

CIN: U70101KL2006FTC019125

SmartCity (Kochi) Infrastructure Pvt. Ltd.
SmartCity Pavilion,
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Kerala, India

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www.smartcity-kochi.in



SCK/P16-P174/91/2022
25th July 2022

The Additional Principal Chief Conservator of Forests (C)

Ministry of Environment, Forests & Climate Change,
4th Floor, E& F Wing, Kendriya Sadan,
Koramangala, Bangalore - 560034

Sub :- Environment Clearance - M/s SmartCity (Kochi) Infrastructure Pvt. Ltd. at Re-Survey Nos. 640/1, 640/ 2 in Kakkanad Village 62/1,62/2 and others in Puthencruz Village, Kunnathunad Taluk, Ernakulam District, Kerala. -Half Yearly Compliance Report - Second half - Reg.

Respected Sir,

Reference:

1. E C order file No. 1191(A)/EC2/2018/SEIAA dated 08th October 2021
2. E C order file No. 1191(A)/EC2/2018/SEIAA dated 16th May 2022

The expansion of the existing Master Plan Development of IT/ITES SEZ township project of M/s. SmartCity (Kochi) Infrastructure Pvt. Ltd. in Re-Survey Nos. 640/1, 640/2 in Kakkanad Village 62/1,62/2 and others in Puthencruz Village at Kunnathunad Taluk, Ernakulam District, Kerala was accorded Environmental Clearance for **37,98,799 Sq.M** of buildup area on 08 October 2021, vide EC File No.,**1191(A)/EC2/2018/SEIAA dt- 08-10-2021** by State Environment Impact Assessment Authority, Kerala. As per the condition stipulated in EC order, the six-monthly compliance report of **Second half** (October 2021 - March 2022) to the specific conditions, green conditions and general condition of the Environment Clearance is enclosed.

Thanking you,

Yours respectfully,

For M/s SmartCity (Kochi) Infrastructure Pvt. Ltd.

A handwritten signature in blue ink, appearing to read 'Sini', with a horizontal line underneath.

Sini PS
Senior Director - Development & Asset Operations



Copy to:

Member Secretary
SEIAA, Thiruvananthapuram



COMPLIANCE REPORT

TO THE CONDITIONS OF
ENVIRONMENTAL CLEARANCE AS PART OF DEVELOPMENT BY THE CO-DEVELOPER
@ SMARTCITY (KOCHI) INFRASTRUCTURE PVT. LTD.

OCTOBER 2021 TO MARCH 2022

E C Proposal No:	SIA/KL/MIS/51114/2018
EC File No:	1191(A)/EC2/2018/SEIAA dated 08 th October 2022
Environmental Clearance No:	58/B/2021



Introduction

M/s SmartCity Kochi Infrastructure Pvt Ltd. is a IT/ITES project situated at Kakkanad & Puthencruz Village, Kanayannur & Kunnathunad Taluk, Ernakulam district, Kerala. The construction project was accorded Environmental Clearance for **37,98,799 Sq. M** of built-up area on 08th October 2021 vide order No. **SIA/KL/MIS/51114/2018** by State Environment Impact Assessment Authority, Kerala.

The half yearly compliance report needs to be submitted as part of general condition No.14 of Environmental Clearance order by the project proponent. The compliance report to conditions of the Environmental Clearance for the period of **October 2021 – March 2022** (Second half) is being submitted.

There are of co-developers in the project site. The name and status of construction of each co developers are given below

Sl. No	Completed Projects	Sl.No	Projects under Construction	Sl. No	Projects yet to start the construction
1	SCK -01 Building	1	Lulu IT Infrabuild Pvt Ltd.	1	Smartbiz Bay Kochi Pvt Ltd
2	MariApps Marine Solutions India Pvt Ltd.	2	Prestige Estates Projects Ltd.		

3	SG Academics / GEMS Modern Academy.	3	Matt Projects Pvt Ltd.		
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A. General Conditions for Projects

1. **Compliance -01:**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.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	A notarized affidavit mentioning proceedings number and date of Environmental Clearance that all the conditions stipulated in the EC shall be scrupulously followed was submitted to SEIAA on 01 st December 2021	Copy of the submission attached	Annexure - GCP.1.a.

2. **Compliance -02:** The project proponent should advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded Environmental Clearance and copies of clearance letters are available on the website of SEIAA www.seiaakerala.in. 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.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		Annexure - GCP.2.a.

Actions Taken-	Advertisement has given in the two newspapers (one in English newspaper-Time of India dt.25 th November 2021 and one in Malayalam newspaper-Deshabhimani dt. 25 th November 2021) regarding the issuance of Environmental Clearance.	Copy of the advertisement is attached	
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3. **Compliance -03:**The proponent shall send a copy of the clearance letter to the concerned Grama Panchayath/District Panchayath/Municipality/Corporation/Urban Local Body and to the local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The Environmental Clearance shall also be uploaded on the website of the company.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	A copy of the EC Order has been furnished at Thrikkakara Municipality Office and Puthencruz panchayath on 25 th & 24 th November 2021 respectively. A copy of the EC Order has been uploaded in the company website www.smartcity-kochi.in	Copy of the acknowledgement is and screenshot of the website page is attached	Annexure - GCP.3.a.

4. **Compliance -04:**The detail of environmental clearance should be prominently displayed in a metallic board of 3ft x 3ft with green background and yellow letters of Time New Roman font of size not less than 40.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied	An image of the board is attached	Annexure - GCP.4.a.

Actions Taken	The board has been displayed as per the specification near to the entrance of project.		
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5. **Compliance -05:**Consent to Establish and Consent to Operate from Kerala State Pollution Control Board under Water and Air Act(s) should be obtained before initiating activity. 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. Copies of statutory clearance obtained shall be enclosed along with first half yearly compliance report.

Response:

Description	Response	Remarks	Annexure No
Status of Consent of Establishment	The project proponent has obtained Consent of establishment form State Pollution Control Board.	Copy of the Consent Issued by PCB is attached.	Annexure -GCP.5.a.
Consent No	<ol style="list-style-type: none"> 1. PCB/HO/EKM/ICE/7/2014 2. PCB/RO-EKM/ERR/O18ERR238252/2020 3. G21ERRCTO174450 4. PCB/HO/EE1/EKM-2/ICE/15/2017 		
Validity	<ol style="list-style-type: none"> 1. 30 June 2024 2. 11 November 2025 3. 31 August 2026 4. 31 August 2023 		

6. **Compliance -06:**If blasting is involved in the preparation of site, the required clearances from the competent authorities should be obtained

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Noted to be complied	Necessary approval will be	

Actions Taken	No blasting has been done as on date. Since it is construction site without hard rock no blasting is required in the project site	taken in case of blasting	
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7. **Compliance -07:**The stipulations/conditions issued 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, Solid Waste Management Rules,2016 Plastic Waste Management and Handling Rules, 2016, Construction and Demolition Waste Management Rules 2016, the Public Liability (Insurance) Act, 1991 and EIA Notification , 2006.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied	The Environment Protection Act,1986	
Actions Taken	The stipulated orders and directions under different act and notification including EIA notification are being scrupulously followed.	The Water (Prevention and Control of Pollution) Act, 1974 The Air (Prevention and Control of Pollution) Act, 1981 The Solid Waste Management Rules, 2016 The Construction and Demolition Waste Management Rules, 2016 The Hazardous and Other Wastes (Management and	

		Transboundary Movement) Rules, 2016	
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8. **Compliance -08:**The conditions specified in the EIA notifications 2006 and subsequent amendments, the specific directions given by SEIAA/SEAC should be followed under corporate Environment Responsibility. The activities carried out under CER should be listed with details in Half yearly compliance report along with Status of Implementation and certificates from the beneficiaries and photographs.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Being Complied		
Actions Taken	<ol style="list-style-type: none"> 1. Infrastructure for Water Metro – Land to an extent of 3.33 Acres has been allocated to KMRL as per the requirement at subsidize land price for creation of boat jetty and related infrastructure. Confirmation awaited from KMRL toward the same. Cost Impact to SCK due to reduced land premium- INR.36,00,000.00 2. Contribution to Rebuild Kerala/ similar initiative by GoK – Support to Rebuild Kerala. Amount spent INR. 14,00,000.00 		
Amount	INR.50,00,000.00		Annexure - GCP.8.a.

9. **Compliance -09:** Safety measures should be implemented as per the Fire and Safety Regulations/SDMA guidelines.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	All developments are being undertaken as per the guideline and with the approvals applicable in case to case. The project proponent has got NoC from Department of fire and rescue services.		

10. **Compliance -10:** The environmental safeguards contained in the EIA Report should be implemented in letter and spirit and status of implementation of each one should be included in the half yearly compliance Report.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	Copy of the half yearly compliance reports are available in the website of Smart City of www.smartcity-kochi.in downloads page. All safeguards mentioned in the EMP is being implemented in its letter and spirit. To monitor this an EMC has been constituted.		

11. **Compliance -11:**Environment Monitoring Committee as agreed under the affidavit filed by the proponent should be formed and made functional. 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.) and action taken to solve these immediately with mitigation measures

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied	Other member of committee	
Actions Taken	The project proponent has formed An Environmental Monitoring Committee with Mrs. Sini P.S - Sr.Director - Development & Asset Operations as head of the committee. The meeting of committee is convened regularly.	as follows <ul style="list-style-type: none"> • Ranjithlal KL - Assis Director-Asset Infrastructure @SCK. • Emmanuel Thomas Deputy Manager Project SCK • M/s. Environmental Engineering Consultant (EIA consultant of SCK) • M/s. Standards Environmental & Analytical Laboratories (Lab facilitator of SCK) • M/s. Lulu IT (Co-Developer of SCK). • M/s. Prestige (Co-Developer of SCK). • M/s. Marrat (Co-Developer of SCK). • M/s. SG Academics (Co-Developer of SCK). 	

		<ul style="list-style-type: none"> • M/s. MariAapps Marine Solutions (Co-Developer of SCK). • Smartbiz Bay Kochi (Co-Developer of SCK). 	
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12. **Compliance -12:** Suitable Avenue trees should be planted on either side of approach road and internal roads and open parking areas, if any. The proponent should plant trees at least 5 times of the loss of trees that has occurred while clearing the land for the project. The native flowering and fruiting species only shall be used for planting and planning should be done considering the nature of public use.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	The number of trees uprooted in the project site was too low since it was underutilised cultivated land. The project proponent has started to plant various saplings in the project site as compensation of loss of trees due to the construction of the project. The list and images of trees planted are attached as part of the report		Annexure - GCP.12.a.

13. **Compliance -13:** 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 power grid and consumption in future.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	<p>As part of promotion of renewable energy, the project proponent has installed solar panels and devises in the project site. The details are given below</p> <ul style="list-style-type: none"> • Solar Plant of capacity 564 kWP commissioned for own building (SCK 01 building) • Solar Plant having a capacity of 63 kWP commissioned by the Co-developer who completed the 1st and 2nd phase (SG Academics). • Solar Plant having a capacity of 90 kWP commissioned by the Co-developer M/s. MariApps. • The generation of energy from solar panel is part of the guideline of SCK to its Co-Developer. • All Co-Developers whose constructions are under progress also will be complying the same. 	<p>Images of the completed facility is attached</p>	<p>Annexure - GCP.13.a.</p>

14. **Compliance -14:**The proponent shall submit half yearly compliance report 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 same on the website and shall update the same periodically. The compliance report shall be simultaneously sent to the Regional Office of Ministry of Environment, Forests and Climate Change, Govt. of India at Bengaluru and to SEIAA.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	Copy of the half yearly compliance reports are available in the website of SmartCity of www.smartcity-kochi.in downloads page. The project proponent is being submitted the compliance report to the integrated Regional Office of Ministry of Environment, Forests and Climate Change, Govt. of India at Bengaluru and to SEIAA as e-mail.		

15. **Compliance -15:**The project proponent is responsible for implementing all the provisions of labour laws applicable from time to time. Provision should be made for providing cooking facilities and supply of kerosene or cooking gas to the labourers.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	Labour campus are provided by SCK and each Co-Developers with adequate facilities, outside the SCK premises, being an SEZ. All the applicable provisions in the labours Laws are being implemented and	Images of the Labour Camp attached.	Annexure - GCP.15.a.

	noted to be implemented in the project site.		
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16. **Compliance -16:** The proponent shall co-operate with and provide facilities and documents/data to the Agencies including the Officials from the Regional office of Ministry of Environment, Forests and Climate Change, Bengaluru during their inspection as part of monitoring the implementation of environmental safeguards.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	As part of expansion of instant project, an official from the Regional office of Ministry of Environment, Forests and Climate Change, Bengaluru had came and inspected the site. The Regional office issued a Certified Compliance Report. All support and facilities were provided at that time. The project proponent can extant such support to officials of MoEF &CC in future.		

17. **Compliance -17:** In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by this Authority.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Noted to be complied.	No changes in the scope as of date.	
Actions Taken	Will be complied as per the requirement.		

18. **Compliance -18:** In case of transfer of EC, the matter shall be intimated and approval from the Authority shall be obtained as per the existing norms.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Noted	No plan for transfer of EC as date.	
Actions Taken	Will be intimated as per the condition stipulated		

19. **Compliance -19:** 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.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Noted		
Actions Taken	Will be taken care off		

20. **Compliance -20:** 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.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Noted		
Actions Taken	Will be taken care off, and the proponent is ready to implement additional safeguard measures subsequently if the Authority directs		

21. **Compliance -21:** Any appeal against this Environmental Clearance shall lie with the National Green Tribunal 1, if preferred, within a period of 30 days as prescribed under section 11 of the National Green Tribunal Act, 1997.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Noted	No such appeal filed at NGT against Environmental Clearance issued to the Smart City project.	
Actions Taken	Not Applicable		

B. General Conditions Specific to Construction Phase

1. **Compliance -01:** All statutory permissions including "consent of Establishment" to STP/ETP, Solid waste management plant, Power generator shall be obtained from Kerala State Pollution Control Board under Air Act, Water Act and Environment (protection) Act. A copy shall be submitted to the ministry / SEIAA before start of any construction work at site.

Response:

Description	Response	Remarks	Annexure No
Status of Consent of Establishment	Complied	Copy of the Consent Issued by PCB is attached.	Annexure - GCP.5.a
Consent No	<ol style="list-style-type: none"> 1. PCB/HO/EKM/ICE/7/2014 2. PCB/RO-EKM/ERR/O18ERR238252/2020 3. G21ERRCTO174450 4. PCB/HO/EE1/EKM-2/ICE/15/2017 		
Validity	<ol style="list-style-type: none"> 1. 30 June 2024 2. 11 November 2025 3. 31 August 2026 4. 31 August 2023 		

2. **Compliance -02:**The approval of the competent authority shall be obtained for structural safety of the buildings due to earthquake, adequacy of firefighting, equipment's, etc. as per National Building Code including protection measures from lightning etc. Building constructed in the runout area of landslide / rock fall area, shall be provided with suitable structures/ measures to prevent earth materials to hit the structure.

Response:

Description	Response	Remarks	Annexure No
Status of Structural Safety Certificate	Complied The project proponent has Obtained structural safety certificate issued by a structural engineer.	The structural stability certificate is attached.	Annexure -GCSC.2.a.

3. **Compliance -03:**All required sanitary and hygienic measures should be in place before starting construction activities which are to be maintained throughout the construction phase.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	The project proponent has been providing adequate facilities to the labours. The details are provided below <ul style="list-style-type: none"> • Adequate water provided. • Portable toilets are provided. • Hand washing station, Shower room and changing rooms are provided. • Rest areas provided. 		

	<ul style="list-style-type: none"> Sanitization facilities are provided. 		
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4. **Compliance -04:** A First Aid Room shall be provided at the project site both during construction and operation phases of the project.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied	Images attached	Annexure - GCSC.4.a.
Actions Taken	First Aid room and Ambulance are provided in each construction site. First Aid Facility is available in the operational buildings also.		

5. **Compliance -05:** Provide safe and healthy basic facilities for construction workers as per the Building & Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied	Images attached	Annexure - GCP.15.a.
Actions Taken	<p>The following facilities are made available in each construction site.</p> <ul style="list-style-type: none"> Constant supply and accessibility of safe drinking water Changing rooms Living Accommodations/Shelter 		

	<ul style="list-style-type: none"> • Sanitary and toilet facilities • Washing facilities • Cooking facility • Facilities for Rest • Arrangement of first aid in case of any emergency medical situation 		
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6. **Compliance -06:** Adequate drinking water and sanitary facilities should be provided for construction workers at the site, Provision should be made for mobile toilets. Safe disposal of wastewater and solid wastes generated including piling debris during the construction phase should be ensured.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	<ul style="list-style-type: none"> • Adequate water provided. • Portable toilets are provided. • Hand washing station, Shower room and changing rooms are provided. • Rest areas provided. • Sanitization facilities are provided. • Waste materials are being cleared through approved agencies. • The generated sewage are disposed at septic tank associated with temporary toilets followed by soak pit. 		

	<ul style="list-style-type: none"> All waste materials are being handled and managed in tune with the various rules enacted in the year 2016. 		
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7. **Compliance -07:** Unless provided otherwise, all the topsoil excavated during construction phase should be stored and re-used for backfilling/ horticulture/landscaping purposes within the project site

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied	Images attached	Annexure - GCSC.7.a.
Actions Taken	Topsoil generated during cutting of earth for construction of foundation is preserved at earmarked locations and used for landscape works		

8. **Compliance -08:** Topsoil excavated should not be used for reclaiming wetland.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied	Images attached	Annexure - GCSC.7.a.
Actions Taken	Topsoil is preserved at earmarked locations and used for landscape works. No topsoil excavated from project site went out side for any purpose.		

9. **Compliance -09:**The muck shall be disposed of only at approved sites with the approval of competent authority. The disposal should not create any adverse effect on the neighbouring communities and should be disposed taking necessary precautions for general safety and health of the public. Proof regarding the same shall be enclosed with the respective monthly compliance reports.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	Operate only through approved agencies. The generated muck disposed without creating any adverse effect on the neighbouring communities		

10. **Compliance -10:**Construction spoils, including bituminous material and other hazardous materials, must not be allowed to contaminate water resources and the dump sites for such materials must be secured so that they will not leach into the ground water

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	<p>The following arrangements are made available in each construction site. The provisions of rules enacted in 2016 for building construction waste and hazardous waste is being implemented.</p> <ul style="list-style-type: none"> Chemicals/ fuels are kept at designated areas and the floor drains are not connected to storm water drain. 		

	<ul style="list-style-type: none"> • Disposal of such waste are being done through PCB approved agencies. • properly use and maintain on-site septic systems • plug and cover waste dumpsters 		
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11. **Compliance -11:** Any hazardous waste generated during construction phase should be disposed off through authorised/approved Waste collectors as per applicable rules and norms with necessary approval of the Kerala State Pollution Control Board.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	Disposal of hazardous waste are being done through PCB approved vendors. The project proponent has earmarked an area to collect and keep the hazardous waste.	Form -10 is attached	Annexure - GCSC.11.a.

12. **Compliance -12:** Soil and ground water samples shall be tested to ascertain that there is no threat to ground water quality by leaching of heavy metals and other toxic contaminants

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied	Latest Reports are attached	Annexure - GCSC.12.a.
Actions Taken	Air, Water, Noise and Stack emission are being tested in		

	every six months though PCB approved agencies.		
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13. **Compliance -13:** Storm water control and its re-use measures as per CGWB and BIS standards shall be followed for various applications.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	<p>The rainwater is being collected in the construction phase and used for the construction phase.</p> <ul style="list-style-type: none"> • Rainwater Harvesting Tanks are constructed for each building as per KMBR guidelines. • Rainwater is used for landscaping and flushing purpose. • 3 number of pond (one pond for each land parcel, total capacity of 100 ML) is envisaged in the master plan for ground water recharge and reuse of water. 	A copy of the Master Plan is attached indicating the proposed ponds and RWHT, which are completed/under construction.	Annexure - GCSC.13.a.

14. **Compliance -14:** 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. During the transportation of building materials/products, the vehicles shall be covered with suitable materials to prevent dust pollution.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	The vehicles engaged for construction only after verification of documents including RC, insurances and pollution certificate etc. as applicable and the materials are being transported with proper covering.		

15. **Compliance -15:** 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 taken to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB/KSPCB

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	Ambient noise levels are being checked in every six months through PCB approved agencies. The levels are noticed within the limit.	Latest Test Results are attached.	Annexure - GCSC.12.a.

16. **Compliance -16:** The diesel generator sets used during construction phase should be of low sulphur diesel type and should conform to Environment (Protection) Rules prescribed for air and noise emission standards. 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. DG sets shall be installed and made functional as per guidelines of KSPCB.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	Low sulphur diesel is being used as fuel with necessary approvals as applicable.		

17. Compliance -17: Ready mixed concrete must be used in building construction. Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	<ul style="list-style-type: none"> Ready mixed concrete is being used for construction works. Admixtures are using for reducing the water content & better workability of concrete. Curing compound is using to reduce the water consumption. 	Consent of PCB obtained for establishment of plant is attached	Annexure - GCSC.17.a.

18. Compliance -18: Permission to draw ground water shall be obtained from the competent Authority prior to construction/operation of the project.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Noted		
Actions Taken	Ground Water is not drawing at present.		

19. **Compliance -19:** Separate dual plumbing line should be provided; one line for Toilet Flushing/ Gardening / Vehicle wash and another separate line for other domestic uses, for ensuring reuse / recycle of treated wastewater to the maximum extent possible

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied	Image is attached.	
Actions Taken	As part of water conservation and for recycling of used water, dual plumbing lines are considered for all building which are completed/ under construction.		

20. **Compliance -20:** Separation of grey and black water should be done by the use of dual plumbing line for separation of grey and black water.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	Dual plumbing lines are considered for all building which are completed/ under construction	Image is attached.	

21. **Compliance -21:** Fixtures for showers, toilet flushing, and drinking should be of low flow either by use of aerators or pressure reducing device or sensor-based controls.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied	Image is attached.	
Actions Taken	As part of water efficiency fixtures in the project, Tap aerators and urinal sensors are provided.		

22. **Compliance -22:** Water efficient plumbing features should be adopted

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied	Image is attached	
Actions Taken	<p>To conserve water and reduce the water consumption many measures are being adopted some of are follows</p> <ul style="list-style-type: none"> • Water efficient plumbing fixtures has been used. • Urinal sensors are provided • Aerators are provided in all the taps. • Dual plumbing lines are provided 		

23. **Compliance -23:** Use of glass may be reduced by 40% to reduce the electricity consumption and load on air conditioning . If necessary, use high quality double glass with special reflective coating on windows.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	Block work and DGU is used in building elevation. If glasses used that will be high quality double glass with special reflective coating on windows		

24. Compliance -24: Design of the building should be in compliance to Energy Building Code as applicable

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	<p>The project proponent has incorporated the provisions and guidelines in the instant construction at project site.</p> <ul style="list-style-type: none"> ➤ Energy <ul style="list-style-type: none"> • Solar Installations in Roof Top & Bike Parking of 564KWP with MPPT Inverter • Natural Ventilation in common lobby & Basement Parking ➤ Water <ul style="list-style-type: none"> • Rainwater harvesting through the 400 KL UG Sump • Treated water utilization • Aerator Installation in all faucets ➤ Environment & Waste Management <ul style="list-style-type: none"> • ODS restriction • Ban of Single-Use plastics 	Image is attached	Annexure - GCSC.24.a.

	<ul style="list-style-type: none"> • Digital Advertising Platforms • Organic Waste Composting • Roof Top Gardening 		
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25. **Compliance -25:** Roof should meet perspective requirement as per Energy Conservation Building Code by using appropriate thermal insulation material to fulfil the requirement.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	Under deck insulation has been provided for roof slab. The terrace areas are covered with solar panels. This measure can reduce the heat inside the building.		

26. **Compliance -26:** Opaque wall should meet perspective requirement as per Energy Conservation Building Code which is proposed to be mandatory for all air-conditioned spaces while it is optional for non-- airconditioned spaces by use of appropriate thermal insulation material to fulfil requirement

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	Concrete and Aerocon blocks are used for partition. The project proponent used appropriate thermal insulation materials to reduce heat. To conserve		

	energy, the project proponent has adopted relevant guidelines of ECBC.		
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27. Compliance -27: Climate responsive design as per Green Building Guidelines in practice should be adopted

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	<p>The below listed activities are few sustainable design consideration adopted by SCK and its Co-Developers.</p> <ul style="list-style-type: none"> • Natural ventilation at carpark • Rainwater harvesting • Low pitch roof efficiently drains/harvest stormwater. • Promoting natural ventilation and daylight. • Massing oriented exploit daylight and reduce solar gain. • Covered carpark reduces heat island effect. • Views and access to outdoors. • DGU façade. • Green Energy Generation etc. 	Images attached.	

28. Compliance -28: Building design should cater to the differently- abled citizens

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	<p>The building design has considered the differently abled citizens and the main features are provided below.</p> <ul style="list-style-type: none"> • Ramps are provided as per the design standard. • Dedicated toilet facilities are provided as per the norms. • Dedicated parking facilities are provided. • Wheelchairs and crutches are provided. 		

29. Compliance -29: Vegetation should be adopted appropriately on the ground as well as over built structure such as roofs, basements, podiums etc.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	<p>Dedicated areas have been considered in the masterplan for vegetation. Further vegetation has been considered in the open areas and terrace of the building</p>	<p>A master plan indicating the green area allocation and images of the greenery in the open areas of buildings are attached.</p>	Annexure - GCSC.13.a.

30. Compliance -30: Exposed roof area and covered parking should be covered with material having high solar reflective index

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	<p>As part of promotion of renewable energy the project proponent has been using roof areas for generation of solar energy. The details are provided below</p> <ul style="list-style-type: none"> • Solar Panel are installed in the roof top of building and covered parking. • Rooftop sunshades are provided. • Roof top gardens are provided 	Images attached.	

31. Compliance -31: Regular supervision of the above and other measures should be in place all throughout the construction phase, to avoid disturbance to the surroundings.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	<p>SCK have a design guideline to address the points and regular inspections is being carried out to ensure the same. The Environment Monitoring Cell has been formed and the committee is supervising the construction site.</p>		

32. **Compliance -32:** 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 27thAugust 2003. (Applicable to Power Stations).

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	Minerals Admixtures (Fly ash/ GGBS) are used in concrete. Even though the condition is not applicable to the instant project.		
Amount Spent (INR.)			

33. **Compliance -33:** Under the provisions of Environment (Protection) Act, 1986, legal action shall be initiated against the project proponent if it was found that construction of the project has been started without obtaining the statutory clearances.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	Constructions are commenced only after obtaining statutory clearances.		

C. General Conditions Specific to Operation Phase

1. **Compliance -01:** The buildings should have adequate distance between them to allow movement of fresh air and passage of natural light and ventilation

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	Setbacks are provided as per KMBR regulations. The distance provided is adequate to allow movement of fresh air and passage of natural light and ventilation.		

2. **Compliance -02:** Sewage Treatment Plant (STP) should be installed and made functional as per KSPCB guidelines. On/site Treatment of Sewage and Sullage should be done with scientific method, ensuring efficiency of treatment, ease in operation, sustainability and it should contain the units of primary, secondary, tertiary and quaternary type of treatment scheme. The installation of the STP should be certified by an independent expert and a report in this regard should be submitted to the Ministry/SEIAA before the project is commissioned for operation. Treated effluent emanating from STP shall be recycled / reused to the maximum extent possible. Treatment of 100% grey water shall be done through a decentralized treatment. Reuse of water shall be practiced for flushing process and garden purposes. Discharge of unused treated effluent shall conform to the norms and standards of the Kerala State Pollution Control Board. Necessary measures should be taken to mitigate the odour problem from STP.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	Each building in the campus has independent STP of SBR/MBR type. The STPs are operated only with the consent of PCB and through specialist agencies. The campus have zero discharge concept and hence the treated water is being used for	Consent to Operate by PCB is attached	Annexure -GCP.5.a.

	landscape, cooling tower and flushing within individual plots.		
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3. **Compliance -03:** Solid waste management plant shall be installed and made functional as per the guidelines of KSPCB. 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. Adequate measures should be taken to prevent odour problem from solid waste processing plant and STP.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	Independent OWC's are provided in each building and single use plastics are banned in the building premise. For collection of various type of waste generated from the project site, colour coded bins are provided in each project site.	Images of the OWC's are attached	Annexure - GCSO.3.a.

4. **Compliance -04:** Provide adequate Material Collection Facility (MCF) for storage of non-biodegradable waste including plastic waste and E waste, for handing over the same to Recyclers/ Local Body, as stipulated by Kerala State Pollution Control Board.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	Materials are collected in designated areas and disposed through PCB authorized agencies		

	and local vendors for recycling and disposal.		
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5. **Compliance -05:** Diesel power generating sets proposed as source of backup 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.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied	Consent to Operate is attached	Annexure - GCSO.5.a.
Actions Taken	All DG sets are confirmed to the standards and PCB approval in place. The height of the stacks are arranged as per the requirement of KSPCB		

6. **Compliance -06:** Low sulphur diesel shall be used as fuel in DG sets. The location of the DG sets may be decided in consultation with Kerala State pollution Control Board. DG sets should not be housed in sub-basement levels.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied	Consent to Operate & Stack Emission Reports are Attached	Annexure -GCP.5.a.
Actions Taken	Low sulphur diesel is used as fuel. DGs are operated with consent of PCB		

7. **Compliance -07:** 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.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	DGs are installed in acoustic enclosure. Noise control measures are taken at sources level. Since all are IT based firm the noise level will not go beyond the limit.	Half Yearly Noise Test Reports are Attached	Annexure -GCP.5.a.

8. **Compliance -08:** The green belt of adequate width and density shall be raised preferably with local species along the periphery of the project site so as to provide protection against particulate matter and noise.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	Adequate greenery is maintained along the periphery of the project site. The PP is intending to plant more local species in the project site.		

9. **Compliance -09:** Weep holes shall be provided in the compound walls to ensure natural drainage of rainwater during the monsoon period.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	Necessary provisions are made to ensure drainage at applicable location. Weep holes are provided in the compound walls at needed locations.	Images attached	

10. **Compliance -10:** Rainwater Harvesting structures should be installed as per the prevailing provisions of KMBR/KPBR, unless otherwise specified elsewhere. Rain water harvesting measures for roof run-off and surface run-off, as per approved building plan 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 m above the highest ground water table.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	RWHT are provided for each building as per the provisions of KMBR/KPBR for collection rain water from roof top. Since the ground water table is high in this region ground water recharge is not suitable for the project area.		

11. **Compliance -11:** The ground water level and its quality should be monitored regularly in consultation with State Groundwater Department/Central Ground Water Authority.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	The ground water level is being monitored around the project site. The quality of water is being monitored by an approved laboratory. All parameters of water are well within limit.		

12. **Compliance -12:** Traffic congestion near the entry and exit points from the roads adjoining the project site must be avoided. Parking should be fully internalized, and no public space should be utilized.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	Adequate parking facilities are provided in each building as per the provisions of KMBR/KPBR. No public spaces are utilised for parking.		

13. **Compliance -13:** A Report on the energy conservation measures, conforming to energy conservation norms issued 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.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Noted		
Actions Taken	The project proponent has used LED type lights in each building. buildings are designed to get natural light inside the buildings and in line with energy conservation norms issued by Bureau of Energy Efficiency.		

14. **Compliance -14:** Energy conservation measures like installation of LED /CFLs/TFLs for the lighting the areas outside the building should be an integral part of the project design and should be in place before project commissioning. Used LED/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. Solar panels may be used to the extent possible.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	<ul style="list-style-type: none"> All light fittings are of LED type and the disposal is being done through approved agencies of PCB. Solar panels are installed in all completed buildings. 	Images attached	

D. Special Conditions Specific to the Project

1. **Compliance -01:** Provide sufficient facilities for treatment of roof top/ rainwater harvested, of 100 ML capacity, stored in the 3 proposed ponds, within the campus, for ensuring recycle / reuse of treated rainwater within the compound, to the maximum extent possible.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	Area has been allocated for three ponds for 100ML storage capacity. The same will be made functional as part of the overall development. All recycled water will be reused in the project site.	Copy of the Master Plan indicating the location of pond is attached	

2. **Compliance -02:** Ensure and insist treatment of sewage generated from individual industrial units, to reuse of the treated water and ensure zero discharge from the compound.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	Each building in the campus has independent STP of SBR/MBR type. The STPs are operated only with the consent of PCB and through specialist agencies. The campus has zero discharge concept and hence the treated water is being used for landscape	Consent to Operate by PCB is attached	Annexure -GCP.5.a.

	and flushing within individual plots.		
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3. **Compliance -03:** Provide a general scheme of treatment for sewage, to all industrial units at the time of signing agreement with them, ensuring that a full-fledged sewage treatment system, intended for reuse / recycle of treated water, is established in all units.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	SCK have a guideline and the same is part of the CDA and Lease Deed		

4. **Compliance -04:** Provide a scientific storm water drainage system, covering the whole area and linking it with the proposed ponds, considering the annual rain fall, topography and infiltration rate of the project area.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	Construction of storm water drainage covering the whole area and linking it with the ponds has been done where the road works are completed in Land A. The same will be done in other area also as per the Master Plan storm water layout shared with SEIAA. The drainages are constructed as per the topography after analysing the contours. The		

	annual rain fall and surface runoff has been considered in the construction of drainage.		
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5. **Compliance -05:** Take action for planting of local species of trees in the green belt area open space, compensatory afforestation area, including avenue plantations, as envisaged in the revised EMP.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	A detailed ecological study has been conducted through a specialist agency as recommended by the SEAC committee, wherein the list of local species recommended for this project was submitted to SEIAA. The local species as per the said recommendation will be planted in this project. The project proponent has started to plant various native species in the project site.	List of local species as per the recommendation is attached	Annexure - SCSO.05.a.

6. **Compliance -06:** Take action for implementing: as part of CER activities, for Restoration of Kadambayar, Beautification of Edachira Canal, providing of Renewable Energy to neighbourhood areas, procurement of land for Anganwadi and Water Metro Station, providing of financial support for study of students in the neighbourhood area, support for Rebuild Kera/ and project for Women Empowerment, at a proposed project cost of Rs 3.075 Crores, as per the revised EMP. The actions shall also be taken for linking it with EMF, in order to ensure monitoring, it in terms of quantifiable, as part of compliance monitoring process.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	1. Infrastructure for Water Metro – Land to an extent of 3.33 Acres has been allocated to KMRL as per the requirement at subsidize land price for creation of boat jetty and related infrastructure. Confirmation awaited from KMRL toward the same. Cost Impact to SCK due to reduced land premium- INR.36,00,000.00 2. Contribution to Rebuild Kerala/ similar initiative by GoK – Support to Rebuild Kerala. Amount spent INR. 14,00,000.00		
Amount	INR.50,00,000.00/-		Annexure - GCP.8.a.

7. **Compliance -07:** As per OM no F.No.22-65 /2017-IA.III dated 30111 September 2020, under Co-operate Environmental Responsibility (CER) the project Proponent shall prepare an Environment Management Plan (EMP) as directed by SEAC during appraisal, covering the issues listed above to address the environmental problems in the project region, indicating both physical and financial targets year wise. The EMP shall be implemented in consultation with District Collector. The indicated cost for CER shall be 2% of the project cost depending upon the nature of activities proposed. The follow up action on implementation of CER shall be included in the half yearly compliance report which will be subjected to field inspection at regular intervals. A copy of the approved EMP shall be made available to the concerned Panchayat for information and implementation support.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		Annexure - GCP.3.a.
Actions Taken	A copy of the EC Order including EMP has been furnished Thrikkakara Municipality Office Puthencruz panchayath on 25 th & November 2021 respectively. A copy of the EC Order has been uploaded in the company website www.smartcitykochi.in		

8. **Compliance -08:** Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project (Circular No.J-11013/41/2006-IA.II(I) of GoI, MoEF dt.22.09.2008).

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	Adequate facility has been arranged by each Co-Developers. The Circular issued by MoEF & CC on 22-09-2008 is being followed in connection with facilities for labours.	Image attached	Annexure - GCP.15.a.

E. Green Conditions Specific to the Project

1. **Compliance -01:** Adequate rainwater harvesting facilities shall be arranged for.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	<ul style="list-style-type: none"> • Rainwater Harvesting Tanks are constructed for each building as per KMBR guidelines. • Rainwater is used for landscaping and flushing purpose. • 3 number of pond (one pond for each land parcel, total capacity of 100 ML) is envisaged in the master plan for ground water recharge and reuse of water. 		

2. **Compliance -02:** Technology and capacity of the STP to be indicated with discharge point (if any) of with the treated effluent.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		

Actions Taken	Each building in the campus has independent STP of SBR/MBR type. The STPs are operated only with the consent of PCB and through specialist agencies. The campus have zero discharge concept and hence the treated water is being used for landscape, cooling tower and flushing within individual plots.		
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3. Compliance -03: Effluent water not conforming to specifications shall not be let out to water bodies.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Noted		
Actions Taken	All used and sewage water is directed to STP for treatment. Treated water is being used in the project site. No water is letting out to the water bodies flowing near to the project site.		

4. Compliance -04: Maximum reuse of grey water for toilet flushing and gardening and construction work shall be ensured.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	Each building in the campus has independent STP of SBR/MBR type. The STPs are operated only		

	with the consent of PCB and through specialist agencies. The campus have zero discharge concept and hence the treated water is being used for landscape, cooling tower and flushing within individual plots.		
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5. **Compliance -05:** Dual plumbing for flushing shall be done.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied	Images attached	Annexure - GCSC.24.a.
Actions Taken	Dual plumbing lines are considered for all building which are completed/ under construction		

6. **Compliance -06:** Provisions for disposal of e-wastes , solid wastes, non-biodegradables and separate parking facility for the buildings shall be provided.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	Materials are collected in designated areas and disposed through PCB authorized agencies. Separate parking area is provided for each building in the project area.		

7. **Compliance -07:** Generation of solar energy to be mandatory for own use and/or to be provided to the grid.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	<ul style="list-style-type: none"> • Solar Plant of capacity 564 kWP commissioned for own building (SCK 01 building) • Solar Plant having a capacity of 63 kWP commissioned by the Co-developer who completed the 1st and 2nd phase (SG Academics). • Solar Plant having a capacity of 90 kWP commissioned by the Co-developer M/s. MariApps. • The generation of energy from solar panel is part of the guideline of SCK to its Co-Developer. <p>All Co-Developers whose constructions are under progress also will comply the same.</p>	Images of the completed plant is attached	Annexure - GCP.13.a.

8. **Compliance -08:** 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.

Response:

Description	Response	Remarks	Annexure No
Status of Compliance	Complied		
Actions Taken	Approvals are obtained from <ul style="list-style-type: none"> • Single Window Clearance Board (SWCB) • Fire and Rescue NoC. • CEIG • Pollution Control Board • Aviation Clearance (applicable only for Sands Infinity Building) The necessary safety facilities are provided in each building, including firefighting equipment, First Aid facility and Ambulance facility.		



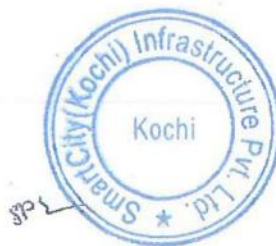
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CZ 573387

AFFIDAVIT

I, Manoj Nair, Chief Executive Officer., Authorized Signatory of M/s SmartCity (Kochi) Infrastructure Pvt. Ltd, having its correspondence office at SmartCity Pavilion, Brahamapuram P.O., Ernakulam, Kerala – 682303, do hereby affirm and confirm as follows:

1. That, M/s SmartCity (Kochi) Infrastructure Pvt. Ltd. proposes the construction of the expansion of the existing Master Plan Development of an IT/ITES SEZ township project at Sy. Nos. 640/1, 640/2 & others in Kakkanad Village., Kanayannur Taluk, Sy. Nos. 62/1, 62/2 & others in Puthencruz Village, Kunnathunadu Taluk, Thrikkakara Municipality, Ernakulam District, Kerala.



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22/11/2021

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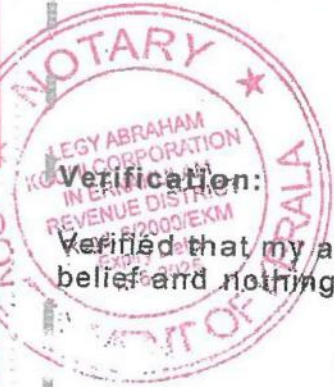
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Rajesh (Kochi) Infrastructure



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CZ 573388

2. That, the Environmental Clearance proceedings number and date are 58/B/2021, Proposal No. SIA/KL/MIS/51114/2018, File No. 1191(A)/EC2/2018/SEIAA dated 08.10.2021.
3. That, all the conditions stipulated in the Environment Clearance would be scrupulously followed.



Verification:

Verified that my above statements are true to the best of my knowledge and belief and nothing material has been concealed therein.

Solemnly affirmed and signed before me by the deponent on this 23rd day of Nov 2021 at my office at Ernakulam.



[Signature]

DEPONENT



[Signature]

DEPONENT

Place: Ernakulam

Date: 23rd November 2021

38089

Rs. 100/-

22/11/2021

LEGY ABRAHAM
NOTARY - Regd: 6/2060/EKM
MARKET ROAD NORTH
ERNAKULAM, KOCHI-682 018

Smartcity Kochi Infrastructure

LINUS JOSE
S R O VENDOR
THRIKKAKARA

[Signature]



hiju Khan was also ... you sure: other matter s...
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NOTICE

This is to inform to the General Public that the construction for the expansion of the existing Master Plan Development of an IT/ITES SEZ township project at Sy. Nos. 6401, 6402 & others in Kaddaral Village, Kanyanur Taluk, Sy. Nos. 6271, 622 & others in Pottanur Village, Kunnathunadu Taluk, Thrakkal Municipalipal, Ernakulam District, Kerala issued by State Environment Impact Assessment Authority, Kerala being developed by M/s SmartCity (Kochi) Infrastructure Pvt. Ltd. is accorded with ENVIRONMENTAL CLEARANCE by State Environment Impact Assessment Authority, Kerala vide Order No. 58/8/2021, Proposal No. SAKLAMS/114/2018, File No. 119/(A)/EC/2018/SEIAA dated 08.10.2021 and the copies of the Environmental Clearance is available on the website of State Environment Impact Assessment Authority (SEIAA) www.seiaa.kerala.in

NO

St. Sairji KJ Koothathaval # 1 Koothathuku mortgaging - 550/41 in Koothathuku obtained vide 2005. Its 1131/1974 o SRO is irrev his possess have any o availing a k certified co Deed 1131/ the branch Koothathuku (Branch Koothathuku 9446458478)

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CIN: U70101KL2006FTC019125

SmartCity (Kochi) Infrastructure Pvt. Ltd.
SmartCity Pavilion,
Brahmapuram P.O., Kochi 682 303,
Kerala, India

Telephone +91 484 668 9800
www.smartcity-kochi.in



SCK/P16-P91/117/2021
23rd November 2021

The Secretary,
Thrikkakara Municipal Corporation,
NGO Quarters - Mavelipuram Rd,
Thrikkakara,
Kakkanad, Kerala 682030

Received.
M. K. ...
എൻ.ഐ. ക്യാമ്പയിൻ സെക്ഷൻ / MUNICIPALITY
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തൃക്കാക്കര നഗരസഭ / THRIKKAKARA MUNICIPALITY
പിൻ/Pin-682030/ഫോൺ/PH: 0484-2422003, 2428140
സെൽ / Cell: 8547629068
ഇ-മെയിൽ / e-mail: sectkramncpity@gmail.com

Sub:- Post Environmental Clearance – Expansion of the existing Master Plan Development of an IT/ITES SEZ township project of M/s SmartCity (Kochi) Infrastructure Pvt. Ltd. at Sy. Nos. 640/1, 640/2 & others in Kakkanad Village, Kanayannur Taluk, Sy. Nos. 62/1, 62/2 & others in Puthencruz Village, Kunnathunadu Taluk, Thrikkakara Municipality, Ernakulam District, Kerala – Compliance to the Conditions of E.C. – Reg.

Respected Sir,

1. This has reference to the Environmental Clearance issued to the expansion of the existing Master Plan Development of an IT/ITES SEZ township project at Sy. Nos. 640/1, 640/2 & others in Kakkanad Village, Kanayannur Taluk, Sy. Nos. 62/1, 62/2 & others in Puthencruz Village, Kunnathunadu Taluk, Thrikkakara Municipality, Ernakulam, Kerala issued by State Environment Impact Assessment Authority, Kerala vide order No. 58/B/2021, Proposal No. SIA/KL/MIS/51114/2018, File No. 1191(A)/EC2/2018/SEIAA dated 08.10.2021.
2. We hereby submit a self attested copy of the Environmental Clearance Order No. 58/B/2021, Proposal No. SIA/KL/MIS/51114/2018, File No.1191(A)/EC2/2018/SEIAA dated 08.10.2021. This is in compliance to the condition of the Environmental Clearance Order.

Kindly acknowledge the receipt of the same.

Thanking you,
Yours respectfully,
For M/s SmartCity (Kochi) Infrastructure Pvt. Ltd.

Manoj Nair
Chief Executive Officer



Encl: As above

CIN: U70101KL2006FTC019125

SmartCity (Kochi) Infrastructure Pvt. Ltd.
SmartCity Pavilion,
Brahmapuram P.O., Kochi 682 303,
Kerala, India

Telephone +91 484 668 9800
www.smartcity-kochi.in



SCK/P16-P277/118/2021
23rd November 2021

The Secretary,
Vadavucode Puthencruz Panchayath Office
Puthencruz
Ernakulam
Kerala 682 308

Sub:- Post Environmental Clearance – Expansion of the existing Master Plan Development of an IT/ITES SEZ township project of M/s SmartCity (Kochi) Infrastructure Pvt. Ltd. at Sy. Nos. 640/1, 640/2 & others in Kakkanad Village, Kanayannur Taluk, Sy. Nos. 62/1, 62/2 & others in Puthencruz Village, Kunnathunadu Taluk, Thrikkakara Municipality, Ernakulam District, Kerala – Compliance to the Conditions of E.C. – Reg.

Respected Sir,

1. This has reference to the Environmental Clearance issued to the expansion of the existing Master Plan Development of an IT/ITES SEZ township project at Sy. Nos. 640/1, 640/2 & others in Kakkanad Village, Kanayannur Taluk, Sy. Nos. 62/1, 62/2 & others in Puthencruz Village, Kunnathunadu Taluk, Thrikkakara Municipality, Ernakulam, Kerala issued by State Environment Impact Assessment Authority, Kerala vide order No. 58/B/2021, Proposal No. SIA/KL/MIS/51114/2018, File No. 1191(A)/EC2/2018/SEIAA dated 08.10.2021.
2. We hereby submit a self attested copy of the Environmental Clearance Order No. 58/B/2021, Proposal No. SIA/KL/MIS/51114/2018, File No.1191(A)/EC2/2018/SEIAA dated 08.10.2021. This is in compliance to the condition of the Environmental Clearance Order.

Kindly acknowledge the receipt of the same.

Thanking you,
Yours respectfully,
For M/s SmartCity (Kochi) Infrastructure Pvt. Ltd.


Manoj Nair
Chief Executive Officer



Received



Encl: As above

SmartCity (Kochi) Infrastructure Pvt Ltd.

SmartCity Pavilion

Brahmapuram P.O, Kochi 682 303

Ernakulum District, Kerala.

Environmental Clearance No. 58/B/2021 dated 08.10.2021

SmartCity (Kochi) Infrastructure Pvt Ltd. awarded the Environmental Clearance for the Master Plan Development of an IT/ITES, SEZ Township construction project at Kakkannad, Puthencruz Village, Kanayannur Taluk, Ernakulum District.

Validity of EC - 07.10.2026

Area of Construction 37,98,799 Sq.M

MONITORING RESULTS

MONITORING	PARAMETER	RESULT	LIMIT
AIR	SO ₂	< 2.00 µg/m ³	80.0 µg/m ³
	NO ₂	2.60 µg/m ³	80.0 µg/m ³
WATER	PH	7.11	6.50 - 8.50
	ODOUR	Unobjectionable	Unobjectionable
NOISE	TDS	10.7 mg/L	296 mg/L
	DAY	47.9 dB (A)	55.0 dB (A)
	NIGHT	36.7 dB (A)	45.0 dB (A)

Environmental Clearance is issued by State Environmental Impact Assessment Authority.



KERALA STATE POLLUTION CONTROL BOARD

FILE NO. :PCB/HO/EKM/ICE/7/2014

Date of issue :04/06/2020

INTEGRATED CONSENT TO OPERATE - RENEWAL

Consent No : PCB/HO/EKM-I/ICO-R/ 12 /2020

VALID UPTO 30/06/2024

Ref :

1. Your application 10445733 dated 31/03/2019.

2.Consent No. PCB/HO/EKM/ICO/27/2016 dated 22/06/2016 valid upto 30/06/2019.

The ' Integrated Consent to Operate' issued as per reference above to M/s SMARTCITY (KOCHI) INFRASTRUCTURE PRIVATE LIMITED, Phase-1, Kakkanad Village, Brahmapuram P.O., Ernakulam is hereby renewed up to 30/06/2024 and issued to M/s SMARTCITY (KOCHI) INFRASTRUCTURE PRIVATE LIMITED, Phase-1, Kakkanad Village, Brahmapuram P.O., Ernakulam The consent(s)/ variation order(s) cited under reference are integral part of this renewal order and this order is subject to the conditions stipulated therein and the following modifications/ additions.

I. GENERAL

S.No.	Items	Description
1	Annual Fees	Rs. 3, 18, 500/-
2	Fee remitted (including arrear)	Rs. 18, 59, 517/-
3	Date of enquiry	31/05/2019 & 22/01/2020
4	Date of completed application	27/01/2020
5	Category	Red
6	Validity	30/06/2024
7	Capital Investment	12922.38 Rs in Lakhs
8	Survey Nos.	640/1,2pt,4pt,5,641/1pt,

II. Stack Details

Stack No.	Source of Emission	Emission Rate(Nm ³ /Hr)	Stack Height above		Control Equipment
			Ground Level(In Meters)	Roof Level(In Meters)	

No change from previous consent					
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III. CONDITIONS

1. For renewal of the consent in case of continuance of discharge/operation of the industry, application in the prescribed form shall be submitted through the web portal of the Board for Online Consent Management & Monitoring System 2 months i.e on or before 31/03/2024 prior to the date of expiry. Late application will be accepted only with fine.
2. No change or alteration of the unit/establishment is to be made without the prior written permission of the Board. Any change in the particulars furnished and/or in the identity of the occupier / authorized agent is to be intimated to the Board forthwith.
3. Periodic/Annual Reports shall be submitted through the E-Correspondence in the Boards Online Web Portal.
4. STP shall be maintained properly and operated at all times.
5. Ultrafiltration shall be commissioned on or before 31/08/2020.

All other conditions of the Integrated Consent to Operate issued as per reference above remain unchanged.

DATE :04/06/2020

SIGNATURE & SEAL OF ISSUING AUTHORITY
CHAIRMAN



To
M/s SMARTCITY (KOCHI) INFRASTRUCTURE PRIVATE LIMITED
Phase-1,
Kakkanad Village,
Brahmapuram P.O.
Ernakulam

1. This digitally signed document is legally valid as per the Information Technology Act 2000

2. For verifying this document please go to krocmms.nic.in and search using date of issue/name of the unit/Application Number in “Consent Granted Applications” link in the home page of the Board’s Online Consent Management and Monitoring System.

FILE NO : PCB/HO/EKM/ICE/7/2014
Date of issue : 22/06/2016



KERALA STATE POLLUTION CONTROL BOARD

CONSENT TO

OPERATE/AUTHORISATION/REGISTRATION

ISSUED UNDER

The Water (Prevention & Control of Pollution) Act, 1974
The Air (Prevention & Control of Pollution) Act, 1981

and

The Environment (Protection) Act, 1986

As per Application No. :2926031
Dated:10-06-2016

TO

**M/s SMARTCITY (KOCHI) INFRASTRUCTURE PRIVATE LIMITED
PHASE-1,KAKKANAD VILLAGE, BRAHMAPURAM P.O. ERNAKULAM
682303**

Consent No. :PCB/HO/EKM/ICO/27/2016
Valid Upto :30/06/2019



1. GENERAL

1.1. This integrated consent is granted subject to the power of the Board to withdraw consent, review and make variation in or revoke all or any of the conditions as the Board deems fit.

1	VALIDITY	30/06/2019
2	Name and Address of the establishment	SMARTCITY (KOCHI) INFRASTRUCTURE PRIVATE LIMITED PHASE-1, KAKKANAD VILLAGE, BRAHMAPURAM P.O. ERNAKULAM 682303
3	Communication	Telephone :0484-3800000 Fax :0484-3080099 E-mail:balu.pillai@smarcity.in
4	Occupier Details	SMARTCITY (KOCHI) INFRASTRUCTURE PVT LTD Phase 1, Kakkanad Village, Brahmapuram P.O. Ernakulam
5	Local Body	Thrikkakara
6	Survey Number	As per application
7	Village	Kakkanad
8	Taluk	KANAYANNUR
9	District	ERNAKULAM I
10	Capital Investment(Rs in Lakhs)	Rs 12922.38 lakhs
11	Scale	Large
12	Category	ORANGE
13	Annual fee(Rs)	Rs 110000
	Total Fee remitted(Rs)	Rs 330000
14	Activity	Self sustained industrial town ship –Phase-1 building for IT sector with built up area of 59,783.22m ² . DG Sets- 3 nos.of 1500 kVA

2. CONDITIONS AS PER

The Water(Prevention and Control of Pollution)Act, 1974

- 2.1 Sewage Treatment Plant(STP) consisting of treatment units having adequate capacity shall be functional/ arrangement for sewage treatment shall be provided, as per the Integrated Consent to Establish, at all times during the operation of the establishment. Additional facilities required, if any, to achieve the standards laid down by the Board u/s 17(1) (g) of the Water Act shall also be made along with.
- 2.2 Water consumption: 200595 l/d
- 2.3 Effluent generation: 167000 l/d
- 2.4 The characteristics of effluent after treatment shall confirm to the following tolerance limits:

Sl.NO.	Characteristics	Unit	Tolerance Limits		
			Irrigation/ Soak pit	Flushing/ Gardening/ Reuse	Discharge to Public Sewer
1	pH		5.5-9	6.5-8.5	5.5-9
2	Suspended Solids	mg/l	100	20	600
3	BOD	"	30	3	350
4	Oil & Grease	"	10	1	20

2.5 Mode of disposal of treated effluent: Reuse for gardening, flushing, HVAC Process.



3. CONDITIONS AS PER

The Air(Prevention and Control of Pollution)Act, 1981

3.1 Adequate air pollution control measures shall be operational at all times during the functioning of the industry. Additional facilities required, if any, to achieve the standards laid down by the Board shall also be made along with.

Stack No.	Sources of Emission	Emission Rate(Nm3/Hr)	Stack Height above		Control Equipment
			Ground Level	Roof Level	
1	DG SET-1500 kVA(3 nos)	-	-	7.5 m each	Acoustic enclosure

3.2 Emission characteristics shall not exceed the following:

Sl.No.	Parameter	Limiting Standards (mg/Nm3)
1	As per EP Rules	

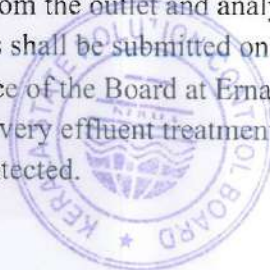
4. CONDITIONS AS PER

The Environment (Protection) Act, 1986.

- 4.1 The construction activities shall be carried out strictly in compliance with the provisions of the Noise Pollution (Regulation and Control) Rules 2000.
- 4.2 Used lead acid batteries shall be disposed of as per the Batteries (Management and Handling) Rules, 2001
- 4.3 e-waste shall be disposed off safely as per the e-waste (Management and Handling) Rules, 2011.

5. SPECIFIC CONDITIONS

- 5.1 Discharge shall be made only through the outlet in the approved drawing attached.
- 5.2 For renewal of the integrated consent, application in the prescribed form shall be submitted to the Board in the third month before expiry of the consent through krcmms.nic.in.
- 5.3 The applicant shall comply with the instructions that the Board may issue from time to time regarding prevention and control of air, water, land and sound pollution.
- 5.4 Suitable species of trees and curtain plants shall be planted and maintained within and along the periphery of the premises, forming a green belt to improve the environment.
- 5.5 Sewage Treatment Plant consisting of treatment units having adequate capacity shall be functional, at all times during the operation of the establishment.
- 5.6 Ultra filtration facility shall be provided in the Sewage Treatment Plant.
- 5.7 Samples of effluent shall be collected from the outlet and analysed in any laboratory approved by Board at least once in three months and the reports shall be submitted on or before the 10th of the next month to the Regional Office and to the District Office of the Board at Ernakulam.
- 5.8 There shall be easy access to each and every effluent treatment unit and recycling area for inspection
- 5.9 Natural drainage of the area shall be protected.





- 5.10 If operations are done with backup power, the generator shall have adequate capacity to run all associated pollution control devices.
- 5.11 The sound level measured at 1 m outside the boundary of the premises shall not exceed the ambient sound level applicable to the adjoining area
- 5.12 All operations likely to produce dust or noise shall be carried out with appropriate enclosure.
- 5.13 DG sets shall be installed as per GSR 280(E) dated 11-4-2008 of the Ministry of Environment, Forest and Climate Change. A minimum height of 6m above the building where generator is installed shall be provided.
- 5.14 Arrangements shall be provided for rainwater harvesting.
- 5.15 Arrangements for collection, segregation, storage, handling and disposal of solid waste including garbage shall be provided and maintained properly.
- 5.16 Non-biodegradable wastes namely plastic shall be collected with due segregation and disposed off safely to genuine recyclers.
- 5.17 Biodegradable wastes shall be treated in biogas plant. Biogas and slurry shall be used effectively.
- 5.18 e- waste shall be segregated, safely stored and disposed to registered recyclers.
- 5.19 Adequate fire safety measures shall be provided in accordance with fire safety regulations.
- 5.20 Water and energy conservation measures shall be provided.
- 5.21 Renewable source of energy such as solar energy shall be utilised.
- 5.22 All conditions in Environmental Clearance No 184/SEIIA/3792/2013 dated 01.10.2014 shall be fully complied with

DATE :22/06/2016



SIGNATURE & SEAL OF ISSUING AUTHORITY

MEMBER SECRETARY

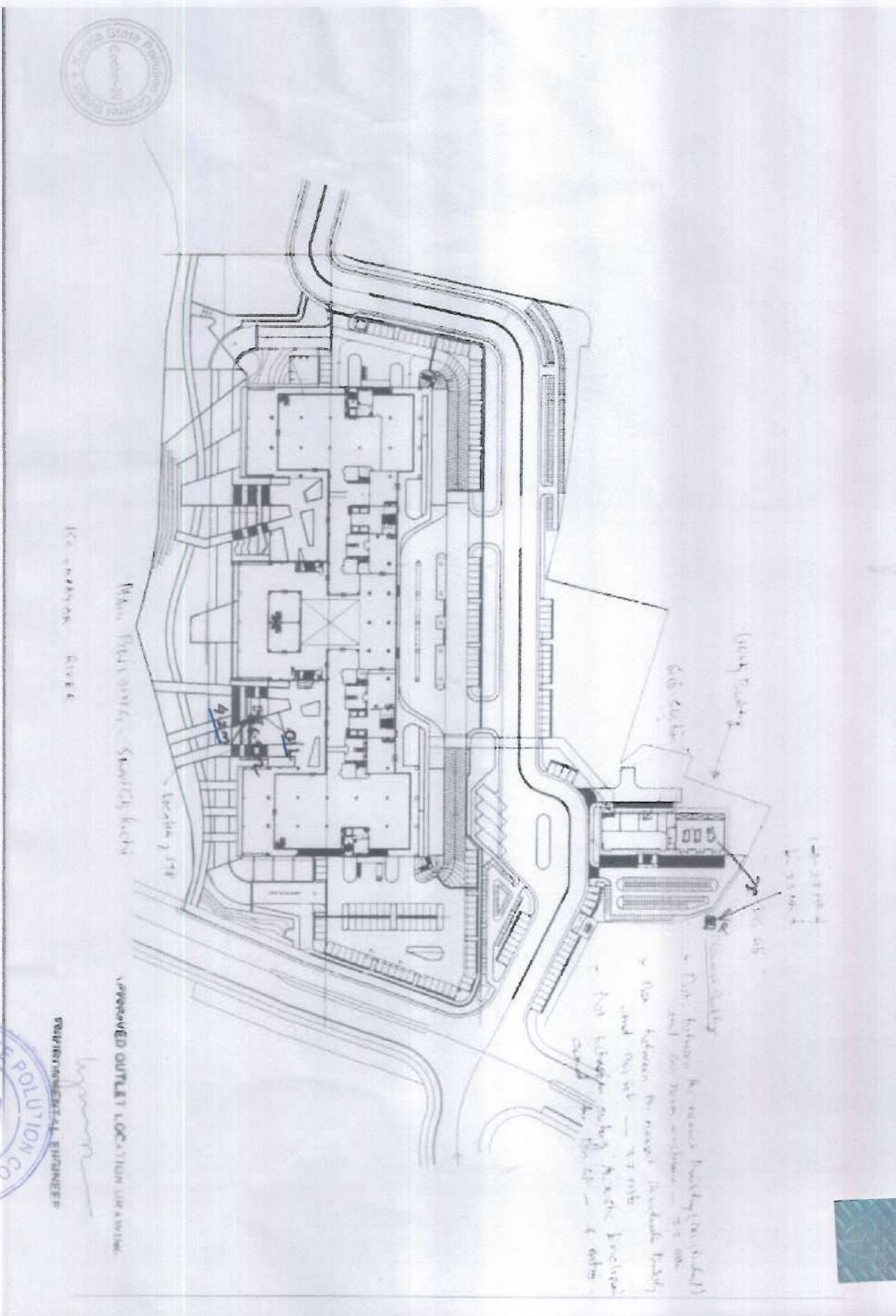
To

M/s SMARTCITY (KOCHI) INFRASTRUCTURE PRIVATE LIMITED
PHASE-1, KAKKANAD VILLAGE
BRAHMAPURAM P.O.
ERNAKULAM- 682303

Copy To

1. Environmental Engineer, District Office-1, Ernakulam
2. Stock file

M/s. SMARTCITY (KOCHI) INFRASTRUCTURE PRIVATE LIMITED



Survey No: As per application
 Village : Kakkannad
 Taluk : Kanayannur
 District : Ernakulam

Counter Signed

MEMBER SECRETARY (1/2)

FILE NO : PCB/RO-EKM/ERR/O18ERR238252/2020

Date of issue : 24/11/2020



KERALA STATE POLLUTION CONTROL BOARD

CONSENT TO

OPERATE/AUTHORISATION/REGISTRATION

ISSUED UNDER

The Water (Prevention & Control of Pollution) Act, 1974

The Air (Prevention & Control of Pollution) Act, 1981

and

The Environment (Protection) Act, 1986

As per Application No. :13592453

Dated:12-08-2020

TO

**M/s OFFICE OF MARIAPPS MARINE SOLUTIONS INDIA (P) LTD , SMART CITY ,
KAKKANADU**

**MARIAPPS MARINE SOLUTIONS INDIA (P) LTD
3RD FLOOR , B - WING , SMART CITY
INFOPARK ROAD , THENGODE P. O.
KAKKANADU , KOCHI**

Consent No. :O20ERRCTO13592453

Valid Upto :21/11/2025

1. GENERAL

1.1. This integrated consent is granted subject to the power of the Board to withdraw consent, review and make variation in or revoke all or any of the conditions as the Board deems fit.

1	VALIDITY	21/11/2025
2	Name and Address of the establishment	OFFICE OF MARIAPPS MARINE SOLUTIONS INDIA (P) LTD , SMART CITY , KAKKANADU MARIAPPS MARINE SOLUTIONS INDIA (P) LTD, 3RD FLOOR , B - WING , SMART CITY , INFOPARK ROAD , THENGODE P. O. , KAKKANADU , KOCHI 682030
3	Communication	Telephone :0484-4047711 Fax :- E-mail:thomas.john@mariapps.com
4	Occupier Details	THOMAS K. JOHN (DIRECTOR OF DEVELOPEMENT & OPERATIONS),KIZHAKKEMULACKEL HOUSE , SNRA - 216 , AININADA ROAD , MARADU , ERNAKULAM
5	Local Body	KAKKANADU
6	Survey Number	650, 653,654
7	Village	KAKKANADU
8	Taluk	KANAYANNUR
9	District	ERNAKULAM I
10	Capital Investment(Rs in Lakhs)	Rs 3927 Lakh
11	Scale	Large
12	Category	ORANGE
13	Annual fee(Rs)	Rs 1,52,810 /-
	Total Fee remitted(Rs)	Rs 3,05,620 /-
14	Activity	IT Building having B+G+7 floors with built up area of 16872 sq.m

2. CONDITIONS AS PER

The Water(Prevention and Control of Pollution)Act, 1974

- 2.1 Sewage Treatment Plant(STP) consisting of treatment units having adequate capacity shall be functional/ arrangement for sewage treatment shall be provided, as per the Integrated Consent to Establish, at all times during the operation of the establishment. Additional facilities required, if any, to achieve the standards laid down by the Board u/s 17(1) (g) of the Water Act shall also be made along with.
- 2.2 Water consumption: 65000 litre/day
- 2.3 Effluent generation: 52000 litre/day
- 2.4 The characteristics of effluent after treatment shall confirm to the following tolerance limits:

SI.NO.	Characteristics	Unit	Tolerance Limit	
			Sewage	Trade Effluent
1	pH	-	6.5-8.5	-

2	BOD	mg/l	3	-
3	Oli and Grease	mg/l	1	-
4	COD	mg/l	50	-
5	Suspended Solids	mg/l	10	-
6	NH4-N	mg/l	5	-
7	N-TOTAL	mg/l	10	-
8	Fecal Coliform	MPN/100ml	<230	-

2.5 Mode of disposal of treated effluent: As per Condition no.5.14

3. CONDITIONS AS PER

The Air(Prevention and Control of Pollution)Act, 1981

3.1 Adequate air pollution control measures shall be operational at all times during the functioning of the industry. Additional facilities required, if any, to achieve the standards laid down by the Board shall also be made along with.

Stack No.	Sources of Emission	Emission Rate(Nm3/Hr)	Stack Height above		Control Equipment
			Ground Level	Roof Level	
1	400 kVA D.G set	-	-	4 m	Acoustic Enclosure
2	400 kVA D.G set	-	-	4 m	Acoustic Enclosure
3	400 kVA D.G set	-	-	4 m	Acoustic Enclosure

3.2 Emission characteristics shall not exceed the following:

Sl.No.	Parameter	Limiting Standards (mg/Nm3)
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4. CONDITIONS AS PER

The Environment (Protection) Act, 1986.

4.1 The construction activities shall be carried out strictly in compliance with the provisions of the Noise Pollution (Regulation and Control) Rules 2000.

4.2 Used lead acid batteries shall be disposed of as per the Batteries (Management and Handling) Rules, 2001

4.3 e-waste shall be disposed off safely as per the e-waste (Management and Handling) Rules, 2011.

5. SPECIFIC CONDITIONS

5.1 For renewal of the consent, application in the prescribed form shall be submitted through the web portal of the Board for Online Consent Management & Monitoring System 2 months prior to the date of expiry. Late application will be accepted only with fine.

5.2 This consent is granted subject to the power of the Board to review and make variation in or revoke any of the conditions as the Board deems fit as per the relevant Acts/Rules.

5.3 The applicant shall comply with the instructions that the Board may issue from time to time regarding prevention and control of air, water, land and sound pollution

5.4. Arrangements for collection, segregation, storage, handling and disposal of solid Waste including garbage shall be provided and maintained properly. Bio bins provided shall be maintained properly for the treatment of biodegradable garbage.

5.5. Non biodegradable, recyclable wastes shall be collected with due segregation and disposed of through authorized recyclers

5.6. Energy and water conservation measures shall be adopted as far as possible

5.7. Renewable sources of energy such as solar energy shall be utilized for lighting and heating wherever possible

5.8. The sewage treatment plant provided with the following units shall be always functional and periodical maintenance shall be done to the equipments.

Screen chamber, Grit and Oil separator, Equalization tank, Anaerobic tank, Denitrification, Aeration tank (MBBR), Flocculation tank, Secondary settling tank, Filter feed tank, Pressure sand filter, Disinfection, Activated carbon filter, Ultra filtration and Treated water tank.

5.9. Sludge generated in the collection tank, settling tanks are periodically removed and treated in the sludge digester.

5.10. Screenings and scum shall be removed daily and shall be disposed scientifically

5.11. Backwash from sand filter and activated carbon filter shall be taken in to aeration tank.

5.12. E-waste generated shall be collected, stored properly and shall be handed over through authorized E-waste collectors periodically

5.13. Periodical reports as detailed below shall be submitted to the District Office-1 of the Board at Ernakulam

Statutes: Water (prevention and Control of pollution) Act 1974

Details: Effluent analysis and flow details

Mode of Collection and analysis: As per standard methods in approved lab

Periodicity of Analysis: Once in six months

Periodicity of Submission: 10th of every sixth month

5.14. Treated water shall be reused for flushing and gardening and balance will be disposed through soak pit provided. Overflow from soak pit shall be connected to public drain leading to canal/surface water. The occupier shall ascertain that the public drain has no block up to the water body. Reuse standards such as pH-6.5-8.5, BOD-3 mg/l, Suspended solids-10 mg/l, Oil & grease -1 mg/l shall be ensured if the treated water reused for the flushing and gardening.

5.15. There shall be easy access to each sewage treatment unit and the recycling facility for inspection. Manhole shall be provided prior to soak pit to facilitate effluent sampling. Lighting arrangements shall be provided in the effluent treatment area, recycling area and backyard.

5.16. Water meters shall be provided for measuring the quantity of treated water.

5.17. Log books shall be provided to register the daily energy consumption in STP and quantity of waste water treated and treated water recycled and the records shall be made available to the inspecting officers of the Board whenever called for.

5.18. Storm water shall be segregated from effluent.

5.19. Rainwater harvesting system and arrangements for its utilization shall be maintained properly.

5.20. Adequate fire protection equipment in accordance with the fire safety regulations shall be

established/installed at salient places within the unit and for ensuring the same, necessary certificate from Fire & Rescue Services Department regarding fire safety shall be obtained. The unit shall have valid certificate from the Fire & Rescue Service Department during its operation

DATE :24/11/2020

SIGNATURE & SEAL OF ISSUING AUTHORITY
CHIEF ENVIRONMENTAL ENGINEER



To

THOMAS K. JOHN
DIRECTOR
MARIAPPS MARINE SOLUTIONS INDIA (P) LTD, 3RD FLOOR , B - WING , SMART CITY ,
INFOPARK ROAD , THENGODE P. O. ,
KAKKANADU , KOCHI

- 1. This digitally signed document is legally valid as per the Information Technology Act 2000**
2. For verifying this document please go to krocmmms.nic.in and search using date of issue/name of the unit/Application Number in "Consent Granted Applications" link in the home page of the Board's Online Consent Management and Monitoring System.



CHIEF ENVIRONMENTAL ENGINEER

Client:	
Mariapps Marine solutions India (P)Ltd	
Title:	
Site Plan	
Site details	
Survey No	650,653,654
Village	Kakkanadu
Taluk	Kanayannur
District	Ernakulam

Legend			
Sl no.	Description	Size	Qty.
1	Screen chamber	1800 × 1000 × 1800	1
2	Grit cum oil separator	3000 × 1000 × 800 + 1800 fb	1
3	Equalisation tank	36 m ² × 1100 + 1900 fb	1
4	Anaerobic tank	2400 × 2400 × 2600 + 400	1
5	Aeration tank (split into two)	2400 x 1200 x 2500 + 500 fb	1
6	Flocculation tank	2000 x 1000 x 1000 + 600 fb	1
7	Secondary settling tank	2000 x 2000 x 1100 swd + 1200 cwd + 700 fb	1
8	Filter feed tank	2000 x 1500 x 2200 + 800 fb	1
9	UF feed tank	2000 x 1500 x 2200 + 800 fb	1
10	Treated water tank	3800 X 2000 x 2500 + 500 fb	1
11	Sludge digester	5000 dia x 2300 swd	1

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Scale : NTS

Rev No.	Date		Name	
Rev 00	21.07.20	Drawn	A.N	
		Appd :	M.N	

Green
Method
Engineering(P)Ltd.



19/195 A1, ATC Building
Moolepadam Nagar Road
HMT Jn, Kalamassery P.O
Kochi, Kerala 683104
Tel: +91 484 2555336
Fax: +91 484 2543985
Mob: +91 9745034922

An ISO 9001:2015, 14001:2015 certified company
Email: mail@greenmethodengineering.com Web: www.greenmethodengineering.com
An approved A Class consultant of KSPCB

FILE NO : PCB/DO1-EKM/ICO/G21ERR174450/21

Date of issue : 26/10/2021



KERALA STATE POLLUTION CONTROL BOARD

CONSENT TO

OPERATE/AUTHORISATION/REGISTRATION

ISSUED UNDER

The Water (Prevention & Control of Pollution) Act, 1974

The Air (Prevention & Control of Pollution) Act, 1981

and

The Environment (Protection) Act, 1986

As per Application No. :15239616

Dated:05-09-2021

TO

**M/s WATER TREATMENT PLANT-SMARTCITY(KOCHI) INFRASTRUCTURE PVT LTD
SMARTCITY(KOCHI) INFRASTRUCTURE PVT LTD INFOPARK (PO).SMARTCITY
PAVILION,
BRAHMAPURAM P.O,KOCHI -682303..**

Consent No. :G21ERRCTO174450

Valid Upto :31/08/2026

1. GENERAL

1.1. This integrated consent is granted subject to the power of the Board to withdraw consent, review and make variation in or revoke all or any of the conditions as the Board deems fit.

1	VALIDITY	31/08/2026
2	Name and Address of the establishment	WATER TREATMENT PLANT- SMARTCITY(KOCHI) INFRASTRUCTURE PVT LTD 3 MLD WATER TREATMENT PLANT SMARTCITY(KOCHI) INFRASTRUCTURE PVT LTD INFOPARK (PO) 682042
3	Communication	Telephone :0484-6689800 Fax :- E-mail:sini.ps@smartcity-kochi.in
4	Occupier Details	MANOJ NAIR CHEIF EXECUTIVE OFFICER SMARTCITY(KOCHI) INFRASTRUCTURE PVT LTD, SMARTCITY PAVILION, BRAHMAPURAM P.O, KOCHI, PIN-682303
5	Local Body	KAKKANAD
6	Survey Number	712/2PT,3PT,14PT
7	Village	KAKKANAD
8	Taluk	KANAYANNUR
9	District	ERNAKULAM I
10	Capital Investment(Rs in Lakhs)	523.98 Rs
11	Scale	Medium
12	Category	GREEN
13	Annual fee(Rs)	Rs.30575/-
	Total Fee remitted(Rs)	Rs.198738/-
14	RAW MATERIAL	PRODUCTS
	River Water @ 3260 Kilo Liters	Potable Water @ 3000 Kilo Liters
15	Total Power Required (HP)	-

2. CONDITIONS AS PER

The Water(Prevention and Control of Pollution)Act, 1974

- 2.1 In case of generation of trade effluent from the industry, effluent treatment system consisting of treatment units having adequate capacity established as per the Integrated Consent to Establish issued shall be operational at all times during which the industry is functional. Additional facilities required, if any, to achieve the standards laid down by the Board u/s 17(1) (g) of the Water Act shall also be made along with.
- 2.2 Water consumption: 3260 KILO LITER
- 2.3 Effluent generation: 260 KLD
- 2.4 The characteristics of effluent after treatment shall confirm to the following tolerance limits:

SL.NO.	Characteristics	Unit	Tolerance Limit	
			Sewage	Trade Effluent

2.5 Mode of disposal of treated effluent:

3. CONDITIONS AS PER

The Air(Prevention and Control of Pollution)Act, 1981

3.1 Adequate air pollution control measures shall be operational at all times during the functioning of the industry. Additional facilities required, if any, to achieve the standards laid down by the Board shall also be made along with.

Stack No.	Sources of Emission	Emission Rate(Nm3/Hr)	Stack Height above		Control Equipment
			Ground Level	Roof Level	

3.2 Emission characteristics shall not exceed the following:

Sl.No.	Parameter	Limiting Standards (mg/Nm3)
--------	-----------	-----------------------------

4. CONDITIONS AS PER

The Environment (Protection) Act, 1986.

4.1 The operation of the industry shall be strictly in compliance with the provisions of the Noise Pollution (Regulation and Control) Rules 2000.

4.2 Used lead acid batteries shall be disposed of as per the Batteries (Management and Handling) Rules, 2001

4.3 Hazardous waste generated, if any, shall be handled as per the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.

4.3.1 Activities for which Authorisation is granted

Collection		transport	
Reception		Storage	
Treatment		Reprocessing/Disposal	

4.3.2 Type, quantity and mode of storage/collection/disposal of hazardous wastes shall be as follows:

Sl.No.	Hazardous Waste	Schedule Category	Quantity Tonne/year
--------	-----------------	-------------------	---------------------

Mode of	
Storage	Disposal

4.4 E-waste shall be disposed off safely as per the E-Waste (Management)Rules, 2016.

5. SPECIFIC CONDITIONS

- 5.1. This consent unless withdrawn earlier and subject to condition no.1.1 shall be valid up to 31.08.2026. This consent is issued based on the affidavit submitted on 500/- stamp paper and supporting documents submitted by the applicant, if any documents submitted by the applicant /any statements in the affidavit found false consent will be revoked.
- 5.2. At the end of the validity period the consent shall be renewed. Late application will be accepted only with fine as applicable.
- 5.3. The consent shall be renewed at least 2 months before the expiry of the consent. 10% of the annual fee shall be levied additional if the applicant is submitting the application within 2 months just prior to the expiry of the consent validity. On expiry of the consent validity a 50% maximum of annual fee shall be levied in addition to the consent fees. The application in the prescribed form shall be submitted through the web portal of the Board for Online Consent Management & Monitoring System (www.krocmms.nic.in).
- 5.4. The applicant shall comply with the instructions that the Board may issue from time to time regarding prevention and control of air, water, land and sound pollution.
- 5.5. All operations likely to produce dust or noise or smell shall be carried out within sufficiently closed and insulated premises.
- 5.6. The sound level measured 1m outside the boundary of the premises shall not exceed the ambient sound level standards applicable for the adjoining area.
- 5.7. No change or alteration of the industrial plant is to be made without the prior written permission of the Board. Any change in the particulars furnished and/or in the identity of the occupier/authorised agent is to be intimated to the Board forthwith.
- 5.8. A Board displaying name and address of the unit shall be placed in front of the unit.
- 5.9. Smart city shall insist the Co-developers to install highly efficient treatment system for microbial removal /disinfection system such as ozonisation for meeting drinking water standards as per IS standards.
- 5.10. Treated water after ultrafiltration shall be analysed once in every month and the analysis report shall be kept available for inspections.
- 5.11. Water consumption during lean period from the River shall be restricted to minimum quantity to maintain the flow in the river and for water requirement may rely on alternate sources.
- 5.12. Water meters shall be provided in the intake and treated outlet for recording water consumption per day. Logbook shall be maintained for recording the readings.
- 5.13. All mandatory and statutory clearances shall be obtained prior to the commissioning of the water

treatment plant.

5.14. The effluent generated during the process per day shall be treated and may scientifically disposed of.



NOBY GEORGE
Assistant Environmental Engineer
Kerala State Pollution Control Board
Gandhi Nagar, Kochi-682 020

DATE :26/10/2021

SIGNATURE & SEAL OF ISSUING AUTHORITY

ASSISTANT ENVIRONMENTAL ENGINEER
DISTRICT OFFICE-1, ERNAKULAM

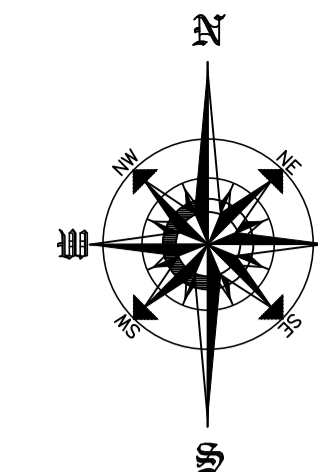


To

MANOJ NAIR
CHEIF EXECUTIVE OFFICER
SMARTCITY(KOCHI)INFRASTRUCTURE PVT LTD,
SMARTCITY PAVILION,
BRAHMAPURAM P.O, KOCHI ,PIN-682303

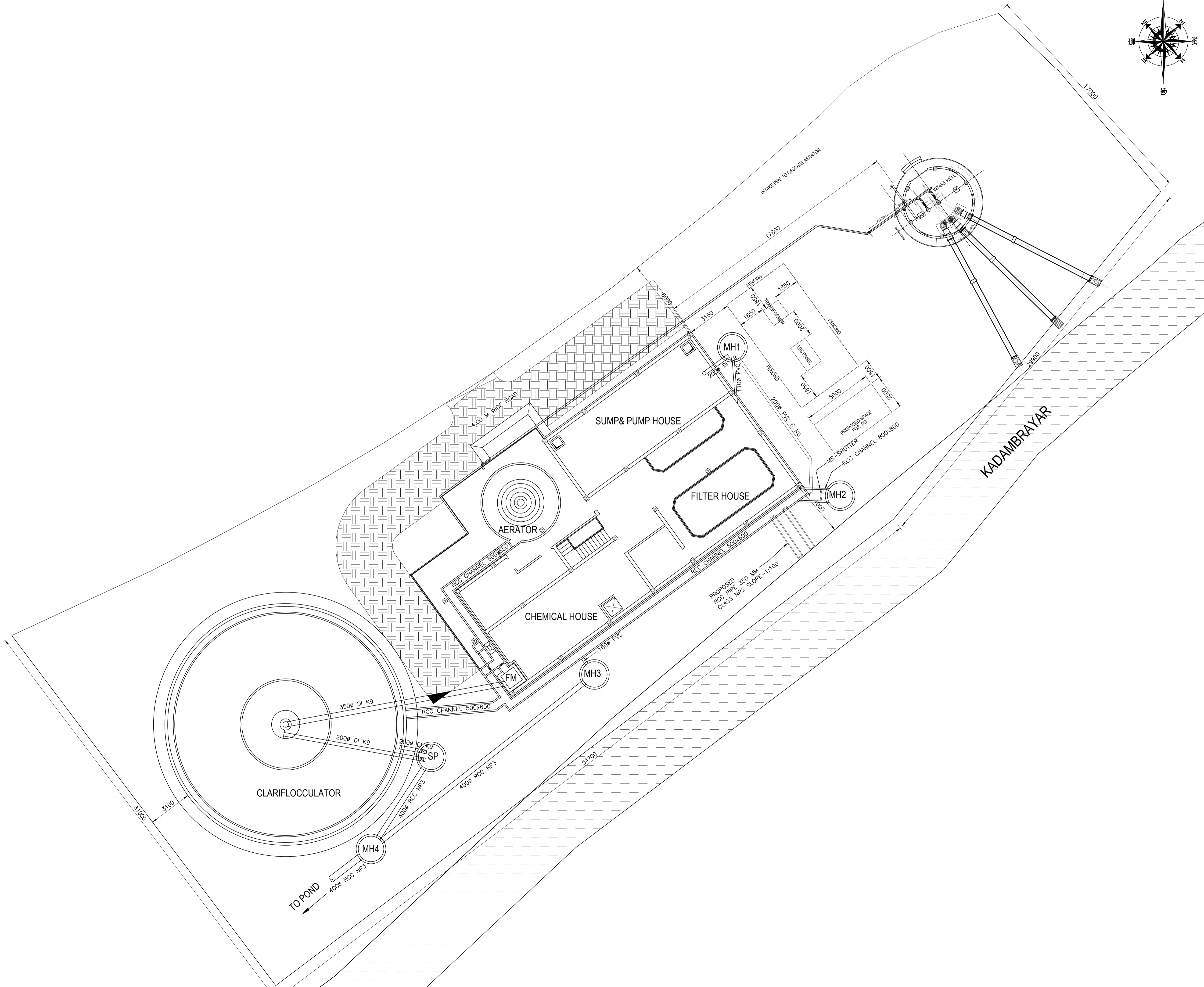
1. This digitally signed document is legally valid as per the Information Technology Act 2000

2. For verifying this document please go to krocmmms.nic.in and search using date of issue/name of the unit/Application Number in "Consent Granted Applications" link in the home page of the Board's Online Consent Management and Monitoring System.



NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
2. DONOT SCALE THE DRAWING BUT FOLLOW FIGURED DIMENSIONS ONLY



Project: **3 MLD WATER TREATMENT PLANT FOR SMART CITY KOCHI**

Title: **LAYOUT PLAN**

Client: **SMART CITY KOCHI**

Designed by: _____ Drawn by: _____

Checked by: _____ Approved by: _____

Scale: 1:100 Date: 16.02.2021

Drawing No. **WTP/SCK/01/2021** Rev. _____



KERALA STATE POLLUTION CONTROL BOARD

FILE NO. :PCB/HO/EE1/EKM-2/ICE/15/2017

Date of issue :02/06/2022

INTEGRATED CONSENT TO OPERATE - RENEWAL

Consent No : PCB/HO/EKM-II/ICO-R/08/2022

Valid upto 31.08.2023

Ref : Consent No. PCB/HO/EKM-2/ICO/ 20 /2018 dated 14/12/2018 valid upto 31/08/2021

The ' Integrated Consent to Operate' issued as per reference above to M/s .GEMS International School, Smart City Campus, Infopark Road, Kochi, PIN-682303, is hereby renewed up to 31/08/2023 and issued to M/s .SG Academic Establishments Private Limited-Gems Modern Academy,Plot B1-4, Smart City Infrastructure Pvt .Ltd, Brahmapuram, Kochi, Kerala-682303. The consent(s)/ variation order(s) cited under reference are integral part of this renewal order and this order is subject to the conditions stipulated therein and the following modifications/ additions.

I. GENERAL

S.No.	Items	Description
1	CATEGORY	ORANGE
2	VALIDITY	31/08/2023
3	ANNUAL FEE	Rs 2,68,000.00/-
4	FEE REMITTED	Rs.6,71,875/-
5	CAPITAL INVESTMENT	Rs.12875 lakhs

II. Stack Details

Stack No.	Source of Emission	Emission Rate(Nm ³ /Hr)	Stack Height above		Control Equipment
			Ground Level(In Meters)	Roof Level(In Meters)	
As per previous consent					

III. CONDITIONS

1. For renewal of the consent in case of continuance of discharge/operation of the industry, application in the prescribed form shall be submitted through the web portal of the Board, 2 months prior to the date of expiry.

Late application will be accepted only with fine as applicable.

All other conditions of the Integrated Consent to Operate issued as per reference above remain unchanged.

DATE :02/06/2022

SIGNATURE & SEAL OF ISSUING AUTHORITY
MEMBER SECRETARY



To
M/S. SG Academic Establishments Private Limited-Gems Modern Academy,Plot B1-4, Smart City
Infrastructure Pvt .Ltd, Brahmapuram, Kochi, Kerala-682303.

- 1. This digitally signed document is legally valid as per the Information Technology Act 2000**
2. For verifying this document please go to krocmmms.nic.in and search using date of issue/name of the unit/Application Number in “Consent Granted Applications” link in the home page of the Board’s Online Consent Management and Monitoring System.

CIN: U70101KL2006FTC019125

SmartCity (Kochi) Infrastructure Pvt. Ltd.
SmartCity Pavilion,
Brahmapuram P.O., Kochi 682 303,
Kerala, India

Telephone +91 484 308 0000

www.smartcity-kochi.in



SCK/P16 -P134/173/2018
08th October 2018

Managing Director,
Kochi Metro Rail Limited,
8th Floor, Revenue Tower, Park Avenue
Kochi 282011

Attention: **Shri. APM Mohammed Hanish**

Dear Sir,

Sub: Kochi Water Metro Project- Land Requirement

1. Reference: KMRL/WM/Corres- stake holders/2017/F-33/ dated 13 Aug 2018

With respect to the letter under reference, we are pleased to inform you that your request for requirement of land for setting up the 3 Jetty Terminals in SmartCity (Kochi) has been approved by the Board of Directors of SmartCity (Kochi) in its meeting on 24th Sep 2018. It has been decided that an extent 1.3498 hectares (3.3353 acres) in 3 land parcels mentioned below will be leased to KMRL for a period of 30 years.

Jetty Terminal Location	SmartCity Land	Extent in Hectares	Extent in Acres	Remarks
1-Near GEMS school	Land B	0.8851	2.1871	See Note 1
2-Hub Terminus	Land A	0.1725	0.4262	
3 - Near Sands Infra	Land A	0.2922	0.7220	See Note 2
	Total	1.3498	3.3353	

Note1- The extent indicated by KMRL was 0.7955ha for terminus 1 but corrected by SmartCity as 0.8851ha to reflect the actual measurement as per FMB.

Note2- KMRL- 0.2892 ha has been corrected by SCK as - 0.2922 ha to reflect the actual measurement as per FMB.

Field Measurement Book (FMB) Sketches of all the three land parcels have been shared with KMRL

The actual extent of leasable land shall be jointly surveyed and extent ascertained for inclusion in the lease deed. Cost of the survey shall be equally shared between SmartCity (Kochi) and KMRL.





Terms and Conditions of lease approved by the Board:

1. Lease Rent per acre per Year: Rs 3,00,000/ (Rupees Three Lakhs Only). Total lease rent payable for 3.3353 acres is Rs 3,00,17,700 (Rupees Three Crores Seventeen Thousand Seven Hundred Only)
2. Lease Period : 30 years
3. Total Lease Rent for 30 years shall be payable in two instalments. First 50 % is payable upon execution of the lease deed and balance 50% within one year from commencement of the first water transport operation.
4. An extent of 1.0005 hectares (2.472 acres) in the promenade connecting Jetty terminus 1 with the public road and SmartCity (Kochi) lands shall be developed and maintained at all times by KMRL at its own cost. No rent will be chargeable for this area of land.
5. KMRL is permitted to monetise only the leasable areas given in the table above for which the rent is paid. Also see point 7 below.
6. KMRL shall not commercialise /monetise 2.472 acres of promenade land and SmartCity (Kochi) will retain such rights at all times.
7. Jetty Terminal 3 near Sands Infra is an entrance to the processing zone of SmartCity (Kochi) SEZ. Hence this terminal should have necessary access control measures to prevent trespass by unauthorized persons beyond the jetty limits. KMRL shall install necessary measures to control entry of non-SEZ persons to the processing zone. No commercial activity like cafeteria etc. is permitted in this Jetty.
8. The lease shall be renewed after 30 years on mutually agreed terms.

We trust that the above is in order and meets your expectations articulated in the above referenced letter, which we have given its full due during the presentation of the proposal during the Board Meeting.

Upon receipt of your concurrence on the above terms and conditions SmartCity (Kochi) will furnish the daft lease deed for your review and finalization.

Warm regards,

A handwritten signature in blue ink, appearing to read "Manoj Nair".

Manoj Nair
Chief Executive Officer



A handwritten checkmark in blue ink, followed by the word "Enclosure:"

1. Attachment -2



भारतीय स्टेट बैंक
State Bank Of India

(04062)-COMMERCIAL BRANCH, ERNAKULAM
1ST FLOOR, VANKARETH TOWERS,
BYE PASS JUNCTION, PADIVATTOM
DIST:ERNAKULAM, KERALA 682024
Tel : 484 2340027 Fax : 2341100 IFS Code : SBIN0004062 SWIFT :

केवल 3 महीने के लिए वैध / VALID FOR 3 MONTHS ONLY
26 04 20 19
D D M M Y Y Y Y

7557 / 100 / BLUE ORDER / R / 04 / April / 2019
SESHAASAI (C) / CTS-2010

PAY Chief Minister's Distress Relief Fund

को या उनके आदेश पर **OR ORDER**

रुपये **RUPEES Forteen Lakh Eighty Six Thousand One**

Hundred Forty Eight Only. X — X अक्षरों ₹ 1486148/-

खा. सं. **67204250511**

VALID UPTO ₹ 50 LACS AT NON-HOME BRANCH

CURRENT A/C Payment Released

PREFIX :
1515900008 Date:

SMART CITY (KOCHI) INFRASTRUCTURE PRIVATE LIMITED

MULTI-CITY CHEQUE Payable at Par at All Branches of SBI

Please sign above

⑈483002⑈ 682002006⑈ 000272⑈ 29

PROCEED

More Donation Options



PAYMENT GATEWAY SERVICES
Internet Banking – 40 banks supported
Domestic Credit and Debit Cards supported

payment charges: Nil
Payments can also be given through SBI collect
SBI COLLECT PORTAL

ACCOUNT DETAILS
A/c Number : 67319948232
A/c Name: Chief Minister's Distress Relief Fund
Branch: City Branch, Thiruvananthapuram
IFSC : SBIN0070028 | SWIFT CODE : SBININBBT08
Account Type: Savings | PAN: AAAGD0584M
Payments can also be given through:
KERALA GOVERNMENT PORTAL

UPI QR CODE / VPA



keralacmdrf@sbi

Sl.No	Description	Unit	Qty
A	LIST OF SPECIES		
1	Alstonia scholaris	Nos	19
2	Barringtonia racemosa	Nos	19
3	Ptychosperma macarthurii	Nos	63
4	Washingtonia	Nos	42
5	Livistona chinensis	Nos	8
6	Felicium decipens	Nos	39
7	Cassia Fistula	Nos	8
8	Thespesia populena	Nos	9
9	Delonix regia	Nos	10
10	Largestromia	Nos	11
11	Kadamba-anthocephalus	Nos	10
12	Michelia Champaca	Nos	21
13	Pongamia	Nos	21
14	Plumeria pink hybrid	Nos	137
15	Plumeria obtusa	Nos	1
16	Mimopsus elengii	Nos	15
17	Terminalia arjunae	Nos	10
18	Calophyllum inophyllum	Nos	11
19	Milletia ovalifolia	Nos	11
20	Raphis excelsa	Nos	408
21	Sterlitzea reginae (Bird of paradise)	Nos	244
22	Azadirachta Indica	Nos	12
23	Mangifera Indica	Nos	25
24	Psidium Guajava	Nos	30
25	PunicaGranatum	Nos	6
26	Flacourtia	Nos	9
27	Manilkara Zapota	Nos	14
28	Artocarpus Heterophyllus	Nos	20
29	Peltophorum Pterocarpum	Nos	3
30	Santalum album	Nos	1
31	Syzygium cumini	Nos	12
32	Indian laburnum	Nos	10
33	Rutaceae	Nos	20
34	Phyllanthus emblica	Nos	20
35	Ficus benghalensis	Nos	13
36	Tectona grandis	Nos	10
37	Swietenia	Nos	25
38	Delonix regia	Nos	11
39	Dalbergia sissoo	Nos	14
40	Palm Trees	Nos	90
	Sub Total	Nos	1,462

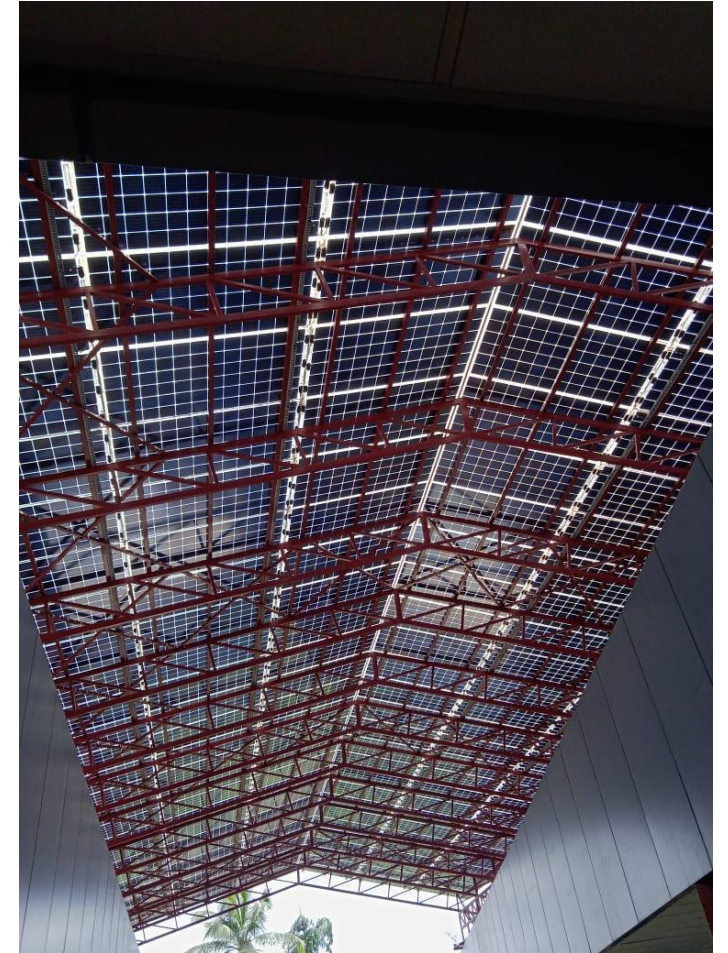




SCK -01 Building



MariApps Marine Solutions Pvt Ltd.



SG Academics



Annexure - GCP.15 a.



Images of Labour Camp



mahimtura consultants (bangalore) pvt. ltd.

Consulting engineers

CIN - U74200KA2011PTC058618

Tel : +91 80 49209999

10th February 2016

STRUCTURAL STABILITY CERTIFICATE

This is to certify that the proposed Commercial building at 640/1,2Part, 4 Part, 5 641/1 part, 10,25 Part,29,30 666/10 Part at Kochi has been designed for Lower Ground + Ground and 5 Upper Floors + Terrace for Office loadings.

The required imposed loads as IS 875 (Part II) - 1987 and also complies with the requirements of IS 456 - 2000. The designs conform to all relevant Indian Standards including IS 1893-(Part 1):2002 "Criteria for Earthquake Resistant Design of Structures" and designed or Zone III criteria as per the Code.

The Building mentioned above structurally safe and stable for its intended purpose.

For Mahimtura Consultants (Bangalore) Pvt Ltd.,

Name : Arun Nadig
Director

Registration No. BCC/BL 3.6/E - 4059/14-15





KEF Infrastructure India Pvt. Ltd.
231A, 232/4, Vinayakapuram Village, Kurubarapalli Post,
Krishnagiri – 635115, Tamil Nadu, India.
Tel: +91 4343 – 222100, Email: Info@kefinfra.com.
Web: kefinfra.com

Date: 05nd February 2018
Ref No: KEF/GEMS/LTCM-LR /001

To
SG ACADEMIC ESTABLISHMENT INDIA PVT. LTD.,
C-310, Unitech Business Zone,
Nirvana Countr, South City,
II Gurgaon, Haryana.

OR

PROJECT OFFICE,
GEMS School,
Opposite to BDPP brahmapuram diesel power plant,
Near smart City Pavillion, B1-4,
Smart City, Cochin.

FAO : Mr. Ajay Thakur – Sr. Vice President.

Project : GEMS MODERN ACADEMY

Sub : STRUCTURAL STABILITY CERTIFICATE.

Dear Sir,

Enclosed, please find the Structural Stability Certificate for the GEMS MODERN ACADEMY – Block 1,2,3&4 Buildings included 01 LAP Pool & 01 Children Swimming Pool, which is self-explanatory for reference and records.

Kindly acknowledge the copy as receipt of Original Certificate for our records.

Thanks and regards,

Yours faithfully
For KEF Infrastructure India Pvt.Ltd.

Safarulla Abdul Azees,
Lead Techno Commercial Manager.
Encl: Original Structural Stability Certificate – 03 Copies.

STRUCTURAL STABILITY CERTIFICATE

SUB: Structural Stability Certificate from KEF Infra India Private Limited for the project "GEMS International School".

PROJECT No. (KEF Internal)	5006		
PROJECT TITLE	GEMS International School for SG Academic Establishments India Private Limited		
PROJECT LOCATION	Smart City SEZ, Puthencruz Village; Kunnathunadu Taluk; Ernakulam.		
ARCHITECTS	Creative Group		
STRUCTURAL DESIGN CONSULTANTS :	KEF Infrastructure India Pvt. Ltd		
BUILDING Blocks	BLOCK 01 & 02	BLOCK 03	BLOCK 04
	This block consists of:	This block consists of:	This block consists of:
Block Descriptions	1 Ground floor + 02 upper floors	(1 Ground floor + 04 upper floors + 1 LAP Pool & 01 Children Swimming Pool in 4 th Floor	(1 Ground floor + 03 upper floors
	The three blocks are separated each other by expansion joints		
Construction Technique	Fully Prefabricated construction		
Design codes & References	The structural design is performed according to the relevant Indian Standards (IS) Whenever the prefabrication is not fully covered by the Indian Standards (IS), the following international Codes and Standards are followed: - The European Codes (EUROCODES) - United States Codes ACI 318 and PCI Handbook.		

This is to certify that, the above buildings have been designed by us.

The structural drawings for the above have been prepared by us on the basis of architectural plans submitted. The building has been designed for Dead loads & Live loads as per relevant IS 875 par-1 & 2 respectively, wind loads as per IS 875 part-3 and earthquake loads as per IS 1893-2002.

Based on our periodic supervision and reports submitted by site supervisors, we are in a position to state that the structural work has been carried out to our satisfaction. We hereby certify that building is safe and stable for the a period of 60 years from the date of handover subject to the periodic building maintenance is done and used for the intended purpose only within the loading limitations as per the design codes.

SIGN:



MADHU.B.S., M.Tech.,
 (Structural Engineering),
 BBMP Registration No.
 BCC/BL-3.6 E-3966/2014-15.

NAME:

MADHU. BS.,
 Structural Design Engineer,
 KEF Infrastructure India Pvt. Ltd.,
 No. 34 Embassy Diamante,
 Vittal Mallya Road,
 Bangalore-560 001.



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Construction Technique	The three blocks are separated each other by expansion joints Fully Prefabricated construction		
Design codes & References	The structural design is performed according to the relevant Indian Standards (IS) Whenever the prefabrication is not fully covered by the Indian Standards (IS), the following international Codes and Standards are followed: <ul style="list-style-type: none"> - The European Codes (EUROCODES) - United States Codes ACI 318 and PCI Handbook. 		

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MADHU. B.S.,
Structural Design Engineer,
KEF Infrastructure India Pvt. Ltd.,
No. 34, Embassy Diamante,
Vittal Mallya Road,
Bangalore-560 001.



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MADHU.B.S., M.Tech.,
 (Structural Engineering),
 BBMP Registration No.
 BCC/BL-3.6 E-3966/2014-15.

NAME:

MADHU.BS.,
 Structural Design Engineer,
 KEF Infrastructure India Pvt.Ltd.,
 No. 34, Embassy Diamante,
 Vittal Mallya Road
 Bangalore-560 001.



TRANSMITTAL

Date: 24/04/2018.

To,	From,
MS. BINDU MENON, GEMS EDUCATION, SMARTCITY, KOCHI.	MR. SARAVANA KUMAR.R. GEMS EDUCATION, GMA, SMARTCITY, KOCHI.

SL NO	DOCUMENT NO	DOCUMENT DESCRIPTION	COPIES
01		STAMP SEAL. (S.G. ACADEMICS ESTABLISHMENTS PVT. LTD. AUTHORISED SIGNATORY)	01 No.

REMARK:

Returning the seal of S.G. ACADEMICS ESTABLISHMENTS
PVT LTD. issued by Mr. Sivakumar.

Kindly acknowledgement the receipt and return the enclosed copy

Thanking You,



GEMS Modern Academy,
SITE OFFICE, KOCHI.

For
Received :



Name: Abdul Salam
Date: 24-04-18

GEO STRUCTURALS (P) Ltd
GEO TECHNICAL & STRUCTURAL CONSULTANT
41/1004, VADAKUMTHALA BUILDING, PULLEPPAD
COCHIN - 682 018. PHONE: 0484-2367824, 236832
FAX: 0484-2371643, e-mail: geostructurals@gmail.com
CIN:U74210KL2001PTCO14716

TO WHOMSOEVER IT MAY CONCERN

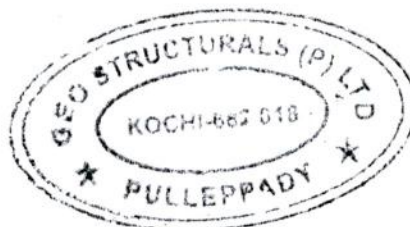
This is to certify that the structural design of Proposed Office Building for Mariapps (B+G+7 floors) for Mariapps Solutions India Private Limited, 401, 4th Floor Olympia, Hiranandani Gardens Powai, Mumbai, Mumbai City, Maharashtra, India, 400076, on Survey No: A2-9 of Kakkanad Village, Kanayannur Taluk, Ernakulam District having an extent of 5871.34 Sqm is done as per provisions of the relevant Indian Standard Codes and the design is structurally stable. The structure is designed for Dead load, Live load, Wind load and Earth quake loads taken as per IS:875 Part I to IV & IS:1893. Design is based on the Architectural drawings prepared by M/s Encemlee Architecture, Planning and Interior Design, Indiranagar, Bangalore -38.

For GEO STRUCTURALS (P) Ltd.,

Cochin
16.06.2018



Dr. ANIL JOSEPH M.E. (S.M.F.E.), M.I.G.S., PhD
DIRECTOR




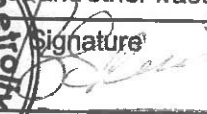
DR. ANIL JOSEPH, M.E. (S.M.F.E.), M.I.G.S., F
STRUCTURAL ENGINEER
L2-3532/07/2811/EA
GEO STRUCTURALS (P) LTD.
PULLEPPADY
KOCHI-682018





TOP SOIL PRESERVATION

MANIFEST FOR HAZARDOUS AND OTHER WASTE

1. Sender's Name and mailing address (including Phone No. and e-mail)	Smart City Kochi Infopark, Kattikanal.			
2. Sender's authorisation No.				
3. Manifest Document No.				
4. Transporter's name and address (including Phone No. and e-mail)	Petroliv Petroleumms. Kasaragod.			
5. Type of vehicle	(Truck/Tanker/Special Vehicle)			
6. Transporter's registration No.				
7. Vehicle registration No.	KL 11 AH 8035			
8. Receiver's name and mailing address (including Phone No. and e-mail)	PETROLIV PETROLEUM (ANGELS GROUP) 8XII/33, Bangalam, Nileshwar P.O. Kasaragod (Dist), Kerala Pin: 671314, Ph: 9995000704, anglsgp@gmail.com			
9. Receiver's authorisation No.	Registration No: PCB/HO/KSGD/HWM/REG/01/2016			
10. Waste description :				
11. Total quantity :	420 Litres m ³ or MT			
No. of Containers:	2 Nos.			
12. Physical form	solid/semi - solid/sludge/Oily/Tarry/slurry/Liquid)			
13. Special handling instructions and additional information:				
14. Sender's Certificate	I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are categorised, packed, marked, and labelled, and are in all respects in proper conditions for transport by road according to applicable national government regulations.			
Name and stamp:	Signature	Month	Day	Year
		10	27	2021
15. Transporter acknowledgement of receipt of wastes				
Name and stamp:	Signature	Month	Day	Year
		10	27	2021
16. Receiver's certification for receipt of hazardous and other waste				
Name and stamp:	Signature	Month	Day	Year
		10	27	2021
Copy number with colour code	purpose			
(1)	(2)			
Copy 1 (White)	To be forwarded by the sender to the State Pollution Control Board after signing all the seven copies.			

TEST REPORT

Test Report No:20220121/R014	Date: 27-01-2022	Page 1 of 1
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CUSTOMER DETAILS	
Customer Name & Address	M/s Smart City (Kochi) Infrastructure (P) Ltd Kakkanad, Ernakulam District.
Customer Reference	Test Request dt 21-01-2022

DETAILS OF MONITORING			
Product Category	Atmospheric Pollution	Sample Code	20220121/S014
Sample Name	Ambient Noise	Monitoring Commenced on	21-01-2022
Monitoring Location	Near Residential House of Edachira-Near North West side of the Site & Near the Project Site Boundary of Land A	Monitoring Completed on	22-01-2022
Test Method	IS 9989:1981 RA:2008	Monitored by	Lab Authorized Sampler

SAMPLING SITE DETAILS			
Plot	Land A- Block 9	Land B- Block 37	Land C- Block 9
Survey No	640-655,665,666,686,687,689,704-712,722	62,63,67-74,101,103-109	570/1part,570/2part,570/28part
Village	Kakkanad	Puthencruz	Kakkanad
Taluk	Kanayannur	Kunnathunnad	Kanayannur
District	Ernakulam	Ernakulam	Ernakulam
State	Kerala	Kerala	Kerala

MONITORING RESULTS - Leq					
TIME	RESULTS dB(A)	TIME	RESULTS dB(A)	TIME	RESULTS dB(A)
06:00	37.4	14:00	50.2	22:00	36.3
07:00	40.1	15:00	50.6	23:00	32.7
08:00	44.4	16:00	51.7	24:00	35.0
09:00	47.9	17:00	52.1	01:00	35.7
10:00	50.2	18:00	46.7	02:00	35.4
11:00	53.3	19:00	43.2	03:00	36.1
12:00	50.6	20:00	39.4	04:00	35.0
13:00	49.8	21:00	38.9	05:00	36.7

Sl. No.	PARAMETERS	UNIT	RESULT
1	Ambient Sound Level (Leq) Day Time (06:00 to 22:00)	dB(A)	48.7
2	Ambient Sound Level (Leq) Night Time (23:00 to 05:00)	dB(A)	35.4

Remarks:

End of Report


Shency Joy
Dy. TM Chemical




Laiju P. N.
Laboratory Head

Checked by:

Authorized Signatory

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Standard^S Environmental & Analytical Laboratories

Approval & Recognition: "A" Grade Laboratory approved by Kerala State Pollution Control Board.

K.J. Tower, Pathalam, Udyogamandal P.O., Ernakulam-683 501, Tel. 0484-2546660, 93 87 27 24 02, 90 74 34 14 43

Web: www.sealabs.in, E-mail: seaalab@gmail.com

TEST REPORT

Test Report No:20220121/R013	Date: 27-01-2022	Page 1 of 1
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CUSTOMER DETAILS	
Customer Name & Address	M/s Smart City (Kochi) Infrastructure (P) Ltd Kakkanad, Ernakulam District.
Customer Reference	Test Request dt 21-01-2022

DETAILS OF MONITORING			
Product Category	Atmospheric Pollution	Sample Code	20220121/S013
Sample Name	Ambient Noise	Monitoring Commenced on	21-01-2022
Monitoring Location	Near the Pavilion Building-Smart City Office with the Project site-Centre of the Site & Near the road in Land B	Monitoring Completed on	22-01-2022
Test Method	IS 9989:1981 RA:2008	Monitored by	Lab Authorized Sampler

SAMPLING SITE DETAILS			
Plot	Land A- Block 9	Land B- Block 37	Land C- Block 9
Survey No	640-655,665,666,686,687,689,704-712,722	62,63,67-74,101,103-109	570/1part,570/2part,570/28part
Village	Kakkanad	Puthencruz	Kakkanad
Taluk	Kanayannur	Kunnathunnad	Kanayannur
District	Ernakulam	Ernakulam	Ernakulam
State	Kerala	Kerala	Kerala

MONITORING RESULTS - Leq					
TIME	RESULTS dB(A)	TIME	RESULTS dB(A)	TIME	RESULTS dB(A)
06:00	37.2	14:00	49.8	22:00	36.0
07:00	39.8	15:00	50.2	23:00	32.4
08:00	44.0	16:00	51.3	24:00	34.7
09:00	47.5	17:00	51.7	01:00	35.4
10:00	49.8	18:00	46.3	02:00	35.1
11:00	52.9	19:00	42.9	03:00	35.7
12:00	50.2	20:00	39.1	04:00	34.7
13:00	49.4	21:00	38.6	05:00	36.4

Sl. No.	PARAMETERS	UNIT	RESULT
1	Ambient Sound Level (Leq) Day Time (06:00 to 22:00)	dB(A)	48.3
2	Ambient Sound Level (Leq) Night Time (23:00 to 05:00)	dB(A)	35.1


Remarks:

End of Report


Shency Joy
Dy. TM Chemical

Checked by:




Lalju P. N.
Laboratory Head
Authorized Signatory

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Web: www.sealabs.in, E-mail: seaalab@gmail.com

TEST REPORT

Test Report No:20220121/R012	Date: 27-01-2022	Page 1 of 1
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CUSTOMER DETAILS	
Customer Name & Address	M/s Smart City (Kochi) Infrastructure (P) Ltd Kakkanad, Ernakulam District.
Customer Reference	Test Request dt21-01-2022

DETAILS OF MONITORING			
Product Category	Atmospheric Pollution	Sample Code	20220121/S012
Sample Name	Ambient Noise	Monitoring Commenced on	21-01-2022
Monitoring Location	Near KINFRA Park-Near Devikulam Distilleries Ltd-Noryh West side of the Site-Land C	Monitoring Completed on	22-01-2022
Test Method	IS 9989:1981 RA:2008	Monitored by	Lab Authorized Sampler

SAMPLING SITE DETAILS			
Plot	Land A- Block 9	Land B- Block 37	Land C- Block 9
Survey No	640-655,665,666,686,687,689,704-712,722	62,63,67-74,101,103-109	570/1part,570/2part,570/28part
Village	Kakkanad	Puthencruz	Kakkanad
Taluk	Kanayannur	Kunnathunnad	Kanayannur
District	Ernakulam	Ernakulam	Ernakulam
State	Kerala	Kerala	Kerala

MONITORING RESULTS - Leq					
TIME	RESULTS dB(A)	TIME	RESULTS dB(A)	TIME	RESULTS dB(A)
06:00	36.7	14:00	49.1	22:00	35.5
07:00	39.3	15:00	49.5	23:00	31.6
08:00	43.5	16:00	50.7	24:00	33.9
09:00	46.9	17:00	51.0	01:00	34.6
10:00	49.1	18:00	45.7	02:00	34.2
11:00	52.2	19:00	42.3	03:00	34.9
12:00	49.5	20:00	38.6	04:00	33.9
13:00	48.8	21:00	38.1	05:00	35.5

Sl. No.	PARAMETERS	UNIT	RESULT
1	Ambient Sound Level (Leq) Day Time (06:00 to 22:00)	dB(A)	47.6
2	Ambient Sound Level (Leq) Night Time (23:00 to 05:00)	dB(A)	34.4

Remarks:

End of Report


Shency Joy
Dy. TM Chemical

Checked by:




Laiju P. N.
Laboratory Head

Authorized Signatory

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TEST REPORT

Test Report No:20220121/R011	Date: 27-01-2022	Page 1 of 1
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CUSTOMER DETAILS	
Customer Name & Address	M/s Smart City (Kochi) Infrastructure (P) Ltd Kakkanad, Ernakulam District.
Customer Reference	Test Request dt 21-01-2022

DETAILS OF MONITORING			
Product Category	Atmospheric Pollution	Sample Code	20220121/S011
Sample Name	Ambient Noise	Monitoring Commenced on	21-01-2022
Monitoring Location	Near Indian Public School - Edachira-North East Direction of the Site & Near the Project Site boundary of Land A(Adjacent plot of Skyline Building)	Monitoring Completed on	22-01-2022
Test Method	IS 9989:1981 RA:2008	Monitored by	Lab Authorized Sampler

SAMPLING SITE DETAILS			
Plot	Land A- Block 9	Land B- Block 37	Land C- Block 9
Survey No	640-655,665,666,686,687,689,704-712,722	62,63,67-74,101,103-109	570/1part,570/2part,570/28part
Village	Kakkanad	Puthencruz	Kakkanad
Taluk	Kanayannur	Kunnathunnad	Kanayannur
District	Ernakulam	Ernakulam	Ernakulam
State	Kerala	Kerala	Kerala

MONITORING RESULTS - Leq					
TIME	RESULTS dB(A)	TIME	RESULTS dB(A)	TIME	RESULTS dB(A)
06:00	36.0	14:00	48.2	22:00	34.9
07:00	38.6	15:00	48.6	23:00	30.9
08:00	42.7	16:00	49.7	24:00	33.2
09:00	46.0	17:00	50.1	01:00	33.8
10:00	48.2	18:00	44.9	02:00	33.5
11:00	51.2	19:00	41.6	03:00	34.1
12:00	48.6	20:00	37.8	04:00	33.2
13:00	47.9	21:00	37.4	05:00	34.8

Sl. No.	PARAMETERS	UNIT	RESULT
1	Ambient Sound Level (Leq) Day Time (06:00 to 22:00)	dB(A)	46.7
2	Ambient Sound Level (Leq) Night Time (23:00 to 05:00)	dB(A)	33.7


Remarks:

End of Report


Shency Joy
Dy. TM Chemical

Checked by:




Laiju P. N.
Laboratory Head
Authorized Signatory

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K.J. Tower, Pathalam, Udyogamandal P.O., Ernakulam-683 501, Tel. 0484-2546660, 93 87 27 24 02, 90 74 34 14 43
Web: www.sealabs.in, E-mail: seaalab@gmail.com

TEST REPORT

Test Report No:20220121/R010	Date: 27-01-2022	Page 1 of 1
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CUSTOMER DETAILS	
Customer Name & Address	M/s Smart City (Kochi) Infrastructure (P) Ltd Kakkanad, Ernakulam District.
Customer Reference	Test Request dt 21-01-2022

DETAILS OF MONITORING			
Product Category	Atmospheric Pollution	Sample Code	20220121/S010
Sample Name	Ambient Noise	Monitoring Commenced on	21-01-2022
Monitoring Location	Near BDPP-Near South-East side of the Site-Land B	Monitoring Completed on	22-01-2022
Test Method	IS 9989:1981 RA:2008	Monitored by	Lab Authorized Sampler

SAMPLING SITE DETAILS			
Plot	Land A- Block 9	Land B- Block 37	Land C- Block 9
Survey No	640-655,665,666,686,687,689,704-712,722	62,63,67-74,101,103-109	570/1part,570/2part,570/28part
Village	Kakkanad	Puthencruz	Kakkanad
Taluk	Kanayannur	Kunnathunnad	Kanayannur
District	Ernakulam	Ernakulam	Ernakulam
State	Kerala	Kerala	Kerala

MONITORING RESULTS - Leq					
TIME	RESULTS dB(A)	TIME	RESULTS dB(A)	TIME	RESULTS dB(A)
06:00	35.7	14:00	47.8	22:00	34.6
07:00	38.3	15:00	48.2	23:00	30.7
08:00	42.3	16:00	49.3	24:00	33.0
09:00	45.6	17:00	49.7	01:00	33.6
10:00	47.8	18:00	44.5	02:00	33.3
11:00	50.8	19:00	41.2	03:00	33.9
12:00	48.2	20:00	37.5	04:00	33.0
13:00	47.5	21:00	37.1	05:00	34.6

Sl. No.	PARAMETERS	UNIT	RESULT
1	Ambient Sound Level (Leq) Day Time (06:00 to 22:00)	dB(A)	46.3
2	Ambient Sound Level (Leq) Night Time (23:00 to 05:00)	dB(A)	33.5

Remarks:

End of Report


Shency Joy
Dy. TM Chemical




Laiju P. N.
Laboratory Head

Checked by:

Authorized Signatory

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K.J. Tower, Pathalam, Udyogamandal P.O., Ernakulam-683 501, Tel. 0484-2546660, 93 87 27 24 02, 90 74 34 14 43

Web: www.sealabs.in, E-mail: sealab@gmail.com

TEST REPORT

Test Report No:20220121/R047	Date: 27-01-2022	Page 1 of 1
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CUSTOMER DETAILS	
Customer Name & Address	M/s Smart City (Kochi) Infrastructure (P) Ltd Kakkanad, Ernakulam District.
Customer Reference	Test Request dt:21-01-2022

DETAILS OF MONITORING			
Product Category	Atmospheric Pollution	Sample Code	20220121/S047
Sample Name	Ambient Noise	Monitoring Commenced on	21-01-2022
Monitoring Location	Near Butterfly Park in Land A (Sound East Side of Land -A, Near Kadambayar River)	Monitoring Completed on	22-01-2022
Test Method	IS 9989:1981 RA:2008	Monitored by	Lab Authorized Sampler

SAMPLING SITE DETAILS			
Plot	Land A- Block 9	Land B- Block 37	Land C- Block 9
Survey No	640-655,665,666,686, 687,689,704-712,722	62,63,67-74,101,103-109	570/1part,570/2part, 570/28part
Village	Kakkanad	Puthencruz	Kakkanad
Taluk	Kanayannur	Kunnathunnad	Kanayannur
District	Ernakulam	Ernakulam	Ernakulam
State	Kerala	Kerala	Kerala

MONITORING RESULTS - Leq					
TIME	RESULTS dB(A)	TIME	RESULTS dB(A)	TIME	RESULTS dB(A)
06:00	37.0	14:00	49.5	22:00	35.8
07:00	39.6	15:00	49.9	23:00	32.9
08:00	43.8	16:00	51.1	24:00	35.3
09:00	47.2	17:00	51.4	01:00	35.9
10:00	49.5	18:00	46.1	02:00	35.6
11:00	52.6	19:00	42.7	03:00	36.3
12:00	49.9	20:00	38.9	04:00	35.3
13:00	49.1	21:00	38.4	05:00	37.0

Sl. No.	PARAMETERS	UNIT	RESULT
1	Ambient Sound Level (Leq) Day Time (06:00 to 22:00)	dB(A)	48.0
2	Ambient Sound Level (Leq) Night Time (23:00 to 05:00)	dB(A)	35.6

Remarks:

End of Report


Shency Joy
Dy. TM Chemical

Checked by:




Laiju P. N.
Laboratory Head
Authorized Signatory

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TEST REPORT

Test Report No:20220121/R001	Date: 27-01-2022	Page 1 of 1
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CUSTOMER DETAILS	
Customer Name & Address	M/s Smart City (Kochi) Infrastructure (P) Ltd Kakkanad, Ernakulam District.
Customer Reference	Test Request dt 21-01-2022

SAMPLE DETAILS			
Product Category	Atmospheric Pollution	Sample Code	20220121/S001
Sample Name	Ambient Air	Sample Received on	22-01-2022
Sample Conditions at Receipt	Fit for Analysis	Test Commenced on	22-01-2022
Sampled by	Lab Authorized Sampler	Test Completed on	27-01-2022

DETAILS OF SAMPLING			
Sampling Location	Near BDPP, Near South-Eastside of the Site-Land B	Date of Sampling	21-01-2022
Sampling Procedure	SEAAL/ENL/GEN/SOP/02	Humidity	72%

SAMPLING SITE DETAILS			
Plot	Land A- Block 9	Land B- Block 37	Land C- Block 9
Survey No	640-655,665,666,686,687,689,704-712,722	62,63,67-74,101,103-109	570/1part,570/2part,570/28part
Village	Kakkanad	Puthencruz	Kakkanad
Taluk	Kanayannur	Kunnathunnad	Kanayannur
District	Ernakulam	Ernakulam	Ernakulam
State	Kerala	Kerala	Kerala

TEST RESULTS- CHEMICAL PARAMETERS					
Sl. No	PARAMETERS	TEST METHOD	UNIT	RESULT	NAAQ STANDARDS
1	Particulate matter (PM ₁₀)	IS 5182 (Part 23):2006 RA 2017	µg/m ³	47.6	100 (Max)
2	Particulate matter (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.9	60.0 (Max)
3	Sulphur dioxide (SO ₂)	IS 5182 (Part 2):2001 RA 2017	µg/m ³	<2.00	80.0 (Max)
4	Nitrogen dioxide (NO ₂)	IS 5182 (Part 6):2006 RA 2017	µg/m ³	<2.00	80.0 (Max)


Remarks:

End of Report


Shency Joy
Dy. TM Chemical

Checked by:




Laiju P. N.
Laboratory Head
Authorized Signatory

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TEST REPORT

Test Report No:20220121/R003	Date: 27-01-2022	Page 1 of 1
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CUSTOMER DETAILS	
Customer Name & Address	M/s Smart City (Kochi) Infrastructure (P) Ltd Kakkanad, Ernakulam District.
Customer Reference	Test Request dt 21-01-2022

SAMPLE DETAILS			
Product Category	Atmospheric Pollution	Sample Code	20220121/S003
Sample Name	Ambient Air	Sample Received on	22-01-2022
Sample Conditions at Receipt	Fit for Analysis	Test Commenced on	22-01-2022
Sampled by	Lab Authorized Sampler	Test Completed on	27-01-2022

DETAILS OF SAMPLING			
Sampling Location	Near KINFRA Park (Near Devikulam Distilleries Ltd)-NW side of the Site-Land C	Date of Sampling	21-01-2022
Sampling Procedure	SEAL/ENL/GEN/SOP/02	Humidity	72%

SAMPLING SITE DETAILS			
Plot	Land A- Block 9	Land B- Block 37	Land C- Block 9
Survey No	640-655,665,666,686,687,689,704-712,722	62,63,67-74,101,103-109	570/1part,570/2part,570/28part
Village	Kakkanad	Puthencruz	Kakkanad
Taluk	Kanayannur	Kunnathunnad	Kanayannur
District	Ernakulam	Ernakulam	Ernakulam
State	Kerala	Kerala	Kerala

TEST RESULTS- CHEMICAL PARAMETERS					
Sl. No	PARAMETERS	TEST METHOD	UNIT	RESULT	NAAQ STANDARDS
1	Particulate matter (PM ₁₀)	IS 5182 (Part 23):2006 RA 2017	µg/m ³	51.9	100 (Max)
2	Particulate matter (PM _{2.5})	IS 5182 (Part 23):2006 RA 2017	µg/m ³	24.3	60.0 (Max)
3	Sulphur dioxide (SO ₂)	IS 5182 (Part 2):2001 RA 2017	µg/m ³	<2.00	80.0 (Max)
4	Nitrogen dioxide (NO ₂)	IS 5182 (Part 6):2006 RA 2017	µg/m ³	2.67	80.0 (Max)

Remarks:

End of Report


Shency Joy
Dy. TM Chemical

Checked by:




Laiju P. N.
Laboratory Head

Authorized Signatory

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Web: www.sealabs.in, E-mail: seaalab@gmail.com

TEST REPORT

Test Report No:20220121/R002	Date: 27-01-2022	Page 1 of 1
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CUSTOMER DETAILS	
Customer Name & Address	M/s Smart City (Kochi) Infrastructure (P) Ltd Kakkanad, Ernakulam District.
Customer Reference	Test Request dt 21-01-2022

SAMPLE DETAILS			
Product Category	Atmospheric Pollution	Sample Code	20220121/S002
Sample Name	Ambient Air	Sample Received on	22-01-2022
Sample Conditions at Receipt	Fit for Analysis	Test Commenced on	22-01-2022
Sampled by	Lab Authorized Sampler	Test Completed on	27-01-2022

DETAILS OF SAMPLING			
Sampling Location	Near Indian Public School - Edachira-North East Direction of the Site & Near the Project Site boundary of Land A(Adjacent plot of Skyline Building)	Date of Sampling	21-01-2022
Sampling Procedure	SEAL/ENL/GEN/SOP/02	Humidity	71%

SAMPLING SITE DETAILS			
Plot	Land A- Block 9	Land B- Block 37	Land C- Block 9
Survey No	640-655,665,666,686,687,689,704-712,722	62,63,67-74,101,103-109	570/1part,570/2part,570/28part
Village	Kakkanad	Puthencruz	Kakkanad
Taluk	Kanayannur	Kunnathunnad	Kanayannur
District	Ernakulam	Ernakulam	Ernakulam
State	Kerala	Kerala	Kerala

TEST RESULTS- CHEMICAL PARAMETERS					
Sl. No	PARAMETERS	TEST METHOD	UNIT	RESULT	NAAQ STANDARDS
1	Particulate matter (PM ₁₀)	IS 5182 (Part 23):2006 RA 2017	µg/m ³	44.3	100 (Max)
2	Particulate matter (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	19.6	60.0 (Max)
3	Sulphur dioxide (SO ₂)	IS 5182 (Part 2):2001 RA 2017	µg/m ³	<2.00	80.0 (Max)
4	Nitrogen dioxide (NO ₂)	IS 5182 (Part 6):2006 RA 2017	µg/m ³	<2.00	80.0 (Max)


Remarks:

End of Report


Shency Joy
Dy. TM Chemical

Checked by:




Lajju P. N.
Laboratory Head
Authorized Signatory

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Standard^S Environmental & Analytical Laboratories

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Web: www.sealabs.in, E-mail: seaalab@gmail.com

TEST REPORT

Test Report No:20220121/R004	Date: 27-01-2022	Page 1 of 1
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CUSTOMER DETAILS	
Customer Name & Address	M/s Smart City (Kochi) Infrastructure (P) Ltd Kakkanad, Ernakulam District.
Customer Reference	Test Request dt 21-01-2022

SAMPLE DETAILS			
Product Category	Atmospheric Pollution	Sample Code	20220121/S004
Sample Name	Ambient Air	Sample Received on	22-01-2022
Sample Conditions at Receipt	Fit for Analysis	Test Commenced on	22-01-2022
Sampled by	Lab Authorized Sampler	Test Completed on	27-01-2022

DETAILS OF SAMPLING			
Sampling Location	Near Butterfly Park in Land A- South East side of Land-A- Near Kadambayar River	Date of Sampling	21-01-2022
Sampling Procedure	SEAL/ENL/GEN/SOP/02	Humidity	72%

SAMPLING SITE DETAILS			
Plot	Land A- Block 9	Land B- Block 37	Land C- Block 9
Survey No	640-655,665,666,686, 687,689,704-712,722	62,63,67- 74,101,103-109	570/1part,570/2part, 570/28part
Village	Kakkanad	Puthencruz	Kakkanad
Taluk	Kanayannur	Kunnathunnad	Kanayannur
District	Ernakulam	Ernakulam	Ernakulam
State	Kerala	Kerala	Kerala

TEST RESULTS- CHEMICAL PARAMETERS					
Sl. No	PARAMETERS	TEST METHOD	UNIT	RESULT	NAAQ STANDARDS
1	Particulate matter (PM ₁₀)	IS 5182 (Part 23):2006 RA 2017	µg/m ³	56.1	100 (Max)
2	Particulate matter (PM _{2.5})	IS 5182 (Part 24):2006 RA 2017	µg/m ³	22.7	60.0 (Max)
3	Sulphur dioxide (SO ₂)	IS 5182 (Part 2):2001 RA 2017	µg/m ³	2.38	80.0 (Max)
4	Nitrogen dioxide (NO ₂)	IS 5182 (Part 6):2006 RA 2017	µg/m ³	3.16	80.0 (Max)

Remarks:

End of Report


Shency Joy
Dy. TM Chemical

Checked by:




Laiju P.N.
Laboratory Head

Authorized Signatory

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TEST REPORT

Test Report No:20220121/R005	Date: 27-01-2022	Page 1 of 1
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CUSTOMER DETAILS	
Customer Name & Address	M/s Smart City (Kochi) Infrastructure (P) Ltd Kakkanad, Ernakulam District.
Customer Reference	Test Request dt 21-01-2022

SAMPLE DETAILS			
Product Category	Atmospheric Pollution	Sample Code	20220121/S005
Sample Name	Ambient Air	Sample Received on	22-01-2022
Sample Conditions at Receipt	Fit for Analysis	Test Commenced on	22-01-2022
Sampled by	Lab Authorized Sampler	Test Completed on	27-01-2022

DETAILS OF SAMPLING			
Sampling Location	Near Residential House of Edachira-Near North West side of the Site & Near the Project Site Boundary of Land A	Date of Sampling	21-01-2022
Sampling Procedure	SEAAL/ENL/GEN/SOP/02	Humidity	72%

SAMPLING SITE DETAILS			
Plot	Land A- Block 9	Land B- Block 37	Land C- Block 9
Survey No	640-655,665,666,686,687,689,704-712,722	62,63,67-74,101,103-109	570/1part,570/2part,570/28part
Village	Kakkanad	Puthencruz	Kakkanad
Taluk	Kanayannur	Kunnathunnad	Kanayannur
District	Ernakulam	Ernakulam	Ernakulam
State	Kerala	Kerala	Kerala

TEST RESULTS- CHEMICAL PARAMETERS					
Sl. No	PARAMETERS	TEST METHOD	UNIT	RESULT	NAAQ STANDARDS
1	Particulate matter (PM ₁₀)	IS 5182 (Part 23):2006 RA 2017	µg/m ³	50.3	100 (Max)
2	Particulate matter (PM _{2.5})	IS 5182 (Part 23):2006 RA 2017	µg/m ³	18.7	60.0 (Max)
3	Sulphur dioxide (SO ₂)	IS 5182 (Part 2):2001 RA 2017	µg/m ³	<2.00	80.0 (Max)
4	Nitrogen dioxide (NO ₂)	IS 5182 (Part 6):2006 RA 2017	µg/m ³	2.73	80.0 (Max)

Remarks:

End of Report



Shency Joy
Dy. TM Chemical

Checked by:





Laiju P. N.
Laboratory Head

Authorized Signatory

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TEST REPORT

Test Report No:20220121/R006	Date: 27-01-2022	Page 1 of 1
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CUSTOMER DETAILS	
Customer Name & Address	M/s Smart City (Kochi) Infrastructure (P) Ltd Kakkanad, Ernakulam District.
Customer Reference	Test Request dt 21-01-2022

SAMPLE DETAILS			
Product Category	Atmospheric Pollution	Sample Code	20220121/S006
Sample Name	Ambient Air	Sample Received on	22-01-2022
Sample Conditions at Receipt	Fit for Analysis	Test Commenced on	22-01-2022
Sampled by	Lab Authorized Sampler	Test Completed on	27-01-2022

DETAILS OF SAMPLING			
Sampling Location	Near the Pavilion Building- Smart City Office with the Project site-Centre of the Site & Near the Road in Land B	Date of Sampling	21-01-2022
Sampling Procedure	SEAAL/ENL/GEN/SOP/02	Humidity	72%

SAMPLING SITE DETAILS			
Plot	Land A- Block 9	Land B- Block 37	Land C- Block 9
Survey No	640-655,665,666,686, 687,689,704-712,722	62,63,67- 74,101,103-109	570/1part,570/2part, 570/28part
Village	Kakkanad	Puthencruz	Kakkanad
Taluk	Kanayannur	Kunnathunnad	Kanayannur
District	Ernakulam	Ernakulam	Ernakulam
State	Kerala	Kerala	Kerala


TEST RESULTS- CHEMICAL PARAMETERS					
Sl. No	PARAMETERS	TEST METHOD	UNIT	RESULT	NAAQ STANDARDS
1	Particulate matter (PM ₁₀)	IS 5182 (Part 23):2006 RA 2017	µg/m ³	55.3	100 (Max)
2	Particulate matter (PM _{2.5})	IS 5182 (Part 24):2006 RA 2017	µg/m ³	26.3	60.0 (Max)
3	Sulphur dioxide (SO ₂)	IS 5182 (Part 2):2001 RA 2017	µg/m ³	2.22	80.0 (Max)
4	Nitrogen dioxide (NO ₂)	IS 5182 (Part 6):2006 RA 2017	µg/m ³	3.27	80.0 (Max)

Remarks:

End of Report


Shency Joy
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TEST REPORT

Test Report No:20220121/R017	Date: 27-01-2022	Page 1 of 2
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CUSTOMER DETAILS

Customer Name & Address	M/s Smart City (Kochi) Infrastructure (P) Ltd Kakkanad, Ernakulam District.
Customer Reference	Test Request dt 21-01-2022

SAMPLE DETAILS

Product Category	Water	Sample Code	20220121/S017
Sample Name	KINFRA Water	Sample Received on	22-01-2022
Sample Conditions at Receipt	Fit for Analysis	Temperature @ Receipt	4 °C
Sample Quantity & Packing	1 Litre & 100 ml Plastic Bottle	Test Commenced on	22-01-2022
Sampled by	Lab Authorized Sampler	Test Completed on	27-01-2022
Information Provided by Customer	---		

DETAILS OF SAMPLING

Sample Source	Near Pump Room	Date of Sampling	21-01-2022
Sampling Procedure	SEAAL/ENL/GEN/SOP/01& SEAAL/MBL/SOP/06	Sample Temperature	28 °C

SAMPLING SITE DETAILS

Plot	Land A- Block 9	Land B- Block 37	Land C- Block 9
Survey No	640-655,665,666,686,687,689,704-712,722	62,63,67-74,101,103-109	570/1part,570/2part,570/28part
Village	Kakkanad	Puthencruz	Kakkanad
Taluk	Kanayannur	Kunnathunnad	Kanayannur
District	Ernakulam	Ernakulam	Ernakulam
State	Kerala	Kerala	Kerala

TEST RESULTS - CHEMICAL PARAMETERS

Sl. No.	PARAMETERS	TEST METHOD	UNIT	RESULT	Requirement as per Acceptable Limit of IS 10500 : 2012
1	Colour	IS 3025 (Part 4):1983 RA 2017	Hazen	1	Max 5
2	Odour	IS 3025 (Part 5):2018	---	Agreeable	Agreeable
3	Turbidity	IS 3025 (Part 10):1984 RA 2017	NTU	0.8	Max 1


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TEST REPORT

Test Report No:20220121/R015	Date: 27-01-2022	Page 2 of 2
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TEST RESULTS - CHEMICAL PARAMETERS					
Sl. No.	PARAMETERS	TEST METHOD	UNIT	RESULT	Requirement as per Acceptable Limit of IS 10500 : 2012
4	pH	IS 3025 (Part 11):1983 RA 2017	---	6.57	6.50 - 8.50
5	Total Dissolved Solids	IS 3025 (Part 16):1984 RA 2017	mg/L	87.6	Max 500
6	Total Hardness as CaCO ₃	IS 3025 (Part 21):2009 RA 2019	mg/L	43.3	Max 200
7	Calcium as Ca	IS 3025 (Part 40):1991 RA 2019	mg/L	13.7	Max 75
8	Magnesium as Mg	IS 3025 (Part 46):1994 RA 2019	mg/L	2.19	Max 30
9	Chloride as Cl	IS 3025 (Part 32):1988 RA 2019	mg/L	19.5	Max 250
10	Iron as Fe	IS 3025 (Part 53):2003 RA 2019	mg/L	2.66	Max 1

TEST RESULTS- BIOLOGICAL PARAMETERS					
Sl.No.	PARAMETERS	TEST METHOD	UNIT	RESULT	REQUIREMENT AS PER ACCEPTABLE LIMIT OF IS 10500 : 2012
1	Total Coliform Bacteria	IS 15185 : 2016	---	Present/100ml	Absent/100 ml
2	E coli	IS 15185 : 2016	---	Present/100ml	Absent/100 ml

Remarks:

End of Report


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TEST REPORT

Test Report No:20220121/R015	Date: 27-01-2022	Page 1 of 2
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CUSTOMER DETAILS	
Customer Name & Address	M/s Smart City (Kochi) Infrastructure (P) Ltd Kakkanad, Ernakulam District.
Customer Reference	Test Request dt 21-01-2022

SAMPLE DETAILS			
Product Category	Water	Sample Code	20220121/S015
Sample Name	Surface Water	Sample Received on	22-01-2022
Sample Conditions at Receipt	Fit for Analysis	Temperature @ Receipt	4 °C
Sample Quantity & Packing	1 Litre & 100 ml Plastic Bottle	Test Commenced on	22-01-2022
Sampled by	Lab Authorized Sampler	Test Completed on	27-01-2022
Information Provided by Customer	---		

DETAILS OF SAMPLING			
Sample Source	Edachira Canal	Date of Sampling	21-01-2022
Sampling Procedure	SEAAL/ENL/GEN/SOP/01& SEAAL/MBL/SOP/06	Sample Temperature	27 °C

SAMPLING SITE DETAILS			
Plot	Land A- Block 9	Land B- Block 37	Land C- Block 9
Survey No	640-655,665,666,686, 687,689,704-712,722	62,63,67- 74,101,103-109	570/1part,570/2part, 570/28part
Village	Kakkanad	Puthencruz	Kakkanad
Taluk	Kanayannur	Kunnathunnad	Kanayannur
District	Ernakulam	Ernakulam	Ernakulam
State	Kerala	Kerala	Kerala

TEST RESULTS - CHEMICAL PARAMETERS					
Sl. No.	PARAMETERS	TEST METHOD	UNIT	RESULT	Requirement as per Acceptable Limit of IS 10500 : 2012
1	Colour	IS 3025 (Part 4):1983 RA 2017	Hazen	5	Max 5
2	Odour	IS 3025 (Part 5):2018	---	Agreeable	Agreeable
3	Turbidity	IS 3025 (Part 10):1984 RA 2017	NTU	5.1	Max 1



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TEST REPORT

Test Report No:20220121/R017	Date: 27-01-2022	Page 2 of 2
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TEST RESULTS - CHEMICAL PARAMETERS					
Sl. No.	PARAMETERS	TEST METHOD	UNIT	RESULT	Requirement as per Acceptable Limit of IS 10500 : 2012
4	pH	IS 3025 (Part 11):1983 RA 2017	---	7.35	6.50 - 8.50
5	Total Dissolved Solids	IS 3025 (Part 16):1984 RA 2017	mg/L	121	Max 500
6	Total Hardness as CaCO ₃	IS 3025 (Part 21):2009 RA 2019	mg/L	52.6	Max 200
7	Calcium as Ca	IS 3025 (Part 40):1991 RA 2019	mg/L	15.5	Max 75
8	Magnesium as Mg	IS 3025 (Part 46):1994 RA 2019	mg/L	3.33	Max 30
9	Chloride as Cl	IS 3025 (Part 32):1988 RA 2019	mg/L	36.1	Max 250
10	Iron as Fe	IS 3025 (Part 53):2003 RA 2019	mg/L	0.44	Max 1

TEST RESULTS- BIOLOGICAL PARAMETERS					
Sl.No.	PARAMETERS	TEST METHOD	UNIT	RESULT	REQUIREMENT AS PER ACCEPTABLE LIMIT OF IS 10500 : 2012
1	Total Coliform Bacteria	IS 15185 : 2016	---	Present/100ml	Absent/100 ml
2	E coli	IS 15185 : 2016	---	Absent/100ml	Absent/100 ml


Remarks:

End of Report


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TEST REPORT

Test Report No:20220121/R016	Date: 27-01-2022	Page 1 of 2
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CUSTOMER DETAILS	
Customer Name & Address	M/s Smart City (Kochi) Infrastructure (P) Ltd Kakkanad, Ernakulam District.
Customer Reference	Test Request dt 21-01-2022

SAMPLE DETAILS			
Product Category	Water	Sample Code	20220121/S016
Sample Name	Surface Water	Sample Received on	22-01-2022
Sample Conditions at Receipt	Fit for Analysis	Temperature @ Receipt	4 °C
Sample Quantity & Packing	1 Litre & 100 ml Plastic Bottle	Test Commenced on	22-01-2022
Sampled by	Lab Authorized Sampler	Test Completed on	27-01-2022
Information Provided by Customer	---		

DETAILS OF SAMPLING			
Sample Source	Kadambrayar River	Date of Sampling	21-01-2022
Sampling Procedure	SEAAL/ENL/GEN/SOP/01& SEAAL/MBL/SOP/06	Sample Temperature	28 °C


SAMPLING SITE DETAILS			
Plot	Land A- Block 9	Land B- Block 37	Land C- Block 9
Survey No	640-655,665,666,686,687,689,704-712,722	62,63,67-74,101,103-109	570/1part,570/2part,570/28part
Village	Kakkanad	Puthencruz	Kakkanad
Taluk	Kanayannur	Kunnathunnad	Kanayannur
District	Ernakulam	Ernakulam	Ernakulam
State	Kerala	Kerala	Kerala

TEST RESULTS - CHEMICAL PARAMETERS					
Sl. No.	PARAMETERS	TEST METHOD	UNIT	RESULT	Requirement as per Acceptable Limit of IS 10500 : 2012
1	Colour	IS 3025 (Part 4):1983 RA 2017	Hazen	5	Max 5
2	Odour	IS 3025 (Part 5):2018	---	Agreeable	Agreeable


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TEST REPORT

Test Report No:20220121/R016

Date: 27-01-2022

Page 2 of 2

TEST RESULTS - CHEMICAL PARAMETERS

Sl. No.	PARAMETERS	TEST METHOD	UNIT	RESULT	Requirement as per Acceptable Limit of IS 10500 : 2012
3	Turbidity	IS 3025 (Part 10):1984 RA 2017	NTU	4.8	Max 1
4	pH	IS 3025 (Part 11):1983 RA 2017	---	6.88	6.50 - 8.50
5	Total Dissolved Solids	IS 3025 (Part 16):1984 RA 2017	mg/L	84.1	Max 500
6	Total Hardness as CaCO ₃	IS 3025 (Part 21):2009 RA 2019	mg/L	39.4	Max 200
7	Calcium as Ca	IS 3025 (Part 40):1991 RA 2019	mg/L	11.6	Max 75
8	Magnesium as Mg	IS 3025 (Part 46):1994 RA 2019	mg/L	2.52	Max 30
9	Chloride as Cl	IS 3025 (Part 32):1988 RA 2019	mg/L	20.4	Max 250
10	Iron as Fe	IS 3025 (Part 53):2003 RA 2019	mg/L	2.31	Max 1

TEST RESULTS- BIOLOGICAL PARAMETERS

Sl.No.	PARAMETERS	TEST METHOD	UNIT	RESULT	REQUIREMENT AS PER ACCEPTABLE LIMIT OF IS 10500 : 2012
1	Total Coliform Bacteria	IS 15185 : 2016	---	Present/100ml	Absent/100 ml
2	E coli	IS 15185 : 2016	---	Absent/100ml	Absent/100 ml

Remarks:

End of Report


Shency Joy
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TEST REPORT

Test Report No:20220121/R018	Date: 27-01-2022	Page 1 of 2
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CUSTOMER DETAILS	
Customer Name & Address	M/s Smart City (Kochi) Infrastructure (P) Ltd Kakkanad, Ernakulam District.
Customer Reference	Test Request dt 21-01-2022

SAMPLE DETAILS			
Product Category	Water	Sample Code	20220121/S018
Sample Name	Surface Water	Sample Received on	22-01-2022
Sample Conditions at Receipt	Fit for Analysis	Temperature @ Receipt	4 °C
Sample Quantity & Packing	1Litre & 100 ml Plastic Bottle	Test Commenced on	22-01-2022
Sampled by	Lab Authorized Sampler	Test Completed on	27-01-2022
Information Provided by Customer	---		

DETAILS OF SAMPLING			
Sample Source	Pond Water-Near Pavilion	Date of Sampling	21-01-2022
Sampling Procedure	SEAAL/ENL/GEN/SOP/01& SEAAL/MBL/SOP/06	Sample Temperature	29 °C

SAMPLING SITE DETAILS			
Plot	Land A- Block 9	Land B- Block 37	Land C- Block 9
Survey No	640-655,665,666,686, 687,689,704-712,722	62,63,67- 74,101,103-109	570/1part,570/2part, 570/28part
Village	Kakkanad	Puthencruz	Kakkanad
Taluk	Kanayannur	Kunnathunnad	Kanayannur
District	Ernakulam	Ernakulam	Ernakulam
State	Kerala	Kerala	Kerala

TEST RESULTS - CHEMICAL PARAMETERS					
Sl. No.	PARAMETERS	TEST METHOD	UNIT	RESULT	Requirement as per Acceptable Limit of IS 10500 : 2012
1	Colour	IS 3025 (Part 4):1983 RA 2017	Hazen	1	Max 5
2	Odour	IS 3025 (Part 5):2018	---	Agreeable	Agreeable
3	Turbidity	IS 3025 (Part 10):1984 RA 2017	NTU	0.9	Max 1


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TEST REPORT

Test Report No:20220121/R018	Date: 27-01-2022	Page 2 of 2
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TEST RESULTS - CHEMICAL PARAMETERS					
Sl. No.	PARAMETERS	TEST METHOD	UNIT	RESULT	Requirement as per Acceptable Limit of IS 10500 : 2012
4	pH	IS 3025 (Part 11):1983 RA 2017	---	5.27	6.50 - 8.50
5	Total Dissolved Solids	IS 3025 (Part 16):1984 RA 2017	mg/L	76.4	Max 500
6	Total Hardness as CaCO ₃	IS 3025 (Part 21):2009 RA 2019	mg/L	14.2	Max 200
7	Calcium as Ca	IS 3025 (Part 40):1991 RA 2019	mg/L	1.90	Max 75
8	Magnesium as Mg	IS 3025 (Part 46):1994 RA 2019	mg/L	<1.00	Max 30
9	Chloride as Cl	IS 3025 (Part 32):1988 RA 2019	mg/L	13.8	Max 250
10	Iron as Fe	IS 3025 (Part 53):2003 RA 2019	mg/L	0.36	Max 1


TEST RESULTS- BIOLOGICAL PARAMETERS					
Sl.No.	PARAMETERS	TEST METHOD	UNIT	RESULT	REQUIREMENT AS PER ACCEPTABLE LIMIT OF IS 10500 : 2012
1	Total Coliform Bacteria	IS 15185 : 2016	---	Present/100ml	Absent/100 ml
2	E coli	IS 15185 : 2016	---	Absent/100ml	Absent/100 ml

Remarks:

End of Report


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Laiju P. N.
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TEST REPORT

Test Report No:20220121/R007	Date: 27-01-2022	Page 1 of 1
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CUSTOMER DETAILS	
Customer Name & Address	M/s Smart City (Kochi) Infrastructure (P) Ltd Kakkanad, Ernakulam District.
Customer Reference	Test Request dt 21-01-2022

SAMPLE DETAILS			
Product Category	Atmospheric Pollution	Sample Code	20220121/S007
Sample Name	Stack Emission	Sample Received on	22-01-2022
Sample Conditions at Receipt	Fit for Analysis	Test Commenced on	22-01-2022
Sampled by	Lab Authorized Sampler	Test Completed on	22-01-2022

DETAILS OF SAMPLING			
Stack Identity	1500 KVA DG Set 1	Stack Temperature	167°C
Stack Diameter	0.40 M	Stack Gas Velocity	5.53m/sec
Date of Sampling	21-01-2022	Stack Gas Flow Rate	1693 Nm ³ /Hr
Sampling Procedure	SEAAL/ENL/GEN/SOP/03		

TEST RESULTS - CHEMICAL PARAMETERS					
Sl. No	PARAMETERS	TEST METHOD	UNIT	RESULT	KSPCB LIMIT
01	Particulate matter	IS 11255 (Part 1):1985 RA 2014	mg/Nm ³	31.8	150

Remarks:

End of Report


Shency Joy
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Checked by:




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Laboratory Head

Authorized Signatory

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K.J. Tower, Pathalam, Udyogamandal P.O., Ernakulam-683 501, Tel. 0484-2546660, 93 87 27 24 02, 90 74 34 14 43
Web: www.sealabs.in, E-mail: seaalab@gmail.com

TEST REPORT

Test Report No:20220121/R008	Date: 27-01-2022	Page 1 of 1
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CUSTOMER DETAILS	
Customer Name & Address	M/s Smart City (Kochi) Infrastructure (P) Ltd Kakkanad, Ernakulam District.
Customer Reference	Test Request dt 21-01-2022

SAMPLE DETAILS			
Product Category	Atmospheric Pollution	Sample Code	20220121/S008
Sample Name	Stack Emission	Sample Received on	22-01-2022
Sample Conditions at Receipt	Fit for Analysis	Test Commenced on	22-01-2022
Sampled by	Lab Authorized Sampler	Test Completed on	22-01-2022

DETAILS OF SAMPLING			
Stack Identity	1500 KVA DG Set 2	Stack Temperature	145°C
Stack Diameter	0.40 M	Stack Gas Velocity	5.61m/sec
Date of Sampling	21-01-2022	Stack Gas Flow Rate	1783 Nm ³ /Hr
Sampling Procedure	SEAAL/ENL/GEN/SOP/03		

TEST RESULTS - CHEMICAL PARAMETERS					
Sl. No	PARAMETERS	TEST METHOD	UNIT	RESULT	KSPCB LIMIT
01	Particulate matter	IS 11255 (Part 1):1985 RA 2014	mg/Nm ³	27.6	150

Remarks:

End of Report



Shency Joy
Dy. TM Chemical

Checked by:




Laiju P. N.
Laboratory Head

Authorized Signatory

The results are related only to the samples submitted for analysis and this test report shall not be reproduced except in full, without the written approval of the laboratory.

Standard^S Environmental & Analytical Laboratories

Approval & Recognition: "A" Grade Laboratory approved by Kerala State Pollution Control Board.

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Web: www.sealabs.in, E-mail: seaalab@gmail.com

TEST REPORT

Test Report No:20220121/R009	Date: 27-01-2022	Page 1 of 1
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CUSTOMER DETAILS	
Customer Name & Address	M/s Smart City (Kochi) Infrastructure (P) Ltd Kakkanad, Ernakulam District.
Customer Reference	Test Request dt 21-01-2022

SAMPLE DETAILS			
Product Category	Atmospheric Pollution	Sample Code	20220121/S009
Sample Name	Stack Emission	Sample Received on	22-01-2022
Sample Conditions at Receipt	Fit for Analysis	Test Commenced on	22-01-2022
Sampled by	Lab Authorized Sampler	Test Completed on	22-01-2022

DETAILS OF SAMPLING			
Stack Identity	1500 KVA DG Set 3	Stack Temperature	155°C
Stack Diameter	0.40 M	Stack Gas Velocity	5.81m/sec
Date of Sampling	21-01-2022	Stack Gas Flow Rate	1829 Nm ³ /Hr
Sampling Procedure	SEAAL/ENL/GEN/SOP/03		

TEST RESULTS - CHEMICAL PARAMETERS					
Sl. No	PARAMETERS	TEST METHOD	UNIT	RESULT	KSPCB LIMIT
01	Particulate matter	IS 11255 (Part 1):1985 RA 2014	mg/Nm ³	28.6	150

Remarks:

End of Report


Shency Joy
Dy. TM Chemical

Checked by:



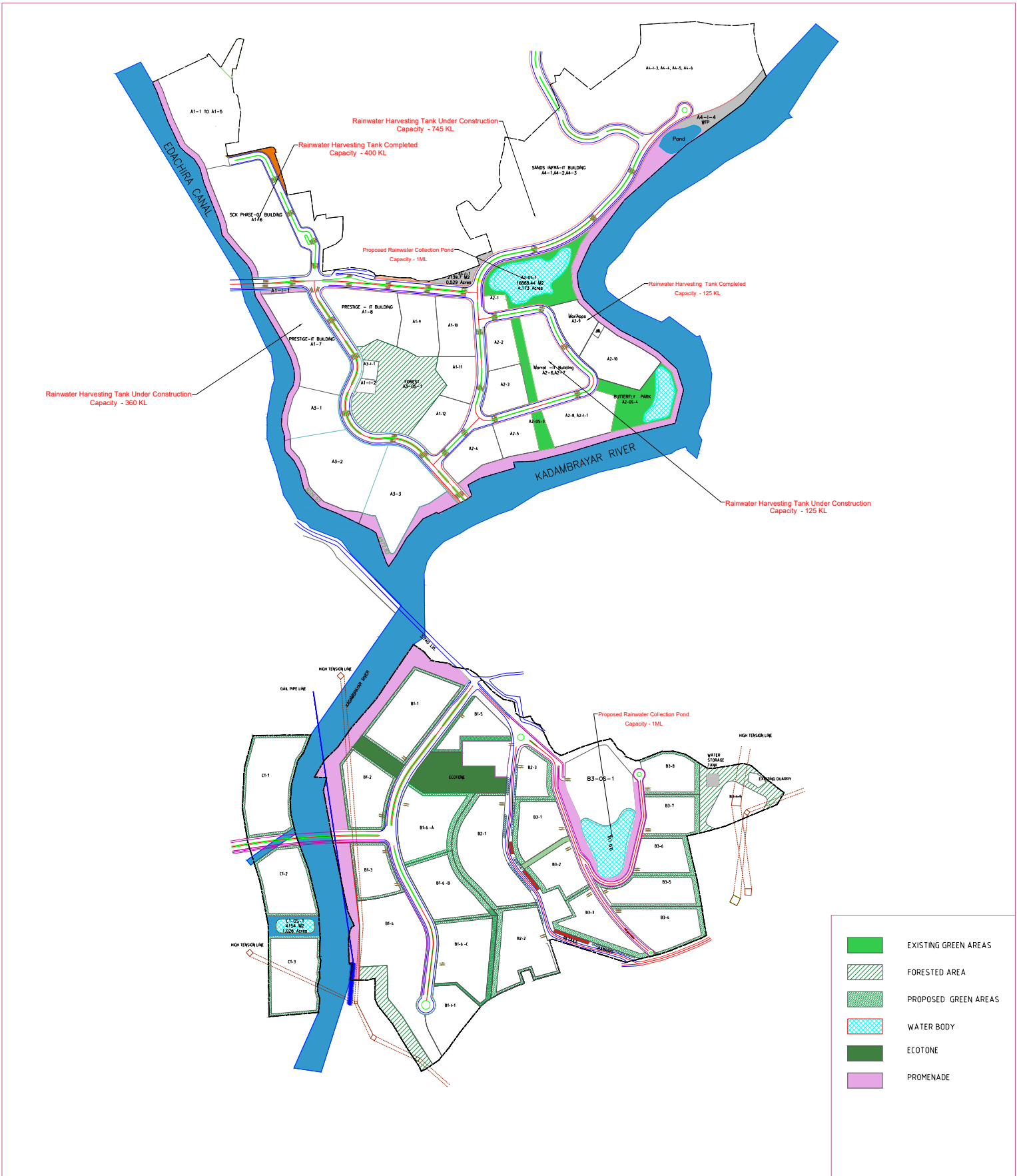

Laiju P. N.
Laboratory Head
Authorized Signatory

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FILE NO : FILE NO. :PCB/EKM/DO-1/OA-317/19

Date of issue : 15/10/2020



KERALA STATE POLLUTION CONTROL BOARD

CONSENT TO

OPERATE/AUTHORISATION/REGISTRATION

ISSUED UNDER

The Water (Prevention & Control of Pollution) Act, 1974

The Air (Prevention & Control of Pollution) Act, 1981

and

The Environment (Protection) Act, 1986

As per Application No. :13997023

Dated:26-09-2020

TO

**M/s SHAPOORJI PALLONJI & COMPANY PRIVATE LIMITED
PRESTIGE CYBER GREEN PRESTIGE ESTATES PROJECTS LIMITED PLOT A1-7 & 8 ,
BLOCK NO.9 SMART CITY (KOCHI) SEZ KAKKANAD,
KOCHI.**

Consent No. :G19ERRCTON162630

Valid Upto :02/10/2025

1. GENERAL

1.1. This integrated consent is granted subject to the power of the Board to withdraw consent, review and make variation in or revoke all or any of the conditions as the Board deems fit.

1	VALIDITY	02/10/2025
2	Name and Address of the establishment	SHAPOORJI PALLONJI & COMPANY PRIVATE LIMITED PRESTIGE CYBER GREEN PRESTIGE ESTATES PROJECTS LIMITED PLOT A1-7 & 8 , BLOCK NO.9 SMART CITY (KOCHI) SEZ KAKKANAD,KOCHI 682313
3	Communication	Telephone :91-9645206998 Fax :- E-mail:biju.sankarapillai@shapoorji.com
4	Occupier Details	SANKARA LINGAM GENERAL MANAGER FLAT 4111,EASWARAN KOIL STREET DURAIPAKKAM 600097
5	Local Body	THRIKKAKARA MUNICIPALITY
6	Survey Number	641,642
7	Village	KAKKANAD
8	Taluk	KANAYANNUR
9	District	ERNAKULAM I
10	Capital Investment(Rs in Lakhs)	56.50 LAKHS
11	Scale	Small
12	Category	GREEN
13	Annual fee(Rs)	Rs.10,000/-
	Total Fee remitted(Rs)	Rs.10,000/-
14	RAW MATERIAL	PRODUCTS
	CEMENT BAG @1200 Numbers WATER @4 Kilo Liters M SAND @168457 Kilogram AGGREGATE @336914 Kilogram	CONCRETE @360979 Kilogram
15	Total Power Required (HP)	-

2. CONDITIONS AS PER

The Water(Prevention and Control of Pollution)Act, 1974

- 2.1 In case of generation of trade effluent from the industry, effluent treatment system consisting of treatment units having adequate capacity established as per the Integrated Consent to Establish issued shall be operational at all times during which the industry is functional. Additional facilities required, if any, to achieve the standards laid down by the Board u/s 17(1) (g) of the Water Act shall also be made along with.
- 2.2 Water consumption: 4300 LPD
- 2.3 Effluent generation: -

2.4 The characteristics of effluent after treatment shall confirm to the following tolerance limits:

Sl.NO.	Characteristics	Unit	Tolerance Limit	
			Sewage	Trade Effluent

2.5 Mode of disposal of treated effluent: REUSE

3. CONDITIONS AS PER

The Air(Prevention and Control of Pollution)Act, 1981

3.1 Adequate air pollution control measures shall be operational at all times during the functioning of the industry. Additional facilities required, if any, to achieve the standards laid down by the Board shall also be made along with.

Stack No.	Sources of Emission	Emission Rate(Nm3/Hr)	Stack Height above		Control Equipment
			Ground Level	Roof Level	

3.2 Emission characteristics shall not exceed the following:

Sl.No.	Parameter	Limiting Standards (mg/Nm3)

4. CONDITIONS AS PER

The Environment (Protection) Act, 1986.

4.1 The operation of the industry shall be strictly in compliance with the provisions of the Noise Pollution (Regulation and Control) Rules 2000.

4.2 Used lead acid batteries shall be disposed of as per the Batteries (Management and Handling) Rules, 2001

4.3 Hazardous waste generated, if any, shall be handled as per the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.

4.3.1 Activities for which Authorisation is granted

Collection		transport	
Reception		Storage	
Treatment		Reprocessing/Disposal	

4.3.2 Type, quantity and mode of storage/collection/disposal of hazardous wastes shall be as follows:

Sl.No.	Hazardous Waste	Schedule Category	Quantity Tonne/year
Mode of			
Storage		Disposal	

4.4 E-waste shall be disposed off safely as per the E-Waste (Management)Rules, 2016.

5. SPECIFIC CONDITIONS

- 5.1 For renewal of the consent in case of continuance of discharge/operation of the industry, application in the prescribed form shall be submitted through the web portal of the Board for Online Consent Management & Monitoring System 3 months prior to the date of expiry. Late application will be accepted only with fine.
- 5.2 This consent is granted subject to the power of the Board to review and make variation in or revoke any of the conditions as the Board deems fit as per the relevant Acts/Rules.
- 5.3 The applicant shall comply with the instructions that the Board may issue from time to time regarding prevention and control of air, water, land and sound pollution
- 5.4 Arrangements for collection, segregation, storage, handling and disposal of solid Waste including garbage shall be provided and maintained properly.
- 5.5 Energy and water conservation measures shall be adopted as far as possible.
- 5.6 Renewable sources of energy such as solar energy shall be utilized for lighting and heating wherever possible
- 5.7 There shall not be any fugitive emission from the premises.
- 5.8 Good housekeeping shall be maintained in and around the plant.
- 5.9 All operations likely to produce dust or noise shall be carried out with appropriate enclosure.
- 5.10 The consentee shall put up a sign board of size 6x4 ft. near the main entrance of the plant to display the name of the unit and important consent conditions
- 5.11 No change or alteration of the industrial plant is to be made without the prior written permission of the Board. Any change in the particulars furnished and/or in the identity of the occupier/authorised agent is to be intimated to the Board forthwith.

DATE :15/10/2020

SIGNATURE & SEAL OF ISSUING AUTHORITY
ASSISTANT ENVIRONMENTAL ENGINEER



To

PRESTIGE CYBER GREEN PRESTIGE ESTATES PROJECTS LIMITED PLOT A1-7 & 8 , BLOCK NO.9 SMART CITY (KOCHI) SEZ KAKKANAD,KOCHI

- 1. This digitally signed document is legally valid as per the Information Technology Act 2000**
2. For verifying this document please go to krocmms.nic.in and search using date of issue/name of the unit/Application Number in “Consent Granted Applications” link in the home page of the Board’s Online Consent Management and Monitoring System.



Rooftop Solar & Greenery



Common Areas



Discharge through 4 LPM Shower flow aerator



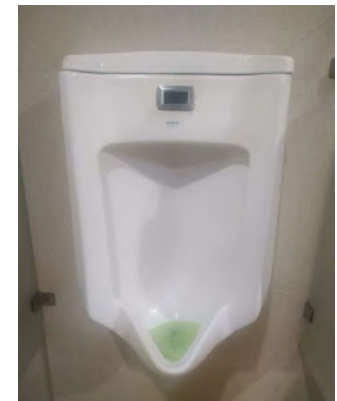
Natural Ventilation



Rooftop Garden



Dual Plumbing Lines



Waterless Urinals



Reddonatura

RN200

Reddonatura

PLANTS SPECIES SUGGESTED FOR GREEN BELT DEVELOPMENT

1. Butterfly garden

A butterfly garden is an easy way to see more butterflies and to contribute toward their conservation. By establishing butterfly gardens, it is possible to gain insight into the life history, behaviour and role of butterflies in sustaining natural ecosystems. Butterfly gardens can be set up in any location by recreating suitable habitats for butterflies. It can be achieved by introducing larval host plants (food plants of the larvae) and nectar plants for the adult butterflies. The nectar and larval food plants can be established while keeping in mind the landscaping aspects of the garden.

The essentials of creating a butterfly garden are an open space with plenty of sunshine and a shield from the wind. Butterflies are cold-blooded creatures and therefore do better where they are warm and sheltered. Three types of plants are required in a butterfly garden. **Nectar plants**, which are the plants that adult butterflies like to feed on, and **larval host plants**, which are plants that butterflies lay their eggs on and their caterpillars (larvae) like to eat. The third types of plants required in a butterflies garden are the **plants which produce certain alkaloids**. This will attract male Milkweed butterflies like crows and Tigers seeking the essential alkaloid.

The caterpillars being highly voracious may finish off the host plants in a short period. Therefore, provision should be made sufficient stocks of host plants in a green house or nursery. Propagation of plants should be undertaken at the appropriate season either as stem cuttings or from seeds. Seedlings thus obtained may be bagged in plastic covers and maintained as replacement stock. Since all the stages of butterflies are extremely susceptible to insecticides, caution should be taken in applying pesticides for controlling pests that might affect these plants. As far as possible pesticide application must be carried out

only when it is absolutely essential and only appropriate biopesticides must be used.

For maintaining appropriate habitats for butterflies, it is essential to set up ponds, waterfalls, streams, bushes, openings etc., in the garden area. Information boards as well as models depicting butterfly life can be set up in the garden for providing information on the life of butterflies so that we can effectively generate conservation awareness among the visitors.

List of Larval Food Plants

Sr. No.	Scientific Name	Malayalam Name
1.	<i>Aristolochia indica</i>	Eshwaramulla
2.	<i>Aristolochia tagala</i>	Karandavalli
3.	<i>Thottea siliquosa</i>	Alpam
4.	<i>Toddalia asiatica</i>	Kakkattutali
5	<i>Zanthoxylum rhetsa</i>	Mullilam
6	<i>Glycosmis arborea</i>	Paanal
7	<i>Melicope lunu-ankenda</i>	Kaattu Rubber
8	<i>Citrus spp</i>	Naarakam
9	<i>Atalantia racemosa</i>	Naivella
10	<i>Murraya koenigii</i>	Kariveppu
11	<i>Zingiber sp</i>	Inji
12	<i>Persea macrantha</i>	Kulamaavu
13	<i>Ixora coccinea</i>	Chethi
14	<i>Cinnamomum spp.</i>	Vazhana
15	<i>Litsea chinensis</i>	Ellukootti
16	<i>Polyalthia longifolia</i>	Aranamaram
17	<i>Uvaria narum</i>	Narum paanal
18	<i>Annona Sp.</i>	Aathachakka
19	<i>Bambusa arundinacea</i>	Mula
20	<i>Ochlandra travancorica</i>	Eetta
21	<i>Crateva adansonii</i>	Neermathalam
22	<i>Cassia fistula</i>	Kanikonna
23	<i>Cassia alata</i>	Aanathakara
24	<i>Cassia tora</i>	Chakrathakara
25	<i>Bauhinia racemosa</i>	Kovidaaram

26	<i>Melastoma malabathricum</i>	Athiraani
27	<i>Hygrophila auriculata</i>	Vayalchulli
28	<i>Caesalpinia sp.</i>	Chappangam
29	<i>Delonix regia</i>	Gulmohar
30	<i>Strobilanthes spp</i>	Kurinji
31	<i>Dendrophthoe falcata</i>	Ithilkanni
32	<i>Calotropis gigantea</i>	Erikku
33	<i>Cleome viscosa</i>	Manjavela
34	<i>Capparis zeylanica</i>	Karthotti
35	<i>Vigna sp.</i>	Payar
36	<i>Crataeva adansonii</i>	Neermathalam
37	<i>Dioscorea sp.</i>	Kaachil
38	<i>Cadaba fruticosa</i>	Kaattakathi
39	<i>Costus speciosa</i>	Channakkoova
40	<i>Calamus sp.</i>	Chooral
41	<i>Panicum sp.</i>	Pullu
42	<i>Phoenix sp.</i>	Eenthappana
43	<i>Bambusa sp.</i>	Mula
44	<i>Passiflora edulis</i>	Passion fruit
45	<i>Passiflora foetida</i>	Poodappazham
46	<i>Flacourtia indica</i>	Loovika
47	<i>Flacourtia Montana</i>	Vayankatha
48	<i>Hydnocarpus pentandra</i>	Marotti
49	<i>Helicteres isora</i>	Idampiri valampiri
50	<i>Mussaenda frondosa</i>	Vellila
51	<i>Ochreinauclea missionis</i>	Aatuvanji
52	<i>Wattakaka volubilis</i>	Vattakkakkakodi
53	<i>Tinospora cordifolia</i>	Chitamruthu
54	<i>Acacia catechu</i>	Karingaali
55	<i>Adenantha pavonina</i>	Manjaadi
56	<i>Melastoma malabathricum</i>	Athiraani
57	<i>Pongamia pinnata</i>	Ungu
58	<i>Barleria cristata</i>	Parvathichedi
59	<i>Curcuma aromatica</i>	Kasthoorimanjal
60	<i>Asystasia sp.</i>	Murikoottippacha

List of Nectar Plants

No.	Scientific Name	Common Name
1.	<i>Ixora coccinea</i>	Jungle geranium
2.	<i>Clerodendrum paniculatum</i>	Pagoda Flower
3.	<i>clerodendrum infortunatum</i>	Hill Glory
4.	<i>Asclepias curassavica</i>	Scarlet Milkweed
5	<i>Lantana camara</i>	Common lantana
6	<i>Delonix regia</i>	Flame Tree
7	<i>Caesalpinia pulcherrima</i>	Peacock Flowe
8	<i>Calendula officinalis</i>	Marigold
9	<i>Zinnia elegans</i>	Zinnia
10	<i>Syzygium caryophyllum</i>	South Indian Plum
11	<i>Leucas aspera</i>	Common Leucas
12	<i>Stachytarpheta jamaicensis</i>	Blue Porterweed
13	<i>Stachytarpheta mutabilis</i>	Red Porterweed

List of Alkaloid Plants

1. *Heliotropium indicum*
2. *Crotalaria retusa*

2. Kitchen garden

Common name	Malayalam name	Botanical name	Family
Pulses			
Black gram	Uzhunnu	<i>Vigna mungo</i>	Fabaceae
Cowpea	Perumpayar	<i>Vigna unguiculata</i>	Fabaceae
Green gram	Cherupayar	<i>Vigna radiata</i>	Fabaceae
Horse gram	Muthira	<i>Macrotyloma uniflorum</i>	Fabaceae
Red gram	Thuvarappayar	<i>Cajanus sp.</i>	Fabaceae
Tubers			
Colocasia	Chembu	<i>Colocasia esculenta</i>	
Elephant foot Yam	Chena	<i>Amorphophallus paeoniifolius</i>	Araceae
Tapioca	Maracheeni	<i>Manihot esculenta</i>	Euphorbiaceae
Greater Yam	Kachil	<i>Dioscorea alata</i>	Dioscoreaceae
Vegetables			
Okra	Venda	<i>Abelmoschus esculentus</i>	Malvaceae
Bitter gourd	Paval	<i>Momordica charantia</i>	Cucurbitaceae
Brinjal	Vazhuthana	<i>Solanum melongena</i>	Solanaceae
Tomato	Thakkali	<i>Lycopersicon esculentum</i>	Solanaceae

Chilli	Mulaku	<i>Capsicum annuum</i>	Solanaceae
Amaranthus	Cheera	<i>Amaranthus spp,</i>	Amaranthaceae
Pumpkin	Mathan	<i>Cucurbita moschata</i>	Cucurbitaceae
Red pumpkin	Vellarimathan	<i>Cucurbita maxima</i>	Cucurbitaceae
Bottle gourd	Churakka	<i>Lagenaria siceraria</i>	Cucurbitaceae
Snake gourd	Padavalam	<i>Trichosanthes anguina</i>	Cucurbitaceae
Ridge gourd	Peechanga	<i>Luffa acutangula</i>	Cucurbitaceae
Ash gourd	Kumbalam	<i>Benincasa hispida</i>	Cucurbitaceae
Little gourd	Koval	<i>Coccinia grandis</i>	Cucurbitaceae
Sword bean	Valaringa	<i>Canavalia gladiata</i>	Fabaceae
Indian bean	Amara	<i>Lablab purpureus</i>	Fabaceae
Drumstick	Muringa	<i>Moringa oleifera</i>	Moringaceae
Musk melon	Thaikumbalam	<i>Cucumis melo</i>	Cucurbitaceae
Fruits			
Banana	Vazha	Musa spp.	Musaceae
Bread fruit	Seemachakka	<i>Artocarpus altilis</i>	Moraceae
Bullock's heart	Malamunthiri	<i>Annona reticulata</i>	Annonaceae
Cashew	Kasuvandi	<i>Anacardium occidentale</i>	Anacardiaceae
Sweet-sop	Seethapazham	<i>Annona squamosa</i>	Annonaceae
Guava	Perakka	<i>Psidium guajava</i>	Myrtaceae
Jack fruit	Chakka	<i>Artocarpus heterophyllus</i>	Moraceae
Jujube	Elantha	<i>Zizyphus jujuba</i>	Rhamnaceae
Lemon	Naranga	<i>Citrus limon</i>	Rutaceae
Mango	Manga	<i>Mangifera indica</i>	Anacardiaceae
Mangosteen	Mangosteen	<i>Garcinia mangostana</i>	Clusiaceae
Papaya	Pappakka	<i>Carica papaya</i>	Caricaceae
Pineapple	Kaithachakka	<i>Ananas comosus</i>	Bromeliaceae
Pomegranate	Mathalanaranga	<i>Punica granatum</i>	Punicaceae
Sapota	Sapota	<i>Achras sapota</i>	apotaceae
Spices			
Chilli	Mulaku	<i>Capsicum annuum</i>	Solanaceae
Turmeric	Manjal	<i>Curcuma domestica</i>	Zingiberaceae
Pepper	Kurumulaku	<i>Piper nigrum</i>	Piperaceae
Ginger	Inchi	<i>Zingiber officinale</i>	Zingiberaceae
Nutmeg	Jathika	<i>Myristica fragrans</i>	Myristicaceae
Cinnamon	Karuvapatta	<i>Cinnamomum verum</i>	Lauraceae

Clove	Grambu	<i>Syzygium aromaticum</i>	Myrtaceae
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3. Species suitable for area near Sacred Grove (in Land A)

Note: Native species especially endemic species should be planted in the area near Sacred Grove.

Sr. No.	Scientific Name	Common Name	Family
1	<i>Aegle marmelos</i> (L.) Corrêa	Bael Tree/ Stone apple / Koovalam	Rutaceae
2	<i>Alstonia scholaris</i> (L.) R. Br.	Ezhilampala/ Devil Tree	Apocynaceae
3	<i>Antiaris toxicaria</i> Lesch.	Upas tree/ Maravuri	Moraceae
4	<i>Artocarpus hirsutus</i> Lam.	Wild Jack Fruit Tree/ Anjili	Moraceae
5	<i>Bambusa bambos</i> (L.) Voss.	Mula	Poaceae
6	<i>Cinnamomum malabratrum</i> (Burm.f.) J.Presl	Cinnamon / Vazhana	Lauraceae
7	<i>Diospyros buxifolia</i> (Blume) Hiern	Green Ebony	Ebenaceae
8	<i>Ficus benghalensis</i> L.	Banyan Tree/Aalmaram	Moraceae
9	<i>Ficus religiosa</i> L.	Sacred Fig/ Arayal	Moraceae
10	<i>Gmelina arborea</i> Roxb.	Beechwood/ Kumizhu	Lamiaceae
11	<i>Hopea parviflora</i> Bedd.	Iron Wood of Malabar/ Kambakam	Dipterocarpaceae
12	<i>Hopea ponga</i> (Dennst.) Mabblerly	Kambakam, Eyyakam	Dipterocarpaceae
13	<i>Hydnocarpus pentandra</i> (Buch.-Ham.) Oken	Marotti	Flacourtiaceae
14	<i>Mimusops elengi</i> L.	Elenji	Sapotaceae
15	<i>Persea macrantha</i> (Nees) Kosterm.	Kulir Mavu	Lauraceae
16	<i>Quassia indica</i> (Gaertn.) Nooteb.	Karinjotta/Njotta	Simaroubaceae
17	<i>Saraca asoca</i> (Roxb.) Willd.	Ashoka tree/ Asokam	Fabaceae
18	<i>Strychnos nux-vomica</i> L.	Kanjiram	Loganiaceae
19	<i>Terminalia arjuna</i> (Roxb. ex DC.) Wight & Arn.	Arjun Tree/ Neermaruthu	Combretaceae
20	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Bastard Myrobalan / Thaanni	Combretaceae

21	<i>Vateria indica</i> L.	Velutta Kunturukkam/ Vellapayin	Dipterocarpaceae
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4. Species suitable for area near abandoned quarry pond (in Land B)

Note: Dry land species should be planted near the rocky area

Sr. No.	Scientific Name	Common Name	Family
1	<i>Alstonia scholaris</i> (L.) R. Br.	Devil Tree/ Ezhilampala	Apocynaceae
2	<i>Azadirachta indica</i> A.Juss.	Neem/ Veppu	Meliaceae
3	<i>Bambusa bambos</i> (L.) Voss.	Mula	Poaceae
4	<i>Bambusa vulgaris</i> Schrad.	Golden Bamboo/ Manjamula	Poaceae
5	<i>Carallia brachiata</i> (Lour.) Merrill	Vankana	Rhizophoraceae
6	<i>Cassia fistula</i> L.	Indian Laburnum/ Kanikkonna	Fabaceae
7	<i>Dalbergia latifolia</i> Roxb.	Indian Rosewood/ Veetti	Fabaceae
8	<i>Dendrocalamus strictus</i> (Roxb.) Nees	Male Bamboo/ Kallanmula	Poaceae
9	<i>Ficus racemosa</i> L.	Cluster fig tree/ Athi	Moraceae
10	<i>Lagerstroemia speciosa</i> (L.) Pers.	Poomaruthu/ Manimaruthu	Lythraceae
11	<i>Mangifera indica</i> L.	Mavu	Anacardiaceae
12	<i>Phyllanthus emblica</i> L.	Indian Gooseberry/ Nelli	Phyllanthaceae
13	<i>Pongamia pinnata</i> (L.) Pierre	Indian Beech/ Ungu	Fabaceae
14	<i>Tectona grandis</i> L.f.	Thekku	Verbenaceae
15	<i>Zanthoxylum rhetsa</i> (Roxb.) DC.	Kothumurikku/ Mullilam	Rutaceae

5. Species suitable for Marshy land in eco-tone area

Sr. No.	Scientific Name	Common Name	Family
1	<i>Crateva religiosa</i> G.Forst.	Sacred Garlic Pear/ Neermathalam	Capparaceae
2	<i>Acorus calamus</i> L.	Sweet Flag / Vayambu	Acoraceae
3	<i>Neolamarckia cadamba</i> (Roxb.) Bossier	Kadambu	Rubiaceae
4	<i>Bacopa monnieri</i> (L.) Wettst	Bhrammi	Plantaginaceae
5	<i>Syzygium caryophyllatum</i> (L.) Alston	Njaara	Myrtaceae

6	<i>Terminalia arjuna</i> (Roxb. ex DC.) Wight & Arn.	Arjun Neermaruthu	Tree/	Combretaceae
7	<i>Ochlandra travancorica</i> (Bedd.) Gamble	Eera		Poaceae
8	<i>Pandanus odorifer</i> (Forssk.) Kuntze.	Pookaitha/ Thazhambu/Thala		Pandanaceae

6. Species suitable for dry land in Eco-tone area

Sr. No.	Scientific Name	Common Name	Family
1	<i>Aporosa acuminata</i> Thw.	Swarnavetti/ Nirvittil/Nirvetti	Phyllanthaceae
2	<i>Bambusa bambos</i> (L.) Voss.	Mula	Poaceae
3	<i>Cassia fistula</i> L.	Indian Laburnum / Kanikkonna	Fabaceae
4	<i>Chrysophyllum cainito</i> L.	Star apple	Sapotaceae
5	<i>Cinnamomum malabatum</i> (Burm.f.) J.Presl.	Idana	Lauraceae
6	<i>Garcinia gummi-gutta</i> (L.) Robs.	Kodampuli	Clusiaceae
7	<i>Haldina cordifolia</i> (Roxb.) Ridsdale	Haldu/ Manjakadambu	Rubiaceae
8	<i>Lagerstroemia speciosa</i> (L.) Pers.	Poomaruthu /Manimaruthu	Lythraceae
9	<i>Persea macrantha</i> (Nees) Kosterm.	Kulir Mavu	Lauraceae
10	<i>Phyllanthus emblica</i> L.	Indian Gooseberry/ Nelli	Phyllanthaceae
11	<i>Quassia indica</i> (Gaertn.) Nooteb.	Karinjotta/Njotta	Simaroubaceae
12	<i>Spondias pinnata</i> (L. f.) Kurz	Wild Mango/ Ambazham	Anacardiaceae
13	<i>Tamarindus indica</i> L.	Tamarind/ Vaalampuli	Fabaceae

7. Species suitable for no development zone (10 m. wide) all along the water bodies

Sr. No.	Scientific Name	Common Name	Family
1	<i>Annona glabra</i> L.	Kattatha	Annonaceae
2	<i>Annona squamosa</i> L.	Sugar-apple/ Aatha	Annonaceae
3	<i>Bambusa vulgaris</i> Schrad.	Golden Bamboo/ Manjamula	Poaceae
4	<i>Cerbera odollam</i> Gaertn.	Othallam	Apocynaceae

5	<i>Crataeva magna</i> (Lour.) DC.	Neermathalam	Capparaceae
6	<i>Hibiscus tiliaceus</i> L.	Pooparuthi	Malvaceae
7	<i>Morinda citrifolia</i> L.	Indian Mulberry/ Mannapavatta	Rubiaceae
8	<i>Terminalia arjuna</i> (Roxb. ex DC.) Wight & Arn.	Arjun Tree/ Neermaruthu	Combretaceae

8. Species suitable for avenue plantation all along the roads

Sr. No.	Scientific Name	Common Name	Family
1	<i>Adenantha pavonina</i> L.	Red Bead Tree/ Manchadi	Fabaceae
2	<i>Albizia saman</i> (Jacq.) Merr.	Rain Tree/ Mazhamaram	Fabaceae
3	<i>Bauhinia malabarica</i>	Malabar bauhinia/ Vellamandara	Caesalpiniaceae
4	<i>Bauhinia purpurea</i> L.	Pink butterfly tree	Fabaceae
5	<i>Caesalpinia pulcherrima</i> (L.) Sw.	Peacock Flower/ Rajamalli	Fabaceae
6	<i>Callistemon citrinus</i> (Curtis) Skeels.	Bottle brush	Myrtaceae
7	<i>Cassia fistula</i> L.	Indian Laburnum/ Kanikkonna	Fabaceae
8	<i>Casuarina equisetifolia</i> L.	Coast Sheoak/ Choolamaram	Casuarinaceae
9	<i>Delonix regia</i> (Hook.) Raf.	Flamboyant/ Gulmohar	Fabaceae
10	<i>Diospyros buxifolia</i> (Blume) Hiern	Green Ebony	Ebenaceae
11	<i>Ficus benjamina</i> L.	Weeping Fig	Moraceae
12	<i>Ficus religiosa</i> L.	Peepal Tree/ Arayal	Moraceae
13	<i>Jacaranda mimosifolia</i> D. Don	Jacaranda Tree	Bignoniaceae
14	<i>Jacaranda mimosifolia</i> D. Don	Green Ebony	Bignoniaceae
15	<i>Lagerstroemia speciosa</i> (L.) Pers.	Queen's Crape-myrtle/ Poomaruthu	Lythraceae
16	<i>Mangifera indica</i> L.	Mango tree/ Mavu	Anacardiaceae
17	<i>Manilkara zapota</i> (L.) P. Royen	Sapodilla/ Sapotta	Sapotaceae
18	<i>Melaleuca bracteata</i> F. Muell.	Tea tree	Myrtaceae
19	<i>Mimusops elengi</i> L.	Spanish Cherry/ Elanji	Sapotaceae
20	<i>Phyllanthus emblica</i> L.	Indian Gooseberry/ Nelli	Phyllanthaceae
21	<i>Plumeria rubra</i> L.	Frangipani	Apocynaceae
22	<i>Polyalthia longifolia</i> (Sonn.) Thwaites	Indian Mast Tree	Annonaceae
23	<i>Pongamia pinnata</i> (L.) Pierre	Indian Beech	Fabaceae

24	<i>Psidium guajava</i> L.	Guava	Myrtaceae
25	<i>Saraca asoca</i> (Roxb.) Willd.	Ashoka tree	Fabaceae
26	<i>Syzygium cumini</i> (L.) Skeels	Black Plum	Myrtaceae
27	<i>Thuja occidentalis</i> L.	Thuja	Cupressaceae

9. Shelter belt plantation

Shelter belts are wide strip of trees and shrubs planted in rows to reduce air velocity there by facilitating settling of the particles on the leaf surfaces and allowing absorption of the pollutant gases. Hence it can mitigate various emissions. It also serves to cool the atmosphere by transpiration from the leaf surface and also provide habitat for birds, reptiles and insects. The greenbelt also diminishes noise pollution by absorbing high degree of noise due to their spongy foliar crown.

Selection criteria of Plant species for Shelter belt development

The list of plant species that can be suitably planted at the project site is provided in Table 1. Selection of the plant species was based on their adaptability to the existing geographical conditions and the vegetation composition of the region. More emphasis was given to native plant species with excellent canopy cover. Bird and insect attracting tree species, trees with high foliage density, leaves with larger leaf area and hairy on the surfaces etc are the other criteria of selection.

Species suitable for shelter belt plantation all along the periphery of the project site.

Top Canopy Tree Species			
Sr. No.	Scientific Name	Common Name	Family
1	<i>Vateria indica</i> L.	Veluttha Kunturukkam/ Vellapayin	Dipterocarpaceae
2	<i>Hopea parviflora</i> Bedd.	Iripu, Pongu	Dipterocarpaceae
3	<i>Hopea ponga</i> (Dennst.) Mabblerly	Kambakam, Eyyakam	Dipterocarpaceae
4	<i>Terminalia arjuna</i> (DC.) Wight & Arn.	Nirmarutu, Neer Marudhu	Combretaceae
5	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Thanni	Combretaceae
6	<i>Artocarpus hirsutus</i> Lam.	Anjili	Moraceae
7	<i>Artocarpus heterophyllus</i> Lam.	Plavu	Moraceae
8	<i>Mangifera indica</i> L.	Mavu	Anacardiaceae

9	<i>Alstonia scholaris</i> (L.) R. Br.	Ezhilamppala	Apocynaceae
10	<i>Diospyros buxifolia</i> (Blume) Hiern	Green Ebony	Ebenaceae
11	<i>Polyalthia longifolia</i> (Sonn.) Thwaites	Aranamaram	Annonaceae
12	<i>Persea macrantha</i> (Nees) Kosterm.	Kulir Mavu	Lauraceae
13	<i>Polyalthia fragrans</i> (Dalz.) Bedd.	Perumaram	Annonaceae
14	<i>Bischofia javanica</i> Bl.	Cholavenga	Euphorbiaceae
15	<i>Anogeissus latifolia</i> (DC.) Wallich ex Guill. & Perr.	Mazhukanjiram	Combretaceae
16	<i>Strychnos nux-vomica</i> L.	Kanjiram	Loganiaceae
17	<i>Ficus benghalensis</i> L.	Aalmaram	Moraceae
18	<i>Holoptelea integrifolia</i> (Roxb.) Planchon	Aaval	Ulmaceae

Mid Canopy Tree Speices			
Sr. No.	Scientific Name	Common Name	Family
1	<i>Cinnamomum malabatum</i> (Burm.f.) J.Presl.	Idana	Lauraceae
2	<i>Xylia xylocarpa</i> (Roxb.)Taub.	Irul	Mimosaceae
3	<i>Pongamia pinnata</i> (L.) Pierre	Ungu	Leguminosae
4	<i>Quassia indica</i> (Gaertn.) Nooteb.	Karinjotta/ Njotta	Simaroubaceae
5	<i>Hydnocarpus pentandra</i> (Buch.-Ham.) Oken	Marotti	Flacourtiaceae
6	<i>Olea dioica</i> Roxb.	Irippa	Oleaceae
7	<i>Aporosa acuminata</i> Thw.	Swarnavetti/ Nirvittil/Nirvetti	Phyllanthaceae
8	<i>Saraca asoca</i> (Roxb.) Wilde	Ashokam	Caesalpiaceae
9	<i>Cananga odorata</i> (Lam.) Hook.f. & Thomson	Kattu Chempakam	Annonaceae
10	<i>Murraya paniculata</i> (L.) Jack.	Maramulla	Rutaceae
11	<i>Magnolia champaca</i> (L.) Baill. ex Pierre	Gloden Champa	Magnoliaceae
12	<i>Plumeria rubra</i> L.	Pagoda Tree	apocynaceae
13	<i>Eriobotrya japonica</i> (Thunb.) Lindl.		Rosaceae
14	<i>Azadirachta indica</i> Adr. Juss.	Veppu	Meliaceae
15	<i>Schleichera oleosa</i> (Lour.) Merr.	Kusum/Poovana m	Sapindaceae
16	<i>Adenanthera pavonina</i> L.	Manjadi	Leguminosae
17	<i>Anogeissus latifolia</i> (DC.) Wallich ex Guill. & Perr.	Mazhukanjiram	Combretaceae
18	<i>Bambusa bambos</i> (L.) Voss.	Mula	Poaceae
19	<i>Carallia brachiata</i> (Lour.) Merrill.	Vankana	Rhizophoraceae
20	<i>Pterocarpus marsupium</i> Roxb.	Venga	Fabaceae

21	<i>Ochlandra sp.</i>	Eetta	Poaceae
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Shrub (Lower strata)			
Sr. No.	Scientific Name	Common Name	Family
1	<i>Jasminum arborescens</i> Roxb.	Tree jasmine/ Nagamallika	Oleaceae
2	<i>Clerodendrum chinense</i> (Osbeck) Mabb.	Glory tree/Madras Malli	Lamiaceae
3	<i>Ixora pavetta</i> Andr.	Suji mulla	Rubiaceae
4	<i>Gardenia jasminoides</i> J.Ellis	Gandharaj	Rubiaceae
5	<i>Pandanus odorifer</i> (Forssk.) Kuntze	Screw pine/ Kaitha	Pandanaceae

10. Species suitable for medicinal park

Medicinal Trees

Sr. No.	Scientific Name	Common Name	Family
1	<i>Aegle marmelos</i> (L.) Corrêa	Bael Tree/ Stome apple/Koovalam	Rutaceae
2	<i>Azadirachta indica</i> A.Juss.	Neem/ Veppu	Meliaceae
3	<i>Mimusops elengi</i> L.	Spanish Cherry/ Elanji	Sapotaceae
4	<i>Phyllanthus emblica</i> L.	Indian Gooseberry/ Nelli	Phyllanthaceae
5	<i>Santalum album</i> L.	Indian Sandalwood/ Chandanam	Santalaceae
6	<i>Saraca asoca</i> (Roxb.) Willd.	Ashoka tree/ Asokam	Fabaceae
7	<i>Syzygium cumini</i> (L.) Skeels	Black Plum/ Njaval	Myrtaceae
8	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Bastard Myrobalan/ Thanni	Combretaceae

a) Medicinal Shrubs

Sr. No.	Scientific Name	Common Name	Family
1	<i>Alangium salviifolium</i> (L.f.) Wangerin	Sage leaved alangium/ Ankolam	Cornaceae
2	<i>Calotropis gigantea</i> (L.)	Downy thorn apple/	Apocynaceae

	Dryand.	Erikku	
3	<i>Datura metel</i> L.	Ummam	Solanaceae
4	<i>Desmodium gangeticum</i> (L.) DC.	Orila	Leguminosae
5	<i>Helicteres isora</i> L.	East-Indian screw tree/ Edampiri-Valampiri	Sterculiaceae
6	<i>Justicia adhatoda</i> L.	Aadalodakam	Acanthaceae
7	<i>Ricinus communis</i> L.	Castor oil plant/ Aavannakku	Euphorbiaceae
8	<i>Thottea siliquosa</i> (Lam.) Ding Hou	Alpam	Aristolochiaceae

b) Medicinal herbs

Sr. No.	Scientific Name	Common Name	Family
1	<i>Achyranthes aspera</i> L.	Kadalaadi	Amaranthaceae
2	<i>Aerva lanata</i> (L.) Juss.	Cherula	Amaranthaceae
3	<i>Aloe vera</i> (L.) Burm.f.	Kattar Vazha	Asparagaceae
4	<i>Alpinia galanga</i> (L.) Willd.	Aratha	Zingiberaceae
5	<i>Andrographis paniculata</i> (Burm.f.) Nees	Kiriyathu	Acanthaceae
6	<i>Catharanthus roseus</i> (L.) G. Don	Shavam Naari	Apocynaceae
7	<i>Centella asiatica</i> (L.) Urban	Kodangal	Apiaceae
8	<i>Eclipta prostrata</i> (L.) L.	Kayyunni	Compositae
9	<i>Emilia sonchifolia</i> (L.) DC. ex DC.	Muyalchevian	Compositae
10	<i>Leucas zeylanica</i> (L.) W.T. Aiton	Thumba	Lamiaceae
11	<i>Ocimum gratissimum</i> L.	Ramathulasi	Lamiaceae
12	<i>Ocimum tenuiflorum</i> L.	Tulsi	Lamiaceae
13	<i>Pogostemon cablin</i> (Blanco) Benth.	Patcholi	Lamiaceae
14	<i>Phyllanthus amarus</i> Schumacher & Thonn.	Keezhanelli	Phyllanthaceae
15	<i>Rauvolfia serpentina</i> (L.) Benth. ex Kurz	Sarpagandhi	Apocynaceae
16	<i>Sida acuta</i> Burm.f.	Kurunthotti	Malvaceae
17	<i>Trichopus zeylanicus</i> Gaertn.	Arogyappacha	Dioscoreaceae
18	<i>Zingiber zerumbet</i> (L.) Roscoe ex Sm.	Kolinchi	Zingiberaceae

c) Medicinal Climbers

Sr. No.	Scientific Name	Common Name	Family
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1	<i>Aristolochia indica</i> L.	Garudakodi	Aristolochiaceae
2	<i>Asparagus racemosus</i> Willd.	Shatavari	Asparagaceae
3	<i>Cardiospermum halicacabum</i> L.	Valliuzhinga	Sapindaceae
4	<i>Cyclea peltata</i> (Lam.) Hook.f. & Thomson	Padathali	Menispermaceae
5	<i>Gloriosa superba</i> L.	Menthonni	Colchicaceae
6	<i>Hemidesmus indicus</i> (L.) R.Br. ex Schult.	Naruneendi	Apocynaceae
7	<i>Piper longum</i> L.	Thippali	Piperaceae
8	<i>Tinospora cordifolia</i> (Willd.) Miers	Chittamaruthu	Menispermaceae

11. Species suitable for Orchard

Sr. No.	Scientific Name	Common Name	Family
1	<i>Anacardium occidentale</i> L.	Cashew/ Kashumavu	Anacardiaceae
2	<i>Annona squamosa</i> L.	Sugar-apple/ Aatha	Annonaceae
3	<i>Artocarpus heterophyllus</i> Lam.	Jack Fruit Tree/ Plavu	Moraceae
4	<i>Artocarpus hirsutus</i> Lam.	Wild Jack Fruit Tree/ Anjili	Moraceae
5	<i>Averrhoa carambola</i> L.	Carambola/ Chathurapuli	Oxalidaceae
6	<i>Citrus aurantiifolia</i> (Christm.) Swingle	Lime/ Cherunarekam	Rutaceae
7	<i>Citrus limon</i> (L.) Burm. f.	Lime	Rutaceae
8	<i>Flacourtia indica</i> (Burm. f.) Merr.	Batoko palm/ Karimulli	Salicaceae
9	<i>Garcinia × mangostana</i> L.	Mangosteen	Clusiaceae
10	<i>Garcinia gummi-gutta</i> (L.) Roxb.	Camboge Tree/ Kudampuli	Clusiaceae
11	<i>Litchi chinensis</i> Sonn.	Litchi	Sapindaceae.
12	<i>Mangifera indica</i> L.	Mango Tree/ Mavu	Anacardiaceae
13	<i>Manilkara zapota</i> (L.) P.Royen	Sapodilla/ Sapotta	Sapotaceae
14	<i>Persea americana</i> Mill.	Avocado Tree	Lauraceae
15	<i>Phyllanthus emblica</i> L.	Indian Gooseberry/ Nelli	Phyllanthaceae
16	<i>Psidium guajava</i> L.	Guava/ Pera	Myrtaceae
17	<i>Spondias pinnata</i> (L. f.) Kurz	Wild Mango/ Ambazham	Anacardiaceae
18	<i>Syzygium caryophyllatum</i> (L.) Alston	Njaara	Myrtaceae

19	<i>Syzygium cumini</i> (L.) Skeels	Black Plum/ Njaval	Myrtaceae
20	<i>Syzygium zeylanicum</i> (L.) DC.	Spicate Eugenia/ Poochapazham	Myrtaceae

12. Suitable for grass species for different patches for lawn development (wet land & dry land)

Sr. No.	Scientific Name	Common Name	Family
1	<i>Axonopus compressus</i> (Sw.) P.Beauv.	Blanket grass/ Kaalappullu	Poaceae
2	<i>Cymbopogon flexuosus</i> (Nees ex Steud.) W.Watson	Lemon grass/ Inchipullu	Poaceae
3	<i>Cynodon dactylon</i> (L.) Pers.	Bermuda grass/ Karukapullu	Poaceae
4	<i>Desmodium triflorum</i> (L.) DC.	Nilamparanda/ Cherupalladi	Leguminosae
5	<i>Pennisetum orientale</i> Rich.	Oriental Fountain Grass / White Fountain Grass	Poaceae
6	<i>Stenotaphrum secundatum</i> (Walter) Kuntze	St Augustine grass	Poaceae

13. Species suitable for steep slopes to prevent soil erosion

Sr. No.	Scientific Name	Common Name	Family
1	<i>Axonopus compressus</i> (Sw.) P.Beauv.	Blanket grass/ Kaalappullu	Poaceae
2	<i>Bambusa bambos</i> (L.) Voss.	Mula	Poaceae
3	<i>Bambusa vulgaris</i> Schrad.	Golden Bamboo/ Manjamula	Poaceae
4	<i>Chrysopogon zizanioides</i> (L.) Roberty	Ramaccham	Poaceae
5	<i>Cymbopogon flexuosus</i> (Nees ex Steud.) W.Watson	Lemon grass/ Inchipullu	Poaceae
6	<i>Cynodon dactylon</i> (L.) Pers.	Bermuda grass/ Karukapullu	Poaceae
7	<i>Ochlandra travancorica</i> (Bedd.) Gamble	Eera	Poaceae
8	<i>Pennisetum orientale</i> Rich.	Oriental Fountain Grass/ White Fountain Grass	Poaceae

9	<i>Stenotaphrum secundatum</i> (Walter) Kuntze	St Augustine grass	Poaceae
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14. Species suitable for all along the periphery of the water ponds (existing & proposed) within the site

Sr. No.	Scientific Name	Common Name	Family
1	<i>Alstonia scholaris</i> (L.) R. Br.	Ezhilampala / Devil Tree	Apocynaceae
2	<i>Bambusa vulgaris</i> Schrad.	Golden Bamboo/ Manjamula	Poaceae
3	<i>Callistemon citrinus</i> (Curtis) Skeels.	Bottle brush	Myrtaceae
4	<i>Casuarina equisetifolia</i> L.	Coast Sheoak/ Choolamaram	Casuarinaceae
5	<i>Diospyros buxifolia</i> (Blume) Hiern	Green Ebony	Ebenaceae
6	<i>Morinda citrifolia</i> L.	Indian Mulberry/ Mannapavatta	Rubiaceae
7	<i>Ochlandra travancorica</i> (Bedd.) Gamble	Eera	Poaceae
8	<i>Pandanus odorifer</i> (Forssk.) Kuntze.	Pookaitha/ Thazhambu/Thala	Pandanaceae
9	<i>Syzygium caryophyllatum</i> (L.) Alston	Njaara	Myrtaceae