enhance patient and bystander facilities.

d) The present practice of parking vehicles in available vacant spaces by the side of roads in and around RCC campus must be done away with. The main drive way proposed on the northern side of the proposed building must be widened to a minimum of 7 m prohibiting any kind of parking in this road.

e) The kutcha road of the southern side, though outside the RCC campus, should be made into an all-weather road establishing connectivity to the proposed parking site.

f) The storm water from the campus gets collected in the waterlogged site and is let out through a narrow culvert. Once the water logged part is excavated, the storm water lines have to be redesigned. This must form part of the plan.

g) MEP (Mechanical, Electrical and Plumbing) design should be compatible with water recycling proposal and STP.

h) The junction behind the plot will be intensively used on commissioning of the proposed building. But this junction does not have adequate width, slope and geometric design. This should be improved using land, if necessary, from the plot.

i) The waterlogged portion in the extreme south is proposed to be excavated to accommodate two floors for parking. The structure should be adequately water proofed to prevent seepage of water into the basement.

j) Considering the sloping nature of the terrain and the occurrence of laterite clay substrate, excavation should be done with adequate safety to the cut slope. Slumping and failure can affect the stability of existing structures.

k) *The quantity of earth to be taken out of the site must be assessed and is to be used for levelling the additional parking site recommended in item c.*

l) *RWH facility to be enhanced to 1000 KL ie. Storage of at least 7 days requirement. Efforts to be directed to collect rain water from the roof of existing buildings too.*

m) *Carrying capacity of existing sewer behind building has to be adequately enhanced.*

n) *The existing bio waste collection facility should be shifted to a suitable site*

o) *While demolishing the old buildings, Construction and Demolition Waste Management Rules 2016 shall be strictly followed.*

4. The proposal was placed in the 78th meeting of SEIAA held on 15.12.2017. As SEAC has brought violation to the attention of SEIAA, the Authority decided to get an explanation from the proponent with proof regarding the constructions already carried out without EC within the project site.

The proponent has submitted an explanation dated 14.02.2018 regarding the details of building constructions. A built up area of 27289.63 sq.m was constructed prior to 2006 EIA Notification, hence EC was not required for these buildings. A built up area of 13014.36 sq.m was constructed after 2006 which is less than 20,000 sq.m. The newly proposed construction is a horizontal expansion with a built up area of 26038.59 sq.m.

That the cumulative area of constructions after 2006 (Existing 13014.36 sq.m + 26038.59 sq.m) is 39052.95 sq.m and which is more that 20,000 sq.m and hence submitted application for prior Environment Clearance before commencing constructions. In view of the above submission the proponent requested to accord EC at the earliest.

5. The proposal was placed in the 81st meeting of SEIAA held on 08th March 2018. Authority decided to defer the item till the reply for the legal opinion on violation is obtained. The 79th meeting of SEIAA held on 09.01.2018 decided to get a legal opinion from Government as to whether the violators can only be delisted as per the provisions of Environment Protection Act 1986 or whether EC can be given as violation proceedings against the proponent have already been initiated as recommended by SEAC. The legal opinion may be made applicable to other violation cases also based on the merit of each case.

6. The proposal was placed in the 82nd meeting of SEIAA held on 15th March 2018. Meanwhile S.O No.1030 (E) dt.08th March 2018 has been issued by MoEF for dealing with violation cases. The said Notification has delegated the powers to SEIAA for dealing with violation cases. SEAC has recommended the proposal for issuance of EC, considering the case only as a technical violation.

Hence Authority accepted the recommendation of SEAC in the light of the above Notification and legal opinion and decided to issue EC subject to general conditions in addition to the specific condition as suggested by SEAC. A notarised affidavit agreeing all the specific and general conditions should be submitted before the issuance of EC. The proponent has submitted the affidavit vide ref 7th cited stating

that all the conditions & all specific and general conditions imposed by SEIAA, will be complied with.

7. Environmental Clearance as per the EIA notification 2006 is hereby accorded for the proposed construction of New Building Project within existing campus of Regional Cancer Centre, Medical College Campus, Thiruvananthapuram at Re.Survey No. 42, Cheruvackal Village, Thiruvananthapuram Taluk, Thiruvananthapuram District by Dr. Paul Sebastian, Director of Regional Cancer Centre, Thiruvananthapuram subject to the conditions mentioned in para 3 & 6 above and the usual general conditions for projects other than mining appended hereto and the following green conditions should be strictly adhered to.

Green Guidelines

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, regularization or consent to operate.

8. The clearance will be subject to all the environmental impact mitigation and management measures envisaged by the project proponent in the documents submitted to SEIAA, and the mitigation measures specified. The assurances in form 1A of the application (Appendix 1I) and clarifications given by the proponent will be deemed to be part of these proceedings as if incorporated herein. Also the general conditions for projects other than mining appended hereto and the following green guidelines will be applicable and have to be strictly adhered to

9. Validity of the Environmental Clearance will be seven years from the date of issuance the subject to earlier review in the event of noncompliance or violation of any of the conditions stipulated herein.

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, 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, Dr.Paul Sebastian, Director, Regional Cancer Centre, P.O.Box No.2417, Medical College Campus, Thiruvananthapuram – 695 011.

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

To

Dr.Paul Sebastian,
Director,
Regional Cancer Centre,
P.O.Box No.2417, Medical College Campus,
Thiruvananthapuram – 695 011.

Copy to:

1. MoEF Regional Office, Southern Zone, Kendriya Sadan, 4th Floor, E&F Wing, II Block, Koramangala, Bangalore-560034
2. Additional chief Secretary to Government, Environment Department,
3. The District Collector, Thiruvananthapuram
4. The District Town Planner, Thiruvananthapuram
5. The Tahsildar, Thiruvananthapuram Taluk
6. Member Secretary, Kerala State Pollution Control Board, Pattom,Thiruvananthapuram
7. Chairman, SEIAA
8. The Secretary, Thiruvananthapuram Corporation
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, 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