

ITL/TVM/FAC/SEZ/009/2023

17th May 2023

The Administrator,
State Environment Impact Assessment Authority (SEIAA),
K.S.R.T.C Bus Terminal Complex,
4th Floor, Thampanoor,
Thiruvananthapuram - 695 001



Dear Sir,

Sub: Six monthly post ECC - Operation and construction phase monitoring report for the period of Oct-2022 to Mar-2023 of Software Development IT Park (SEZ) at Attippra Village, Trivandrum District.

Reference: ECC No: 647/SEIAA/EC1/4943/2013 dated 16.02.2016

Please find enclosed Six months' report for the project with relevant annexures.

Thanking You,
Yours faithfully



Devi Padmanabhan Nair
Senior Regional Manager – Facilities

Enclosures:

- Annexure-1: STP outlet sample analysis report
- Annexure-2: UGR Out sample analysis report
- Annexure-3: Ambient air quality report
- Annexure-4: DG Stack emission report
- Annexure-5: Noise level monitoring report
- Annexure-6: Solar Power generated details
- Annexure-7: Fire NOC Certificates copy
- Annexure-8: Petroleum License copy
- Annexure-9: KSPCB ICTO copy



Received
17/5/23

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MOEF report for Construction Phase & Operation Phase (SEZ) **Oct'22 to Mar'23.**

Conditions Imposed and Compliance taken by us-

Water

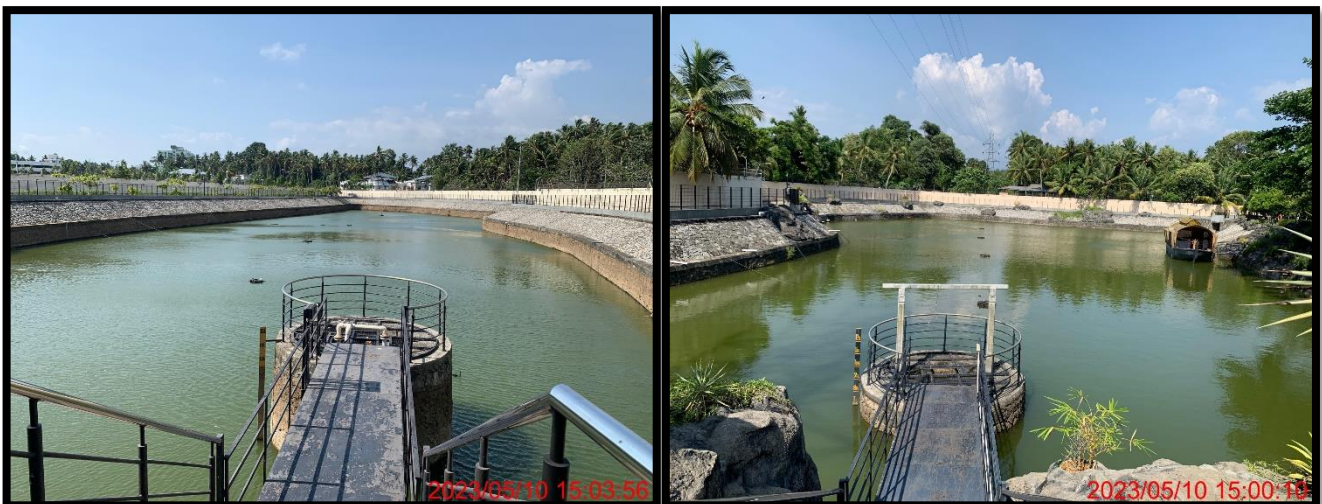
1. Water requirement & sources

Water is sourced through Technopark which is treated and stored in Underground reservoir for operation. Sewage water is treated at the STP within the campus. Roof rainwater is collected, stored & treated to be used for domestic purpose.



2. RWH units

Towards collecting rainwater, 2 ponds have been created with a total capacity of 36118cum inside the campus with proper side pitching and desilting.



3. Facilities for liquid waste treatment

Sewage generated in the campus is treated through Sewage Treatment Plant (STP) of capacity 500KLD which is based on Membrane Bio Reactor Technology (MBR). Recycled water from Sewage treatment plant will be utilized for Irrigation, flushing & cooling purposes. Treated water quality confirms to KSPCB prescribed standard (**Annexure 1**).

STP Outlet Report detail: Mar 2023.

Parameter	Stipulated Limit	Results
Ph	6.5 to 8.5	6.9
TSS in MG/L	20 mg/l	BDL
Oil and Grease	1 mg/l	BDL
BOD in mg/l	3 mg/l	2.10 mg/l
E-Coli	NIL	<2
Residual Chlorine	1.0 mg/l	BDL mg/l
COD in mg/l	20 mg/l	12 mg/l
TDS in mg/l	Nil	379 mg/l
Total Nitrogen	Not more than 10 mg/l	2.14 mg/l
Ammonia	Not more than 5 mg/l	BDL

4. Impoundment, damming, culverting, realignment, or other changes to the hydrology of watercourses or aquifers

No impoundment, damming, realignment, or other changes to the hydrology of surface water courses is done. We have a Thodu/canal passing through the campus, which has been maintained and water flow has been enhanced by pitching with additional culvert in the downstream



5. Water quality meeting requirements

Monthly monitoring is carried out through a MOEF approved external agency to ensure that the water quality meets IS 10500 requirement and reports attached for the last 6 months (Oct'22 to Mar'23) and maintained at site. **(Annexure 2)**.

6. Provisions for use of recycled water

Recycled water from STP is utilized for irrigation, flushing and cooling requirements within the campus.

LAND

7. Access road to the site –Width & Condition

Main Access Road to the site is through NH-66 by-pass and service road available for easy entry to the site. For safety movement of the pedestrians and vehicles, crash barriers and traffic signals are placed along the service road and at the NH Sides

8. Storage of explosives/hazardous substances

All precautionary measures have been taken, also obtained valid license from Petroleum and Explosives Safety Organization (PESO) for storage of HSD valid till 31st Dec 2030.



9. Facility for solid waste management.

In Operation phase as part of solid waste management, segregation is achieved at source by provision of signage's, color coded bins and the same is stored and disposed asper the standards. The food waste generated is fed in to 350kg capacity digester biogas plant within the campus.

Type of Waste	Avg quantity (Oct'22 to Mar'23)
Food Waste	2868kg/month



10. Proneness to natural hazards

As per the Indian Standards Seismic Zoning Map, the campus area comes under Zone –III, moderate damage risk zone. Scheduled Mock drills are conducted to make the employees aware on what to do in case of an emergency. Safe Assembly point identified to accommodate all the employees safely in one place in case of an emergency.



11. Topsoil, overburden etc.

The topsoil is used for landscaping work.

AIR

12. Air quality meeting requirements

12.a Dust emission from construction phase

Provision of wind breakers (GI Sheets/green shade) as barrication for controlling dust is provided. Monthly monitoring of ambient air is done across the campus, and reports attached for last 6 months (Oct'22 to Mar'23) in **(Annexure 3)**.

12.b Emissions from combustion of fossil fuels

There is no major air pollutant generating source except DG sets and vehicular movement during construction and operation phase.

DGs are used as backup power generation in case of Grid power failure. Appropriate stacks with stipulated height are provided for DGs as Air pollution control measures. Monthly monitoring of stack emission is done by an MOEF approved third party Vendor and reports attached for last 6 months (Oct'22 to Mar'23) and report maintained. **(Annexure 4)**

Stack Monitoring Report Detail – Mar'23 (DG 2 P II)

Parameter	Stipulated Limit	Results
Particulate Matter	75mg/ Nm ³	59.21 mg/ Nm ³
Sulphur Dioxide	Nil	22.74 mg/ Nm ³
Oxides of Nitrogen as NO2	710 ppmv	22.05 ppmv
Carbon Monoxide	150 mg/ Nm ³	121.25 mg/Nm ³
Non-methane Hydrocarbon	100/ Nm ³	7.31 mg/ Nm ³



13. Noise level meeting requirements

- a. During Construction Phase: (There will be some noise generated due to cutting of marble and other stone materials)
- b. Uninterrupted movement of heavy and light vehicles at high speeds may cause increase in ambient noise levels on the project road (No significant impacts)

Marble and Tiles are located far away from the operational phase, ie at designated area thereby decreasing the effect of noise pollution. Workers are equipped with Personal Protective equipment's (PPE's).

It is ensured that good, conditioned vehicles are used for transporting construction materials thereby resulting in decrease of noise levels, also strictly following the speed limit of 20km/hr. and securities posted to keep a check on vehicle speeding.

Transportation is during non-peak hours.

Monthly ambient noise monitoring is done, and reports attached for last 6 months (Oct'22 to Mar'23). (**Annexure 5**).

14. Likely emissions effecting environment

There is no major air pollutant generating source. DGs are used as backup power generation in case of Grid power failure. Appropriate stacks with stipulated height are provided for DGs as Air pollution control measures. Monthly monitoring of stack emission is done, and reports attached for last 6 months (Oct'22 to Mar'23) and report maintained. (**Annexure 4**).

15. Hazardous waste generation and management

Hazardous wastes generated are collected, stored, and disposed through CPCB & KSPCB authorized vendors. A designated Scrap Yard available inside campus for storing the Hazardous and Non-Hazardous waste generated.

Scrap Yard



ENERGY

16. Energy requirement & source

Source of Power supplied to the campus is through Technopark. DG has been installed which is used as backup power generation in case of Grid power failure. Average Power consumption for (Oct'22 to Mar'23) is 455,039 kwh.

17. Extent of usage of alternative energy resources

Grid connected Solar panels of 827.28kwp has been installed which caters to 22% of total campus power consumption for the period of (Oct'22 to Mar'23)
Monthly Power generation from solar power has been attached. (**Annexure 6**). Average Solar power generated for (Oct'22 to Mar'23) is 99257 kwh/month.
In addition to this, Solar power generated on weekends and public holidays are exported to Technopark.



BIODIVERSITY

18. Presence of any endangered species or red listed category

Unique initiative towards safeguarding Rare Endangered and Threatened (RET) species of native plants / trees and medicinal plants is taken up. The dedicated area of approx. 1.5 acres is planted with RET species and medicinal plants.

RET Trees/Saplings

Acacia catechu, Acalypha fruticosa, Aegle marmelos, Aphanomixis polystachya, Artocarpus Lakoocha, Barringtonia racemosa, Bersama abyssinica, Bridelia retusa, Butea monosperma, Calophyllum apetalum, Calophyllum Apetalum, Calophyllum inophyllum, Cedrus deodara, Cinnamomum riparium, Cinnamomum Riparium, Clausena austroindica, Diospyros buxifolia, Diospyros Malabaricum, Ensete superba, Ficus religiosa, Ficus Travancorica, Flacourtia montana, Garcinia cambogia, Garcinia Morella, Garcinia talbotii, Hopea parviflora, Hopea ponga, Humboldtia Decurrens, Humboldtia decurrens, Hydnocarpus pentandra, Justicia gendarussa, Lophopetalum wightii, Madhuca longifolia, Michelia champaca, Murraya paniculate, Prosopis cineraria, Pterocarpus santalinus, Saraca asoca, Syzygium cumini, Syzygium densiflorum, Terminalia arjuna, Terminalia bellirica, Thespesia populnea, Vateria indica & Wrightea tinctoria.

Medicinal Plants

Aloe vera, Asparagus officinalis, Chamaecostus cuspidatus, Chrysopogon zizanioides, Gymnema sylvestre, Hemigraphis colorata, Hibiscus, Justicia adhatoda, Lawsonia inermis, Mussaenda glabrata, Ocimum tenuiflorum, Piper betle, Piper longum, Piper nigrum, Plumbago zeylanica, Selaginella bryopteris, Stevia rebaudiana, Strobilanthus heiniyanus & Woodfordia fruticosa.

19. Loss of native species and genetic diversity

As a responsible corporate large number of saplings of native fruit species like Mangosteen, Ramaphal, Seethaphal, Malasyian Jamba, Water apple, Nutmeg, Wild jack, Badam, Bird's cherry, Coconut tree, Fig, Garcinia, Agasthya, Tamarind, Carambola, Pulinchikka, Jamun, Mosambi, Mangoes, Pomegranete, Amla, Sapotta, Guava, Jack fruit, Soursop, Rambootan , Milk fruit, Velvet Apple, Java Apple, Jujube, Avocado, Cashew & Walnut.

Native trees such as Rain tree, Elanji, Gulmohar, Banyan tree, Cassia, Areca nut, Neem, Mani marathu and Chembakam are planted and shrubs like Hibiscus, Ixora, lantana, Wild jasmine, Rose, Neela koduveli, Krishna Neelam, Rangoon creeper, Phyllanthus, Kilukki, Plumeria, Bougainvilla, Nerium, Parijathakam, Jasmine, Teccoma, Kanakambaram, Cleodendron, Kanakambaram, Allamanda, Golden Duranta etc are planted inside campus so as to conserve the biodiversity.







Not Applicable.

21. Any introduction of alien/ invasive species

Nil

SOCIAL ASPECTS

22. Proximity to nearest habitation

Campus is located within Trivandrum Corporation limits surrounded by UST, NH Bypass and Residential houses.

23. CSR Activities

- Vijnana team has provided Regular weekend classes benefiting around 852 students to various Govt. school across Trivandrum.
- A total of 5 notebook donation drive in which 1046 students were given notebooks across the state.
- Bag distribution for kids benefiting around 100 students.
- PA System donated to Govt. school benefiting 50 students.
- Water Purifier system donated to Govt. school benefiting 610 students.
- As part of Vijnana, hour of code program at Infosys campus tour arranged for students from various school benefiting 55 students.
- Blood Donation drive conducted inside Infosys Campus benefiting 38 peoples.

- In view of Sanjeevani, Infosys employees celebrate their special occasion with students at various Govt. Schools benefiting 216 students.
- In View of Samyam, Anti-Drug awareness session conducted at Govt. School, Ayilam.
- Computer donation to Govt. School, Ayilam benefiting 130 students.
- In view of “Make A Wish”, gives Trinfoscion the opportunity to celebrate Christmas. A total of 45 such events were conducted, impacting over 1863 individuals.

Notebook donation drive



Bag distribution



Christmas Celebration



Campus Tour programme.



PA System donation



Water Purifier installation.



24. Environment Management plan/ Eco restoration plan (brief details)

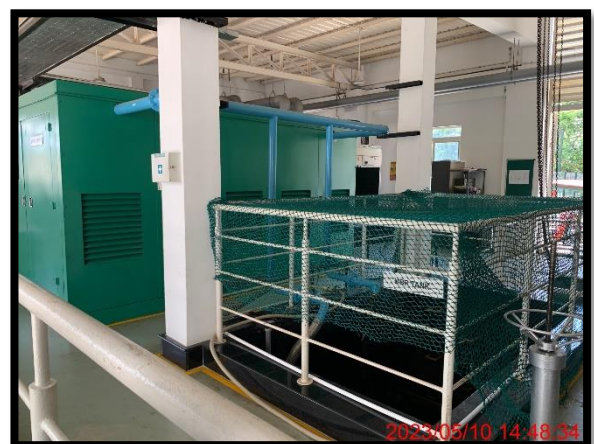
As part of Environment management, the following measures have been taken:

- T5 tube lights in MLPL first floor with Sensor based LED lights thereby reduced the wattage from 3640 watts to 2340 watts
- REUSE TO CONSERVE: Two number of 10KL Sintex tank removed from SDB-1 Terrace has been re-used for Rainwater Harvesting to collect the water from STP-2 and Bio-gas plant. Water thus collected is used for landscaping and road cleaning in the nearby areas.
- Awareness mailer circulated at location w.r.t Single use plastic, environment protection and effective waste management circulated to employees on periodic basis.
- Shredder cum pulverizer had been installed in campus for shredding leaves & dry branches. The same is being used to increase soil composition and for mulching
- Monthly near to 2000 kg of garden shredded waste is generated and used by the inhouse Shredder cum pulverizer for mulching purpose for tree & in potting mixtures for flora propagation.
- Waste segregation done at source by implementing color coding for different types of waste
- Hazardous waste segregated and stored in designated areas and disposed of through authorized vendors
- Conducting environmental quality monitoring for emissions and effluents as per the PCB standards through MOEF authorized vendor
- Shredder cum pulverizer had been installed in campus for shredding leaves & dry branches. The same is being used to increase soil composition and for mulching
- To enhance awareness on roof top gardening during working from home, Mailers are circulated to employees on periodic basis.
- Sewage generated in the campus is treated through Sewage Treatment Plant (STP) which is based on Membrane Bio Reactor Technology (MBR).
- As a responsible corporate, we have increased the renewable source (solar) to 827.28kWp which caters to 22% of total power consumption.
- In addition to the regular checks, an effective monitoring and study of indoor air quality is done.
- Food waste generated is fed to Biogas plant wherein the generated biogas is used for cooking purpose

Shredder cum pulverizer



MBR Technology



25. Biomedical waste management

Bio-medical waste generated within the campus is disposed through IMAGE. Color coded bins are placed inside medical center with markings for proper segregation at source. A software application “IMAGE HCE PORTAL 1.0” has been implemented for tracking the end disposal of Biomedical waste.

Abiding by the Biomedical waste rule, used masks and gloves are separated from the biomedical waste and quantified and disposed through IMAGE.

All Biomedical waste handlers has been immunized with Hepatitis B and Tetanus Vaccination.

Details on the disposal has been submitted to KSPCB through Form IV annually.

Bio Medical Waste	Avg (Oct'22 to Mar'23)
43.40 kg/month	



26. E-waste management

E-wastes generated are collected, stored, and disposed through CPCB & KSPCB authorized vendors.

Details on the disposal has been submitted to SPCB through Form 3 annually.

27. Litigation, if any, against the project

No.

SPECIFIC CONDITIONS: -

Conditions

1. The Emergency parking facility proposed should be ear marked.

Complied, it is ear marked. In every floor of Multi level parking lot (MLPL) a designated emergency parking space is identified, and ear marked.

2. 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.

Drinking water facilities are provided at construction site. Sanitary facilities are also provided and are connected to the STP.

3. Disposal of muck during construction phase should not create any adverse effect on the neighboring 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.

No construction activity is in progress.

4. Construction spoils, including bituminous material and other hazardous materials, must not be allowed to contaminate water courses and the sump sites for such materials must be secured so that they should not leach into the ground water.

Hazardous materials generated are stored in a safe and secured manner. The placement is on concrete base thereby eliminating any chance of contamination to the water courses.

5. Any hazardous waste generated during construction phase, should be disposed of as per applicable rules and norms with necessary approvals of Kerala State Pollution Control Board.

No construction activity is in progress. All hazardous waste are disposed as per applicable rules and norms with necessary approvals of Kerala State Pollution Control Board.

6. The diesel generator sets to be used during construction phase should be low Sulphur diesel type and should conform to Environment (Protection) rules prescribed for air and noise emission standards.

No construction activity is in progress.

DGs are used as backup power generation in case of Grid power failure. DGs are in secluded areas with appropriate acoustic enclosure and stack

7. Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred.

No construction activity is in progress.

8. Roof should meet prescriptive requirement as per Energy Conservation Building Code by using appropriate thermal insulation material to fulfil requirement.

Complied, Energy Conservation Building Code is followed.

GENERAL CONDITIONS: -

Conditions

1. Rainwater Harvesting capacity should be installed as per the prevailing provisions of KMBR/ KPMR, unless otherwise specified elsewhere.

2 ponds have been created with a total capacity of 36118cum inside the campus with proper side pitching and desilting towards collecting rainwater. Open drains are also created along the rear periphery wall towards collecting the run-off water from the neighborhood.

2. Environment Monitoring Cell as agreed under the affidavit filed by the proponent should be formed and made functional.

Yes, formed, and functional.

3. 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.

Trees such as Water apple, Fig, Jamun, Mango, Badam and Amla are the avenue tree cum fruit trees and trees like Raintree, Gulmohar, Spathodia, Elanji, Ficus, Japanese Fern, Wild Neem, Kadamba, Ezhilampala, Bauhunia, Cardia, Terminalia, Golden shower, Bird's cherry and Calophyllum are grown along the roads and pathways for shade.

Shade trees has been provided along the NH service road like Mimusops elengi and Ficus benamina with flowering plants like Ixora, Wild Jasmine, Lantana, Tecooma, Nikotia, Nerium, Caesalpinia and Ficus panda are planted in the service roads and median outside campus for public environmental welfare.

4. 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.

Grid connected Solar panels of 827.28kwp has been installed which caters to 22% of total campus power consumption.

Solar power generated on weekends and public holidays are exported to Technopark.

5. Safety measures should be implemented as per the Fire and Safety Regulations.

Complied, safety measures are implemented as directed by Department of Fire & Rescue services.

Annual Renewal of the Fire NOC certificate is carried out by FRS after necessary site inspections.

All buildings are equipped with Sprinkler systems, hose reels, wet risers, smoke & fire alarm system. External fire hydrants provided around the buildings across the campus.

Exclusive fire tanks maintained atop all the high-rise buildings in addition to the fire tanks available in our Underground reservoirs.

Fire extinguishers are provided as per IS 2190 standard and sand buckets are provided at prominent places. (Annexure 7)



6. STP should be installed and made functional as per KSPCB guidelines including that for solid waste management
 Complied, Sewage generated in the campus is treated in the Sewage Treatment Plant (STP) of capacity 500KLD. The STP is based on Membrane Bio Reactor (MBR) technology. Recycled water from Sewage treatment plant will be utilized for landscaping, flushing and cooling tower purpose. Treated water quality confirms to KSPCB required standard. Proper facilities are provided inside campus for solid waste management. The food waste generated is fed in to 350kg capacity digester biogas plant biogas. The dry waste generated is disposed through authorized dealer. Adequate number of collection bins are provided for bio-degradable waste. Have also ensured that the solid waste generated is segregated at source.

7. The conditions specified in the Companies Act, 2013 should be observed for Corporate Social Responsibility.
 Complied.

8. The proponent should plant trees at least 5 times of the loss that has been occurred while clearing the land for the project.
Complied, saplings comprising of native fruit species and shrubs has been planted inside campus, to conserve the biodiversity.

9. Consent from Kerala State Pollution Control Board under Water and Air Act(s) should be obtained before initiating activity.

Complied, Consent obtained.

10. 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.

Complied. Possessing valid license from Petroleum and Explosives Safety Organization (PESO) for storage of HSD valid till 31st Dec 2030.

11. In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by this Authority.

No change in the Scope of the proposed project.

12. 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.

Yes, agreed.

13. The stipulations by Statutory Authorities under different Acts and Notification 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.

Complied.

14. 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). It shall simultaneously be sent to the respective Regional Office of MoEF, Govt. of the India and also to the Directorate of Environment and Climate Change, Govt. of Kerala.

Half yearly report submitted to Regional Office of MOEF and to Directorate of Environment and Climate change, Govt of Kerala.

15. 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.

Complied, the details of EC are prominently displayed.