



Lulu

Convention Center Calicut (Pvt) Ltd.

24/826A, P.O. Mankavu,

Calicut - 673 007

www.luluicc.in

CTN: U52190KL2011PTC010058

Dated 28.08.2024

To,

The Director

Ministry of Environment & Forests,

Regional Office (Southern Zone)

Kendriya Sadan IVth Floor

E&F Wings, 17th Main Road

Koramangala II Block,

Bangalore - 560 034

Tel. 080 256 35909

Dear Sir,

Sub: - Lulu Calicut Project. Proposed Commercial Building by M/s Lulu Convention Centre Calicut Pvt. Ltd.- Submission of Environment Monitoring Report for the period from October 2023 to March 2024

Ref: - Environmental Identification No EC22A038KL176010 File No. 21-110/2021-IA-III dated 24.01.2022 from Ministry of Environment, Forest and Climate Change (Government of India)- Impact Assessment Division

The Environmental Clearance Compliance Report for the period from October 01, 2023 to March 31st, 2024 is enclosed. The Project works of the Mall is completed and will be inaugurated on September 09, 2024. Next report onwards the project will be in Operation Phase.

Thanking You.

Yours faithfully,

For Lulu Convention Center Calicut (Pvt).Ltd


Babu Varghese,
Project Director

Encl:A/a

CC:

1. State Environment Impact Assessment Authority, Devikripa, Pallimukku, Petta P.O, Thiruvananthapuram,
2. Director, Lulu Calicut Project.

**HALF YEARLY COMPLIANCE REPORT [HYCR]
CONDITIONS OF ENVIRONMENTAL CLEARANCE**

EC Identification No-EC22A038KL176010 File No 21-110/2021-IA-III dated 24.01.2022

**Half Yearly Report No. 10
For the period From October 2023 to March 2024**

FOR

**Commercial building consists of Retail area, Food court & Family Entertainment
Centre**

CALICUT

By

M/s. Lulu Convention Center Calicut Pvt Limited

SUBMITTED TO:

MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE

SUBMITTED BY:

Lulu Convention Centre Calicut Pvt. Ltd

24/826 A, Mankavu P.O, Calicut- 673 007

www.lulushoppingmall.com

HALF YEARLY COMPLIANCE REPORT (HYCR)

ENVIRONMENTAL CLEARANCE COMPLIANCE REPORT

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Chapter- 1 : INTRODUCTION

Environmental Clearance identification EC22A038KL176010 and File No- 21-110/2021-IA-III dated 24.01.2022 was obtained vide proposal number IA/KL/MIS/237876/2021 dated 29.11.21. The half yearly compliance report is prepared and submitted herewith.

Methodology for Preparation of Report is as follows:

- 1) Study of EC Letter & Related Documents,
- 2) Site Visits by a Team of Experts,
- 3) Monitoring of Environment Parameters, viz. Ambient Air, Water, Noise, Soil & DG Sets,
- 4) Analysis of Samples collected during Monitoring,
- 5) Interpretation of Monitoring Results,
- 6) Preparation of Corrective Action & Preventive Action (CAPA) Plan in case emission / effluent levels are beyond prescribed limits.

**CHAPTER-2- PART-B
SPECIFIC CONDITIONS**

COMPLIANCE

i.	Abstraction of ground water shall be subject to the permission of Central Ground Water Authority (CGWA). Fresh water requirement shall not exceed 93 KLD during operational phase.	As on date we have not used any ground water. In case we need to use ground water, then we will obtain permission from CGWA. Fresh water requirement during operation will not exceed 93 KLD.
ii.	As proposed, wastewater shall be treated in an onsite STP of 210 KLD capacity. At-least 157 KLD of treated water from the STP shall be recycled and re-used for flushing (142 KLD) and for gardening (5 KLD) and for make-up water requirement for cooling towers attached with the HVAC system (10 KLD). There shall be no discharge of treated water outside the project premises, as committed	On-site STP of 210 KLD is installed. The entire treated water will be reused for flushing, gardening and cooling tower. Annexure 1, Annexure 2, Annexure 3
iii.	The project proponents would commission a third-party study on the implementation of conditions related to quality and quantity of recycle and reuse of treated water, efficiency of treatment systems, quality of treated water being supplied for flushing (specially the bacterial counts), comparative bacteriological studies from toilet seats using recycled treated waters and fresh waters for flushing, and quality of water being supplied through spray faucets attached to toilet seats.	We will commission a third party, after commissioning of the STP, to study on the implementation of conditions related to quality and quantity of recycle and reuse of treated water, efficiency of treatment systems, quality of treated water being supplied for flushing (specially the bacterial counts), comparative bacteriological studies from toilet seats using recycled treated waters and fresh waters for flushing and quality of water being supplied through spray faucets attached to toilet seats.
iv.	Area for greenery shall be provided as per the details provided in the project document i.e., area under plantation/greenery will be at least 3,434. 45 sqm. As proposed, at least 800 trees shall be maintained during the operation phase of the project. The landscape planning should include plantation of native species. A minimum of 01 tree for every 80 sqm of land should be planted and maintained The existing trees will be counted for this purpose Plantations to be ensured species (cut) to species (planted). The species with heavy foliage, broad leaves and wide canopy cover are desirable. Water intensive and/or landscaping invasive species should not be used for landscaping.	We have provided greenery to the maximum extent. Apart from parking nothing is left and entire balance area is greenery and garden. Maximum number of trees are planted. Landscape & gardening are done with native species. No trees are cut. In case we are cutting the trees, we will plant more trees than number of trees cut. Species with heavy foliage, broad leaves and wide canopy cover are the preferred plants and water intensive and landscaping invasive species are avoided. Annexure 4, 5, 6
v.	No tree can be felled / transplanted unless exigencies demand Where absolutely necessary, tree felling shall be with prior permission from the	We are not cutting any tree and if at all any tree is to be cut, we will obtain prior permission from the concerned authorities.

	concerned regulatory authority Old trees should be retained based on girth and age regulations as may be prescribed by the Forest Department. Plantations to be ensured species (cut) to species (planted).	It is our intention to retain old trees. In case we cut any tree we will plant more trees than the number of trees cut.
vi.	Where the trees need to be cut with prior permission from the concerned local Authority, compensatory plantation in the ratio of 1:10 (i.e., planting of 10 trees for every 1 tree that is cut) shall be done and maintained. Plantations to be ensured species (cut) to species (planted). Area for green belt development shall be provided as per the details provided in the project document.	Noted. Where trees are cut with prior permission compensation plantation in the ratio 1:10 will be done. We will ensure plantation species (cut) to species (planted). Green belt development is provided as per details provided in the project document.
vii.	The local bye-law provisions on rainwater harvesting should be followed. If local bye-law provision is not available adequate provision for storage and recharge should be followed as per the Ministry of Urban Development Model Building Byelaws, 2016. As proposed, RWH tank of total 400 KL capacity shall be provided by PP for rainwater harvesting after filtration.	We are following Local bye-law provisions of rainwater harvesting. The total capacity of rainwater harvesting tanks is 202 KL.
viii.	The solid waste shall be duly segregated into biodegradable and non-biodegradable components and handled in separate area earmarked for segregation of solid waste, as per SWM Rules, 2016. As committed, biodegradable waste shall be utilized through bio-gas generation unit /bio-bin system to be installed within the site. Inert waste shall be disposed off as per norms at authorized site The recyclable waste shall be sold to authorized vendors/recyclers Construction & Demolition (C&D) waste shall be segregated and managed as per C&D Waste Management Rules, 2016.	The solid waste will be duly segregated into biodegradable and non-biodegradable components and handled in separate area earmarked for segregation of solid waste, as per SWM Rules. Biodegradable waste will be utilized through bio-gas generation unit / bio-bin system to be installed within the site. Inert waste shall be disposed of as per norms at authorized site. Annexure 7
ix.	A detailed traffic management and traffic decongestion plan shall be drawn up to ensure that the current level of service of the roads within a 05 kms radius of the project is maintained and improved upon after the implementation of the project. This plan should be based on cumulative impact of all development and increased habitation being carried out or proposed to be carried out by the project or other agencies in this 05 kms radius of the site in different scenarios of space and time and the traffic management plan shall be duly validated and certified by the State Urban Development department augmentation and the P.W.D./competent authority for road and shall also have their consent to the implementation of components of the plan which involve the participation of these departments.	Detailed traffic management and traffic decongestion plan was done with NATPAC quite some time back. As the situation has changed, we have once again requested NATPAC to do a detailed study and give us the report. In our opinion they are best people to do this job. Annexure No 8

x.	The PP shall provide electric charging points in parking areas for e vehicles as committed.	We have provided 5 Nos Electric Charging Points in the basement. We are considering more numbers at Open Parking.
xi.	As committed, solar PV installation of 630 KWp capacity shall be provided to meet at least 12:6% of the connected load.	Solar PV installation of 630 KWp capacity is provided It is 12% of the connected load. Work order attached Annexure 9
xii.	The Environmental Clearance to the project is primarily under provisions of EIA Notification, 2006. The Project Proponent is under obligation to obtain approvals/clearances under any other Acts/ Regulations or Statutes as applicable to the project.	Noted. We have obtained all the required approvals / clearances.

	<u>CHAPTER-3-PART C- STANDARD CONDITIONS</u>	<u>COMPLIANCE</u>
I	Statutory Compliance	
i.	The project proponent shall obtain all necessary clearance/ permission from all relevant agencies including town planning authority before commencement of work All the construction shall be done in accordance with the local building bylaws.	We have obtained all required permissions / clearances from concerned authorities. All constructions are done in accordance with KMBR, NBC and BIS under the supervision of qualified and experienced Engineers.
ii.	The approval of the Competent Authority shall be obtained for structural safety of buildings due to earthquakes, adequacy of firefighting equipment etc., as per National Building Code including protection measures from lightening etc.	The building is designed as per BIS and other relevant codes of practices The structural safety certificate is obtained from Structural consultant. We have also obtained NOC from Fire and Rescue Department. Annexures 10 A, 10B
iii.	The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act. 1980, in case of the diversion of forest land for non-forest purpose involved in the project.	There is no diversion of forest land for non- forest purpose in this project.
iv.	The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.	For this project permission is not required from the National Board to Wildlife.
v.	The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act. 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.	We have obtained Consent To Establish and Consent To Operate from Kerala State Pollution Control Board. Annexure 11
vi.	The project proponent shall obtain the necessary permission for drawl of ground water/surface water required for the project from the competent authority.	As on date we do not expect any ground water extraction. If ground water/ surface water is drawn, we will obtain permission from Competent authority.
vii.	A certificate of adequacy of available power from the agency supplying power to the project along with the load allowed for the project should be obtained.	We have obtained Power allocation from KSEB for the power requirement. Annexure 12
viii.	All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department Civil Aviation Department shall be obtained, as applicable, by project proponents from the respective competent authorities.	In this project, considering the size of building we are not providing Diesel storage tank. NOC from Fire and Rescue Department and Civil Aviation are obtained. Annexure 13 A, Annexure 13B
ix.	The provisions of the Solid Waste Management Rules, 2016, e-Waste (Management) Rules, 2016,	We will follow the Solid waste Management Rules, 2016, e-Waste

	and the Plastics Waste Management Rules, 2016, shall be followed.	(Management) Rules, 2016, and the Plastics Waste Management Rules, 2016 when the mall is in operation.
x.	The project proponent shall follow the ECBC/ECBC-R prescribed by Bureau of Energy Efficiency, Ministry of Power strictly.	We follow the ECBC / ECBC-R prescribed by Bureau of Energy Efficiency, Ministry of Power strictly.
II	Air quality monitoring and preservation:	
i.	Notification GSR 94(E) dated 25.01.2018 of MoEFACC regarding Mandatory Implementation of Dust Mitigation Measures for Construction and Demolition Activities for projects requiring Environmental Clearance shall be complied with.	We had taken all precautions. During summer to mitigate dust nuisance we were sprinkling water. Demolition and construction activities were enclosed with green netting. Now the constructions are over and the Mall about to open.
ii	A management plan shall be drawn up and implemented to contain the current exceedance in ambient air quality at the site.	We had formed a committee to oversee this. Also monitoring is done by tests by approved laboratories. Annexure 14
iii.	The project proponent shall install system to carryout Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (c g PM10 and PM2.5) covering upwind and downwind directions during the construction period.	The system installed by us is to test air and water periodically so that precautions can be taken if required.
iv.	Diesel power generating sets proposed as source of backup power should be of enclosed type and conform to rules made under the Environment (Protection) Act, 1986. The height of stack of DG sets should be equal to the height needed for the combined capacity of all proposed DG sets. Use of low sulphur diesel. The location of the DG sets may be decided with in consultation with State Pollution Control Board.	D.G sets provided as source of backup power are of enclosed type and conform to rules made under the Environment (Protection) Act, 1986. The height of stack of DG sets are equal to the height needed for the combined capacity of all proposed DG sets. This has been inspected and approved by KSPCB before issue of Consent To Operate. We are using HSD for D G Sets which are low Sulphur. The location of the DG sets were inspected and approved by KSPCB before the issue of Consent To Operate. Annexure 15
V.	Construction site shall be adequately barricaded before the construction begins Dust; smoke & other air pollution prevention measures shall be provided for the building as well as the site. These measures shall include screens for the building under construction, continuous dust/wind breaking walls all around the site (at least 3 meter height) Plastic/tarpaulin sheet covers shall be provided for vehicles bringing in sand, cement, murrum and other construction materials prone to causing dust	Construction site was barricaded before the construction began. Dust, smoke & other air pollution prevention measures such as water sprinkling, netting, tarpaulins, plastic sheets, etc. were provided during construction. The trucks bringing building construction materials were fully covered with sheet covers. The police were also

	pollution at the site as well as taking out debris from the site.	keeping vigil on this.
vi.	Sand, murrum, loose soil, cement, stored on site shall be covered adequately so as to prevent dust pollution.	There was no occasion to store large quantities as the materials were being consumed. Whatever quantities stored were covered. The excavated soil was used for site development works simultaneously.
vii.	Wet jet shall be provided for grinding and stone cutting.	Grinding and stone cutting were minimum as we purchase mostly ready to use tiles. Wherever required wet jet was used.
viii.	Unpaved surfaces and loose soil shall be adequately sprinkled with water to suppress dust.	Water sprinkling was used abundantly to suppress the dust.
ix.	All construction and demolition debris shall be stored at the site (and not dumped on the roads or open spaces outside) before they are properly disposed. All demolition and construction waste shall be managed as per the provisions of the Construction and Demolition Waste Management Rules 2016.	Not even a single piece of demolition debris or construction material were stored outside the premises; we had a huge land property and most of the debris were used for land development.
x.	The diesel generator sets to be used during construction phase shall be low sulphur diesel type and shall conform to Environmental (Protection) prescribed for air and noise emission standards.	The Diesel Generator sets used during construction phase was low Sulphur HSD conforming to Environmental (Protection) prescribed for air and noise emission standards.
xi.	The gaseous emissions from DG set shall be dispersed through adequate height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution. Low sulphur diesel shall be used. The location of the DG set and exhaust pipe height shall be as per the provisions of the Central Pollution Control Board (CPCB) norms.	The gaseous emissions from DG set and the height of chimney and location of D G Sets were as per CPCB standards and they were inspected and approved by KSPCB before they issued the Consent To Operate. Acoustic enclosures are provided to the DG sets to mitigate the noise pollution. Low Sulphur diesel, that is HSD is used for D G Sets.
xii.	For indoor air quality the ventilation provisions as per National Building Code of India.	For indoor air quality the ventilation provisions are as per N B C of India.

III	Water quality monitoring and preservation:	
i.	The natural drain system should be maintained for ensuring unrestricted flow of water. No construction shall be allowed to obstruct the natural drainage through the site, on wetland and water bodies. Check dams, bio swales, landscape, and other sustainable urban drainage systems (SUDS) are allowed for maintaining the drainage pattern and to harvest rainwater.	The natural drain system is maintained to ensure unrestricted flow of water. No construction is done which will obstruct the natural drainage through the site, on wetland and water bodies. We will not do anything to obstruct sustainable urban drainage system.
ii.	Buildings shall be designed to follow the natural topography as much as possible. Minimum cutting and filling should be done.	Buildings are designed keeping the natural topography to the extent possible. Minimum cutting and filling are done keeping the cost to minimum.
iii.	The quantity of freshwater usage, water recycling and rainwater harvesting shall be measured and recorded to monitor the water balance as projected by the project proponent. The record shall be submitted to the Regional Office, MoEF&CC along with six monthly Monitoring reports.	Noted. Once the mall is in operation we will keep records of freshwater usage, recycled water and rainwater harvesting and will be submitted along with half yearly monitoring reports.
iv.	A certificate shall be obtained from the local body supplying water, specifying the total annual water availability with the local authority, the quantity of water already committed, the quantity of water allotted to the project under consideration and the balance water available. This should be specified separately for ground water and surface water sources, ensuring that there is no impact on other users.	We do not intend to draw ground water.
V.	At least 20% of the open spaces as required by the local building byelaws shall be pervious. Use of Grass pavers, paver blocks with at least 50% opening, landscape etc. would be considered as pervious surface.	Apart from parking the entire area is landscaped. We have used paver blocks; unlike other places water penetration is limited as we are having clayey and black cotton soil below.
vi.	Installation of dual pipe plumbing for supplying fresh water for drinking, cooking and bathing etc and other for supply of recycled water for flushing, landscape irrigation, car washing, thermal cooling, conditioning etc. shall be done.	Installation of dual pipe plumbing for supplying fresh water for drinking, cooking and bathing, etc. and other for supply of recycled water for flushing, landscape irrigation, thermal cooling, Conditioning, etc. are provided. Car washing within the site is not expected.
vii.	Use of water saving devices / fixtures (viz. low flow flushing systems; use of low flow faucets tap aerators etc.) for water conservation shall be incorporated in the building plan.	Use of water saving devices / fixtures (viz. low flow flushing systems; use of low flow faucets tap aerators etc.) for water conservation are provided in the building.

viii.	Separation of grey and black water should be done by the use of dual plumbing system. In case of single stack system separate recirculation lines for flushing by giving dual plumbing system be done.	Separation of grey and black water is done by the use of dual plumbing system. We are not using single stack system.
ix.	Water demand during construction should be reduced by use of premixed concrete, curing agents and other best practices referred.	We were using mainly RMC only. Curing was done partly by curing compound and partly with available water.
x.	Rainwater harvesting recharge pits/storage tanks shall be provided for ground water recharging as per the CGWB norms.	Mainly Rainwater harvesting is done with R C C Water Tanks. This is done as per KMBR. The total capacity of rainwater harvesting tanks
xi.	A rainwater harvesting plan needs to be designed where the recharge bores of minimum one recharge bore per 5,000 square meters of built up area and storage capacity of minimum one day of total freshwater requirement shall be provided. In areas where ground water recharge is not feasible, the rainwater should be harvested and stored for reuse. The ground water shall not be withdrawn without approval from the Competent Authority.	We have rainwater harvesting tanks of total capacity which is more than one day's water requirement. Presently we have no intention of drawing ground water. Further ground water will not be drawn without permission from competent authority.
xii.	All recharge should be limited to shallow aquifer.	The site and soil condition are not suitable for recharge.
xiii.	No ground water shall be used during construction phase of the project.	No ground water is used during construction phase of the project.
xiv.	Any ground water dewatering should be properly managed and shall conform to the approvals and the guidelines of the CGWA in the matter. Formal approval shall be taken from the CGWA for any ground water abstraction or dewatering.	At present we have no plan to dewater ground water. In future if any ground water dewatering is required it will be properly managed and will conform to the approvals and the guidelines of the CGWA in the matter. Formal approval will be taken from the CGWA for any ground water abstraction or dewatering.
xv.	The quantity of fresh water usage, water recycling and rainwater harvesting shall be measured and recorded to monitor the water balance as projected by the project proponent The record shall be submitted to the Regional Office, MoEF&CC along with six monthly Monitoring reports.	The quantity of freshwater usage, water recycling and rainwater harvesting will be measured and recorded to monitor the water balance as projected during the operation phase and the record will be submitted to the Regional Office, MoEF&CC along with half yearly Monitoring Reports.
xvi.	Sewage shall be treated in the STP with tertiary treatment.	STP provided is with tertiary treatment. It is MBBR technology.

xvii.	No sewage or untreated effluent water would be discharged through storm water drains.	No sewage or untreated effluent water will be discharged through storm water drains.
xviii.	Onsite sewage treatment of capacity of treating 100% waste water to be installed The installation of the Sewage Treatment Plant (STP) shall be certified by an independent expert and a report in this regard shall be submitted to the Ministry before the project is commissioned for operation Treated waste water shall be reused on site for landscape, flushing, cooling tower, and other end-uses Excess treated water shall be discharged as per statutory norms notified by Ministry of Environment, Forest and Climate Change Natural treatment systems shall be promoted.	Onsite sewage treatment with a capacity of treating 100% wastewater is installed. The installation of the Sewage Treatment Plant (STP) will be certified by an independent expert when STP operation is commissioned and the report in this regard will be submitted to the Ministry. Wastewater Treated will be reused on site for landscape, flushing, and cooling tower. Excess treated water, if any, will be discharged as per statutory norms notified by Ministry of Environment, Forest, and Climate Change. We will promote natural treatment systems. We do not expect surplus treated water.
xix.	Periodical monitoring of water quality of treated sewage shall be conducted. Necessary measures should be made to mitigate the odour problem from STP.	Periodical monitoring of the water quality of treated sewage will be conducted. Testing will be done at the approved laboratory. Necessary measures will be taken, if necessary, to mitigate the odour problem from STP.
xx.	Sludge from the onsite sewage treatment, including septic tanks, shall be collected, conveyed and disposed as per the Ministry of Urban Development, Central Public Health and Environmental Engineering Organization (CPHEEO) Manual on Sewerage and Sewage Treatment Systems, 2013.	Sludge from the onsite sewage treatment, including septic tanks, if any, will be collected, conveyed and disposed of as per the Ministry of Urban Development, Central Public Health and Environmental Engineering Organization (CPHEEO) Manual on Sewerage and Sewage Treatment Systems, 2013. This is applicable after STP is commissioned and Mall is in operation.
IV	Noise monitoring and prevention:	
i.	Ambient noise levels shall conform to residential area/commercial area/industrial area/silence zone both during day and night as per Noise Pollution (Control and Regulation) Rules, 2000. Incremental pollution loads on the ambient air and noise quality shall be closely monitored during construction phase. Adequate measures shall be made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards	Ambient noise levels are monitored, and it is conforming to residential area / commercial area, industrial area / silence zone both during day and night as per Noise Pollution (Control and Regulation) Rules, 2000. Incremental pollution loads on the ambient air and noise quality were closely monitored during construction phase and the test results were submitted

	by CPCB / SPCB.	along with half yearly compliance reports. Adequate measures such as green net, products manufactured at factory and installed at site, etc were made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB / SPCB.
ii.	Noise level survey shall be carried as per the prescribed guidelines and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.	Noise level survey and tests were carried out as per the prescribed guidelines and report in this regard were submitted to Regional Officer of the Ministry as a part of half yearly Compliance Report.
iii.	Acoustic enclosures for D G sets, noise barriers for ground run ways, ear plugs for operating personnel shall be implemented as mitigation measures for noise impact due to ground sources.	Acoustic enclosures for D G sets, noise barriers for ground run ways, ear plugs for operating personnel, etc. were provided as mitigation measures for noise impact due to ground sources.
V.	Energy Conservation measures:	
i.	Compliance with the Energy Conservation Building Code (ECBC) of Bureau of Energy Efficiency shall be ensured Buildings in the States which have notified their own ECBC shall comply with the State ECBC.	Compliance with the Energy Conservation Building Code (ECBC) of Bureau of Energy Efficiency were taken care of.
ii.	Outdoor and common area lighting shall be LED.	Outdoor and common area lighting provided are with LED.
iii.	Concept of passive solar design that minimize energy consumption in buildings by using design elements, such as building orientation, landscaping, efficient building envelope, appropriate fenestration, increased day lighting design and thermal mass etc. shall be incorporated in the building design. Wall, window, and roof u values shall be as per ECBC specifications.	Concept of passive solar design that minimize energy consumption in buildings by using design elements, such as building orientation, landscaping, efficient building envelope, appropriate fenestration, increased day lighting design and thermal mass, etc. were incorporated in the building design to the extent possible. Skylights and atrium give natural lights to the building. Wall, window, and roof 'U' values are as per ECBC specifications.
iv.	Energy conservation measures like installation of CFLs / LED for the lighting the area outside the building should be integral part of the project design and should be in place before project commissioning.	Energy conservation measures like installation of CFLs / LED for the lighting the area outside the building, etc. are integral part of the project design and are in place now.
v.	Solar, wind or other Renewable Energy shall be installed to meet electricity generation equivalent to 1% of the demand load or as per the state	Solar Renewable Energy is installed to meet electricity generation equivalent to more than 1% of the demand load or as per

	level/local building byelaws requirement, whichever is higher.	the state level / local building byelaws requirement, whichever is higher.
vi.	Solar power shall be used for lighting in the apartment to reduce the power load on grid. Separate electric meter shall be installed for solar power. Solar water heating shall be provided to meet 20% of the hot water demand of the commercial and institutional building or as per the requirement of the local building byelaws, whichever is higher. Residential buildings are also recommended to meet its hot water demand from solar water heaters, as far as possible.	Solar power to the tune of 630 KWp is used for the Mall including lighting in the building to reduce the power load on grid. Separate electric meter is being installed for solar power as per KSEB norms. There is no requirement of hot water as it is a commercial building.
VI.	Waste Management	
i.	A certificate from the competent authority handling municipal solid wastes, indicating the existing civic capacities of handling and their adequacy to cater to the M.S.W. generated from project shall be obtained.	Will be done during Operation Phase.
ii.	Disposal of muck during construction phase shall not create any adverse effect on the neighbouring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.	Creation muck is minimum using modern technology. Disposal of muck during construction phase did not create any adverse effect on the neighbouring communities and were disposed of taking all necessary precautions for general safety and health aspects of people. This happened almost 3 years back.
iii.	Separate wet and dry bins must be provided in each unit and at the ground level for facilitating segregation of waste. Solid waste shall be segregated into wet garbage and inert materials.	Separate wet and dry waste rooms are provided for facilitating segregation of waste. The concerned shops will carry and put the waste in appropriate rooms. Solid waste will be segregated into wet garbage and inert materials.
iv.	Organic waste compost/Vermiculture pit/Organic Waste Converter within the premises with a minimum capacity of 0.3 kg/person/day must be installed.	Organic Waste Converter within the premises is installed at site.
v.	All non-biodegradable waste shall be handed over to authorized recyclers for which a written tie up must be done with the authorized recyclers.	All non-biodegradable waste will be handed over to authorized recyclers for which a written tie up will be done with the authorized recyclers. This will be during the operation phase.
vi.	Any hazardous waste generated during construction phase, shall be disposed of as per applicable rules and norms with necessary approvals of the State Pollution Control Board.	No hazardous waste generated during the construction phase. If at all anything is produced later it will be disposed of as per applicable rules and norms with necessary

		approvals of the State Pollution Control Board.
vii.	Use of environment friendly materials in bricks, blocks and other construction materials, shall be required for at least 20% of the construction material quantity. These include Fly Ash bricks, hollow bricks, AACs, Fly Ash Lime Gypsum blocks, Compressed earth blocks, and other environment friendly materials.	Use of environment friendly materials in bricks, blocks and other construction materials, such as fly ash cement, etc. were used for of the construction material quantity. These will include Fly Ash bricks, hollow bricks, AACs, Fly Ash Lime Gypsum blocks, Compressed earth blocks, and other environment friendly materials as per the designs.
viii.	Fly ash should be used as building material in the construction as per the provision of Fly Ash Notification of September 1999 and amended as on 27 August 2003 and 25th January 2016 Ready mixed concrete must be used in building construction.	Fly ash cement were used as building material in the construction as per the provision of Fly Ash Notification of September 1999 and amended as on 27 August 2003 and 25th January 2016. Ready mixed concrete was used mainly in building construction.
ix.	Any wastes from construction and demolition activities related thereto shall be managed so as to strictly conform to the Construction and Demolition Waste Management Rules, 2016.	Waste from construction and demolition activities related thereto were mainly used for filling up low lying areas. It was so managed so as to strictly conform to the Construction and Demolition Waste Management Rules, 2016.
x.	Used 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.	Used CFLs and TFLs will be properly collected and disposed of / sent for recycling as per the prevailing guidelines / rules of the regulatory authority to avoid mercury contamination. This is applicable during operation phase.
VII.	GREEN COVER	
i.	Topsoil should be stripped to a depth of 20 cm from the areas proposed for buildings, roads, paved areas, and external services. It should be stockpiled appropriately in designated areas and reapplied during plantation of the proposed vegetation on site.	Topsoil was stacked separately and used for gardening. Rest of the soil were used for site development works.
VIII	TRANSPORT	

i.	<p>A comprehensive mobility plan, as per MoUD best practices guidelines (URDPFI), shall be prepared to include motorized, non-motorized, public, and private networks. Road should be designed with due consideration for environment, and safety of users. The road system can be designed with these basic criteria.</p> <p>a. Hierarchy of roads with proper segregation of vehicular and pedestrian traffic. b. Traffic calming measures. c. Proper design of entry and exit points. d. Parking norms as per local regulation.</p>	<p>NATPAC had prepared a report initially but to meet the changed circumstances we have appointed them again to make a detailed study and advise us how to go about the traffic. Their report will be implemented in coordination with local authorities.</p>
ii.	<p>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 applicable air and noise emission standards be operated only during non-peak hours.</p>	<p>Vehicles hired for bringing construction material to the site were in good condition and had pollution check certificates conforming to applicable air and noise emission standards and were operated only during non-peak hours.</p>
IX	Human health issues:	
i.	<p>All workers working at the construction site and involved in loading, unloading, carriage of construction material and construction debris or working in any area with dust pollution shall be provided with dust mask.</p>	<p>All workers worked at the construction site and involved in loading, unloading, carriage of construction material and construction debris or worked in any area with dust pollution were provided with dust mask.</p>
ii.	<p>For indoor air quality the ventilation provisions as per National Building Code of India.</p>	<p>For indoor air quality the ventilation provisions as per National Building Code of India is provided.</p>
iii.	<p>Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.</p>	<p>Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan were provided.</p>
iv.	<p>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, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.</p>	<p>No workers were allowed to stay within the work site. Provision were made for the housing of construction labour outside the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche, etc. as required. The housing was in the form of temporary structures to be removed after the completion of the project.</p>
V.	<p>Occupational health surveillance of the workers shall be done on a regular basis.</p>	<p>Occupational health surveillance of the workers were done on a regular basis.</p>

vi.	A First Aid Room shall be provided in the project both during construction and operations of the project.	A First Aid Room with required facilities was provided in the project site during construction phase. LuLu will provide similar facilities during operations phase.
X	Miscellaneous	
i.	The project proponent shall prominently advertise it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days indicating that the project has been accorded environment clearance and MOEF&CC/SEIAA website where it is displayed.	We have already advertised in two local newspapers of the district, one in Malayalam language and another one in English, within seven days indicating that the project has been accorded environment clearance. Copies of such advertisement were submitted along with earlier Compliance Report.
ii.	The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.	The copies of the environmental clearance were submitted to the Heads of local bodies, Municipal Bodies in addition to the relevant offices of the Government.
iii.	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.	We are regularly uploading the status of compliance of the stipulated environment clearance conditions, including results of monitored data on the website and updated the same on half-yearly basis.
iv.	The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.	We are regularly submitting the six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
v.	The company shall have a well laid down environmental policy duly approved by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental/ forest / wildlife norms / conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental forest / wildlife norms / conditions and / or shareholders /stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.	We have a well-laid environmental policy duly approved by the Board of Directors. We have constituted a committee to oversee this. The committee will report to the senior management any infringements / deviation/violation of the environmental / forest / wildlife norms / conditions. We will have a defined system of reporting infringements / deviation / violation of the environmental forest / wildlife norms / conditions and / or / stake holders.
vi.	A separate Environmental Cell both at the project	As stated under item v above we have

	and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly report to the head of the organization.	formed the committee with qualified personnel and they will report to the senior management.
vii.	Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.	
viii.	The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986. as amended subsequently and put on the website of the company.	
ix.	The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.	The project work is over and occupation certificate obtained. On inauguration and starting of operation and settlement of final bills we will inform the financial closure of the project.
x.	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.	Noted and we are complying.
xi.	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report and also that during their presentation to the Expert Appraisal Committee.	We will abide by all the commitments and recommendations made in the EIA / EMP report and also that during their presentation to the Expert Appraisal Committee as required.
xii.	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change (MoEF&CC).	No further expansion or modifications in the building will be carried out without prior approval of the Ministry of Environment, Forest and Climate Change (MoEF&CC).
xiii.	Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.	Noted. We have not concealed any factual data or submitted any false / fabricated data which can revoke this Environmental Clearance.
xiv.	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	Noted please.
xv.	The Ministry reserves the right to stipulate	Noted please.

	additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.	
xvi.	The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data/information/monitoring reports.	Noted. We will extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.
xvii.	The above conditions shall be enforced. inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016, and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.	We have noted that the above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016, and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.
xviii.	Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010).	Noted please.


Babu Varghese.

Project Director, 27-08-2024.



LULU

Convention Center Calicut (Pvt) Ltd.

24/825A, P.O. Mannavu,
Calicut - 673 007

www.lulucce.in

CIN: U52190KL2011PTC030058

WORK ORDER

WO Ref No: KOZHIKODE/STP/GREEN METHOD/WO/01
February 15th 2022.

M/s. Green Method Engineering (P) Ltd
A KSPCB approved 'A Class' Consultant
19/195A1, ATC Building, Moolepadam Nagar Road,
HMT Junction, Kalamassery, Ernakulam,
Kerala - 683104.

Dear Sirs,

Sub: - **STP WORKS FOR THE PROPOSED BUILDING FOR LULU AT KOZHIKODE, KERALA, INDIA.**

Ref: - 1. Your final priced BoQ received vide e-mail dated 14th February 2022.

1. We refer to the tender dated 31st March 2021 submitted by you for the captioned works and various correspondences & discussions and negotiations we had with you. As discussed and mutually agreed upon, we are pleased to advise that your negotiated offer for the above-mentioned works has been in principle accepted by us at a total amount of **Rs 1,97,87,544 /-** (**Rupees One Crore Ninety-Seven Lakhs Eighty-Seven Thousand Five Hundred and Forty-Four Only**) Inclusive of all taxes, GST and Warranty/DLP of 36 Months from the date of issuance of Taking Over Certificate. The above amount is inclusive of all taxes and duties like GST, ED, Port Clearances, Customs, any other taxes etc. whatsoever. Adjustments shall not be allowed in respect of any rate or price contained in the Contract Document for any fluctuation in the cost of labor, materials, equipment, services, whatsoever that may occur during the period of Contract. Labour Cess shall be taken care by M/s LuLu.

2. The Scope of the works are as defined in the Tender Documents are generally referred to without limitation as Design Coordination, Value Engineering, supply, timely delivery, quality testing & certification, material approval, installation, testing, commissioning, protection, handing over and attendance of defects during Defects Liability Period of the **STP WORKS FOR THE PROPOSED BUILDING FOR LULU AT KOZHIKODE, KERALA, INDIA** (the Works) as described and in coordination with other agencies engaged by the Employer. The GFC Drawings, Preambles to BoQ, Bill of Quantities, Conditions of Contract, Technical Specifications, responses to bid queries, addendums etc. are complementary to each other and you will carry out any missing items also, if it is required for satisfactory completion of works.

3. The time is the essence of the contract and you are requested to start the work at once, in consultation with the Project Manager of LuLu and proceed with due diligence, skill, workmanship, manpower, utmost care and meticulous vigil and complete the works in all respects in accordance with contractual requirements and to our satisfaction without causing / creating any unpleasant or dissatisfactory situation whatsoever. You are also please aware that the time mutually agreed for the completion of the entire works in all respects is strictly 10

For Green Method Engineering (P) Ltd


Roy M. Thomas Manager



½ months, including mobilization period, which shall be reckoned from the **15.02.2022**. however, it is explicitly agreed that:

- 3.1. Commencement Date shall be 15th February 2022
- 3.2. Completion of design, shop drawings etc. shall be on or before 25th February 2022.
- 3.3. Completion of Works shall be on or before 31st December 2022.
- 3.4. A detailed works program complying with the above milestones, depicting Contractor's planned sequence of work in the approved format shall be submitted for approval by the Consultant/Employer within 15days.

You shall prepare a detailed construction program for all activities relating to the project indicating the time schedule keeping in view of the overall time of completion of the project. The liquidated damages (not as penalty) will be a 0.50% of the contract sum per week subject to a maximum of 5% of contract sum.

4. The contract shall be item fixed rates, re-measurable domestic contract, in accordance with the approved drawings, specifications, addendums, bid queries, Minutes of Meetings and BOQ for a probable amount of **Rs 1,97,87,544 /-** (**Rupees One Crore Ninety-Seven Lakhs Eighty-Seven Thousand Five Hundred and Forty-Four Only**) – Inclusive of all taxes, loading, transportation, unloading, stacking, storing, re-handling, etc. Labour Cess shall be taken care by LuLu. The rates quoted are firm and valid till completion of the entire works and no price escalation due to any reasons whatsoever will be entertained. The quantity mentioned in BoQ are tentative and any changes will be paid as per the above rate with the revised quantity. Adjustments shall not be allowed in respect of any rate or price contained in the Contract Document for any fluctuation in the cost of labor, materials, equipment, services, whatsoever that may occur during the period of Contract except those as mentioned under clause 9 of this agreement.

5. Terms of Payments shall be as per below.

5.1 - Supply Rate.		
Stage-1	Mobilization Advance	30% on total contract basic value as Mobilization Advance will be paid against suitable PDC as security, which will be recovered at the rate of 37.5% from the RA Bills.
Stage-2	Against Supply	70% of BOQ item supply rates on pro-rata basis against delivery of materials at site and upon quality and quantity are accepted by PM/OPM at site.
Stage-3	Against Installation	15% of BOQ item rates on pro-rata basis against installation at site.
Stage-4	Against T&C	10% of BOQ item rates on pro-rata basis against completion of Testing and Commissioning.
Stage-5	Against Handing Over	5% of BOQ item rates against completion of works in all aspects and issuance of taking over certificate.

For Green Method Engineering (P) Ltd

Roy M. Thomas  Manager



5.2 - Installation Rate.		
Stage-1	Mobilization Advance	30% on total contract basic value as Mobilization Advance will be paid against suitable PDC as security, which will be recovered at the rate of 37.5% from the RA Bills.
Stage-2	Against Installation	85% of BOQ item rates on pro-rata basis against installation at site.
Stage-3	Against T&C	10% of BOQ item rates on pro-rata basis against completion of Testing and Commissioning.
Stage-4	Against Handing Over	5% of BOQ item rates against completion of works in all aspects and issuance of taking over certificate.

5.3 Defect Liability Period (DLP): DLP shall be 36 Months from the date of issuance of Taking Over Certificate.

5.4 Performance Bank Guarantee (PBG): You shall furnish PBG for 5% of the total Contract value towards Performance Security within 15 days of issue of this Letter of Intent. PBG should be valid from the commencement till the issuance of Taking Over Certificate (TOC). PBG shall be returned on issuance of TOC.

5.5 Retention: Retention money will be deducted at the rate of 5% from each running RA bill. Out of the total accumulated retention money of 5%, 50% of the said amount will be released to the contractor against submission of equivalent amount of Retention Bank Guarantee (valid till DLP of 36 Months). The balance of 50% of the accumulated amount will be retained till successful completion of defects liability of 36 months or extended period if any.

5.6 CAR Policy & Third-party Insurance Policy: For an amount of 110 % of contract value.

5.7 Workmen's Compensation Policy: Rs. 10 Lakhs for one incident with number of incidents being unlimited. Validity up to end of Defects Liability period.

Note: - All payments shall be further subject to applicable statutory withholdings/deductions and retention as per Contract. From each RA bill, recovery will be made towards TDS etc. All the other terms and the conditions shall remain same as per the tender document and addendums.

6. Contract Documents: The following documents listed hereunder shall form part of the Contract as annexures. In the event of any inconsistency between the terms and conditions stipulated in this Work Order and other documents issued in connection with the Works, the hierarchy for the priority of documents shall be as follows.

- a. This Work Order.
- b. Preamble to Bill of Quantities.
- c. Bill of Quantities.
- d. Offered Tank Dimension details



- e. Parameters – Compliances
- f. General Conditions of Contract.
- g. EHS Plan & Safety Code.
- h. The Drawings.

In case any conflict or contradiction may arise in the documents, the LuLu / Consultant Engineer shall decide on the most stringent requirements take precedence and instruct the Contractor accordingly. Any exclusion, qualification, condition made in the Contractor's Tender Offer, shall be considered as excluded and if any of the qualifications / exclusions from the Contractor, solely based on Tender Documents / requirements will prevail.

7. The works call for use of best quality materials and high standards of workmanship conforming to Contract Provisions, Bureau of Indian Standards, National Building Code, local KSEB norms and Best Engineering Practice and to our absolute satisfaction. All materials, goods and equipment absolutely and wholly free from any defects, deficiencies, repairs and liens and encumbrances, free from any material or structural defects and the best and the most suitable of their respective kinds of their intended uses and they shall strictly conform to the respective description set forth in the contract documents. Furthermore, all the materials used / to be used in the project shall be appraised by LuLu / our Architect / Consultant well in advance of incorporating them in the Project.


8. Consultants and Contractors: - It is hereby informed that M/s. Design Concepts Consulting Architect & Engineers is the Consultant, M/s. Desionics is the Sub MEP Consultant and M/s PMK Contractors Pvt Ltd is the Main Civil Contractor, M/s Bluestar is the MEP Contractor. At the commencement of the Work and from time to time, the Contractor shall co-operate with Main Contractor, Employer's other Contractors, Sub-Contractors, persons engaged on separate contracts in connection with the Project, Vendors, Consultants, Quantity Surveyor, Engineer and with the Employer's Representative for the purpose of the co-ordination and execution of various phases of the Project.

9. Variation: This being an item rate contract any variation in total value of the contract acceptable up to plus or minus 25%. In case there is any variation over and above +25%, the rates will be renegotiated based on market rates. All the RO items need to be renegotiated based on market actual rates and needs to be mutually agreed upon, whenever the value of the same exceeds Rs 1 Lakh against each RO item.

10. Non-tendered Items: For Any New Items for which Rates cannot be arrived from the existing BOQ, the rate of extra items will be arrived considering 15% profit & OH charges. i.e., Actual expense should be rate competitive (i.e. Material + Labour) + 15% OH & profit.

11. You shall take Insurance Policies covering your liability under Workmen Compensation Act, 1923, Minimum Wages Act 1948, ESI Act 1948, Provident Fund Act 1952, Contract Labour (Regulation and Abolition) Act, 1970 and under the other applicable and relevant labour legislations which cover the project. Also, please arrange to take out necessary Insurance Covers such as **CAR/EAR Policy [For an amount of 110 % of contract value], Third Party Liability [Rs.10 Lakhs for one incident with number of incidents being unlimited. Validity up to end of Defects Liability period]**, etc. The originals of all above Insurance and any other insurance as applicable as per the contract documents shall be submitted to Employer without fail and shall be retained by us. Such Policies shall be endorsed for the Project Contract and shall be operative till the completion of the project to our utmost satisfaction. In the event of any accident covered by these Policies, you shall forthwith pay compensation to the employees and other parties without waiting for payment due to be received by you from the insurer/ underwriters. You shall indemnify and keep Employer harmless from against all loss, claims, demands, action, liabilities and expenses suffered, incurred or sustained by Employer on any court. The Contractor shall include the bank clause

For Green Method Engineering (P) Ltd


Roy M. Thomas Manager



of the lending bank of the owner in all the insurance policies pertaining to this contract. The Contractor hereby unconditionally and categorically represents warrants and undertakes to the Owner that throughout the term of this Work Order it has all necessary licenses, permits, authorizations, approvals and / or consents to enter into all of its obligations under this Work Order and it shall comply with all relevant, applicable laws, regulations in respect of its obligations pursuant to this Work Order and that it has full capacity and authority to enter into and to perform this Work Order. Contractor shall without fail share with Owner copies of all such licenses, permits, authorizations and approvals which are current and unexpired without demand.

12. You shall not assign any part of the works to any other party without our consent. All sub-contractors appointed by you shall be strictly in accordance with the provisions of the contract documents and you shall seek our prior written approval of all your subcontractors and suppliers engaged in the works.

13. You and your subcontractors are requested to strictly adhere and comply with all the statutory rules, notifications, directives, regulations & requirements which are being issued from time to time. Upon any failure, the employer shall be authorized to make deductions from the bills and to withhold the same for mitigating the liability or to pay to the respective statutory authorities.


14. All workmanship shall conform strictly to the standards laid down in the contract documents and if no such standards are laid down, to the best accepted market standards of current professional construction and engineering practice and to our satisfaction and there shall not be any displeasure or discomfort in this regard on our part.

15. You shall deploy well qualified, experienced, skilled and competent Quality Engineer with sound and through knowledge about the project and with excellent expertise as per requirements of Quality Control Requirements laid down in the contract documents, to cover the supervision needs of the Project.

16. You, your subcontractors, nominated subcontractors and all your agencies and representatives shall comply with the safety precautions, protective measures, housekeeping requirements, etc. Our Site Engineer / ourselves with due intimation shall have the right to stop the work at site if in our opinion proceeding with the work will lead to an unsafe and dangerous condition. You shall ensure that all workmen deployed and employed by you at the site / for the project are aware about the nature of risk involved in their works and have adequate knowledge for carrying out their works safely. During the currency of the Work Order, the Owner is very particular about proper housekeeping of the construction sites and site offices, etc. and in case the Contractor fails to keep the construction sites, site offices, etc. hygienic, neat & tidy the Owner shall serve the notice to the Contractor requesting to upkeep the site, and even thereafter if the Contractor fails to set right the things in its proper order, Owner shall arrange for housekeeping and recover the cost thereof from the Contractor and the contractor shall not dispute or challenge the same.

17. The Contractor shall prepare a detailed construction programme for the activities relating to the scope of work indicating the time schedule keeping in view of the overall time of completion of the work. At any point of time if the Contractor fails to meet or achieve any of the requirements qualified in this Work Order, the Owner shall be entitled to terminate / pre-determine this Work Order with advance written notice of 30 (thirty) days and on the failure of the Contractor, Owner shall take over the works under this Work Order in partial and execute directly or through other agencies at the contractor's risk and cost, provided the Owner shall settle and pay the Contractor for the works executed and materials supplied as per the contract.

For Green Method Engineering (P) Ltd.


Roy M. Thomas Mahager

Page 5 of 8



18. The Contractor alone shall be liable for the death of or injury to any of its employee or other people who visit the site. The Contractor shall be bound by the laws in force at the time of any such occurrence. In case any accident occurs on the site/the property, the Contractor is obliged to immediately notify the owner and take necessary corrective measures. The ultimate liability to set right the things in such incidents vest with the Contractor and the Owner is not at all responsible for such events. For any action of Government like Police Departments, Contractor shall have to face the consequential situations and the Contractor alone is responsible, liable, accountable and answerable for any such lapse irregularity, omission, commission and fault.

19. The Contractor shall be liable for any loss or damage to the work under this Work Order and / or any assets or goods belonging to the Owner or a third party, caused by wilful negligence of the Contractor.

20. If the Contractor or any of its employees or agents break / deface or destroy the property belonging to the Owner during the execution of the scope of the work, the same shall be made good by the Contractor at their own expense and in default thereof. The Owner may cause the same to be made good by other agencies and recover the expenses from the Contractor, even after the defect liability period.

21. The Contractor shall be responsible for fulfilling the laws, rules and regulations regarding the health and safety that are in effect at the time of the commencement of this Work Order. For such purpose the Contractor will sign, keep and place at the disposal of the relevant authorities all legally perceptible documents, more specifically the following:

- Occupational Risk Prevention Plan
- Risk Assessment and regular reports
- Planning of preventive measures
- Monitoring of the health conditions of the Contractor's employees and other people on the site and
- List of labour accidents and sicknesses that have made the employees, the workers, the representatives and other people temporarily incapacitated.

22. Contractor's Employees/Agents: The Contractor shall provide an employee on the site in connection with the execution of the works,

- Only such technical employees as are skilled with core competence, excellently trained and well experienced in their respective professions and trades and such sub-agents, foremen and leading hands as are competent to give proper supervision to those part of the works they are required to supervise,
- such skilled, semi-skilled and unskilled labour as is necessary for the proper and timely execution of the works
- any defective and unsatisfactory work with infirmity the Contractor alone is answerable and liable to the employee

23. Security/Fencing and Lighting: The Contractor shall be solely responsible for the security of the site including, without limitation, proper fencing, lighting, guarding, warning signs and watching of all the works on each section and part on the site, in accordance with the specifications. No naked light shall be used by the Contractor on the site, otherwise than in the open air.

24. Safety and protection of the Environment: The Contractor shall, throughout the execution of the works and the Defects Liability Period:

- have full regard for the safety of all persons entitled to be upon the site and keep the site (so far as the same is under its control) and the works (so far as the same are

not completed or occupied by the Owner) in an orderly state appropriate to the avoidance of danger to such persons: and

- take all reasonable steps to protect the environment on and off the site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of its methods of operation.

Following safety precautions shall have to be taken by the Contractor to protect the Corona Virus effect (i.e., COVID 19) for the Contractor's labour/staff

- providing all labour nose mask
- sanitization – 3 times / day / as per the requirements
- Thermal Scanning – 2 times / day
- Other PPE's like Safety Helmet, Shoes, Jackets, Hand Gloves etc
- Necessary documents maintain at site to ensure the above said PPE

25. Epidemics: In the event of any outbreak of illness of epidemic nature the Contractor shall comply with and carry out such Laws as may be made by the Government or other appropriate Authorities for the purpose of dealing with and overcoming such outbreak.

26. Amendment or Modifications:

No Amendment or Modification to this Work Order shall be valid and binding unless set forth in writing and duly executed by both the parties specifically referring to the provisions so amended and or modified.

27. Waiver:

No waiver of any provision of this Work Order or of any breach thereof shall be effective or binding unless made in writing and signed by the Party purporting to give the same and unless otherwise provided in the written waiver and it shall be limited to the specific matter waived.

28. Assignment:

The contractor shall not assign or transfer its rights or obligations under this Work Order without the prior written consent of the owner.

29. Termination without reason / cause by Owner:

The Owner may at any time during the currency of this Work Order terminate this Work Order by giving 30 (Thirty) days' notice in writing to the Contractor without assigning any reason / cause whatsoever, provided the Owner shall settle and pay the Contractor for the works actually executed and materials supplied as per the contract. In case of termination by the Owner without reason as aforesaid, Contractor shall be paid on prorata basis for actual completed work strictly on the basis of measurement certified by Owner's Site Engineer pursuant to 'Clause 5: Payment Terms' of this Work Order supra.

30. Dispute Resolution and Arbitration:

All or any disputes or differences whatsoever between the parties arising out of this Work Order or relating to or touching the mutual rights and obligations of the parties shall be referred to a sole arbitrator to be appointed by the Owner under the provisions of Arbitration and Conciliation Act 1996 as amended. The arbitration proceedings shall be conducted at Cochin in English language. The award passed by the sole arbitrator shall be final. All the initial and subsequent expenses relating to the appointment and adjudication of the dispute by the arbitrator shall be equally borne by the parties. A mere reference to the sole arbitrator shall not entitle the Contractor from carrying out any of its duties and obligations under this Work Order.

For Green Method Engineering (P) Ltd

Roy M. Thomas

Manager



31. The construction, validity and performance of this Work Order shall be governed by and construed and interpretation thereof in accordance with Indian Law and the Courts at Kochi alone shall have jurisdiction over all the matters arising from this Work Order.

32. This Work Order shall constitute a binding contract between us. It is issued in duplicate and you are requested to sign, stamp, seal and return the duplicate to us as a token of your acceptance of the contract. This Work Order will supersede all previous correspondences and communications.

33. We look forward to a good working relationship for executing a quality job within the agreed time frame and to our expectations. Awaiting your excellent service and assuring you of our best co-operation always.

Thanking you.
Yours truly,



BABU VARGHESE
PROJECT DIRECTOR

Enclosure:

1. Preamble to Bill of Quantities.
2. Bill of Quantities (BoQ).
3. Tank Dimensions.
4. STP Parameters – Compliances.

CC: (1) Lulu Site Office (2) Accounts Department.

Acknowledgement

I, **Roy M. Thomas** in the capacity of **Manager**
duly authorized to sign for and on behalf of **M/s. Green Method** hereby confirm acceptance
of the terms and conditions stipulated in this letter.

For Green Method Engineering (P) Ltd

Signature & Stamp of Contractor

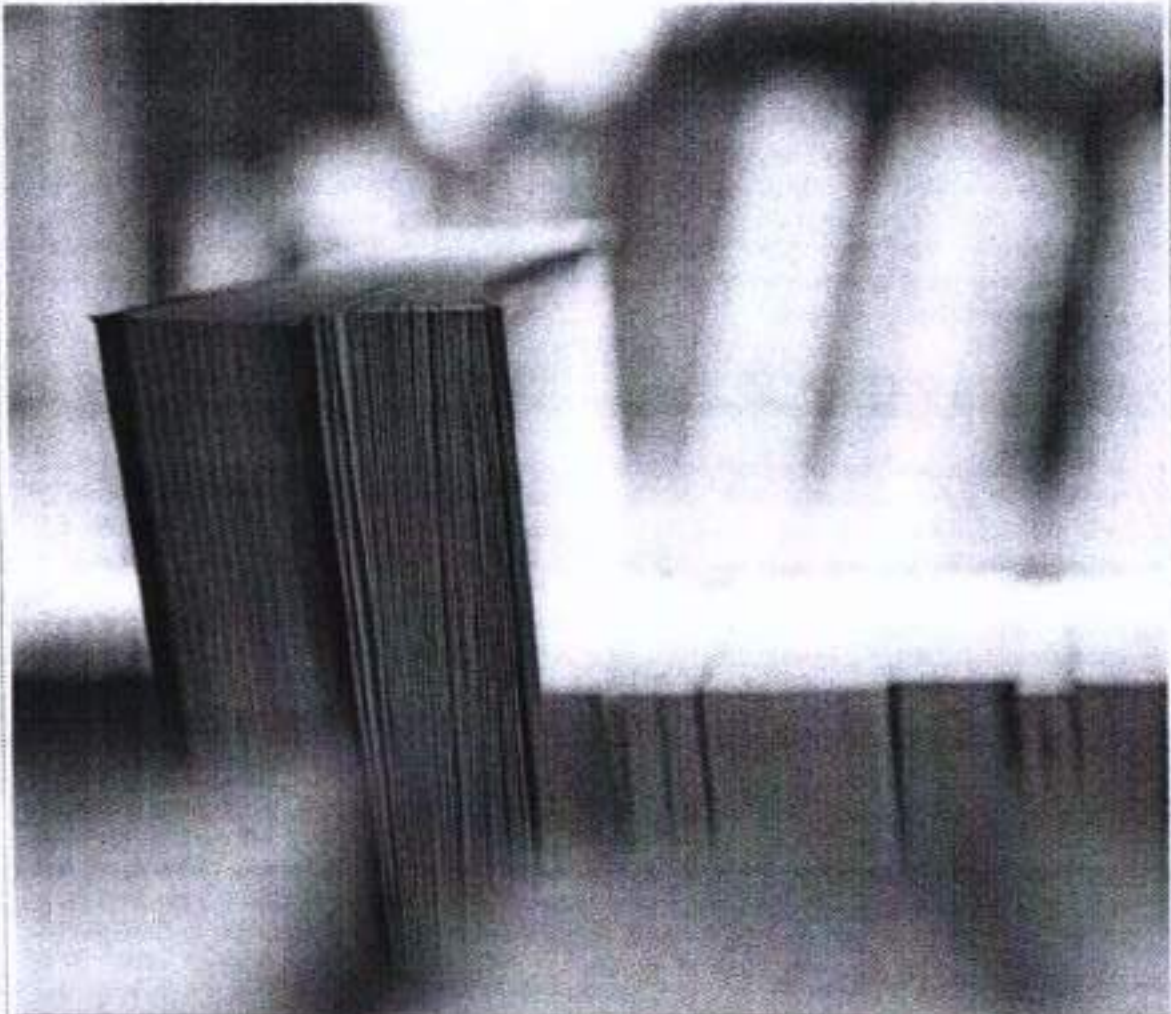


Roy M. Thomas

Manager

Date:





STP WORKS

Proposable

3-25-21

Proposed Building for Ltd. Co.
Calicut

For Green Method Engineering (P) Ltd

Roy M. Thomas

Manager



PREAMBLES TO BILL OF QUANTITIES.

1. Unless otherwise stated, the quoted rate for all equipment, materials (including imported), controllers, devices etc shall include cost in Indian Rupees. The quoted rate shall include all applicable taxes, labour welfare cess, Kerala flood cess (if applicable), customs duty, port clearances, other duties, packing, forwarding, freight, & insurance up to site, loading, unloading, handling, re-handling, hoisting, scaffolding, crane charges, Plant and Machineries, wastage of material, installation, reconciliation, testing, commissioning including all accessories as may be required to complete the installation and the removal of waste material/debris from site.
2. In the event of conflict between Bill of Quantities and other documents including the Specifications, the most stringent shall apply. The interpretation of the Owner / Employer shall be final and binding.
3. The Contractor shall procure and bring Materials / Equipment to the site on the basis of approved shop drawings and not on the basis of Bill of Quantities. In case of increase of quantities for a particular item, a prior approval shall be sought from Owner / Employer in the form of Variation-in-Quantities statement. For any variation in the quantities of any item, the unit rates shall remain firm.
4. The Bill of Quantities should be read with all the other sections of this tender. All the items of work mentioned in the Bill of quantities covered by this contract shall be carried out as per the drawings, specifications and directions of the Owner / Employer and shall include the cost of all labour, materials, tools and plants, materials, testing if any with sub-Contractor's testing appliance, all octroi, royalties, taxes and Contractor's profit and overheads etc.
5. The rate(s) shall include the cost of providing and executing all ancillary - jobs / activities e.g. necessary excavations of earth, back filling, lean current concrete 1 : 4 : 8, RCC 1 : 2 : 4 with reinforcement and Shuttering's, Brick Masonry in Cement mortar 1 : 4, Cement Plaster 1 : 5 (1 Cement : 5 Sand); Cutting holes, fixing clamps, lugs, M.S. Bolts / Nuts, Dash fasteners, M.S. / G.I. screws, drilling holes, grouting in cement concrete 1 : 2 : 4; primer and painting to all steel works, welding, locking devices to Panel Boards etc. in any items for the scope of works contained in the tender documents, whether mentioned in description of item of work or not; and the contractor shall make the job complete as per drawings and direction of Owner / Employer, and nothing extra shall be payable on all such activities / jobs.
6. The rates quoted for items of work shall include working in all conditions at all heights/depths including in/under water, liquid mud, foul conditions etc. and shall also include bailing or pumping out water from the foundations basements or any other place of construction collected from rain or any other source whatsoever at any time, till the completion of work including all suspension period and delays whatsoever.
7. The Quantities in this schedule are provisional. The Contractor will be paid for the actual quantity of work executed at site at the rates quoted in his tender. The Owner / Employer reserves the right to increase or decrease any of the quantities or to totally omit any item of work and no claims by the Contractor on these accounts shall be entertained.
8. No Alteration whatsoever is to be made to the text or quantities of this Bill of quantities unless alteration is authorised in writing by the Owner / Employer. Any such alterations, notes or additions shall, unless authorised in writing be disregarded when tender documents are considered.



9. In the event of error occurring to the amount column of the Bill of quantities, as a result of wrong extension unit rate and quantity, the unit rate quoted by the Tenderer shall be regarded as firm and the extension shall be amended on the basis of the rates.
10. All error in totalling in the amount column and in carrying forward totals shall be corrected by the Employer. Any error in description or in quantity or omission of items from the contract Bill of quantities shall not vitiate this contract but shall be corrected and deemed to be a variation required by the Employer.
11. The rates quoted for items of work shall provide for making good of all builder's work, chasings (wall/concrete), all openings, holes, cutting in false ceilings, partitions and the like and sealing (with minimum of 2Hrs rated Fire Sealant), grouting and making good all opening, and work disturbed etc. All co-ordination, Programme, organise, co-ordinate and confirm with all contractors on the exact position of M & E equipment and services prior to installation of any builder's work or items which are to be installed through or in concrete. (e.g. hangers, column guards, sockets, hoisting beams, plinths, etc) and co-ordinate for reflected plans / drawings for interior works. Filling in grout and sealing in all voids, recesses, mortices, chases and the like in brickwork and concrete and making good to receive finishes or match existing finishes or adjoining works should be inclusive.
12. The rates quoted for the items to be deemed to have included all the necessary accessories, MS/GI supports, GI/MS channels, additional lengths (if required) to complete the system and to suit the site actual requirements and conditions and as per the drawings / specifications / BoQ / site conditions and shall remain firm. No additional claims by the contractor on this shall be entertained.
13. Approval of all material used for construction would be subject to submitting country of origin.
14. The Unit Price shall cover all costs of every kind whatsoever including, without being limited to, all charges for additional site installations, relocation, supervision (including co-ordination with other agencies, consultants, engineers etc.), labour, transportation and supply of materials, the provision, maintenance, use and efficient repair of all plant, equipment and appliance of every kind, the construction and maintenance of all temporary works, the performance of all services and the fulfilment of all obligations and responsibilities herein defined.
15. The Unit Prices given hereunder the BOQ shall also include erection, installation, fixing, and re-fixing of all elements. These prices shall also include taxes, visa for labour, gate passes, accommodations for the Contractor's staff and labours, all required insurance and work permits, guarantees, bonds etc. and all requirements necessary to have the work maintained until its final handing over.
16. The works, materials or activities listed in the following shall always be considered as auxiliary works to be included in the Unit Prices bid for any item in the Bill of Quantities:
- Any measurement for execution and payment of the works, including the provision of measuring instruments, gauges, setting out marks, marking paint and relevant tools, labour, etc., the maintenance and preservation of gauges and setting-out marks during the execution of the works.
 - Provision of small tackle tools or any other equipment required for the execution of the works.
 - Supply of consumable for the Contractor's equipment.
 - Removal of all contamination (refuse, debris, building rubbish and the like) arising from or in connection with the Contractor's work.



- Protection of the executed works and of the items made available for execution of the works from damage, fire, inclement weather, vandalism and theft etc. to the time of final acceptance.
- Transportation of all materials and structural components from the storage places on site to the points of use and return transportation, if required.
- Submitting and transporting any samples required.
- Carrying out tests on materials and works, etc., that is required by the Engineer.
- Fuel and lubricants for operation of Contractor's equipment.
- All safety precautions and measures for safeguarding labour as well as securing surrounding areas.
- Lighting of the work site.


15/02/22
BABU VARGHESE
Project Director
Lulu Convention Center Calicut Pvt. Ltd.
Mankavu, Calicut-673 007

For Green Method Engineering (P) Ltd


Roy M. Thomas Manager



**Proposed Building for LuLu, Kozhikode
Executive Summary STP Works**

S No	Description	Total Amount
1	Pumps	2,53,000
2	Air Diffusion System	5,10,350
3	DAF / PSF / ACF / UF / Dosing	28,27,100
4	Electrical / Piping / Valves	9,27,000
5	Tanks	57,50,000
6	GI Truss Works for the complete STP	4,00,000
7	Civil Works	70,00,000
A	Sub Total [1+..+6]	1,76,67,450
B1	GST Amount	21,20,094
	Packing / Forwarding / Loading / Freight / Insurance / Unloading / Installationg / Safe storing / guarding / re-handling / reconciliation / testing / commissioning / handing over etc.	Inclusive
B2		
B3	Liasioning	Inclusive
B4	Defect Liability Period - 36 Months	Inclusive
C	Grand Total [A+B1+...+B4]	1,97,87,544
D	AMC [GST extra at actuals]	Quoted for AMC
D1	Year - 4 th	1,00,000
D2	Year - 5 th	1,05,000
D3	Year - 6 th	1,10,250
D4	Year - 7 th	1,15,763
D5	Year - 8 th	1,21,551
D	CAMC - Sub Total [D1+...+D5]	5,52,564
E	O&M Charges [GST extra at actuals]	
	Contractor to quote One Supervisor and One Operator in day shift and One Operator for rest of the shifts on 24/7 basis. Rate should be Inclusive of Chemicals & Consumables	
E1	Year - 1 st	10,80,000
E2	Year - 2 nd	11,34,000
E3	Year - 3 rd	11,90,700
E4	Year - 4 th	12,50,235
E5	Year - 5 th	13,12,747
E6	Year - 6 th	13,78,384
E7	Year - 7 th	14,47,303
E8	Year - 8 th	15,19,668
E	O&M - Sub Total [E1+..+E8]	1,03,13,037

For Green Method Engineering (P) Ltd

Roy M. Thomas

Manager



**Proposed Building for LuLu, Kozhikode
Executive Summary_STP Works**

Notes:

- 1 Maximum space allotted for the Construction of STP works is 300SqM. Vendors to limit their design basis of such sapce.

- 2 Only piling and pile capping shall be done for the above said space. Further all kinds of civil foundations (RCC/PCC), MS structures, tanks constructions, equipments pedestals, electricals works, plumbing works, GI piping works, earthing works, GI truss works to protect the system from the weather etc should be included in the total contract pricing.

- 3 BoM should be read inconjunction with tender documents, technical aparamters, process flow, preambles etc.

- 4 Contractor has to access the actual requirements of the system and inline has to add/include missing items (if any) additionally to the above BoM. Any such items not listed or added shall be deemed and construed as included.

- 5 Bidder to submit quote along with tentaive STP layout.

AN
15/02/22
BABU VARGHESE
Project Director
LuLu Convention Center Calicut Pvt Ltd.
Mankavu, Calicut - 673 007

for Green Method Engineering (P) Ltd

Roy M. Thomas
Roy M. Thomas Manager



Proposed Building for LuLu, Kozhikode

Bill of Materials_200kLD STP_MBBR

S No.	Generic Description	Unit	Qty	Detailed Description (As proposed_Vendor)	Unit Rate		Total Rate	Total Amount
					Supply	Labour		
	Designing, Engineering, Procurement, Manufacturing, Fabricating, Supply, Loading, Transportation, Insurance, Unloading, Safe Storing, Installation, Safe Guarding, Testing, Commissioning and Process commissioning, Training and Handing Over of the 200 KLD Sewage Treatment Plant with Nitrogen Removal System, Dissolved Air Flocculator (DAF) System for removal of FOG (Fat, Oil & Grease), electro mechanical equipment, piping, electrical, instrumentation, dosing, chemicals, tank constructions, truss works as required as complete etc. based on "Moving Bed Bio Reactor" and Micro Filtration System.							
	Note :- Contractor should submit detailed GA drawings (Plan & Section), P & I diagram, schematic diagram and calculations for the below mentioned STP BOQ component and additional component if so required for the complete working of the STP and get it approved by the Owner's Architect / Project Manager / Consultants.							
	All the STP/ETP process tanks namely Bar Screen Chamber, Grit cum oil separator, Equalization Tank, Anaerobic tank, Anoxic tank, MBBR Tank, Secondary Settling tank with Tube Settler, Filter feed Tank, Treated Water Tank, UF feed Tank, RO Feed tank, Sludge Digester, shall be constructed in MSEP - FRP (MS Tank FRP Lining internally & Epoxy Painting Externally)							
	Pumps @ N Working + 1 Standby. Pump set (horizontal or vertical type) of adequate HP capable of giving a required discharge at suitable head to work on 2Ph, 50Hz, 400-440 V with necessary unions, flanges, foundation bolts, NRVs, SS body & SR impeller along with motor, pressure gauge with isolation cock, isolation valve, NRV on delivery line, isolation valve, strainer at suction. Mechanical seal, suitable vibration elimination pads of approved design, drain pipe with valve (25 dia) for the pump/pump etc. N+1 Configuration to be considered. Note: Capacity & Head should be calculated based on the actual requirements.							
1.1	Sewage Water Transfer Pumps - Cutter Type	Set	2	Self priming Open impeller, 10 m ³ /hr, 10m head, Kribskar	18,000	500	18,500	37,000
1.2	Waste/sullage Water Transfer Pumps	Set		Not Required				
1.3	Kitchen Waste Water Transfer Pumps	Set		Not Required				
1.4	MLSS Recirculation Pump	Set		Not Required				
1.5	Sludge Transfer Pump	Set	2	Self priming Open impeller, 5 m ³ /hr, 10m head, Kribskar	18,000	600	18,500	37,000
1.6	Sludge Recirculation Pump	Set		Not Required				
1.7	PSF + ACF - Filter Feed Pumps	Set	2	Clear Water Pump, 25M head, 10m ³ /hr, Kribskar	20,000	500	20,500	41,000
1.8	Filter Backwash Pumps	Set	1	CM series, 30m head, 20 m ³ /hr, Grundfos	50,000	1,000	51,000	51,000
1.9	UF Feed Pumps	Set	1	CM series, 30m head, 10 m ³ /hr, Grundfos	35,000	1,000	36,000	36,000
1.10	Recirculation Pumps for Nitrification Tanks	Set	2	Self priming Open impeller, 30 m ³ /hr, 10m head, Kribskar	25,000	500	25,500	51,000
1.11	Flush Water Transfer Pumps	Set		Not Required				
1.12	Irrigation Transfer Pumps	Set		Not Required				
1	Sub Total_Pumps							2,83,000
2	Air Diffusion System							
2.1	Air Blower with Motor - Twin lobe rotary blower, Inclusive of accessories like Base frame, Suction Filter, V-belt & Guard, Drive & Driven pulley, Pressure gauges, NRV, Pressure relief valve, 5mm, GI header etc.	Set	2	450 m ³ /hr, 0.35 bar, Everest, 12.5HP, Motor Kribskar	2,04,175	5,000	2,09,175	4,18,350
2.2	Air piping shall comprise of pipes, MOC - GI C Class complete with all fittings such as tees, crosses, plugs, sockets, elbows, reducers, supports & clamps, etc cutting chases & making good. Contractor to submit detailed P & I indicating their proposal.	Set	1	GI B class, Heavy duty	35,000	5,000	40,000	40,000
2.3	Non clog type air retrieval diffusion (EPDM) (Course bubble diffuser for EQT & fine bubble diffuser for MBBR tanks) system capable of handling 3-5 Cfm of air with oxygen transfer efficiency of 3-4% per/meter water depth. Air dispersion grid shall be assembled in modular form so that they can be replaced / repaired easily from plat form at the top. (fine bubble epdm membrane diffusers) Membrane Diffusers Dia 63 mm x 1000 mm long (MOC : EPDM)	Set	2	SS 304, Aeration Grid	25,000	1,000	26,000	52,000
2	Sub Total_Air Diffusion System							5,10,350

Roy M. Thomas

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Proposed Building for LuLu, Kozhikode
 Bill of Materials_200kLD STP_MBBR

S No.	Generic Description	Unit	Qty	Detailed Description [As proposed_Vendor]	Unit Rate		Total Rate	Total Amount
					Supply	Labour		
3	PSF/ACF/UF & Dosing							
3.1	Bar Screen: SS 304 - 2 mm minimum thickness with suitable lifting arrangement as per the site conditions etc	Skid	2	SS 304 - 10MM hole 10 m ² /hr	6,500	500	7,000	14,000
3.2	DAF (Dissolved Air Flotation) System / Oil Trap: Inclusive of Aerator, Accessories such as Base frame, Recirculation pump, White bubble diffuser, Gear box with motor, PP heli chain, PP Drive & Driven pulley, Pressure gauges, NRV and skinning pad - 100 rpm gear box with SS 304 Skirt etc	Set		Not Required				
3.3	Pressure Sand Filter: Pressure sand filter with necessary accessories complete with Frontal piping (GI piping), valves, suitable supports for mounting pressure gauges orifice plates etc. The filter shall be made of MS with Epoxy painting inside & Enamel painting outside the vessel as protective coating. The cost of filter shall also include initial charge of underbed & multi-grade filter media to suit the requirement etc. complete as per the standards. Note: Capacity should be calculated based on the actual requirements.	Set	1	1m x1.80 m Dia. MS Epoxy Filter with sand pebble and sizer	1,35,000	5,000	1,40,000	1,40,000
3.4	Activated Carbon Filter: Activated carbon filter in MS with Epoxy painting inside & Enamel painting outside the vessel electrical control system complete with Frontal piping (GI Piping), valves, suitable supports for mounting pressure gauge, orifice plate etc. complete as per the detailed specification for the efficient working of system. The maximum working Pressure shall be 1.5 Kg/cm ² . Note: Capacity should be calculated based on the actual requirements.	Set	1	1m x1.80 m Dia. MS Epoxy Filter with carbon and pebbles	1,75,000	5,000	1,80,000	1,80,000
3.5	UltraFiltration System: UF for (flowrate - as per the actual requirement) including the ultra filtration feed pumps, back wash pumps, filters, VFD driven pumps, pressure transmitter, modules, compressors, automatic control - PLC based fully automatic, automation valves, dosing system, CIP pumps, pressure gauges, skid, any other required accessories etc as complete	Set	1	UF system of 10m ³ /hr, Membrane Tank with PLC based panel and instrumentation with cleaning tank of 250 L, syntax	6,50,000	15,000	6,65,000	6,65,000
3.6	Clarifier Mechanism	Set	1	Clarifier Rake mechanism for 4m dia tank, all welded parts in SS 304	2,75,000	5,000	2,80,000	2,80,000
3.7	Sludge (FOG & F - Fat, Oil, Grease & Floatables) Digester / Compactor / Filter Press Type - FOG & F Sludge and Bio Sludge dewatering system with automation inclusive of all the necessary pumps, accessories, piping, valves, fittings, specials etc	Set		Not Required				
3.8	Diffusers / Bio-Media	Set						
3.8.1	Diffusers for Collection Tank	Set		Not Required				
3.8.2	Diffusers for Aeration Tank	Set		Considered in aeration manifold				
3.8.3	Bio Media (MBBR)	Set	22	PE, White, 500mm ³ /m ³	40,000	500	40,500	8,91,000
3.8.4	Diffusers for Nitrification Tank	Set		Not Required				
3.8.5	Bio Media for Nitrification Tank	Set		Not Required				
3.8.6	Bio Media for De-Nitrification Tank	Set		Not Required				
3.8.7	Tube Settler Media	Set	52	PVC Fill media for anaerobic, MM Aqua	7,000	200	7,200	3,70,800
3.8.8	Flow Meter (EMF)	Set	1	ABB	45,000	500	45,500	45,500
3.8.9	Flow Meter (Rota)	Set		considered in UF				
3.8.10	Level Switch	Set		considered in electrical items				
3.9	Dosing System: Electronic dosing system for dosing chemicals into the water integrated with pH Sensor. The panel shall also include one meter for reading pH with display, conductivity and free chlorine. It shall be possible to integrate the motor with BMS using BACnet/Modbus/RS 485. The dosing system shall consist of Electronic dosing pump with positive displacement type with adjustable stroke length & frequency. The quoted rate shall also include HDPE chemical solution tank necessary electricals etc. complete to make the operation automatic. Note: Capacity should be calculated based on the actual requirements.	LS	4	0-4LPH, Milton Roy, CV Tank 60 L	10,000	200	10,200	40,800
3	Sub Total_DAF/PSF/ACF & UF							28,27,100

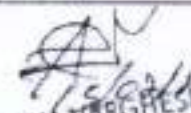
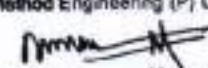
Roy M. Thomas

Manager



Proposed Building for LuLu, Kozhikode
Bill of Materials_200kLD STP_MBBR

S No.	Generic Description	Unit	Qty	Detailed Description [As proposed_Vendor]	Unit Rate		Total Rate	Total Amount
					Supply	Labour		
4	Electrical/Piping & Valves							
	Electrical Panel Board outside for controlling the complete system including filter feed pumps with dry run preventors, level sensors/controllers both for raw water and treated water tanks, MCCB, overload relays, auto manual switches, timers, starters etc. as per local inspectorate standards. Inclusive of all the related electrical hot dipped galvanised GI perforated cable trays, FRLS - XLPE insulated cables, cable termination with double compression gland earthing, supports, flow meters (suitable for BMS integration-RS 485 port). Incomer cable termination etc. The panel shall also have integration facility with BMS for dry run indication, ON/OFF indication, Auto Manual position indications & trip indication.	LS	1	L&T, with Fug PLC for UF panel, Panel enclosure Rittal, Contactor and MPCB Schneider	2,15,000	20,000	2,35,000	2,35,000
4.1	Trays, FRLS - XLPE insulated cables, cable termination with double compression gland earthing, supports, flow meters (suitable for BMS integration-RS 485 port). Incomer cable termination etc. The panel shall also have integration facility with BMS for dry run indication, ON/OFF indication, Auto Manual position indications & trip indication.	LS	1	L&T, with Fug PLC for UF panel, Panel enclosure Rittal, Contactor and MPCB Schneider	2,15,000	20,000	2,35,000	2,35,000
4.2	Piping Piping of Inter unit with CPVC - SH 80 piping with necessary accessories, supports, flanges, couplers, reducers, adaptors, unions, nipples, bolts, nuts, neoprene gaskets, welding wherever necessary with necessary control valves, non return valves etc and with one coat of primer and two coats of approved enamel paint with IS recommended colour etc. complete.	LS	1		3,25,000	20,000	3,45,000	3,45,000
4.3	Valves Suitable manual valves such as ball valves, butterfly valves, check valves, NRV, gate valves, Y Strainers etc arrangement with all instruments such that it should be possible to mix and run the system using either of the filter/activated carbon filters if station demands.	LS	1		35,000	2,000	37,000	37,000
4.4	Erection, Commissioning, PCB liaison works	LS	1	Erection, Commissioning, PCB liaison works	3,00,000	10,000	3,10,000	3,10,000
4	Sub Total_Electrical/Piping/Valves							9,27,000
5	Tanks							
	Inclusive of upstands, foundation etc. MOC - (MSEP-FRP or RCC)			Tanks : MS Tanks with FRP lining - 8mm				
5.1	Anaerobic Tank	LS		3.00 x 3.60m x 3.50m				
5.2	Anoxic Tank	LS		3.00m x 3.60m x 3.50m				
5.3	Aeration Tank	LS		3.00m x 3.00m x 3.50m				
5.4	Flocculation Tank	LS		1.50m x 1.50m x 2.00m			57,90,000	57,90,000
5.5	Clarifier Tank	LS		4.00m dia. x 3.00m				
5.6	Filter Feed Tank	LS		2.50m x 2.50m x 2.50m				
5.7	STP Treated Water	LS		4.00m x 3.00m x 3.50m				
5.8	Ultra Filtration Feed Tank	LS		2.50m x 2.50m x 2.50m				
5	Sub Total_Tanks							57,90,000
6	GI Truss Works							
	GI Truss works including GI corrugated sheets to cover all the equipments of the Sewage Treatment Plant as required as complete.	LS	1	MS Structure TATA roofing sheet with 0.45mm thickness			4,00,000	4,00,000
6	Sub Total_GI Truss Works							4,00,000
7	Civil Works							
			1	Civil Works (Screen, Oil trap, primary settling tank, collection tank, sludge digester, equipment pedestal)			70,00,000	70,00,000
7	Sub Total_Civil Works							70,00,000
A	Sub Total [1+...7]							1,78,67,480


BABU VARGHESE
 Project Director
 Lulu Convention Center Calicut Pvt. Ltd.
 Mankavu, Calicut 673 007

Roy M. Thomas Manager



Proposed Building for LuLu, Kozhikode
STP Tank Dimensions

S No.	Description	Green Method - Negotiated						
		Material [MSEP-FRP or RCC]	Thick mm	Length mm	Width mm	Height mm	Dia mm	Vol M ³
1	Sewage							
1	Bar Screen Chamber - Kitchen Waste	RCC M 25		2000	800	1000		1.60
2	Bar Screen Chamber - Soil & Waste	RCC M 25		2000	800	1000		1.60
3	Grit Cum Oil Chamber	RCC M 25		4600	1200	1800		9.94
4	Primary Settling Tank	RCC M 25		3000	3000	4200		37.80
5	Combined Collection Tank	RCC M 25		10000	8000	3600		288.00
6	Anaerobic Tank - 2nos	MS		3000	3600	3500		75.60
7	Anoxic Tank	MS		3000	3600	3500		37.80
8	Aeration Tank - 2nos	MS		3000	3000	3500		63.00
9	Flocculation Tank	MS		1500	1500	1500		3.38
10	Clarifier Tank	MS				3000	4000	37.70
11	Filter Feed Tank	MS		1800	2500	2500		11.25
12	STP Treated Water	MS		4000	3000	3500		42.00
13	Sludge Digester Tank	RCC M 25				5000	6000	141.39
14	Ultra Filtration Treated Tank	MS		1800	2500	2500		11.25
15	Pressure Sand Filter					1800	1000	1.41
16	Activated Carbon Filter					1800	1000	1.41
A	Total							765.13


 BABU VARGHESE
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 Mankavu, Calicut-673 007

For Green Method Engineering (P) Ltd


 Roy M. Thomas
 Manager



Proposed Building for LuLu, Kozhikode
STP Parameters_Technical Compliances

S No.	Parameter	Unit	Tender Value	Compliance
A Sewage Treatment Plant [Flow Characteristics] :				
1	Plant Capacity [Volume]	m ³ /day	200	Yes
2	Service Cycle [Hours of pumping operation]	hours	20	Yes
B Raw sewage characteristics for design [Influent Parameters]				
1	pH	-	5.5-9.0	Yes
2	BOD	mg/l	600-800	Yes
3	COD	mg/l	1000-1600	2000
4	Total Suspended Solids (TSS)	mg/l	200-450	Yes
5	Fat, Oil & Grease	mg/l	<500	Yes
6	Ammoniacal Nitrogen (NH ₄ -N)	mg/l	50-60	Yes
7	Total Nitrogen (N-Total)	mg/l	100-200	Yes
C Treated sewage analysis after treatment [Effluent Parameters]				
1	pH	-	7.0-7.5	6.5-8.5
2	BOD	mg/l	<10	<3
3	COD	mg/l	<30	yes
4	Total Suspended Solids (TSS)	mg/l	<10	Yes
5	Fat, Oil & Grease	mg/l	<1	Yes
6	Ammoniacal Nitrogen (NH ₄ -N)	mg/l	<5	Yes
7	Total Nitrogen (N-Total)	mg/l	<10	Yes
8	Fecal Coliform		<220MPN / 100ml	Yes

For Green Method Engineering (P) Ltd

Roy M. Thomas

Manager



SAFETY CODE

- 1) There shall be maintained in a readily accessible place first aid appliances including adequate supply of sterilized dressings and cotton wool.
- 2) The injured person shall be taken to a Public hospital without loss of U in cases where the injury necessitates hospitalization.
- 3) Suitable and string scaffolds, safety belts, helmets, shoes etc. should be provided for workmen and site engineers for all works that cannot safety done from ground. Safety net to be provided all-round to prevent from falling debris. Provide temporary railings at staircases, ramps etc., till permanent railings are fixed
- 4) No portable single ladder shall be over 4 metres in length. The width between, the side rails shall not be less than 30cm Clear and the distance between two adjacent rungs not more than 30cms. When the ladder is used an extra Labourer shall be engaged for holding the ladder.
- 5) Excavated material shall not be placed. within 1.5 metres of the edge of the trench or half of the depth of the trench whichever is more All trenches and excavations shall be provided with necessary fencing and lighting.
- 6) Every Opening in the floor of a building or in a, working platform shall be provided with suitable means to prevent the fall of persons or materials, by providing suitable fencing or railing, the minimum height of which shall be one meter.
- 7) No floor, roof or other part of the structure shall, be so loaded with debris or materials as to render it unsafe.
- 8) Workers employed on mixing and handling materials such as asphalt, cement, mortar or concrete and lime mortar shall be provided with protective footwear and rubber hand gloves.
- 9) Those engaged in welding works shall be provided with welder's protective eye shields and gloves.
- 10) i) No paint containing lead or lead products shall be used except the form of paste or ready-made paint.
a. ii) The workers should be supplied with suitable facemasks for when the paint is applied in the form of spray or a. surface having lead -paint if dry, rubbed and scraped.
- 11) Overalls should be supplied by the Contractor to the painter and adequate facilities shall be provided to enable the working painters to wash themselves during periods of cessation.

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Roy M. Thomas

Manager

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- 12) Tower Cranes / Hoisting machines and tackle used in the works, including their attachments, anchorage and supports shall be maintained in effect condition.
- 13) Ropes used in hoisting or lowering materials or as a means of suspension shall, be of durable quality and of adequate strength and free from defects.
- 14) Site should be free from water logging, debris, vegetable waste, dust, mosquitoes, pests, rodents etc., and kept in a hygienic atmosphere. Regular chemical treatments like pest control, rodent control etc. shall be compulsory.
- 15) Any worker with communicable diseases shall be isolated from other workers and hospitalized.
- 16) Regarding Fire - No thatched structure is allowed at the site. Combustible items such as Petrol diesel, paints etc. shall be stored with utmost care to avoid any fire hazard.
- 17) Workers with the habit of smoking, consuming alcohol, drugs etc are not allowed at site.
- 18) Alarm bell shall be provided for any emergency at site.
- 19) Suitable scaffolds shall be provided for workmen for all work that cannot safely be done from the ground, or from solid Construction except such short period of work as can be done safely from ladder. When a ladder is used an extra Mazdoor (Labourer) shall be engaged for holding the ladder and if the ladder is used for carrying materials as well, suitable footholds and handholds shall be provided on the ladder and the ladder shall be given an inclination not steeper than $\frac{1}{4}$ to 1 ($\frac{1}{4}$ horizontal and 1 vertical)
- 20) Scaffolding or staging more than 3.25 metres above the ground or floor, swing or suspended from an overhead support or erected with stationary support, shall have a guard rail properly attached, bolted, braced and otherwise secured at least 1 meter high above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such opening as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.
- 21) Working platform, gang-ways, and stairways shall be so constructed that they do not sag unduly or unequally, and if height of a platform or gangway or stairway is more than 3.25 meters above ground level or floor level, it shall be closely boarded, have adequate width and be suitably-fenced as described above.
- 22) Every opening in floor of a building or in a working platform shall be provided with suitable means to prevent fall of persons or materials by providing suitable fencing or railing with a minimum height of 1 meter.

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- 23) Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9 meters in length. Width between side rails in a rung ladder shall in no case be less than 30 cm. For ladders up to and including 3 metres in length. For longer ladders this width shall be increased by at least 6 mm for each additional 30mm of length. Uniform step spacing shall not exceed 30cm.
- 24) Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any of the sites shall be so stacked or placed as to cause danger or inconvenience to any person or the public. The Contractor shall provide all necessary fencing and lights to protect public from accidents and shall be bound to bear expenses of defence of every suit action or other proceedings at law that may be brought by any person for injury sustained owing to neglect of the above precautions and pay any damages and costs which may be awarded in such situation or proceeding to any such person or which may with the consent of the Contractor be paid to compromise any claim by any such person.
- 25) Excavation and Trenching
- a. All trenches; 1.5 metres or more in depth, shall at all times be supplied with at least one Ladder for each 30m length or fraction thereof. Ladder shall be extended from bottom of trench to at least 1 meter above surface of the ground. Side of trench 1.5 metres or more in depth shall be stepped back to give suitable slope or securely held by timber bracing so as to avoid the danger of the sides collapsing. Excavated materials shall not be placed within 1.5 meter of the edge of trench or half the depth of trench; whichever is more. Cutting shall be from top to bottom. Under no circumstances shall undermining or undercutting be done.
- 26) Demolition
- a. Before any demolition work is commenced and also during the progress of the work.
- 27) All roads and open areas adjacent to the work site shall either be closed or suitably protected;
- 28) No electric cable or apparatus which is liable to be a source of danger over a cable or apparatus used by the operator shall be remain electrically charged
- 29) All practical steps shall be taken to prevent danger to persons employed, from risk of fire or explosion, or flooding. No floor, roof, or other part of a building shall be so overloaded with debris or materials as to render it unsafe.
- 30) All necessary personnel safety equipment as considered adequate by the engineer-in-charge shall be available for use of persons employed on the site and maintained in a condition suitable for immediate use and the Contractor shall take adequate steps to ensure proper use of equipment by those concerned.

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- 31) Workers employed on mixing asphaltic materials cement and tire mortar / concrete shall be provided protective goggles.
 - 32) Those engaged in handling any material which is injurious to the eye shall be provided protective goggles.
 - 33) Those engaged in welding works shall be provided with welders protective eye shields.
 - 34) Stonebreaker shall be provided with protective goggles and protective clothing and shall be seated at sufficiently safe intervals.
 - 35) When workers are employed in sewers and manholes, which are in use, the Construction shall ensure that manhole covers are opened and manholes are ventilated at least for an hour before workers are allowed to get into them. Manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident to public.
 - 36) The Construction shall not employ men below the age of 18 and women on the work of painting with products containing lead in any form. Whenever men above the age of 18 are employed on the work of lead painting, the following precautions shall be taken
 - 37) No paint containing lead products shall be used except in the form of paste or ready-made paint.
 - 38) Suitable face masks shall be supplied for use by workers when paint is applied in the form of spray or a surface having lead paint is dry rubbed and scrapped.
 - 39) Overalls shall be supplied by the Construction to workmen and adequate facilities shall be provided to enable working painters to wash during or cessation of work.
 - 40) When work is done near any place where there is risk of drowning, all necessary equipment shall be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provision made for prompt first aid treatment of all injuries likely to be sustained during the course of work.
 - 41) Use of hoisting machine and tackles including their attachments, anchorage and supports shall conform to the following:
 - 42) These shall be of good mechanical Construction, sound materials and adequate strength and free from defects and shall be kept in good working order
- Every rope used in hoisting or lowering materials or a means of suspensions shall be of durable quality and adequate strength and free from defect.

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- 43) Every crane driver of hoisting appliance operator shall be properly qualified and no person under the age of 21 years shall be in charge of any hoisting machine including any scaffolding winch or give signals to operator.
- 44) In case of every hoisting machine and of every chain, ring, hook, shackle, swivel and pulley block used in hoisting at lowering or as means of suspension, safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall have the safe working load plainly marked thereon. In case of a hoisting machine having a variable safe working load, each safe working load at the conditions under which it is applicable shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing
- 45) In the case of departmental machine, safe working load shall be notified by the Engineer-in-charge. As regards Contractor's machines the Contractor shall notify safe working load of each machine to the Engineer-in-charge whenever he brings it to site of work and get it verified by the engineer-in-charge.
- 46) Motors, gearing, transmission, electric wiring and other dangerous parts of hoisting appliance shall be provided with efficient safeguards; hoisting appliances shall be provided with such means as will reduce to the minimum risk of accidental descent of load. Adequate precaution shall be taken to reduce to the minimum risk of accidental descent of load. Adequate precautions shall be taken to reduce to the minimum risk of any part of a suspended load becoming accidentally displaced. When workers are employed in electrical installations which are already energized, insulating mats, working apparel such as gloves, sleeves and boots, as may be necessary shall be provided. Workers shall not wear any rings, watches; carry keys or other materials, which are good conductors of electricity
- 47) All scaffolds, ladders and other safety devices mentioned or described herein shall be maintained in a safe condition and no scaffold, ladder equipment shall be altered or removed while it is in use. Adequate washing facilities shall be provided at or near the places of work.
- 48) To ensure effective enforcement of the rules and regulations relating to safety precautions arrangements made by the Contractor shall be open to inspection by the Engineer-in-charge or his representative and the inspecting officers as defined in the Contractor's Labour Regulations.
- 49) Notwithstanding the above conditions 1 to 14, the Contractor is not exempted from the operation of any other Act or Rule enforce.
- 50) Water Supply: Water required for the work shall be arranged by the Contractor at predetermined points within or outside the building, at his cost. No claim of water shortage shall be accepted by Employer for any stoppage of work or delay or damage to any construction for want of water. Contractor's rate shall be inclusive of any contingency arising out of this. If any treatment of construction water is required, the Contractor shall do so at their own cost.

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51) Working area should be kept clean and tidy at all times. Contractor to ensure the safe working space and should do pest control as when required at his own cost.

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GENERAL CONDITIONS OF CONTRACT**1. DEFINITIONS**

The following terms shall have the meaning hereby assigned to them except where the context otherwise specified.

1. Owner / Employer

Owner / Employer means LuLu Convention Center Calicut (Pvt) Ltd. or the authorized person on whose behalf tenders are invited and include its successors permitted assigns and Legal authorized representatives.

- 1.1 PROJECT MANAGER** shall mean the Officer in Administrative and technical charge of the project. He/She shall be from the authorized Project Management Consultancy appointed by the employer.
- 1.2 "ENGINEER" OR "ENGINEER IN CHARGE"** shall mean ENGINEER deputed by the Project Management Consultancy. The term includes PROJECT MANAGER, CONSTRUCTION MANAGER, RESIDENT MANAGER, SITE ENGINEER, RESIDENT ENGINEER and ASSISTANT SITE ENGINEER of the Employer at site as well as the Officers in charge at Office.
- 1.3 PROTECT MANAGEMENT CONSULTANCY (PMC)** shall mean the consultancy engaged by the employer through an Agreement, for ensuring the satisfactory completion of the project, hereinafter referred as PMC.
- 1.4 "SITE"** Shall mean the places or place at which the building is to be erected and services are to be performed as per the specification of this contract.
- 1.5 "CONTRACTOR"** shall mean the individual firm or company who enters into the contract with the Employer and shall include their executors, administrators and successors and permitted assignees.
- 1.6 "CONTRACT OR CONTRACT DOCUMENT"** shall mean and include the agreement of work order, the acceptance, appendices or rates, schedules, quantities, general conditions of contract, special conditions of contract, instructions to the Tenderer, drawings, technical specifications, the tender documents and the Letter of Indent / Accepting letter issued by the Employer. Any conditions or terms stipulated by the contractor in the tender documents or subsequent letters shall not form part of the contract unless, specifically accepted in writing by the Employer and incorporated in the agreement.

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- 1.7 "GENERAL AND SPECIAL CONDITIONS OF CONTRACT" shall mean the instructions to Tenderer and general and special conditions of contract pertaining to the work for which above tenders have been called for.
- 1.8 "TENDER SPECIFICATION" shall mean specific conditions, technical specifications, appendices, site information and drawings pertaining to the work in which the Tenderers are required to submit their offer.
- 1.9 "COMPLETION TIME" shall mean the period by date specified in the acceptance of tender for handing over the completed building, which are found acceptable by the PMC / Employer being of required standard and conforming to the specification of the contract.
- 1.10 "BUILDING" shall mean and connote the entire floors of the building basement floor, approaches and other ancillaries (if any) covered by the contract.
- 1.11 "TESTS" shall mean and include such test or tests to be carried out on the part of the contractor as prescribed in the contract or , considered necessary by the PMC / Employer, in order to ascertain • the _quality and workmanship of the work and performance and - efficiency of the contractor or part there of.
- 1.12 "APPROVED, DIRECTED or INSTRUCTED" shall mean approved, directed or instructed by the PMC / Employer
- 1.13 "WORK OR CONTRACT" shall mean and include supply of all categories of labours, specified consumables (except materials not included in the BOQ – Light Fixtures, Fans & CP & Sanitary Fixtures will be supplied by the Employer free of cost) tools and tackles required for complete and satisfactory site transportation, handling, stacking, storing, erecting, testing etc and handing over the Building to the entire satisfaction of the PMC / Employer.
- 1.14 SINGULAR AND PLURALS ETC. Words carrying singular number shall also include plural and vice versa, where the context so requires. Words, imparting the masculine gender shall be taken to include the feminine gender and words imparting persons shall include any company or associations or body of individuals, wherever incorporated or not.
- 1.15 HEADING - The heading in these general conditions are solely for the purpose of facilitating reference and shall not be deemed to be part thereof or be taken as instructions there of or of the contract.
- 1.16 "MONTH" shall mean calendar month
- 1.17 "HANDING OVER" shall mean completing the building in the specifications laid down, after cleaning the site to the satisfaction of PMC / Employer. . .

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Roy M. Thomas Manager



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- 1.18 "WRITING" shall include any manuscript type written or printed statement under the signature of the PMC / Employer.
- 1.19 LAW GOVERNING THE CONTRACT AND COURT JURISDICTION: The contract shall be governed by the Law for the time being in force in the Republic of India. The Courts at Kochi having ordinary original civil jurisdiction shall alone have exclusive jurisdiction in regard to all disputed claims in respect of this contract.
- 1.20 ISSUE OF NOTICE: The contractor shall furnish to the Project Manager the name, designation and address of his authorized agent and all complaints, notices, communication and reference shall be deemed to have been duly given to the contractor if delivered to the contractor or his authorized agent or left at or posted to the address either of the contractor or his representative and shall be deemed to have been so given in the case of posting on the day on which they would have reached such address in the ordinary course of the post or on which they were so delivered of or left.
- 1.21 USE OF LAND: No land belonging to the employer or their land owners under temporary possession of the employer shall be occupied by the contractor without written permission of the employer
- 1.22 COMMENCEMENT OF WORK: The contractor shall commence the work within the time indicated in the letter of Indent from the employer and shall proceed with the same with due expedition without delay


If the successful Tenderer fails to start the work within stipulated period, the Employer will have the right to cancel the contract.

2. RIGHTS OF THE EMPLOYER

The employer reserves the following rights in respect of this contract without entitling the contractor for any compensation.

- 2.1 To get work done through other agency at the risk and cost of the contractor in the event of contractor's poor progress or inability to progress the work for completion as stipulated in the contract, poor quality of the work, persistent disregard to instructions of the PMC / employer or their representatives assignment, transfer, subletting of the contract without permission of the employer, non-fulfilment of any contractual obligation etc. and to claim/ recover compensation for such losses from the contractor including the supervision charges and overheads but not limited to, from security deposit and other dues

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- 2.2 To withdraw any portion of work and / or to restrict the quantum of work as indicated in the contract during the progress of work and get it done through other agency to suit the employer requirement.
- 2.3 To terminate the contract after due notice and forfeit security deposit and recover the loss sustained in getting the balance work done through other agencies in addition to liquidated damages in the event of:
- Contractor's continued poor progress.
 - Withdrawal from or abandonment of the work before completion of the work.
 - Corrupt act of contractor.
 - Insolvency of the contractor.
 - Persistent disregard to the instructions of the employer / PMC or their representatives. Assignment, transfer, sub-letting of contract without the Employer's written permission.
 - Non fulfilment of any contractual obligations.
 - To recover any money due from contractor from any money due to the contractor under this contract or any contract or from the security deposit.
 - To claim compensation for losses sustained including the employer supervision charges and overheads for completion on termination of contract including consequent damages if any.
 - To terminate the contract or to restrict the quantum of work and pay for the portion of work executed in case the employer's contract with their customers are terminated for any reasons.
 - To affect recovery from any amounts due to the contractor under this or any other contract or in any other form, the money, the employer is forced to pay to anybody due to contractor's failure to fulfil any of his obligations.
 - To restrict or increase the quantity and nature of work to suit site requirement since the tender specification is based on preliminary documents and quantities furnished therein are indicative and approximate and the rates quoted shall not be subject to revision.
 - While every endeavour will be made by the employer they cannot guarantee uninterrupted work due to conditions beyond their control, contractor will not be entitled for any compensation / extra payment on this account.
 - In the event of any dispute of any nature, the decision of the employer shall be final and binding on the contractor.

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Roy M. Thomas


Manager



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- 3. RESPONSIBILITIES OF THE CONTRACTOR IN RESPECT OF LOCAL LAWS, EMPLOYMENT OF WORKERS ETC.** The following are the responsibilities of the contractor in respect of observation of local laws, employment of personnel, payment of taxes etc.
- 3.1** As far as possible, Unskilled Workers shall be engaged from the local areas in which the work is being executed.
- 3.2** The contractor at all times during the continuance of this contract shall, in all his dealings with local labour for the time being employed on or in connection with the work, have due regard to all local festivals and religious and other customs.
- 3.3** The contractor shall comply with all State and central Laws, Statutory Rules, Regulations etc. such as: Payment of Wages Act (1936), Minimum Wages Act (1948), Workmen Compensation ad (1923), Employer's Liability Act (1938), Industrial Dispute Act (1947), Employers Provident Fund Scheme, employees State Insurance Scheme, contract Labour (Regulation and Abolition) Act, 1970 and other acts, rules and regulations for labour as may be enacted by the Government during the tenure of the contact shall give to the local governing body, police and other relevant authorities all such notices as may be required by the Law.
- 3.4** The contractor shall pay all taxes, license charges, deposits, duties, taxes, royalties, commission or other charges which may be levied on account of his operations in executing the contract In case the employer is forced to pay any of such taxes, the employer shall have the right to recover the same from his bills or otherwise as deemed fit.
- 3.5** Contractor shall be responsible for provision of health and sanitary arrangements (more particularly described in contract Labour regulation & Abolition Ad), Safety precautions etc. as may be required for safe and satisfactory execution of contract.
- 3.6** The contractor shall be responsible for proper accommodation including adequate medical facilities for personnel employed by him.
- 3.7** The contractor shall be responsible for the proper behaviour and observance of all regulations by the staff employed by him.
- 3.8** The contractor shall ensure that no damage is caused to any person/property of other parties working at site. If any such damage is caused, it is responsibility of the contractor to make good the losses or compensate for the same.
- 3.9** All the properties/equipments/components of the employer loaned with or without deposit to the contractor in connection with the contract shall remain properties of the employer.

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- 3.10 The contractor shall use each property for the purpose of execution of this contract. All such properties/equipments/components shall be deemed to be in good condition when received by the contractor unless he notifies within 48 hours to the contrary. The contractor shall return them in good condition as and when required.
- 3.11 It is not obligatory on the part of the employer to supply tools or tackles or other materials other than those specifically agreed to do so by the employer. However, depending upon availability/ possibility/ the employer handling equipment and other plants may be made available to the contractor on payment of the hire charges/free of charges as fixed, subject to the conditions laid down by the employer from time to time unless paid in advance, such hire charges if applicable shall be recovered from contractor's bills/Security Deposit in one instalment.
- 3.12 The contractor shall fully indemnify the employer against all claims of whatsoever nature arising during the course of construction work under the contract.
- 3.13 In case the contractor is required to undertake any work outside the scope of this contract, the rates payable shall be those mutually agreed upon.
- 3.14 Any delay in completion of works/or non achievement of periodical targets due to the reasons attributable to the contractor, the same will have to be compensated by the contractor either by increasing manpower and resources or by working extra hours and/or by working more than one shift. All these are to be carried out by the contractor at no extra cost.
- 3.15 The contractor shall arrange/coordinate his work in such a manner as to cause non-hindrance to other agencies working within the same premises.
- 3.16 All safety rules and codes applied by the employer at site shall be observed by the contractor without exception. The contractor shall be responsible for the safety of the equipment/material and works to be performed by him and shall maintain all light, fencing guards, slings etc. or other protection necessary for the purpose. Contractor shall also take such additional precautions as may be indicated from time to time by the Project Manager with a view to prevent pilferage, accidents, fire hazards and due precautions shall be taken against fire hazards and atmospheric conditions. Suitable number of Clerical staff watches and ward, store keepers to take care of equipment/materials and construction tools and tackles shall be posted at site by the contractor till the completion of work and this contract. The contractor shall arrange for such safety devices as are necessary for such type of work and carry out the requisite site tests of handling equipment, lifting tools, tackles etc. as per prescribed standards and practices

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Manager



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- 3.17 The contractor will be directly responsible for payment of wages to his workmen and complying with all statutory obligations pertaining to the labour engaged by him. A pay roll sheet giving all the payments given to the workers and duly signed by the contractor's representative should be furnished to the employer and for record purpose, if so called for.
- 3.18 In case of any class of work for which there is no such specification as laid down in the contract, such work shall be carried out in accordance with the relevant IS code of practice or with the instructions of the PMC / Employer.
- 3.19 No levy or payment or charge made or imposed shall be impeached by reason of any Clerical error or by reason of any mistake in the amount levied or demanded or charged by the Employer. In case of non returning, loss, damage, repair etc. the cost thereof as may be fixed by the PMC, will be recovered from the contractor.
- 3.20 No idle labour charges will be admissible in the event of any stoppage caused in the work resulting contractor's labour being rendered idle due to any cause at any time.
- 3.21 The contractor shall take all responsible care to protect the materials and work till such time the Building has been taken over by the Employer.
- 3.22 The contractor shall not stop the work or abandon the site for whatsoever reason of dispute, excepting force majeure conditions. All such problems/disputes shall be separately discussed and settled without affecting the progress of work. Such stoppage or abandonment shall be treated as breach of contract and deal with accordingly.
- 3.23 Contractor should supply labours to the Employer whenever required at the quoted rate
- 3.24 It is contractor's liability to solve any local issues arises in the contract period.

4. CONSEQUENCES OF CANCELLATION

- 4.1 Whenever the Employer exercises its authority to terminate the contract/withdraws a portions of work, they may complete the work by any means at the contractor's risk and cost, provided that the event of the cost of completion (as certified by the PMC which is final and conclusive) be less than contract cost, the advantage shall accrue to the Employer and that if the cost of completion exceeds the money due to contractor under the contract, the contractor shall either pay the excess amount ordered by the Employer or same shall be recovered from the contractor by any other means. This will be in addition to the forfeiture of security deposit and recovery of liquidated damages as per relevant clauses.

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- 4.2 In case the Employer completes the work the cost of such completion to be considered in determining the excess cost to be charged to the contractor under this condition shall consist of materials purchased and / or labour provided by the Employer with addition of such percentage to cover Supervision and establishment charges as may be decided by the Employer

5. INSURANCE

- 5.1 The successful contractor shall take out Contractor's All Risk (CAR) insurance policy, jointly in the name of the Employer and the contractor, and the original policy shall be deposited with the Employer.
- 5.2 It is the sole responsibility of contractor to insure his workmen against accident and injury while at work as required by relevant rules and to pay compensation to workmen as per Workmen's Compensation Act 1923 or any other law in force for the time being. In any case in which, by virtue of the provision of the said Act, the Employer is obliged to pay compensation to a workmen employed by the contractor in executing the works, the Employer shall recover from the contractor the amount of the compensation so paid and without prejudice to the rights of the Employer under the said Act. Contractor shall insure his staff against accidents. The work will be carried out in a protected area and all the rules and regulations of the Employer in the area of project, which are in force from time to time, will have to be followed by the contractor.
- 5.3 If due to negligence and for non-observance / observance of safety and other precautions, any accident / injury occur to any other persons / public, the contractor shall have to pay necessary compensation and other expenses, if so decided by the appropriate authorities.
- 5.4 If due to the contractor's carelessness, negligence or non-observance of safety precautions, damages to the property or personnel of the Employer property and personnel occurs and if the Employer is unable to recover in full cost from the insurance company, the same will be recovered from contractor.
- 5.5 It shall be the responsibility of the contractor to provide security arrangement for the equipment/materials belonging to the Employer and handed over to contractor for construction/ transportation till it is taken over by the Employer

6. STRIKES & LOCKOUTS

The contractor will be fully responsible for the entire dispute and other issues connected with his labour. In the event of the contractor's labour resorting to strike or the Contractor resorting to lockout and if the strike or lockout declared is not settled within a period of one week the

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Employer shall have the right to get the construction work executed employing its own labour or through any other agencies or both and the cost so incurred by the Employer shall be deducted from the contractor bills. For all purposes whatsoever, the employees of the contractor shall not be deemed to be in the employment of the Employer

7. FORCE MAJEURE

The following shall amount to force majeure:

7.1 Acts of God, War, sabotage, Riots, Civil commotion, revolution, Flood, Fire, Cyclones, Earthquake and Epidemic and other similar causes over which the contractor has no control.

7.2 If the contractor suffers delay in the due execution of the contractual obligation due to delays caused by force majeure as defined above, the agreed time of completion of the job covered by this contract or the obligations of the contractor shall be extended by a period of time equal to period of delay, provided that on the occurrence of any such contingency, the contractor, immediately should report to the PMC / Employer and the contractor shall not be eligible for any compensation.

8. GUARANTEE


Even though the work will be carried out under the supervision of the PMC / Employer or their representatives, the contractor will be responsible for the quality of the workmanship and shall guarantee the work done for a period of twelve months from the date of completion of work as certified by the PMC for good workmanship and shall rectify free of cost all such defects due to faulty construction detected during the guarantee period starting from the date of the completion of rectification. In the event of the contractor failing to repair the defective works within the time specified by the PMC, the PMC / Employer may proceed to undertake the repairs of such defective works at the contractor's risk and cost without prejudice to any other rights and recover the same from security deposit/other dues or by other legal means.

9. PRICE VARIATION CLAUSE

The quoted rates shall be firm throughout the period including extended period of contract as specified in time schedule.

10. WATER AND ELECTRICITY

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The contractor shall bear all the cost for drawing water & Electricity from the source provided by the Employer including deposit, monthly charges Etc. If the water & electricity not available in the solace, it is Contractor's responsibility to, find out alternate method for water and electricity:

11. INTERPRETING SPECIFICATIONS

In interpreting the specifications, the following order of decreasing importance shall be followed:

Drawings

Schedule of Quantities & Technical Specifications

General specifications

Matters not covered by the specifications given in the contract as a whole shall be covered by the relevant Indian Standard Codes. If such codes on a particular subject have not been framed, the decision of the Architect / PMC / Owner / Engineer shall be final.

12. DRAWINGS, INSTRUCTIONS AND MEASUREMENTS:

The Contractor shall strictly adhere to the working drawings or detail drawings and written instructions of the Architect. No working drawing or detail drawing shall be scaled. Figured dimensions alone shall be followed. Measurements shall be recorded of the actual work done. However, the quantum of work over and above that indicated in the working or detail drawings shall not to be recorded unless the same is brought to the notice of the PMC / Architect. Mode of measurement shall be generally in accordance with IS-1200 for measurement of building works unless otherwise specified. An approved metallic tape shall be used at site and utmost care shall be taken to see that the same is preserved in good condition throughout the period of execution.


The Contractor is directed to deposit an identical tape with the Architect / PMC so that in case the tape at site is lost or damaged another identical tape could be purchased after comparing it with the one deposited with the Architect / PMC.

13. SUPERVISION

The work shall be carried out under the direction and supervision of the Architect/ PMC / Employer or their representative at site. On acceptance of the tender, the contractor shall intimate the name of his accredited representative who would be supervising the construction and would be responsible for taking instructions for carrying out the work.

14. COMMUNICATIONS TO BE IN WRITING:

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All references, communications, correspondences made by the Employer / PMC / Architect, or the Contractor concerning the works shall be in writing-and no reference, communication, or complaint which is not in writing, shall be recognized.

15. SUB-LETTING

No part of the contract shall be sublet without the written permission of the Architect, PMC and the Employer nor shall transfers be made by the 'Power of Attorney' authorizing others to carryout the work or receive payment on behalf of the Tenderer.

16. DELAYS IN COMMENCEMENT

The contractor shall not be entitled to any compensation for any loss suffered by him on account of delays in commencing or executing the work, whatever the cause for such delays may be including in procuring Government Controlled or other materials.

17. OCCUPATION IN PART

If the Employer wants to occupy areas in part, the contractor shall complete the work of these areas in conjunction with the Employer and handover the same to the Employer without affecting any of the clause of contract agreement.

18. LIQUIDATED DAMAGES

Employer shall levy penalty at the rate of 0.5% per week of the contract value subjected to a maximum of 5% after the contract period.


19. CONTRACTOR'S STORE AND SITE OFFICE

Suitable area within the site shall be allowed free of cost for storing his tools and plants, materials and for his site office and MEP materials. However, the structure will be provided by him using non-combustible material at his own expense and he will be solely responsible for guarding his property and shall cover his property with requisite insurance against theft, fire etc. The contractor however will have to dismantle the sheds and vacate the land of all debris etc. at his own expenses after completion of work. The storage, stacking and handling practices should be as per Part V Section 2 of NBC 2005.

20. BARRICADING AROUND EXCAVATED TRENCHES ETC

The contractor shall at his own cost provide around excavation temporary barricading, warning signals during day and night and shall maintain it so long as the trenches are not filled up. Similar barricades shall also be provided at all dismantling work, erection of structural & r sheeting work etc. as per

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relevant code of practice or the direction of PMC no extra claim shall be entertained for providing, maintaining and removing such barricades.

21. PROTECTION OF UNDERGROUND SERVICES

The contractor must take precautionary measures to protect the underground and other services lines viz cables, water and sewer lines etc. and observe any specific instructions which may be given in this regard by the Architect / PMC.

22. DEWATERING TRENCHES AND PITS

The tendered rates shall always be deemed to have taken into account the cost of removal of silt and materials that may slip in the trenches and pots, dewatering the trenches or pits of water accumulated or collected through seepage, subsoil water or surface runoff due to rain water. The contractor shall in no case be entitled to claim any extra amount for the above work. The contractor shall remain prepared with necessary pumps and equipment for dewatering the trenches or pits so as to avoid unnecessary delay and possible damage to the property etc.

23. RECORD OF MATERIALS SUPPLIED BY THE EMPLOYER

The contractor shall maintain an account of different materials supplied by the Employer for executing the works under the contract. The Architect / PMC / Employer or their representative shall have the right to check the position of materials at all times.

24. SAFE STORAGE OF MATERIALS

The contractor shall be responsible for the safe storage of materials supplied by the Employer for execution of the works. Surplus materials or materials lost or damaged or unaccounted for or made unserviceable, by the contractor shall be charged at twice the prevailing market price.

25. TRANSPORT OF MATERIALS

Unless otherwise specified, all the materials supplied by the Employer shall be transported by the contractor from the Employer's store/yard, to the site of work at no extra cost. The permission if required for the conveyance of contractors own materials from the source to site should be obtained from concern authorities at his own risk and cost.

26. DEPOSITING DEBRIS ON SITE

Wherever it is stated in the schedule of quantities that debris shall be deposited on the site, the rate quoted by the Contractor shall include for making all required excavations for receiving or covering the debris within the limits of the site and neatly spreading the debris, and covering the same with earth to the depth of at least 4 inches. If so ordered by the Architect / PMC / Employer or their representative,

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the Contractor shall deposit and spread debris to form the foundations of roads, drives, paths, floors etc., in such cases, the Contractor shall be entitled to payment only for consolidating the debris used for such foundation.

27. SITE TO BE KEPT CLEAN

The surplus spoil and dismantled debris shall be removed to a place as directed by the Architect / PMC / Employer or their representative and stacked, levelled and dressed as directed. After completion of the project the contractor is responsible for properly cleaning the premises.

28. SITE REPORTING

The contractor shall adhere to site reporting system as per the directions Of the Architect / PMC / Employer or his representative.

29. LABOUR RULES

In respect of all labour directly or indirectly employed on the works by the contractor, the contractor shall comply with the provisions of the Contract Labour (Regulation and Abolition) Act 1970, Minimum Wages Act 1948, Payment of Wages Act 1936 and any amendments thereof and all legislations and rules of the State and/ or Central Government or other local authorities, framed from time to time, governing the protection of health, sanitary arrangements, wages, welfare and safety for labour employed on building and construction works and for bonus, retirement benefits, retrenchment/layoff, compensation and all other matters involving liabilities of employers to employees. The rules and the other statutory obligations with-regard to fair wages, welfare and safety measures, maintenance of register etc, will be deemed to, be part of the Contract.


30. ACCIDENT OR INJURY TO WORKMAN

The contractor shall be responsible for the safety of all employees and/or workers employed or engaged by him on and in connection with the works and shall forthwith report all cases of accidents to any of them, however caused and whenever occurring, to the Architect / PMC / Employer or their representative and shall make every arrangement to render all possible assistance and aid to the victims of the accident.

31. ACCIDENT OR INJURY TO WORKMEN

The Employer shall not be liable for or in respect of any damages or compensation payable at law in respect to consequence of any accident of injury to any workmen or other person in the employment of the contractor or his sub-contractors, and the contractor shall indemnify and keep indemnified the

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Employer against all such damages and compensation and against all claims, demands, proceedings costs, charges and expenses whatsoever in respect thereof or in relation thereto.

32. AGE LIMIT OF LABOUR

The age limit for employment of labour shall be in strict accordance with the existing labour legislation.

33. RETURN OF LABOUR EMPLOYED

The contractor, if required by the Architect / PMC / Employer or their representative, shall submit return in detail in such form and at such interval as the Architect/ PMC / Employer or their representative may prescribe showing number of different classes of labour employed on the works on a daily basis by the contractor.

34. PRESERVATION OF PEACE:

The contractor shall take requisite precautions to prevent any riotous or unlawful behaviour by or amongst his workmen and / or others employed on the works by him, for the preservation of peace and protection of the inhabitants and security of property in the neighbourhood of the works.

35. SKILLFUL WORK - PEOPLE TO BE EMPLOYED

The Contractor shall employ only experienced competent, skilful work-people to do the work and whenever the Architect / PMC / Employer inform him in writing that any man on the work, in their opinion, is unsatisfactory or incompetent or dishonest or untruthful or disorderly or otherwise unsuitable, such men shall be discharged from the work at once and shall not be employed again on the job.

36. QUALITY OF MATERIALS, WORKMANSHIP AND TESTS

All materials and workmanship shall be of the respective kinds described in the contract and in accordance with the Architect / PMC / Employer or their representative's instructions and shall be subjected, on a daily basis, to such tests as the Architect/ PMC / Employer or their representative may direct at the place of manufacture or fabrication or in the site or at all or any of such places. The contractor shall provide such assistance instruments, machines, labour and materials, as are normally required for examining, measuring and testing any work and the quality, weight or quantity of any material used and shall supply samples of materials before incorporation in the works for approval as may be required by the Architect/ PMC / Employer or their representative.

37. TESTING LAB

The contractor shall on his cost establish a full fledged laboratory as per the direction of the PMC / Employer with adequate skilled technician and shall conduct the test in the presence and acceptance of the PMC.

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38. CONSTRUCTION OF SAMPLES OF WORK

The contractor shall construct samples of work as laid down in the contract or as instructed by the Architect / PMC. Such samples of work, after approval by the Architect / PMC, shall serve as the standards to be achieved in the final construction.

39. SAMPLES OF MATERIAL

The Contractor shall deposit at the office of the Architect/ PMC for their approval samples of the materials proposed to be used in Works, at least 15 days before placing order for supply, and the bulk shall be equal in every respect to the approved sample deposited

40. SAMPLES OF WORKMANSHIP

The contractor at his own expense shall prepare samples of all joinery, cornice, parapet, mouldings, enrichments, etc., and shall obtain the approval of the Architect / PMC to the same before putting the work in hand. If so required by the Architect / PMC, the Contractor at his own expense shall prepare the same and submit a second sample of each individual item of work. If the Architect / PMC require more than two samples to be made of any individual item of work, the Contractor shall prepare the same and shall be paid the actual cost of preparing the third and any subsequent samples of such individual item. The Contractor shall carry out the work strictly in accordance with the approved samples.

41. COST OF SAMPLES AND TESTS

All samples shall be supplied by the contractor at his own cost

The cost of making any test as per specifications shall be borne by the contractor and contractor should arrange for all facilities like meters, instruments as required for carrying out such tests.

42. REMOVAL OF IMPROPER WORK AND MATERIALS:

The Architect / PMC / Employer or their representative shall during the progress of the works have power to order in writing from time to time:

- i. The removal from the site within such time or times as may be specified in the order of any materials which in the opinion of the Architect / PMC or their representative are not in accordance with the contract.
- ii. Substitution with proper and suitable materials. (iii) The removal and proper re-execution notwithstanding a previous test thereof or interim payment therefore of a work which in respect of materials or workmanship is not in the opinion of the Architect / PMC / Employer or their representative in accordance with contract.

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43. INSPECTION OF OPERATION

The Architect / AMC / Employer or their representative shall at all times have access to the works and so the site and to all workshops and places where materials, manufactured articles or machinery are being obtained for the works and the contractor shall afford every facility for any every assistance in or in obtaining the right to such access. - .

44. EXAMINATION OF WORK BEFORE COVERING UP

No work shall be covered up or put out of view without the approval of the Architect/ PMC / Employer or their representative and the contractor shall afford full opportunity to the Architect/PMC / Employer or their representative to examine and measure any work which is about to be covered up or put out of view and to examine foundations before permanent work is placed thereon. The contractor shall give due notice to the Architect/ PMC /Employer or their representative wherever any such work or foundations is or are ready or about to be ready for examination and the Architect / PMC / Employer or their representative shall without unreasonable delay, unless he considers it unnecessary and advises the contractor accordingly, attend for the purpose of examining and measuring such work or of examining such foundations.

45. UNCOVERING AND MAKING OPENINGS

The contractor shall uncover any part or parts of the works or make openings in or through the same as the Architect/ PMC may, from time to time, direct and shall reinstate and make good such part or parts to the satisfaction of the Architect/ PMC. If any such part or parts have been covered up or put out of view after compliance with the requirements and found to be executed in accordance with the contract the expenses of uncovering, making openings in or through, reinstating and making good the same shall be borne by the Employer, but in any other case all such expenses shall be borne by the contractor and shall be recoverable from him by the Employer and deducted by the Employer from any money due or which may become due to the contractor, without prejudice to any other remedy that may be available to the Employer in law.

46. SUSPENSION OF WORK

The contractor shall, on the written order by the Employer suspend the progress of the works or any part thereof for such time or times and in such manner as the Architect / PMC may consider necessary and shall during such suspension, properly protect and secure the work, so far as is necessary in the opinion of the Architect / PMC

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47. WORK TREATED AS COMPLETE

The works shall not be treated as complete until:

- i. The site is clear from all materials, site shed etc., and the Architect / PMC / Employer or their representative is satisfied with the job done by the contractor.
- ii. The contractor has submitted the reconciliation statement regarding the stores received from the Employer, and all the surplus and salvaged materials are returned to the stores.
- iii. All equipment, tools, plant taken from the Employer have been returned by the contractor.
- iv. Any other material, taken on loan/transfer from other agency has been returned by the contractor.
- v. All power and water supply connections taken for the execution of the works have been disconnected by the contractor.
- vi. Rectifications of any damage done by the contractor to the work executed have been satisfactorily done by the contractor.
- vii. The works shall not be considered as completed until the Architect / PMC has certified in writing that they have been virtually completed and the Defects Liability Period shall commence from the date of such certificate.

48. DEFECT LIABILITY PERIOD

48.1 "Defect liability period" is defined as the period reckoned from the virtual completion when the Contractor is supposed to remove all defects pointed out and arising during this period. The defect liability period shall be twelve months from the date of virtual completion.

48.2 Any defect arising during this period shall be brought to the notice of Contractor, consultant and the architect. The concerned parties shall act within 24 hours or earlier depending on the seriousness of the defect. It will be responsibility of the Contractor to make all possible efforts to rectify the defect or replace the defective material within reasonable period of time. The Architect/ PMC shall define this reasonable period depending on the nature of the defect/ s.

48.3 In the event if the Contractor undertakes and executes the remedy of such defects and deficiencies which are caused due to the negligence or carelessness of the Employer, his employees, agents and agencies under his control, the Contractor shall be compensated for the costs as incurred by him towards the rectification of the same. The time taken for such works if falling beyond the expiry of the Defects Liability Period shall not be considered for the purpose of the issue of final completion certificate by the Employer. shall,

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notwithstanding the fact that the Contractor has completed the works caused due to the Employer as above or not, upon completion of such other works for which the Contractor is responsible to issue the said certificate.

49. TAKING OVER

After completion of works or any substantial part of the works before the completion of the whole of the works, the contractor shall notify the Architect/ PMC / Employer or their representative in writing, within 15 days of receipt of the said notice shall give such certificate with respect to any substantial part of the works which has been both completed to the satisfaction of the Architect and occupied or used by the Employer or refuse to issue the same stating the reasons thereof in writing. When any such certificate is given in respect of a part of the works, such part shall be considered as completed for the purpose of taking over and computation of the period of maintenance of such part, that is, such period shall commence from the date of completion of such part of the works as certified. The works in whole or part shall not, however, be treated as completed for the purpose of other relevant clause thereof unless and until the provisions of the above clause thereof are fully complied with.

50. TERMINATION OF CONTRACT

If the contractor has abandoned the contract or has failed to proceed with the work due diligence or the progress on any particular item or items is slow or he has failed to execute the work in accordance with the terms and conditions of the contract, is persistently or frequently neglecting to carry out his obligation under the contract, then it shall be lawful for the Employer to terminate the contract forthwith under written notice and to proceed with the balance of the work through any other agencies. During the course of execution of the job, in case the contractor has done any substandard work, he shall be asked in writing to dismantle and re-do the same at his own expenses. If the contractor fails to comply with the above instructions immediately, then the Employer shall proceed with the above rectification work, through another agency or agencies. Similarly, if the contractor goes slowly on any particular item or items of work, the Employer shall have the right to execute this item or items through another agency or agencies, including its own department.

51. BACK CHARGING THE CONTRACTOR

Extra cost and expenses incurred for completing the work or balance work or carrying out the rectification of any work as mentioned above through another agency or agencies including its own department shall be debited to contractor's account and shall be recovered from any money due or that

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may become due to the contractor without prejudice to any other remedy that may be available to the Employer in law.

52. VARIATION

52.1 The Architect with the approval of the Employer shall be entitled to make any variation of the quality or quantity of the works or any part thereof that may in his opinion, be necessary and for that purpose, or if for any other reason it shall, in his opinion be desirable, he shall have power to order the contractor to do and the contractor shall do any of the following:

- (i) Increase or decrease the quantity of any item included in the contract.
- (ii) Omit any portion of work.
- (iii) Change the character or quality or kind of any such work.
- (iv) Change the levels, lines, position and dimensions of any part of the works and,
- (v) Execute additional work of any kind necessary for satisfactory completion of the works.

52.2 No such variation shall in any way initiate or invalidate the contract but the value, if any, of all such variations shall be taken into account in ascertaining the amount of the contract price.

53. ORDERS FOR VARIATIONS TO BE IN WRITING

No such variation shall be made by the contractor without an order in writing of the Architect / PMC. Provided that no order in writing shall be required for increase or decrease in the quantity of any item of work where such increase or decrease is the result of the actual quantities exceeding or being less than those stated in the bill of quantities which are estimates. In such cases, the contractor shall be paid only for the actual quantity of work done as certified by the Architect/ PMC at the accepted unit item rates and no compensation shall be allowed. Provided also that if for any reason the Architect / PMC shall consider it desirable to give any such order verbally, the contractor shall comply with such order but it must be followed by confirmation in writing of such verbal order given by the Architect/ PMC, which shall be deemed to be an order in writing.

54. QUANTITIES

The quantities set out in the bill of quantities are the estimated quantities of the work. They are not to be taken as the actual and correct quantities of the works, to be executed by the contractor in fulfilment of his obligations under the contract. Payments will be made as per the actual measurements taken at site.

55. EXTRA ITEMS

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55.1 If the contractor has been asked to execute any such item/ work in course of construction for - which the tender rates have not been quoted by him, he must undertake such work. The rates for such additional work shall be determined by the Employer on the following line: in the order of preference:

- (i) The rate to be derived from any one of the quoted rates for similar items., work in the Lender.
- (ii) Rates based on actual observation and/or analysis of labour and materials involved in such items. For this purpose, the contractor shall submit to the Architect / PMC detailed analysis of the rate proposed by the contractor supported by relevant vouchers. While fixing rates for extra items an allowance of 10% of the cost will be provided towards contractor's overheads, profits and establishments taken together.

56. ITEMS OF AD-HOC NATURE

The contractor shall procure necessary materials and carry out miscellaneous work of ad-hoc nature specifically provided with necessary tools and tackles as may arise during execution of the contract. The actual quantum of work shall be certified and settled by the PMC and payment for the same shall be fixed on the basis of actual cost plus overheads, profits and establishments taken at 10% of the cost.

57. SETTLEMENT OF DISPUTES

57.1 MATTER TO BE SETTLED BY EMPLOYER:

All disputes and differences of any kind whatsoever arising out or in connection with the contract, whether during the progress of the works or after their completion shall be referred by the contractor to the Employer and the Employer shall within a reasonable time after their presentation make and notify decisions thereon in writing. The decisions, directions, clarifications, measurements, drawings and certificates with respect to any matter the decision.. for which is specially provided for by these or other special conditions to be given and made by the Employer or by the Architect or PMC on behalf of the Employer are matters which are referred to hereinafter as Expected matters and shall be final and binding upon the contractor and shall not be set aside on account of non-observance of any formality, any omission, delay or error in proceeding in or about the same or on any other ground or for any reason and shall be without Appeal.

57.2 DISPUTES:

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In the event of any dispute or difference between the parties hereto as to the construction or operation of this contract, or the respective rights and liabilities of the parties on any matter in question, dispute or difference on any account or as to the withholding by the Employer of any certificate to which the contractor may claim to be entitled to or if the Employer fails to make a decision within a reasonable time, then and if any such case, but except in any of the Excepted matters referred to in the above clause, the contractor after 90 days of his presenting his final claim on the disputed matters, may demand in writing that the dispute or difference be referred to arbitration as per CLAUSE 92.. The contractor shall not, except with the consent in writing of the Employer/ PMC / Architect, in any way delay the carrying out of the work by reason of any such matter, question or dispute being referred to arbitration but shall proceed with the work with all due diligence and shall, until the decision of the arbitration is given, abide by the decision of the Architect / PMC and no award of the arbitrator shall relieve the contractor of his obligations to adhere strictly to the PMC's / Architect's instructions with regard to the actual carrying out of the work except as specifically affected by such award.

58. SERVICE OF NOTICE ON CONTRACTOR

All certificates, notices or written orders to be given by the Employer or by the Architect or PMC to the contractor under terms of the contract shall be served by sending by post or delivering the same to the contractor's place of business or such other address as the contractor shall nominate for this purpose.

59. SERVICE OF NOTICE ON EMPLOYER

All notices to be given to the Employer under the terms of the contract shall be served by sending by post or delivering the same to the Employer's address.

60. COPY RIGHT

As between the parties, the employer shall retain the copyright and other intellectual property rights in the specifications, the drawings and other documents made by (or on behalf of) the employer. The contractor may at his cost, copy, use, and obtain communication of these document for the purpose of the contract. They shall not, without the employer's consent, be copied, used or communicated to a third party by the contractor, except as necessary for the purpose of the contract.

61. ESI and PF Obligations

The Contractor shall maintain all statutory Registers and include in their rates all expenses towards meeting obligations under the Employees State Insurance Act and the Provident Fund Act. He shall follow all rules and regulations required under the Act as may be in force from time to time. The

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Contractor shall cover all their workmen working at the Site, under the PSI scheme and PF Scheme, and directly deposit the required amounts with the concerned authorities. Proof of deposit shall be provided to the Project Manager monthly.

62. Approval from Authorities

The Contractor shall assist Employer in obtaining the approvals/ certificates from the various Local Authorities, if applicable i.e. the Electrical Inspector, Lift Inspector, Fire Department etc. before the Works can be put in commercial use by Employer.

63. Local and other Authorities notices and Fees

The Contractor shall comply with and give all notices required by any public authority or statutory body who may have jurisdiction over the matter and he shall pay and indemnify the employer against any fees or charges (including any rates and taxes) legally demandable in respect of the works; provided that the said fees and charges (Including any rates and taxes), if not expressly included in the contract sum or stated by way of provisional; sum shall be added to the contract sum.

64. Position of Contractor's Plant and Sheds etc.

Before commencing the work, the Contractor shall submit to the Architects, his proposal for the location of all sheds for storing materials, and other activities.

65. Temporary offices and stores on the site

The Contractor shall erect and maintain entirely at his own expense properly lighted and waterproof lock-up Readymade offices for the Employer's Site Engineer and for his own staff respectively, on such parts of the site as the Architects may indicate and to their satisfaction and the same shall be provided with furniture light etc. the toilets for such officers shall be separate and properly maintained.

On completion, the materials and furniture shall be removed and the sheds shall be demolished and the place cleared. This shall include area for which drive-way and temporary handling locations.

66. Latrines for Work People

The Contractor shall at his own expense provide immediately on the commencement of the contract temporary flush out latrines for the use of work people separately for males and females.

67. Lighting & Watching etc.

The work site should be kept properly lighted and watched during the period of Construction and provide with first-aid equipment

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68. Sunday & Night work

Sunday and night work shall not be permitted unless with the written permission or direction of the Architects save when the work is unavoidable, or absolutely necessary for saving the life or property. Such work shall be undertaken if so directed by the Architects without any extra charge.

69. Telephone at Site

The Contractor shall provide on the written orders of the Architects, a separate telephone for the works, and pay all charges in connection with the same during the whole period of the execution of the works. The Employer's Site Engineer and the Architects/Representatives will have access to and use of the telephone (Optional).

70. Surveying instruments etc.

The Contractor his expense shall provide on the work for the duration of the contract and maintain a first class Dumpy level, at least two steel and at least two metallic tapes each 30m long and also, as and when required by the Architects, a theodolite.

71. Order Book

The Contractor shall at his own expense keep an Order Book at the site in which shall be entered all instructions given by the Architects or public authorities. A copy of the orders shall be sent to the Architects for their confirmation.

72. Progress Photos


At his expense the Contractor shall supply the Employer / Architects, periodically with set of copies of photographs not less than 250 x 200mm of the works taken from approved positions as and when required.

73. Scaffolding Instructions

All requires scaffolding shall be provided at the Contractor's expense and the same shall be double i.e. it must have two sets of - upright supports. Care must be taken to ensure the safety of the work people and the Contractor must comply with such instructions as the Architects may issue to ensure such safety. The Contractor should be entirely responsible for any damage or injuries to persons or property resulting from any defective safety standards.

74. Setting out works and Clearing of site and protection of works

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The Contractor shall prepare the level chart (of the existing ground level) by block levelling with suitable intervals as specified by Architects and it should got approved before starting any work. The Contractor shall set out the works and shall be responsible for the true and perfect setting out of the same and for the Correctness of the positions, level, dimensions and alignment of all parts thereof. The Contractor is to construct and maintain proper benchmarks at the intersection of all main walls in order that the lines and levels may be accurately checked up any time. If at any time any error in this respect shall appear during the progress of the work the Contractor shall at his own expense rectify the same, if so required, to the satisfaction of the Architects.

The Contractor shall at his expense provide and fix all steel and wooden pegs, posts, sight rails, bonding rod, templates, lines and all other materials necessary for setting out of the work.

The area covered by the proposed building together with an extra width of upto 8M all round the building shall be kept cleared, for which the contractor shall not be entitles to any extra payment. No trees to be cut unless obstructing Building or its foundation.

The Contractor shall at his expense cover up and protect the works and materials stores in the site from the effects of inclement weather, and is to suspend all 'wet' operations during bad weather which, in the Architects opinion, will be detrimental to the work.

75. Fossils etc.

All treasures, fossils, coins, articles of value and antiquity and structures and other remains or things of - geological . or archaeological interest discovered on the site shall deemed to be the absolute property of the Employer and the Contractor shall take reasonable precautions to prevent his workmen or any other person from removing, damaging any such articles or things and shall immediately upon discovery thereof and before removal acquaint the Architects of such discovery and hand over such articles to the Employer.


76. Tests

Every part of the works on the site and all the materials to be used therein shall be subject to such tests from time to time, during the execution of the works, as the Architects may direct and the whole of such tests shall in all cases be made at the Contractor's expense.

77. Laboratory

The Contractor shall establish a full-fledged material testing laboratory in the site with the direction of the PMC and provide commission and run the lab effectively.

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78. The Contractor shall submit along with their R.A bills all the check lists, of the relevant works duly signed by the Project Manager PMC.

79. Technical Staff

Contractor's Site Engineer should be a BE/ B Tech holder in any of the MEP discipline with minimum 5 years' experience or a Diploma holder with minimum 10 years' experience.

The Contractor shall provide Technical Staff as narrated hereunder for assisting the Contractor's Site Engineer by taking up responsibilities of various port folios:

The Project Manager of Project Management Consultant shall verify the qualification and experience of the technical staff of the Contractor and issue approval for their appointment at site.

80. Variation not to vitiate the contract


No addition, alteration, omissions of variations, shall vitiate this contract or release the Contractor from his responsibilities contained but in case the Architects think proper at any time during the progress of the works to make any alterations in or additions to or omissions from the works or any alteration the kind or quality of the materials to be used therein and shall give notice thereof in writing under there hand to the Contractor, the Contractor shall alter, add to or omit from as the case may require in accordance with such notice but the Contractor shall not do any work extra to or make any alterations or additions to or omission from the works or any deviation from any of the provisions of the contract, stipulation or contract drawings without the previous consent in writing of the Architects and the value of such extras, alterations, additions or omissions shall in all cases be determined by the Architects in accordance with the provisions of Clause 81 hereof, and the same shall be added to or deducted from the contract amount accordingly.

81. Ascertainment of price for extras

Should it be found (in accordance with Clause 80) that any of the quantities or amount of works thus ascertained are less or greater than the quantities and/or amounts specified for the works in the priced bills of quantities and/or Tender, or, that any variation is made the valuation of such quantities amounts or variation, unless previously or otherwise agreed upon shall be made in accordance with the following rules:

81.1 The net rates of prices in the original tender shall determine the variation of the extra work where such extra work is of similar character and executed under similar conditions as the work priced therein.

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Roy M. Thomas Manager



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- 81.2** The net prices of the original. Tender shall determine the value of the items omitted provided if omissions vary the conditions under which any remaining items of work are carried out. For such variations, the rates are to be derived from the tendered rates (for the similar extent) and limiting the extra. components of work to the incremental or decremental portion of the said works due to variation in condition of the said items from the conditions which was envisaged in tender. The rate for the extra will be decided as described below in 81.3
- 81.3** If any item of work other than above is introduced and such item is outside the scope of the original contract, the Contractor must start the work after receiving the rate approval not later than 3 days from the date of instruction. The application for new rate must be supported by proper rate analysis for materials and labour. The Architect shall fix the new rate taking into account the quantum of work, market price of materials, labour cost and such other additional factors as may be relevant for arriving at the new rate.
- 81.4** If the Contractor considers that he is entitled to any extra payment or any other amount, he shall give notice of his claim within 15 days from the date on which he is informed or is aware or with due diligence could have been aware of his right to receive extra rates or any amount. The notice of claim shall be supplemented by necessary particulars with reference to the amount claimed. Failure to give notice of claim in the manner aforesaid shall be an absolute waiver of the Contractor's right to get any extra rate or amount.
- 81.5** Measures and valuation in respect of the contract shall be completed. within the "Period of Final Measure" stated in the appendix.

82. Measurement and Check Measurement of works'

All bills. submitted. by the Contractor for payment, shall be accompanied by detailed measurements, in support thereof (recorded in bound measurement books) and on completion of each work the connected measurement books shall be handed over - to the Architects for record.

The Architects may from time to time during or after completion of works, intimate to the Contractor that they

require the works to be check measured and the Contractor shall forthwith instruct his Site Engineer to assist the Architects or their representative or any person approved by them or the Employer's Site Engineer in taking such check measurements and calculations and to furnish all particulars or give all assistance required by any of them.

Should the Contractor not attend or neglect or omit to send his Site Engineer, then the measurements taken by the Architects or any person approved by them shall be taken to be the correct measurements

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of the works. Such measurements shall be taken in accordance with Standard Method of Measurements of works.

All authorized extra work, omissions and all variations made without the Architect's knowledge if subsequently sanctioned by them in writing, shall be included in such measurements.

83. Measurement Book.

The Contractor shall maintain at his cost bound measurement books/ Printed measurement book duly certified by the bank authorities in which shall be recorded all measurements of the works done date-wise as well as structure - wise.

84. Unfixed materials when taken into

Where in any certificate of which the Contractor has received payment, the Architects have in accordance with clause 87.3 of the conditions included the value of any unfixed materials, intended for and placed on or adjacent to the works, such materials and goods shall become the property of the Employer and shall not be removed except for use upon the works unless the Architects authorize in writing such removal, but the Contractor shall remain responsible for loss or damage to the same. Such payment for the materials shall not preclude the Architects from rejecting the materials if they are subsequently found to be not in accordance with the required standard or specification and direct the Contractor to remove the same. In such rejection, the value of the materials shall be deducted out of the subsequent bills passed for payment.

85. Removal of improper work

The Architects shall during the progress of the works have power to order in writing from time to time removal from the work, within such reasonable time or times as may be specified in the order, of any material which in the opinion of the Architects are not in accordance with the specification, or sample or according to the instructions of the Architects, the substitution of proper materials, and the removal and proper re-execution of any work executed with materials or workmanship not in accordance with the drawings and specification or instructions and the Contractor shall forthwith carry out such order at his own cost. In case of default on the part of the Contractor, the Employer shall have the power to employ and pay other persons to carry out the same and all expenses consequent thereon or incident, thereto as certified by the Architects shall be borne by the Contractor, and be recoverable from him by the Employer or may be deducted from any monies due or that may become due to the Contractor.

86. Date of possession and completion.

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- 86.1** On or before the date of possession stated in the appendix, possession of the site shall be given to the Contractor who shall thereupon begin the works forthwith and regularly and diligently proceed with the same and shall complete the same on or before the Date of Completion stated in the said appendix subject nevertheless to the provisions for extension of the time.
- 86.2** On taking over site, Contractor shall submit programme for completion of work and as per Architects bar chart or per network in consultation with Architect and the Contractor is bound to follow the programme scrupulously.
- 87. Certificates and payments**
- 87.1** The Contractor shall submit all their R.A Bills to the Architects along with the supporting measurement books. Their RA bills shall be submitted at intervals of not less than 30 days and such bills should be raised for a minimum of 10% of the contract value. The bill shall be approved and passed by the technical consultant authorized by client.
- 87.2** The interim certificate issued by Architect based on the R A Bills may be certified subject to the deductions of retention amount as per clause 87.4 and other recoveries as per Contract NO ADVANCE TOWARDS MATERIAL SHALL BE PAID.
- 87.3** It will be the sole responsibility of the Contractor to store safely without damage, deterioration and loss then such materials are brought to site and kept in his custody.
- 87.4** The amount which maybe retained by the Employer by virtue of this clause shall be the percentage of certified value retained and up to the amount there named in Limit of Retention Fund, provided that where the limit named in the appendix has been reached, the full value of the work shall be certified by the Architects.
- 87.5** The amounts retained by virtue of this clause and called the Retention Fund shall be dealt with in the following manner:- The fund shall be 5% from each running bill, wherein 2.5% will be released on completion of work in all respects without any interest and balance 2.5% on successful completion of Defect Liability Period of 12 months without any interest.
- 87.6** On such completion of the works, the Contractor shall subject to clause 90 of these conditions be entitled to a certificate for one moiety of the Fund, the other moiety being held by the Employer, until the issue of the Architect's Final Certificate whereupon the said moiety shall be paid to the Contractor after expiry of defects liability period.
- 87.7** Upon expiration of the Defects Liability Period stated in appendix or upon completion of making good defects under clause 91 of these condition, whichever is the later, the Architects

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shall issue a Final Certificate of the value of Works executed by the Contractor and such final certificate, save in cases of fraud, dishonest or fraudulent concealment relating to the works or materials or to any matter dealt with in the certificate and save as regards all defects and insufficiencies in the works or materials shall be conclusive evidence as to the sufficiency of the said works and materials.

87.8 Save as an aforesaid no certificate of the Architects shall of itself be conclusive evidence that any works or materials to which it relates are in accordance with the Contract.

87.9 The Architect may withhold or on account of a subsequently discovered evidence nullify the whole or a part of any certificate to such extent as may be necessary in his reasonable opinion to protect the Owner from loss on account of:

- a) Defective work not remedied.
- b) A reasonable doubt that the contract can be completed for the balance then unpaid.
- c) Damage to another Contractor or sub-Contractor.

87.10 The Architects may make any correction in any previous certificates, which shall have been issued by them. All interim Payments shall be regarded as advances, which will be adjusted in the final payment on completion.

87.11 Payments upon the Architect's Certificate shall be made within the period named in the Appendix as "Period for Honouring of Certificates" after such Certificates have been delivered to the Employer.

88. Cleaning up during progress & Delivery of works

All rubbish shall be removed periodically from the site as it accumulates. All floors, stairs, landing etc., shall be cleaned down and put in a thoroughly complete, clean, sound and workmanlike state to the satisfaction of the Architects before the work is finally handed over, all rubbish and surplus materials not required by the Employers having first been removed by the Contractors. The Contractor shall give notice in writing to the Architects when the work is so ready to be handed over, and shall be responsible for its maintenance until it is taken over by the Employer.

89. Certificate of Completion

The Works shall not be considered as completed until the as-built drawings are submitted by the Contractor and approved by the Architects and the Architects have certified, in writing that they have been completed their work in all respects and the Defects Liability Period shall commence from the date of such certificate.

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90. Defects after Completion

Any defects or malfunctioning of the MEP system which may appear within the defects liability period, after the completion of the works, arising in the opinion of the Architects from materials or workmanship not in accordance with the contract, shall upon the directions in writing of the Architects and within such reasonable time as shall be specified therein be amended and made good by the Contractor at his own cost unless the Architects/PMC shall decide that he ought to be paid for such amending and making good; and in case of default, the Employer may employ and pay other persons and amend and make good. Such defects or other faults, and all expenses, damages and loss consequent thereupon or incidental thereto shall be made good and borne by the Contractor and such damage, loss and expenses shall be recoverable from him by the Employer or may be deducted by the Employer upon the Architect's Certificate in writing from any monies due or that may become due to the Contractor, or the Employer may in lieu of such amending and making good by the Contractor deduct from any monies the event of the amount retained under clause 87.6 and 87.7 and the Appendix herein being insufficient recover the balance from the Contractor, together with any expenses the Employer may have incurred in connection therewith. The Contractor shall remain liable under the provisions of this clause notwithstanding the signing by the Architects of any certificate or the passing of any accounts.

91. Dispute and Arbitration

Subject to the above, all disputes and differences of any kind whatever arising out of or connection with or touching with the Contract of the carrying out of the works whether during the progress of the works or after their completion and whether before or after the determination, abandonment or breach of the contract, shall be referred to and settled by the Architects who shall state their decision in writing. Such decision may be in the form of a final certificate or otherwise. The decision of the Architects with respect to any of the excepted matters shall be final and without appeal as stated in the preceding clauses. If either the Employer or the Contractor be dissatisfied with the decision of the Architects on any matter, question or dispute of any kind (Except any of the excepted matters) or as to the withholding by the Architects of any certificate to which the Contractor may claim to be entitled, then and in any such case either party (the Employer or the Contractor) may within twenty-eight days after receiving notice of such decision give a written notice to the other party through the Architects requiring that such matters in dispute or difference of which such written notice has been given and no other shall be and is hereby referred to the arbitration and final decision of a single Arbitrator to be appointed by the Employer. The decision/ Award of the Arbitrator shall be final and binding on both the parties.

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STP PHOTOS



SCHOOL OF ENVIRONMENTAL STUDIES
COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY
Cochin University P. O., Kochi - 682 022, Kerala, India

ANAND M., M.Sc., M.Phil., Ph.D.
Associate Professor

To

30.01.2024

Lulu Group International
Lulu Corporate office Edapally
Kochi

Sub: Design evaluation of sewage treatment plant (STP) 200CMD capacity at Lulu
Convention Centre, Calicut, Kerala.

Ref No. GME/CUSAT/CL/10204/24 dated 30/01/2024

Sir/Madam,

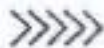
On verification of the detailed design of the sewage treatment plant (STP) of 200CMD capacity proposed for Lulu Convention Centre, Calicut, Kerala submitted by M/s Green Method Engineering (P)Ltd., Kochi, was found adequate and satisfactory as per the design criteria for STP of Kerala State Pollution Control Board.

Signature  20/01/2024
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School of Environmental Studies
Cochin University of Science and Technology
Kochi - 682 022, Ph: 0484-2577311, 2862551

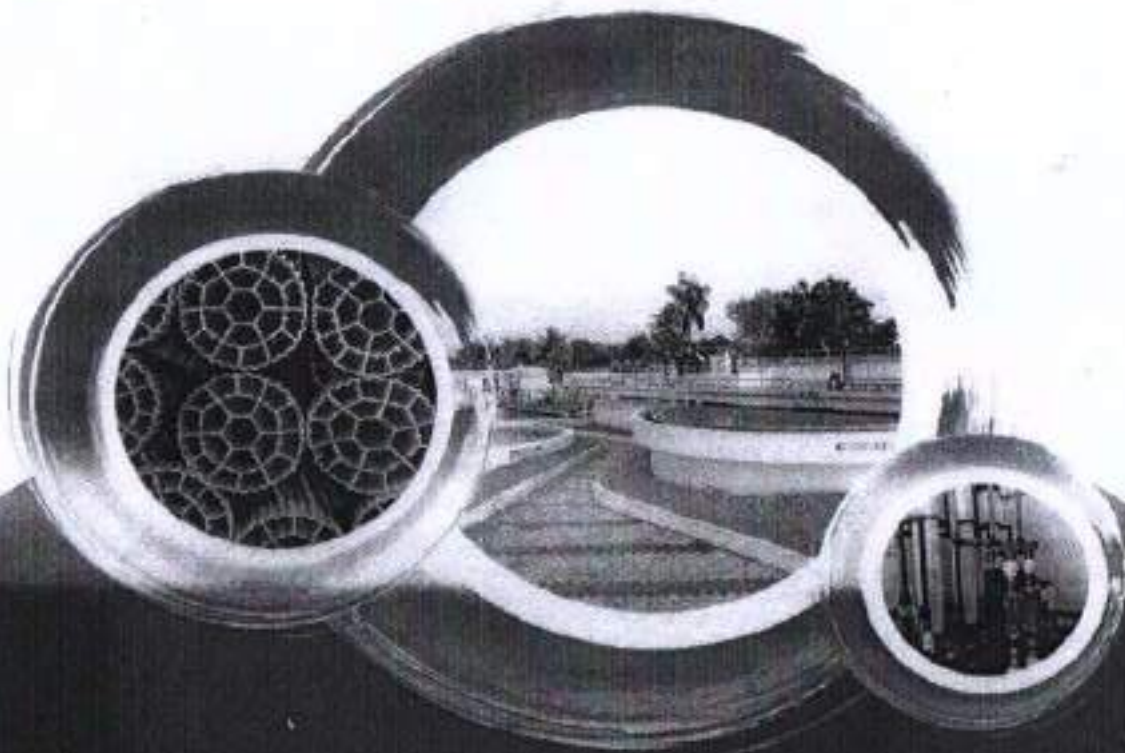


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PROJECT REPORT FOR SEWAGE
TREATMENT PLANT AT LULU
CONVENTION CENTRE CALICUT



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Phone: 0484- 2555336| Fax: 0484-2543985
proposal@greenmethodengineering.com|mail@greenmethodengineering.com
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A Kerala State Pollution Control Board Approved 'A' Class Consultant
A Government Of Kerala State Suchitwa Mission Approved Consultant

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DESIGN PARAMETERS

Flow Characteristics

S.No.	Parameter	Unit	Value
1.	Volume	m ³ /day	200
2.	Hours of pumping operation	hours	20

Influent Parameters

S.No.	Parameter	Unit	Value
1.	pH	-	5.5-9
2.	BOD	mg/l	<600
3.	COD	mg/l	<1000
4.	Suspended Solids (SS)	mg/l	<250
5.	Oil & Grease*	mg/l	30
6.	TKN	mg/l	40
7.	AN	mg/l	30

Effluent Parameters

S.No.	Parameter	Unit	Value
1.	pH	-	5.5-9
2.	BOD	mg/l	<3
3.	COD	mg/l	<50
4.	Suspended Solids (SS)	mg/l	<10
5.	Oil & Grease	mg/l	<1
6.	TKN	mg/l	<10
7.	AN	mg/l	<5

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PROCESS DESCRIPTION

I. Primary Treatment

Screening

The sewage & sullage is passed via a screen chamber. The process enables removal of coarse particles from the stream that may clog pipes and cause operational disruptions in downstream unit processes. The screened sewage is then directed to the equalisation tank.

Grit and Oil Separation

The screened sullage approaches the Grit and Oil Trap. In this chamber a series of baffles are provided which enable the settlement of grit particles at the bottom and the separation of the oil in the stream at the top. The final oil and grit free stream is directed to the Primary Settling Tank.

Primary Settling Tank

The primary settling tank receives the waste water which is free of oil and grit. Due to the laminar flow of the water, the remaining heavier solids settle at the bottom and are drained into the Sludge Digester. Online chemical dosing is done for pH neutralization. The pre-treated water is then directed into the Equalisation Tank.

Equalisation

An equalisation tank is provided for receiving the pre-treated waste water. The equalization tank will have the capacity to cope with peak flow conditions. The waste water from the equalization tank is then pumped to an anaerobic reactor at a uniform rate. Two pumps are provided with one on duty and the other for standby.

II. Secondary Treatment

Anaerobic System

A high rate anaerobic reactor is provided by which the organic matter (BOD) in the wastewater is biologically degraded by micro-organisms in the absence of air. The anaerobic reactor is provided with a media to provide a surface for the anaerobic bio-film to attach and grow. Around 30-40% reduction of BOD and COD is achieved in this anaerobic system. This reduces the load on the aerobic system, reducing electrical costs. The effluent from the anaerobic reactor flows into the Anoxic system.

Anoxic System

A de-nitrification tank is provided for de-nitrification process, for the removal of Nitrogen by converting nitrates with the help of denitrifying bacteria. An internal recirculation loop from the Aeration tank is provided to supply the nitrates. The influent waste water with organic load is mixed with the re circulation from the aeration tank with sufficient reaction tank for de-nitrification to occur. Anoxic condition is maintained in the tank. Overflow from the tank is fed to the MBBR.

Aerobic System

Moving Bed Bio Reactor (MBBR)

The Moving Bed Bio Reactor consists of two aeration tanks in series which are located adjacent to each other. Each tank will be provided with an aeration grid at the bottom, which is made of anticorrosive material and covers the entire area of the tank. The Aeration tank is filled with a specific volume of the bio-media, which are made of a plastic compound with a specific gravity just below that of water, so that they remain in suspension.

The inlet to the aeration tank is at the top with the waste water falling freely into the MBBR tank. The outlet is located on the opposite side, which has a perforated screen mounted on it, to prevent the bio-media from flowing out of the MBBR tank. Both compartments are connected to each other by openings, which have perforated screens at both ends.

Micro-organisms grow on the surface of the plastic media, feed on the organic content of the waste water, and after a complete growth cycle, detached from the surface of the medium. The detached cells form a semisolid mass called bio-sludge. Treated water from the second MBBR along with the bio-sludge flows into a Flocculation Tank.

Aeration Grid

The Aeration System consists of 2 air blowers. One blower shall be on duty and the other on standby. The blowers will be used for the aeration inside the MBBR.

Flocculation Tank

A mild dose of coagulants and flocculants is dosed into the flocculation tank. The addition of these chemicals will aid in the formation of large flocs consisting of the bio-sludge flowing in from the MBBR. This step also helps in de-emulsifying the emulsified oil present in the waste water and settling the same along with the sludge.

Secondary Clarifier

The waste water from the flocculation tank along with biologically stabilized solids and chemically precipitated sludge will flow by gravity to the secondary Clarifier. The separation of solids from waste water is achieved by laminar flow developed inside the settling tank. Due to this, heavier solids settle down, whereas the clear water rises up and flows out into the filter feed tank. The sludge settling at the bottom of the clarifier is pumped to the sludge digester.

III. Tertiary Treatment (Filtration and Disinfection)

Pressure Sand Filter

The treated effluent overflow from the secondary settling tank is directed to a filter feed tank. From here it is pumped through a pressure sand filter. The media in the

filter contains fine grain sand that serves to trap any small particles that might have escaped removal in the settling tank.

Activated Carbon Filter

From the pressure sand filter the effluent passes through an activated carbon filter. The media in the filter contains granular activated carbon that serves to remove chemical compounds in the effluent by adsorption. Colour causing and odour forming compounds are removed in this stage.

Disinfection

The filter feed tank receives a pre-calculated dose of oxidative disinfectant chemicals to destroy micro-organisms in the effluent stream. The dosed water remains in the tank for a designed amount of time for effective disinfection.

Ultrafiltration

The filtered water is passed through an ultrafiltration membrane unit to make it suitable for reuse

Reverse osmosis

Reverse Osmosis system is provided to reduce the total dissolved solids in the treated water and to make it suitable for reuse. During Reverse Osmosis (R.O) process, pressure is continuously applied to the feed stream by a high-pressure pump. Feed stream gets divided into a 'permeate' stream-low in dissolved salt and brine (or reject) stream very high in dissolved salts content. Dissolved salts rejected by the membrane are continuously flushed from the system viz. brine stream. A flow control valve on the brine stream controls the percentage of feed water that is converted into permeates.

The micron-filtered water will be pumped by means of high-pressure pumps through the membrane assembly, where under high pressure process of reverse osmosis takes place and dissolved impurities are reduced.



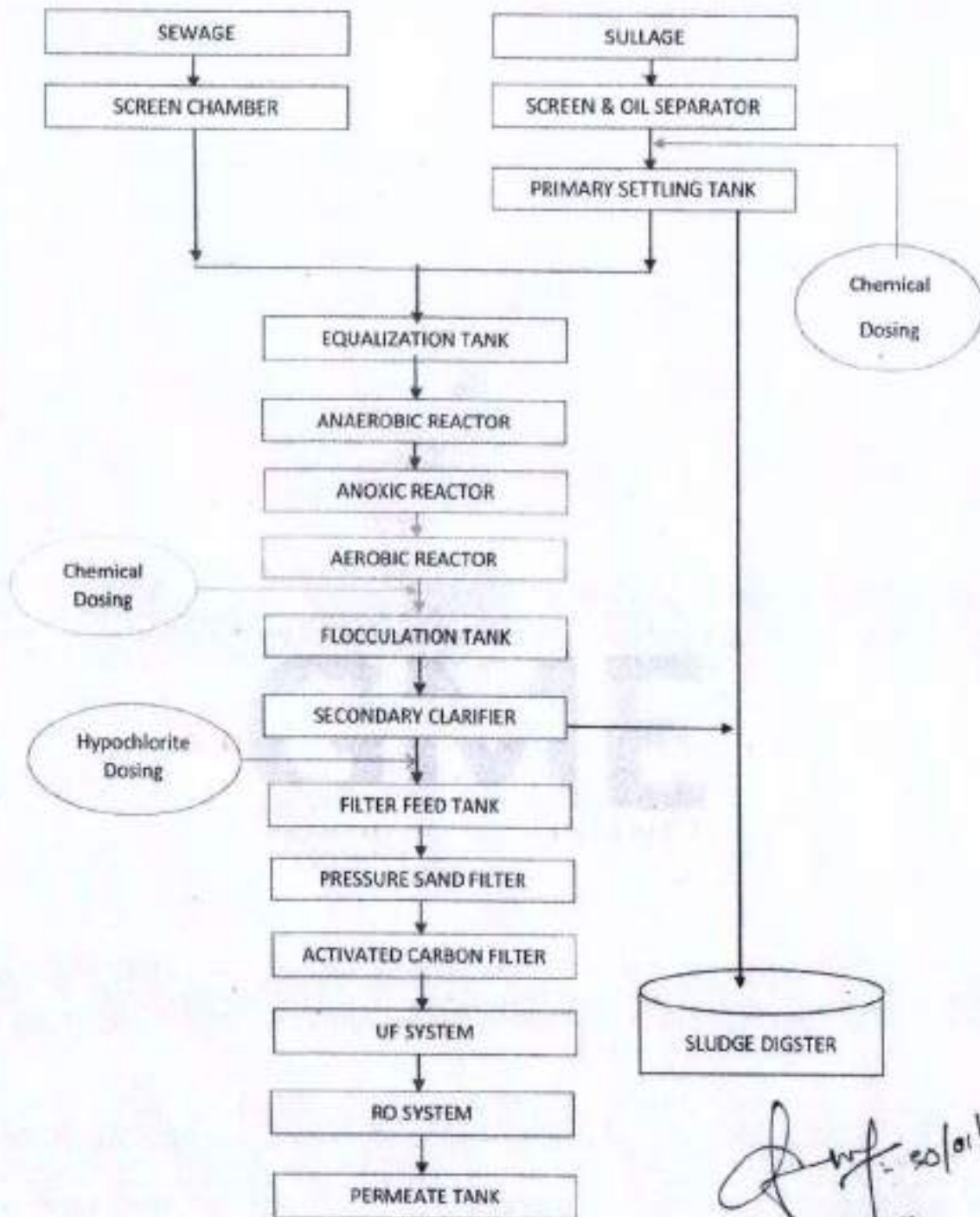
The RO Plant will be a skid mounted automatic type system with optional manual override. The plant will have necessary instrumentation like flow indicators, high and low pressure switches, pressure indicators etc.

IV. Sludge Handling

The sludge from the settling tank is pumped to a sludge digester. Anaerobic digestion is involved in the unit, generating biogas. Proper pH, alkalinity and anaerobic condition enhance the production of biogas and sludge digestion.

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PROCESS FLOW DIAGRAM

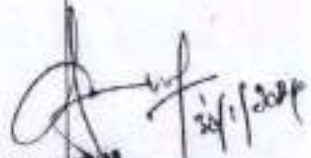


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TANK SIZES.

S.No.	Item	QTY.	Size	MOC
1.	Screen Chamber for sewage 0.80m x 2.00m x 1.00m	1	Average Flow rate : 8.33 m ³ /hr Sewage : 2.78m ³ /hr (1/3 rd average flow) Peak factor : 3 Peak flow : 8.33 m ³ /hr Approach velocity : <0.6m/s Angle of inclination : 45°	RCC
2.	Screen Chamber for sullage 0.80m x 2.00m x 1.00m	1	Sullage : 5.55 m ³ /hr (2/3 rd average flow) Peak factor: 3 Peak flow : 16.66 m ³ /hr Approach velocity : <0.6m/s Angle of inclination : 45°	RCC
3.	Grit cum Oil Separator 1.20m x 4.60m x 1.50m + 0.30m FB	1	Average Flow : 5.55m ³ /hr Peak factor : 3 Peak Flow : 16.66m ³ /hr Retention time required : 15-20 min Volume of grit cum oil separator provided : 8.28m ³ Retention time provided : 29.8min Hence the size provided is adequate	RCC
4.	Primary Settling Tank	1	Average Flow : 5.55m ³ /hr	RCC

	3.00m x 3.00m x 2.20m SWD x 1.60m CWD + 0.40m FB		Peak factor : 3 Peak Flow : 16.66m ³ /hr Loading rate provided (at peak) : 1.85m ³ /hr/m ² Retention time provided (at peak) : 1.5 hr Hence the size provided is adequate	
5.	Equalization Tank 10.00m x 8.00m x 3.00m+ 0.60m FB	1	Waste water generated per day : 200m ³ /day Minimum Retention time : 8hr average flow Volume provide : 240m ³ +F.B Retention time provided : 24 hr Hence the size provided is adequate	RCC
6.	Anaerobic Tank 2.70m x 3.60m x 3.80m	2	Inlet BOD load : 120kg/day BOD reduction considered in anaerobic system : 40% BOD loading rate per m ³ of media : 1.00kg/m ³ Anaerobic media required : 48m ³ Media provided : 52 m ³ Tank volume 1.40times the media volume Tank volume provided = 360m ³ times	MSEP


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			Hence the tank volume is adequate	
7.	Anoxic Tank 2.70m x 3.60m x 3.80m	1	Flow rate considering 20hr pumping : 10 m ³ /hr Retention time required : 2.5-3 hr Tank volume provided : 32m ³ Retention provided : 3.20hr Hence the tank volume is adequate	MSEP
8.	Aeration Tank 3.00m x 3.00m x 3.00m + 0.50m FB	2	BOD inlet after anaerobic & denitrification process : 72kg/day BOD loading rate per m ³ of media : 4.50kg/m ³ MBBR media required : 16m ³ MBBR media provided :22 m ³ Tank volume required : with 40-45% media filling Tank volume required : 55-48m ³ Tank volume provided : 54.00 m ³ Hence the volume provided is adequate	MSEP
9.	Flocculation Tank 1.50m x 1.50m x 1.20m+ 0.30m F.B	1	Retention time required: 10min Volume provided : 2.7m ³ Retention time provided : 16min Hence the provided size is adequate	MSEP

10.	Secondary Clarifier 4.00m dia x 3.00m ht	1	Loading rate required : $1\text{m}^3/\text{hr}/\text{m}^2$ Loading rate provided : $0.8\text{m}^3/\text{hr}/\text{m}^2$ Retention time required : 2-3hrs Retention time provided : 3.8hrs' Hence the tank volume is adequate	MSEP
11.	Filter Feed Tank 1.80m x 2.50m x 2.40m + 0.10m F.B	1	Retention time required : 1hr Volume provided : 10.8m^3 Retention time provided:1.08hr Hence the tank volume is adequate	MSEP
12.	UF Feed Tank 1.80m x 2.50m x 2.40m + 0.10m F.B	1	Volume provided : 10.8m^3 Retention time provided:1.08hr Hence the tank volume is adequate	MSEP
13.	RO Feed Tank 3.30m x 1.50m x 3.80m	1	Volume provided : 18.31m^3 Retention time provided:1.83hr Hence the tank volume is adequate	MSEP
14.	RO Permeate tank 3.30m x 1.80m x 3.80m	1	Volume Provided : 22m^3 Retention time provided : 3.7hr Hence the tank volume is adequate	MSEP
15.	Sludge digester	1	Sludge generated per day :	MSEP

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20/1/2024

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	6.00m dia x 5m ht	108kg/day 1% Slurry generated : 10800l/day HRT : 10 days SRT : 25 days Volume required : 110m ³ Volume provided : 125m ³ Hence the tank volume is adequate	
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GME

12-01-2019
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DETAILS OF MECHANICAL EQUIPMENT

S.No.	Item	Specification	Quantity
1.	Coarse Screen	MOC : SS 304	2 No's
2.	Waste Water Transfer Pumps	Capacity : 10 m ³ /hr Head : 5-7 MLC Type : Submersible Make : DAB/ Equivalent	2 No's (1D + 1S)
3.	Anoxic Recirculation pumps	Capacity : 30 m ³ /hr Head : 10 MLC Type : Self priming Make : Kirloskar/ Equivalent	2 No's (1D + 1S)
4.	Sludge Pumps	Capacity : 8 m ³ /hr Head : 10 MLC Type : Self priming Make : Kirloskar/ Equivalent	2 No's (1D + 1S)
5.	Fixed Bed Packing Media	Type : PVC Make : MM Aqua	2sets
6.	Aeration Manifold and Sieves for Aeration Tank	Make : GME	2 Set
7.	Aeration Grid for Collection tank	Make : GME	1 set
8.	MBBR Media	MOC : PE	2 Sets
9.	Blower	Capacity : 450 m ³ /hr Head : 0.35 bar Make : Everest / Equivalent	2 No's (1D + 1S)

[Handwritten Signature]
20/6/2024
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10.	Stirrer for flocculation tank	MOC : SS 304	1 nos
11.	Filter Feed pumps	Capacity : 10 m ³ /hr Head : 30 MLC Type : Clear water pump Make : Kirloskar/ Equivalent	2 No's (1D + 1S)
12.	Pressure Filter Sand	Size : 1.00m Ø x 1.80 m Ht Construction : MS Type : Vertical Valves : Butterfly valves Make : GME Filtering Media: Sand, Graded pebble	1set
13.	Activated Carbon Filter	Size : 1.00m Ø x 1.80 m Ht Construction : MS Type : Vertical Valves : Butterfly valves Make : GME Filtering Media: Activated Carbon, Graded pebble	1 Set
14.	Clarifier Rake Mechanism	All wetted parts like feed well, scrapper system, rake arm etc in SS construction Accessories include Gear Box & motors Walkway & bridge in MS construction	1 set
15.	Dosing System	Accessories : Dosing pump with tank Make : Milton Roy/ Eqvt.	3 No's
16.	Hypochlorite Dosing System	Accessories : Dosing pump with tank Make : Milton Roy / Eqvt.	1 No

17.	Skid mounted UF system	Capacity : 8 m3/hr Accessories : Feed – backwash pump, dosing system, MS skid, PLC panel, piping, instrumentation etc	1 Set
18.	Piping work with valves in the STP area	Make : Supreme / Zoloto /Eqvt.	1 Lot
19.	Electrification works	Make : L&T, Finolex	1lot

*Electrification work includes Laying and fixing of one lot of cables, isolators, starters, energy meter control panel, etc. required for the above work

Handwritten signature and date: 30/01/2024

Dr. ANAND M.
Associate Professor
School of Environmental Studies
Cochin University of Science and Technology
Kochi - 682 022, Ph: 0484-2577311, 2862551

GME



Lulu

Convention Center Calicut (Pvt) Ltd.

24/826A, P.O, Mankavu,

Calicut - 673 007

www.lulucc.in

CIN: U52100KL2011PTC030058

L/CLT/SOFTSCAPE/01

20.05.2023

M/S Greenline Agri and Horticulture,

No 39/ 4472 C 10, First Floor,

Peejes Mall,

Opposite Medical Trust

Pallimukku, Kochi-16

Ph:9995885042

Dear Sir,

Sub: - Landscaping Work-Gardening & Irrigation Works- M/s. Lulu Convention Centre Calicut Pvt. Ltd., Mankavu, Kozhikode – Labour-Work Order

1. We refer to your quotation submitted for the captioned work and the discussions & negotiations we had with you on 06.12.18. We are pleased to advise that your offer has been accepted by us at an estimated cost of **Rs. 2,78,330/-** (Rupees Two Lakhs Seventy-Eight Thousand Three Hundred and Thirty Only). The amount is exclusive of GST. The entire works will be carried out under your supervision and responsibility. The tentative BOQ is attached herewith.

Sl No	Item	Amount
1	Labour charge for Planting of supplied trees, Shrubs, and Ground covers by digging holes in ordinary soil and refilling the same with the excavated earth mixed with manure in the ratio of 2:1 by volume	278330
	Total Amount	2,78,330
	GST Extra	

2. You are requested to start the works at once in consultation with the Project Manager. Time is the essence of the contract. The time allowed for completion of the works in all respects is 3 months which shall reckon on 7th day of issue of this Work order.
3. The work calls for high standards of workmanship and use of best quality materials.
4. The entire work will be supervised, checked and approved by "LuLu" Engineers. All the materials used for softscape should be checked and approved by "LuLu" Engineers.
5. Adequate protections shall be arranged as required. The contractor shall comply with the safety requirements/ precautions. The contractor shall be held solely responsible for noncompliance of the safety measures, delay, injuries, fatalities and compensations arising out of any accident.

6. Any dispute / accident at site, during execution of work should be dealt with and settled at your own responsibility & cost.
7. Any materials that are not as per BOQ, specifications, standards and requirements shall be rejected and should be removed from the site forthwith and replaced by the contractor at his own cost. Any material found damaged at site / stock while execution should be removed and replaced at contractor's cost.
8. The amount is exclusive of GST. From the bills recovery will be made towards labour welfare cess at 1% and all other statutory recoveries such as IT as per rules.
9. The rate accepted is firm and valid throughout the contract period till completion of the entire works and no price escalation due to any reason whatsoever will be entertained.
10. The contractor shall be well acquainted himself with climatic conditions, access & approach to work site, general road conditions, local labour rules, condition of worksite and such other factors which have direct or indirect bearing on the progress of contraction works. No extra claim arising out of such factors shall be entertained by LuLu. The contractor shall appoint well qualified, competent and well experienced Project Manager, Site engineers, Supervisors and skilled workmen.
11. Terms of Payments:
 - a) 20% Mobilization advance against PDC which will be recovered at 30% of gross bill value of RA Bills.
 - b) 95% payment against submission of RA Bills.
 - c) Balance 5% will be paid on successful completion of free maintenance period and defects liability period of 1 year
12. Water and power required for the work shall be arranged by you.
13. Maintenance. The free maintenance period is 1 year from the date of completion of works. Any defect in the work shall be rectified by the contractor without any cost to "LuLu" within 24 hours.
14. You are requested to comply with all statutory rules, regulations & requirements. Please take out insurance covers as required.
15. This Work Order shall constitute a binding contract between us. It is issued in duplicate and you are requested to sign, seal and return the duplicate as a token of acceptance of the contract.

We wish you all the best and look forward to a good working relationship for executing a quality job within the agreed time frame. This Work Order supersedes the previous one.

Thanking you.

Yours truly,


Babu Varghese
Project Director.

Encl: BOQ

CC: Site office, Accounts Department



LuLu

Convention Center Calicut (Pvt) Ltd.

24/826A, P.O, Mankavu,

Calicut - 673 007

www.lulucc.in

CIN: U52190KL2011PTC030058

PURCHASE ORDER						
Invoice To LuLu Convention Centre Calicut Pvt Ltd 24/826 A, Mankavu P.O Calicut- 673 007		Order No.: CLT/PLANTS/57 dated 20.05.23				
		Delivery Note		1) 30% Advance against PDC which will be recovered at 37.5% against RA bills. 2) 70% against delivery 3) 20% after installation. 4) 5 % on completion in all respects and handing over and balance 5 % on successful completion of DLP of 1 year.		
Despatch To LuLu Convention Centre Calicut Pvt Ltd 24/826 A, Mankavu P.O Calicut- 673 007		Despatch Through		Destination		
Supplier M/s.Greenline Agri and Horticulture No 66/1999, Panakkal Building Veekshanam Road ernakulam-682 018 Ph-9995885042		Terms of Delivery:		No Tax 1 year DLP is included Delivery Time: Immediate		
Sl No	plants name	quantity	size	unit	rate	amount
TREES						
1	bahunia purpurea	14	12 TO 13ft	nos	4150	58100
2	leptostromia speciosa	18	12 to 13 ft	nos	3400	61200
3	cassia fistula	12	10 to 11 ft	nos	4000	48000
4	jack fruit varieties	15	5 to 7ft	nos	2400	36000
5	plumeria alba	20	6 to 8 ft	nos	3750	75000
6	podocarpus tree	15	up to 4 ft	nos	3300	49500
7	filicium decipience	15	6 to 7ft	nos	2950	44250
8	figus panda	26	4 ft	nos	2600	67600
9	coconut tree	10	8 ft	nos	2600	26000
10	callophyllum inophyllum	15	8ft	nos	3100	46500
11	bahunia acuminate	10	up to 10 ft	nos	2850	28500
12	magferra indica varieties	5	7 ft bush	nos	3100	15500
13	figus banchamina	83	4 ft	nos	3100	257300
14	njanvel tree	8	8 ft	nos	3150	25200
15	spanish cherry (elanji)	12	10 ft	nos	3550	42600
16	gulmohar tree	10	10 ft	nos	3505	35050
17	seracca asoka	15	7 to 9 ft	nos	3850	57750
18	santhol tree	5	5 ft	nos	3900	19500
19	wax apple fruit tree (malasian)	5	5 ft to 6 ft	nos	2950	14750
20	guva varieties	4	up to 5 ft	nos	2950	11800
21	rambutan varieties	4		nos	2850	11400
22	phaltaphorum	5	10 ft	nos	3150	15750
23	pongamia pinnata	12	10 ft	nos	3000	36000
24	star goosberry	2	5 ft	nos	2650	5300
25	bread fruit tree	4	7ft	nos	2950	11800
26	conocarpus tree	23	10 ft	nos	2950	67850
27	citrus tree	4	4 ft	nos	3150	12600
28	custard apple fruit tree	2	7ft	nos	2850	5700
29	abiu fruit tree	4	5ft	nos	3500	14000
30	cherry fruit tree	5	5ft	nos	2740	13700
31	star fruit tree	4	6 ft	nos	3000	12000
32	bare apple	4	7 ft bush	nos	3500	14000

33	garcinia comboya (tudampul)	6	7 ft bush	nos	3250	19500
34	barringtonia tree	12	8 ft	nos	3650	43800
35	tecoma tree	13		nos	2650	34450
36	tabebuia rosea	15		nos	2650	39750
37	plumeria pink	13	4 ft bush	nos	4050	52650
38	figus taperia	18		nos	10500	105000
39	figus taperia	6		nos	16050	96300
40	terminilia green	25	13 ft	nos	8500	212500
41	bottle brush golden	30	5ft	nos	2800	84000
42	astonia scolris	18	5ft	nos	3400	61200
43	radermachera	50			2400	120000
44	golden dismodium	25	6 ft	nos	2600	65000
	total					2174350
	PALMS					
1	kentia palm	70	6ft	nos	2950	206500
2	dates palm	20	6 ft stem from GL	nos	15550	311000
3	witchiya merili yellow	15	5 ft	nos	4050	60750
4	witchiya merili green	10	6ft	nos	4050	40500
5	bismarckea silver palm	2	3 ft clear trunk	nos	13500	27000
6	travellers palm	25	8 ft	nos	4050	101250
	total					747000
	BAMBOOS					
1	luthi bamboo	60	8 ft	nos	1550	93000
2	múltiplex bamboo	145	6 ft	nos	1250	181250
3	yellow bamboo	125	8 to 10 ft	nos	1100	137500
	total					411750
	SHRUBS					
1	costas species woodsonii	300	varage 1.5 ft	nos	190	57000
2	malpigia ball	10	2ft ball	nos	3950	39500
3	spider lily	350		nos	130	45500
4	lemonia	325		nos	170	55250
5	dracena americana	275		nos	210	57750
6	dracena CTC red	190		nos	280	53200
7	duranta gold	250		nos	130	32500
8	calathea lutea	150		nos	780	117000
9	black lily	350		nos	210	73500
10	green crenium lily	30		nos	1100	33000
11	ipomea yellow	300		nos	210	63000
12	hemigraphis	235		nos	150	35250
13	thunberja erecta	250		nos	190	47500
14	isora red	175		nos	610	106750
15	isora pink	250		nos	350	87500
16	alocasia macrorhizios	125		nos	1050	131250
17	murraya exotica	250		nos	220	55000
18	ophiopogon white	300		nos	160	48000
19	dracena mahatma	190		nos	250	47500
20	thai pendunas	350		nos	190	66500
21	gradinia	250		nos	190	47500
22	wadela tribeluta	250		nos	180	45000
23	melestroma	360		nos	350	126000
24	nerium clinader pink	80		nos	250	20000
25	hibiscus hybrid	250		nos	360	90000
26	heliconia st vincent red	250		nos	280	70000
27	muzanda lutea	350		nos	210	73500
28	giant crenium lily pink	30	2ft	nos	1910	57300
29	clerorandrum ineme	300		nos	190	57000
30	acalifa green	320		nos	260	83200
31	acalifa holland	320		nos	260	83200
32	aralia golden finger	250		nos	280	70000
33	loropetalum	332		nos	280	92960
34	isora peach	150		nos	470	70500
35	nandyarvattom miniature gold	250		nos	210	52500
36	tecoma miniature	200		nos	220	44000
37	figus panda	140	2ft	nos	610	85400
38	spider lily	300		nos	200	60000

39	canna indica varigated yellow	180		nos	320	57600
40	canna indica varigated red	180		nos	330	59400
41	alpinal zerumbet	121		nos	280	33880
42	eugenia	146		nos	280	40880
43	dianell flex lily	225		nos	190	42750
44	giant heliconia	100		nos	1410	141000
45	schefflera	230		nos	290	66700
46	zephyranthus lily	1000		nos	100	100000
47	coral jasmin	100		nos	220	22000
48	casaei penia	180		nos	220	39600
49	lantana varieties	450		nos	210	94500
50	dracena song of india	200		nos	250	50000
51	pseduranthium	225		nos	260	58500
52	dracena coloroma	135	2 ft	nos	750	101250
	total					3388570
	Grand total					67,21,670

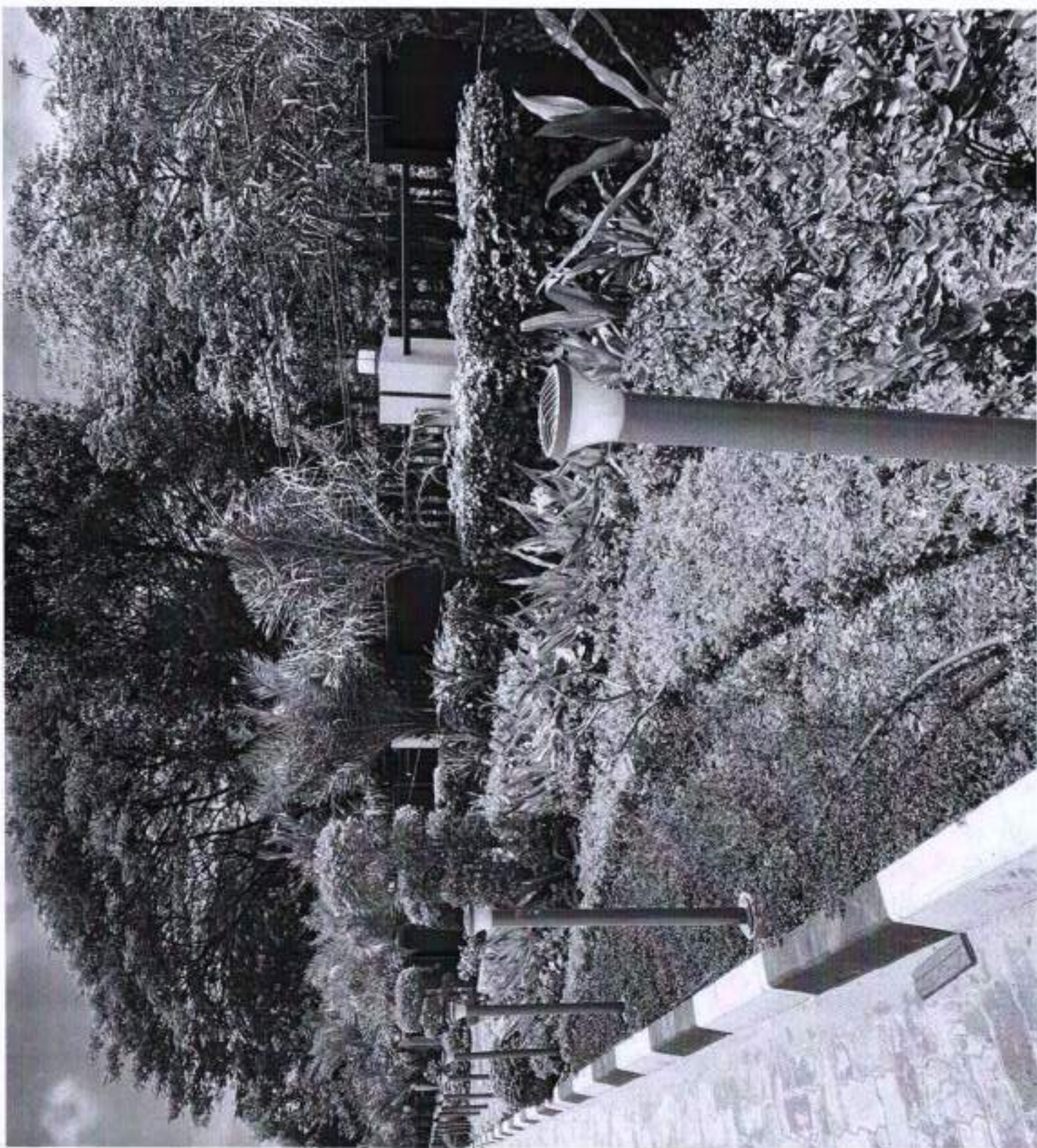
Note: 1. Under no circumstances the contract sum shall be exceeded.

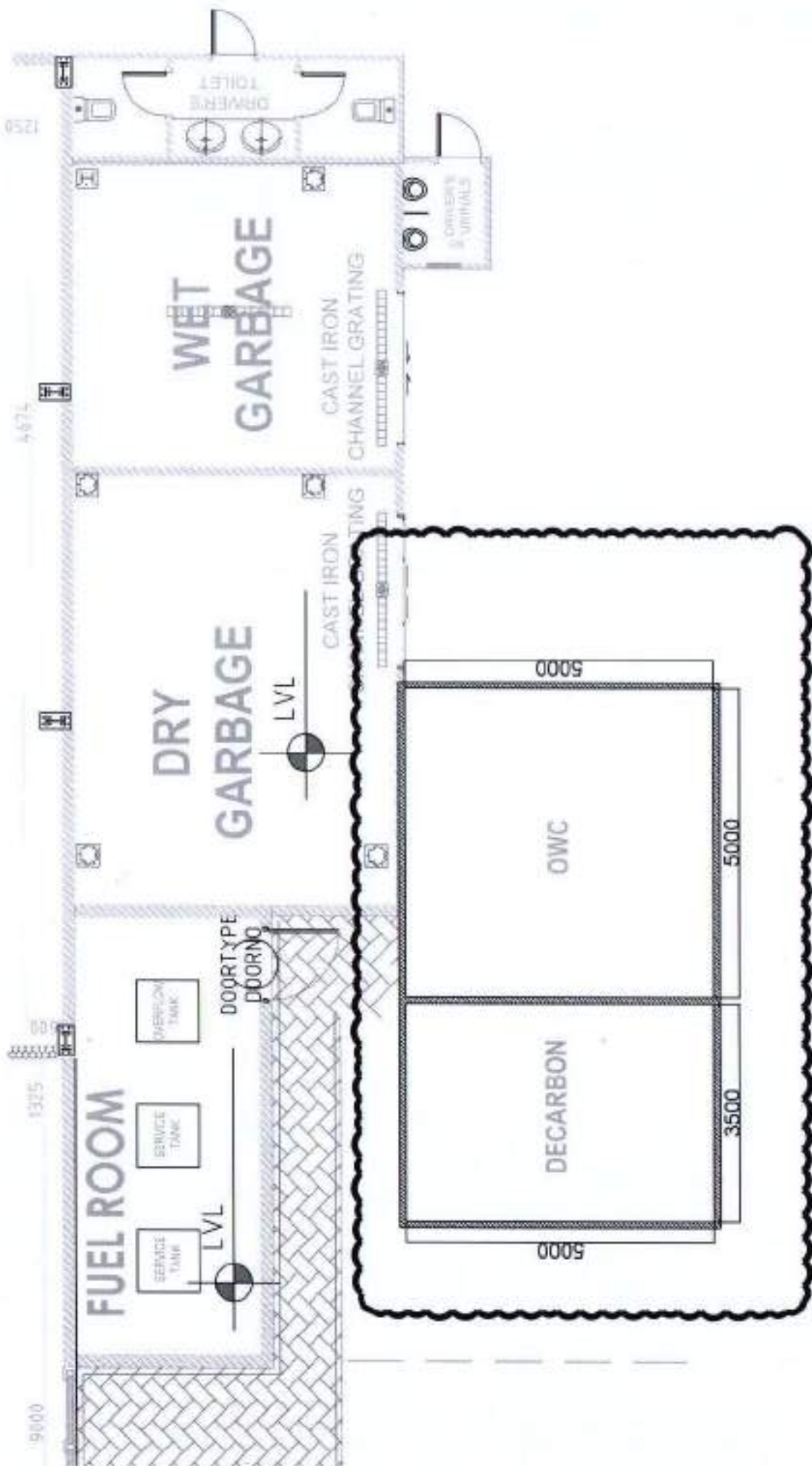
2. Contractor to do Value engineering along with our Project Manager and try to reduce the number of plants and economise the cost.


Babu Varghese
Project Director

LANDSCAPE PHOTOS









LULU

Convention Center Calicut (Pvt) Ltd.

24/826A, P.O. Mankavu,
Calicut - 673 007
www.luluicc.in

CIN: U52190KL2011PTC030058

31.07.2024

KSCSTE-NATPAC

K. Karunakaran Transpark, Akkulam,
Thuruvikkal P.O,
Thiruvananthapuram- 695 011,
Kerala.

Sub: Lulu International Shopping Mall- Calicut- Submission of Project Proposal-Traffic Impact Study - Appointment of Consultants.

Dear Sir,

1. Please refer to your Offer dated 31.07.2024 and subsequent discussions we had with you. As discussed, and mutually agreed we are pleased to appoint your firm as consultants for the captioned work.
2. **SCOPE OF WORKS.**
 - i Traffic Movement Count
 - ii Classified Volume Count
 - iii Pedestrian Survey
 - iv Parking Survey
 - v Preparation of Traffic Management Plans
 - vi Please also help us with any other details which will reduce the congestion/ traffic jam and help smooth flow of traffic.
3. **CONSULTANTS FEES.**
The total payment as discussed and mutually agreed is **Rs 6,99,223 plus applicable taxes.**
4. **Payment Schedule**
100% Advance against the Work Order. Kindly raise your GST invoice so that we can make the payment.
5. You are requested to take up the work at once and furnish the report at the earliest.
6. This letter shall constitute a binding contract between us. It is issued in duplicate, and you are requested to sign, seal and return the duplicate as a token of acceptance of the appointment.
7. We wish you the very best and look forward long lasting relationship.

Thanking You.

Yours faithfully,

Babu Varghese
Project Director



LULU

Convention Center Calicut (Pvt) Ltd.

24/825A, P.O. Mankaru,

PO No: 1340

Calicut - 573 007

Tel: +91 495 2330012

www.luluindia.com

WORK ORDER

CIN-U52190KL2011PTC030058

WO Ref No: LULU/CALICUT/SOLAR/01

28th February 2022.

M/s URON,

A CleanTech Engineering and Management Company.

A-404, Privilon, B/h Iskcon Temple,

S.G. Highway, Ahmedabad,

Gujarat - 380054, India.

Dear Sirs,

Sub: - **SOLAR WORKS FOR THE PROPOSED BUILDING FOR LULU AT CALICUT, KERALA, INDIA.**

Ref: - 1. Letter of Intent Ref No: LULU/CALICUT/SOLAR/01 dtd 11.02.2022.
2. Your Final Contract price received vide E-Mail dated 11.02.2022.

1. We refer to the tender dated 14th January 2022 submitted by you for the captioned works and various correspondences & discussions and negotiations we had with you. As discussed and mutually agreed upon, we are pleased to advise that your negotiated offer for the above-mentioned works has been in principle accepted by us at a total amount of **INR 3,85,64,146 /-** (Rupees Three Crores Eighty-Five Lakhs Sixty-Four Thousand One Hundred and Forty-Six Only) - Inclusive of all taxes and Warranty/DLP of 3 Years from the date of handing over. The above amount is inclusive of all taxes and duties like GST, Labour Cess etc. whatsoever. The above amount is inclusive of all taxes and duties like GST, ED, Port Clearances, Customs, any other taxes etc. whatsoever. Adjustments shall not be allowed in respect of any rate or price contained in the Contract Document for any fluctuation in the cost of labor, materials, equipment, services, whatsoever that may occur during the period of Contract.

2. The Scope of the works are as defined in the Tender Documents are generally referred to without limitation as Design Coordination, Value Engineering, supply, timely delivery, quality testing & certification, material approval, installation, testing, commissioning, protection, handing over and attendance of defects during Defects Liability Period of the **SOLAR WORKS FOR THE PROPOSED BUILDING FOR LULU AT CALICUT, KERALA, INDIA.** (the Works) as described and in coordination with other agencies engaged by the Employer. The GFC Drawings, Preambles to BoQ, Bill of Quantities, Conditions of Contract, Technical Specifications, responses to bid queries, addendums etc. are complementary to each other and you will carry out any missing items also, if it is required for satisfactory completion of works.

3. The time is the essence of the contract and you are requested to start the work at once, in consultation with the Project Manager of LuLu and proceed with due diligence, skill, workmanship, manpower, utmost care and meticulous vigil and complete the works in all respects in accordance with contractual requirements and to our satisfaction without causing /

creating any unpleasant or dissatisfactory situation whatsoever. You are also please aware that the time mutually agreed for the completion of the entire works in all respects is strictly **10 months**, including mobilization period, which shall be reckoned from the **11.02.2022**. however, it is explicitly agreed that:

- 3.1. Commencement Date shall be from the date of issuance & confirmation of PO & advance whichever later.
- 3.2. Completion of design, shop drawings etc. shall be on or before 20th March 2022.
- 3.3. Supply of Solar Panels on or before 31st March 2022.
- 3.4. Completion Date shall be 10 months from the Date of issuance of PO or 4 months from the date of site readiness.
- 3.5. A detailed works program complying with the above milestones, depicting Contractor's planned sequence of work in the approved format shall be submitted for approval by the Consultant/Employer within 15days.

You shall prepare a detailed construction program for all activities relating to the project indicating the time schedule keeping in view of the overall time of completion of the project. The liquidated damages (not as penalty) will be a 0.50% of the contract sum per week subject to a maximum of 5% of contract sum.

4. The contract shall be item fixed rates, re-measurable domestic contract, in accordance with the approved drawings, specifications, addendums, bid queries, Minutes of Meetings and BOQ for a probable amount of **INR 3,85,64,146 /- (Rupees Three Crores Eighty-Five Lakhs Sixty-Four Thousand One Hundred and Forty-Six Only)** – Inclusive of all taxes, loading, transportation, unloading, stacking, storing, re-handling, etc. The rates quoted are firm and valid till completion of the entire works and no price escalation due to any reasons whatsoever will be entertained. The quantity mentioned in BoQ are tentative and any changes will be paid as per the above rate with the revised quantity. Adjustments shall not be allowed in respect of any rate or price contained in the Contract Document for any fluctuation in the cost of labor, materials, equipment, services, whatsoever that may occur during the period of Contract except those as mentioned under clause 9 of this agreement.

5. Terms of Payments shall be as per below.

5.1a. For supply of Solar Modules - 100% against Letter of Credit (LC).

5.1b: Supply Rate. (For other items)		
Stage-1	Against Supply	90% of BOQ item supply rates on pro-rata basis against delivery of materials at site and upon quality and quantity are accepted by PM at site.
Stage-2	Against Installation	05% of BOQ item rates on pro-rata basis against installation at site.
Stage-3	Against Testing & Commissioning	5% of BOQ item rates on pro-rata basis against completion of Works, T&C, handing over & submission of RBG.

5.1c: Labour Rate.		
Stage-1	Against Installation	90% of BOQ item rates on pro-rata basis against installation at site.
Stage-2	Against Installation	05% of BOQ item rates on pro-rata basis against installation at site.
Stage-3	Against Testing & Commissioning	5% of BOQ item rates on pro-rata basis against completion of Works, T&C, handing over & submission of RBG.

5.2 Defect Liability Period (DLP) / Guarantee / Warranty: DLP shall be 36 Months from the date of issuance of Taking Over Certificate.

5.3. Performance Bank Guarantee (PBG): You shall furnish PBG for 5% of the total Contract value towards Performance Security within 15 days of issue of this Work Order. PBG should be valid from the commencement till the issuance of Taking Over Certificate (TOC). PBG shall be returned on issuance of TOC.

5.4. Retention: You shall furnish Retention Bank Guarantee - RBG for 5% of the final cumulative bill/total contract value along with the submission of final bill valid for 12 Months from the date of issuance of Taking Over Certificate.

5.5. Performance Deduction at first year (if any): The amount equivalent to the product of KSEB actual tariffs and the difference in minimum guaranteed generation values at first year and actual generated values shall be deducted from the CAMC charges.

Note: - All payments shall be further subject to applicable statutory withholdings/deductions and retention as per Contract. From each RA bill, recovery will be made towards TDS etc. All the other terms and the conditions shall remain same as per the tender document and addendums.

6. Contract Documents: The following documents listed hereunder shall form part of the Contract as annexures. In the event of any inconsistency between the terms and conditions stipulated in this Work Order and other documents issued in connection with the Works, the hierarchy for the priority of documents shall be as follows;

- a. This Work Order
- b. Bill of Quantities
- c. Technical Compliances.
- d. LOI Ref No: LULU/CALICUT/SOLAR/01 dtd 11.02.2022.
- e. MoM Dtd 29.01.2022
- f. Preambles to BoQ.
- g. GCC.
- h. Safety Code.

In case any conflict or contradiction may arise in the documents, the LuLu / Consultant Engineer shall decide on the most stringent requirements take precedence and instruct the Contractor accordingly. Any exclusion, qualification, condition made in the Contractor's Tender

Offer, shall be considered as excluded and if any of the qualifications / exclusions from the Contractor, solely based on Tender Documents / requirements will prevail.

7. The works call for use of best quality materials and high standards of workmanship conforming to Contract Provisions, Bureau of Indian Standards, National Building Code, local KSEB norms and Best Engineering Practice and to our absolute satisfaction. All materials, goods and equipment absolutely and wholly free from any defects, deficiencies, repairs and liens and encumbrances, free from any material or structural defects and the best and the most suitable of their respective kinds of their intended uses and they shall strictly conform to the respective description set forth in the contract documents. Furthermore, all the materials used / to be used in the project shall be appraised by LuLu / our Architect / Consultant well in advance of incorporating them in the Project.

8. Consultants and Contractors: - At the commencement of the Work and from time to time, the Contractor shall co-operate with Main Contractor, Employer's other Contractors, Sub-Contractors, persons engaged on separate contracts in connection with the Project, Vendors, Consultants, Quantity Surveyor, Engineer and with the Employer's Representative for the purpose of the co-ordination and execution of various phases of the Project.

9. Variation: This being an item rate contract any variation in total value of the contract acceptable up to plus or minus 25%. In case there is any variation over and above +25%, the rates will be renegotiated based on market rates. All the RO items need to be renegotiated based on market actual rates and needs to be mutually agreed upon, whenever the value of the same exceeds Rs 1 Lakh against each RO item.

10. Non-tendered Items: For Any New Items for which Rates cannot be arrived from the existing BOQ, the rate of extra items will be arrived considering 15% profit & OH charges, i.e., Actual expense should be rate competitive (i.e. Material + Labour) + 15% OH & profit.

11. You shall take Insurance Policies covering your liability under Workmen Compensation Act, 1923, Minimum Wages Act 1948, ESI Act 1948, Provident Fund Act 1952, Contract Labour (Regulation and Abolition) Act, 1970 and under the other applicable and relevant labour legislations which cover the project. Also, please arrange to take out necessary Insurance Covers such as **CAR/EAR Policy [For an amount of 110 % of contract value], Third Party Liability [Rs.10 Lakhs for one incident with number of incidents being unlimited. Validity up to end of Defects Liability period]**, etc. The originals of all above Insurance and any other insurance as applicable as per the contract documents shall be submitted to Employer without fail and shall be retained by us. Such Policies shall be endorsed for the Project Contract and shall be operative till the completion of the project to our utmost satisfaction. In the event of any accident covered by these Policies, you shall forthwith pay compensation to the employees and other parties without waiting for payment due to be received by you from the insurer/ underwriters. You shall indemnify and keep Employer harmless from against all loss, claims, demands, action, liabilities and expenses suffered, incurred or sustained by Employer on any court. The Contractor shall include the bank clause of the lending bank of the owner in all the insurance policies pertaining to this contract. The Contractor hereby unconditionally and categorically represents warrants and undertakes to the Owner that throughout the term of this Work Order it has all necessary licenses, permits, authorizations, approvals and / or consents to enter into all of its obligations under this Work Order and it shall comply with all relevant, applicable laws, regulations in respect of its obligations pursuant to this Work Order and that it has full capacity and authority to enter into and to perform this Work Order. Contractor shall without fail share with Owner copies of all such licenses, permits, authorizations and approvals which are current and unexpired without demand.

12. You shall not assign any part of the works to any other party without our consent. All sub-contractors appointed by you shall be strictly in accordance with the provisions of the contract documents and you shall seek our prior written approval of all your subcontractors and suppliers engaged in the works.

13. You and your subcontractors are requested to strictly adhere and comply with all the statutory rules, notifications, directives, regulations & requirements which are being issued from time to time. Upon any failure, the employer shall be authorized to make deductions from the bills and to withhold the same for mitigating the liability or to pay to the respective statutory authorities.

14. All workmanship shall conform strictly to the standards laid down in the contract documents and if no such standards are laid down, to the best accepted market standards of current professional construction and engineering practice and to our satisfaction and there shall not be any displeasure or discomfort in this regard on our part.

15. You shall deploy well qualified, experienced, skilled and competent Quality Engineer with sound and thorough knowledge about the project and with excellent expertise as per requirements of Quality Control Requirements laid down in the contract documents, to cover the supervision needs of the Project.

16. You, your subcontractors, nominated subcontractors and all your agencies and representatives shall comply with the safety precautions, protective measures, housekeeping requirements, etc. Our Site Engineer / ourselves with due intimation shall have the right to stop the work at site if in our opinion proceeding with the work will lead to an unsafe and dangerous condition. You shall ensure that all workmen deployed and employed by you at the site / for the project are aware about the nature of risk involved in their works and have adequate knowledge for carrying out their works safely. During the currency of the Work Order, the Owner is very particular about proper housekeeping of the construction sites and site offices, etc. and in case the Contractor fails to keep the construction sites, site offices, etc. hygienic, neat & tidy the Owner shall serve the notice to the Contractor requesting to upkeep the site, and even thereafter if the Contractor fails to set right the things in its proper order, Owner shall arrange for housekeeping and recover the cost thereof from the Contractor and the contractor shall not dispute or challenge the same.

17. The Contractor shall prepare a detailed construction programme for the activities relating to the scope of work indicating the time schedule keeping in view of the overall time of completion of the work. At any point of time if the Contractor fails to meet or achieve any of the requirements qualified in this Work Order, the Owner shall be entitled to terminate / pre-determine this Work Order with advance written notice of 30 (thirty) days and on the failure of the Contractor, Owner shall take over the works under this Work Order in partial and execute directly or through other agencies at the contractor's risk and cost, provided the Owner shall settle and pay the Contractor for the works executed and materials supplied as per the contract.

18. The Contractor alone shall be liable for the death of or injury to any of its employee or other people who visit the site. The Contractor shall be bound by the laws in force at the time of any such occurrence. In case any accident occurs on the site/the property, the Contractor is obliged to immediately notify the owner and take necessary corrective measures. The ultimate liability to set right the things in such incidents vest with the Contractor and the Owner is not at all responsible for such events. For any action of Government like Police Departments, Contractor shall have to face the consequential situations and the Contractor alone is responsible, liable, accountable and answerable for any such lapse irregularity, omission, commission and fault.

19. The Contractor shall be liable for any loss or damage to the work under this Work Order and / or any assets or goods belonging to the Owner or a third party, caused by willful negligence of the Contractor.

20. If the Contractor or any of its employees or agents break / deface or destroy the property belonging to the Owner during the execution of the scope of the work, the same shall be made good by the Contractor at their own expense and in default thereof. The Owner may cause the same to be made good by other agencies and recover the expenses from the Contractor, even after the defect liability period.

21. The Contractor shall be responsible for fulfilling the laws, rules and regulations regarding the health and safety that are in effect at the time of the commencement of this Work Order. For such purpose the Contractor will sign, keep and place at the disposal of the relevant authorities all legally perceptible documents, more specifically the following:

- Occupational Risk Prevention Plan
- Risk Assessment and regular reports
- Planning of preventive measures
- Monitoring of the health conditions of the Contractor's employees and other people on the site and
- List of labour accidents and sicknesses that have made the employees, the workers, the representatives and other people temporarily incapacitated.

22. Contractor's Employees/Agents: The Contractor shall provide an employee on the site in connection with the execution of the works,

- Only such technical employees as are skilled with core competence, excellently trained and well experienced in their respective professions and trades and such sub-agents, foremen and leading hands as are competent to give proper supervision to those part of the works they are required to supervise,
- such skilled, semi-skilled and unskilled labour as is necessary for the proper and timely execution of the works
- any defective and unsatisfactory work with infirmity the Contractor alone is answerable and liable to the employee

23. Security/Fencing and Lighting: The Contractor shall be solely responsible for the security of the site including, without limitation, proper fencing, lighting, guarding, warning signs and watching of all the works on each section and part on the site, in accordance with the specifications. No naked light shall be used by the Contractor on the site, otherwise than in the open air.

24. Safety and protection of the Environment: The Contractor shall, throughout the execution of the works and the Defects Liability Period:

- have full regard for the safety of all persons entitled to be upon the site and keep the site (so far as the same is under its control) and the works (so far as the same are not completed or occupied by the Owner) in an orderly state appropriate to the avoidance of danger to such persons; and
- take all reasonable steps to protect the environment on and off the site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of its methods of operation.

Following safety precautions shall have to be taken by the Contractor to protect the Corona Virus effect (i.e., COVID 19) for the Contractor's labour/staff

- providing all labour nose mask
- sanitization – 3 times / day / as per the requirements

- Thermal Scanning – 2 times / day
- Other PPE's like Safety Helmet, Shoes, Jackets, Hand Gloves etc
- Necessary documents maintain at site to ensure the above said PPE

25. Epidemics: In the event of any outbreak of illness of epidemic nature the Contractor shall comply with and carry out such Laws as may be made by the Government or other appropriate Authorities for the purpose of dealing with and overcoming such outbreak.

26. Amendment or Modifications:

No Amendment or Modification to this Work Order shall be valid and binding unless set forth in writing and duly executed by both the parties specifically referring to the provisions so amended and or modified.

27. Waiver:

No waiver of any provision of this Work Order or of any breach thereof shall be effective or binding unless made in writing and signed by the Party purporting to give the same and unless otherwise provided in the written waiver and it shall be limited to the specific matter waived.

28. Assignment:

The contractor shall not assign or transfer its rights or obligations under this Work Order without the prior written consent of the owner.

29. Termination without reason / cause by Owner:

The Owner may at any time during the currency of this Work Order terminate this Work Order by giving 30 (Thirty) days' notice in writing to the Contractor without assigning any reason / cause whatsoever, provided the Owner shall settle and pay the Contractor for the works actually executed and materials supplied as per the contract. In case of termination by the Owner without reason as aforesaid, Contractor shall be paid on prorata basis for actual completed work strictly on the basis of measurement certified by Owner's Site Engineer pursuant to 'Clause 5: Payment Terms' of this Work Order supra.

30. Dispute Resolution and Arbitration:

All or any disputes or differences whatsoever between the parties arising out of this Work Order or relating to or touching the mutual rights and obligations of the parties shall be referred to a sole arbitrator to be appointed by the Owner under the provisions of Arbitration and Conciliation Act 1996 as amended. The arbitration proceedings shall be conducted at Cochin in English language. The award passed by the sole arbitrator shall be final. All the initial and subsequent expenses relating to the appointment and adjudication of the dispute by the arbitrator shall be equally borne by the parties. A mere reference to the sole arbitrator shall not entitle the Contractor from carrying out any of its duties and obligations under this Work Order.

31. The construction, validity and performance of this Work Order shall be governed by and construed and interpretation thereof in accordance with Indian Law and the Courts at Kochi alone shall have jurisdiction over all the matters arising from this Work Order.

32. This Work Order shall constitute a binding contract between us. It is issued in duplicate and you are requested to sign, stamp, seal and return the duplicate to us as a token of your acceptance of the contract. This Work Order will supersede all previous correspondences and communications.

33. We look forward to a good working relationship for executing a quality job within the agreed time frame and to our expectations. Awaiting your excellent service and assuring you of our best co-operation always.

Thanking you,
Yours truly,



BABU VARGHESE
PROJECT DIRECTOR

Enclosure:

- Bill of Quantities
- Technical Compliances.
- LOI Ref No: LULU/CALICUT/SOLAR/01 dtd 11.02.2022.
- MoM Dtd 29.01.2022
- Preambles to BoQ.
- GCC.
- Safety Code.

CC: (1) Lulu Site Office (2) Accounts Department.

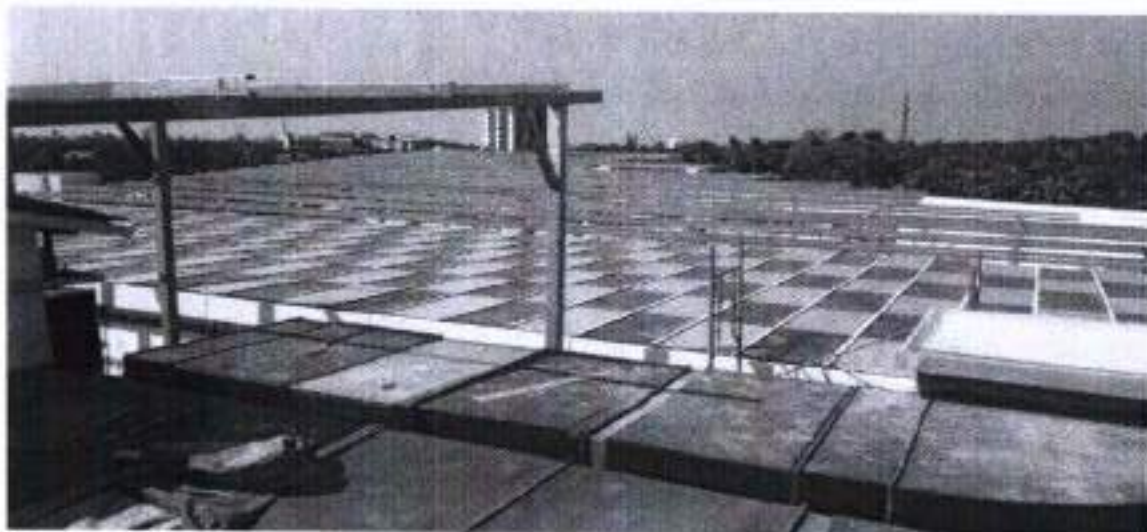
Acknowledgement

I, in the capacity of
duly authorized to sign for and on behalf of **M/s. Uron** hereby confirm acceptance of the
terms and conditions stipulated in this letter.

Signature & Stamp of Contractor

Date:

SOLAR PHOTOS





Date: 04.10.2023

STRUCTURAL STABILITY CERTIFICATE

This is to certify that the proposed building complex of Lulu International Shopping Malls Pvt. Ltd. at survey numbers 271, 272, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291/1A, 291/1B, 321/2, 364, 367/2, 368, 369/2, 370, 372/1, 488/1A1A, 488/2 at Valayanad Village of Kozhikode District, Kerala in Kozhikode Municipal Corporation is structurally designed by myself based on the architectural plan submitted to the concerned development authority. The building complex includes Basement level + Ground Floor + 2Floor for shopping mall (4 floors) + 1 Mezzanine floor, Ground only Utility buildings and compound wall around the property.

The structure of the proposed shopping Mall building is reinforced concrete framed structure with columns and lift core wall suitably placed with beam slab framing system and is complying with Bureau of Indian Standard norms, regulations and the design is safe and suitable for the purpose for which it is intended.

The building is designed in accordance with relevant Indian standard codes including IS 456-2000, IS 875 (Part 01 to 05) and seismic code IS1893 (part 1) 2016. The structure falls under seismic zone III. The building foundation is pile foundation, designed based on the site specific Soil Investigation report.

For Design Concepts



Abin Bobby (M-Tech Structural Engineer)



VISVESVARAYA NATIONAL INSTITUTE OF TECHNOLOGY
(DEEMED UNIVERSITY)
NAGPUR 440 011 (INDIA)

*Upon recommendation of the Senate hereby confers degree of
Master of Technology in Structural Engineering*

on

Abin Bobby

*who has successfully completed the course of study
as prescribed under the regulations in
November 2002 in First Division
Given this day under the seal of
Visvesvaraya National Institute of Technology
at Nagpur in the Republic of India.*

विश्वेश्वरय्या राष्ट्रीय प्रौद्योगिकी संस्थान
(अभिमत विद्यापीठ)
नागपूर - ४४० ०११ (भारत)

अबिन बॉबी

को एतद्वारा

संरचनात्मक अभियांत्रिकी में प्रौद्योगिकी डिप्लोमा

की उपाधि प्रदान करता है। अभियंत की अनुसंधान पर संस्थान की
मुद्रांकित यह उपाधि, विनियमों में विहित पाठ्यक्रमों को

नवम्बर 2002 में प्रथम श्रेणी
में सफलता पूर्वक पूर्ण कर लेने पर,
नागपूर (भारत) में आज दी गई है।



दिनांक
DATE: August 9, 2003

U. S. P. P. P.
अध्यक्ष, अभिमत
CHAIRMAN, SENATE

R. P. P.
अध्यक्ष, शासकी मंडल
CHAIRMAN, BOARD OF GOVERNORS



**DEPARTMENT OF FIRE & RESCUE SERVICES
GOVERNMENT OF KERALA**

No. F2-7734/17

Date: 05.08.2017

FIRE SAFETY CLEARANCE FOR SITE

- | | |
|-------------------------------------|---|
| 1. Name & Address of the Applicant | : Sri. Packer Koya.P.P
Director, Lulu Convention Centre Calicut Pvt Ltd, 24/826A, Mankavu.P.O, Calicut-673007. |
| 2. Name of the Company | : - |
| 3. Occupancy type of Building | : Residential (Hotel), Industrial & Assembly Building |
| 4. Height of the Building | : Residential (Hotel) – 48.25 mtrs
Industrial – 12.85 mtrs
Assembly – 15.72 mtrs |
| 5. Number of Floors of the Building | : Residential (Hotel) – 11 F (G.F+ 10 F)
Industrial – 3 F (B+G.F+ 1 F)
Assembly – 1 F (G.F)
Parking –G.F Partially |
| 6. Total Plinth Area (in sqm) | : Residential (Hotel) – 13133.08 m ²
Industrial – 1958.04 m ²
Assembly – 9210.32 m ² |
| 7. Survey No | : 271, 272, 282, 283, 285, 286, 287, 288, 290, 291/1A, 1B, 321/2, 364, 367/2, 368, 369/2, 370, 372/1, 488/1A1A, 488/2 |
| 8. Village | : Valayanad |
| 9. Corporation | : Kozhikode |
| 10. District | : Kozhikode |

The above site was inspected by the competent and authorized Officials of this Department. It was found that the site is suitable, prima facie for the proposed construction as per KMBR.




No: F2-7734/17

The Fire Plan drawings were scrutinized and compared with the Checklist (Form No.R-13, I-7, A-3) and Prima Facie found to be in Order. The Applicant shall comply with all the Fire Safety arrangements as contained in the filled up Checklist, copy of which is attached to this clearance letter without any deviation. In case of some deviation to be made, the same shall be intimated to the competent authorities of the Stake holder Departments including this Department and the Applicant shall deposit necessary Fees etc. as per rules to obtain further clearance.

On completion of construction of the Building, the Applicant shall fill the Checklist Cum Application (Form No. R-13, I-7, A-3) again and also prepare a Fire Plan Drawing and submit following the due procedure. On receiving the Plan & the Checklist Cum Application duly filled, the authorized and competent Officials of this Department will inspect & verify the arrangements made as per the filled up Checklist to consider issuance of Certificate of Approval from this Department.

This clearance is limited to the Fire Safety measures/ Arrangements for the proposed Building. The Fire Safety Clearance for the Site is issued for facilitating the construction of the proposed Building.


E.B.PRASAD
Director (Technical)
For Director General

To,

The Secretary, Kozhikode Municipal Corporation. (In Original).

(Vide Letter No.TP6/231/16 (TP6/52097/17) Dated.22.06.2017)

Enclosures: 1) Approved Checklist Cum Application form duly signed by the Competent Official.
2) Fire Plan duly affixed with Seal

Copy to:

- 1) The Applicant with the above Enclosures
- 2) The Divisional Officer, Kozhikode.
- 3) The Assistant Divisional Officer, Kozhikode.
- 4) The Station Officer, Meenchanda.



KERALA STATE POLLUTION CONTROL BOARD

FILE NO. : PCB/HO/KKD/ICE/06/2017

Date of issue : 10/11/2020

INTEGRATED CONSENT TO ESTABLISH - RENEWAL

Consent No : PCB/HO/KKD/ICE-R/02/2020

valid upto 30.06.2025

Ref : Consent No. PCB/HO/KKD/ICE/03/2017 dated 29.06.2017 Valid upto 28.06.2020

The 'Integrated Consent to Establish' issued as per reference above to M/s Lulu Convention Centre Calicut Pvt Ltd 14/826A, P.O. Mankavu, Kozhikode-673007, is hereby renewed up to 30/06/2025 and issued to M/s Lulu Convention Centre Calicut Pvt Ltd

14/826A, P.O. Mankavu, Kozhikode-673007. The consent(s)/ variation order(s) cited under reference is/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	Validity	30.06.2025
2	Capital Investment	Rs.12500 lakh
3	Fee remitted	Rs.20,22,500/-
4	Annual Fee	Rs.3,12,500/-

II. Stack Details

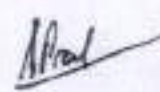
Stack No.	Source of Emission	Emission Rate(Nm ³ /Hr)	Stack Height above		Control Equipment
			Ground Level	Roof Level	
As per previous consent					

III. CONDITIONS

1. At the end of the validity period if the construction is in progress, the same shall be got renewed. If the construction is not started in the consent period, the applicant shall apply afresh for consent to establish.

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

DATE: 10/11/2020


SIGNATURE & SEAL OF ISSUING AUTHORITY
CHAIRMAN

PRADEEP KUMAR A.B.
CHAIRMAN



To

Lulu Convention Centre Calicut Pvt Ltd
24/826A, P.O. Mankavu, Kozhikode-673007.

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.

KSEB

കേരളത്തിന്റെ ഊർജ്ജം

**KERALA STATE ELECTRICITY BOARD LIMITED**

(Incorporated under Indian companies act 1956)

Office of the Deputy Chief Engineer, Electrical Circle, Vidyuthi Bhavanam,
Gandhi Road, Kozhikode - 673011

Phone No : +91 495 2765912

E-mail : keralacsb@gmail.com

Reg. Office : Vidyuthi Bhavanam, Pattom, Thiruvananthapuram, 695004, Kerala

Website : www.kseb.in . CIN: U40100KL2011SGCO27424**PROCEEDINGS OF THE DEPUTY CHIEF ENGINEER, ELECTRICAL CIRCLE KOZHIKODE**

Sub: Providing HT power with a contract demand of 3000KVA to M/s Lulu Convention Centre Calicut Pvt Ltd, Near Mini Bypass Road, Mankave under ES, Mankave - Administrative Sanction - Issued - reg

ORDER No.TS5/HT-Lulu Convention Centre/2021-22/ 2601**Dtd: 01.12.2021**

Read: 1. Supply Code-2014

2.DB/ES-MKV/2021-22/134 Dtd: 13.10.2021 of the Assistant Engineer, ES Mankave forwarded through the Assistant Executive Engineer, ESD, Mankave

3. Letter dated 12.11.2021 of the Director, M/s Lulu Convention Centre

4. BO(FTD) 2429/2016(IT/LD/APDRP/AMR Meter/16-17/TVM dated 17.08.16

ORDER

Administrative Sanction to an estimate amounting Rs 1,00,85,000/- (Rupees One Crore & Eighty Five Thousand only) is here by accorded for providing HT power with a Contract Demand of 3000kVA to M/s Lulu Convention Centre Calicut Pvt Ltd, Near Mini Bypass Road, Mankave under ES, Mankave and is entered in the estimate sanction register as ECK - 98 /2021-22.

The HT power is proposed to be given to the premises of the applicant by drawing a 11KV dedicated feeder from 110kV Substation, Mankave. The applicant has requested to provide one number 11kV dedicated feeder with one additional UG cable (2 run) from CCC RMU proposed to install at substation premises to Lulu Convention Centre, for meeting the eventualities due to cable failure. Also, the applicant vide read (3) above has informed that, apart from KSEB supply, they are installing 4x1010kVA DG sets as back up which is above cent percent of power from KSEBL. So, secondary source of power from another KSEB substation is not required. Hence, the estimate is prepared accordingly.

Part I of this estimate involves the work for providing 11kV outlet at 110kV Mankave substation (erection of new Indoor feeder panel & laying 50mtr 11kV 3*300mm² XLPE cable in trench) and installation of CCC type RMU at the back side of the old substation building.

Part II involves laying 11kV UG cable from substation to LULU premises and installation of CCVV type RMU. The 11kV cable from CCC RMU at substation premises, is proposed to lay in 2 run by HDD method and terminate at the CCVV type RMU at LULU premises.

Part III involves laying 11kV cable from both V module of RMU to the HT panels and installation of LBS, CT-PT & metering unit etc. and testing & commissioning.

Part I will be executed by KSEBL. Transmission *being* ~~making~~ *cost* ~~from~~ the beneficiary and PART II & III will be executed by the applicant under *own* ~~own~~ *charge* of KSEBL. Provision is included in the estimate for other utility charges-restoration charges *during* ~~at~~ *and* ~~execution~~ *which* ~~is~~ *to* be met by the beneficiary.

An amount of Rs. 21,42,494/- (Rupees Twenty One Lakh Forty Two Thousand Four Hundred & Ninety Four only) towards cost of 11kV outlet for providing *distribution* ~~supply~~ *from* 110kV Mankave substation (Part I) and Administrative Overhead charges *including* ~~cost~~ *of* ~~Part II & Part III~~, shall be realized from the consumer. CT/PT units and ToD meter *must* ~~be~~ *included* ~~in~~ *per* ~~the~~ *estimate* ~~as~~ *ref-* (4) above. Fund to the extent required may be collected from the *beneficiary* ~~of~~ *the* ~~order~~ *of* ~~the~~ *order*.

[Signature]
DEPUTY CHIEF ENGINEER
ELECTRICAL SUPPLY, KOZHIKODE

To

The Assistant Executive Engineer, Electrical Sub Division, Mankave

Copy submitted to :- The Chief Engineer, Distribution North, Kozhikode

Copy to:

1. The Executive Engineer, Electrical Division, Feroke
2. The Executive Engineer, PMU, Kozhikode
3. The Assistant Engineer, Electrical Section, Mankave with copy of estimate



KERALA STATE ELECTRICITY BOARD Ltd.

(Incorporated under the Indian Companies Act, 1956)

**OFFICE OF THE ASSISTANT ENGINEER, ELECTRICAL SECTION
MANKAVU, KOZHICODE.-673007**

Phone: (O) +91 495 2332662, 9496010780.

E-mail: aseksebmankave@gmail.com

Reg Office: Vidyuthi Bhavanam, Pattom, Thiruvananthapuram 695 004, Kerala

Website: www.kseb.in. CIN:U40100KL20115GCC027424

No: DB/AE/MKV/76 /2021-22

19-07-2021

To
The Director
LULU CONVENTION CENTRE CALICUT PVT. LTD.

Sir,

Sub: Feasibility of 3000kVA power to Lulu Convention Centre Calicut Pvt Ltd under Electrical Section Mankavu reg:-

Ref(1):- TS5/HT-Lulu Convention Centre/2021-22/480 dated 25-05-2021

As per letter shown in ref(1), from Deputy Chief Engineer, Electrical Circle, Kozhikode, the requested power of 3000kVA by Lulu Convention Centre Calicut Pvt Ltd is feasible to provide through a dedicated 11kV feeder from 110kV Mankavu Substation.

Yours faithfully

Assistant Engineer
Electrical Section
K.S.E.Board Ltd.
Mankave , Calicut-673007



भारतीय विमानपत्तन प्राधिकरण
AIRPORTS AUTHORITY OF INDIA

M/S LULU CONVENTION CENTER CALICUT PRIVATE LIMITED

Date: 06-09-2016

MR. PACKER KOYA P.P., Director,
LULU CONVENTION CENTER
CALICUT PRIVATE LIMITED,
Dist. No. 24826 A, Mankavu PO,
Kozhikode - 673007

Valid Upto: 06-09-2021

No Objection Certificate for Height Clearance

1. This NOC is issued by Airports Authority of India (AAI) in pursuance of responsibility conferred by and as per the provisions of Govt. of India (Ministry of Civil Aviation) order GSR751 (E) dated 30th Sep. 2015 for Safe and Regular Aircraft Operations.

2. This office has no objection to the construction of the proposed structure as per the following details:

NOC ID	CAL/SOUTH/B-090116/170124
Applicant Name*	Bhuvanesh B
Site Address*	Located at Mini Bypass Govindapuram Road Jn, Mankavu, Kozhikode, 24-9 (sub nos.), 24-08 (sub nos.), 24-11 (sub nos.), 286,
Site Coordinates*	75 48 00.88-11 14 30.27, 75 48 01.17-11 14 25.85, 75 48 01.61-11 14 23.94, 75 48 09.78-11 14 23.20, 75 48 11.94-11 14 28.44, 75 48 15.84-11 14 21.99,
Site Elevation in mtrs AMSL as submitted by Applicant*	4.924 M
Permissible Top Elevation in mtrs Above Mean Sea Level (AMSL)	57.82

*As provided by applicant

3. This NOC is subject to the terms and conditions as given below:

a. Permissible Top elevation has been issued on the basis of Site coordinates and Site Elevation submitted by Applicant. AAI neither owns the responsibility nor authenticates the correctness of the site coordinates & site elevation provided by the applicant. If at any stage it is established that the actual data is different, this NOC will stand null and void and action will be taken as per law. The office in-charge of the concerned aerodrome may initiate action under the Aircraft (Demolition of Obstruction caused by Buildings and Trees etc.) Rules, 1994.

b. The Structure height (including any superstructure) shall be calculated by subtracting the Site elevation in AMSL from the Permissible Top Elevation in AMSL i.e. Maximum Structure Height = Permissible Top Elevation minus (-) Site Elevation.

c. The issue of the "NOC" is further subject to the provisions of Section 9-A of the Indian Aircraft Act, 1934 and any notifications issued there under from time to time including the Aircraft (Demolition of Obstruction caused by Buildings and Trees etc.) Rules, 1994.

d. No radio-TV Antenna, lighting structures, sun-cast, Muntee, Overhead water tank and attachments of fixtures of any kind shall project above the Permissible Top Elevation of 57.82 M, as indicated in para 2.

Page 1/2

राजीव गांधी भवन

सफाई विभाग, इंदौर, कडवा नई दिल्ली-110023

दूरभाष - 24632950

Rajiv Gandhi Bhawan

Safaiyug Airport, New Delhi-110023

Phone: 24632950



भारतीय विमानपत्तन प्राधिकरण
AIRPORTS AUTHORITY OF INDIA

- r. Only use of oil fired or electric fired furnace is permissible, within 8 KM of the Aerodrome Reference Point
- f. The certificate is valid for a period of 5 years from the date of its issue. If the construction of structure/Chimney is not commenced within the period, a fresh 'NOC' from the Designated Officer of Airports Authority of India shall be obtained. However, if construction work has commenced, onetime revalidation request, for a period not exceeding 8 years from the date of issue of NOC in respect of building/structure and for a period not exceeding 12 years from the date of issue of NOC in respect of chimney, may be considered by AAI. The date of completion of the Structure should be intimated to this office.
- g. No light or a combination of lights which by reason of its intensity, configuration or colour may cause confusion with the aeronautical ground lights of the Airport shall be installed at the site at any time, during or after the construction of the building. No activity shall be allowed which may affect the safe operations of flights.
- h. The applicant will not complain/claim compensation against aircraft noise, vibrations, damages etc. caused by aircraft operations at or in the vicinity of the airport.
- i. Day markings & night lighting with secondary power supply shall be provided as per the guidelines specified in chapter 6 and appendix 6 of Civil Aviation Requirements Series 'B' Part I-Section 4, available on DGCA India website: www.dgca.in
- j. The applicant is responsible to obtain all other statutory clearances from the concerned authorities including the approval of building plans. This NOC for height clearances is to ensure the safe and regular aircraft operations and shall not be used as document for any other purpose/claim whatsoever, including ownership of land etc.
- k. This NOC has been issued w.r.t. the Civil Airports. Applicant needs to seek separate NOC from Deities, if the site lies within their jurisdiction.
- l. In case of any discrepancy/interpretation of NOC letter, English version shall be valid.
- m. In case of any dispute w.r.t. site elevation and/or AGL height, top elevation in AMSL shall prevail.

Chairman NOC Committee

Region Name: SOUTH

Address: General Manager, Airports
Authority of India, Regional
Headquarter, Southern Region,
Chennai Airport,
Chennai-600027 (Tamil Nadu)

Email ID: vcmm.noc@aii.aero

Contact No: 044-22560046

V. J. Rao

(V. J. RAO)

आसिस्टेंट जनरल मॅनेजर (ए.टी.ए.ए.सी.)

Assistant General Manager (ATM-NOC)

भारतीय विमानपत्तन प्राधिकरण

Airports Authority of India

पश्चिमी क्षेत्र/Southern Region

चेन्नई/Chennai-600 027



WE SERVE TO SAVE



DEPARTMENT OF FIRE AND RESCUE SERVICES
GOVERNMENT OF KERALA

No:FRS/11/KKDM/24220/2024/FINAL

Date:01/07/2024

NO OBJECTION CERTIFICATE (COMPLETION)

Name & Address of the Applicant:	MR. PACKER KOYA P.P DIRECTOR ,LULU CONVENTION CENTRE CALICUT PVT LTD P.O MANKAVU Kozhikode,Kerala 673007 India
Name of the Company:	LULU CONVENTION CENTRE CALICUT PVT LTD
Occupancy type of Building:	Assembly Buildings
Height of the building:	22.55 M
Number of Floors of the Building:	B+G+2(4Floors)+1Mezzanine Floor
Total Built up Area (in sqm):	34744.79 M ²
Survey No:	271,272,282,283,284,285 286,287,288,289,290,291/1A 291/1B,321/2,364,367/2,368,369/2 370,372/1,488/1A1A,488/2
Village:	Valayanad
Corporation:	Kozhikode
District:	Kozhikode
Details of NOC For Permit	FRS11/KKDM/15900/2023/Site

The above Building was inspected by the authorized and competent Officials of this Department. The final Fire System drawings, the filled up Checklist Cum Application and other Documents produced were scrutinized.

All the necessary fire protection arrangements as per the Rules and Norms pertaining to Fire Safety has been provided in the building and are found to be in good working condition

In the circumstances this No Objection Certificate (Completion) is issued under my Seal and Authority on condition that the Fire Fighting Systems installed will kept always be functional and owner of the Building should take special care to maintain the installed Fire protection arrangements in proper working condition. No further construction will be allowed in the open spaces, in and around the building, provided in the approved plan. This Certificate is issued on the basis of the data made available to the department regarding the site and building and if any of such data is found to be incorrect, this certificate will become invalid.

This Certificate is valid for one year from the date of issue. After one year the Certificate must be renewed. Non Renewal of the Certificate within the time limit will result in loss of eligibility for insurance coverage and appropriate legal action by Local Self Government / Revenue Department.All Officers of and above the rank of Station Officers of the Fire & Rescue Services Department will have the right to Inspect the building on any day / time after serving seven days notice to ensure that the Installed Systems are in good working condition.

This Certificate pertains only to the Fire Fighting arrangements made and installed in the Building. The civil construction, eligibility of the land and plot for this project, environmental feasibility, survey details, etc. shall be got Inspected and Approved by the concerned competent authority.



Digitally signed by Nouaid M
Reason: Final Clearance
Location: Headquarters Thiruvananthapuram
Date: 2024.07.01 05:18:48 +05:30

To,
Applicant / Concerned Local Authority

** This is a computer generated certificate & signature is not required.*

Standards



TEST REPORT

ULR No.: TC1293924000006625F

LRI No.: SEAL24031681A

Date: 21-03-2024

Page 1 of 1

CUSTOMER DETAILS

Customer Name & Address	Mr. Packer Koya P. P Director M/s Lulu Convention Center Calicut (P) Ltd Mankavu, Kozhikode District
Customer Reference	Test Request date: 15-03-2024

SAMPLE DETAILS

Product Category	Atmospheric Pollution	Sample Code	EN24030854
Sample Name	Ambient Air	Sample Received on	17-03-2024
Sample Conditions at Receipt	Fit for Analysis	Test Commenced on	18-03-2024
Sampled by	Lab Authorized Sampler	Test Completed on	20-03-2024

DETAILS OF SAMPLING

Sampling Location	North Side Boundary	Date of Sampling	15-03-2024
Sampling Procedure	SEAL/CHL/SOP/7.2/02	Humidity	67 %

TEST RESULTS-CHEMICAL DISCIPLINE

SL NO	PARAMETERS	TEST METHOD	UNIT	RESULT	KSPCB LIMIT
1	Particulate matter, PM ₁₀	IS 5182 (Part 23): 2006	µg/m ³	52.8	100 (Max)
2	Particulate matter, PM _{2.5}	IS 5182 (Part 24): 2019	µg/m ³	25.8	60.0 (Max)
3	Sulphur dioxide as SO ₂	IS 5182 (Part 2): 2001	µg/m ³	<4.00	80.0 (Max)
4	Oxides of Nitrogen as NO ₂	IS 5182 (Part 6): 2006	µg/m ³	5.25	80.0 (Max)
5	Carbon monoxide as CO	IS 5182 (Part 10): 1999	mg/m ³	<0.10	4.00 (Max)

Reports:

End of Report

Shency Joy
TM-Chemical
Checked by:



Laju P N
Laboratory Head
Authorized Signatory

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Standards Environmental & Analytical Laboratories

Accreditation & Approval: NABL accredited Testing Laboratory as per ISO/IEC 17025:2017
vide Certificate No. TC - 12939 & "A" Grade Laboratory approved by KSPCB.

'Standards' Bldg. No: 338/A,B,C,D,E (Behind BPCL Petrol Pump), Edayar, Muppathadam P.O., Ernakulam Dist. - 683 110
Tel: 0484-2546660, 93872 72402, 90743 41443, Web: www.sealabs.in, E-mail: seaalab@gmail.com

Standards



TEST REPORT

ULR No.: TC129392400006626F

LRI No.: SEAAL24031682A

Date: 21-03-2024

Page 1 of 1

CUSTOMER DETAILS

Customer Name & Address	Mr. Packer Koya P. P Director M/s Lulu Convention Center Calicut (P) Ltd Mankavu, Kozhikode District
Customer Reference	Test Request date: 15-03-2024

SAMPLE DETAILS

Product Category	Atmospheric Pollution	Sample Code	EN24030855
Sample Name	Ambient Air	Sample Received on	17-03-2024
Sample Conditions at Receipt	Fit for Analysis	Test Commenced on	18-03-2024
Sampled by	Lab Authorized Sampler	Test Completed on	20-03-2024

DETAILS OF SAMPLING

Sampling Location	South Side Boundary	Date of Sampling	15-03-2024
Sampling Procedure	SEAAL/CHL/SOP/7.2/02	Humidity	67%

TEST RESULTS CHEMICAL DISCIPLINE

SL NO	PARAMETERS	TEST METHOD	UNIT	RESULT	KSPCB LIMIT
1	Particulate matter, PM ₁₀	IS 5182 (Part 23): 2006	µg/m ³	59.6	100 (Max)
2	Particulate matter, PM _{2.5}	IS 5182 (Part 24): 2019	µg/m ³	28.6	60.0 (Max)
3	Sulphur dioxide as SO ₂	IS 5182 (Part 2): 2001	µg/m ³	<4.00	80.0 (Max)
4	Oxides of Nitrogen as NO ₂	IS 5182 (Part 6): 2006	µg/m ³	5.37	80.0 (Max)
5	Carbon monoxide as CO	IS 5182 (Part 10): 1999	mg/m ³	<0.10	4.00 (Max)

Reports:

End of Report

Shency Joy
TM-Chemical
Checked by:



Laju P
Laboratory Head
Authorized Signatory

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Standards



TEST REPORT

ULR No.:TC1293924000006627F

LRI No.: SEAAL24031683A

Date: 21-03-2024

Page 1 of 1

CUSTOMER DETAILS

Customer Name & Address	Mr. Packer Koya P. P Director M/s Lulu Convention Center Calicut (P) Ltd Mankavu, Kozhikode District
Customer Reference	Test Request date: 15-03-2024

SAMPLE DETAILS

Product Category	Atmospheric Pollution	Sample Code	EN24030856
Sample Name	Ambient Air	Sample Received on	17-03-2024
Sample Conditions at Receipt	Fit for Analysis	Test Commenced on	18-03-2024
Sampled by	Lab Authorized Sampler	Test Completed on	20-03-2024

DETAILS OF SAMPLING


Sampling Location	East Side Boundary	Date of Sampling	15-03-2024
Sampling Procedure	SEAAL/CHL/SOP/7.2/02	Humidity	67 %

TEST RESULTS-CHEMICAL DISCIPLINE


SL NO	PARAMETERS	TEST METHOD	UNIT	RESULT	KSPCB LIMIT
1	Particulate matter, PM ₁₀	IS 5182 (Part 23): 2006	ug/m ³	50.8	100 (Max)
2	Particulate matter, PM _{2.5}	IS 5182 (Part 24): 2019	ug/m ³	23.7	60.0 (Max)
3	Sulphur dioxide as SO ₂	IS 5182 (Part 2): 2001	ug/m ³	<4.00	80.0 (Max)
4	Oxides of Nitrogen as NO ₂	IS 5182 (Part 6): 2006	ug/m ³	4.75	80.0 (Max)
5	Carbon monoxide as CO	IS 5182 (Part 10): 1999	mg/m ³	<0.10	4.00 (Max)

Reports:

End of Report


Shency Joy
TM-Chemical
Checked by:




Laboratory Head
Authorized Signatory

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Standards



TEST REPORT

ULR No.:TC1293924000006628F

LRI No.: SEAAL24031684A

Date: 21-03-2024

Page 1 of 1

CUSTOMER DETAILS

Customer Name & Address	Mr. Packer Koya P. P Director M/s Lulu Convention Center Calicut (P) Ltd Mankavu, Kozhikode District
Customer Reference	Test Request date: 15-03-2024

SAMPLE DETAILS

Product Category	Atmospheric Pollution	Sample Code	EN24030857
Sample Name	Ambient Air	Sample Received on	17-03-2024
Sample Conditions at Receipt	Fit for Analysis	Test Commenced on	18-03-2024
Sampled by	Lab Authorized Sampler	Test Completed on	20-03-2024

DETAILS OF SAMPLING


Sampling Location	West Side Boundary	Date of Sampling	15-03-2024
Sampling Procedure	SEAAL/CHL/SOP/7.2/02	Humidity	67 %

TEST RESULTS-CHEMICAL DISCIPLINE

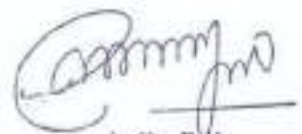
SL NO	PARAMETERS	TEST METHOD	UNIT	RESULT	KSPCB LIMIT
1	Particulate matter, PM ₁₀	IS 5182 (Part 23): 2006	µg/m ³	45.8	100 (Max)
2	Particulate matter, PM _{2.5}	IS 5182 (Part 24): 2019	µg/m ³	21.7	60.0 (Max)
3	Sulphur dioxide as SO ₂	IS 5182 (Part 2): 2001	µg/m ³	<4.00	80.0 (Max)
4	Oxides of Nitrogen as NO ₂	IS 5182 (Part 6): 2006	µg/m ³	4.63	80.0 (Max)
5	Carbon monoxide as CO	IS 5182 (Part 10): 1999	mg/m ³	<0.10	4.00 (Max)

Reports:

End of Report


Shency Joy
TM-Chemical
Checked by:




Laju P W
Laboratory Head
Authorized Signatory

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Standards



TEST REPORT

ULR No.:TC1293924000006629F		
LRI No.: SEAAL24031685A	Date: 21-03-2024	Page 1 of 1

CUSTOMER DETAILS	
Customer Name & Address	Mr. Packer Koya PP Director M/s Lulu Convention Center Calicut (P) Ltd Mankavu, Kozhikode District
Customer Reference	Test Request date: 15-03-2024

DETAILS OF MONITORING			
Product Category	Atmospheric Pollution	Sample Code	EN24030858
Sample Name	Ambient Noise	Monitoring Commenced on	15-03-2024
Test Method	IS 9989:1981	Monitoring Completed on	16-03-2024
Monitoring Location	North Side Boundary	Monitored by	Lab Authorized Sampler

MONITORING RESULTS - Leq					
TIME	RESULTS dB(A)	TIME	RESULTS dB(A)	TIME	RESULTS dB(A)
06:00	37.9	14:00	50.8	22:00	36.8
07:00	40.7	15:00	51.2	23:00	36.1
08:00	45.0	16:00	52.4	24:00	38.7
09:00	48.5	17:00	52.8	01:00	39.4
10:00	50.8	18:00	47.3	02:00	39.1
11:00	54.0	19:00	43.8	03:00	39.8
12:00	51.2	20:00	39.9	04:00	38.7
13:00	50.4	21:00	39.4	05:00	40.5

TEST RESULTS - CHEMICAL DISCIPLINE			
Sl. No.	PARAMETERS	UNIT	RESULT
1	Ambient Sound Level (Leq) Day Time (06:00 to 22:00)	dB(A)	49.3
2	Ambient Sound Level (Leq) Night Time (22:00 to 06:00)	dB(A)	39.1

Remarks:

End of Report

Shency Joy
TM-Chemical
Checked by:



Laju P N
Laboratory Head
Authorized Signatory

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Standards



TEST REPORT

ULR No.:TC1293924000006630F		
LRI No.: SEAL24031686A	Date: 21-03-2024	Page 1 of 1

CUSTOMER DETAILS	
Customer Name & Address	Mr. Packer Koya PP Director M/s Lulu Convention Center Calicut (P) Ltd Mankavu, Kozhikode District
Customer Reference	Test Request date: 15-03-2024


DETAILS OF MONITORING			
Product Category	Atmospheric Pollution	Sample Code	EN24030859
Sample Name	Ambient Noise	Monitoring Commenced on	15-03-2024
Test Method	IS 9989:1981	Monitoring Completed on	16-03-2024
Monitoring Location	South Side Boundary	Monitored by	Lab Authorized Sampler

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	35.7
08:00	44.4	16:00	51.7	24:00	38.3
09:00	47.9	17:00	52.1	01:00	39.0
10:00	50.2	18:00	46.7	02:00	38.6
11:00	53.3	19:00	43.2	03:00	39.4
12:00	50.6	20:00	39.4	04:00	38.3
13:00	49.8	21:00	38.9	05:00	40.1


TEST RESULTS - CHEMICAL DISCIPLINE			
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 (22:00 to 06:00)	dB(A)	38.7

Remarks:

End of Report


Shency Joy
TM-Chemical
Checked by:




Laju P N
Laboratory Head
Authorized Signatory

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Standards



TEST REPORT

ULR No.:TC1293924000006631F		
LRI No.: SEAAL24031687A	Date: 21-03-2024	Page 1 of 1

CUSTOMER DETAILS	
Customer Name & Address	Mr. Packer Koya PP Director M/s Lulu Convention Center Calicut (P) Ltd Mankavu, Kozhikode District
Customer Reference	Test Request date: 15-03-2024

DETAILS OF MONITORING			
Product Category	Atmospheric Pollution	Sample Code	EN24030860
Sample Name	Ambient Noise	Monitoring Commenced on	15-03-2024
Test Method	IS 9989:1981	Monitoring Completed on	16-03-2024
Monitoring Location	East Side Boundary	Monitored by	Lab Authorized Sampler

MONITORING RESULTS - Leq					
TIME	RESULTS dB(A)	TIME	RESULTS dB(A)	TIME	RESULTS dB(A)
06:00	37.7	14:00	50.6	22:00	36.6
07:00	40.5	15:00	51.0	23:00	36.0
08:00	44.7	16:00	52.1	24:00	38.6
09:00	48.2	17:00	52.5	01:00	39.3
10:00	50.6	18:00	47.1	02:00	39.0
11:00	53.7	19:00	43.6	03:00	39.7
12:00	51.0	20:00	39.7	04:00	38.6
13:00	50.2	21:00	39.2	05:00	40.4

TEST RESULTS - CHEMICAL DISCIPLINE			
Sl. No.	PARAMETERS	UNIT	RESULT
1	Ambient Sound Level (Leq) Day Time (06:00 to 22:00)	dB(A)	49.1
2	Ambient Sound Level (Leq) Night Time (22:00 to 06:00)	dB(A)	39.0

Remarks:

End of Report

Shency Joy
TM-Chemical
Checked by:



Laju P N
Laboratory Head
Authorized Signatory

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Standards



TEST REPORT

ULR No.:TC1293924000006632F

LRI No.: SEAAL24031688A

Date: 21-03-2024

Page 1 of 1

CUSTOMER DETAILS

Customer Name & Address	Mr. Packer Koya PP Director M/s Lulu Convention Center Calicut (P) Ltd Mankavu, Kozhikode District
Customer Reference	Test Request date: 15-03-2024

DETAILS OF MONITORING

Product Category	Atmospheric Pollution	Sample Code	EN24030861
Sample Name	Ambient Noise	Monitoring Commenced on	15-03-2024
Test Method	IS 9989:1981	Monitoring Completed on	16-03-2024
Monitoring Location	West Side Boundary	Monitored by	Lab Authorized Sampler

MONITORING RESULTS - Leq

TIME	RESULTS dB(A)	TIME	RESULTS dB(A)	TIME	RESULTS dB(A)
06:00	38.1	14:00	51.1	22:00	36.9
07:00	40.9	15:00	51.5	23:00	36.3
08:00	45.2	16:00	52.7	24:00	38.9
09:00	48.7	17:00	53.1	01:00	39.6
10:00	51.1	18:00	47.6	02:00	39.3
11:00	54.2	19:00	44.0	03:00	40.0
12:00	51.5	20:00	40.1	04:00	38.9
13:00	50.7	21:00	39.6	05:00	40.8

TEST RESULTS - CHEMICAL DISCIPLINE

Sl. No.	PARAMETERS	UNIT	RESULT
1	Ambient Sound Level (Leq) Day Time (06:00 to 22:00)	dB(A)	49.6
2	Ambient Sound Level (Leq) Night Time (22:00 to 06:00)	dB(A)	39.3

Remarks:

End of Report

Shency Joy
TM-Chemical
Checked by:



Laju P N
Laboratory Head
Authorized Signatory

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Standards



TEST REPORT

ULR No.:TC1293924000006624F

LRI No.: SEAAL24031680A

Date: 21-03-2024

Page 1 of 2

CUSTOMER DETAILS

Customer Name & Address	Mr. Packer Koya PP Director M/s Lulu Convention Center Calicut (P) Ltd Mankavu, Kozhikode District
Customer Reference	Test Request Date: 15-03-2024

SAMPLE DETAILS

Product Category	Water	Sample Code	WT24030341
Sample Name	Ground Water	Sample Received on	17-03-2024
Sample Description by Customer	Open Well	Temperature @ Receipt	4°C
Sample Conditions at Receipt	Fit for Analysis	Test Commenced on	18-03-2024
Sample Quantity & Packing	2 L & 125 ml in a Plastic Bottle	Test Completed on	20-03-2024
Information Provided by Customer	---	Sampled by	Lab Authorized Sampler

DETAILS OF SAMPLING

Sample Source	Open Well	Date of Sampling	15-03-2024
Sampling Procedure	SEAAL/QAD/SOP/7.3/01	Sample Temperature	27 °C

TEST RESULTS - CHEMICAL DISCIPLINE

Sl. No.	PARAMETERS	TEST METHOD	UNIT	RESULT	Requirement as per Acceptable Limit of IS-10500:2012
1	Colour	IS 3025 (Part 4): 2021	Hazen	1	5.0 (Max)
2	Odour	IS 3025 (Part 5): 2018	---	Agreeable	Agreeable
3	Turbidity	IS 3025 (Part 10): 2023	NTU	0.80	1(Max)
4	pH	IS 3025 (Part 11): 2022	---	6.56	6.50 - 8.50
5	Total Dissolved Solids	IS 3025 (Part 16): 2023	mg/L	189	500 (Max)
6	Total Hardness as CaCO ₃	IS 3025 (Part 21): 2009	mg/L	56.3	200 (Max)
7	Calcium as Ca	IS 3025 (Part 40): 1991	mg/L	14.4	75.0 (Max)

Shency Joy
TM-Chemical
Checked by:



Remya B
TM-Biological
Authorized Signatory

Laiju P H
Laboratory Head
Authorized Signatory

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Standards



TEST REPORT

ULR No.:TC1293924000006624F

LRI No.: SEAAL24031680A

Date: 21-03-2024

Page 2 of 2

TEST RESULTS - CHEMICAL DISCIPLINE

Sl. No.	PARAMETERS	TEST METHOD	UNIT	RESULT	Requirement as per Acceptable Limit of IS 10500:2012
8	Magnesium as Mg	IS 3025 (Part 46): 2023	mg/L	4.89	30.0 (Max)
9	Chloride as Cl	IS 3025 (Part 32): 1988	mg/L	95.9	250 (Max)
10	Total Alkalinity as CaCO ₃	IS 3025 (Part 23): 2003	mg/L	20.4	200 (Max)
11	Iron as Fe	IS 3025 (Part 53): 2003	mg/L	0.42	1.00 (Max)
12	Sulphate as SO ₄	IS 3025 (Part 24/Sec 1): 2022	mg/L	1.10	200 (Max)
13	Fluoride as F	IS 3025 (Part 60): 2008	mg/L	< 0.10	1.00 (Max)
14	Selenium as Se	IS 3025 (Part 56): 2023	mg/L	BDL (LOD:0.001)	0.01 (Max)
15	Arsenic as As	IS 3025 (Part 37): 2022	mg/L	BDL (LOD:0.001)	0.01 (Max)
16	Copper as Cu	IS 3025 (Part 42):1992	mg/L	BDL (LOD:0.016)	0.05 (Max)
17	Manganese as Mn	IS 3025 (Part 59): 2006	mg/L	BDL (LOD:0.016)	0.05 (Max)
18	Cadmium as Cd	IS 3025 (Part 41):2023	mg/L	BDL (LOD:0.003)	0.003 (Max)
19	Chromium as Cr	IS 3025 (Part 52): 2003	mg/L	BDL (LOD:0.05)	0.05 (Max)
20	Zinc as Zn	IS 3025 (Part 49): 1994	mg/L	BDL (LOD:0.008)	5.00 (Max)
21	Mercury as Hg	IS 3025 (Part 48): 1994	mg/L	BDL (LOD:0.001)	0.001 (Max)
22	Cyanide as CN	IS 3025 (Part 27/ Sec1): 2021	mg/L	< 0.01	0.05 (Max)
23	Lead as Pb	IS 3025 (Part 47):1994	mg/L	BDL (LOD:0.01)	0.01 (Max)
24	Aluminium as Al	IS 3025 (Part 55): 2003	mg/L	BDL (LOD:0.03)	0.03 (Max)
25	Boron as B	IS 3025 (Part 57): 2021	mg/L	< 0.20	0.50 (Max)

Sl. No.	PARAMETERS	TEST METHOD	UNIT	RESULT	Requirement as per Acceptable Limit of IS 10500: 2012
1	Total Coliform Bacteria	IS 15185: 2016	---	Absent/100 ml	Absent/100 ml
2	E coli	IS 15185: 2016	---	Absent/100 ml	Absent/100 ml

Remarks:

The water sample complies with drinking water Specification as per Acceptable Limit of IS10500:2012 with respect to above parameters tested.

End of Report

Shency Joy
TM-Chemical
Checked by:



Remya B
TM-Biological
Authorized Signatory

Laju RN
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.

Standards Environmental & Analytical Laboratories

Accreditation & Approval: NABL accredited Testing Laboratory as per ISO/IEC 17025:2017
vide Certificate No. TC - 12939 & "A" Grade Laboratory approved by KSPCB.

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Area 1.5

7A sets



