GANGA ASMI

Wakad Pune

EC COMPLIANCES REPORT

Period – JULY 2025 - DECEMBER 2025

EC -. SIA/MH/MIS/244716/2021 Dated 27-3-2022

By

SHANTI MOHAN DEVELOPERS LLP

INTRODUCTION AND PROJECT DESCRIPTION

Goel Ganga Group now after amalgamation known as **Goel Ganga Group** having its address at 3rd Floor San Mahu Complex, 5 Bund Garden Road, Camp, Pune 411001.

Goel Ganga Group having reputation in the real estate market for delivering quality construction for over 42 years and is a responsible organization which places due emphasis on sustainable development and CSR activities. Goel Ganga India Pvt. Ltd receives various certifications that stands testimony to our unflinching professionalism.

Goel Ganga Group is the Pune's first construction Company to receive the ISO 9001 (Quality) Certification, ISO 14001 (Environment) Certification, ISO 45001 (Health & Safety) Certification.

Six monthly environmental compliance/status report for Ganga ASMI for JULY 2025 - DECEMBER 2025

Project Description- Ganga ASMI is the residential and commercial project **Located at Sr 274P, 275P, 276P, Wakad, Pune**

Prior Environment Clearance has been obtained from Ministry of Environment & Forests (MoEFCC) wide letter no. **EC -. SIA/MH/MIS/244716/2021 Dated 27-3-2022**

MPCB C TO E – Received

MPCB C TO O (Wing A) – Received

Construction Status as on date

1. WING 1 –RCC & finishing is in progress
2. Wing 2 - 12th slab RCC is in progress
3. Wing 3- At foundation stage
4. Non-tower- RCC is in progress
5. External Development work is in progress
6. Transformers RCC completed & finishing is in progress

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6 Monthly EC Compliances JULY 2025 – DECEMBER 2025

ANNEXURE 1

`Environment Clearance for 'Ganga Asmi' Wakad Pune

New EC - SIA/MH/MIS/244716/2021 Dated 27-03-2022

The proposal has been considered by SEIAA in its 239th (Day-1) meeting & decided to accord environmental clearance to the said project under the provisions of Environment Impact Assessment Notification, 2006 subject to implementation of the following terms and conditions::

Sr No		Description	Annexure
A	SEIAA Conditions		
1.	PP to submit certified compliances report from Regional Office MoEFCC Nagpur	Certified compliances report submitted to environmental department	
2.	Pp to submit the undertaking regarding there is no court order issued regarding stoppage of work of the project .PP to also undertake that Development agreement executed is not challenged in any court	Undertaking regarding there is no court order issued regarding stoppage of work of the project had been submitted to environmental department during meeting	
3.	Also PP to submit the undertaking regarding 1,37,742.04 Sq.mt is the full potential of the plot	Undertaking regarding 1,37,742.04 Sq.mt is the full potential of the plot had been submitted to environmental department during meeting	
4.	Committee noted that, the green space of the project is proposed on area which comes in blue line zone. PP to ensure that , this is permissible as per UDCPR	Submitted & Annexed herewith	
5.	PP to ensure that all adequate facilities are provided to the labors.	The Green space is permitted under Blue line as per UDCPR .Undertaking regarding the same had been submitted to environmental department &the same	
6.	PP to ensure that , the water proposed to use for construction phase should not be drinking water. They can use recycled water or tanker water for proposed construction	Recycled / Treated / Tanker water has been used during construction	
7.	PP to provide minimum 30% of	Condition will be compiled with during	

	total parking arrangement with electric charging facility by providing charging points at suitable places	operation phase	
B	SEIAA Conditions		
1.	This EC is restricted up to 70m height till PP obtains civil aviation NOC	The civil aviation NOC has been obtained ref copy	
2.	PP to keep open space unpaved so as to ensure permeability of water. However, whenever paving is deemed necessary, PP to provide grass pavers of suitable types & strength to increase the water permeable area as well as to allow effective fire tender movement.	Noted . The Point will be taken care . 600 no of trees has been planted	
3.	PP to achieve at least 5% of total energy requirement from solar/other renewable sources.	Noted. Solar hot water & Solar PV renewable sources will be provided as per requirement. The Point will be taken care .	
4.	PP shall comply with Standard EC conditions mentioned in the Office Memorandum issued by MoEF & CC vide F.No.22-34/2018-IA.III dt.04.01.2019.	The EC condition will be complied with as per Memorandum issued by MoEF& CC vide F.No.22-34/2018-IA.III dt.04.01.2019	
5.	SEIAA after deliberation decided to grant EC for - FSI-84,633.76 m^2, Non-FSI-53,108.28 m^2, Total BUA-1,37,742.04 m^2. (Plan approval-BP/EC/WAKAD/.07/2021 dated 20.08.2021)	Noted .We are thankful to Environment department for the grant of EC	
	General Conditions: a) Construction Phase		

1.	The solid waste generated should be properly collected and segregated. Dry/inert solid waste should be disposed of to the approved sites for land filling after recovering recyclable material.	1. Agreement executed with SWACH for disposal of dry waste, E waste, wet waste in construction phase **Solid waste:** 1. **Operation Phase - Total 1006 kg/day(Dry Waste) and 1502 kg/day(wet Waste)** 2. OWC provision for treatment of Biodegradable waste in operation phase 3. Solid wastes will be generated in the project during construction phase and will be handed over to authorized agency. 2. Separate dust bin for Wet and Dry Garbage and disposal of wet waste through local authority 3. Construction waste has been used for filling at construction sites. 4. Top Soil has been used for landscaping STP sludge will be used as manure in operation phase. **Sewage:** 1. **STP of 500+60+50 =610 KLD capacity** shall be provided for treatment of sewage. Wastewater generated will be treated and utilized for gardening and flushing Sewage sludge: 47 kg/day will be used as organic manure.	Annexure 1
2.	Disposal of muck, Construction spoils, including bituminous material during construction phase should not create any adverse effect on the neighboring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in the	Excavated material has been used within site premises and other sites for backfilling and not creates any adverse effect on the neighboring communities. During disposal the necessary precaution will be taken for general safety and health aspects of people, Scrap Steel has been send to authorized vendor	

	approved sites with the approval of competent authority.		
3.	Any hazardous waste generated during construction phase should be disposed of as per applicable rules and norms with necessary approvals of the Maharashtra Pollution Control Board.	No Hazardous material has been generated at site . if generated the same will be disposed off as per applicable rules and norms with necessary approvals of the State Pollution Control Board. There is No storage of Diesel at site as site is within city area and petrol pump is within 1 km from site. Empty containers of oil , grease, paints has been returned to vendor immediately after use **Agreement with Swach for disposal of E waste and Dry waste**	Annexure 1
4.	Adequate drinking water and sanitary facilities should be provided for construction workers at the site. Provision should be made for toilets. The safe disposal of wastewater and solid wastes generated during the construction phase should be ensured.	Adequate drinking water and sanitary facilities has been provided for construction workers .Care has been taken for Safe disposal of wastewater and solid waste **1.Total No of Hutments - 50 Nos** **.Total No of toilets -16 Nos ,Septic Tank -1 Nos** 2.Drinking water facility Tank 5000 lit 3 No 3.Labour Insurance policy	

		4 First Aid facility 24*7 5. STP facility in operation stage . 6.Septic tank For Toilets and regular cleaning of Septic Tank through vendor / PMC 7. Use of STP sludge as manure in Operation phase 8. Regular Cleaning of toilets and labour colony. 9. Agreement executed with SWACH for disposal of dry waste, E waste, wet waste . 10. Seperate dust bin for Wet and Dry Garbage and disposal of wet waste through OWC in operation phase 11.Construction waste has been used for filling at construction sites.	
5.	Arrangement shall be made that waste water and storm water do not get mixed.	The same will be taken in design and planning. Natural water drainage pattern: As per contour .There will not be any change in the drainage pattern. It will be improved by well planned development	
6.	Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices.	Water demand during construction has been reduced by use of pre-mixed concrete, using Ponding of slab , Using Gunny Bags during curing , and other best practices referred.	
7.	The ground water level and its quality should be monitored regularly in consultation with	**CGWA permission has been obtained** Rain water harvesting facility will be provided to improve ground water level.	

	Ground Water Authority.	**7 No Of recharge Pits - 2.0 x 2.0 x 2.0 m depth and recharge bore of 60 m depth** **Level of the Ground Water table: 7m.BGL** Tanker water has been used for construction.	
8..	Permission to draw ground water for construction of basement if any shall be obtained from the competent Authority prior to construction/operation of the project.	**CGWA NOC has been obtained to comply with the mentioned condition.** During Construction Tanker water has been used during construction.	Annexure 1
9..	Fixtures for showers, toilet flushing and drinking should be of low flow either by use of aerators or pressure reducing devices or sensor based control.	The low flow fixtures has been planned for shower, toilet flushing and drinking purpose. Will be complied as per requirement at the time of occupation	
10.	The Energy Conservation Building code shall be strictly adhered to.	LED bulbs lamps has been used in construction phase . CFL and LED bulbs will be used for outdoor and common area lighting for energy conservation in operation phase. LED , CFLs and TFLs will be properly collected and disposed off/sent for recycling from authorized vendor as per the prevailing guidelines/rules of the regulatory authority to avoid mercury contamination . The design of buildings is such that adequate Natural light and air will be available in Building.. Energy Efficient Electrical Appliances & equipment are selected .	Annexure 3

		Solar water heating system will be planned in operation phase . **Operation phase As per EC :** • Connected load = 6691.50 kW • Maximum demand=2833.37kW Source: MSEDCL **Energy Conservation Measures -** Auto Timer control for external & Common lighting • Use of CFL / LED lamps in all public/ common areas. • Solar powered water heating. & PV Cells • Electronic V3F Drives for Elevators Solar PV based renewable energy system is being planned	
11.	All the topsoil excavated during construction activities should be stored for use in horticulture/landscape development within the project site.	Top soil from construction site stored safely and the same will be used for horticulture / landscape development within the project site	Annexure 3
12.	Additional soil for leveling of the proposed site shall be generated within the sites (to the extent possible) so that natural drainage system of the area is protected and improved.	Additional soil for leveling of the proposed site will be generated within the sites (to the extent possible) so that natural drainage system of the area is protected and improved.	Annexure 1 and 3
13.	Soil and ground water samples will be tested to ascertain that there is no threat to ground water quality by leaching of heavy metals and other toxic contaminants	Soil and water sample testing has been carried out at regular interval. There are no traces of heavy metals in soil	

14.	PP to strictly adhere to all the conditions mentioned in Maharashtra (Urban Areas) Protection and Preservation of Trees Act, 1975 as amended during the validity of Environment Clearance.	This condition shall be complied with. If applicable	
15	The diesel generator sets to be used during construction phase should be low sulphur diesel type and should conform to Environments (Protection) Rules prescribed for air ad noise emission standards.	DG set at site confirms the Air and Noise emission standards . **In construction Phase - DG SET – 125 KVA -2 NO** **In Operation Phase as Per EC - 500 kVA X 2 nos.,320 kVA X 1 no**	
16.	PP to strictly adhere to all the conditions mentioned in Maharashtra (Urban Areas) Protection and Preservation of Trees Act, 1975 as amended during the validity of Environment Clearance.	This condition shall be complied with. If applicable	
17	Vehicles hired for transportation of Raw materials shall strictly comply the emission norms prescribed by Ministry of Road Transport & Highways Department. The vehicle shall be adequately covered to avoid spillage/leakages.	Vehicles for bringing construction material to the site are in good condition and operated in non peak hours and pollution check certificate duly checked before using the vehicles at site	
18	Ambient noise levels should conform to residential standards both during day and night.	Ambient noise levels has been conform to residential standards both during day and night Ambient Noise and Air quality level has been	Annexure 1

	Incremental pollution loads on the ambient air and noise quality should be closely monitored during construction phase. Adequate measures should be made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB/MPCB.	closely monitored during construction phase. Noise generation from construction equipment's used for drilling, cutting operations. All DG sets will be covered by acoustic encasements as per statutory rules and will conform to noise standards. The dg sets will be mounted on anti-vibration mounts to reduce the impacts of vibration. Adequate measures are taken to reduce the Noise and Air level during construction phase. ➢ eg constructing Compound wall surrounding the periphery of plot . ➢ Operation of vehicle in non peak hour. ➢ Using Latest technology in construction with Mechanization eg **Aluform Technology to reduce the noise**. ➢ Using the low noise generating equipments during construction work ➢ By using crane for transportation of material steel and shuttering material to minimize the Noise ➢ Keeping the Noisy equipments, pumps away as far as possible from nearby Buildings ➢ Use of electrically powered equipments instead of diesel power equipments ➢ By using ready to use material at site during construction ➢ By close supervision at site By Switching of the equipments when not in use	
19	Diesel power generating sets proposed as source of backup power for elevators and common area illumination during	Enclosed type of DG set has been installed during Construction and will be installed during operation phase as source of backup power for elevators and common area	Annexure 2

	construction phase should be of enclosed type and conform to rules made under the Environment (Protection) Act, 1986. The heights of stack of DG sets should be equal to the height needed for the combined capacity of all proposed DG sets. Use low sulphur dies el is preferred. The location of the DG sets may be decided with in consultation with Maharashtra Pollution Control Board	illumination during operation phase. Testing of stack emission , Noise level has been carried out through authorized vendor . DG confirm to rules made under the Environment (Protection) Act, 1986 A Stack with adequate height is provide to DG set for exhaust **In construction Phase - DG SET – 125 KVA -2 NO** **In Operation Phase as Per EC - 500 kVA X 2 nos.,320 kVA X 1 no**	
20	Regular supervision of the above and other measures for monitoring should be in place all through the construction phase, so as to avoid disturbance to the surroundings by a separate environment cell / designated person.	Regular supervision of the above and other measures is carried out throughout the construction activity by experienced staff to avoid the disturbance.	

	B) Operation Phase		
1.	a) The solid waste generated should be properly collected and segregated. b) Wet waste should be treated by Organic Waste Converter and treated waste (manure) should be utilized in the existing premises for gardening. And, no wet garbage will be disposed outside the premises. c) Dry/inert solid waste should be disposed of to the approved sites for land filling after recovering recyclable	5. Agreement executed with SWACH for disposal of dry waste, E waste, wet waste in construction phase **Solid waste:** 1. **Total 35 kg/day (Dry waste-16.5 & Wet waste-18.5)** solid wastes will be generated in the project during construction phase and will be handed over to authorized agency. 6. Separate dust bin for Wet and Dry Garbage and disposal of wet waste	

	material.	through local authority 7. Construction waste has been used for filling at construction sites. **OWC provision** for treatment of Biodegradable waste in operation phase. **1502 kg/day Bio-degradable waste will be treated in OWC. Non – biodegradable waste: 1006 kg/day generated which will be handed over to Authorized Vendor.** 8. Top Soil has been used for landscaping STP sludge will be used as manure in operation phase. **Sewage:** 2. **STP of 500+60+50=610 KLD** capacity shall be provided for treatment of sewage. Wastewater generated will be treated and utilized for gardening and flushing Sewage sludge: 10 kg/day will be used as organic manure.	
2.	E-waste shall be disposed through Authorized vendor as per E-waste (Management and Handling) Rules, 2016.	Agreement executed with SWACH for disposal of dry waste, E waste, wet waste in construction phase	Annexure 1
3.	a) The installation of the Sewage Treatment Plant (STP) should be certified by an independent expert and a report in this regard should be submitted to the MPCB and Environment department before the project is commissioned for operation. Treated effluent emanating	**STP has been operational for Buiding A** Condition will be complied as per requirement during operation phase. Treated effluent emanating from STP will be recycled/refused to the maximum extent possible and discharge unused treated affluent, in	Annexure 1

	from STP shall be recycled/ refused to the maximum extent possible. Treatment of 100% grey water by decentralized treatment should be done. Necessary measures should be made be mitigate the problem from STP. b) PP to give 100% treatment to sewage /Liquid waste and explore the possibility to recycle at least 50% of water, Local authority should ensure this.	the sewer line. Necessary measures should be made to mitigate the odour problem from STP. Septic tank Provision In Construction phase for Toilet 3. **STP of 500+60+50=610 KLD** capacity shall be provided for treatment of sewage. Wastewater generated will be treated and utilized for gardening and flushing Sewage sludge: 10 kg/day will be used as organic manure. **Total Water Requirement in operation phase - 747 KLD** Fresh Water- 445 Kld Flushing -217 Kld Gardening -85 Kld	
4.	Project proponent shall ensure completion of STP, MSW disposal facility, green belt development prior to occupation of the building. As agreed during the SEIAA meeting, PP to explore possibility of utilizing excess treated water in the adjacent area for gardening before discharging it into sewer line No physical occupation or allotment will be given unless all above said environmental infrastructure is installed and made functional including water requirement.	STP, MSW disposal facility, green belt development will be complied prior to occupation of the buildings and OWC provision for treatment of Biodegradable waste in operation phase. **1502 kg/day** Bio-degradable waste will be treated in OWC. Non – biodegradable waste:**1006 kg/day** generated which will be handed over to Authorized Vendor. Top Soil has been used for landscaping STP sludge will be used as manure in operation phase. **Sewage:** 4. **STP of 500+60+50=610 KLD** capacity shall be provided for treatment of sewage. Wastewater generated will be treated and utilized for gardening and flushing Sewage sludge: 10 kg/day will be used as organic manure.	Annexure 1 and 3

		RG area -2767.68 Sqm **No Of trees Proposed - 440 Nos** **Existing Trees -600 Nos Plantation done** No physical occupation or allotment will be given unless all above said environmental infrastructure is installed and made functional and after obtaining Prior certification from appropriate authority.	
5.	The Occupancy Certificate shall be issued by the Local Planning Authority to the project only after ensuring sustained availability of drinking water, connectivity of sewer line to the project site and proper disposal of treated water as per environmental norms.	Local authority will issue Occupancy Certificate after ensuring sufficient availability of drinking water, connectivity of sewer line to the project site and proper disposal of treated water as per Environment norms.	Annexure 1
6.	Traffic congestion near the entry and exit points from the roads adjoining the proposed projects site must be avoided. Parking should be fully internalized and no public space should be utilized.	Security personnel's has been and will be appointed at entry and exit point to avoid traffic congestion in construction and Operation stage. Provided parking area within project site. Parking will be fully internalized and no public space will be utilized **Actual provided parking :** **4 -wheeler : 822** **2-wheeler : 2393**	
7.	PP to provide adequate electric charging points for electric vehicles (EVs)	Adequate electrical charging points / Station are provided.	
8.	Green Belt Development shall be carried out considering CPCB guidelines including	Green belt development will be done as per the CPCB guide lines, indigenous species are selected for the plantation	

	selection of plant species and in consultation with the local DFO/Agriculture Dept.	**- RG area -2767.68 Sqm** **No Of trees Proposed - 440 Nos** **Existing Trees -600 Nos Plantation done**	
9.	A separate environment management cell with qualified staff shall be set up for implementation of the stipulated environmental safeguards.	Environment management cell with qualified staff has been appointed for implementation and monitoring environment safeguards in operation stage.	
10.	Separate funds shall be allocated for implementation of environmental protection measures/EMP along with item-wise breaks-up. These cost shall be included as part of the project cost. The funds earmarked for the environment protection measures shall not be diverted for other purposes.	Separate funds will be allocated for implementation of environmental protection measures Environment protection measures are implemented at site and the same has been adhere to. **Environmental Management plan Budgetary Allocation as mentioned in EC**	Annexure 1
11.	The Project management shall advertise at least in two local newspapers widely circulated in the region around the project, one of which shall be in the Marathi language of the local concerned within seven days of issue of this letter, informing that the project has been accorded environmental clearance and copies of clearance letter are available with the Maharashtra Pollution Control Board and may be seen at Website at http://parivesh.nic.in.	Ref attached copy of News Paper advertising	
12.	Project management should submit half yearly compliance reports is respect of the stipulated prior environment clearance terms and conditions in hard & soft copies to the MPCB & this	Report attached herewith and same will be submitted to MPCB an Environment department in respect of the stipulated prior environment clearance terms and conditions in hard copies .	

	department, on 1 st June & 1 st December of each calendar year.		
13.	A copy of the clearance letter shall be sent by proponent to the concerned Municipal Corporation and the local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.	A copy of the clearance letter will be sent by proponent to the concerned Municipal Corporation. The clearance letter will also be put on the website of the Company.	
14.	The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; SPM,RSPM.SO2,NOx (ambient levels as well as stack emission) or critical sector parameters, indicated for the project shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.	Status of compliance of the stipulated EC conditions, and results of monitored data sent to MOEF and MPCB. .The criteria pollutant levels monitored and displayed at site in the public domain	Annexure 1

	General EC Conditions		
1.	PP has to strictly abide by the conditions stipulated by SEAC& SEIAA	Noted.	
2.	If applicable Consent for Establishment" shall be obtained from Maharashtra Pollution Control Board under Air and Water Act and a copy shall be submitted to the Environment Department before start of any construction work at the site.	**Consent To Establish & Part C to O for A building have been obtained** as per EC Received 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. **MPCB C TO O (Wing A) – Received**	
3.	Under the provision of Environment (Protection) Act, 1986, legal action shall be initiated against the project proponent if it was found that construction of the project has been started without obtaining environmental clearance.	Construction of the project has been started after obtaining EC. SIA/MH/MIS/244716/2021 dated 27-3-2022	
4.	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated EC condition including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB.	6 month compliances submitted herewith and also submitted to MOEF and MPCB regional office and Condition will be complied on regular basis. RO Visit Done and RO compliances report received	
5.	The environmental statement for each financial year ending 31 st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall be also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective Regional Offices of MoEF be e-mail.	Please find attached Form V for Financial year **2025-26** to and MOEF and MPCB	

6.	No further Expansion or modification, other than mentioned in the EIA Notification, 2006 and its amendments, shall be carried out without prior approval of the SEIAA. In case of deviations or alterations in the project proposal from those submitted to SEIAA for clearance, a fresh reference shall be made to the SEIAA as applicable to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	Noted.	
7.	This environmental clearance is issued subject to obtaining NOC from Forestry & Wild life angle including clearance from the standing committee of the National Board for Wild life as if applicable & this environment clearance does not necessarily implies that Forestry & Wild life clearance granted to the project which will be considered separately on merit.	Project is not located in any Forest area .NOC from Forestry & Wild life and clearance from the standing committee of the National Board for Wild life is not required.	

GANGA ASMI EC Compliances JULY 2025-DECEMBER 2025		
New EC - SIA/MH/MIS/244716/2021 Dated 27-3-2022		
Standard EC Conditions for Project/Activity 8(a/b): Building and Construction projects / Townships and Area Development projects as per Notification dated 4-1-2019		
	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 byelaws.	**EC has been obtained - SIA/MH/MIS/244716/2021 DATED 27-3-2022**
ii	The approval of the Competent Authority shall be obtained for **structural safety of buildings** due to earthquakes, adequacy of fire fighting equipment etc as per National Building Code including protection measures from lightening etc.	The approval from Lisioned Structural Engineer for structural safety of buildings as per National Building Code
iii	The project proponent shall obtain **forest clearance** under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.	Project is not located in forest Area so Forest NOC is not required
iv	The project proponent shall obtain **clearance from the National Board of ' Wildlife, if applicable**.	Project is not located in National wildlife demarcated Area so clearance from the National Board of ' Wildlife is not required
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.	**Consent to Establish & Part C to O(A building) have been obtained** 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.

		C TO O (Wing A) – Received
vi	The project proponent shall obtain the **necessary permission** for drawal of ground water/surface water required for the project from the competent authority.	**CGWA NOC** has been obtained to comply with the mentioned condition. During Construction Tanker water has been used during construction
vii	A certificate or adequacy of available power from the agency supplying power to the project along with the load allowed for the project should be obtained.	Adequate power supply is available for the project. LED bulbs lamps will be used in construction phase. and LED bulbs will be used for outdoor and common area lighting for energy conservation in operation phase.
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.	All required approval will be complied with . There is No storage of Diesel at site as site is within city area and petrol pump is within 1 km from site.
ix	The provisions of the **Solid Waste (Management) Rules, 2016, E-Waste** (Management) Rules, 2016, and the Plastics Waste (Management) Rules, 2016 shall be followed.	Agreement with Swach for collection and disposal of solid waste and E waste
x	The project proponent shall follow the **ECBC**/ECBC-R prescribed by Bureau of Energy Efficiency, Ministry of Power strictly.	The same is taken care in design and will be complied with

	II. Air quality monitoring and preservation	
i	Notification GSR 94(E) dated 25.01.2018 of MoEF& CC regarding Mandatory Implementation of **Dust Mitigation Measures** for Construction and Demolition Activities for projects requiring Environmental Clearance shall be complied with.	**Construction phase** Fugitive dust emissions will be generated due to movement of vehicles and material handling. Odour may be there from diesel emissions from vehicles and construction machinery. **Operation phase** During operation phase, emissions will be generated from operation of dg sets. In case of malfunction of STP odour may be emitted. Adequate mitigation plans are prepared for such problems. **Mitigation Measures:** 1. The traffic congestion will be avoided by proper parking arrangement and maintaining smooth traffic flow 2. Regular PUC checkup for vehicles 3. CPCB approved DG sets only will be used. 4. Proper maintenance of DG sets shall be done and Low Sulphur fuel will be used. 5. Plantation of trees which will act as noise and dust buffer 6. Use of Latest technology for construction 7. Use of polymeric spray for dust suppression instead of water wherever possible 8. Curing water shall be sprayed on concrete structures, free flow of water shall not be allowed for curing 9. Use of wet jute cloth/gunny bags instead of water spray for curing activity. 10. Provision of Barricades of adequate height along the periphery of the site 11. Use of covering sheets while transporting the material 12. Slab ponding 13. Use of RMC

ii	A **management plan** shall be drawn up and implemented to contain the current **exceedance in ambient air quality at the site.**	Management Plan is prepared to maintain the ambient Air quality 1. Construction site is adequately barricaded before the construction begins. 2. Dust mask provided for labours 3. Watering to avoid dust 4. All vehicles carring construction material are covered with tarpaulin to avoid dust emission.. 5. Sand. muram, loose soil. cement, stored on site are covered adequately so as to prevent dust pollution.
iii	The project proponent shall install system to carryout **Ambient Air Quality monitoring for commo**n/criterion parameters relevant to the main pollutants released (e.g. PM_{10} and $PM_{2.5}$) covering upwind and downwind directions during the construction period.	Ambient Air quality testing will be carried out and reports submitted in Six monthly compliances to MOEF and MPCB
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 Slate Pollution Control Board.	Enclosed type of DG set will be installed during Construction and will be installed during operation phase as source of back up power for elevators and common area illumination during operation phase. Testing of stack emission , Noise level will be carried out through authorized vendor . A Stack with adequate height will be provide to DG set for exhaust **In construction Phase - DG SET – 125 KVA -2 NO** **In Operation Phase as Per EC - 500 kVA X 2 nos.,320 kVA X 1 no**

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, murram and other construction materials prone to causing dust pollution at the site as well as taking out debris from the site.	1. Construction site is adequately barricaded before the construction begins. 2. Dust mask provided for labours 3. Watering to avoid dust 4. All vehicles carring construction material is covered with tarpaulin to avoid dust emission.
vi	Sand. murram, loose soil. cement, stored on site shall be covered adequately so as to **prevent dust pollution.**	Sand. muram, loose soil. cement, stored on site will be covered adequately so as to prevent dust pollution.
vii	**Wet jet** shall be provided for grinding and stone cutting.	Wet jet will be used for grinding and stone cutting.
Viii	Unpaved surfaces and loose soil shall be adequately sprinkled with water to **suppress dust**.	Unpaved surfaces and loose soil are adequately sprinkled with water to suppress dust during construction phase .
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 Rules 2016.	Solid waste during the construction phase would comprise mainly the excavated earth, concrete debris, steel scrap, scrap from/of insulation material for air-conditioning and packaging material. Cement bags, waste paper and cardboard packing material will be sold off to recyclers. Unusable steel scrap will also be collected at site and sold to recyclers. Excavated earth and construction debris will be disposed as per debris management plan

X	**The diesel generator** sets to be used during construction phase shall be low sulphur diesel type and shall confirm to Environmental (Protection) prescribed for air and noise emission standards.	DG set at site confirms the Air and Noise emission standards . A Stack with adequate height will be provide to DG set for exhaust **In construction Phase - DG SET – 125 KVA -2 NO** **In Operation Phase as Per EC - 500 kVA X 2 nos.,320 kVA X 1 no**
xi	**The gaseous emissions from DG set** shall be dispersed through adequate stack height as per MPCB standards. Acoustic enclosure shall be provided to the DC; sets to mitigate the noise pollution. Low sulphur diesel shall be used. The location of the DO set and exhaust pipe height shall be as per the provisions of the Central Pollution Control Board MPCB norms.	Enclosed type of DG set will be installed during Construction and will be installed during operation phase as source of back up power for elevators and common area illumination during operation phase. A Stack with adequate height will be provide to DG set for exhaust
xii	For **indoor air quality** the ventilation provisions as per National Building Code of India.	The same is taken care in design

	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 rain water.	Care will be taken in design to maintain natural drain system to ensure unrestricted flow of water. Landscaping and Rain water Harvesting is proposed in operation phase for water harvesting. **In Operation Phase -** **7 No Of recharge Pits - 2.0 x 2.0 x 2.0 m depth and recharge bore of 60 m depth** **Level of the Ground Water table: 7m.BGL** There will not be any change in the drainage pattern. It will be improved by well planned development.
ii	**Buildings shall be designed to follow the natural topography** as much as possible. Minimum cutting and filling should be done.	The same is incorporated in design and building is designed as per natural topography for minimum cutting and filling .
iii	**Total fresh water use** shall not exceed the proposed requirement as provided in the project details.	Total fresh water use will not exceed the proposed requirement as provided in the project details Water Saving measures are adopted in Construction and operation phase such as Use of Low Flow Fixtures, Use of Treated STP water for Flushing and Gardening, Use of Ponding and Gunny Bags for curing etc. **STP of 500+60+50 =610 KLD capacity** shall be provided for treatment of sewage. Wastewater generated will be treated and utilized for gardening and flushing Sewage sludge: 10 kg/day will be used as organic manure. **Total Water Requirement in operation phase - 747 KLD** Fresh Water- 445 Kld Flushing -217 Kld

		Gardening -85 Kld
iv	**The quantity of fresh water usage. water recycling and rainwater harvestin**g 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.	Requirement of Fresh water, Water Used for Flushing and Landscaping is as per mentioned in EC. The payment will be made to local authority in form of Water Tax which is included in property Tax after completion. Rain water harvesting report is annexed for reference. **In Operation Phase -** **7 No Of recharge Pits - 2.0 x 2.0 x 2.0 m depth and recharge bore of 60 m depth** **Level of the Ground Water table: 7m.BGL** **STP of 500+60+50 =610 KLD capacity** shall be provided for treatment of sewage. Wastewater generated will be treated and utilized for gardening and flushing Sewage sludge: 10 kg/day will be used as organic manure. **As per EC In operation Phase -1 No of STP 500+60+50 =610 KLD** **Total Water Requirement in operation phase - 747 KLD** Fresh Water- 445 Kld Flushing -217 Kld Gardening -85 Kld
v	**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.	Water NOCwill be obtained from local body . No Ground water is used for construction. Tanker water is used for construction. **STP of 500+60+50 =610 KLD capacity** shall be provided for treatment of sewage. Wastewater generated will be treated and utilized for gardening and flushing Sewage sludge: 10 kg/day will be used as organic manure. **Total Water Requirement in**

		operation phase - 747 KLD Fresh Water- 445 Kld Flushing -217 Kld Gardening -85 Kld
Vi	At least 20% of the **open spaces** as required by the local building bye-laws shall be pervious, Use of Grass pavers, paver blocks with at least 50% opening, landscape etc. would be considered as pervious surface.	The condition is taken care in design as per prevailing rules.
Vii	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 supply of 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. is provided. **Single stack system with recirculation lines for flushing will be provided**
Viii	**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) are selected for water conservation. the same is taken cate in design and implemented in operation phase.
Ix	**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.	The separation of gray and black will be taken care in design and will be complied before occupation. Installation of dual pipe plumbing for supply of 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. is provided. **Single stack system with recirculation lines for flushing will be provided**.

X	**Water demand during construction should be reduced**bv use of pre-mixed concrete, curing agents and other best practices referred.	Water demand during construction will be reduced by use of pre-mixed concrete, using Ponding of slab , Using Gunny Bags during curing , and other best practices referred
xi	The local bye-law provisions **on rain water 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. Rain water harvesting recharge pits/storage tanks shall be provided for ground water recharging as per the CGWB norms.	Rain water Harvesting is proposed in operation phase **In Operation Phase -** **7 No Of recharge Pits - 2.0 x 2.0 x 2.0 m depth and recharge bore of 60 m depth** **Level of the Ground Water table: 7m.BGL**
Xii	**A rain water 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 fresh water requirement shall be provided. In areas where ground water recharge is not feasible, the rain water should be harvested and stored for reuse. The ground water shall not be withdrawn without approval from the Competent Authority.	Recharge survey/ Rain water Harvesting survey and plan will be carried out and the condition is complied in operation phase **In Operation Phase -** **7 No Of recharge Pits - 2.0 x 2.0 x 2.0 m depth and recharge bore of 60 m depth** **Level of the Ground Water table: 7m.BGL** **CGWA permission has been obtained** There is no withdrawal of ground water
Xiii	**All recharge** should be limited to shallow aquifer.	Recharge survey will be carried out and the condition is complied in operation phase
Xiv	**No ground water shall be used** during construction phase of the project.	No ground water will be used during construction phase of the project Tanker water is used for construction.

Xv	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.	No ground water will be used during construction phase of the project Tanker water is used for construction. **CGWA permission has been obtained .**
Xvi	**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 condition will be complied in operation phase Ref attached water balance as per EC No Ground water is used for construction. Tanker water is used for construction. **In Operation Phase -** **7 No Of recharge Pits - 2.0 x 2.0 x 2.0 m depth and recharge bore of 60 m depth** **Level of the Ground Water table: 7m.BGL** **STP of 500+60+50 =610 KLD capacity** shall be provided for treatment of sewage. Wastewater generated will be treated and utilized for gardening and flushing Sewage sludge: 10 kg/day will be used as organic manure. **Total Water Requirement in operation phase - 747 KLD** Fresh Water- 445 Kld Flushing -217 Kld Gardening -85 Kld **Ref attached Test Reports**
Xvii	**Sewage shall be treated in the STP** with tertiary treatment. The treated effluent from STP shall be recycled/re-used for flushing, AC make lip water and gardening. As proposed, no untreated water shall be disposed in to municipal drain.	**STP of 500+60+50 =610 KLD capacity** shall be provided for treatment of sewage. Wastewater generated will be treated and utilized for gardening and flushing Sewage sludge: 10 kg/day will be used as organic manure.

Xviii	**No sewage or untreated effluent water would be discharged through storm water drains.**	This condition is taken care in design that No sewage or untreated effluent water would be discharged through storm water drains.
Xix	**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.	Condition will be complied as per requirement during operation phase . **STP of 500+60+50 =610 KLD capacity** shall be provided for treatment of sewage. Wastewater generated will be treated and utilized for gardening and flushing Sewage sludge: 10 kg/day will be used as organic manure. Necessary measures should be made to mitigate the odour problem from STP. Septic tank Provision In Construction phase for Toilet
Xx	**Periodical monitoring of water quality** of treated sewage shall be conducted. Necessary measures should be made to mitigate the odour problem from S'I'P.	Periodical monitoring of water quality of treated sewage will be conducted in operation phase and Necessary measures will be taken to mitigate the odour problem from S'I'P. Ref Test Reports
Xxi	**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. Will be Collected and used as a manure for landscape in operation phase **STP of 500+60+50 =610 KLD capacity** shall be provided for treatment of sewage. Wastewater generated will be treated and utilized for gardening and flushing Sewage sludge: 10 kg/day will be used as organic manure.

	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 by CPCB /SPCB.	Ambient noise levels will be conform to residential standards both during day and night Ambient Noise and Air quality levelwill be closely monitored during construction phase. Noise generation from construction equipment's used for drilling, cutting operations. All DG sets will be covered by acoustic encasements as per statutory rules and will conform to noise standards. The dg sets will be mounted on anti-vibration mounts to reduce the impacts of vibration. Adequate measures will be taken to reduce the Noise and Air level during construction phase ➢ eg constructing Compound wall surrounding the periphery of plot . ➢ Operation of vehicle in non peak hour. ➢ Using Latest technology in construction with Mechanization. ➢ Using the low noise generating equipments during construction work ➢ By using crane for transportation of material steel and shuttering material to minimize the Noise ➢ Keeping the Noisy equipments, pumps away as far as possible from nearby Buildings ➢ Use of electrically powered equipments instead of diesel power equipments ➢ By using ready to use material at

		site during construction ➢ By close supervision at site ➢ By Switching of the equipments when not in use
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 testing is carried out as per the prescribed guidelines and report will be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.**Ref attached Test Reports**
Iii	**Acoustic enclosures for DG sets**, noise barriers for ground-run bays, ear plugs for operating personnel shall be implemented as mitigation measures for noise impact due to ground sources.	Acoustic enclosures are provided for DG sets, Ear plugs are provided for operating personnel to avoid impact due to noise .**Other measure are**– 1. Ambient noise levels will be conform to residential standards both during day and night. 2. Ambient Noise level will be closely monitored during construction phase. 3. Adequate measures are taken to reduce the Noise during construction phase .

	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.	The same is taken care in design
Ii	**Outdoor and common area lighting shall be LED.**	Outdoor and common area lighting LED lights are planned in Outdoor and common area lighting in construction and operation phase
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.	The same is / will be taken care in design
Iv	**Energy conservation measures like installation of s/ 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.	LED bulbs lamps will be used in construction phase . LED bulbs will be used for outdoor and common area lighting for energy conservation in operation phase. The design of buildings is such that adequate Natural light and air will be available in Building.. Energy Efficient Electrical Appliances & equipment are selected . Solar water heating system will be planned in operation phase .

X	**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 level/ local building bye-laws requirement, whichever is higher.	The design of buildings is such that adequate Natural light and air will be available in Building.. Energy Efficient Electrical Appliances & equipment are selected. **Energy Conservation Measures -** Auto Timer control for external & Common lighting • Use of / LED lamps in all public/ common areas. • Solar PV Cells • Electronic V3F Drives for Elevators Solar PV based renewable energy system is being planned
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 bye-laws, whichever is higher. Residential buildings are also recommended to meet its hot water demand from solar water heaters, as far as possible.	Solar water heating system will be planned in operation phase . Solar PV based renewable energy system is being planned **Energy Conservation Measures -** Auto Timer control for external & Common lighting • Use of / LED lamps in all public/ common areas. • Solar PV Cells • Electronic V3F Drives for Elevators

	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.	Agreement executed with SWACH for disposal of dry waste, E waste, wet waste in construction phase **Solid waste:** 1. **Total 35 kg/day(Dry waste-16.5 & Wet waste-18.5) solid wastes** will be generated in the project during construction phase and will be handed over to authorized agency. 1. Separate dust bin for Wet and Dry Garbage and disposal of wet waste through local authority 2. Construction waste will be used for filling at construction sites. **1502 kg/day Bio-degradable waste will be treated in OWC.** **Non – biodegradable waste: 1006 kg/day generated which will be handed over to Authorized Vendor.** . 3. Top Soil will be used for landscaping STP sludge will be used as manure in operation phase. **Sewage:** **STP of 500+60+50 =610 KLD capacity** shall be provided for treatment of sewage. Wastewater generated will be treated and utilized for gardening and flushing Sewage sludge: 47 kg/day will be used as organic manure.
Ii	**Disposal of muck during construction** phase shall not create any adverse effect on the neighbouring communities and be disposed taking the necessary	Excavated material will be used within site premises to the extent possible and other sites for backfilling and not creates any adverse effect on the

	precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.	neighboring communities. During disposal the necessary precaution will be taken for general safety and health aspects of people. Scrap Steel will be send to authorized vendor
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 bin will be provided in each unit and at the ground level for facilitating segregation of waste in operation phase . Separate wet and dry bin are provided in construction phase also. Solid waste will be segregated into wet garbage and inert materials before treatment and disposal .
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.	**1502 kg/day Bio-degradable waste will be treated in OWC.** **Non – biodegradable waste: 1006 kg/day generated which will be handed over to Authorized Vendor.** . Top Soil will be used for landscaping STP sludge will be used as manure in operation phase.
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.**	Agreement executed with SWACH for disposal of dry waste, E waste. Seperate dust bin for Wet and Dry Garbage
Vi	Any **hazardous waste** generated during construction phase, shall be disposed off as per applicable rules and norms with necessary approvals of the State Pollution Control Board.	No Hazardous material will be generated at site .if generated the same will be disposed off as per applicable rules and norms with necessary approvals of the State Pollution Control Board. There is No storage of Diesel at site as site is within city area and petrol pump is within 1 km from site.Empty containers of oil , grease, paints will be returned to vendor immediately after use. Scrap Steel will be send to authorized vendor Agreement with Swach for

		disposal of E waste
vi	**Use of environment friendly materials** in bricks, blocks and other construction materials, shall be required fix 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.	Environment friendly materials are used during construction such as FlyAsh Bricks for Retaining wall , AAC blocks for wall , earth bricks for water proofing etc
vii	**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 27th August, 2003 and 25th January, 2016 Ready mixed concrete must be used in building construction.	Fly ash is used as building material RCC as per the provisions of Fly Ash Notification of September 1999 and amended as on 27th August, 2003 and 25th January, 2016 . Ready mixed concrete is used in building construction.
viii	Any **wastes from construction and demolition activities** related thereto shall be managed so as to strictly conform to the Construction and Demolition Rules, 2016.	Solid waste during the construction phase would comprise mainly the excavated earth, concrete debris, steel scrap, scrap from/of insulation material for air-conditioning and packaging material. Cement bags, waste paper and cardboard packing material will be sold off to recyclers. Unusable steel scrap will also be collected at site and sold to recyclers.
Ix	**Used s 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 LED, s and TFLs will be properly collected and disposed off/sent for recycling as per the prevailing guidelines/ rules of the regulatory authority to avoid mercury contamination. Agreement with Swach for disposal of E , Dry Waste

	VII. Green Cover	
I	**No tree can be felled/transplant unless exigencies demand**. Where absolutely necessary, tree felling shall be with prior permission from the 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).\	**Tree NOC has been obtained**.
Ii	A minimum of 1 **tree** for every 80 sqm of land should be planted and maintained. The existing trees will be counted for this purpose. The landscape planning should include plantation of native species. The species with heavy foliage, broad leaves and wide canopy cover are desirable. Water intensive and/or invasive species should not be used for landscaping.	This criteria is taken care in design of landscaping .Native species are planned in landscaping. **RG area -2767.68 Sqm** **No Of trees Proposed - 440 Nos** **Existing Trees -600 Nos**
Iii	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.	Tree Cutting Permission has been obtained. Green belt development will be carried out as per the details provided in EC.
Iv	**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.	Top soil from construction site stored safely and the same will be used for horticulture / landscape development within the project site to the extent possible .

	VIII. Transport	
I	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.	The same is taken care in project design
ii	a. Hierarchy of roads with proper segregation of vehicular and pedestrian traffic.	The same is taken care in project design. Footpath, Drive ways are as per Standard design guidelines.
iii	b. Traffic calming measures.	Security personnel's will be and will be appointed at entry and exit point to avoid traffic congestion in construction and Operation stage. Provided parking area within project site. Parking will be fully internalized and no public space will be utilized.
	c. Proper design of entry and exit points.	Proper design of entry and exit points to avoid conjunction
	d. Parking norms as per local regulation.	Parking norms as per local regulation are followed.
iv	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.	Vehicles for bringing construction material to the site are in good condition and operated in non peak hours and pollution check certificate duly checked before using the vehicles at site

v	**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 he duly validated and certified by the State Urban Development department and the P.W.D/ competent authority for road augmentation and shall also have their consent to the implementation of components of the plan which involve the participation of these departments.	A detailed traffic management and traffic decongestion is taken care . Security personnel's will be and will be appointed at entry and exit point to avoid traffic congestion in construction and Operation stage. Provided parking area within project site. Parking will be fully internalized and no public space will be utilized.

	IX. Human health issues	
I	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.**	Dust Masks are provided for labours working in loading, unloading, carriage of construction material and construction debris shifting areas.
Ii	For **indoor air quality** the ventilation provisions as per National Building Code of India.	Indoor air quality ,Movement of fresh air and passage of natural light, air and ventilation will be taken care in Design as per National Building Code of India.
Iii	Emergency preparedness plan based on the **Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan** shall be implemented.	Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan is prepared and implemented.
Iv	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, creches etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	Housing Facilities is provided for Construction workers with all necessary infrastructure and facilities within the site area. Sanitary facilities and hygienic measures are provided in labor colony. Cleanliness is maintained throughout the project site. **1.Total No of Hutments - 50Nos** **.Total No of toilets -16Nos ,Septic** **Tank -1 Nos** 1. Drinking water facility at labour colony 5000 lit 3 tanks 2. Labour Accident Insurance and workman Compensation policy 3. First Aid facility 24*7 at site and 4. Tie up with local Hospitals for emergency During the construction period 5. Aadequate precaution will be

		taken to avoid stagnation of water to avoid mosquito breeding. 6. Labours will be provided with purified water to avoid spread of waterborne diseases. 7. Contamination of ground water will be avoided through proper drainage and housekeeping surface runoffs will be secured by efficient flow management.
V	**Occupational healthsurveillance ofthe workers** shall be done on a regular basis.	Health camp is arranged on regular intervals for labours and staff .Workmen Compensation Policy and Accident Insurance policy is provided by company
Vi	**A First Aid Room** shall be provided in the project both during construction and operations of the project.	24*7 First Aid facility is available for labours and staff . Also Tie up with local hospitals during emergency. Workmen Compensation Policy and Accident Insurance policy is provided by company

	X. Corporate Environment Responsibility	
I	The project proponent shall comply with the provisions contained in this Ministry's OM vide F. No. 22-65/2017-IA.III dated 1st May 2018, as applicable, regarding Corporate Environment Responsibility.	The same will be complied with If applicable
Ii	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 or six-monthly report.	Company have Environment Policy duly approved by the Board of Directors with all necessary checks for Environment, Safety and Quality .
Iii	**A separate Environmental Cell** both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.	A separate Environmental Cell with qualified personnel is deployed under the control of senior Executive.

Iv	**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.	Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company is prepared and submitted to authority .
	XI. 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 will be accorded environment clearance and the details of MoEFCC/SEIAA website where it is displayed.	**The condition is complied with.**
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.	Noted
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.	The status of six monthly compliance of the stipulated environment clearance conditions and results of monitored data will be updated regularly after submission of compliances to MOEF ad MPCB and Acknowledgment is displayed on website

Iv	The project proponent shall submit **six-monthly reports** and 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.	six-monthly reports and the status of the compliance of the stipulated environmental conditions will be submitted to MOEF and MPCB with Six monthly compliances report Ref annex
V	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.	Environmental statement for financial year in **Form- V** will be submitted to MOEF and MPCB with Six monthly compliances report and acknowledgement is displayed on company website Ref annex
Vi	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 proponent informed the Regional Office as well as the Ministry, regarding commencement date of project, approval received for project in six monthly compliances report submitted periodically .
Vii	The project **authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.**	The project proponent is abiding and will abide and adhere the stipulations made by the State Pollution Control Board and the State Government.
Viii	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.	The project proponent is abiding and will abide all the commitments and recommendations made in the EIA/EMP report.
Ix	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF& CC).	Noted

X	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
Xi	The Ministry may revoke or suspend the clearance. if implementation of any of the above conditions is not satisfactory.	Noted
Xii	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.	Noted
Xiii	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.	The project authorities will give full cooperation to the officer(s) of the Regional Office by furnishing the requisite data / information/monitoring reports.
Xix	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 Tran boundary 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.	Noted
Xx	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

ENVIRONMENTAL CLEARANCE

PARIVESH

(Pro-Active and Responsive Facilitation by Interactive, and Virtuous Environmental Single-Window Hub)

Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA), Maharashtra)

To,

The Partner

SHANTI MOHAN DEVELOPERS

3rd Floor San Mahu Complex, Bund Garden road, Opp Poona Club - 411001

Subject: Grant of Environmental Clearance (EC) to the proposed Project Activity under the provision of EIA Notification 2006-regarding

Sir/Madam,

This is in reference to your application for Environmental Clearance (EC) in respect of project submitted to the SEIAA vide proposal number SIA/MH/MIS/244716/2021 dated 14 Dec 2021. The particulars of the environmental clearance granted to the project are as below.

1.	**EC Identification No.**	**EC22B038MH110628**
2.	**File No.**	SIA/MH/MIS/244716/2021
3.	**Project Type**	Expansion7
4.	**Category**	B2
5.	**Project/Activity including Schedule No.**	8(a) Building and Construction projects
6.	**Name of Project**	"Ganga Asmi" - Proposed Residential and Commercial Project at Wakad, Pune at Sr. No. 274P, 275P, 276P by Shanti Mohan Developers LLP
7.	**Name of Company/Organization**	SHANTI MOHAN DEVELOPERS
8.	**Location of Project**	Maharashtra
9.	**TOR Date**	N/A

The project details along with terms and conditions are appended herewith from page no 2 onwards.

(e-signed)
Manisha Patankar Mhaiskar
Member Secretary
SEIAA - (Maharashtra)

Date: 27/03/2022

Note: A valid environmental clearance shall be one that has EC identification number & E-Sign generated from PARIVESH.Please quote identification number in all future correspondence.

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STATE LEVEL ENVIRONMENT IMPACT ASSESSMENT AUTHORITY

No. SIA/MH/MIS/244716/2021
Environment & Climate
Change Department
Room No. 217, 2nd Floor,
Mantralaya, Mumbai- 400032.

To
M/s.Shanti Mohan Developers LLP,
Sr. No. 274P, 275P, 276P, Wakad,
Pune.

Subject : Environmental Clearance for "Ganga Asmi" - Proposed Residential and Commercial Construction Project Sr. No. 274P, 275P, 276P, Wakad, Pune at by M/s.Shanti Mohan Developers LLP

Reference : Application no. SIA/MH/MIS/244716/2021

This has reference to your communication on the above-mentioned subject. The proposal was considered by the SEAC-3 in its 132nd meeting under screening category 8 (a) B2 as per EIA Notification, 2006 and recommend to SEIAA. Proposal then considered in 239th (Day-1) meeting of State Level Environment Impact Assessment Authority (SEIAA).

2. Brief Information of the project submitted by you is as below:-

1	Proposal Number	SIA/MH/MIS/244716/2021	
2	Name of Project	"Ganga Asmi" Proposed Residential and Commercial Project at Sr. No.274P, 275P, 276P at Wakad, Mulshi, Pune by Shanti Mohan Developers LLP through Shri. Atul Goel	
3	Project category	8a (B2)	
4	Type of Institution	Private	
5	Project Proponent	Name	"Ganga Asmi" Proposed Residential and CommercialProject at Sr. No. 274P, 275P, 276P at Wakad, Tehsil: Mulshi, District: Pune, Maharashtra by Shanti Mohan Developers LLP through Shri. Atul Goel
		Regd. Office address	3rd Floor, San Mahu Complex, Bund Garden Road, Opp.Poona Club, Camp, Taluka-Haveli, District-Pune 411001
		Contact number	7755935577/02026140254
		e-mail	technical@goelganga.com
6	Consultant	SD Engineering Services Pvt Ltd	
7	Applied for	Expansion in EC	
8	Details of previous EC	Previous EC is obtained vide letter no. SIA/MH/MIS/145122/2020 dated 09.02.2021 for BUA 89,191.34 m^2	

9	Location of the project	Sr. No. 274P, 275P, 276P at Wakad, Tehsil: Mulshi, District: Pune, Maharashtra
10	Latitude and Longitude	Latitude - 18°35'27.41"N, Longitude 73°45'55.78"E
11	Total Plot Area (m^2)	28,310.00
12	Deductions (m^2)	645.37
13	Net Plot area (m^2)	27,664.63
14	Proposed FSI area (m^2)	84,633.76
15	Proposed non-FSI area (m^2)	53,108.28
16	Proposed TBUA (m^2)	1,37,742.04
17	TBUA (m^2) approved by	1,37,742.04
	Planning Authority till date	Pimpri-Chinchwad Municipal Corporation (PCMC)
18	Ground coverage (m2) & %	6,639.15
19	Total Project Cost (Rs.)	Rs. 125.75 Cr
20	CER as per MoEF & CC circular dated 01/05/2018	Activity | Location | Cost (Rs.) | Duration We will follow the conditions mentioned in OM vide no. F.No.22-65/2017-IA.III dated 20.10.2020

21	Details of Building Configuration:						Reason for
	<Please use following legends: Floor = F, Parking = Pk, Podium = Po, Stilt =St, LowerGround = LG, Upper Ground = UG, Basement = B, Shops = Sh>						Modificat i on / Change
	Previous EC / Existing Building			Proposed Configuration			
	Building Name	Configura tion	Height (m)	Building Name	Configuration	Height (m)	Increase in floors due tovertical expansion
	Wing 1, 2 & 3	G + Pk 1 + Pk2 + PK3 +PK4 +Po +17 F	67	Wing 1, 2 & 3	Pk1 + Pk2 + Pk3 + Pk4 + Pk5 + Pk6 + Podium + 28 Floors (MHADA at P2 +P3 + P4 + P5 + P6 LEVEL)	108.00	
	Wing 4 Existing structure	Pk+7	24.45	Wing 4 Existing structure	Pk+8	26.10	
	MHADA	Pk+9	29.30				
	Club house	G+1	7.00				

22	Total number of tenements	No of Tenements- 882No. of shops – 8 No of Restaurants- 2 No of Rooms- 89
	Dry Season (CMD)	Wet Season (CMD)

23	Water Budget	Fresh Water	Residential & Shops 368 + MHADA 40 + Hotel 37 **Total = 445**	Fresh Water	Residential & Shops 368 + MHADA 40 + Hotel 37 **Total = 445**
		Recycled (Gardening)	85	Recycled (Gardeni ng)	0
		Swimming Pool	0	Swimming Pool	0
		Recycled	Residential & Shops 180	Recycled	Residential & Shops 180
		Flushing	+ MHADA 20 + Hotel 17 **Total =217**	Flushing	+ MHADA 20 + Hotel 17 **Total =217**
		Total	747	Total	662
		Waste water generation	Residential & shops 493 + MHADA 54 + Hotel 50 = **Total 597 KLD**	Waste water generation	Residential & shops 493 + MHADA 54 + Hotel 50 = **Total 597 KLD**
24	Water Storage Capacity for Firefighting / UGT	**Fire UG tank – 550 Cum** **Fire Overhead tank** – 20 KL each building			
25	Source of water	Local Body – Pimpri Chinchwad Municipal Corporation			
26	Rainwater Harvesting (RWH)	Level of the Ground water table:	Water table 7 m. BGL		
		Size and no of RWH tank(s) and Quantity:	NA		
		Quantity and size of recharge pits:	7 Nos Recharge Pits with 60 m recharge bore Pits size 2 m. X 2 m. X 2 m		
		Details of UGT tanks if any:	**Domestic UGT Tank** Residential-552Cu.m.MHADA- 60 Cu.m. Hotel-56Cu.m. **Flushing UGT Tank** Residential-264Cu.m.MHADA- 20 Cu.m. Hotel-18Cu.m. **Fire UGT tank** 550 Cu.m.		
27	Sewage and	Sewage generation in CMD:	Residential & Shops 493, MHADA 54 + Hotel 50 =TOTAL 597 KLD		
		STP technology:	MBBR		

	Wastewater	Capacity of STP (CMD):	Residential & shops 500, MHADA 60 + Hotel 50 = TOTAL 610 KLD	
28	Solid Waste Management during Construction Phase	**Type**	**Quantity (kg/d)**	**Treatment / disposal**
		Dry waste:	16.5	Collected by Ghantagadi
		Wet waste:	18.5	Collected by Ghantagadi
		Construction waste	Excavated material	Debris and excavated material will be reused within site; top soil will be used for landscaping.
29	Solid Waste Management during Operation Phase	**Type**	**Quantity (kg/d)**	**Treatment / disposal**
		Dry waste:	Residential:794MHADA: 88 Shops: 9 Restaurant & Hotel: 116 **Total: 1006**	Handed over to authorized recyclers
		Wet waste:	Residential:1191MHADA:132 Shops:6 Restaurant & Hotel:173 **Total: 1502**	Organic Waste Convertor
		Hazardous waste:	Negligible	Handed over to authorized recyclers
		Biomedical waste	NA	NA
		E-Waste	Residential: 5.44MHADA:0.60 Shops: 0.16 Restaurant & Hotel: 1.05 **Total: 7**	Handed over to AuthorisedVendor
		STP Sludge (dry)	Residential 500 KLD STP- 38 kg/dayMHADA 60 KLD STP - 5 kg/day Commercial Hotel 50 KLD STP- 4 kg/day	Will be used as manure
30	Green Belt Development	Total RG area (m^2):		Provided RG = 2,767.68 m^2
		Existing trees on plot:		108
		Number of trees to be planted:		440
		Number of trees to be cut:		0
		Number of trees to be transplanted:		22 already transplanted
	Power	Source of power supply:		MSEDCL
		During Construction Phase (Demand Load):		145 KW
		During Operation phase (Connected load):		6691.50 KW
		During Operation phase (Demand load):		2833.37 KW

31	requirement:	Transformer:		630KVA - 5NO."S
		DG set:		500 kVA - 2NO."S 320 kVA - 1 NO
		Fuel used:		HSD
		Sr. No.	**Energy Conservation Measures**	**Saving%**
		1	Solar water heating	12.37
		2	Solar PV system	0.67
		3	Solar lights will be provided for common amenities like Street lighting & Garden lighting	4.14
		4	LED based lighting will be done in the common areas, landscape areas, signages, Entry gates and boundary compound walls etc.	
		5	Auto Timer Switches will be provided for Street lights, Garden lights, Parking & staircase Lights &Other Common Area Lights, for saving electrical energy.	
		6	Total Power saving including saving due to Water Heaters	18.25 %

33	Environmental Management plan budget during Construction phase	**Type**	**Details**	**Cost**
		Capital	Air, water, land, biological environment and socioeconomic environment	21.161
		O&M	Air, water and Noise Monitoring	1.08

34	Environmental Management plan Budget during	**Component**	**Details**	**Capital (Rs.in Lacs)**	**O&M (Rs.in Lacs/Y)**
		Storm water	-	-	-
		Sewage treatment	1 No of STP 500	110	16.40
	Operation phase		KLD		
			1 No of STP 60 KLD	37	6.79
			1 No of STP 50 KLD	37	6.79
		Water treatment	-	-	-
		RWH	Recharge pits	14.7	0.42
		Swimming Pool	-	-	-
		Solid Waste	OWC	37	8.08
		Hazardous waste	-	-	-
		E waste	Handed over to Authorized Vendor	-	-

		Green belt development		Gardening	83.68	20.39
		Energy saving		Other measures	-	-
				Renewable energySolar PV panel & solar hot water	76.15	1.52
		Environmental Monitoring		From MoEF&CC approved lab	-	29.18
		Disaster Management		-	290.06	9.1
35	Traffic Management	**Type**	**Required as per DCR**	**Actual Provided**	**Area per parking (m^2)**	
		4-Wheeler	822	822	As per local body rules	
		2-Wheeler	2393	2393		
		Bicycles	00	00		
36	Details of Court cases / litigations w.r.t. the project and project location if any.	Yes, Details of Court cases / litigations Attached as **Annexure 1**				

3. Proposal is an expansion of existing construction project. PP has received environment clearance vide letter dated 9/2/2020 for total built up area 89191.34 Sq.mt. Proposal has been considered by SEIAA in its 239th (Day-1) meeting and decided to accord Environment Clearance to the said project under the provisions of Environment Impact Assessment Notification, 2006 subject to implantation of following terms and conditions-

Specific Conditions:

A. SEAC Conditions-

1. PP to submit the certified compliance report from Regional office MoEF & CC.
2. PP to submit the undertaking regarding there is no court order issued regarding stoppage of work of the project. PP to also undertake that Development agreement executed is not challenged in any court.
2. Also PP to submit the undertaking regarding 1,37,742.04 Sq.mt is the full potential of the plot.
3. PP to submit the signed copy of fire NoC. PP to submit the aviation NoC.
4. Committee noted that, the green space of the project is proposed on area which comes in blue line zone. PP to ensure that, this is permissible as per UDCPR.
5. PP to ensure that all adequate facilities are provided to the labors.

6. PP to ensure that, the water proposed to use for construction phase should not be drinking water. They can use recycled water or tanker water for proposed construction
7. PP to provide minimum 30% of total parking arrangement with electric charging facility by providing charging points at suitable places.

B. SEIAA Conditions-

1. This EC is restricted up to 70 m height till PP obtains civil aviation NOC.
2. PP to keep open space unpaved so as to ensure permeability of water. However, whenever paving is deemed necessary, PP to provide grass pavers of suitable types & strength to increase the water permeable area as well as to allow effective fire tender movement.
3. PP to achieve at least 5% of total energy requirement from solar/other renewable sources.
4. PP Shall comply with Standard EC conditions mentioned in the Office Memorandum issued by MoEF& CC vide F.No.22-34/2018-IA.III dt.04.01.2019.
5. SEIAA after deliberation decided to grant EC for – FSI- 84,633.76 m2, Non-FSI- 53,108.28 m2, Total BUA- 1,37,742.04 m2. (Plan approval- BP/EC/WAKAD/.07/2021 dated 20-8-2021).

General Conditions:

a) Construction Phase :-

I. The solid waste generated should be properly collected and segregated. Dry/inert solid waste should be disposed of to the approved sites for land filling after recovering recyclable material.

II. Disposal of muck, Construction spoils, including bituminous material during construction phase should not create any adverse effect on the neighbouring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in the approved sites with the approval of competent authority.

III. Any hazardous waste generated during construction phase should be disposed of as per applicable rules and norms with necessary approvals of the Maharashtra Pollution Control Board.

IV. Adequate drinking water and sanitary facilities should be provided for construction workers at the site. Provision should be made for mobile toilets. The safe disposal of wastewater and solid wastes generated during the construction phase should be ensured.

V. Arrangement shall be made that waste water and storm water do not get mixed.

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

VII. The ground water level and its quality should be monitored regularly in consultation with Ground Water Authority.

VIII. Permission to draw ground water for construction of basement if any shall be obtained from the competent Authority prior to construction/operation of the project.

IX. Fixtures for showers, toilet flushing and drinking should be of low flow either by use of aerators or pressure reducing devices or sensor based control.

X. The Energy Conservation Building code shall be strictly adhered to.

XI. All the topsoil excavated during construction activities should be stored for use in horticulture / landscape development within the project site.

XII. Additional soil for levelling of the proposed site shall be generated within the sites (to the extent possible) so that natural drainage system of the area is protected and improved.

XIII. Soil and ground water samples will be tested to ascertain that there is no threat to ground water quality by leaching of heavy metals and other toxic contaminants.

XIV. PP to strictly adhere to all the conditions mentioned in Maharashtra (Urban Areas) Protection and Preservation of Trees Act, 1975 as amended during the validity of Environment Clearance.

XV. The diesel generator sets to be used during construction phase should be low sulphur diesel type and should conform to Environments (Protection) Rules prescribed for air and noise emission standards.

XVI. PP to strictly adhere to all the conditions mentioned in Maharashtra (Urban Areas) Protection and Preservation of Trees Act, 1975 as amended during the validity of Environment Clearance.

XVII. Vehicles hired for transportation of Raw material shall strictly comply the emission norms prescribed by Ministry of Road Transport & Highways Department. The vehicle shall be adequately covered to avoid spillage/leakages.

XVIII. Ambient noise levels should conform to residential standards both during day and night. Incremental pollution loads on the ambient air and noise quality should be closely monitored during construction phase. Adequate measures should be made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB/MPCB.

XIX. Diesel power generating sets proposed as source of backup power for elevators and common area illumination during construction phase should be of enclosed type and conform to rules made under the Environment (Protection) Act, 1986. The height of stack of DG sets should be equal to the height needed for the combined capacity of all proposed DG sets. Use low sulphur diesel is preferred. The location of the DG sets may be decided with in consultation with Maharashtra Pollution Control Board.

XX. Regular supervision of the above and other measures for monitoring should be in place all through the construction phase, so as to avoid disturbance to the surroundings by a separate environment cell /designated person.

B) Operation phase:-

I. a) The solid waste generated should be properly collected and segregated. b) Wet waste should be treated by Organic Waste Converter and treated waste (manure) should be utilized in the existing premises for gardening. And, no wet garbage will be disposed outside the premises. c) Dry/inert solid waste should be disposed of to the approved sites for land filling after recovering recyclable material.

II. E-waste shall be disposed through Authorized vendor as per E-waste (Management and Handling) Rules, 2016.

III. a) The installation of the Sewage Treatment Plant (STP) should be certified by an independent expert and a report in this regard should be submitted to the MPCB and Environment department before the project is commissioned for operation. Treated

effluent emanating from STP shall be recycled/ reused to the maximum extent possible. Treatment of 100% grey water by decentralized treatment should be done. Necessary measures should be made to mitigate the odour problem from STP. b) PP to give100 % treatment to sewage /Liquid waste and explore the possibility to recycle at least 50 % of water, Local authority should ensure this.

IV. Project proponent shall ensure completion of STP, MSW disposal facility, green belt development prior to occupation of the buildings. As agreed during the SEIAA meeting, PP to explore possibility of utilizing excess treated water in the adjacent area for gardening before discharging it into sewer line No physical occupation or allotment will be given unless all above said environmental infrastructure is installed and made functional including water requirement.

V. The Occupancy Certificate shall be issued by the Local Planning Authority to the project only after ensuring sustained availability of drinking water, connectivity of sewer line to the project site and proper disposal of treated water as per environmental norms.

VI. Traffic congestion near the entry and exit points from the roads adjoining the proposed project site must be avoided. Parking should be fully internalized and no public space should be utilized.

VII. PP to provide adequate electric charging points for electric vehicles (EVs).

VIII. Green Belt Development shall be carried out considering CPCB guidelines including selection of plant species and in consultation with the local DFO/ Agriculture Dept.

IX. A separate environment management cell with qualified staff shall be set up for implementation of the stipulated environmental safeguards.

X. Separate funds shall be allocated for implementation of environmental protection measures/EMP along with item-wise breaks-up. These cost shall be included as part of the project cost. The funds earmarked for the environment protection measures shall not be diverted for other purposes.

XI. The project management shall advertise at least in two local newspapers widely circulated in the region around the project, one of which shall be in the Marathi language of the local concerned within seven days of issue of this letter, informing that the project has been accorded environmental clearance and copies of clearance letter are available with the Maharashtra Pollution Control Board and may also be seen at Website at http://parivesh.nic.in

XII. Project management should submit half yearly compliance reports in respect of the stipulated prior environment clearance terms and conditions in hard & soft copies to the MPCB & this department, on 1st June & 1st December of each calendar year.

XIII. A copy of the clearance letter shall be sent by proponent to the concerned Municipal Corporation and the local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.

XIV. The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; SPM, RSPM. SO2, NOx (ambient levels as well as stack emissions) or critical sector parameters, indicated for the project shall be monitored and displayed at a convenient

location near the main gate of the company in the public domain.

C) General EC Conditions:-

I. PP has to strictly abide by the conditions stipulated by SEAC& SEIAA.

II. If applicable Consent for Establishment" shall be obtained from Maharashtra Pollution Control Board under Air and Water Act and a copy shall be submitted to the Environment department before start of any construction work at the site.

III. Under the provisions of Environment (Protection) Act, 1986, legal action shall be initiated against the project proponent if it was found that construction of the project has been started without obtaining environmental clearance.

IV. The project proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB.

V. The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail.

VI. No further Expansion or modifications, other than mentioned in the EIA Notification, 2006 and its amendments, shall be carried out without prior approval of the SEIAA. In case of deviations or alterations in the project proposal from those submitted to SEIAA for clearance, a fresh reference shall be made to the SEIAA as applicable to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.

VII. This environmental clearance is issued subject to obtaining NOC from Forestry & Wild life angle including clearance from the standing committee of the National Board for Wild life as if applicable & this environment clearance does not necessarily implies that Forestry & Wild life clearance granted to the project which will be considered separately on merit.

4. The environmental clearance is being issued without prejudice to the action initiated under EP Act or any court case pending in the court of law and it does not mean that project proponent has not violated any environmental laws in the past and whatever decision under EP Act or of the Hon'ble court will be binding on the project proponent. Hence this clearance does not give immunity to the project proponent in the case filed against him, if any or action initiated under EP Act.

5. This Environment Clearance is issued purely from an environment point of view without prejudice to any court cases and all other applicable permissions/ NOCs shall be obtained before starting proposed work at site.

6. In case of submission of false document and non-compliance of stipulated conditions, Authority/ Environment Department will revoke or suspend the Environment clearance without any intimation and initiate appropriate legal action under Environmental Protection Act, 1986.

7. Validity of Environment Clearance: The environmental clearance accorded shall be valid as per EIA Notification, 2006, amended from time to time.

8. The above stipulations would be enforced among others under the Water (Prevention and

Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and rules there under, Hazardous Wastes (Management and Handling) Rules, 1989 and its amendments, the public Liability Insurance Act, 1991 and its amendments.

9. Any appeal against this Environment clearance shall lie with the National Green Tribunal (Western Zone Bench, Pune), New Administrative Building, 1st Floor, D-Wing, Opposite Council Hall, Pune, if preferred, within 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

Manisha Patankar-Mhaiskar
(Member Secretary, SEIAA)
24/3/2022

Copy to:

1. Chairman, SEIAA, Mumbai.
2. Secretary, MoEF & CC, IA- Division MOEF & CC
3. Member Secretary, Maharashtra Pollution Control Board, Mumbai.
4. Regional Office MoEF & CC, Nagpur
5. District Collector, Pune.
6. Commissioner, Pimpri Chinchwad Municipal Corporation
7. Regional Officer, Maharashtra Pollution Control Board, Pune.

Signature Not Verified
Digitally signed by Manisha Patankar Mhaiskar
Member Secretary
Date: 3/27/2022 6:24:41 AM

Environment statements as per EC condition Iv For Project

GANGA ASMI

WAKAD PUNE

ANNEXURE

ENVIRONMENTAL STATEMENT

FORM-V (See rule 14)

Environmental Statement for the financial year ending with 31st March

PART-A

i. **Name and address of the owner/ occupier of the industry,Operation or process**. - M/S **SHANTIMOHAN DEVELOPERS LLP**

3rdFloor,SanMahu Complex, Opp. Poona Club, Bund Garden Road ,Camp, Pune – 411001

ii. **Industry category**– Residential and Commercial Building- code 1520

iii. **Production category Units**. –Residentialand Commercial Project

iv. **Year of establishment** - 2021

Date of the last environmental statement submitted. –Environment Submitted for financial year **June 2025**

EC - SIA/MH/MIS/244716/2021 Dated 27-03-2022

PART B

Water and Raw Material Consumption:

Process /Raw water: 7.20 m³/day. Avg Used in Construction Phase. Tanker water has been used during construction phase.

Cooling : NA

Domestic – 21.60 m3 / day Avg water has been used for domestic purpose in construction phase for labour. Tanker water had been used during construction phase.

Name of Product	**Process water consumed per unit of product output**	
	During Previous financial year	**During Current Financial Year**
Flushing	NA -Project is in construction phase Recycled water will be used	Project is in construction phase Recycled water will be used for Flushing in operation phase

	for Flushing in operation phase	
Gardening	NA -Project is in construction phase Recycled water will be used for Gardening in operation phase	NA -Project is in construction phase Recycled water will be used for Gardening in operation phase

Raw Material consumption

	Name of Product	**Consumption of product per unit of output 01-07- 2025 to 01-12-2025**
1	Cement BAGS	241
2	Steel MT	314
3	Crushed Sand+ N sand CUM	1145
4	Bricks and AAC blocks IN NOs	5265
5	RCC IN CUM	3362

* Industry may use codes if disclosing details of raw material would violate contractual obligations, otherwise all industries have to name the raw materials used.

PART-C

Pollution discharged to environment / unit of output (Parameter as specified in the consent issued)

	Pollutant	**Quantity of pollutant discharged (Mass per day)**	**Concentration of pollutions discharges (mass / volume)**	**Percentage of variation from prescribed standards with reasons.**
1	Water	Ref attached report		
2	Air	Ref attached report		
3	Noise	Ref Attached report		

PART-D

HAZARDOUS WASTES

(As specified under Hazardous Wastes (Management & Handling Rules, 1989).

Hazardous Waste	**Total quantity (Kg)**	
	During the previous financial year	**During the current Financial year**
From Process	No hazardous waste generated at site	No hazardous waste generated at site
From Pollution Control Facilities	No hazardous waste generated at site	No hazardous waste generated at site

PART E

SOLID WASTES:

Solid Waste	Total quantity (Kg)	
	During the previous financial year	**During the current Financial year APRIL 1-7-2025 TO 1-12-2025**
1.From Process	**Scrap Steel 0 MT** and Empty cement bags used for material shifting and balance handed over to authorized vendor **Construction waste - 0 cum** had been used for filling at site	**Scrap Steel 5.95 MT** and Empty cement bags used for material shifting and balance handed over to authorized vendor **Construction waste - 3.7 kg/yr** had been used for filling at site
2Pollution Control Facilities	Manure from STP will be used for Gardening in operation phase. Recycled water will be used for Flushing and landscaping . OWC will be used for treatment of biodegradable waste and material will used as a manure in operation phase. MPCB approved External Agency appointed to check Air, Noise and water periodically Swach Agreement in Construction phase Septic Tank for Toilets Periodic Fogging at site	1. Manure from STP will be used for Gardening in operation phase. 2. Recycled water will be used for Flushing and landscaping . 3. OWC will be used for treatment of biodegradable waste and material will used as a manure in operation phase. MPCB approved External Agency appointed to check Air, Noise and water periodically 4. Swach Agreement in Construction phase 5. Septic Tank for Toilets 6. Periodic Fogging at site
3. Quantity recycled or reutilised within the unit.	**Construction Phase** – Construction waste 0 cum had been used for filling in plinth area **Biodegradable waste 15 kg / day** **Non Biodegradable waste -10 Kg/Day .** • Authorized vendor for disposal of wet	**Construction Phase** – **Construction waste 3.7 kg/yr** had been used for filling in plinth area **Biodegradable waste - 48 kg / day** **Non Biodegradable waste - 32 Kg/Day .** • Authorized vendor for disposal of wet and dry waste **Scrap steel sold to vendor waste 0 MT** • Authorized vendor for disposal of wet and dry waste • Scrap steel sold to vendor .

	and dry waste Scrap steel sold to vendor waste -30.32 MT • Authorized vendor for disposal of wet and dry waste • Scrap steel sold to vendor .	

PART F

Please specify the characteristics (in terms of concentration and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

Type of Waste –

- **Hazardous waste**–Nil - There is no Hazardous waste generated at site .
- **Solid waste**-

In Operation Phase-(Waste from preparation Kitchen, vegetable etc) Biodegradable waste will be treated in OWC and the Manure will be used in Landscaping ,

- **In Construction phase**–Separate Bins are provided for wet and Dry waste at site at different locations . Authorized vendor for disposal of wet and dry waste

Construction waste - broken concrete, rubble, plaster etc **3.7 cum** had been used for filling in plinth area

Biodegradable waste – 48 kg / day

Non Biodegradable waste – 32 Kg/Day .

- Authorized vendor for disposal of wet and dry waste .
- Scrap steel sold to vendor .
- All the waste generated at site is non-Toxic, inflammable and Non explosive

PART-G

Impact of the pollution, control measures taken for conservation of natural

Resources and consequently on the cost of production.

Sr No	Activity	Env Impact	Control Measures

1	Excavation	Noise and Air pollution	1.Water sprinkling during excavation to avoid dust 2. Covering of Dumper during excavation by Tarpaulin 3. No excavation work during night 4. Barricading of plot using GI sheet of sufficient height 5. well maintained vehicle during working at site.
2	RCC	Noise and Air Pollution	1. RMC is used for concreting 2.Transporation of vehicle during non peak hour
3	Use of Generator	Noise & Air pollution – smoke generation	1.Aucustic covering provided 2. Periodic maintenance of DG set 3. Use of DG only during power shut off

Others Measures –

- Authorized vendor for disposal of wet and dry waste. Scrap steel sold to vendor
- STP will be provided for the treatment of Grey and Black water .
- The treated water from STP will be used for flushing in Toilets and Garden irrigation,
- The sludge from STP will be used a manure for gardening

PART H

Additional measures/investment proposal for environmental protection including abatement of pollution.

1. Green belt development is planned inside the plot and near plot boundary to minimise pollutant load.
2. Compound wall around plot periphery.
3. Fund had been allotted for the environment protection measures .
4. OWC facility for disposal, Treatment and reuse of wet garbage in operation phase.
5. STP for treatment of grey and black water and sludge from STP will be used as manure after completion.
6. Segregation and disposal of dry waste through External Vendor . Use of RMC in construction
7. Provision of Rain water Harvesting system for the collection of terrace water to recharge the ground water condition.
8. Construction debris is being used for the filling in plinth areas .
9. Energy conservation measures such as us of LED lights for all common real
10. Periodic training session for Engineers, Contractors , Labours to protect environment
11. Toilet Facility at Labour Colony
12. Routine fogging at labour colony

13. Labours deployed to maintain cleanliness at site
14. Provision of cooking fuel for labours by contractor.
15. Provision of safe drinking water at labour colony and at site
16. Insurance for labours

PART I

MISCELLANEOUS:

Any other particulars in respect of environmental protection and abatement of pollution.-

All required control measures have been adopted to protect the environment and to avoid resource depletion such as -

1. Sufficient Environment protection measures is being taken for the protection and conservation of environment.
2. Lectures, site visits and in house Training on environment protection and conservation for contractors, Staff and labours
3. Tool box talks on pollution control, Pollution sources, on routine basis for labours , contractors and staff.
4. Award had been given to labours , contractors and employees to motivate and create environment awareness between all .
5. Eco friendly material is being in used in construction .eg –Crushed sand, RMC,etc
6. Provided Housing and sanitary , Safe Drinking water , Crèche facilities for labours
7. Periodic health check up for labours
8. Excavated soil had been stored properly and will be utilised for landscaping
9. Periodic testing of Water, Soil, Noise level.
10. Barricade to plot boundary to reduce noise level

MAHARASHTRA POLLUTION CONTROL BOARD

Tel: 24010706/24010437
Fax: 24023516
Website: http://mpcb.gov.in
Email: cac-cell@mpcb.gov.in

Kalpataru Point, 2nd and 4th floor, Opp. Cine Planet Cinema, Near Sion Circle, Sion (E), Mumbai-400022

Infrastructure/RED/L.S.I
No:- Format1.0/CC/UAN No.0000135115/CE/2209000498

Date: 11/09/2022

To,
M/s SHANTI MOHAN DEVELOPERS LLP,
GANGA ASMI, SR NO 274 P, 275P, 276P at Wakad,
Tal Mulshi, District Pune.

Your Service is Our Duty

Sub: Consent to Establish for Expansion in Residential & Commercial Construction project under Red Category

Ref:
1. Consent to Establish granted vide No. Format1.0/JD(WPC)/UAN No.0000108525/CE-2107000785 dtd. 14.07.2021
2. Minutes of 11th Consent Committee Meeting of 2022-23 dtd. 01.08.2022

Your application NO. MPCB-CONSENT-0000135115

For: grant of Consent to Establish under Section 25 of the Water (Prevention & Control of Pollution) Act, 1974 & under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981 and Authorization / Renewal ofAuthorization under Rule 6 of the Hazardous & Other Wastes (Management & Transboundry Movement) Rules 2016 is considered and the consent is hereby granted subject to the following terms and conditions and as detailed in the schedule I,II,III & IV annexed to this order:

1. **The Consent to establish is granted for period up to Commissioning of the project or 5 Yrs whichever is earlier**
2. **The capital investment of the project is Rs.125.75 Cr. (As per C.A Certificate submitted by industry).**
3. **The Consent to Establish is valid for expansion in Residential & Commercial Construction project named as M/s SHANTI MOHAN DEVELOPERS LLP, GANGA ASMI, SR NO 274 P, 275P, 276P at Wakad, Tal Mulshi, District Pune on Total Plot Area of 28310.00 SqMtrs for proposed total construction BUA of 137742.04 SqMtrs as per EC granted dated 27.03.2022 including utilities and services.**

Sr.No	Permission Obtained	Plot Area (SqMtr)	BUA (SqMtr)
1	Consent to Establish dtd 14.07.2021	28310.00	88895.51
2	Environmental Clearance dtd 09.02.2021	28310.00	89134.00
3	Environment Clearance dtd 27.03.2022	28310.00	137742.04

4. **Conditions under Water (P&CP), 1974 Act for discharge of effluent:**

Sr No	Description	Permitted (in CMD)	Standards to	Disposal
1.	Trade effluent	Nil	NA	NA

Sr No	Description	Permitted	Standards to	Disposal
2.	Domestic effluent	597	As per Schedule - I	The treated effluent shall be 60% recycled for secondary purposes such as toilet flushing, air conditioning, cooling tower make up, firefighting etc. and remaining shall be connected to the sewerage system provided by local body

5. **Conditions under Air (P& CP) Act, 1981 for air emissions:**

Stack No.	Description of stack / source	Number of Stack	Standards to be achieved
S-1	DG-500 kVA	01	As per Schedule -II
S-2	DG-500 kVA	01	As per Schedule -II
S-3	DG-320 kVA	01	As per Schedule -II

6. **Conditions under Solid Waste Rules, 2016:**

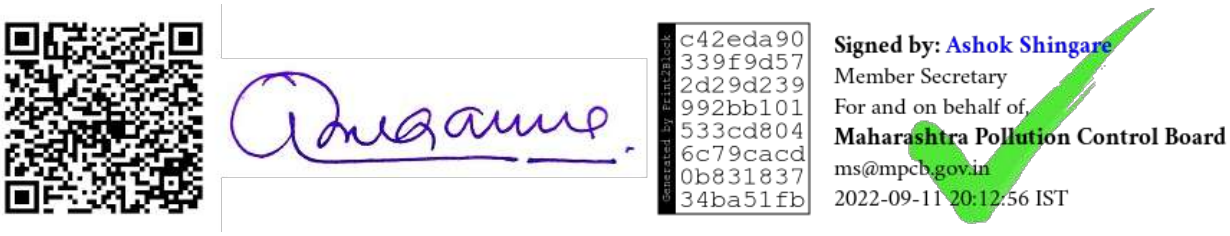
Sr No	Type Of Waste	Quantity & UoM	Treatment	Disposal
1	Dry Waste	1006 Kg/Day	segregation	To Local Body
2	Wet Waste	1502 Kg/Day	Organic waste Converter with composting facility / Biogas digester with composting facility	As Manure
3	STP Sludge	59.7 Kg/Day	Dewatering	As Manure

7. **Conditions under Hazardous & Other Wastes (M & T M) Rules 2016 for treatment and disposal of hazardous waste:**

Sr No	Category No.	Quantity	UoM	Treatment	Disposal
1	5.1 Used or spent oil	100	Ltr/A	Reprocessing	To Authorized Reprocesser

8. This Board reserves the right to review, amend, suspend, revoke etc. this consent and the same shall be binding on the industry.
9. This consent should not be construed as exemption from obtaining necessary NOC/permission from any other Government agencies.
10. Project Proponent shall install online monitoring system for the parameter pH, SS, BOD and flow at the outlet of STP.
11. Project Proponent shall provide Organic waste digester with composting facility or biodigestor with composting facility.
12. Project Proponent shall comply the Construction and Demolition Waste Management Rules, 2016 which is notified by Ministry of Environment, Forest and Climate Change dtd.29/03/2016.
13. The project proponent shall make provision of charging of electric vehicles in atleast 40 % of total available parking area.
14. The project proponent shall take adequate measures to control dust emission and noise level during construction phase.
15. The Project Proponent shall comply with the Environmental Clearance obtained vide No SIA/MH/MIS/244716/2021 dtd. 27.03.2022 for construction project on total Plot area 28310.00 Sq.mtrs, & total construction BUA 137742.04 Sq.mtrs.

16. This consent is issued with overriding effect on earlier Consent to Establish granted vide No. Format1.0/ JD(WPC)/ UAN No.0000108525/CE-2107000785 dtd. 14.07.2021.
17. PP shall submit an affidavit in Boards prescribed format within 15 days regarding compliance of C to E & Environmental Clearance.



Received Consent fee of -

Sr.No	Amount(Rs.)	Transaction/DR.No.	Date	Transaction Type
1	251500.00	MPCB-DR-11621	22/04/2022	NEFT

Copy to:

1. Regional Officer, MPCB, Pune and Sub-Regional Officer, MPCB, Pimpri Chinchwad
- They are directed to ensure the compliance of the consent conditions.
2. Chief Accounts Officer, MPCB,Sion, Mumbai

SCHEDULE-I

Terms & conditions for compliance of Water Pollution Control:

1) A] As per your application, you have proposed to provide Sewage Treatment Plant of designed capacity 610 CMD with MBBR technology for the treatment of 597 CMD of sewage.

B] The Applicant shall operate the sewage treatment plant (STP) to treat the sewage so as to achieve the following standards prescribed by the Board or under EP Act, 1986 and Rules made there under from time to time, whichever is stringent.

Sr.No	Parameters	Limiting concentration not to exceed in mg/l, except for pH
1	pH	5.5-9.0
2	BOD	10
3	COD	50
4	TSS	20
5	NH4 N	5
6	N-total	10
7	Fecal Coliform	less than 100

C] The treated domestic effluent shall be 60% recycled for secondary purposes such as toilet flushing, air conditioning, cooling tower make up, firefighting etc. and remaining shall be utilized on land for gardening and connected to the sewerage system provided by local body.

2) The Board reserves its rights to review plans, specifications or other data relating to plant setup for the treatment of waterworks for the purification thereof & the system for the disposal of sewage or trade effluent or in connection with the grant of any consent conditions. The Applicant shall obtain prior consent of the Board to take steps to establish the unit or establish any treatment and disposal system or and extension or addition thereto.

3) The industry shall ensure replacement of pollution control system or its parts after expiry of its expected life as defined by manufacturer so as to ensure the compliance of standards and safety of the operation thereof.

4) **The Applicant shall comply with the provisions of the Water (Prevention & Control of Pollution) Act,1974 and as amended, and other provisions as contained in the said act.**

Sr. No.	Purpose for water consumed	Water consumption quantity (CMD)
1.	Industrial Cooling, spraying in mine pits or boiler feed	0.00
2.	Domestic purpose	747.00
3.	Processing whereby water gets polluted & pollutants are easily biodegradable	0.00
4.	Processing whereby water gets polluted & pollutants are not easily biodegradable and are toxic	0.00

5) The Applicant shall provide Specific Water Pollution control system as per the conditions of EP Act, 1986 and rule made there under from time to time.

SCHEDULE-II

Terms & conditions for compliance of Air Pollution Control:

1) **As per your application, you have proposed to provide the Air pollution control (APC)system and also proposed to erect following stack (s) and to observe the following fuel pattern-**

Stack No.	Source	APC System provided/proposed	Stack Height(in mtr)	Type of Fuel	Sulphur Content(in %)	Pollutant	Standard
S-1	DG Set-500 kVA	Acoustic Enclosure	5.00	HSD 100 Ltr/Hr	1	SO2	48 Kg/Day
S-2	DG Set-500 kVA	Acoustic Enclosure				SO2	48 Kg/Day
S-3	DG Set 320 kVA	Acoustic Enclosure	3.50	HSD 64 Ltr/Hr		SO2	30.72 Kg/Day

2) The applicant shall operate and maintain above mentioned air pollution control system, so as to achieve the level of pollutants to the following standards.

Total Particular matter	Not to exceed	150 mg/Nm3

3) The Applicant shall obtain necessary prior permission for providing additional control equipment with necessary specifications and operation thereof or alteration or replacemenalteration well before its life come to an end or erection of new pollution control equipment.

4) The Board reserves its rights to vary all or any of the condition in the consent, if due to any technological improvement or otherwise such variation (including the change of any control equipment, other in whole or in part is necessary).

5) **Conditions for utilities like Kitchen, Eating Places, Canteens:-**

a) The kitchen shall be provided with exhaust system chimney with oil catcher connected to chimney through ducting.

b) The toilet shall be provided with exhaust system connected to chimney through ducting.

c) The air conditioner shall be vibration proof and the noise shall not exceed 68 dB(A).

d) The exhaust hot air from A.C. shall be attached to Chimney at least 5 mtrs. higher than the nearest tallest building through ducting and shall discharge into open air in such a way that no nuisance is caused to neighbors.

SCHEDULE-III

Details of Bank Guarantees:

Sr. No.	Consent(C2E/C2O/C2R)	Amt of BG Imposed	Submission Period	Purpose of BG	Compliance Period	Validity Date
1	C to E	Rs 10 Lakhs	15 Days	Compliance of Consent conditions and EC conditions	upto Commissioning of the Project	upto Commissioning of the Project

** The above Bank Guarantee(s) shall be submitted by the applicant in favour of Regional Officer at the respective Regional Office within 15 days of the date of issue of Consent. **# Existing BG obtained for above purpose if any may be extended for period of validity as above.**

BG Forfeiture History

Srno.	Consent (C2E/C2O/C2R)	Amount of BG imposed	Submission Period	Purpose of BG	Amount of BG Forfeiture	Reason of BG Forfeiture
NA						

BG Return details

Srno.	Consent (C2E/C2O/C2R)	BG imposed	Purpose of BG	Amount of BG Returned
NA				

SCHEDULE-IV

Conditions during construction phase

A	During construction phase, applicant shall provide temporary sewage and MSW treatment and disposal facility for the staff and worker quarters.
B	During construction phase, the ambient air and noise quality shall be maintained and should be closely monitored through MoEF approved laboratory.
C	Noise should be controlled to ensure that it does not exceed the prescribed standards. During night time the noise levels measured at the boundary of the building shall be restricted to the permissible levels to comply with the prevalent regulations.

General Conditions:

1 The applicant shall provide facility for collection of samples of sewage effluents, air emissions and hazardous waste to the Board staff at the terminal or designated points and shall pay to the Board for the services rendered in this behalf.

2 The firm shall strictly comply with the Water (P&CP) Act, 1974, Air (P&CP) Act,1981 and Environmental Protection Act 1986 and Solid Waste Management Rule 2016, Noise (Pollution and Control) Rules, 2000 and E-Waste (Management & Handling Rule 2011.

3 Drainage system shall be provided for collection of sewage effluents. Terminal manholes shall be provided at the end of the collection system with arrangement for measuring the flow. No sewage shall be admitted in the pipes/sewers downstream of the terminal manholes. No sewage shall find its way other than in designed and provided collection system.

4 Vehicles hired for bringing construction material to the site should be in good condition and should conform to applicable air and noise emission standards and should be operated only during non-peak hours.

5 Conditions for D.G. Set

a) Noise from the D.G. Set should be controlled by providing an acoustic enclosure or by treating the room acoustically.

b) Industry should provide acoustic enclosure for control of noise. The acoustic enclosure/ acoustic treatment of the room should be designed for minimum 25 dB (A) insertion loss or for meeting the ambient noise standards, whichever is on higher side. A suitable exhaust muffler with insertion loss of 25 dB (A) shall also be provided. The measurement of insertion loss will be done at different points at 0.5 meters from acoustic enclosure/room and then average.

c) Industry should make efforts to bring down noise level due to DG set, outside industrial premises, within ambient noise requirements by proper sitting and control measures.

d) Installation of DG Set must be strictly in compliance with recommendations of DG Set manufacturer.

e) A proper routine and preventive maintenance procedure for DG set should be set and followed in consultation with the DG manufacturer which would help to prevent noise levels of DG set from deteriorating with use.

f) D.G. Set shall be operated only in case of power failure.

g) The applicant should not cause any nuisance in the surrounding area due to operation of D.G. Set.

h) The applicant shall comply with the notification of MoEFCC, India on Environment (Protection) second Amendment Rules vide GSR 371(E) dated 17.05.2002 and its amendments regarding noise limit for generator sets run with diesel.

6 Solid Waste – The applicant shall provide onsite municipal solid waste processing system & shall comply with Solid Waste Management Rule 2016 & E-Waste (M & H) Rule 2011.

7 Affidavit undertaking in respect of no change in the status of consent conditions and compliance of the consent conditions the draft can be downloaded from the official web site of the MPCB.

8 Applicant shall submit official e-mail address and any change will be duly informed to the MPCB.

9 The treated sewage shall be disinfected using suitable disinfection method.

10 The firm shall submit to this office, the 30th day of September every year, the environment statement report for the financial year ending 31st march in the prescribed Form-V as per the provision of rule 14 of the Environmental (Protection) Second Amended rule 1992.

11 The applicant shall obtain Consent to Operate from Maharashtra Pollution Control Board before commissioning of the project.

This certificate is digitally & electronically signed.

MAHARASHTRA POLLUTION CONTROL BOARD

Tel: 24010706/24010437
Fax: 24023516
Website: http://mpcb.gov.in
Email: cac-cell@mpcb.gov.in

Kalpataru Point, 2nd, 3rd and 4th floor, Opp. Cine Planet Cinema, Near Sion Circle, Sion (E), Mumbai-400022

Infrastructure/RED/L.S.I
No:- Format1.0/CC/UAN No.0000205222/CR/2503004223

Date: 31/03/2025

To,
SHANTI MOHAN DEVELOPERS LLP,
GANGA ASMI A BUILDING (1ST TO 7TH FLOOR), 274 P,275P,276P at Wakad, Mulshi, Pune

Your Service is Our Duty

Sub: Renewal of Consent to Operate (Part I) for Residential and Commercial construction project under Red Category

Ref:

1. Application submitted by SRO - Pune II vide No. MPCB-CONSENT-0000205222
2. Consent to Establish - Format1.0/JD(WPC)/UAN No.0000108525/CE-2107000785 dated 14/07/2021
3. Consent to Establish (Expansion) - Format1.0/CC/UAN No.0000135115/CE/2209000498 dated 11/09/2022
4. Environmental Clearance - EC22B038MH110628 dated 27/03/2022
5. Minutes of 12th Consent Committee Meeting dated 04/12/2024
6. Minutes of 16th Consent Committee Meeting dated 20/03/2025.

Your application NO. MPCB-CONSENT-0000205222

For: grant of Consent to Renewal under Section 26 of the Water (Prevention & Control of Pollution) Act, 1974 & under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981 and Authorization / Renewal ofAuthorization under Rule 6 of the Hazardous & Other Wastes (Management & Transboundry Movement) Rules 2016 is considered and the consent is hereby granted subject to the following terms and conditions and as detailed in the schedule I,II,III & IV annexed to this order:

1. **Renewal of Consent to Operate (Part I) is hereby granted for the period up to 31/01/2030**
2. **The capital investment of the project is Rs.5.7263 Cr. (As per C.A Certificate submitted by industry).**
3. **The Consent to Renewal is valid for Residential & Commercial Construction Project named as SHANTI MOHAN DEVELOPERS LLP, GANGA ASMI A BUILDING (1ST TO 7TH FLOOR), 274 P,275P,276P at Wakad, , MULSHI, Pune on Total Plot Area of 28310 SqMtrs for construction BUA of 3976.56 SqMtrs out of Total Construction BUA of 137742.04 SqMtrs as per EC granted dated 27/03/2022 including utilities and services**

Sr.No	Permission Obtained	Plot Area (SqMtr)	BUA (SqMtr)
1	Consent to Establish dated 14/07/2021	28310.00	88895.51
2	Consent to Establish (Expansion) dated 11/09/2022	28310.00	137742.04
3	Environmental Clearance dated 27/03/2022	28310.00	137742.04

4. **Conditions under Water (P&CP), 1974 Act for discharge of effluent:**

Sr No	Description	Permitted (in CMD)	Standards to	Disposal
1.	Trade effluent	Nil	NA	NA
2.	Domestic effluent	27	As per Schedule - I	The treated effluent shall be 60% recycled for secondary purposes such as toilet flushing, air conditioning, cooling tower make up, firefighting etc. and remaining shall be connected to the sewerage system provided by local body

5. **Conditions under Air (P& CP) Act, 1981 for air emissions:**

Stack No.	Description of stack / source	Number of Stack	Standards to be achieved
S1	DG Set - 45 KVA	1	As per Schedule -II

6. **Conditions under Solid Waste Rules, 2016:**

Sr No	Type Of Waste	Quantity & UoM	Treatment	Disposal
1	Bio Degradable Waste	45 Kg/Day	OWC	USED AS A MANURE
2	Non-Bio Degradable Waste	30 Kg/Day	DISPOSED THROUGH AUTHORIZRED VENDOR	DISPOSED THROUGH AUTHORIZRED VENDOR

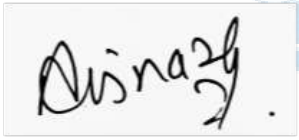
7. **Conditions under Hazardous & Other Wastes (M & T M) Rules 2016 for Collection, Segregation, Storage, Transportation, Treatment and Disposal of hazardous waste:**

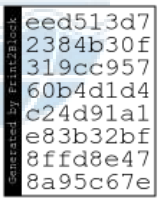
Sr No	Category No.	Quantity	UoM	Treatment	Disposal
1	5.1 Used or spent oil	100	Ltr/A	Reprocessing	To Authorized Reprocesser

8. The Board reserves the right to review, amend, suspend, revoke etc. this consent and the same shall be binding on the industry.
9. This consent should not be construed as exemption from obtaining necessary NOC/permission from any other Government authorities.
10. Project Proponent shall provide Organic waste digester with composting facility or biodigestor with composting facility.
11. Project Proponent shall operate the Organic waste digester with composting facility or biodigestor with composting facility effectively
12. Project Proponent shall comply the Construction and Demolition Waste Management Rules, 2016 which is notified by Ministry of Environment, Forest and Climate Change dtd.29/03/2016.
13. The project proponent shall make provision of charging of electric vehicles in atleast 40 % of total available parking area.
14. The project proponent shall take adequate measures to control dust emission and noise level during construction phase.

15. The Project Proponent shall comply with the Environmental Clearance obtained vide No EC22B038MH110628 dtd 27/03/2022 for construction project having total plot area of 28310.0 Sqm and total construction BUA of 137742.04 Sqm as per specific condition of EC.
16. PP shall obtain Environmental Clearance from competent authority for the proposed activity. PP shall not take effective steps towards construction without obtaining Environmental Clearance.
17. PP shall submit an affidavit in Boards prescribed format within 15 days regarding compliance of C to E & Environmental Clearance/CRZ Clearance.
18. This consent is issued as per the 16th Consent Committee Meeting dated 20/03/2025.
19. As per the decision in the 16th CC meeting dated 20/03/2025, it was decided to give remaining 12% BG interest fees from date of application i.e. 26/04/2024 to 31/03/2025 i.e. for 213 days. Thus 12% BG interest fees calculated as = 12% of Rs. 10 lakhs x 213/365= Rs. 70027.39/-. Payment Received.
20. This consent is issued after receipt of the Penal Fees of Rs. 140137/- and 12% BG interest fees of Rs. 80219/-. Payments Received.

This consent is issued on the basis of information/documents submitted by the Applicant/Project Proponent, if it has been observed that the information submitted by the Applicant/Project Proponent is false, misleading or fraudulent, the Board reserves its right to revoke the consent & further legal action will be initiated against the Applicant/Project Proponent.





Signed by: Dr.Avinash Dhakne
Member Secretary
For and on behalf of,
Maharashtra Pollution Control Board
ms@mpcb.gov.in
2025-03-31 11:50:35 IST

Received Consent fee of -

Sr.No	Amount(Rs.)	Transaction/DR.No.	Date	Transaction Type
1	125000.00	MPCB-DR-25954	26/04/2024	NEFT
2	160685.00	MPCB-DR-28437	12/08/2024	NEFT
3	60356.00	MPCB-DR-29649	14/10/2024	NEFT
4	70027.40	TXN2503005362	22/03/2025	Online Payment

-

Copy to:

1. Regional Officer, MPCB, Pune and Sub-Regional Officer, MPCB, Pune II
- They are directed to ensure the compliance of the consent conditions.
2. Chief Accounts Officer, MPCB,Sion, Mumbai

SCHEDULE-I

Terms & conditions for compliance of Water Pollution Control:

1) A] As per your application, you have provided MBBR based Sewage Treatment Plants (STPs) of combined capacity **50 CMD for treatment of domestic effluent of 27 CMD.**

B] The Applicant shall operate the sewage treatment plant (STP) to treat the sewage so as to achieve the following standards prescribed by the Board or under EP Act, 1986 and Rules made there under from time to time, whichever is stringent.

Sr.No	Parameters	Limiting concentration not to exceed in mg/l, except for pH
1	pH	5.5-9.0
2	BOD	10
3	COD	50
4	TSS	20
5	NH4 N	5
6	N-total	10
7	Fecal Coliform	less than 100

C] The treated domestic effluent shall be 60% recycled for secondary purposes such as toilet flushing, air conditioning, cooling tower make up, firefighting etc. and remaining shall be utilized on land for gardening and connected to the sewerage system provided by local body.

2) The Board reserves its rights to review plans, specifications or other data relating to plant setup for the treatment of waterworks for the purification thereof & the system for the disposal of sewage or trade effluent or in connection with the grant of any consent conditions. The Applicant shall obtain prior consent of the Board to take steps to establish the unit or establish any treatment and disposal system or and extension or addition thereto.

3) The industry shall ensure replacement of pollution control system or its parts after expiry of its expected life as defined by manufacturer so as to ensure the compliance of standards and safety of the operation thereof.

4) **The Applicant shall comply with the provisions of the Water (Prevention & Control of Pollution) Act,1974 and as amended, and other provisions as contained in the said act.**

Sr. No.	Purpose for water consumed	Water consumption quantity (CMD)
1.	Industrial Cooling, spraying in mine pits or boiler feed	0.00
2.	Domestic purpose	40.50
3.	Processing whereby water gets polluted & pollutants are easily biodegradable	0.00
4.	Processing whereby water gets polluted & pollutants are not easily biodegradable and are toxic	0.00
5.	Grandening/Other consumption	O

5) The Applicant shall provide Specific Water Pollution control system as per the conditions of EP Act, 1986 and rule made there under from time to time.

SCHEDULE-II

Terms & conditions for compliance of Air Pollution Control:

1) **As per your application, you have provided the Air pollution control (APC)system and erected following stack (s) and to observe the following fuel pattern-**

Stack No.	Source	APC System provided/proposed	Stack Height(in mtr)	Type of Fuel	Sulphur Content(in %)	Pollutant	Standard
S1	DG Set - 45 KVA	Acoustic Enclosure	2.00	HSD 15 Kg/Hr	1	SO2	2.4 Kg/Day

2) The applicant shall operate and maintain above mentioned air pollution control system, so as to achieve the level of pollutants to the following standards.

Total Particular matter	Not to exceed	150 mg/Nm3

3) The Applicant shall obtain necessary prior permission for providing additional control equipment with necessary specifications and operation thereof or alteration or replacemenalteration well before its life come to an end or erection of new pollution control equipment.

4) The Board reserves its rights to vary all or any of the condition in the consent, if due to any technological improvement or otherwise such variation (including the change of any control equipment, other in whole or in part is necessary).

SCHEDULE-III

Details of Bank Guarantees:

Sr. No.	Consent(C2E/C2O/C2R)	Amt of BG Imposed	Submission Period	Purpose of BG	Compliance Period	Validity Date
1	C2O	Rs.10 Lakhs	Within 15 Days	Compliance of Consent Conditions & EC Conditions	31/01/2030	31/01/2031

** The above Bank Guarantee(s) shall be submitted by the applicant in favour of Regional Officer at the respective Regional Office within 15 days of the date of issue of Consent. **# Existing BG obtained for above purpose if any may be extended for period of validity as above.**

BG Forfeiture History

Srno.	Consent (C2E/C2O/C2R)	Amount of BG imposed	Submission Period	Purpose of BG	Amount of BG Forfeiture	Reason of BG Forfeiture
NA						

BG Return details

Srno.	Consent (C2E/C2O/C2R)	BG imposed	Purpose of BG	Amount of BG Returned
NA				

SCHEDULE-IV

General Conditions:

1 The applicant shall provide facility for collection of samples of sewage effluents, air emissions and hazardous waste to the Board staff at the terminal or designated points and shall pay to the Board for the services rendered in this behalf.

2 The firm shall strictly comply with the Water (P&CP) Act, 1974, Air (P&CP) Act,1981 and Environmental Protection Act 1986 and Solid Waste Management Rule 2016, Noise (Pollution and Control) Rules, 2000 and E-Waste (Management & Handling Rule 2011.

3 Drainage system shall be provided for collection of sewage effluents. Terminal manholes shall be provided at the end of the collection system with arrangement for measuring the flow. No sewage shall be admitted in the pipes/sewers downstream of the terminal manholes. No sewage shall find its way other than in designed and provided collection system.

4 Vehicles hired for bringing construction material to the site should be in good condition and should conform to applicable air and noise emission standards and should be operated only during non-peak hours.

5 Conditions for D.G. Set

a) Noise from the D.G. Set should be controlled by providing an acoustic enclosure or by treating the room acoustically.

b) Industry should provide acoustic enclosure for control of noise. The acoustic enclosure/ acoustic treatment of the room should be designed for minimum 25 dB (A) insertion loss or for meeting the ambient noise standards, whichever is on higher side. A suitable exhaust muffler with insertion loss of 25 dB (A) shall also be provided. The measurement of insertion loss will be done at different points at 0.5 meters from acoustic enclosure/room and then average.

c) Industry should make efforts to bring down noise level due to DG set, outside industrial premises, within ambient noise requirements by proper sitting and control measures.

d) Installation of DG Set must be strictly in compliance with recommendations of DG Set manufacturer.

e) A proper routine and preventive maintenance procedure for DG set should be set and followed in consultation with the DG manufacturer which would help to prevent noise levels of DG set from deteriorating with use.

f) D.G. Set shall be operated only in case of power failure.

g) The applicant should not cause any nuisance in the surrounding area due to operation of D.G. Set.

h) The applicant shall comply with the notification of MoEFCC, India on Environment (Protection) second Amendment Rules vide GSR 371(E) dated 17.05.2002 and its amendments regarding noise limit for generator sets run with diesel.

6 Solid Waste – The applicant shall provide onsite municipal solid waste processing system & shall comply with Solid Waste Management Rule 2016 & E-Waste (M & H) Rule 2011.

7 Affidavit undertaking in respect of no change in the status of consent conditions and compliance of the consent conditions the draft can be downloaded from the official web site of the MPCB.

8 Applicant shall submit official e-mail address and any change will be duly informed to the MPCB.

9 The treated sewage shall be disinfected using suitable disinfection method.

10 The firm shall submit to this office, the 30th day of September every year, the environment statement report for the financial year ending 31st march in the prescribed Form-V as per the provision of rule 14 of the Environmental (Protection) Second Amended rule 1992.

11 The applicant shall make an application for renewal of the consent at least 60 days before date of the expiry of the consent.

This certificate is digitally & electronically signed.

जलनि:सारण विभाग

पिंपरी चिंचवड महानगरपालिका पिंपरी -१८
'ड' क्षेत्रीय कार्यालय, जलनि:सारण विभाग
जा. क्र. डक्षेका / जनि / ४९१ / २०२१
दिनांक :- १२.०१.२०२१.

प्रति,

मे. शांती मोहन डेव्हलपर्स एल. एल. पी. तर्फे
भागीदार श्री. अतुल जयप्रकाश गोयल
३ रा मजला, साम माहू कॉम्पलेक्स, ५ बंडगार्डन रोड,
पुना क्लब समोर, पुणे ४११००१

विषय :- इमारतीच्या अंतर्गत जलनि:सारण व्यवस्थेअंतर्गत परवानगी ना हरकत दाखला देण्याबाबत...
संदर्भ :- १) अर्ज क्र.१०३३२१२२०००५९८९ दिनांक - ३०.०८.२०२१.
२) या विभागाकडील जलनि:सारण परवानगी ना हरकत दाखला क्र. Engg/Sewerage/0173/21 दिनांक 12.04.2021

महाशय,

आपण नियोजित बांधकामाचे नकाशे व अर्ज दाखल केल्यावरून कळविणेत येते कि, आपण मौजे वाकड येथील सर्व्हे नं. २७४/१,२७४/२,२७५/१/१,२७५/१/२अ, २७५/१/२ब, २७५/१/३, २७५/१/३/१, २७५/१/३/२, २७५/१/३/३, २७५/२, २७६/२(पै) या मिळकतीसाठी ड्रेनेज डेव्हलपमेंट चार्जेस महापालिका नियमानुसार ठरविणेत येतील त्याप्रमाणे भरणेचे मान्य केले सबब या अटीवर सोबतच्या नकाशा व बांधकाम संमती मिळण्यास बांधकाम परवानगी विभागाकडे दाखल करण्यास या विभागाची हरकत नाही.

८४६३३.७६ चौ. मी. बांधकाम क्षेत्राकरिता
२८३१०.२० चौ. मी. जागेचे क्षेत्राकरिता.

विशेष अटी :-

१) प्रत्यक्ष काम सुरू करण्यापुर्वी ड्रेनेजचे नकाशे मान्य करून घ्यावे लागतील. व ड्रेनेज डेव्हलपमेंट चार्जेस भरल्याशिवाय ड्रेनेज पुर्णत्वाचा दाखला मिळणार नाही.
२) पावसाचे पाण्याचा निचरा होणेची स्वतंत्र व्यवस्था करणेत यावी. पावसाचे पाण्याची नलिका ड्रेनेज लाईन जोडण्यात येऊ नये.
३) सदर गृहप्रकल्पामधील इमारतींसाठी महाराष्ट्र प्रदुषण नियंत्रण मंडळाच्या नियमानुसार आवश्यक क्षमतेचा मैलाशुद्धिकरण प्रकल्प बांधणे बंधनकारक राहील.
४) सदर गृहप्रकल्पाचे प्रत्यक्ष काम सुरू करण्यापुर्वी मैलाशुद्धिकरण प्रकल्पाचे (STP) स्थान, क्षमता, अंमलबजावणी इत्यादीची माहीती दर्शविणा-या नकाशाच्या आराखड्यास मंजूरी बांधकाम परवानगी विभागाकडून घेणेत यावी.
५) या विभागाकडील पुर्णत्व ना हरकत घेणेपुर्वी पर्यावरण विभागाचा Environmental clearance दाखला, महाराष्ट्र प्रदुषण नियंत्रण मंडळ यांचे कडील Consent to establish and consent to operate चा दाखला सादर करणे बंधनकारक राहील.
६) गृहप्रकल्पामधील प्लंबिंग कार्याची अंमलबजावणी करण्यापुर्वी या विभागाकडून प्लंबिंग कार्यप्रणालीची पुर्व मंजूरी घ्यावी. सर्व ड्रेनेज लाईन, चेंबर्स, प्लंबिंग लाईन वेगवेगळ्या रंगात चिन्हांकित केलेली लेआऊट सादर करणेत यावा. प्लंबिंग साहित्य संबधित आय. एस. कोड, एनबीसी इत्यादीची पुष्टी करण्यात यावी.
७) प्रक्रियायुक्त पाणी बागकाम, कार धुणे, शौचालय फ्लशिंग सिंचन इत्यादीकरिता वापरावे. पिण्याचे पाणी, अंघोळीसाठी, भांडी धुण्यासाठी, कपडे इत्यादीसाठी दुहेरी नळ व पंपींग यंत्रणा बसविणे बंधनकारक राहील.
८) पावसाचे पाण्याचा निचरा होणेची स्वतंत्र व्यवस्था करणेत यावी. पावसाचे पाण्याची नलिका ड्रेनेज लाईन जोडण्यात येऊ नये.
९) प्रक्रियायुक्त सर्व पाण्याचा वापर करणेत यावा. ड्रेनेज लाईनमध्ये सोडण्यात येऊ नये. ड्रेनेज लाईन कनेक्शन जोडण्यासाठी मनपाकडून कोणतीही परवाना देणेत येणार नाही.
१०) गृहप्रकल्पाअंतर्गत (मैलाशुद्धिकरण प्रकल्प) याबाबत कोणतीही कायदेशीर बाब उद्भवल्यास / दुर्घटना उद्भवल्यास अपघात घडसेल अशा परिस्थितीत त्याची संपुर्ण खर्चासह निरसन करण्याची जबाबदारी विकसक / गृहनिर्माण संस्था यांची असेल. गृहप्रकल्पाअंतर्गत अश्या कोणत्याही प्रकारच्या दुर्घटनेस महानगरपालिकेची जबाबदार नाही.
११) अर्जदार / विकसक वेळोवेळी एनसीबी आणि युडीसीपीआरच्या नियमांचे शुल्कांचे पालन करणे बंधनकारक राहील. तसेच महानगरपालिकेच्या अधिकारातील नियमांमध्ये आवश्यक योग्य शुल्क आकारण्याचा अधिकार महानगपालिकेस राहील.
१२) प्रक्रियायुक्त पाणी बागकाम, कार धुणे, शौचालय फ्लशिंग सिंचन इत्यादीसाठी पाण्याचा वापर केल्यानंतर अतिरिक्त मनपाच्या उपलब्ध कार्यान्वित पावसाळी पाण्याच्या (SWD) नलिकेस स्थापत्य विभागाच्या पूर्वपरवानगीने विकसक यांनी स्वखर्चाने जोडण्यात यावे. कोणत्याही परिस्थितीत ते महानगरपालिकेच्या ड्रेनेज लाईनला जोडणेत येऊ नये.
१३) सदर प्रकरणी काही शंका असल्यास, आंतर संरक्षण, युडीसीपीआर-२०२० च्या संबधित कलमे अंतिम राहतील.
१४) सदर सोसायटी / अपार्टमेंट यांनी भविष्यात मैलाशुद्धिकरण प्रकल्प चालविणेस नकार दिल्यास अथवा मैलाशुद्धिकरण प्रकल्प बंद ठेवल्यास याबाबत कोणतीही कायदेशीर बाब उद्भवल्यास त्याची संपुर्ण खर्चासह निरसन करण्याची जबाबदारी विकसकाची राहील.

शेरा :- मौजे वाकड येथील सर्व्हे नं. २७४/१, २७४/२,२७५/१/१, २७५/१/२अ, २७५/१/२ब, २७५/१/३, २७५/१/३/१, २७५/१/३/२, २७५/१/३/३, २७५/२, २७६/२(पै) मधील श्री. अतुल जयप्रकाश गोयल आणि श्री. समिर दर्शन शहा यांचे २८३१०.२० चौ. मी. जागेच्या क्षेत्रामधील नियोजित गृहप्रकल्पामधील विंग१ मधील २५५ सदनिका विंग२ मधील २८४ सदनिका, विंग३ मधील २५५ सदनिका व १९३.९० चौ. मी. व्यापारी बांधकाम क्षेत्र, म्हाडाचे ८८ सदनिका असे एकुण ८८२ सदनिका, विंग३ मधील १९३.९० चौ. मी. व्यापारी बांधकाम क्षेत्र, बिल्डींग ए मधील २३०१.७८ चौ. मी. व्यापारी बांधकाम क्षेत्राकरिता वरील दिलेल्या विशेष अटींवर सदरचा सुधारीत जलनि:सारण बांधकाम परवानगी ना हरकत दाखला देणेत येत आहे.

पिंपरी चिंचवड महानगरपालिका स्थापना ११/१०/१९८२ पिंपरी-४११०१८

उप अभियंता
'ड' क्षेत्रीय कार्यालय, जलनि:सारण विभाग
पिंपरी चिंचवड महानगरपालिका, पिंपरी -१८

प्रत :- मा. सह शहर अभियंता, बांधकाम परवानगी विभाग,
पिंपरी चिंचवड महानगरपालिका पिंपरी -१८, यांना माहितीसाठी सादर.

पिंपरी चिंचवड महानगरपालिका,
पाणी पुरवठा विभाग, पिंपरी - १८.
क्र. पापु / - / कावी / 2061 / २०२१.
दि. 20 / 09 / २०२१.

प्रति,

श्री. / मे. अनुज जयप्रकाश गोयल;
सर्वे- 208/9, वाकड;
पुणे-57.

सदुद्धारीत

विषय :- आपले नियोजित बांधकामासाठी पाणीपुरवठा विभागाकडील 'ना' हरकत प्रमाणपत्रा बाबत...

संदर्भ :- अर्ज क्र. :- 9033292200059ECC दिनांक - 30/08/2029.

उपरोक्त संदर्भिय पत्रानुसार आपले नियोजित बांधकामाचे नकाशे दाखले केल्यावरुन आपणास कळविण्यात येते की, **मौजे-** वाकड येथील **स.नं.-** 208/9, 208/2, 209/9/9, 209/9/2A, 209/9/2B, 209/9/3/9, 209/9/3/2, 209/9/3/3, 209/2, 206/2(P) **सि.स.नं.-** — **प्लॉट नं.-** — मधील नकाशात दाखविल्याप्रमाणे खालील अटीस अधिन राहून सोबतचा नकाशा समंती मिळणेसाठी बांधकाम परवानगी विभागाकडे दाखल करण्याची या विभागाची हरकत नाही.

१) जमिनीखालील पाण्याची टाकी किमान 232C3 **लिटर** क्षमतेची घ्यावी.
२) इमारतीवरील पाण्याची टाकी किमान E94422 **लिटर** क्षमतेची घ्यावी.
३) जमिनीखालील पाण्याची टाकी आर.सी.सी. **(M-20 Grade)** मध्ये करावी.
४) जमिनीखालील पाण्याची टाकीवर स्टँन्ड बायसह योग्य त्या क्षमतेचा विदयुत पंप घ्यावा.
५) जमिनीखालील पाण्याची टाकी जमिनीच्या पातळीपेक्षा जास्तीत जास्त **0.30 ते 0.50 मी.**ने उंच असावी.
६) जमिनीखालील पाण्याची टाकी मुख्य रस्त्याच्या लगत असावी व नकाशात दर्शविलेल्या जागेवर जमिनीखालील पाण्याची टाकी घेणेत यावी.
७) जमिनीखालील व इमारतीवरील टाक्यांवर सुरक्षिततेच्या दृष्टीन झाकणे बसवावित.
८) उपरोक्त इमारतीकरीता जमिनीखालील व इमारतीवरील पाण्याच्या टाक्यांची क्षमता ही अग्निक्षमणासाठी गरज असलेल्या पाण्याच्या आवश्यकतेखेरीज आहे.
९) सदर नियोजित गृहसंकुलांचे ठिकाणी म.न.पा. ची पाणीपुरवठा योजना (नवीन पाण्याच्या उंचटाक्या वितरण व्यवस्था) पूर्ण क्षमतेने विकसित होईपर्यंत होणाऱ्या नविन गृहसंकुलांना संबंधीत विकसकाने स्वंतत्ररित्या पाणीपुरवठा सुविधा उपलब्ध करावी.
१०) म.न.पा. कडून इमारत बांधकामासाठी पाणीपुरवठा होऊ शकणार नाही.
११) म.न.पा. ची मुख्यपाईपलाईन पर्यंत विकसकाने डिझाईनप्रमाणे पाईपलाईन टाकावी.
१२) PCMC मार्फत नविन पाणीपुरवठा प्रकल्प विकसीत होईपर्यंत विकसकास **सदनिका/वाणिज्य** धारकांना **पझेसेन नंतर हमीपत्रामध्ये नमुद केल्याप्रमाणे स्वखर्चाने पाणिपुरवठा करणेच्या अटिवर सदरचा** दाखला देणेत येत आहे.
१३) उपरोक्त ठिकाणी **रेन वॉटर हार्वेस्टींगची** व्यवस्था म.न.पा. नियमाप्रमाणे करण्यात यावी. दर्शविलेल्या डिझाईन प्रमाणे बोरवेल मार्फत रेन वॉटर हार्वेस्टींग करणे अनिवार्य आहे. पिण्याचे पाणी, वापर करण्यासाठीचे पाणी व **RECIRCULATION** साठी लागण्याऱ्या पाणी साठविणे करीता स्वतंत्र पाण्याची टाकी व पाईप लाईन करणेच्या अटिवर सदरचा दाखला देणेत येत आहे.
१४) पुर्णत्वाचा "ना" दाखला घेणे अगोदर **CGWA** विभागाकडील "ना" हरकत दाखला व **MEP** अभियंता यांचे टेस्टींग व पुर्णत्वाचा दाखला सादर करणेच्या अटिवर सदर दाखला देणेत येत आहे.

१५) पुर्णत्वाचा "ना" दाखला घेणे अगोदर नळांना **AERATORS** बसविणे व **STP** च्या **TREATED** पाण्यासाठी व बोअरवेलचे पाण्यासाठी **वॉटर मिटर** बसविणेच्या अटिवर सदरचा दाखला देणेत येत आहे.

सदरचा सुधारीत दाखला वाणिज्य इमारत क्षेत्र= Bldg-A = 2301.78sqm. व वाणिज्य क्षेत्र= Wing-3 = 193.90sqm. व CC2 सदनिकां (Wing-1 = 255 Ten, Wing-2 = 284 Ten, Wing-3 = 255 Ten, MHADA = 88 Ten) करीना देणेत आला असे.

परंतु एकूणच प्रकल्पाच्या अंतर्गत पाणीपुरवठा व्यवस्थेसाठी विकसकांने योग्य ते तांत्रिक नियोजन (आवश्यक भासल्यास पंपीग व इतर व्यवस्था) करावे याची संपूर्ण जबाबदारी विकसक / सोसायटीची राहील.

तथापी वर नमुद केलेल्या अटींचे पालन न केल्यास, बांधकाम पुर्णत्वाचा दाखला मिळण्याकरीता आवश्यक असलेला पाणीपुरवठा विभागाकडील 'ना' हरकत दाखला मिळणार नाही याची नोंद घ्यावी.

कार्यकारी अभियंता

पाणीपुरवठा विभाग, ग्रॅव्हिटी ('ड' क्षेत्रिय कार्यालय),
पिंपरी चिंचवड महानगरपालिका, पिंपरी - १८.

प्रत - १) मा. उपशहर अभियंता,
यांना माहितीसाठी व पुढील कार्यवाहीसाठी.
२) मा. उप संचालक, नगररचना,
यांना माहितीसाठी व पुढील कार्यवाहीसाठी.

पिंपरी चिंचवड महानगरपालिका
अग्निशमन विभाग
Pimpri Chinchwad Municipal Corporation
Fire Department.

File No:- 714 O.W.No:- Fire/01/5RC-203/IOD-6/WS /714/2021. Date:- 8 / 12 /2021

Fire IOD for Building

Token No:- 103321220003620 Token Dt:- 16/07/2021

With reference to the application and Plans submitted, Dt. 16/07/2021 by the under mentioned applicant, for IOD NOC, case scrutiny is done by the concerned Officer of the fire department with respect to the submitted Layout plan and documents.

Accordingly, IOD Fire NOC is being herewith issued considering Unified **Development Control Rules** of State Govt order No.TPS1818/Pra. Kra.236/18/Viyo.Prayo./Cl.27 (1cc)(g)&Cl.20(4),UD-13, Dt - 02/12/2020, NBC 2016 – Part IV, at the under mentioned site, subject to compliance of the following conditions.

Proposed Site Address-
S.No. 274, 275, 276,(P), At- Wakad, Pune.

Plot Area	27664.83	Sq.Mtrs
Permissible FSI Area (Incl. Ancillary FSI)	84703.88	Sq.Mtrs

Building Details –

Bldg. Nos.	Height (From GL to Slab) Mtrs.	No. of Floors	Net Built up Area (Sq.Mtrs)	Gross Built up Area (Sq.Mtrs)	Occupancy Use Type	Bldg. Classification
Wing-1	108.00	GP+5UP+01PoPr.+28	27054.69	38756.76	Mix (Resi.+Comm.)	Mix.
Wing-2	108.00	GP+5UP+01PoPr.+28	28028.70	39734.74	Mix (Resi.+Comm.)	Mix.
Wing-3	108.00	GP+5UP+01PoPr.+28	27248.59	38977.77	Mix (Resi.+Comm.)	Mix.
Wing-A	26.10	GP+08	2359.35	14869.76	Comm.	Comm.
MAHADHA	108.00	GP+5UP+01PoPr.+28	5534.87	5534.87	Mix (Resi.+Comm.)	Mix.

- This is just a **Token Approval**, issued only for full potential plan sanctioning of the buildings and layout for Environmental Clearances.
- **It is mandatory for the Applicant/Owner/Occupier to take Regular Provisional and Final Fire NOC.**
- This should not be treated as a Permission for starting construction of building.
- IOD doesn't imply any final clearance of matter or should not be taken as granted for clearance of building permission.
- Necessary other Permissions and or Clearances to be sought from concern Building Permission/Town Planning, Aviation, MPCB, Defense, Collectorate office, etc. Depts. as applicable.
- Fire Dept. reserves the rights to alter, modify, revise or revoke the IOD.
- Fees paid for IOD is independent and shall not be deducted/adjusted in further Provisional Fire NOC.
- Any false or wrong information or documents given knowingly or unknowingly or manipulated, or precautions mentioned above if not adhered will be liable for cancellation / revoking of the IOD and the applicant will be solely responsible for the matter and will be liable for legal action.
- **IOD issued, subject to final approval from Building Permission Dept. of PCMC.**

(Abbrv: B-Basement, Gr-Ground, Stl- Stilt, Flr–Floor, Po-Podium, Pr-Parking, PoPr-Podium Parking, BP-Basement Parking, UBP- Upper Basement Parking, LBP- Lower Basement, GP-Ground Parking, LGP – Lower Ground Parking, UGP – Upper Ground Parking)

Chief Fire Officer
Pimpri Chinchwad Municipal Corporation
Pimpri- 18.

To,

Mr. Atul J Goel

Owner/Through:- **Mr. Atul Jaiprakash Goel & Sameer Darshan Shah**

Particulars	IOD Fees Paid (Rs.)	Receipt No.& Date
CFC Paid	1,000/-	R.No.103321220003620, Dt.16/07/2021
Diff Amt. Paid	24,300/-	R.No.103321220016960, Dt.28/10/2021
Total Paid	25,300/-	.....
IOD Fees Rs.24,300/-paid.		

PIMPRI CHINCHWAD MUNICIPAL CORPORATION, PIMPRI -18
FIRE DEPARTMENT

File No:- 490 O.W.No:- Fire/01/SRC/ WS/490/2023. Date:- 7 /09/2023

Provisional Fire No Objection Certificate for Building Construction (Rev-II)

Token No:- 103323240007735 **Token Dt:- 09/08/2023**

With reference to the application and Plans submitted, **Dt. 09/08/2023** by the under mentioned applicant, technical site inspection had been carried out by the concerned Officer of the fire department in accordance with the submitted plan copies and documents.

Revised Provisional Fire NOC is being herewith issued under Unified Development Control Rules of State Govt. order No.TPS1818/Pra. Kra.236/18/Viyo.Prayo./Cl.27(1cc)(g)&Cl.20(4),UD-13, Dt – 02/12/2020, NBC 2016 – Part IV, and under Sec 3(2) of Maharashtra Fire & Life Safety Act 2006 & Rules 2009 , at the under mentioned site, subject to compliance of the following conditions.

Proposed Site Address –

Sr. No. 274, 275, 276(P), At- Wakad, Pune.

Plot Area	**28310.20**	**Sq.Mtrs**
Permissible FSI Area (Incl. Ancillary FSI)	**22444.33**	**Sq.Mtrs**

Building Details –

Bldg. Nos.	Height (From GL to Slab)	No. of Floors	Net Built up Area (Sq.Mtrs)	Gross Built up Area (Sq.Mtrs)	Occupancy Use Type	Bldg Classification
A Bldg. (Old)	26.10	GP + 08 Flr.	4270.82	4868.79	Restaurant/ Rooms	Mercantile Bldg.
Wing-1/Mhada (Rev)	108 (Rev)	GP + 06 Parking Flr. + 1 PoPr. + 28Flr. (Rev)	28344.25 (Rev)	39448.73 (Rev)	Resi.	Resi.
Wing-2 (Old)	27.00	GP + 06 Parking Flr. + 1 PoPr. +01 Flr.	3997.00	4508.91	Resi.	Resi.
Wing-3 (Old)	24.00	GP + 06 Parking Flr. + 1 PoPr.	2792.56	3115.56	Resi + Shops	Mix.

1. **Building Side margins, Drive ways, Staircases, Passages, Vehicle Ramps** clearance as per shown in plan, for the maneuverability of the fire fighting vehicle should be kept absolutely free of obstructions, all the time. **No Landscaping or any other structural work, to be done in side margins** or in any other way, obstructing the access to side margins.
2. **Emergency Contact Numbers Board** of Fire, Ambulance, Police & MSEB o be displayed prominently at main gate and other easily visible places.
3. **Podium if provided**, should be designed and constructed to carry weight of 45 tons for Special Heavy Fire Rescue Vehicle load (ALP, TTL, etc). The required vehicular Turning Width, at Ramp ends & building corners to be provided on podium. Podium slab to be painted with Red colour strip exactly above the Beam line so as to easily identify it and ease operation of the Special Fire Vehicle Outrigger Jacking.
4. **Hose Reel Hose (Type B)**, to be provided on all floors with shut off nozzle, (according to length of Bldg), fixed on wall Only. (Fitting of hose reel drums on Riser-Downcomer pipe is not allowed).
5. **Extra Standby Pump (Electric for Res. and Diesel driven as applicable)** of same capacity connected to DG Set, to be installed.
6. **Independent Duct provision** to be made with Size as per mentioned in below given table for Riser cum Down Comer System.

Sr. No.	Zone	Bldg. Height In Mtrs.	Fire Duct Size in Mtrs.	Location
A)	Zone 1	0 to 23.99	1.00 X 1.00	Near to the Fire Staircase
B)	Zone 2	24 to 44.99	1.00 X 1.20	
		45 to 69.99	1.00 X 1.50	
C)	Zone 3	70 to 89.99	1.20 X 2.00	Inside the Fire Tower near to the Fire Lobby
		90 to 134.99	1.50 X 2.00	
		135 to 179.99	1.50 X 2.50	

7. **Over Head RCC Fire Water Tank** – 25,000 lts for buildings from 24 to 70 Mtrs height as well for Special/Non Res.Bldgs. Tank capacity varies depending upon type of occupancy of building.
8. **Under Ground RCC Fire Water Tank** – 50,000 ltrs capacity for Buildings above 24 mtrs to 40 mtrs height. 75,000 ltrs capacity for Buildings from 40 mtrs to 60 mtrs & 1,00,000 ltrs. capacity for Buildings 60 to 70 mts. height and for Special/Non Res.Bldgs. Tank capacity varies depending upon type of occupancy of building. However for group (cluster) of maximum 5 buildings, fire Water tank if single, its capacity should be calculated on the basis of 2250 lpm for minimum 2 hours of firefighting or min 50% of the total water requirement for all buildings, whichever is higher.
9. (a) **Down Comer System** - 4" dia, C class ISI mark GI pipe, 3 to 5 HP Terrace pump with ISI mark accessories for each Bldg/Wing

upto 24 mts height, with Hose Reels on all floors to be provided with fire service Inlet at accessible position.
(b) Riser cum Down Comer System (each Bldg/Wing) - 6" dia, C class, ISI mark GI pipe, **UG Tank Pump to be of Coupled Type, Positive Pressure Operating** and above capacity for group/cluster of buildings (5 Wings and above) based on calculation with Hose Pipes (according to length of Bldg), Hydrant Valves, Nozzle, fittings, Starter, Pressure Switches, DOL Switch, etc. to be ISI Mark for all bldgs and provided with Fire Service Inlet at accessible position.
For Bldgs above 60 mtrs, UG Tank Pump to be of Multi Head, Multi Outlet type. **Automatic Sprinkler installation if any, to be provided with independent Pump** of rated output and capacity. **Jockey Pump of rated capacity to be provided for Wet/Sprinkler system, etc.**

Height of Bldg (Mtrs)	OH Tank Pump Cap.	UG Tank Pump Cap.	Head (UG Pump)
(i) 24 to 40 mts	900 lpm	1800 lpm	90 Mtrs
(ii) 40 to 60 mts	900 lpm	2280 lpm	110 Mtrs
(iii) 60 to 80 mts	900 lpm	2850 lpm	120 Mtrs
(iii) 80 to 100 mts	900 lpm	3250 lpm	160 Mtrs
(iv) 100 to 120 Mtrs	900 lpm	3800 lpm	220 Mtrs
(v) 120 to 150 Mtrs	900 lpm	4500 lpm	250 Mtrs

10. **Automatic Sprinkler System** to be provided for -
(a) All types of Bldgs having Basements/Lower Parking area more than 200 sq.mt.
(b) All Multilevel Basements.
(c) All Covered Ground and all Upper floor (multilevel) Stilt parking.
(d) All Podium Parking (Below Podium /all parking under elevated open spaces on podium).
(e)All Mechanical / Puzzle / Stack Parking as Side Wall Sprinklers diagonally fitted on opposite sides of support channels of the structure.
(f) All Commercial Bldg with Covered Area more than 500 sq mts. – (For Entire building.)
(g) All buildings **(Including Refuge Area)** other than Residential, Mix and Educational of height above 15 mtrs.
(h) All Hotels, Hospitals, Malls, Multiplexes, Warehouses, etc with height above 15 mtrs.
(i) All **Residential Buildings (Including Refuge Area) above 45 mtrs height to** be fully sprinklered.
IS-15105 – Design and Installation of Fixed Automatic Sprinkler Fire Extinguishing System. **Sprinkler Pump shall be independent** of rated output and capacity.
(j) All Comm. area, Shops, Godown, Warehouse, including passage area should be covered with sprinkler system.

11. **Garbage chute** if any, shall be provided with **independent Sprinkler system** at each garbage inlet point of the chute pipe.

12. **MCP (Manual Call Points) and PA (Public Address) Communication System** with Talk Back facility to be provided.(Not allowed in Fire Ducts or Staircases)

13. **Minimum TWO Staircases** (apart) to be provided .One enclosed Fire Escape Staircase of Fire Tower Type to be provided with Fire Resistance Doors Assembly (with frame & accessories) of min 120 mins. (45mm thick) and Commercial bldgs to install Metal F. R. Door of CBRI / IPIRTI approved. This fire staircase shall be treated for use of inhabitants during fire and other emergencies and will not be taken into any other use, not even for installation of fire fighting system, etc

14. **Fire Resistance Doors** as above, of min 120 mins (45mm thick) as per IS 4079 to be provided for all Flats Entrances and Balcony/Terrace opening Doors for buildings above 60 mtrs.

15. **Fire Escape Staircase** to be provided with Pressurization System, for Bldgs above 60 mtrs, Fire Tower Smoke Check Lobby Fire Duct 02 Hours Rating Fire Door With 1.5 Mtrs Pressurization System, Fire Lift, For Above 70 Mtrs. Bldg.

16. All Bldgs above 60 mtrs and Starred Hotels, Malls, Multiplexes, Hospitals above 50 beds to be provided with **Fire Sealant material** of 2 hours rating at every floors at the point of Electric cables and other pipes etc passing through such floors or walls openings, etc

17. Hotel bldgs above 24 mtrs, Hospital bldgs above 15 mtrs, other Fully Commercial Bldgs above 24 mtrs, Residential Bldgs above 45 mtrs and Malls, Multiplexes irrespective of their height to provide **Fire Retardant Paint/Coat** (DRDO approved) for Electrical Cables.

18. **Special Commercial bldgs** like Hotels, Hospitals, Commercial Complexes, above 30 mtrs, Mix Occupancy Bldgs above 45 mtrs and fully Residential Bldgs above 60 mtrs to provide at least 1 no. of **Self Rescue Chute** for each building.

19. **Automatic Fire Suppression Systems to be provided for Commercial Kitchen Hoods of Hotels, Restaurants, Canteens, etc, complying LPS 1223/UL300.**

20. **Among the total Lifts provided,** for bldgs upto 36 mtrs height, minimum one Lift to be Fire Lift of 545 kgs (8 person) capacity. Bldgs above 36 mtrs height to be provided with Fire cum Stretcher Lift (min 1.9 m x 2.5 m).These lifts shall have Fireman's switch and Talk back Facility emergency communication system

21. **Refuge Area** of minimum 1/4th of the maximum floor area to be provided in front & conspicuously marked for identification located after 24 mtr, 39 mtr and every 5th floor thereafter. Refuge Area parapet wall and railings to be painted in red colour and a bold 'Fire Refuge Area" Board of min. 5ft x 3 ft painting prominently to be displayed. Fire Resistance Door (with frame & accessories) of min 120 mins (45mm thick) to be fitted for Refuge Area.

22. **Basement/Lower Parking** should have proper Mechanical **Smoke Extraction** & **Dewatering pump Arrangements** to prevent smoke and water logging.

23. **Basement/Lower Parking** to be used **only for Parking and Nonflammable stores** as per DC Rule Cl.15.11.12 &15.11.13. Human habitation use of any kind is not permitted.

24. **Adequate Ventilation arrangement to be provided for Hotel Kitchen room areas.**

25. Open Terrace, especially over topmost floor of the building should not be covered or taken into use for any Hotel, Business, commercial purposes or human habitation such as any Roof Top Structure or alike.

26. **(a) ABC Type Fire Extinguishers** ,6 kg cap.(ISI mark of Reputed Brand) - 2 Nos. on **every floor** and additional 1Nos for Electric Panel Board, 1 Nos for Lift Room of each building and 1 Nos for D.G. Set /Transformer/D.P/ Feeder pole to be provided.
(b) ABC Type 6 kg cap.(ISI mark of Reputed Brand) -1 Nos. minimum for every shop/office, etc to be provided in case of Mix or Commercial occupancy bldgs.
(c) ABC Type 6 kg capacity (ISI mark of Reputed Brand) -1 Nos. minimum for every 100 sq mtr area for every Basement

	or other Parking areas AND 1 no for every vehicle for bldgs having Stack Mechanical/Puzzle Parking if any. **(d)** ABC Type 2 kg capacity (ISI mark of Reputed Brand) -1 Nos. minimum for every Flat. **(e) (i) Modular type Fire Extinguisher,** 5 kg cap - 1 Nos to be provided in flat kitchens for Residential Buildings more than 60 m in height and 1 no over top of every upper car for Mechanical/Puzzle area Parking, if any. (ii) **Modular FE – 10 KG** capacity to be provided of every shop of Bldg for Mezzanine floor and Hotel kitchens. (iii) **Modular FE – 10 KG** capacity to be provided over Indoor Transformers given under roof(covered slab) **(f) (i) Automatic Fire Trace & Suppression System** to be provided for Computer Server Rooms. (ii) Automatic Fire Suppression System to be provided over Kitchen Hoods Ducts for Kitchens for Hotels.
27.	**Courtyard Ring Mains (Above Ground) and or Parking Hydrants** with one 2/4 way Collecting Head for each wing to be provided apart from the bldg in front, at accessible position as per IS-13039-1991 – Provision & Maintenance of External Hydrant System.
28.	Fire Pump Installation and all Emergency Lighting System (eg. Staircase, passage, etc to be connected to **Independent Backup System**, for cluster and Tower Buildings.
29.	**LPG Reticulated System (Gas Bank)** installation is preferred from fire safety point in High Rise Building. It shall comply with ISI 6044 – 1988 Code and OISD norms. Modular Fire Ext. 10 kg - 1 No for each Gas bank, (up to 500 kg -1 No and >500 kg -2 Nos) ABC Type Fire Ext.(ISI mark) - 6 kgs – 5 Nos.
30.	**Heat and or Smoke /Multi Sensor Detectors with Response Indicators (RI)** to be provided for entire False Ceilings and coverings if any.
31.	**Fire Evacuation Plan/Fire Orders** to be prepared for Special Buildings with proper display of adequate Directional Illuminated Signages and Exit Drawings boards, etc.
32.	**Addressable Automatic Smoke/Multi Sensor Detection and Fire Alarm System** to be provided for Commercial Buildings above 15mtrs height ,or having floor area above 500 sq.mtrs, with Laser Beam Detectors in Malls, Godowns, Auditoriums , Multiplexes & all other building, including **Residential bldgs above 60 Meter in height** as per IS-2189-1999 Code of Practice for selection, installation and maintenance of Automatic Fire Detection and Alarm System. Detectors and Panel Board to be of reputed company. Linear Heat Detection System for Electrical/Electronic Panels/Computer Server, etc
33.	Hotels, Hospitals, Malls and other special/commercial buildings to install **LP Gas Detector Devices** in their kitchens.
34.	All Three Star & above Starred Hotels, Hospitals above 100 beds, Malls and other special/commercial buildings to install **Fire Stop Curtains** of minimum 2 hrs resistance in passages, etc at strategic locations.
35.	Starred Hotels, Hospitals above 100 beds, Malls, Multiplexes and other special/commercial buildings should apply **Fire Retardant Paint** for Electric Cables and Pipes, etc
36.	Hotels, Hospitals, Malls, Multiplexes, Industrial special bldgs above 15 mtrs height of individual proprietorship to install **Cloud based Remote Monitoring and Alert Notification System (Feeds)** for their entire Fire Fighting Installation connected to PCMC Fire Brigade Control Centre.
37.	Full equipped **Fire Control Room** be provided on Ground floor with **qualified Fire Officer** appointment for Special Bldgs like Hotels, Malls, Multiplexes, Hospitals, etc above 30 mtrs and or recommended by fire dept.
38.	**Fire Installation to be got done from the authorized Licensed Agency** of Govt. of Maharashtra only and Drawings for Tower buildings above 40 mtrs height, Commercial Complexes Malls, Multiplexes, Hospitals above 100 beds, Star Hotels etc. to be got approved, from local fire authority before starting of work.
39.	**Building Revision if any towards Remaining/Addl FSI,** TDR Loading, Addl Plot Amalgamation, etc. in future, shall be sanctioned, subject to strict compliance of PCMC DC Rules Cl.6.2.6.1,10.6,19.6.2,19.6.3,19.6.4 and GR No.TPS-1809/287/CR-1924/UD-13, Dt.10/03/2010, for Two Staircases, proper Side Margins & proper Approach Road width clearance, only. Apart from above requirements, the construction of the building and compliance to be carried out as per the following codes, which is the moral responsibility of the applicant – a. **NBC -2016 Codes – Part IV** – Fire and Life Safety b. **ISI Codes -** • IS-1642 – Code for Fire Safety of Buildings.-Details of Construction • IS-1643 – Code for Fire Safety of Buildings- Exposure Hazard. • IS-1644 - Code for Fire Safety of Buildings- Exit requirement and Personal Hazards. • IS-1646 - Code for Fire Safety of Buildings- Electrical Installation. • IS-732 - Code for Electrical Wiring installations. • IS-1893- Criteria for Earthquake Design of Structures and • IS-4326- Code for Earthquake Resistance Design and Construction of building • IS-2309- Code for Protection of buildings against Lightning Safety.
NOC Applicable Points Nos.:	**1, 2, 3, 4, 5, 6(c), 7, 8, 9 (a,b), 10(c,d,f,g,h,i,j), 11, 12, 13, 14, 15, 16, 19, 20, 21, 24, 25, 26 (a, b, c, d, e (ii,iii), f (i,ii)), 27, 28, 29, 30, 31, 32, 33, 36, 38, 39 Only.**
NOC Remarks if any	**Prov. NOC No. Fire/01/5RC-401/WS/830/2022, Dt.14/01/2021.** **Rev. to Rev-I. NOC No. Fire/01/5RC-107/WS/465/2022, Dt.21/07/2022** **Subject to Sanctioned Plan No. BP/Wakad/12/2022, Dt.20/01/2022.** **As per proposal note no. 2408 sanctioned by Hon. Addl. Commissioner on Dt.07/09/2023**

Since, this NOC is only for building construction purposes, Fire NOC for the Business / Utility purposes should be taken separately. eg. Malls, Multiplexes, Hotels, Hospitals, Schools, Gas Banks, Gas Agencies, Petrol Pumps, etc.

This NOC is a guideline, based/framed on present codes/rules/conditions, to carry out / provide / install fire equipments and installation as per governing rules. However, practical technical working, designing and actual

implementation may require additions to fire equipment, etc depending upon the actual site conditions during/after the construction and or the rules prevailing during that time. The concerned Fire Consultants / Fire Licensing Agency / MEP Consultants / Project Management Consultants / etc should work out on pure technical grounds. The Fire Equipments, Systems to be installed should be of high standard, having ISI,LPCB,UL,NFPA,EN,CE,etc standards.

This NOC to be read carefully and note to be taken of all the "Applicable Points" mentioned above. All applicable points/conditions to be fulfilled and fire installations to be installed before the submission of Final Fire NOC. The Fire Fighting System Installation to be got done by actual Licensed Fire Agency only, and the Fire Installation Certificate (AMC) in Form 'A' as per Sec.3(3) of Maharashtra Fire & Life Safety Act – 2006, to be submitted at the time of Final NOC.

Difference of fees amount if any, found during Audit, in future, will be recovered from the Applicant / Occupier.

Fire NOC Fees once paid, is Non-refundable.

This is a temporary NOC, issued only for plan sanctioning of the buildings and layout purposes, from fire prevention point of view. **This NOC should not be treated as a Permission.** This Fire NOC doesn't imply any final clearance of matter or should not be taken as granted for clearance of building permission. Necessary Permissions and or Clearances to be sought from concerned Building Permission/Town Planning, Aviation, MPCB, Defense, Collectorate office, etc Depts as applicable.

Fire Dept reserves the right to alter, modify, revise or revoke the NOC.

All other rules governing of this department and or changes, up-gradation in equipment/installation are applicable from time to time.

Any false or wrong information or documents given knowingly or unknowingly or manipulated, or precautions mentioned above if not adhered will be liable for cancellation / revoking of the NOC as per Cl.386(3) of MMC Act -2012 and the applicant will be solely responsible for the matter and will be liable for legal action. NOC Fees once paid, shall not be refunded.

NOC issued, subject to final approval from Building Permission Dept. of PCMC.

(Abbrv: B-Basement, Gr-Ground, Stl- Stilt, Flr–Floor, Po-Podium, Pr-Parking, PoPr-Podium Parking, BP-Basement Parking, UBP- Upper Basement Parking, LBP- Lower Basement, GP-Ground Parking, LGP – Lower Ground Parking, UGP – Upper Ground Parking)

Proposed Site Address –
At- Wakad, Pune.
Sr. No. 274, 275, 276(P),

07/09/2023

Fire Officer
Pimpri Chinchwad Municipal Corporation
Pimpri, Pune-411018.

To,
Arch. Manik Buchade

Owner/ Through: Mr. Atul Jaiprakash Goel & Sameer Darshan Shah

Particulars	Previous NOC No. & Date	NOC Fees Paid (Rs.)	Receipt No.& Date
Paid For CFC	N/A	1,500/-	R.No.303321220010448,Dt.15/11/2021
Paid For Prov.	830, Dt. 14/01/2022	46,88,500/-	R.No.303321220023277,Dt.13/01/2022
Paid For CFC	N/A	1,500/-	R.No.303322230004087,Dt.20/05/2022
Paid For Rev-I	465, Dt. 21/07/2022	72,90,800/-	R.No.303322230009874,Dt.21/75/2022
Paid For CFC	N/A	1,500/-	R.No.303323240013004,Dt.09/08/2023
Diff. Amt. Paid	N/A	45,54,600/-	R.No.303323240016579,Dt.07/09/2023
	Total Paid	1,65,37,400/-	.....
Provisional Fire NOC Fees Rs.45,51,600/- paid.			

***Fees Receipt to be preserved properly & Xerox copy submitted during next submission for Revision or Final NOC case.**

.....FINISH.....

PIMPRI CHINCHWAD MUNICIPAL CORPORATION, PIMPRI – 18
FIRE DEPARTMENT

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File No – 1617 **OW. No. Fire/1/RC/WS/1617 /2025** **Date – 08/01/2025**

****

Provisional Fire No Objection Certificate For Building Construction Rev I

Token No – 103323240019628 **Token Dt. – 28/02/2024 & 08/11/2024**

With reference to the application and plans submitted **Dt – 28/02/2024 & 08/11/2024** by the under mentioned applicant, technical site inspection had been carried out by the concerned officer of the Fire Department in accordance with the submitted plan copies and documents.

Provisional Revised Fire NOC is being herewith issued Unified Development Control Rules of State Govt. Order No.TPS1818/Pra.Kra.236/18/Viyo/Cl20 (4),UD-13, Dt – 02/12/2020, NBC 2016 – Part IV, and under Sec 3(2) of Maharashtra Fire & Life Safety Act 2006 & Rules 2009 , at the under mentioned site, subject to compliance of the following conditions.

Proposed Site Address	**Sr. No. 274/1, 274/2, 275/1/1, 275/1/2A, 275/1/2B, 275/1/3/1, 275/1/3/2, 375/1/3/3, 275/2, 276/2, Wakad, Pune.**
Plot Area	**28310.20 Sq. Mtrs.**
Permissible FSI Area (Incl. Ancillary FSI)	**58211.53 Sq. Mtrs.**

Building Details –

Bldg. No.	Height (From GL to Slab)	No of Floors	Built Up Area (Sq.Mtrs.)	Gross Built Up Area (Sq. Mtrs.)	Occupancy Use Type	Bldg. Classification
Wing 2/ Mhada (Rev)	108.00 (Rev)	GP+06 Parking Flr. + Stilt Flr.+28 Flr (Rev)	28672.05 (Rev)	39250.55 (Rev)	Resi	Resi

1. **Building Side margins, Drive ways, Staircases, Passages, Vehicle Ramps** clearance as per shown in plan, for the maneuverability of the fire fighting vehicle should be kept absolutely free of obstructions, all the time. **No Landscaping or any other structural work, to be done in side margins** or in any other way, obstructing the access to side margins.
2. **Emergency Contact Numbers Board** of Fire, Ambulance, Police & MSEB o be displayed prominently at main gate and other easily visible places.
3. **Hose Reel Hose** Type as per IS Code 884 (1985) & **Fire Delivery Hose/Hoses** as per IS code 14933 (2001) with appropriate length along with **Standard (universal) Branch Pipe** as per IS Code 2871 (2012) (Preferably in fire hose cabinet) **Fire Hydrant / Landing Valve** as per IS code 5290 shall be installed at each floor (including all basements/parking/terrace floor/floors) near to fire staircase / inside the Fire Tower near to Smoke check lobby of each Special/High Rise Building.
4. **Extra Standby Pump (Electric for Res. And Diesel driven as applicable)** of same capacity connected to DG Set, to be installed.
5. **Independent Duct provision** to be made for Riser cum Down Comer System for Buildings more than 7 floors and all Commercial Buildings.

Sr. No.	Zone	Bldg. Height In Mtrs.	Fire Duct Size in Mtrs.	Location
A)	Zone 1	0 to 23.99	1.00 X 1.00	Near to the Fire Staircase
B)	Zone 2	24 to 44.99	1.00 X 1.20	
		45 to 69.99	1.00 X 1.50	
C)	Zone 3	70 to 89.99	1.20 X 2.00	Inside the Fire Tower near to the Fire smoke Lobby
		90 to 134.99	1.50 X 2.00	
		135 to 179.99	1.50 X 2.00	

6. The capacity/numbers of the fire water storage tanks (underground/ intermediate -Break/terrace level which ever applicable according to height/types of occupancy/cluster building) should be provided in RCC according to the statement/chart mentioned in the proposed plans submitted by the concern Architect/Licensed Engineer. All the firefighting pumps shall be installed with positive suction type only.
7. a) **A Wet Down Comer System of 4" dia.** of GI 'C' Class pipe shall be provided and connected with Terrace level Booster pump for each non-special building.
   b) **A Fire Wet Riser cum down comer System of 6"** dia. of GI 'C' Class pipe shall be provided and connected with Terrace level Booster pump , intermediate booster pump of fire break water storage tanks (if applicable) as well as underground Fire Pump set Each special/high rise buildings independent or separately. Water Pressure reducing orifice metal disc/plate shall be provided between the wet riser and hydrant Valve at lower level so as not to exceed the water pressure of 5.5kgs./sq.cms.

   Note: *If proposed building's height is more than 60 meter then, fire Wet Riser cum down comer of 6" dia. of GI 'C' Class pipe system shall be provided for higher zone & lower zone separately & independently for the Fire hydrant & sprinkler system coupled with Multi Head/Stage Multi Outlet (MSMO) pumps of rated output and capacity should not be less than the guidelines of NBC 2016/ MFP&LSM Act 2023.*
8. **Fire Fighting Pumps Requirement :**

   All the types of under mentioned fire fighting pumps shall capable to maintain/supply water pressure of not less than 3.5k/sm.cms. ath the topmost and remote ends fire hydrant.

   a) **OVERHEAD :** An auto-start ISI marked electric driven with alternate electric supply of DG backup 01 (One) No. of Fire Booster Pump of 900 LPM capacity shall be installed near to overhead terrace level fire water storage tank of each building / wing separately to fed water for the both hydrant and sprinkler system. With a RCC foundation, Isolating Sluice Valve, Butterfly Valve, Suction Strainer, ARV, NRV, Pressure Switch, pressure Gauge and Starter Panel of Ground Floor near to entrance lobby for non-special building and additionally one starter panel to be provided near to Booster Pump for the each special/high rise and non-special building/wing

	independently/separately. b) **UDERGROUND: If high rise/special cluster buildings are proposed then i) Fire Pumps (one set of pumps s… be provided for 100 nos. of Hydrant with maximum of two sets). ii) Fire Pumps with one additional Dies… Engine/ DG Set driven stand by pump means (02 no. (Two) of standby pumps) (one set of pumps shall be provided for up to 150 nos. of Hydrant with maximum of two sets. Iii) if total number of hydrants are more than 150 then dedicated 02 (two) no. of complete fire pumps sets to be provided.** c) If high rise/special cluster buildings are proposed with 2 (Two) no. of Fire pumps sets then the both pumps sets shall be interconnected to fed water to each Wet Riser of each building. Fire hydrants, hose reel hoses Branches/Nozzles, fittings, pressure switches , ARV'S , PRV'S, DOL switches, Fire service inlet, etc. to be ISI mark a RCC foundation, Isolating Sluice Valve, Butterfly Valve, Suction Strainer, ARV, NRV, Pressure Switch, Pressure Gauges and Starter Panels, Air Vessel Tank, System Test & Drain Lines separately with isolating Valves, Fire Pumps Panels to be provided/Installed at appropriate places according relevant norms. The applicant/owner/occupier shall note that, the numbers or capacity of fire pumps shall increase/ decrease according to software based hydraulic calculations submitted by fire license agency regarding the fire protection system's design plans approval. **One number of 900 LPM Booster Pump (For each Building/ Wing) shall be provided.** **One number of 4500 LPM Electric Driven Fire Hydrant Pumps with 180 LPM Fire Jockey pump separately should be provided.** **One number of 4500 LPM Electric Driven Fire Sprinkler Pumps with 180 LPM Fire Jockey pump separately should be provided.** **Two numbers of 4500 LPM Diesel Engine/Alternate Electric Supply of DG set driven as a Stand By Pump/System shall be provided.** **One number of 4500 LPM Electric Driven Fire Water Curtains Suppression Pump with automatic operated deluge valve system separately should be Provided for all basements parking area.**
9.	**Automatic Sprinkler System** to be provided for – a) All Parking, stilt parking area. b) Automatic fire water curtain suppression (with deluge valve) system as above mentioned (if applicable) shall be installed in the basement parking area to achieve compartmention with water curtain nozzle (K-23) as per relevant Norms. c) **All Residential Buildings of 45 mtrs & above height Including Balcony, Dry Balcony, All Passage, Refuge Area to be fully sprinklered. IS-15105 – Design and Installation of Fixed Automatic Sprinkler Fire Extinguishing System. Sprinkler Pump shall be independent of rated output and capacity.** Note - *Sprinklers shall be fed water from both underground static water storage and overhead terrace tank when both (overhead & underground fire tanks) are being provided*
10.	**Garbage Chute:-** if any, Garbage Duct is provided then that Should be protected by providing an Automatic Water **Sprinkler system.**
11.	**MOEFAS** (Manual Operated Electronic Fire Alarm System)/ MCP should be provided near to & external side of the staircase on each floor of each building including all parking floors i.e. All basements, Lower/ ground/ upper/ podium/ parking under raised open space/ multilevel parking.
12.	**Minimum TWO Staircases** (apart) to be provided .One enclosed Fire Escape Staircase of Fire Tower Type to be provided with Fire Resistance Doors Assembly (with frame & accessories) of min 120 mins. With (45mm thick) adequate natural (cross) ventilation or mechanical pressurization system according to NBC, that should consisting firefighting shaft /Duct and Fireman's /evacuation lifts / with smoke check lobby or talkback facility, and Commercial Bldgs. to install Metal F. R. Door of CBRI / IPIRTI approved. This fire staircase shall be treated for use of inhabitants during fire and other emergencies and will not be taken into any other use, not even for installation of firefighting system, etc
13.	**Fire Escape Staircase** to be provided with Pressurization System, for Bldgs above 60 mtrs
14.	All Bldgs. above 60 mtrs and Starred Hotels, Malls, Multiplexes, Hospitals above 50 beds to be provided with **Fire Sealant material** of 2 hours rating at every floors at the point of Electric cables and other pipes etc passing through such floors or walls openings, etc
15.	**Among the total Lifts 50% Lift should be provided Fire Lift,** for Bldgs. upto 36 mtrs height, minimum one Lift to be Fire Lift of capacity 545 kgs (8 persons) area not less than 1.43 Sq. mtrs., Bldgs. between 36 Mtrs to 70 Mtrs in height Fire cum Stretcher Lift Capacity 884 Kgs. (13 persons) area not less than 2.06 Sq. Mtrs., Fire cum Stretcher Lift cap.1020 Kgs. (15 Persons) area no less than 2.35 Sq. mtrs. Should be provided in the Fire Tower For Bldgs. Height above 70 mtrs. These lifts shall have Fireman's switch and Talk back Facility emergency communication system.
16.	**Refuge area** shall be provided in buildings of height more than 24m. Refuge area provided shall be planned to accommodate the occupants of two consecutive floors including the occupant of refuge floor by considering area of 0.3 m2 per persons for the calculated number of occupants and shall include additionally to accommodate one wheelchair space of an area of 0.9 m2 for every 200 occupants, portion thereof, based on the occupants load served by the area of refuge or a minimum of 15m2, whichever is higher, shall be provided as under: 1) The Refuge area shall be provided on the periphery of the floor and open to air at least on one side protected with suitable railings. 2) Refuge area(s) shall be provided at/or immediately above 24 m. and thereafter at every 15 m or so.
17.	**a) Basement/Lower Parking** should have proper Mechanical **Smoke Extraction & Dewatering pump Arrangements** to prevent smoke and water logging. **b) Mirror should be provided all Basement/Lower/Ground/Upper Parking Level's blind turn appropriate areas.** c) If any Air Conditioning Duct facility is provided inside the Building then **Fire Dampers** Should be provided As per IS: 655:1963
18.	**Basement/Lower Parking** to be used **only for Parking and Nonflammable stores** as per DC Rule Cl.15.11.12

	&15.11.13. Human habitation use of any kind is not permitted.
19.	Open Terrace, especially over topmost floor of the building should not be covered or taken into use for any Hotel, Business, commercial purposes or human habitation such as any Roof Top Structure or alike.
20.	a) **ABC Type Fire Extinguishers** ,6 kg cap.(ISI 15683 mark of Reputed Brand) - 2 Nos. on **every floor** and additional 1Nos for Electric Panel Board, 1 Nos for Lift Room of each building and 1 Nos for D.G. Set /Transformer/D.P/ Feeder pole to be provided. b) ABC Type 6 kg capacity (ISI 15683 mark of Reputed Brand) -1 Nos. minimum for every 100 sq mtr area for every Basement or other Parking areas AND 1 no for every vehicle for Bldgs. c) ABC Type 2 kg capacity (ISI 15683 mark of Reputed Brand) -1 Nos. minimum for every Flat. d) **Automatic Fire Modular Extinguisher (ISI Marked 15683) - of 10 KG** capacity should be installed in each Electrical Meter Room And over Indoor Electrical Transformers. e) **Automatic Fire Trace & Suppression System** to be provided for Computer Server Rooms. f) ABC & Co_2 Fire Extinguisher as per is Code 15683 (2006) & 2190 (2010) shall be installed at prominent places or near to all staircase at each floor (Including all types of parking area.)
21.	**a) Courtyard Ring Mains (Above Ground) and or Parking Hydrants** with one 2/4 way Collecting Head for each wing to be provided apart from the Bldgs in front, at accessible position as per IS-13039-1991 - Provision & Maintenance of External Hydrant System. External Hydrants : courtyard hydrants on ground shall be provided at distance of every 30 mtrs. Each around the each special/ high rise building as well as at top of the podium level within the confines of the site of the wet riser. Hose box with two hoses & branch shall be equal distributed in each basement, ground/upper parking courtyard area as well as on each floor. b) Fire Hydrant Valve should be installed on each 'Riser cum Down Comer' With Delivery Hose/Hoses Box including Fire Nozzle/Branch (ISI Mark) on each floor of each building of any type of occupancy including each parking floor I.e. All basements, Lower/ ground/ upper/ podium/ parking under raised open space/multilevel parking. c) Fire Draw off connection & Fire service inlet with Yard-Ring Main Hydrant systems shall be installed as per IS Code 3844 (1989) & additional independent Fire Service Inlet shall be installed on each Fire Riser of each special building.
22.	Fire Pump Installation and all Emergency Lighting System (eg. Staircase, passage, etc. to be connected to **Independent Backup System**, for cluster and Tower Buildings.
23.	**LPG Reticulated System** (Gas Bank) installation is preferred on ground level from fire safety point in High Rise/Commercial Building. It shall comply with ISI 6044 - 1988 Code and OISD norms. Modular Fire Ext. 10 kg - 1 No for each Gas bank, (up to 500 kg -1 No and >500 kg -2 Nos.) ABC Type Fire Ext. (ISI mark) - 6 kgs - 5 Nos.
24.	**a) Fire Evacuation Plan/Fire Orders** to be prepared for Special Buildings with proper display of adequate Directional Illuminated Signage's and Exit Drawings boards, etc. **b) Lightning Arresters** (As per IS 3070-3 (1993)) to be provided on top of Bldgs. Above 36 mts. For Lightning safety.
25.	**Addressable Automatic Smoke/Multi Sensor Detection and Fire Alarm System** to be provided for Commercial Buildings above 15mtrs height or having floor area above 500 sq.mtrs, with Laser Beam Detectors in Malls, Godowns, Auditoriums, Multiplexes & all other building, including Residential Bldgs. 45 mtrs & above in height as per IS-2189-1999 Code of Practice for selection, installation and maintenance of Automatic Fire Detection and Alarm System. Detectors and Panel Board to be of reputed company. Linear Heat Detection System for Electrical/Electronic Panels/Computer Server, etc
26.	**A voice evacuation System**: the voice evacuation system shall be integrated to fire alarm system so as to facilitate the coordination activities in case of fire emergencies. The actuation of the alarm control panel shall automatically activate the Voice Evacuation System . A pre-recorded message shall be broadcast on the affected floor, one floor below & two floor above the affected area.
27.	**Integrated System** : the entire firefighting system shall be of the types " integrated building automation system combining all the system. Flasher light shall be installed at the top of the building which will be switched on in case of incident of fire in that building to indicate involvement of the building in fire. It will also help incomeing fire brigade appliances to reach the spot in time without delay.
28.	**Fire Installation to be got done from the authorized Licensed Agency** of Govt. of Maharashtra only and Drawings of building of special / High rise buildings to be got approved, from local fire authority before starting of work.
29.	**Building Revision if any towards Remaining/Addl FSI**,TDR Loading, Addl Plot Amalgamation, etc. in future, shall be sanctioned, subject to strict compliance of Unified Development Control Rules of State Govt. Order No.TPS1818/Pra.Kra.236/18/Viyo/CI20 (4),UD-13, Dt - 02/12/2020 PCMC DC Rules Cl.6.2.6.1, 10.6, 19.6.2, 19.6.3, 19.6.4 and GR No.TPS-1809/287/CR-1924/UD-13, Dt.10/03/2010, for Two Staircases, proper Side Margins & proper Approach Road width clearance, only. Apart from above requirements, the construction of the building and compliance to be carried out as per the following codes, which is the moral responsibility of the applicant - a. NBC -2016 Codes - Part IV - Fire and Life Safety b. National Electrical Code - 2023 c. Central Electrical Authorities (Measures Relating to safety & Electrical Supply) Regulation 2023 d. ISI Codes - • IS-1642 - Code for Fire Safety of Buildings.-Details of Construction • IS-1643 - Code for Fire Safety of Buildings- Exposure Hazard. • IS-1644 - Code for Fire Safety of Buildings- Exit requirement and Personal Hazards. • IS-1646 - Code for Fire Safety of Buildings- Electrical Installation. • IS-732 - Code for Electrical Wiring installations. • IS-1893- Criteria for Earthquake Design of Structures and • IS-4326- Code for Earthquake Resistance Design and Construction of building • IS-2309- Code for Protection of buildings against Lightning Safety.

	NOC Applicable Points Numbers	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29 only.
	NOC Remarks if any	Prov Fire NOC No. Fire/01/5RC-401/WS/830/2022 Dt. 14/01/2021 Rev I Fire NOC No. Fire/01/5RC-107/WS/465/2022 Dt. 21/07/2022 Rev II Fire NOC No. Fire/01/5RC/WS/490/2023 Dt. 07/09/2023 Subject to sanctioned plan No. BP/Wakad/07/2021 Dt. 20/08/2021 As per proposal note no. 3553 sanctioned by Hon. Addl. Commissioner on Dt. 20/12/2024

Since, this NOC is only for building construction purposes, Fire NOC for the Business / Utility purposes should be taken separately. Eg. Malls, Multiplexes, Hotels, Hospitals, Schools, Gas Banks, Gas Agencies, Petrol Pumps, etc.

This NOC is a guideline, based/framed on present codes/rules/conditions, to carry out / provide / install fire equipment's and installation as per governing rules. However, practical technical working, designing and actual implementation may require additions to fire equipment, etc depending upon the actual site conditions during/after the construction and or the rules prevailing during that time. The concerned Fire Consultants / Fire Licensing Agency / MEP Consultants / Project Management Consultants / etc should work out on pure technical grounds. The Fire Equipments, Systems to be installed should be of high standard, having ISI, LPCB, UL, NFPA, EN, CE, etc standards.

This NOC to be read carefully and note to be taken of all the "Applicable Points" mentioned above. All applicable points/conditions to be fulfilled and fire installations to be installed before the submission of Final Fire NOC. The Fire Fighting System installation to be got done by actual Licensed Fire Agency only, and the Fire Installation Certificate (AMC) in Form 'A' as per Sec.3(3) of Maharashtra Fire & Life Safety Act – 2006, to be submitted at the time of Final NOC.

Difference of fees amount if any, found during Audit, in future, will be recovered from the Applicant/ Occupier.

Fire NOC Fees once paid, is Non-refundable.

This is a temporary NOC, issued only for plan sanctioning of the buildings and layout purposes, from fire prevention point of view. **This NOC should not be treated as a Permission.** This Fire NOC doesn't imply any final clearance of matter or should not be taken as granted for clearance of building permission. Necessary Permissions and or Clearances to be sought from concerned Building Permission/Town Planning, Aviation, MPCB, Defense, Collectorate office, etc Departments as applicable.

The applicant/owner/occupier shall note that, The present needs of fire pumps and their capacities are less according to plans submitted for provisional fire NOC. But, the above mentioned numbers of fire pumps and their capacities are considered against the full potential plans submitted earlier for IOD/provisional NOC's of cluster building's project. if any further changes made/proposed in built up area, height, or occupancy in future during the revision of fire noc then numbers and capacities of fire pump's shall be changed automatically.

The applicant/owner/occupier shall note that, The undersigned/fire officers reserves all rights to visit/inspect the construction site/constructed project any time without any prior formal intimation or written notice and also reserves rights to modify/alter/revoke the terms and conditions mentioned in this NOC due to any technical/practical error/difficulty regarding the fire prevention/protection/life safety measures without any notice or cause, at any time in the public interest.

All other rules governing of this department and or changes, up-gradation in equipment/installation are applicable from time to time.

Any false or wrong information or documents given knowingly or unknowingly or manipulated, or precautions mentioned above if not adhered will be liable for cancellation / revoking of the NOC as per Cl.386(3) of MMC Act -2012 and the applicant will be solely responsible for the matter and will be liable for legal action. NOC Fees once paid, shall not be refunded.

NOC issued, subject to final approval from Building Permission Dept. of PCMC.

(Abbrv : B-Basement, Gr-Ground, Stl- Stilt, Flr-Floor, Po-Podium, Pr-Parking, PoPr-Podium Parking, BP-Basement Parking, UBP- Upper Basement Parking, LBP- Lower Basement, GP-Ground Parking, LGP – Lower Ground Parking, UGP – Upper Ground Parking)

Proposed Site Address –
Sr. No. 274/1, 274/2, 275/1/1, 275/1/2A, 275/1/2B, 275/1/3/1, 275/1/3/2, 375/1/3/3, 275/2, 276/2, Wakad, Pune.

07/11/2025

Fire Officer
Pimpri Chinchwad Municipal Corporation
Pimpri, Pune – 411018

To,
M/s. Atul Goel
M/s. Kimaya Associates
Arch. Manik Buchade.
Owner/Through – Atul Jaiprakash Goal & Sameep Darshan Shah

Particulars	Pervious NOC no. Date	NOC Fees Paid Rs.	Receipt No & Date
Paid For CFC	NA	1,500/-	R.No. 303321220010448 Dt. 15/11/2021
Paid For Prov	Fire/01/5RC-401/WS/830/22 Dt. 14/01/21	46,88,500/-	R.No. 303321220023277 Dt. 13/01/2022
Paid For CFC	NA	1,500/-	R.No. 303322230004087 Dt. 20/05/2022
Paid For Rev	Fire/01/5RC-107/WS/465/22 Dt. 21/07/22	72,92,800/-	R.No. 303322230000987 Dt. 21/07/2022
Paid For CFC	NA	1,500/-	R.No. 303323240013004 Dt. 09/08/2023
Paid For Rev	Fire/01/5RC/WS/490/23 Dt. 07/09/2023	45,51,600/-	R.No. 303323240016579 Dt. 07/09/2023
Paid For CFC	NA	1,500/-	R.No. 303323240033444 Dt. 28/02/2024
Paid For Rev	--	70,16,400/-	R.No. 303324250032231 Dt. 03/01/2025
Total Paid		2,35,55,300/-	.....

Diff. Amt. For Rev Fire NOC Fees Rs. 70,16,400/- paid

* Fees Receipt to be preserved properly & Xerox copy submitted during next submission for Revision or Final NOC case. ********** FINISH **********

(Total three pages)

Regd Post

Tele: 011-23010231/ 5216

Directorate of Ops (ATS)
Air Headquarters
Vayu Bhawan, Rafi Marg
New Delhi -110011

Air HQ/S 17726/01/ATS (PC- MMMCCXLVI) 13 June 2022

M/s Shanti Mohan Developers LLP
C/o Mr. Atul Jaiprakash Goel
San Mahu Commercial Complex
Opp to Poona Club Amphitheatre
Pune, Maharashtra-411001

NOC FOR CONSTRUCTION OF BUILDING

Sir,

1. Please refer your application on the subject.

2. The application has been examined within **provisions mentioned under Section 5(2) of Gazette of India GSR 751 (E) read in conjunction with Sub Section (1) Clause (o) & Clause (r) of Sub Section 2 of Section 5 read with section 9A of Aircraft Act 1934, Works of Defence Act 1903** and other relevant orders on the subject. Air HQ has no objection for construction of building **with a reduced height of 121.80m AGL/ 680m AMSL** at Survey No. 274(P), 275(P), 276(P), Village Wakad, Taluka Mulshi, District Pune-411057 (Maharashtra) subject to following conditions: -

(a) The NOC is for construction of building and cannot be used as document for any other purpose/claim whatsoever including ownership of land.

(b) The applicant is responsible to obtain NOC/all statutory clearances from the concerned authorities including approval of building plans. Clearance shall also be obtained separately from any other defence establishment in the vicinity of proposed construction.

(c) The site elevation and site coordinates provided by the applicant are taken for calculation of the permissible top elevation of the proposed structures. If however at any stage it is established that the actual site elevation and site coordinates are different from those provided by the applicant, the NOC will be invalid.

Contd... Air HQ/S 17726/01/ATS (PC- MMMCCXLVI) dated 13 June 2022

(d) The issue of the NOC is further subject to the provisions of Sec 9A of the Indian Aircraft Act 1934 and those of any notifications issued there under from time to time including the Aircraft (Demolition of Obstruction caused by buildings and trees etc) Rules, 1994.

(e) Vertical extent (highest point) of the building proposed at coordinates mentioned below **shall not exceed 121.80m AGL/ 680m AMSL, whichever is lower. No extension or structure permanent or temporary (e.g. Cranes, Antennas, Mumty, Lightening Arresters, Lift machine room, Overhead water tank, Cooling towers, Sign boards, any attachment or fixtures of any kind) shall be permitted above the cleared height.**

Pillar	Latitude	Longitude	Site Elevation
1	18° 35' 29.52" N	73° 45' 56.5" E	558.2 m AMSL
2	18° 35' 22.73" N	73° 45' 56.58" E	556.4 m AMSL
3	18° 35' 18.3" N	73° 45' 56.85" E	554.0 m AMSL
4	18° 35' 18.95" N	73° 45' 54.29" E	554.9 m AMSL
5	18° 35' 22.81" N	73° 45' 53.89" E	555.9 m AMSL
6	18° 35' 27.47" N	73° 45' 53.36" E	557.7 m AMSL
7	18° 35' 27.68" N	73° 45' 54.87" E	557.3 m AMSL
8	18° 35' 28.37" N	73° 45' 54.89" E	557.8 m AMSL
9	18° 35' 28.36" N	73° 45' 55.27" E	557.5 m AMSL
10	18° 35' 29.95" N	73° 45' 55.32" E	558.1 m AMSL

(f) Standard obstruction lightings as per International Civil Aviation Organization (ICAO) standards as stipulated in ICAO Annex-14 is to be provided by the company. The lights shall be kept **'ON'** at all times. Provision shall be made for standby power supply to keep the lights 'ON' during power failure. Company shall carry out periodic maintenance of the lights to keep them in serviceable and visible condition.

(g) A proper garbage disposal system in accordance with the provisions of Solid Waste Management Rules, 2016 / Gazette Notification SO 1357(E) (Para 4) or Environment (Protection) Act, 1986 including amendments shall be adhered to by the applicant for the purpose of avoiding bird activity.

(h) 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.

(j) The commencement and completion of construction including installation of obstruction lights shall be intimated to **AOC, AF Station Pune and CATCO, HQ SWAC IAF, Vayu Shakti Nagar, Chiloda, Gandhinagar-382042, Gujarat.** Failure to render these certificates within the stipulated time shall lead to cancellation of NOC.

Contd... Air HQ/S 17726/01/ATS (PC- MMMCCXLVI) dated 13 June 2022

(k) The NOC is valid for five years from the date of its issue. If the buildings are not constructed and completed within this period, the applicant shall be required to obtain a fresh NOC from Indian Air Force. Request for revalidation of NOC will not be entertained after the expiry of validity period.

Yours sincerely,

(YK Dixit)
Group Captain
Group Captain Operations ATS

SWACH

A higher level of self-reliance

Date: 20 November 2025

To,
Shanti Mohan Developers LLP
Goel Ganga Group , 3rd floor, San Mahu Complex, Bund Garden Rd., Camp, Pune 411001

Sub: -Facilitating Solid Waste Management at your Commercial/Residential "**GANGA ASMI Project** "situated at ***SR NO 274 P, 275 P , 276 P, Wakad, Tal. Mulshi, Dist. Pune 411057***

Dear Sir,

With reference to above subject we intend to facilitate the management of solid waste at your proposed project.
SWaCH Pune Seva Sahakari Sanstha Maryadit, (SWaCH) is India's first wholly-owned cooperative of self-employed waste pickers or waste collectors and other urban poor. It is an autonomous enterprise that ensures provision of front-end waste management services to the citizens of Pune through self-employed informal waste-pickers.

We will facilitate the collection of segregated dry waste (recyclables & non-recyclables: **1062.00Kg/Day, E Waste 14.00 Kg/Day)** from your registered project **GANGA ASMI Project** *situated at SR NO 274 P, 275 P , 276 P, Wakad, Tal. Mulshi, Dist. Pune 411057 through waste-picker* members of SWaCH after completion of project.

Further, you have also confirmed that you have acquired the necessary equipment and infrastructure **(OWC: 1587.00 Kg/Day)** for management of wet waste at source. If necessary, we can assist in facilitating in-situ wet waste processing using existing infrastructure and equipment through waste-pickers within the premises of your registered project through such affiliates and subject to such terms and conditions as may be applicable. We ensure collection of E-waste from the site at a cost mutually decided. All commercial terms must be negotiated with waste-pickers prior to commencement of work.

Assuring you the best of our services.
Thanking You,

Aditi

Reg. No. PNA(1)/GNL/(O)1321/07-08

For **SWaCH Pune Seva Sahakari Sanstha Maryadit**
Date: 20 November 2025
EC/2025-26/275

पिंपरी चिंचवड महानगरपालिका पिंपरी-18,
उदयान/ वृक्षसंवर्धन विभाग
क्र. उद्यान/3अ/कावि/4069/2020
दिनांक-29/ 1 /2021

प्रति,
मे. शांती मोहन डेव्हलपर्स तर्फे
श्री. अतुल जयप्रकाश गोयल
वाकड पुणे-57

विषय- स नं 274/1,274/2, 275/1/1, 275/1/2अ,275/1/2ब पै वाकड पुणे येथील वृक्ष पुनर्रोपन / पुर्ण काढणेबाबत.

संदर्भ-1) आपला दिनांक- 22/12/2020 रोजीचा अर्ज.

2) उदयान सहा./ सहा.व्हार्टी सुपरवायझर यांचा दि 14/1/2021 रोजीचा पाहणी अहवाल

3) वृक्षप्राधिकरण समिती ठराव क्र. 24 दिनांक 25/1/2021 परिशिष्ट- अ, अ.क्र. 41

2/- उपरोक्त विषयांकित आपला संदर्भिय क्र.1 अन्वये अर्ज कार्यालयास प्राप्त झाला आहे. त्या अनुषंगाने उदयान सहा./ सहा.व्हार्टी सुपरवायझर यांनी संदर्भिय क्र 2 अन्वये पाहणी अहवाल सादर केला आहे. त्यानुसार खालील अटीस अधिन राहून वृक्षांचा विस्तार कमी करणेस परवानगी देणेत येत आहे.

अ.क्र.	झाडाचे नाव	मध्यवेढी
1.	सदर वृक्षांची मालकी अर्जदार यांची आहे. **सुबाभुळ-01,सुरु-04, कडुनिम-03, ऑस्ट्रेलीयन बाभुळ-01 सिल्व्हराओक-03, एकूण-12** मंजूर नकाशानुसार बांधकामामध्ये व अंतर्गत रस्त्यामध्ये सदर वृक्ष अडथळा ठरत असलेने सदरची वृक्ष पुर्ण काढण्याची तसेच **गुलमोहर-02, पिंपर्णी-01, जांभुळ-02, पिंपळ-01, पेल्ट्राफोरम-01, कॅशिया-05, विलायतीचींच-01, बदाम-06 एकूण-19** पुनर्रोपन करण्याची परवानगी आहे.	**63 ते 113 से.मी.**

1)वृक्ष काढत असताना/वृक्षांचा विस्तार कमी करत असताना सभोवतालचे तारकुंपन/ झाडे/ विदयुत तार/ टेलीफोन तारा व ईमारतीचे किंवा अन्य मालमत्तेचे नुकसान होणार नाही याची दक्षता घ्यावी व त्यातील वित्त अथवा ईतर हानीस वृक्षप्राधिकरण जबाबदार राहणार नाही.

2) काढणेत आलेल्या वृक्षांच्या ऐवजी त्याच अथवा इतर जातीय वृक्षप्राधिकरण यांचे सुचनेनुसार प्रतिवृक्षांसाठी **5 वृक्ष** त्याच ठिकाणी किंवा त्याचे आसपास वृक्ष काढल्यापासून 30 दिवसाच्या आत लावणेत यावेत व तसे ईकडील कार्यलयास कळवावे.

3) उपरोक्त अटींचे उल्लंघन झाल्याचे निदर्शनास आल्यास आपणा विरूध्द महाराष्ट्र राज्य (नागरी क्षेत्र) झाडांचे संरक्षण व जतन अधिनियम 1975 मधील तरतुदीनुसार कारवाई केली जाईल याची गंभीर नोंद घ्यावी.

4) सदर कार्यवाही करते वेळी विद्युत तारा अढथळा ठरत असतील तर महाराष्ट्र स्टेट ईलेक्ट्रीब्यूशन कंपनी लि.कार्यालयाशी संपर्क साधुन विद्युत प्रवाह खंडीत करुनच कार्यवाही करावी.

वृक्षअधिकारी
पिंपरी चिंचवड महानगरपालिका
पिंपरी-18

प्रत-1) श्री. मोरे सी सी
(उदयान सहा./ सहा.व्हार्टी सुपरवायझर)

2) 31 वृक्षांची र.रु 4000/- प्रमाणे अनामत रक्कम रुपये 1,24,000/- अक्षरी र.रु एक लाख चौवीस हजार फक्त पावती क्र 178574 दि. 29/1/2021 अन्वये भरले आहे.

Rainwater Harvesting Scheme for
'Ganga Asmi' at Wakad, Pune
Geophysical Investigations and Hydrogeological Assessments.

INTRODUCTION:

During this visit the following studies were carried out in the field:

- Entire stretch of the proposed area and small sections exposed were observed to understand geological conditions.
- Observations were made in the entire area to infer the role of local geological, geomorphological and climatological factors leading to weathering of the rock.
- Electrical Resistivity Surveys were conducted to infer subsurface geological conditions in general and thickness / depth of different layers in particular besides geotechnical strata classification for estimating the extent and thickness of different layers.

Scope of the work:

1. Attempt geo-technical strata classification by using resistivity method
2. To delineate the areas suitable for rainwater harvesting
3. To find out the groundwater table
4. Percolation test on site with percolation pits

The results of the electrical resistivity surveys along with the strata classification and aquifer conditions are included in this report.

In order to understand the hydrogeological conditions of the area, investigations were carried out in February, 2020 at Ganga Asmi, Wakad by M/s Shanti Mohan Developers. The investigations were conducted in two parts, viz. (A) Hydrogeological and (b) Geophysical (Electrical Resistivity). The out come of the investigations is discussed in the present report.

(A) HYDROGEOLOGICAL :

(i) Topography:

The area under investigation is a relatively plain land having slight slope towards South which is a part of discharge zone of a River located at a distance of 200 m from the site boundary.

(ii) Geology:

The area under investigation forms the part of the volcanic sequence of basaltic rocks belonging to the Deccan Volcanic activity, which is one of the largest known geological formations in India, covering over 80 percent area of the state of Maharashtra. The rock exposed is highly amygdaloidal in nature, the upper flow is mantled by a soil horizon which is followed by weathered basalt (Murum).
Presence of groundwater and unconfinement is therefore unpredictable and required detailed study. The area becomes more rocky as we move towards southern most area.

(iii) Hydrology:

In basaltic lava flows, ground water occurs under both water table and confine conditions. Its occurrence and movement in basaltic terrain are controlled by vertical and horizontal porosity and permeability owing to fractures and interconnected vesicular interstices, which permit storage and movement of ground water. Occurrence of impervious layers and presence of dykes retard movement of ground water in basalt.

Alternating sequence of permeable and compact horizons in volcanic rocks gives rise to a multi-aquifer system. There is a hydraulic continuity between the contiguous massive and vesicular basaltic units, horizontal and other joints along with weathered mantle being responsible for this.

Generally, one continuous water table aquifer in the area of Deccan Basalts is rather rare, instead separate or discontinuous water table zones in different weathered vesicular units of the flow are developed.. Beyond this, the deeper aquifer, if present and more permeable than the overlying ones, would be under confined conditions, provided that they are favorably situated to receive recharge. The presence of a dugwell and bore wells of moderate yield in and around the area of investigation indicate that the subsurface geology is conducive for the occurrence of groundwater.

(B) GEOPHYSICAL:

In order to study the overall sub-surface geological conditions of the area, Geophysical investigations (Electrical Resistivity Surveys) were carried out. This was to understand the overall spread of sub-surface geological formations in the entire area. From the Electrical Resistivity Surveys, Electrical Resistivity Method (IS: 1892-1979 Appendix B clause 3.3 B-2):

Methodology:

By applying this method, the resistance to the flow of an electric current through the subsurface materials is measured at intervals on the ground surface. The resistivity is usually defined as the resistance between opposite phases of a unit cube of the material. Each material has its own resistivity depending upon the water content, compaction and composition

In studying the lateral as well as vertical variations, various electrode configurations are adopted and the array is moved as a whole along a traverse line. The measurement is called as ‘Vertical Electrical Sounding’ (VES). In the present work VES were conducted at 5 different locations at the site

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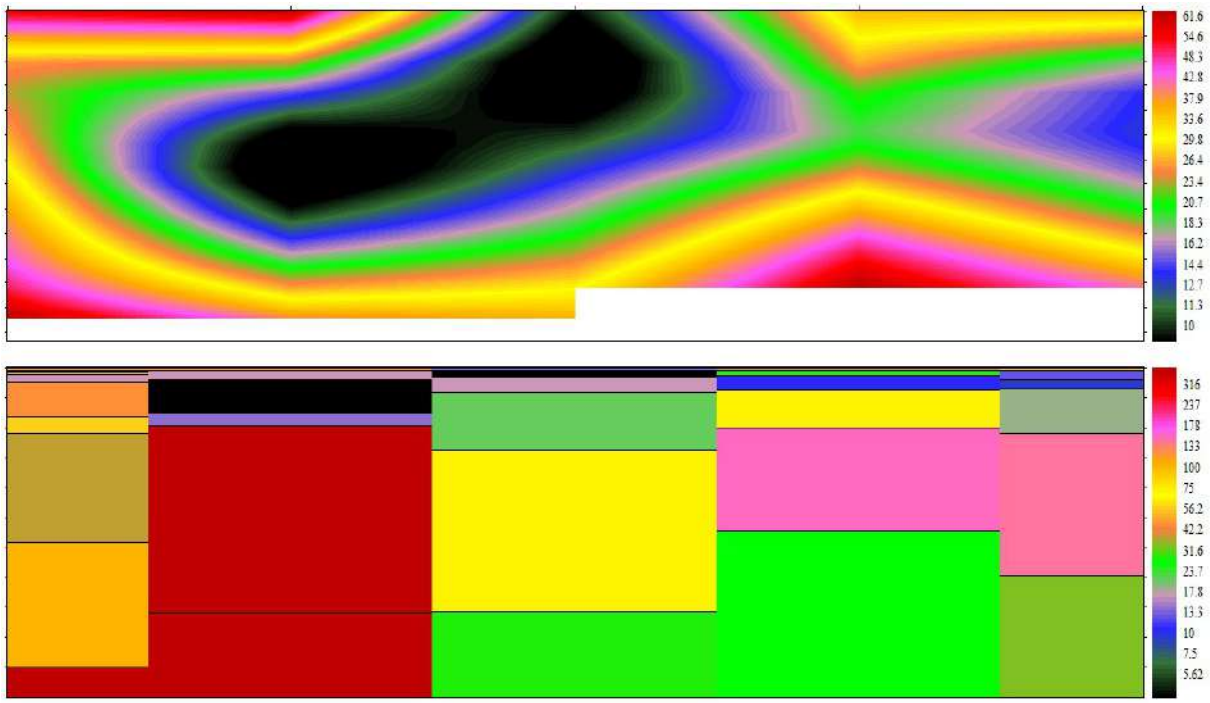
The L sections generated on the basis of values of electrical resistivity for the site have been used to depict 2-D subsurface images of strata that are also included in this report.

Results and data processing:

In the area to understand the shallow subsurface geological and aquifer conditions extending up to 70-90 meters depth, vertical electrical soundings were conducted at Five different locations. Using IPI2 WINDOW based software the data obtained from field was processed. As discussed points, the graphs obtained were further utilized to build subsurface 2-D geo-electrical sections.

Profiles: **1-5**



The geoelectrical cross-sections passing through various points have been presented in the above figures. It is to be noted that these are apparent resistivity L sections, which broadly match the true resistivity of formations. The values of true resistivity have been computed and thickness, depth and true resistivity have been presented in appendix. Using IPI2 software, the values of true resistivity of strata (ρ), its thickness (h) and depth (d) have been obtained after modeling of data and are depicted in table form besides each curve.

Strata classification and Estimation of layer thicknesses:

General Stratification can be inferred as below:

Depth in M	Strata
0 – 0.5	Soil + Weathered strata
0.5 – 3	Highly Weathered Rock
3 - 7	Moderately Fractured basalt
7 – 35	Fractured Jointed rock
35 – 40	Moderately Fractured Soft Rock
40 – 63	Poorly Fractured Basalt

The site shows prominent unconfined aquifer upto a depth of 3 – 7 m with 7 – 35 m jointed rock characteristic iof river discharge zone. Deeper confined aquifer located in between 35 – 40 m BGL followed by Poorly fractured Hard basalt. The recharge bores of up to 60 m BGL are recommended on site.

Water Table : 7 m BGL in pre monsoon

Rainwater harvesting feasibility analysis and Water Budgeting:

It would be necessary for any one to know first the nature, movement and occurrence of ground water in hard rocks before the formulation and implementation of artificial recharge works in hard rock region. Some salient characteristics of occurrence of ground water in hard rock are listed below:

Features of Occurrence of Ground Water in Hard Rocks are:

1. Ground water reservoir (aquifer) in hard rocks is dominantly shallow
2. The bulk of the ground water is stored in the zone of weathering (Vadose zone)
3. Fractures and joints in hard rock occur as conduits for rapid transport of water as they do not provide large space for storage of ground water
4. The width of fractures & lineaments and weak planes narrows as depth increases
5. Fairly limited aquifer water yield by wells and bore-wells in comparison to alluvial and sedimentary rock aquifer wells
6. Unpredictable ground water occurrence over short distances

The principle ground water reservoir in hard rocks therefore consists of two parts viz. “Vadose zone” or unsaturated zone that lie between ground surface and water table; and the phreatic or unconfined zone that lie below the water table. The feature of low permeability of Basalts, their multilayered occurrence, fractured and jointed natures, vesicular character besides topographic and other geological features are to be normally considered in the formulation and construction of recharging schemes

---

QUANTIFICATION:

The final area for consideration is 15335.74 sq.m

We have also considered runoff coefficient for calculating flow for rainwater design based on Central Pollution Control Board Ministry of Environment & Forests data.

Incremental Runoff due to Development:

	Ground Cover	Area in sq.m	Max intensity rainfall (m/ Hr)	Runoff coefficient	Runoff (cum/ min)	Annual potential for RWH (Cum)
A	Before Development					
	Plot Area	15335.74	0.055	0.6	8.43	6441.01
B	After Development					
1	Softscape area	1540	0.055	0.3	0.42	323.40
2	Terrace Area	3904.58	0.055	0.9	3.22	2459.89
3	Hardscape / Road/ Driveways	9891.16	0.055	0.9	8.16	6231.43
Total B	Total	15335.74			11.80	9014.72
B-A	Increase in the runoff due to development				3.37	2573.71

Annual Rainfall: 700 mm; Max. Rainfall intensity: 55 mm/hr; Avg daily rainfall:18 mm/d

RUNOFF PARAMETERS:

Anticipated Increase at in runoff at max intensity: 3.37 cum/min

Average daily runoff available after development (A): 231.81 cum/d

Average daily runoff available Before development (B): 165.62 cum/ d

Daily minimum Design percolation required: 66.18 cum/d

Rooftop runoff available: 63.25 cum/d

Recommendations:

Owing to the nature of aquifer rock, it is having low - moderate potential for recharge of deep aquifers.

(1) Site is suitable for recharge with recharge bores of limited depth of 60 m. The dia recommended is 160 mm. Seven such units are recommended.

(2) A recharge pit of 2 Mt. x 2 Mt. x 2 Mt. should be constructed around the recharge bore with filter media. This should preferably receive filtered rooftop water after treatment. This will help in strengthening shallow aquifer.

a) Approx storativity available in the srata:

= Area of aquifer (Sq.Mt.) x Thickness of aquifer x specific yield of aquifer.

= 15405 Sq.Mt. x 14 Mt. x 0.03

= 6470 M3

Thus, 7 Recharge bores with surrounding recharge pits as provided in the design can be sufficient to recharge the aquifer area available on site in a scenario of reasonable distributed rainfall in the season.

QUANTITATIVE ASSESSMENT OF RECHARGE:

(1) Recharge pit with bore of 60 Mt. at the bottom.

Dimensions - 2 MT x 2 MT x 2 MT

Bore well - Dia. – 160 mm Depth – 60 Mt.

Quantification would be

2 MT x 2 MT x 2 MT (with a layer of filter media)

= 8 M^3

For Bore - $\pi r^2 h$

= 3.14 $(0.08)^2$ x 60 Mt.

= 1.20 M^3

Total capacity of 7 recharge bores would be around 64 M^3. Incremental increase in the discharge of storm water runoff is around 3.39 cum/min. Thus, more than 16 minutes retention is available.

Percolation Test Method:

(Cross verification of the adequacy of recharge system)

Recharge anticipated through one single bore:	**23 cum/d**
Percolation anticipated through 7 recharge bores:	**161 cum/d**
Increase in runoff due to development:	**67 cum/d**
Rooftop runoff from the site:	**63**
% of efficiency of RWH against requirement:	**70%**

SUMMARY:

It is impossible to exactly predict the annual recharge/ harvesting taking place due to large variance in intensities, concentration and spread out of the monsoon and rainspells. Exact quantification of recharge will vary from year to year.

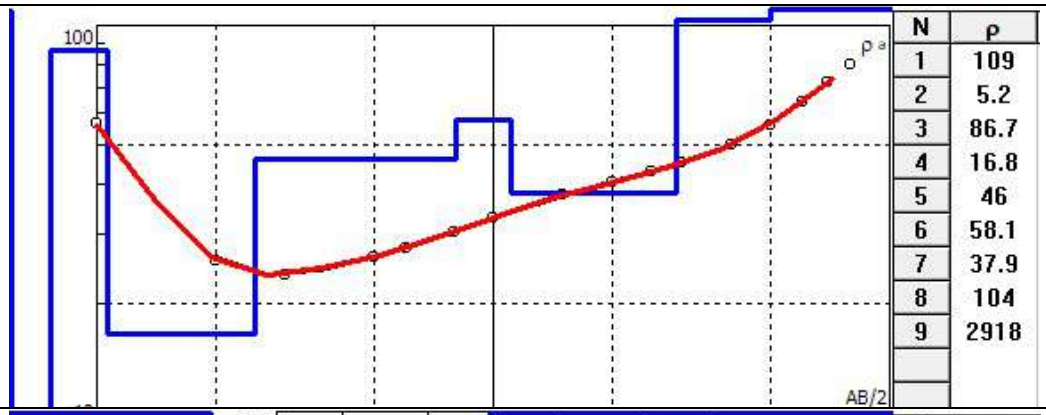
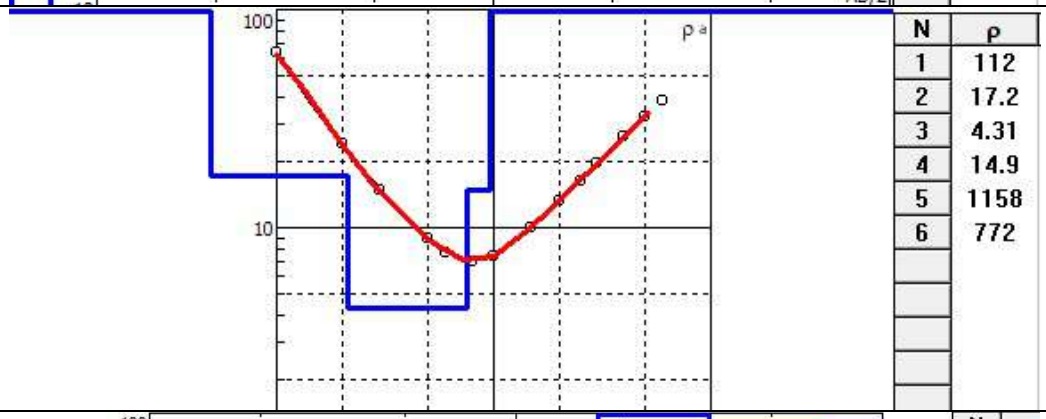
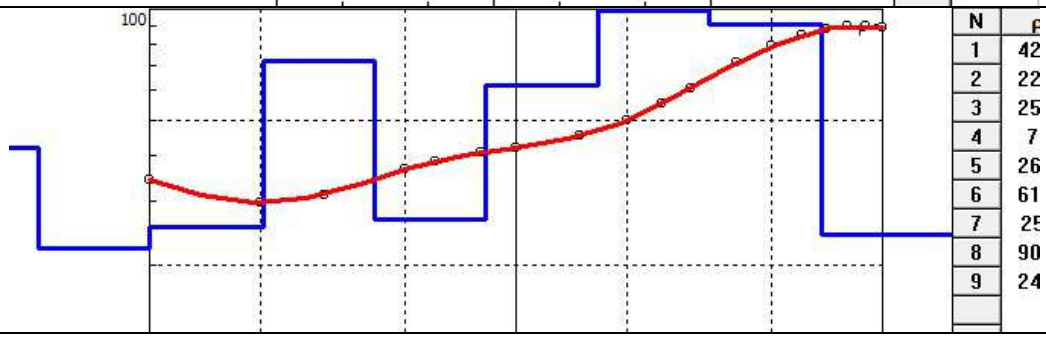
1. The site shows prominent unconfined aquifer upto a depth of 3 – 7 m with 7 – 35 m jointed rock characteristic of river discharge zone. Deeper confined aquifer located in between 35 – 40 m BGL followed by Poorly fractured Hard basalt. The borewells are recommended up to 60 m BGL.

2. As per average daily rainfall in the area which is 18 mm/day, the system can accommodate 93% of the total runoff or 100% rooftop runoff.

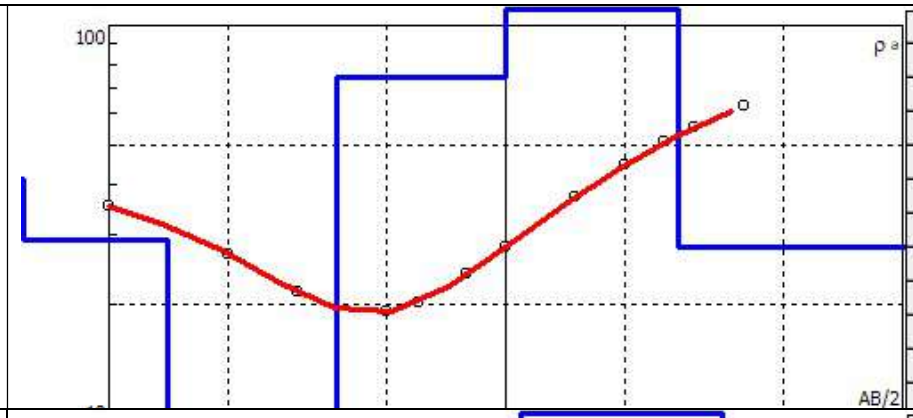
3. During 45 wet days, out of 100, the rainfall is less than 5-6 mm/d or so, infiltration and subsequent filling accompanied by evaporation can be anticipated in a cyclic manner.

4. The proposed System can accommodate almost 16 minutes increased runoff at max rainfall intensity.

Appendix: Modeled electrical resistivity data output

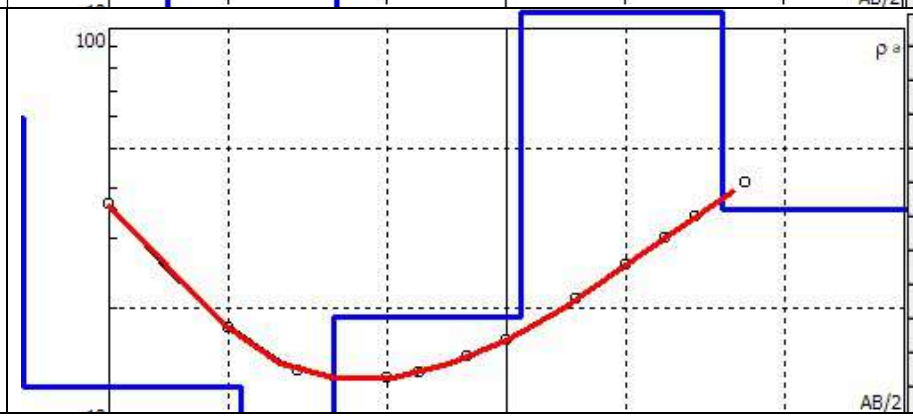
Sr. No.	Graph
1	
	N ρ 1 109 2 5.2 3 86.7 4 16.8 5 46 6 58.1 7 37.9 8 104 9 2918
2	
	N ρ 1 112 2 17.2 3 4.31 4 14.9 5 1158 6 772
3	
	N ρ 1 42 2 22 3 25 4 7 5 26 6 61 7 25 8 90 9 24

4



N	ρ
1	41.2
2	28.9
3	10.6
4	74.5
5	155
6	27.9

5



N	ρ
1	59.5
2	12.7
3	9.65
4	19
5	145
6	35.1

Smartenviro Systems Pvt .Ltd.

TECHNO COMMERCIAL OFFER

FOR

WASTE MANAGEMENT PROJECT

FOR

1502 Kg/Day ORGANIC WASTE

Office/Works: Gat No. 382, Mutha Road, A/P. Pirangut, Tal. Mulshi, Dist. Pune – 412111. Maharashtra (INDIA)
Tel: +91-20-25443163| E-mail: Info@smartenvirosystems.co.in | URL:www.smartenvirosystems.com

September 14, 2021

To,
M/s. Ganga Asmi,
Shanti Mohan Developers LLP,
Wakad, Pune.

Sub: Proposal of SMART Composting System for your Project.

Dear Madam/Sir,

As per the discussion, we are sending a proposal for your requirement of Organic Waste Composting Systems.

- **OWC-1: - Smart Drum Composter – 800 2 nos (Capacity up to 1600 kg/day)** machine which is having a **built-in shredder** with MS with FRP Lining curing drum, a continuous composting machine with inlet & outlet chutes

Our enclosed proposal contains:

1. Introduction	**Annexure I**
2. Technical Specifications	**Annexure II**
3. Commercial	**Annexure III**
4. Photographs	**Annexure IV**

Should you need any further clarification/information, please feel free to contact us.

Thanks and regards,

Yours truly,

Swapnil Yadav
Smartenviro Systems Pvt Ltd

ANNEXURE I

INTRODUCTION

Waste, food waste, garbage, trash, junk, debris, and refuse are all names given to the Municipal Solid Waste (MSW) that is no longer useful in its current form. In contemporary society, many of the items used daily are designed to be used and discarded. The changing lifestyle has increased availability of disposables and also aggravated the problem of how to get rid of all this waste. Innovative strategies are needed to deal with the waste we produce today to prevent it from causing problems for future generations.

There are various ways to get rid of the MSW; mechanical composting is one of them. Mechanical Composting is one of the means of recapturing value through the use of natural biodegradation process.

Smart, the Mechanical Composter by Smart Enviro Systems operates with a very simple mechanism that breaks down the complex bio-degradable waste into its simpler forms. This deodorized waste-stock is further cured for a fortnight to produce the compost as end product. This compost can directly be used for the field application.

ABOUT COMPANY

Smart Enviro Systems is a part of Shrikrishna Group, a well-diversified Engineering group engaged in the manufacturing of Rescue Equipments, Hydraulic Equipments & a new age lighting solution through Light Pipes. Shrikrishna Group is an OEM with an established infrastructure on the area of 40,000 sq.ft. in Pune. The Group has an established Dealer and Service network pan India. It is a set-up with skilled engineers and technicians, own R&D Center, modern machinery and management with futuristic outlook. The company believes in constantly evolving with new products and novel systems, Smart Enviro Systems is a result of such endeavors.

Shrikrishna Group earlier manufactured composting machines for Save Environment Engineers Pvt. Ltd. for their SAVECO range of products. These machines were well accepted by the number of Municipal bodies, residential & commercial complexes and reputed companies across India. Now as part of backward and forward integration the Group has in place, it has introduced a range of products and services to provide solutions in the areas of Municipal Solid Waste Management (MSW).

Our specially designed Smart composting machine is the heart of the system. Smart composting machine is available in the various capacities ranging from 100 Kgs/hr to 400 Kgs/hr&1000 Kg/hr for customized requirements of municipal councils.

The Smart Enviro Systems is a complete solutions provider in the areas of MSW. The solutions provided by Smart Enviro Systems consist of:

- Smart Composter
- Smart Curing Systems
- Smart Turner
- Smart Squeeze (de-watering Press)
- Smart Shredder
- Smart Road Sweeper
- Smart Fuel Bricked Machine

Group Strengths:

- Original Equipment Manufacturer (**OEM**) with an established infrastructure
- The only manufacturer of Rescue Equipments in India
- Engineering & in-house R&D
- Cost effective product range
- Winner of two National Awards
- National Quality Award- 1995
- Vikas Ratan Award- 1995
- Winner of Hari Malini Joshi Award for new product/ design

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MECHANICAL COMPOSTING

Concept:

Mechanical Composting is the most efficient and effective mode of MSW disposal, carried out through a cylindrical container having multipurpose churning and chopping systems working simultaneously to crush and mix the waste matter so as to cut down on the volume and faster pre-decomposition. The machine is a very simple mechanism which accelerates the process of breaking down of the complex bio-degradable waste into its simpler forms, bringing ahead deodorized waste stock which is further cured for a fortnight cycle to produce the organic compost as end product. This compost can directly be used for the field application.

Smart Composting Machine:

To carry out the mixing and crushing process the machine is empowered by a geared motor for mixing & churning purpose and a high-speed motor to crush the tough waste material. **The critical components of the machine are manufactured in SS 304 for longer life and better results.**

The Process:

The 100% segregated bio-degradable waste has to be treated in this composting machine. The machine works in two process stages of 5 min. each to complete one cycle. It's termed as batch process. In initial 5 min. the machine crushes the waste & mixes it homogeneously with the bio decomposition culture.

In the second stage this homogeneous mixture is further mixed & churn with saw dust / bagasse, to soak the excess water content from the biomass which ultimately deodorizes it. Later **this pre-composted mass is kept for curing in the curing bays for about 18 days. Optimum irrigation has to be observed to the curing system**. After the 18th day the container is ready with compost and can be used for field applications.

We supply the complete system including the **Smart** composter and curing system including irrigation system to effectively treat the organic biodegradable portion of MSW to convert into compost.

PROCESS

Collection of organic waste

Segregated organic waste

SMART Drum Composter

Compost

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ANNEXURE II- Technical Specifications

1. **Smart Drum Composter DC-800:**

Machine Size in meter (L x W x H)	: 9.00 x 1.50 x 3.10
Power	: 12 HP
Waste Treatment Capacity	: 800 kg/day
Composter Drum	: MS with FRP Lining
Operation	: Automatic
Volume Reduction	: Up to 70-80%
Shredder	**: Built in (to crush all organic waste including Coconuts, non-veg bones etc.)**

Arrangements to be made by Client:

- Power: Three phase, 415 Volts, 64 A connection with earthing and neutral.
- Drainage line for draining the condensed moisture.
- Shaded area for the machine.
- PCC Flooring (5 inches min.)

Annexure III - COMMERCIAL:

SR NO	DESCRIPTION	AMOUNT(INR)
1	Smart Drum Composter DC – 800 X 2 nos	37,00,000
	Total	37,00,000

Note: -The above price is excluding all taxes. GST will be charged extra on Composting machine, Transportation and Installation and Commissioning.

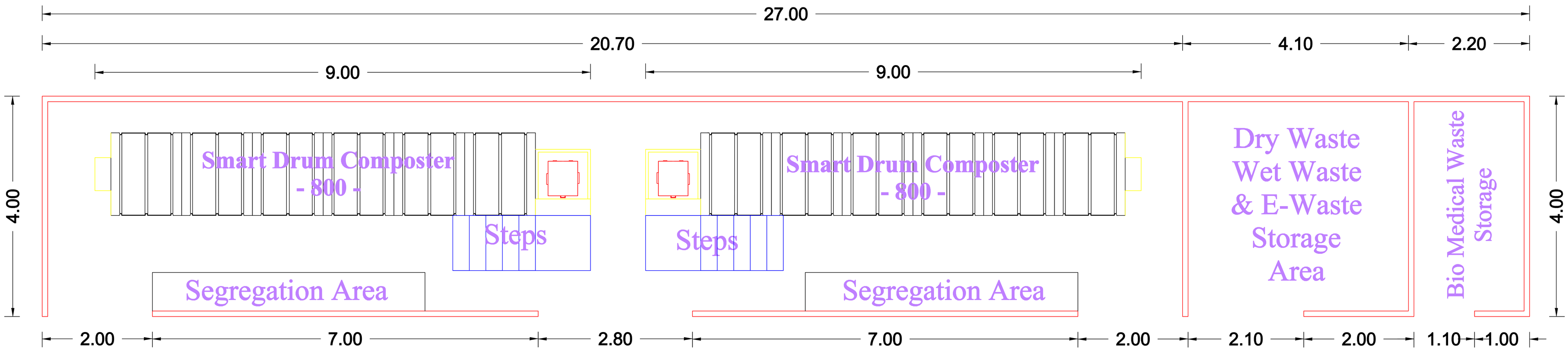
TERMS & CONDITIONS:

1. Warrantee – 12 months from the date of invoice against any manufacturing defect.
2. Delivery: Within 6-8 weeks from the receipt of commercial P.O. and advance
3. Payment Terms:

   50%- advance at the time of order along with the commercial PO
   40%- after inspection at our Pune works before dispatch
   10%- on supply and erection and commissioning

Annexure IV: Photographs.

SMART COMPOSTING DRUM



Shanti Mohan Developers 'Ganga Asmi' At Wakad, Pune
OWC Area Layout With Dimensions

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED. DO NOT SCALE THIS DRAWING.	SMARTENVIRO SYSTEMS PVT LTD 10, KOTHRUD INDUSTRIAL ESTATE,PUNE38.			
		NAME	SIGN & DATE	TITLE:- SMART DC - 1600
	DESIGNED BY:-	S B M	20-11-19	
TREATMENT:-	CHECKED BY:-	S B Y	20-11-19	SUB TITLE:-
SHEET 1OF1	APPROV BY:-	D V K	20-11-19	MATERIAL:-
SCALE:-1:1	QTY:- 1	MODEL:-		PART NO:-

DESIGN BASIS REPORT

FOR

SEWAGE TREATMENT PLANT

(CAPACITY –50 m^3/day)

CLIENT: M/s. Shanti Mohan Developer llp, pune

Submitted By

Sustainera
Solutions Pvt. Ltd.

DESIGN BASIS FOR SEWAGE TREATMENT PLANT

The plant is designed to treat sewage generated having following Characteristics.

Nature of Waste Water	Sewage
Capacity	50 m^3 /day
Flow	2.5 m^3 /hr/ Average
Operating Period	18-20 hrs. /day
Technology	MBBR.

A] RAW SEWAGE PARAMETER(At the inlet of Collection tank / Septic tank)	
Ph	6.5-8.0
COD	≤ 350 mg/lit
BOD	≤ 300 mg/lit
Suspended Solids	≤ 200 mg/lit
Oil & Grease	≤ 10-50 mg /lit
Nitrogen	≤ 40-50 mg /lit
Phosphorous	≤ 5-7 mg /lit
Fecal Coli form	Present

B] TREATED WATER PARAMETER (After tertiary Filtration system)	
pH	6.5-8.0
COD	≤ 30 mg /lit
BOD(5 days @ 20 0C)	≤ 10 mg/lit
Suspended Solids	≤ 10 mg/lit
Oil & Grease	≤ 01 -05 mg/lit
Nitrogen	≤ 5-10 mg /lit
Phosphorous	≤ 05 mg /lit
Fecal Coli form	Absent

1. TREATMENT SCHEME FOR STP

To have eco-friendly & natural treatment, this plant is designed based on the biological treatment concept. This means naturally occurring microbes (which are present in sewage water itself) removes or degrade the organic matter present in the sewage & at the end clean water is available for the non-potable usage or to dispose safely in the drainage or river bodies as per the norms.

1. Primary Treatment

Screening : This is the first units of the plant in which large or floating materials in the sewage gets arrested and blockage or choking of the downstream Equipments can be avoided. This arrested material will be removed manually and then will be disposed of suitably

Oil & Grease trap : Domestic sewage sometimes gets waste water from pantries or kitchen which contains free oil. This oil if not removed then creates the problem of scum accumulation and affects the functioning of microbes.

To avoid this, oil & Grease trap is provided after the bar screen, where free floating oil is arrested prior to entry in the plant. Accumulated oil will be removed periodically and disposed of properly.

Equalization : To absorb variation in quantity and quality of sewage and to provide uniform flow at the downstream treatment process, a collection or equalization tank is provided. This will avoid shock loading and process upsets of the treatment plant. To avoid settling of suspended solids in this tank continues air agitation is provided.

If at site, septic tank is provided then collection tank as well as air agitation is not required.

2. Secondary Treatment

Biological Treatment : This is the main section of the plant where degradation of organic pollutants with the help of aerobic micro-organism takes place. To provide higher surface area for micro-organism, floating media is provided. On which micro-organism growth takes place. This makes bioreactor is of hybrid concept in which both suspended growth as well as attached growth principal for micro-organism is achieved. Due to higher population of micro-organism, effective volume of bioreactor reduced drastically as compared to conventional aeration tanks.

To maintain the aerobic condition in the bioreactor, air supply arrangement is provided by means of aeration equipment which has high oxygen transfer efficiency.

Tube Settler : Gravity overflow from the bioreactor is collected in the tube settler tank. In this settling tank, generated sludge from the bioreactor undergoes a gravity settling. Clear supernatant from settling tank will flow by gravity to a chlorine contact tank.

To reduce the plan area of settling tank, tube modules are placed in this tank to increase the settling area of the tank. Since this tank is a hopper bottom tank due to which there is no need of sludge scrapping mechanisms.

Intermediate Storage tank: Supernatant from Tube settler, flow by gravity to the Intermediate storage tank. Here water is stored before pass through the Filtration plant.

Sludge disposal system : Settled sludge from tube settler will be removed by pumping to the sludge holding tank and from there it will dispose to other safe areas.

3. Tertiary treatment

Secondary treated water will be further passed through sand media filter followed by activated carbon filter.

A. Pressure sand filter

The raw water is first passed through a Pressure sand filter to reduce the suspended solids present in the raw water. This filter is provided to keep a check on the suspended solids.

B. Activated carbon filter

Activated Carbon Filter shall be used to remove undesired color, odor & Organic matter.

Filtered water will be collected in the Treated water Storage tank from where it will be for desired non-potable application. Backwashed water from filters will return back to equalization tank.

If sewage treated & operated properly this sewage treatment plant will give enormous benefits such as

- It will avoid the water pollution
- It will help us to give hygienic surrounding
- After required treatment, treated water can reduce your 60-70 % fresh water requirement, which otherwise we use for toilet flushing, gardening, construction etc. Thus we can save a lot on water expenditure as well as provide us a remedy on present water crises.
- Being a water recycling & conservation system, commercial establishment gets depreciation benefits for promoting green & eco-friendly development.

LEVEL OF AUTOMATION:

The plant is designed based on moving media aerobic process which needs no skilled manpower. The operations involved are ON / OFF of the pumps and air blower, sludge drain, filter backwash. These operations can be done by the security or gardener. The pumps are provided with level switch for ON /OFF based on PLC Program & the tank water level and to avoid dry run and mechanical damage. This is SEMI-AUTOMATIC.

2. A .TECHNICAL SPECIFICATION for STP

1. Bar Screen	
MOC	MSEP
Coating	Red Oxide + Epoxy
Angle of inclination	45 Deg
Distance between bar	10 mm
Qty	1 No

2. Sewage Transfer Pump	
Type	Self-Priming, non-clog, centrifugal
Capacity	2.5 m3/hr. @ 12 m head
Power	0.75 Kw / 1.5 hp/ 3 Phase
MOC	CI
Make	Kirloskar/CG/JP/Equiv
Qty	2 No (1W+1SB)

3. Sludge Transfer Pump	
Type	Self-Priming, non-clog, centrifugal
Capacity	1 m3/hr @ 12 m head
Power	0.75Kw / 1.02 hp/3 Phase
MOC	CI
Make	Kirloskar/CG/JP/Equiv
Qty	1 No

4. PAC Dosing System	
Type	Electronic Diaphragm
Capacity	6-12 LPH @ 4 Kg/cm2
Power	0.0025 kW
Make	Positive/Initiative/Equiv.
Tank capacity	100 Lit
MOC	LDPE
Quantity	1 no.

5. Tube Media	
MOC	PVC
Shape of Tube	Hexagonal
Thickness	1.0To 1.2 mm
Working Temp	500C
Qty	1 lot
Make	Cool deck/Marvellous/Equiv

6. Air Blower	
Type	Twin Lobe, Root Blower
Capacity	50 m3/hr @0.4 kg/cm2
Make	KPT/TMVT/ Everest/IR/Equiv
Qty	2 no.(1W+1SB)

7. Electric Motor for Blower	
Type	Foot Mounted
RPM	1440
Power	3-5 HP
Make	Crompton/Siemens
Qty	2 no(1W+1SB)

8. Diffuser Membrane	
MOC Membrane	EPDM
MOC Base	PP
Make	Rehau/Scogen/Jaegers/Equiv
Qty	1 lot

9. MEDIA FOR BIOREACTOR (MBBR)	
Shape	Cylindrical
MOC	PP
Make	MM Aqua/Equiv
Qty	1 LOT
Density of Media	0.93 gm/cm3
Media Specific Gravity	0.90 – 0.95 gm/cm3
Effective SA	400 m2/m3
Media Size	15mm ht x 22 mm Dia

10. Filter feed pump	
Type	Monobloc, Centrifugal
Capacity	2.5 m3/hr @ 28 m head
Duty	To pump water from IST to Filter
Accessories	Standard Base Frame
Power	1.1 KW /1.5 hp/3 phase
Make	Kirloskar /CRI/Wilo/ Equiv.
Quantity	2no.(1W+1SB)

11. Sand Filter	
Capacity	2.5 m3/hr
Size	800 x 1500 mm
MOC	MSEP
Piping	40 NB
Valve	Butter Fly valve
Filter media	Fine sand and supporting pebbles
Quantity	1No.

12. Activated Carbon Filter	
Capacity	2.5 m3/hr
Size	800 x 1500 mm
MOC	MSEP
Piping	40 NB
Valve	Butter fly valve
Filter media	sand and carbon
Quantity	1No.

13. Centrifuge system	
Capacity	2 kg/day
MOC	CI body, SS internal
Piping	40 NB
Motor power	0.75 kw
No. bags	3 nos
Quantity	1No.

14. Control panel	
Qty	1 no
Specification	DOL Starter panel,
Type	Semi-automatic
Cable	Flexible
Make	SGM

15. Ozonator	
Ozonator	20 G/Hr.
Type	Corona Discharge
Dose	5-10 ppm
Cell MOC	SS 316 Electro Polished With Dielectric,
No. Of Cells	04 Nos. Air Cooled
Power Supply	High Frequency High Voltage Circuit.
Weight	Approximate 500 Kg.

Size	36 ” H X 24” D X 36” W Approximate
Ozone Out Put	10 Gram / hr.
Oxygen Flow	25-50 Lpm, 90 % Purity @ 1 kg/cm2 pressure per kg of Ozone.
Ozone Concentration	30 - 40 g/m3
All Contact Parts	In SS 316
Ozone Tube	Silicon / Teflon ½” X 5 meter Long
Supply Fuse	5 Amp.
Power	1.1 KW
ORP	550 – 650 mV

1. UTILITY CONSUMPTION

To operate STP plants following overheads are to be considered.

a. Electricity consumption
b. Chemicals
c. Manpower

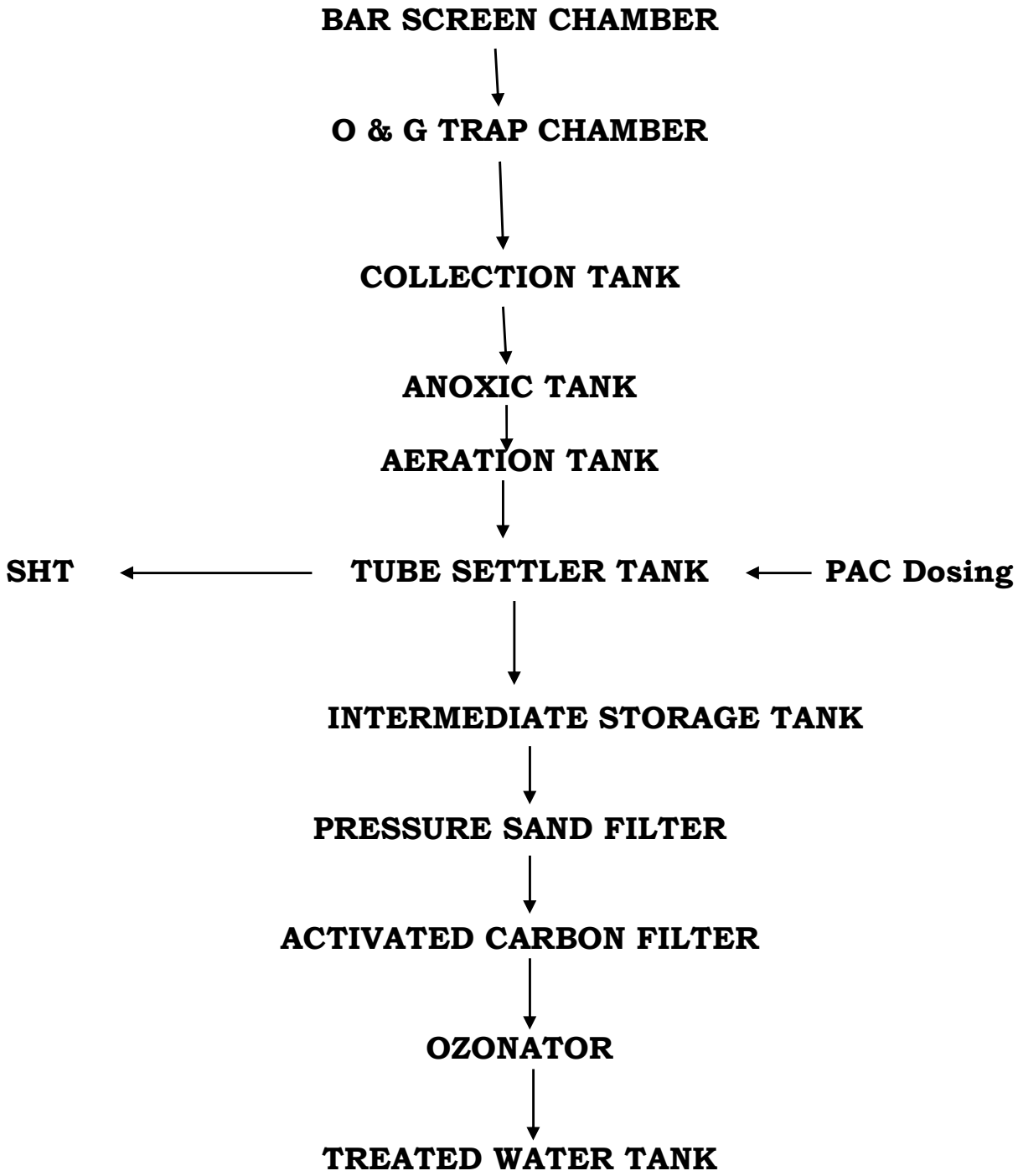
a. Electrical Load

Sr No.	Description	Installed load, kW	Working load, kW/hr	Working hours in a day	Electricity consumption/day
01	Sewage Transfer pump	1.5	0.75	20hr	15
02	PAC dosing	0.0025	0.0025	20hr	0.05
03	Sludge transfer pump	0.75	0.75	10hr	7.5
04	Air Blower	4.4	2.2	20 hr.	44
05	Filter feed pump	2.2	1.1	20 hr.	22
06	Ozonator	1.1	1.1	20 hr.	22
	Total power required per day in KW/day				110.55

b. Chemical & Manpower

Sr. No.	Description	Quantity
1	PAC	Approx. 0.5 kg / day
2	Man Power	One man Power

STP SCHEMATIC FLOW CHART



4. PLANT OPERATION COST FOR 230 KLD- STP

Per day operating cost of Plant as follows:

Sr.No	Utility consumption/day	Qty/day	Rate/unit	Price in Rs.
1	Electricity Consumption	110.55 KW	Rs.10	1105.5
	Chemical -PAC	2 kg	Rs.25	50
2	Man power	1/Shift	Rs.500	500.00
			TOTAL PRICE FOR 1 DAY	**1655.5**
			TOTAL PRICE FOR 30 DAYS	**49665**
Treated water testing charges per month for 1 time				**2000**
Miscellaneous charges monthly				**5000**
Total O & M per month				**56665/-**
Total O & M per Year				**6,79,980**

Capital cost of Plant as follows:

Sr.No	Perticular	Qty	Rate(Rs.)	Price in Rs.
1	Civil work	1 no	2500000/-	2500000/-
	Plant Equipments	1 lot	1200000/-	1200000/-
			TOTAL PRICE	**3700000/-**

DESIGN CALCULATIONS

- BAR SCREEN CHAMBER–

- Capacity – 50 m^3/day
- Flow - 2.5 m^3/hr.
- Retention Time for Bar screen = 1 to 3 min

Now, considering Retention Time =1.7 Min
Therefore, Tank Volume=2.5 × 0.029 hr. = 0.05 m^3

- Considered Volume of Tank – 0.05 m3

- Let SWD of Tank – 0.2 m

- Area of Chamber – 0.05/0.2 = 0.25 m^2

Consider Length of Tank = 0.5 m
Therefore Width of Tank = 0.5 m

Therefore Tank Size is 0.5 m ×0.5 m × 0.2 m SWD+2.5 m FB – 1 no.

- O & G CHAMBER –

- Capacity – 50 m^3/day
- Flow - 2.5 m^3/hr.
- Retention Time for O&G Chamber = 6 -8min

  Now, considering Retention Time – 6.2 min (0.10hr)
  Therefore, Tank Volume = 2.5× 0.10 = 0.18 m^3

- Considered Volume of Tank – 0.18 m^3

- Let SWD of Tank – 0.35 m

- Area of Chamber –0.18/0.35= 0.51 m^2

Consider Length of Tank = 1.0 m
Therefore Width of Tank = 0.5 m

Therefore Tank Size is 1.0 m × 0.5 m × 0.35 m SWD + 2.55 m FB – 1 no.

- COLLECTION CUM EQUALIZATION TANK –

Flow – 2.5 m^3/hr

Retention Time for Collection Tank = 5 – 8hrs.

Consider retention time = 8.0 hrs

Therefore, Tank Volume = 2.5 × 8.0 = 20.06 m^3

Considered Volume of Tank – 20.06 m^3

- Let SWD of Tank – 2.95 m
- Area of Chamber –20.06/2.95= 6.8 m^2

Consider Length of Tank = 3.4 m
Therefore Width of Tank = 2.0 m

Therefore Tank Size is 3.4m x 2.0 m × 2.95 m SWD + 2.55 m FB = 1 No

- ANOXIC TANK –

- Flow – 2.5 m^3/hr.
- Retention Time for Collection Tank = 3 – 4 hrs. considered

  Therefore, Tank Volume = 2.5× 3.0 = 7.5 m^3
- Considered Volume of Tank – 7.5 m3
- Let SWD of Tank – 3.7 m
- Area of Chamber –7.5/3.7 = 2.23 m^2

Consider Length of Tank – 2 m
Therefore Width of Tank = 1.0 m

Therefore Tank Size is 2.0 m × 1.0m × 3.7m SWD + 0.3 m FB – 1 no.

- AERATION TANK

Flow – 2.5 m^3/hr

Retention Time for Aeration Tank = 4 - 6hrs

Considered retention time of 4.8 hrs

Therefore, tank volume = 2.5 × 4.8 = 11.7 m3

Considered Volume of Tank – 11.7 m^3

Let SWD of Tank – 3.65 m
Area of Chamber – 11.7/3.65 = 3.3 m^2

Consider Length of Tank – 2.0 m
Therefore Width of Tank = 1.6 m

Therefore Tank Size is 2.0 m x 1.6 m × 3.65 m SWD + 0.35 m FB – 1no

MBBR Media Qty Calculation:-

BOD Load = 291 x 50
= 10185 gm. of BOD

16 gm. of BOD : - 1 m^2 media area

10185 gm. of BOD: - 636.5625 m^2area

1 m^3 of MBBR Media: - 400 m^2 area

Total MBBR Media Required = 636.56/400
= 1.6 m3
Therefore MBBR Media Required for Aeration Tank = 2 m^3

- AIR BLOWER –

- BOD Load In aeration Tank – (300-20)=280 mg/lit

- BOD Load = 50 × 280/1000

= 11.8 kg/day

- Air Requirement for BOD Reduction:

1 kg of BOD required 1-1.5 kg of Oxygen, considering 1.5 kg of Oxygen.
Therefore,

Theoretical oxygen requirement per day= 11.8 X 1.5 kg O_2

Hence, Theoretical oxygen requirement per day = 16.7 kg/day of O_2

Theoretical oxygen requirement per hour = 16.7/24
= 0.6125 kg/hr.

$$\text{Standard oxygen requirement} = \frac{\text{Theoretical oxygen requirement}}{\frac{\text{AlphaX [BetaXCsW-DO] XTheta}^{(\text{Tww}-20^0\text{C})}}{\text{Css}}}$$

Where,
Alpha = 0.5
Beta = 0.95
Theta = 1.024
Waste water temperature, Tww = 27^0C
DO maintained for designed flow = 2 mg/lit
Surface saturation C = 7.97
Site basin saturation Csw = 9.26
Standard basin saturation Css = 10.57

Therefore,

$$\text{Standard oxygen requirement} = \frac{0.6125}{((0.5X\ (0.95X9.26\text{-}2)/10.57)\ X\ (1.024\text{^}\ (27\text{-}20)))}$$

$$= 0.12\text{kg of } O_2\text{/hr}$$

$$\text{Total air requirement} = \frac{\text{Actual } O_2 \text{ requirement}}{\text{Density of air X\% of } O_2 \text{ in air by weight X SOTE\%}}$$

Where,
Density of air = 1.19 kg/m^3
Considering, SOTE % per Mtr SWD of Aeration tank – 6 % per Mtr
SOTE = Standard oxygen transfer efficiency = 21% (calculated)
% of O_2 in air by weight = 0.2306

Therefore,

$$\text{Total air requirement for Aeration Tanks} = \frac{\text{Actual } O_2 \text{ requirement}}{1.19\ X\ 0.2306\ X\ 0.21}$$

$$= \frac{0.12}{1.19\ X\ 0.2306\ X\ 0.21}$$

= 40 m^3/hr
Air required for Equalization tank, sludge holding tank, Intermediate tank & Treated water tank = 30 %
Therefore Total air requirement will be = 40 X 30 % = 12m^3/hr

Therefore air blower capacity = 40+12 = 52 m^3/hr

Therefore we select air blower capacity is 50 m^3/hr

- DIFFUSER MEMBRANES FOR AERATION TANK–

Consider size of diffuser membranes as 90 mm OD X 1500 mm length
Considering average 50 m^3/hr air required for Aeration tank
Number of diffusers = (Air to be supplied to aeration tank) / (minimum air flux Rating)
= 50/12.5
= 3.8 Nos.

Therefore, number of diffusers will be 4 in aeration tank.

- TUBE SETTLING TANK –

- Flow – 2.5 /hr
- Retention Time for Tube Settling Tank = 2 to 5 hrs

Now, considering Retention Time = 2.8 hr
Therefore, Total Tank Volume –2.5 × 2.8 hr = 7 m^3
- Considered volume of tank – 5 m^3
- Let SWD of Tank – 3.6 m

- Area of Tank – 7/3.6 = 1.92 m^2
- Consider Length of Tank – 1.2 m

- Therefore Width of Tank = 1.6 m

Therefore Tank Size is 1.2 m × 1.8 m × 3.6 m SWD +0.4 m FB – 1 No.

- TUBE SETTLER MEDIA –

- Flow – 1.75 m^3/hr
- Height of media – 0.55 m
- Tube Media required for Each Tank = length X width X height of media

=1.3 X 1.2 X 0.55 =0.86 m^3

Therefore, Tube media required for Settling Tank will be 1 m^3

- FILTER FEED TANK/INTERMEDIATE STORAGE TANK –

- Flow – 2.5 m^3/hr
- Retention Time for Filter feed Tank = 1 to 4 hr
  Now, considering Retention Time = 1.96 hr
  Therefore, Tank Volume –2.5 × 1.96 = 4.76 m^3
- Considered volume of tank – 4.76 m3
- Let SWD of Tank – 3.6 m

- Area of Chamber – 4.76/3.6 = 1.32 m^2

- Consider Length of Tank – 1.2 m

- Therefore Width of Tank = 1.1 m

Therefore Tank Size is 1.2 m x 1.1 m × 3.6 m SWD + 0.4 m FB – 1 no.

- PRESSURE SAND FILTER –

- Flow – 50 m^3/day
  – 2.5 m^3/hr.
- Design Velocity – 12 $m^3/m^2/hr$.
- Continuity Equation,

- Q = A × u

- Filtration Area – Q / u
- 2.5/12
- 0.29 m^2

Area = $\prod D^2/4$

D = $\sqrt{((0.29 \times 4)/\prod)}$
D = 0.802m

Diameter Considered = 800 mm

HOS = 1500mm
Media Depth = 1000 mm
Density of Media = 1800 kg/cm^3
Media Quantity = Area × 1800 × Media Depth
= $\prod/4 \times 1.2^2 \times 1800 \times 1$
= 2034 kg ≈ 2500 kg

- ACTIVATED CARBON FILTER –

- Flow – 50 m^3/day
  – 2.5 m3/hr
- Design Velocity – 14 $m^3/m^2/hr$
- Continuity Equation,

- Q = A × u

- Filtration Area – Q / u
- 2.5/14
- 0.25 m^2

Area = $\prod D^2/4$

D = $\sqrt{((0.25 \times 4)/\prod)}$
D = 0.801m

Diameter Considered =800 mm
HOS = 1500 mm

Supporting Media Depth = 300 mm
Density of Media = 1800 kg/m^3
Media Quantity = Area × 1800 × Media Depth

= ∏/4 x 0.8^2× 1800× 0.3

= 210 kg ≈ 250 kg

Activated Carbon Depth = 700 mm
Density of Media = 600 kg/m^3
Media Quantity = Area × 600× Media Depth

= ∏/4 x 0.8^2× 600× 0.7

= 74 kg ≈ 100 kg

- TREATED WATER TANK –
- Flow – 2.5 m^3/hr
- Retention Time for Filter feed Tank = 2 to 4 hr
  Now, considering Retention Time = 2.25 hr
  Therefore, Tank Volume –2.5 × 2.25 = 8.14 m^3
- Considered volume of tank – 8.14 m3
- Let SWD of Tank – 3.7 m
- Area of Chamber – 8.14/3.7 = 2.6 m^2
- Consider Length of Tank – 1.1 m
- Therefore Width of Tank = 2.0 m

Therefore Tank Size is 1.1 m x 2.0 m × 3.7 m SWD + 0.3 m FB – 1 no.

- SLUDGE HOLDING TANK –
- BOD Load = (300 × 50)/1000

= 15 kg/day

1 kg of BOD generates 0.2-0.25 kg of dry sludge per day.

1 Kg of BOD = 0.25 kg of dry sludge
Hence, 15 kg BOD = 3.75 kg of dry sludge

Considering 1 % slurry consistency

Therefore volume of slurry generated = 3.75 /1%
= 375 liters
I.e. approximately 0.375 m^3 per day

- Considering Retention Time for Sludge Holding Tank =12.5 days

Therefore, Tank Volume = 0.375 m^3/day×12.5 days = 4.44 m^3

- Considered Volume of Tank –4.44 m^3
- Let SWD of Tank – 3.7 m
- Area of Chamber – 4.4/3.7 = 1.2 m^2
- Consider Length of Tank – 1.2 m
- Therefore Width of Tank = 1.0 m

Therefore Tank Size is 1.2 m x 1.0 m × 3.7 m SWD + 0.3 m FB – 1 no.

- OZONE DOSING SYSTEM

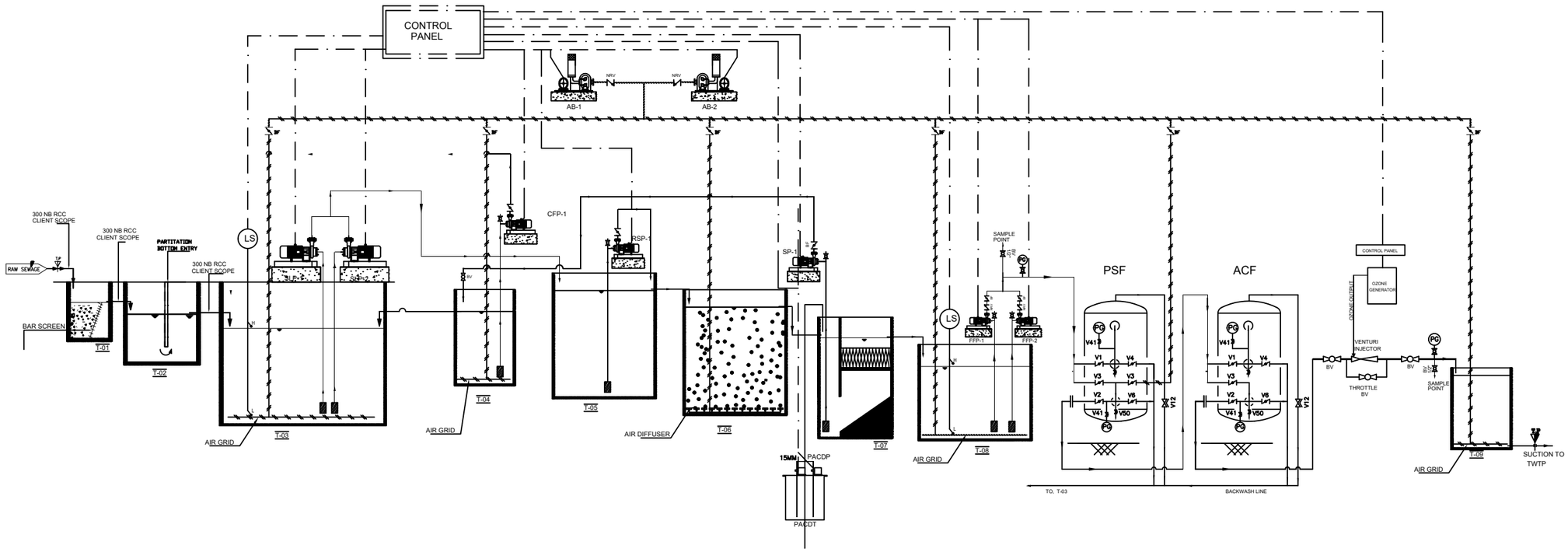
Dosage rate = 5 gm/hr
Flow rate = 2.5 m^3/Hr
Concentration of Ozone = 85 % to 95%
Consider Concentration of Ozone = 90%

$$\text{Ozonator Capacity} = \frac{\text{Flow } (m^3/Hr) \times \text{Dosage (gm/hr)}}{90\%}$$

= 2.5 x 5/ 90%
= 16.5 = 20 Grm/Hr

Consider Ozonator Capacity as 20 Grm/Hr

ORP value for Ozonator= 550 – 650 mv



PIPING & INSTRUMENTATION DIAGRAM

COLOUR LEGEND :-

SR. NO.	COLOUR CODE	DESCRIPTION
01	———	PROCESS LINE
02	———	AIR LINE
03	———	TREATED LINE
04	———	DRAIN, LETCHATE BACKWASH LINE
05	———	SLUDGE LINE
06	———	DOSING LINE
07	———	GRAVITY LINE
08	———	OZONE LINE

VALVE LEGEND:-

NO	LEGEND	MARK	DISCRIPTION
01		BF	BUTTERFLY VALVE
02		NRV	NON RETURN VALVE
03		BV	BALL VALVE
04		PRV	PRESSURE RELIF VALVE

UNIT DETAILS :-

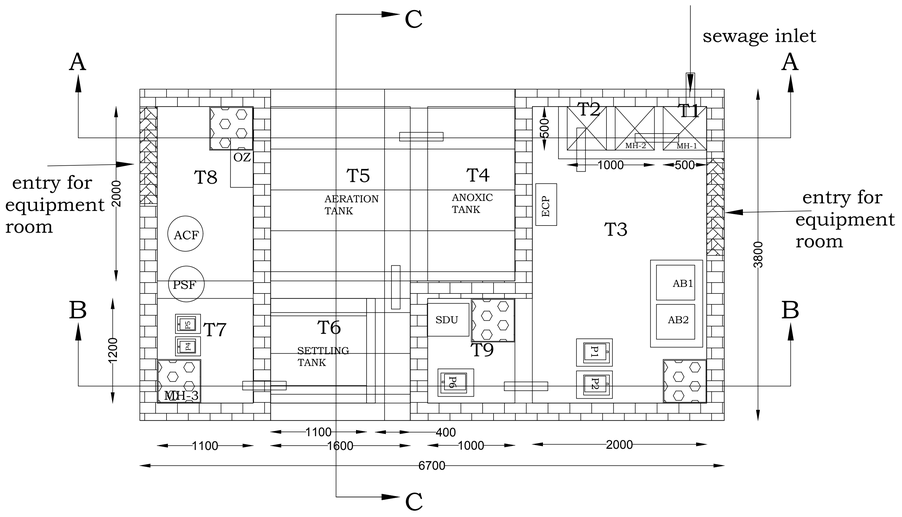
SR NO	DESCRIPTION	TAG NO.	SR NO	DESCRIPTION	TAG NO.
1	Bar Screen	BS	10	Tube Media	TM
2	Sewage Transfer Pump	SLP	11	Sludge Pump	SP
3	Air Blower	AB	12	PAC Dosing Tank	PAC DT
4	Air Grid	AG	13	PAC Dosing Pump	PAC DP
5	Diffuser Membrane		14	Filter Feed Pump	FFP
6	Media for Bioreactor	MBBR	15	Pressure Sand Filter	PSF
7	CENTRIFUGE	CF	16	Activated carbon Filter	ACF
8	CENTRIFUGE FEED PUMP	CFP	17	OZONATOR	OZ

INSTRUMENT LEGEND:-

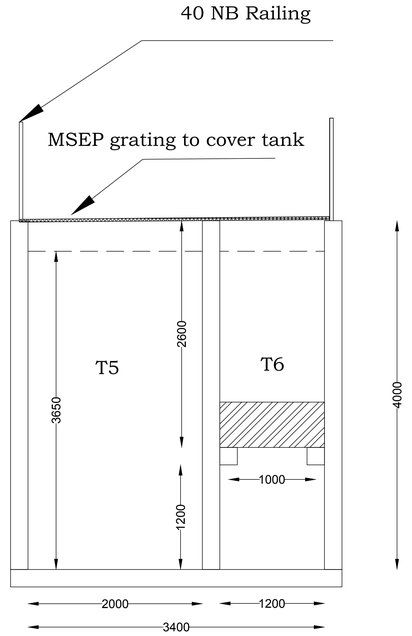
SR.	LEGEND	DISCRIPTION
1	PG	PRESSURE GAUGE
2	LS	LEVEL SWITCH
3		VENTURI

CLIENT:-	**SHANTI MOHAN DEVELOPERS, PUNE**	
PROJECT:-	50 **KLD SEWAGE TREATMENT PLANT**	
SCALE: UTS	**CAPACITY: 50 CUM/DAY**	DATE: 04/01/2020
DRAWN: VARSHA	**SEWAGE TREATMENT PLANT**	DWG NO.: DUS/01/20-21
CHECKED: LAWANYA	**PIPING AND INSTRUMENTAIONAL DIAG.**	**REV. NO.:- 01**

SUSTAINERA SOLUTIONS PVT.LTD



TOP PLAN WITH EQUIPMENT ROOM



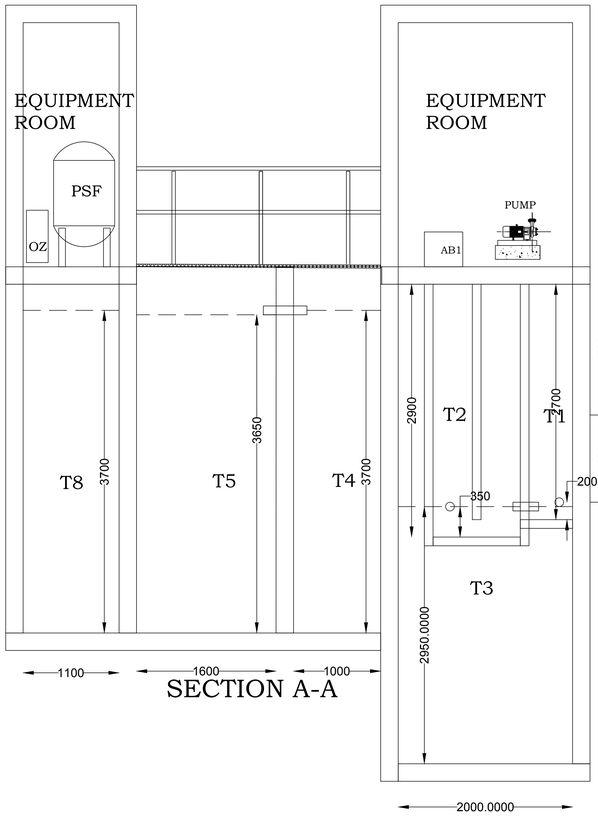
SECTION C-C

PLEASE NOTE:

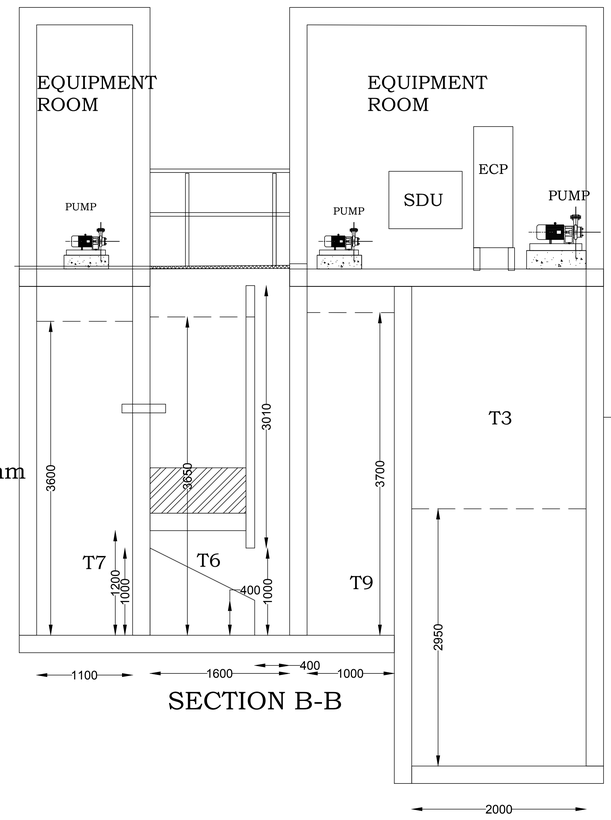
SN	DESCRIPTION
1	ALL DIMENSIONS ARE IN MM.
2	WALL THICKNESS IS ASSUMED TO BE 200 MM.
3	PVC/MSEP GRATING SHOULD BE PROVIDED BY CLIENT = 50 MM OR 100 MM THICKNESS.
4	INTERNAL CORE CUTTING SIZES IS OF 100 MM AND MAY GET CHANGED AS PER SITE
5	INTERNAL PIPING LAYOUT MAY CHANGE AS PER SITE CONDITION.
6	PROVISION OF VENTILATION DUCT/EXHAUST IN THE EQUIPMENT ROOM.
7	TYPE AND NUMBER OF WINDOWS TO BE DECIDED BY ARCHITECT.
8	PROVISION OF INSERTS/PUDDLES/RUNGS IN EACH TANK WILL BE IN CLIENT SCOPE.
9	A CLEAR HEIGHT OF EQUIPMENT ROOM 3.0 MTR SHALL BE ENSURED TO ALL UNOBSTRUCTED MOVEMENT OF EQUIP.

EQUIPMENT DETAILS

TAG NO.	DESCRIPTION
P1 & P2	SEWAGE TRANSFER PUMP (1W + 1SB)
P3	SLUDGE RE-CIRCULATION PUMP (1W)
P4 & P5	FILTER FEED PUMP (1W + 1SB)
SDU	SLUDGE DEWATERING UNIT
P8	FILTER PRESS FEED PUMP
AB1 & AB2	AIR BLOWER (1W + 1SB)
PSF	PRESSURE SAND FILTER
ACF	ACTIVATED CARBON FILTER
PDS	POLY DOSING SYSTEM
OZU	OZONIZATION UNIT
FP	FILTER PRESS
ECP	ELECTRICAL CONTROL PANEL



SECTION A-A



SECTION B-B

TANK DETAILS

TAG	DESCRIPTION OF TANKS	DIMENSION	LD (MTR)	VOLUME (M3)	EFFECTIVE VOLUME
T1	BAR SCREEN CHAMBER	0.5 M x 0.5 M x 2.7 M	0.2	0.675	0.05
T2	OIL N GREASE CHAMBER	1.0 M x 0.5 M x 2.9 M	0.35	1.45	0.18
T3	EQUALIZATION TANK	2.0 M x 3.4 M x 5.5 M	2.95	37.4	20.06
T4	ANOXIC TANK	2.0 M x 1.0 M x 4.0 M	3.7	8	7.5
T5	AERATION TANK	1.6 M x 2.0 M x 4.0 M	3.65	12.8	11.68
T6	SETTLING TANK	1.6 M x 1.2 M x 4.0 M	3.65	7.68	7
T7	FILTER FEED TANK	1.2 M x 1.1 M x 4.0 M	3.6	5.28	4.76
T8	TREATED WATER TANK	2.0 M x 1.1 M x 4.0 M	3.7	8.8	8.14
T9	SLUDGE HOLDING TANK	1.2 M x 1.0 M x 4.0 M	3.7	4.8	4.44
	TOTAL AREA FOR STP	25.4 SQ.M			

MANHOLE DETAILS

TAG NO.	DESCRIPTION
MH1	1000 MM X 1000 MM
MH3	600 MM X 900 MM

CLIENT:-	**SHANTI MOHAN DEVELOPER LLP, PUNE**	
PROJECT:-	**GANGA ASMI, MHADA**	
SCALE: UTS	**CAPACITY: 50 CUM/DAY STP**	DATE: 17/12/2021
DRAWN: VARSHA	**SEWAGE TREATMENT PLANT**	DWG NO.: DUS/01/20-21
CHECKED: LAWANYA	**GA AND SECTIONAL DRAWING**	**REV. NO.:- 02**

SUSTAINERA SOLUTIONS PVT.LTD

DESIGN BASIS REPORT

FOR

SEWAGE TREATMENT PLANT

(CAPACITY –60 m^3/day)

CLIENT: M/s. Shanti mohan developers llp

Submitted By

Sustainera
Solutions Pvt. Ltd.

DESIGN BASIS FOR SEWAGE TREATMENT PLANT

The plant is designed to treat sewage generated having following Characteristics.

Nature of Waste Water	Sewage
Capacity	60m^3 /day
Flow	3.0 m^3 /hr/ Average
Operating Period	18-20 hrs. /day
Technology	MBBR

A] RAW SEWAGE PARAMETER(At the inlet of Collection tank / Septic tank)	
Ph	6.5-8.0
COD	≤ 350 mg/lit
BOD	≤ 300 mg/lit
Suspended Solids	≤ 200 mg/lit
Oil & Grease	≤ 10-50 mg /lit
Nitrogen	≤ 40-50 mg /lit
Phosphorous	≤ 5-7 mg /lit
Fecal Coli form	Present

B] TREATED WATER PARAMETER (After tertiary Filtration system)	
pH	6.5-8.0
COD	≤ 30 mg /lit
BOD(5 days @ 20 0C)	≤ 10 mg/lit
Suspended Solids	≤ 10 mg/lit
Oil & Grease	≤ 01 -05 mg/lit
Nitrogen	≤ 5-10 mg /lit
Phosphorous	≤ 05 mg /lit
Fecal Coli form	Absent

1. TREATMENT SCHEME FOR STP

To have eco-friendly & natural treatment, this plant is designed based on the biological treatment concept. This means naturally occurring microbes (which are present in sewage water itself) removes or degrade the organic matter present in the sewage & at the end clean water is available for the non-potable usage or to dispose safely in the drainage or river bodies as per the norms.

1. Primary Treatment

Screening : This is the first units of the plant in which large or floating materials in the sewage gets arrested and blockage or choking of the downstream Equipments can be avoided. This arrested material will be removed manually and then will be disposed of suitably

Oil & Grease trap : Domestic sewage sometimes gets waste water from pantries or kitchen which contains free oil. This oil if not removed then creates the problem of scum accumulation and affects the functioning of microbes.

To avoid this, oil & Grease trap is provided after the bar screen, where free floating oil is arrested prior to entry in the plant. Accumulated oil will be removed periodically and disposed of properly.

Equalization : To absorb variation in quantity and quality of sewage and to provide uniform flow at the downstream treatment process, a collection or equalization tank is provided. This will avoid shock loading and process upsets of the treatment plant. To avoid settling of suspended solids in this tank continues air agitation is provided.

If at site, septic tank is provided then collection tank as well as air agitation is not required.

2. Secondary Treatment

Biological Treatment: This is the main section of the plant where degradation of organic pollutants with the help of aerobic micro-organism takes place. To provide higher surface area for micro-organism, floating media is provided. On which micro-organism growth takes place. This makes bioreactor is of hybrid concept in which both suspended growth as well as attached growth principal for micro-organism is achieved. Due to higher population of micro-organism, effective volume of bioreactor reduced drastically as compared to conventional aeration tanks.

To maintain the aerobic condition in the bioreactor, air supply arrangement is provided by means of aeration equipment which has high oxygen transfer efficiency.

Tube Settler : Gravity overflow from the bioreactor is collected in the tube settler tank. In this settling tank, generated sludge from the bioreactor undergoes a gravity settling. Clear supernatant from settling tank will flow by gravity to a chlorine contact tank.

To reduce the plan area of settling tank, tube modules are placed in this tank to increase the settling area of the tank. Since this tank is a hopper bottom tank due to which there is no need of sludge scrapping mechanisms.

Intermediate Storage tank: Supernatant from Tube settler, flow by gravity to the Intermediate storage tank. Here water is stored before pass through the Filtration plant.

Sludge disposal system : Settled sludge from tube settler will be removed by pumping to the sludge holding tank and from there it will dispose to other safe areas.

3. Tertiary treatment

Secondary treated water will be further passed through sand media filter followed by activated carbon filter.

A. Pressure sand filter

The raw water is first passed through a Pressure sand filter to reduce the suspended solids present in the raw water. This filter is provided to keep a check on the suspended solids.

B. Activated carbon filter

Activated Carbon Filter shall be used to remove undesired color, odor & Organic matter.

Filtered water will be collected in the Treated water Storage tank from where it will be for desired non-potable application. Backwashed water from filters will return back to equalization tank.

If sewage treated & operated properly this sewage treatment plant will give enormous benefits such as

- It will avoid the water pollution
- It will help us to give hygienic surrounding
- After required treatment, treated water can reduce your 60-70 % fresh water requirement, which otherwise we use for toilet flushing, gardening, construction etc. Thus we can save a lot on water expenditure as well as provide us a remedy on present water crises.
- Being a water recycling & conservation system, commercial establishment gets depreciation benefits for promoting green & eco-friendly development.

LEVEL OF AUTOMATION:

The plant is designed based on moving media aerobic process which needs no skilled manpower. The operations involved are ON / OFF of the pumps and air blower, sludge drain, filter backwash. These operations can be done by the security or gardener. The pumps are provided with level switch for ON /OFF based on PLC Program & the tank water level and to avoid dry run and mechanical damage. This is SEMI-AUTOMATIC.

2. A .TECHNICAL SPECIFICATION for STP

1. Bar Screen	
MOC	MSEP
Coating	Red Oxide + Epoxy
Angle of inclination	45 Deg
Distance between bar	10 mm
Qty	1 No

2. Sewage Transfer Pump	
Type	Self-Priming, non-clog, centrifugal
Capacity	3.0 m3/hr. @ 12 m head
Power	0.75 Kw / 1.5 hp/ 3 Phase
MOC	CI
Make	Kirloskar/CG/JP/Equiv
Qty	2 No (1W+1SB)

3. Sludge Transfer Pump	
Type	Self-Priming, non-clog, centrifugal
Capacity	1 m3/hr @ 12 m head
Power	0.75Kw / 1.02 hp/3 Phase
MOC	CI
Make	Kirloskar/CG/JP/Equiv
Qty	1 No

4. PAC Dosing System	
Type	Electronic Diaphragm
Capacity	6-12 LPH @ 4 Kg/cm2
Power	0.0025 kW
Make	Positive/Initiative/Equiv.
Tank capacity	100 Lit
MOC	LDPE
Quantity	1 no.

5. Tube Media	
MOC	PVC
Shape of Tube	Hexagonal
Thickness	1.0To 1.2 mm
Working Temp	500C
Qty	1 lot
Make	Cool deck/Marvellous/Equiv

6. Air Blower	
Type	Twin Lobe, Root Blower
Capacity	60 m3/hr @0.5 kg/cm2
Make	KPT/TMVT/ Everest/IR/Equiv
Qty	2 no.(1W+1SB)

7. Electric Motor for Blower	
Type	Foot Mounted
RPM	1440
Power	3-5 HP
Make	Crompton/Siemens
Qty	2 no(1W+1SB)

8. Diffuser Membrane	
MOC Membrane	EPDM
MOC Base	PP
Make	Rehau/Scogen/Jaegers/Equiv
Qty	1 lot

9. MEDIA FOR BIOREACTOR (MBBR)	
Shape	Cylindrical
MOC	PP
Make	MM Aqua/Equiv
Qty	1 LOT
Density of Media	0.93 gm/cm3
Media Specific Gravity	0.90 – 0.95 gm/cm3
Effective SA	400 m2/m3
Media Size	15mm ht x 22 mm Dia

10. Filter feed pump	
Type	Monobloc, Centrifugal
Capacity	3.0 m3/hr @ 28 m head
Duty	To pump water from IST to Filter
Accessories	Standard Base Frame
Power	1.1 KW /1.5 hp/3 phase
Make	Kirloskar /CRI/Wilo/ Equiv.
Quantity	2no.(1W+1SB)

11. Sand Filter	
Capacity	3.0 m3/hr
Size	800 x 1500 mm
MOC	MSEP
Piping	40 NB
Valve	Butter Fly valve
Filter media	Fine sand and supporting pebbles
Quantity	1No.

12. Activated Carbon Filter	
Capacity	3.0 m3/hr
Size	800 x 1500 mm
MOC	MSEP
Piping	40 NB
Valve	Butter fly valve
Filter media	sand and carbon
Quantity	1No.

13. Centrifuge system	
Capacity	4 kg/day
MOC	CI body, SS internal
Piping	40 NB
Motor power	0.75 kw
No. bags	3 nos
Quantity	1No.

14. Control panel	
Qty	1 no
Specification	DOL Starter panel,
Type	Semi-automatic
Cable	Flexible
Make	SGM

15. Ozonator	
Ozonator	20 G/Hr.
Type	Corona Discharge
Dose	5-10 ppm
Cell MOC	SS 316 Electro Polished With Dielectric,
No. Of Cells	04 Nos. Air Cooled
Power Supply	High Frequency High Voltage Circuit.
Weight	Approximate 500 Kg.

Size	36 ” H X 24” D X 36” W Approximate
Ozone Out Put	20 Gram / hr.
Oxygen Flow	25-50 Lpm, 90 % Purity @ 1 kg/cm2 pressure per kg of Ozone.
Ozone Concentration	30 - 40 g/m3
All Contact Parts	In SS 316
Ozone Tube	Silicon / Teflon ½” X 5 meter Long
Supply Fuse	5 Amp.
Power	1.1 KW
ORP	550 – 650 mV

1. UTILITY CONSUMPTION

To operate STP plants following overheads are to be considered.

a. Electricity consumption
b. Chemicals
c. Manpower

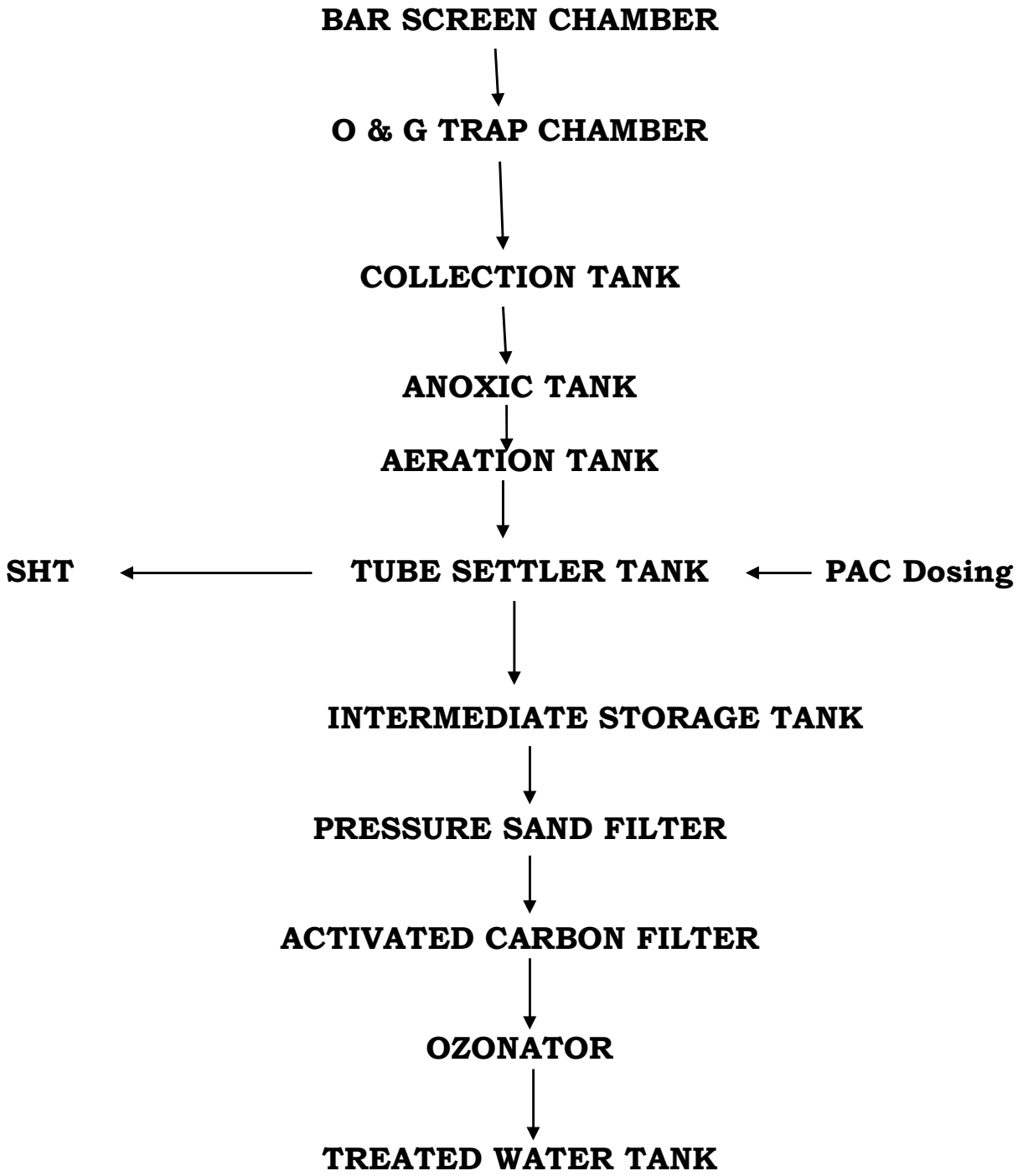
a. Electrical Load

Sr No.	Description	Installed load, kW	Working load, kW/hr	Working hours in a day	Electricity consumption/day
01	Sewage Transfer pump	1.5	0.75	20hr	15
02	PAC dosing	0.0025	0.0025	20hr	0.05
03	Sludge transfer pump	0.75	0.75	10hr	7.5
04	Air Blower	4.4	2.2	20 hr.	44
05	Filter feed pump	2.2	1.1	20 hr.	22
06	Ozonator	1.1	1.1	20 hr.	22
	Total power required per day in KW/day				110.55

b. Chemical & Manpower

Sr. No.	Description	Quantity
1	PAC	Approx. 0.5 kg / day
2	Man Power	One man Power

STP SCHEMATIC FLOW CHART



4. PLANT OPERATION COST FOR 230 KLD- STP

Per day operating cost of Plant as follows:

Sr.No	Utility consumption/day	Qty/day	Rate/unit	Price in Rs.
1	Electricity Consumption	110.55 KW	Rs.10	1105.5
	Chemical -PAC	2 kg	Rs.25	50
2	Man power	1/Shift	Rs.500	500.00
			TOTAL PRICE FOR 1 DAY	**1655.5**
			TOTAL PRICE FOR 30 DAYS	**49665**
Treated water testing charges per month for 1 time				**2000**
Miscellaneous charges monthly				**5000**
Total O & M per month				**56665/-**
Total O & M per Year				**6,79,980**

Capital cost of Plant as follows:

Sr.No	Perticular	Qty	Rate(Rs.)	Price in Rs.
1	Civil work	1 no	2500000/-	2500000/-
	Plant Equipments	1 lot	1200000/-	1200000/-
			TOTAL PRICE	**3700000/-**

DESIGN CALCULATIONS

- BAR SCREEN CHAMBER–

- Capacity – 60 m^3/day
- Flow - 3.0 m^3/hr.
- Retention Time for Bar screen = 1 to 3 min

Now, considering Retention Time =2.7 Min
Therefore, Tank Volume=3.0 × 0.05 hr. = 0.16 m^3

- Considered Volume of Tank – 0.16 m3

- Let SWD of Tank – 0.25 m

- Area of Chamber – 0.16/0.25 = 0.64 m^2

Consider Length of Tank = 0.8 m
Therefore Width of Tank = 0.8 m

Therefore Tank Size is 0.8 m ×0.8 m × 0.25 m SWD+2.75 m FB – 1 no.

- O & G CHAMBER –

- Capacity – 60 m^3/day
- Flow - 3.0 m^3/hr.
- Retention Time for O&G Chamber = 8 -10min

  Now, considering Retention Time – 9.9 min (0.165hr)
  Therefore, Tank Volume = 3.0× 0.165 = 0.58 m^3

- Considered Volume of Tank – 0.58 m^3

- Let SWD of Tank – 0.45 m

- Area of Chamber –0.58/0.45= 1.29 m^2

Consider Length of Tank = 1.6 m
Therefore Width of Tank = 0.8 m

Therefore Tank Size is 1.6 m × 0.8 m × 0.45 m SWD + 2.85 m FB – 1 no.

- COLLECTION CUM EQUALIZATION TANK –

Flow – 3.0 m^3/hr

Retention Time for Collection Tank = 4 – 8hrs.

Consider retention time = 5.5 hrs

Therefore, Tank Volume = 3.0 × 5.48 = 19.19 m^3

Considered Volume of Tank – 19.19 m^3

- Let SWD of Tank – 2.05 m
- Area of Chamber –19.19/2.05= 9.36 m^2

Consider Length of Tank = 3.6 m
Therefore Width of Tank = 2.6 m

Therefore Tank Size is 3.6m x 2.6 m × 2.05 m SWD + 2.75 m FB = 1 No

- ANOXIC TANK –
- Flow – 3.0 m^3/hr.
- Retention Time for Collection Tank = 3 – 4 hrs. considered

  Therefore, Tank Volume = 3.0× 3.33 = 11.66 m^3
- Considered Volume of Tank – 11.66 m3
- Let SWD of Tank – 2.7 m
- Area of Chamber –11.66/2.7 = 4.32 m^2

Consider Length of Tank – 3.6 m
Therefore Width of Tank = 1.2 m

Therefore Tank Size is 3.6m × 1.2m × 2.7m SWD + 0.3 m FB – 1 no.

- AERATION TANK

Flow – 3.0 m^3/hr

Retention Time for Aeration Tank = 4 - 6hrs

Considered retention time of 6 hrs

Therefore, tank volume = 3.0 × 5.99 = 20.99 m3

Considered Volume of Tank – 20.99 m^3

Let SWD of Tank – 2.65 m
Area of Chamber – 20.99/2.65 = 7.9 m^2
Consider Length of Tank – 3.6 m
Therefore Width of Tank = 2.2 m

Therefore Tank Size is 3.6 m x 2.2 m × 2.2 m SWD + 0.35 m FB – 1no

MBBR Media Qty Calculation:-

BOD Load = 291 x 60
= 20370 gm. of BOD

16 gm. of BOD : - 1 m^2 media area

20370 gm. of BOD: - 1273.125 m^2area

1 m^3 of MBBR Media: - 400 m^2 area

Total MBBR Media Required = 1273.125/400
= 3.18 m3
Therefore MBBR Media Required for Aeration Tank = 4 m^3

- AIR BLOWER –

- BOD Load In aeration Tank – (300-20)=280 mg/lit
- BOD Load = 60 × 280/1000
  = 19.6 kg/day

- Air Requirement for BOD Reduction:

1 kg of BOD required 1-1.5 kg of Oxygen, considering 1.5 kg of Oxygen.
Therefore,

Theoretical oxygen requirement per day= 19.6 X 1.5 kg O_2

Hence, Theoretical oxygen requirement per day = 29.4 kg/day of O_2

Theoretical oxygen requirement per hour = 29.4/24
= 1.47 kg/hr.

$$\text{Standard oxygen requirement} = \frac{\text{Theoretical oxygen requirement}}{\frac{\text{AlphaX [BetaXCsW-DO] XTheta}^{\wedge} (\text{Tww-20}^{0}\text{C})}{\text{Css}}}$$

Where,
Alpha = 0.5
Beta = 0.95
Theta = 1.024
Waste water temperature, Tww = 27^{0}C
DO maintained for designed flow = 2 mg/lit
Surface saturation C = 7.97
Site basin saturation Csw = 9.26
Standard basin saturation Css = 10.57

Therefore,

$$\text{Standard oxygen requirement} = \frac{1.47}{((0.5X\ (0.95X9.26\text{-}2)/10.57)\ X\ (1.024^{\wedge}\ (27\text{-}20)))}$$

$$= 1.12\text{kg of } O_2\text{/hr}$$

$$\text{Total air requirement} = \frac{\text{Actual } O_2 \text{ requirement}}{\text{Density of air X\% of } O_2 \text{ in air by weight X SOTE\%}}$$

Where,
Density of air = 1.19 kg/m^3
Considering, SOTE % per Mtr SWD of Aeration tank – 6 % per Mtr
SOTE = Standard oxygen transfer efficiency = 21% (calculated)
% of O_2 in air by weight = 0.2306

Therefore,

$$\text{Total air requirement for Aeration Tanks} = \frac{\text{Actual } O_2 \text{ requirement}}{1.19\ X\ 0.2306\ X\ 0.21}$$

$$= \frac{1.12}{1.19\ X\ 0.2306\ X\ 0.21}$$

= 43.33 m^3/hr
Air required for Equalization tank, sludge holding tank, Intermediate tank & Treated water tank = 30 %
Therefore Total air requirement will be = 43.33 X 30 % = 12.99 m^3/hr

Therefore air blower capacity = 43.33 + 12.99 = 56.329 m^3/hr

Therefore we select air blower capacity is 60 m^3/hr

- DIFFUSER MEMBRANES FOR AERATION TANK–

Consider size of diffuser membranes as 90 mm OD X 1500 mm length
Considering average 60 m^3/hr air required for Aeration tank

Number of diffusers = (Air to be supplied to aeration tank) / (minimum air flux Rating)
= 60/12.5
= 4.8 Nos.

Therefore, number of diffusers will be 5 in aeration tank.

- TUBE SETTLING TANK –

- Flow – 3.0 /hr
- Retention Time for Tube Settling Tank = 3 to 5 hrs

Now, considering Retention Time = 4.8 hr
Therefore, Total Tank Volume –3.0 × 4.8 hr = 16.85 m^3
- Considered volume of tank – 16.85 m^3
- Let SWD of Tank – 2.6 m

- Area of Tank – 16.85/2.6 = 6.48 m^2
- Consider Length of Tank – 3.6 m

- Therefore Width of Tank = 1.8 m

Therefore Tank Size is 3.6 m × 1.8 m × 2.6 m SWD +0.4 m FB – 1 No.

- TUBE SETTLER MEDIA –

- Flow – 3.0 m^3/hr
- Height of media – 0.55 m
- Tube Media required for Each Tank = length X width X height of media

=3.0 X 1.8 X 0.55 =2.97 m^3

Therefore, Tube media required for Settling Tank will be 3 m^3

- FILTER FEED TANK/INTERMEDIATE STORAGE TANK –

- Flow – 3.0 m^3/hr
- Retention Time for Filter feed Tank = 3 to 4 hr
  Now, considering Retention Time = 3.2 hr
  Therefore, Tank Volume –3.0 × 3.2 = 11.23 m^3
- Considered volume of tank – 11.23 m3
- Let SWD of Tank – 2.6 m

- Area of Chamber – 11.23/2.6 = 4.32 m^2

- Consider Length of Tank – 1.2 m
- Therefore Width of Tank = 3.6 m

Therefore Tank Size is 1.2 m x 3.6 m × 2.6 m SWD + 0.4 m FB – 1 no.

- PRESSURE SAND FILTER –
- Flow – 60 m^3/day
  – 3.0 m^3/hr.
- Design Velocity – 14 $m^3/m^2/hr$.
- Continuity Equation,
- Q = A × u
- Filtration Area – Q / u
- 3.0/12
- 0.29 m^2

Area = $\prod D^2/4$

D = $\sqrt{((0.29 \times 4)/\prod)}$
D = 0.802m

Diameter Considered = 800 mm

HOS = 1500mm
Media Depth = 1000 mm
Density of Media = 1800 kg/cm^3
Media Quantity = Area × 1800 × Media Depth
= $\prod/4 \times 1.2^2 \times 1800 \times 1$
= 2034 kg ≈ 2500 kg

- ACTIVATED CARBON FILTER –
- Flow – 6 0 m^3/day
  – 3.0 m3/hr
- Design Velocity – 14 $m^3/m^2/hr$
- Continuity Equation,
- Q = A × u
- Filtration Area – Q / u
- 3.0/14
- 0.25 m^2

Area = $\prod D^2/4$

D = $\sqrt{((0.25 \times 4)/\prod)}$

D = 0.801m

Diameter Considered =800 mm
HOS = 1500 mm
Supporting Media Depth = 300 mm
Density of Media = 1800 kg/m^3
Media Quantity = Area × 1800 × Media Depth

= ∏/4 x 0.8^2× 1800× 0.3

= 610 kg ≈ 650 kg

Activated Carbon Depth = 700 mm
Density of Media = 600 kg/m^3
Media Quantity = Area × 600× Media Depth

= ∏/4 x 0.8^2× 600× 0.7

= 474 kg ≈ 500 kg

- TREATED WATER TANK –
- Flow – 3.0 m^3/hr
- Retention Time for Filter feed Tank = 2 to 4 hr
  Now, considering Retention Time = 3.3 hr
  Therefore, Tank Volume –3.0 × 3.3 = 11.66 m^3
- Considered volume of tank – 11.66 m3
- Let SWD of Tank – 2.7 m
- Area of Chamber – 11.66/2.7 = 4.32 m^2
- Consider Length of Tank – 1.2 m
- Therefore Width of Tank = 3.6 m

Therefore Tank Size is 1.2 m x 3.6 m × 2.7 m SWD + 0.3 m FB – 1 no.

- SLUDGE HOLDING TANK –
- BOD Load = (300 × 60)/1000

= 18 kg/day

1 kg of BOD generates 0.2-0.25 kg of dry sludge per day.

1 Kg of BOD = 0.25 kg of dry sludge

Hence, 18 kg BOD = 4.5 kg of dry sludge

Considering 1 % slurry consistency

Therefore volume of slurry generated = 4.5 /1% = 450 liters
I.e. approximately 0.45 m^3 per day

- Considering Retention Time for Sludge Holding Tank =18.5 days

Therefore, Tank Volume = 0.45 m^3/day×18.5 days = 9.72 m^3

- Considered Volume of Tank –9.72 m^3
- Flow – 3.0 m^3/hr
- Retention Time for Filter feed Tank = 2 to 3 hr
  Now, considering Retention Time = 2.8 hr
  Therefore, Tank Volume –3.0 × 2.8 = 9.72 m^3
- Considered volume of tank – 9.72 m3
- Let SWD of Tank – 2.7 m
- Area of Chamber – 9.72/2.7 = 3.6 m^2
- Consider Length of Tank – 1.2 m
- Therefore Width of Tank = 3.6 m

Therefore Tank Size is 1.2 m x 3.6 m × 2.7 m SWD + 0.3 m FB – 1 no.

- OZONE DOSING SYSTEM

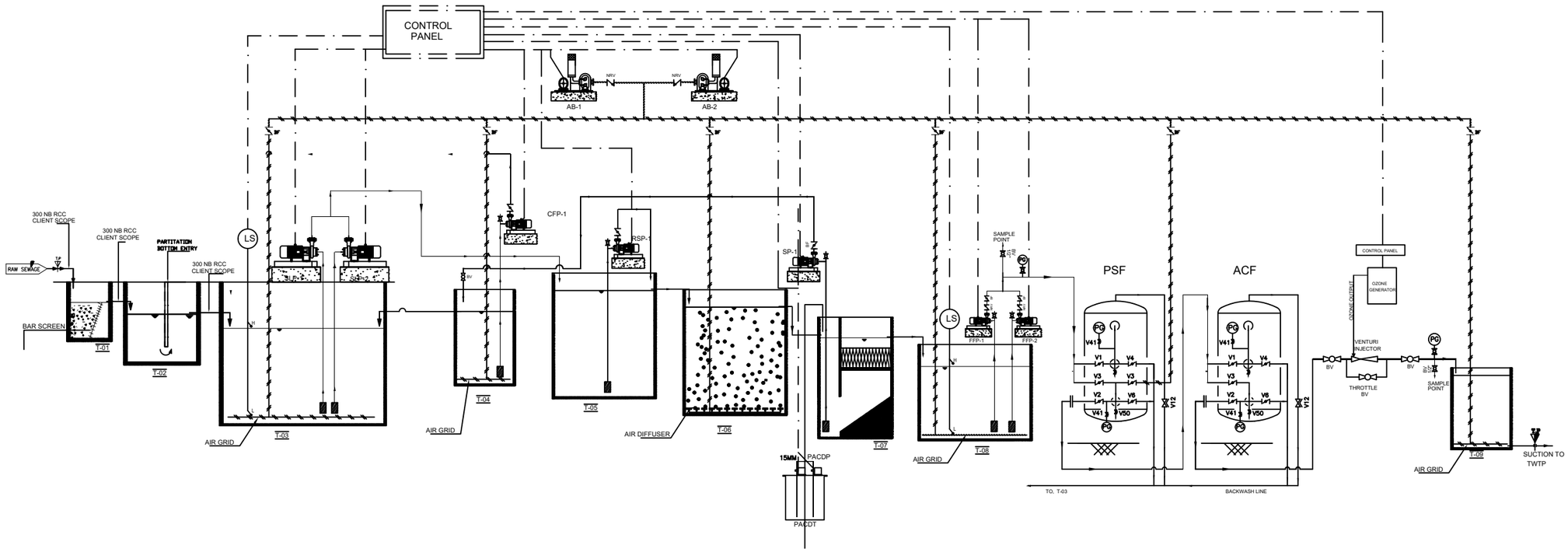
Dosage rate = 5 gm/hr
Flow rate = 3.0 m^3/Hr
Concentration of Ozone = 85 % to 95%
Consider Concentration of Ozone = 90%

$$\text{Ozonator Capacity} = \frac{\text{Flow } (m^3/Hr) \times \text{Dosage (gm/hr)}}{90\%}$$

= 3.0 x 5/ 90%
= 19.9 = 20 Grm/Hr

Consider Ozonator Capacity as 20 Grm/Hr

ORP value for Ozonator= 550 – 650 mv



PIPING & INSTRUMENTATION DIAGRAM

COLOUR LEGEND :-

SR. NO.	COLOUR CODE	DESCRIPTION
01	———	PROCESS LINE
02	———	AIR LINE
03	———	TREATED LINE
04	———	DRAIN, LETCHATE BACKWASH LINE
05	———	SLUDGE LINE
06	———	DOSING LINE
07	———	GRAVITY LINE
08	———	OZONE LINE

VALVE LEGEND:-

NO	LEGEND	MARK	DISCRIPTION
01		BF	BUTTERFLY VALVE
02		NRV	NON RETURN VALVE
03		BV	BALL VALVE
04		PRV	PRESSURE RELIF VALVE

UNIT DETAILS :-

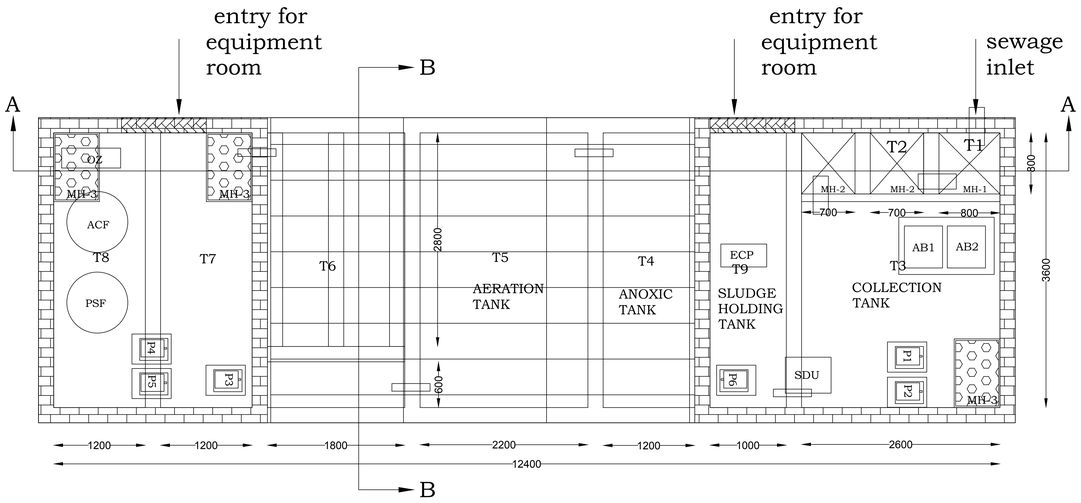
SR NO	DESCRIPTION	TAG NO.	SR NO	DESCRIPTION	TAG NO.
1	Bar Screen	BS	10	Tube Media	TM
2	Sewage Transfer Pump	SLP	11	Sludge Pump	SP
3	Air Blower	AB	12	PAC Dosing Tank	PAC DT
4	Air Grid	AG	13	PAC Dosing Pump	PAC DP
5	Diffuser Membrane		14	Filter Feed Pump	FFP
6	Media for Bioreactor	MBBR	15	Pressure Sand Filter	PSF
7	CENTRIFUGE	CF	16	Activated carbon Filter	ACF
8	CENTRIFUGE FEED PUMP	CFP	17	OZONATOR	OZ

INSTRUMENT LEGEND:-

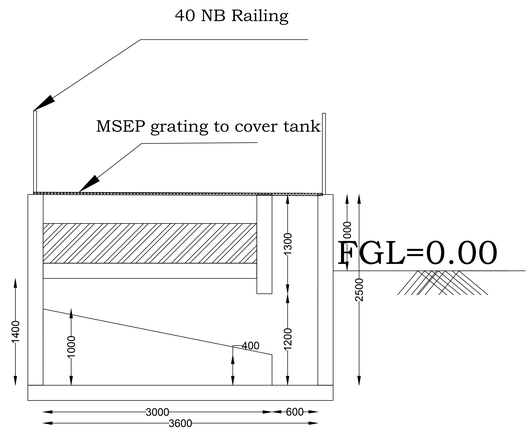
SR.	LEGEND	DISCRIPTION
1	PG	PRESSURE GAUGE
2	LS	LEVEL SWITCH
3		VENTURI

CLIENT:-	**SHANTI MOHAN DEVELOPERS, PUNE**	
PROJECT:-	**60 KLD SEWAGE TREATMENT PLANT**	
SCALE: UTS	**CAPACITY: 60 CUM/DAY**	DATE: 04/01/2020
DRAWN: VARSHA	**SEWAGE TREATMENT PLANT**	DWG NO.: DUS/01/20-21
CHECKED: LAWANYA	**PIPING AND INSTRUMENTAIONAL DIAG.**	**REV. NO.:- 01**

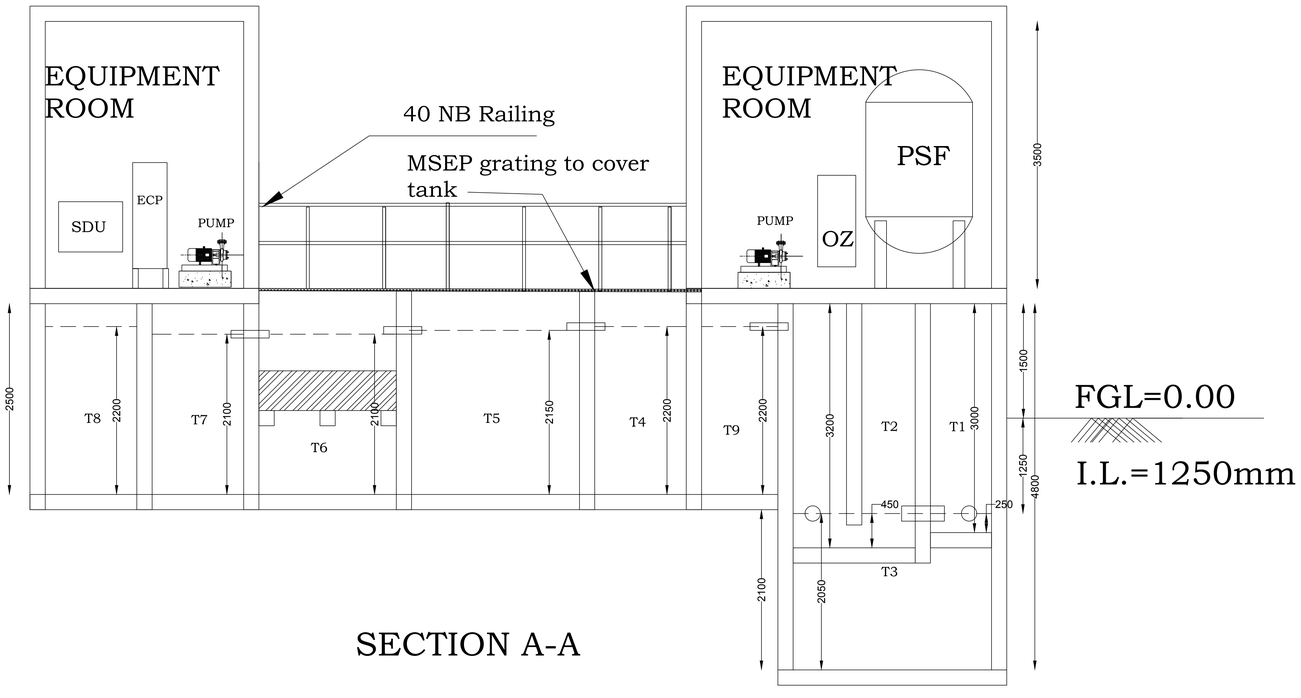
SUSTAINERA SOLUTIONS PVT.LTD



TOP PLAN WITH EQUIPMENT ROOM



SECTION B-B



SECTION A-A

PLEASE NOTE:	
SN	DESCRIPTION
1	ALL DIMENSIONS ARE IN MM.
2	WALL THICKNESS IS ASSUMED TO BE 200 MM.
3	PVC/MSEP GRATING SHOULD BE PROVIDED BY CLIENT = 50 MM OR 100 MM THICKNESS.
4	INTERNAL CORE CUTTING SIZES IS OF 100 MM AND MAY GET CHANGED AS PER SITE
5	INTERNAL PIPING LAYOUT MAY CHANGE AS PER SITE CONDITION.
6	PROVISION OF VENTILATION DUCT/EXHAUST IN THE EQUIPMENT ROOM.
7	TYPE AND NUMBER OF WINDOWS TO BE DECIDED BY ARCHITECT.
8	PROVISION OF INSERTS/PUDDLES/RUNGS IN EACH TANK WILL BE IN CLIENT SCOPE.
9	A CLEAR HEIGHT OF EQUIPMENT ROOM 3.5 MTR SHALL BE ENSURED TO ALL UNOBSTRUCTED MOVEMENT OF EQUIP.

EQUIPMENT DETAILS	
TAG NO.	DESCRIPTION
P1 & P2	SEWAGE TRANSFER PUMP (1W + 1SB)
P3	SLUDGE RE-CIRCULATION PUMP (1W)
P4 & P5	FILTER FEED PUMP (1W + 1SB)
SDU	SLUDGE DEWATERING UNIT
P8	FILTER PRESS FEED PUMP
AB1 & AB2	AIR BLOWER (1W + 1SB)
PSF	PRESSURE SAND FILTER
ACF	ACTIVATED CARBON FILTER
PDS	POLY DOSING SYSTEM
OZU	OZONIZATION UNIT
FP	FILTER PRESS
ECP	ELECTRICAL CONTROL PANEL

TANK DETAILS					
TAG	DESCRIPTION OF TANKS	DIMENSION	LD (MTR)	VOLUME (M3)	EFFECTIVE VOLUME
T1	BAR SCREEN CHAMBER	0.8 M x 0.8 M x 3.0 M	0.25	1.92	0.16
T2	OIL N GREASE CHAMBER	1.6 M x 0.8 M x 3.2 M	0.45	4.096	0.58
T3	EQUALIZATION TANK	3.6 M x 2.6 M x 4.8 M	2.05	44.93	19.19
T4	ANOXIC TANK	3.6 M x 1.2 M x 2.5 M	2.2	10.8	9.5
T5	AERATION TANK	3.6 M x 2.2 M x 2.5 M	2.15	19.8	17.0
T6	SETTLING TANK	3.6 M x 2.2 M x 2.5 M	2.1	19.8	16.6
T7	FILTER FEED TANK	3.6 M x 1.2 M x 2.5 M	2.1	10.8	9.0
T8	TREATED WATER TANK	3.6 M x 1.2 M x 2.5 M	2.2	10.8	9.5
T9	SLUDGE HOLDING TANK	3.6 M x 1.0 M x 2.5 M	2.2	9	7.9
	TOTAL AREA FOR STP	44.64 SQ.M			

MANHOLE DETAILS	
TAG NO.	DESCRIPTION
MH1	1000 MM X 1000 MM
MH3	600 MM X 900 MM

CLIENT:-	SHANTI MOHAN DEVELOPER LLP, PUNE	
PROJECT:-	GANGA ASMI, HOTEL	
SCALE: UTS	CAPACITY: 60 CUM/DAY STP	DATE: 16/12/2021
DRAWN: VARSHA	SEWAGE TREATMENT PLANT	DWG NO.: DUS/01/20-21
CHECKED: LAWANYA	GA AND SECTIONAL DRAWING	REV. NO.:- 02

SUSTAINERA SOLUTIONS PVT.LTD

DESIGN BASIS REPORT

FOR

SEWAGE TREATMENT PLANT

(CAPACITY –500 m^3/day)

CLIENT: M/s. Shanti Mohan Developers llp, pune

Submitted By

Sustainera
Solutions Pvt. Ltd.

DESIGN BASIS FOR SEWAGE TREATMENT PLANT

The plant is designed to treat sewage generated having following Characteristics.

Nature of Waste Water	Sewage
Capacity	500m^3 /day
Flow	25 m^3 /hr/ Average
Operating Period	18-20 hrs. /day
Technology	MBBR

A] RAW SEWAGE PARAMETER(At the inlet of Collection tank / Septic tank)	
Ph	6.5-8.0
COD	≤ 350 mg/lit
BOD	≤ 300 mg/lit
Suspended Solids	≤ 200 mg/lit
Oil & Grease	≤ 10-50 mg /lit
Nitrogen	≤ 40-50 mg /lit
Phosphorous	≤ 5-7 mg /lit
Fecal Coli form	Present

B] TREATED WATER PARAMETER (After tertiary Filtration system)	
pH	6.5-8.0
COD	≤ 30 mg /lit
BOD(5 days @ 20 0C)	≤ 10 mg/lit
Suspended Solids	≤ 10 mg/lit
Oil & Grease	≤ 01 -05 mg/lit
Nitrogen	≤ 5-10 mg /lit
Phosphorous	≤ 05 mg /lit
Fecal Coli form	Absent

1. TREATMENT SCHEME FOR STP

To have eco-friendly & natural treatment, this plant is designed based on the biological treatment concept. This means naturally occurring microbes (which are present in sewage water itself) removes or degrade the organic matter present in the sewage & at the end clean water is available for the non-potable usage or to dispose safely in the drainage or river bodies as per the norms.

1. Primary Treatment

Screening : This is the first units of the plant in which large or floating materials in the sewage gets arrested and blockage or choking of the downstream Equipments can be avoided. This arrested material will be removed manually and then will be disposed of suitably

Oil & Grease trap : Domestic sewage sometimes gets waste water from pantries or kitchen which contains free oil. This oil if not removed then creates the problem of scum accumulation and affects the functioning of microbes.

To avoid this, oil & Grease trap is provided after the bar screen, where free floating oil is arrested prior to entry in the plant. Accumulated oil will be removed periodically and disposed of properly.

Equalization : To absorb variation in quantity and quality of sewage and to provide uniform flow at the downstream treatment process, a collection or equalization tank is provided. This will avoid shock loading and process upsets of the treatment plant. To avoid settling of suspended solids in this tank continues air agitation is provided.

If at site, septic tank is provided then collection tank as well as air agitation is not required.

2. Secondary Treatment

Biological Treatment: This is the main section of the plant where degradation of organic pollutants with the help of aerobic micro-organism takes place. To provide higher surface area for micro-organism, floating media is provided. On which micro-organism growth takes place. This makes bioreactor is of hybrid concept in which both suspended growth as well as attached growth principal for micro-organism is achieved. Due to higher population of micro-organism, effective volume of bioreactor reduced drastically as compared to conventional aeration tanks.

To maintain the aerobic condition in the bioreactor, air supply arrangement is provided by means of aeration equipment which has high oxygen transfer efficiency.

Tube Settler : Gravity overflow from the bioreactor is collected in the tube settler tank. In this settling tank, generated sludge from the bioreactor undergoes a gravity settling. Clear supernatant from settling tank will flow by gravity to a chlorine contact tank.

To reduce the plan area of settling tank, tube modules are placed in this tank to increase the settling area of the tank. Since this tank is a hopper bottom tank due to which there is no need of sludge scrapping mechanisms.

Intermediate Storage tank: Supernatant from Tube settler, flow by gravity to the Intermediate storage tank. Here water is stored before pass through the Filtration plant.

Sludge disposal system : Settled sludge from tube settler will be removed by pumping to the sludge holding tank and from there it will dispose to other safe areas.

3. Tertiary treatment

Secondary treated water will be further passed through sand media filter followed by activated carbon filter.

A. Pressure sand filter

The raw water is first passed through a Pressure sand filter to reduce the suspended solids present in the raw water. This filter is provided to keep a check on the suspended solids.

B. Activated carbon filter

Activated Carbon Filter shall be used to remove undesired color, odor & Organic matter.

Filtered water will be collected in the Treated water Storage tank from where it will be for desired non-potable application. Backwashed water from filters will return back to equalization tank.

If sewage treated & operated properly this sewage treatment plant will give enormous benefits such as

- It will avoid the water pollution
- It will help us to give hygienic surrounding
- After required treatment, treated water can reduce your 60-70 % fresh water requirement, which otherwise we use for toilet flushing, gardening, construction etc. Thus we can save a lot on water expenditure as well as provide us a remedy on present water crises.
- Being a water recycling & conservation system, commercial establishment gets depreciation benefits for promoting green & eco-friendly development.

LEVEL OF AUTOMATION:

The plant is designed based on moving media aerobic process which needs no skilled manpower. The operations involved are ON / OFF of the pumps and air blower, sludge drain, filter backwash. These operations can be done by the security or gardener. The pumps are provided with level switch for ON /OFF based on PLC Program & the tank water level and to avoid dry run and mechanical damage. This is SEMI-AUTOMATIC.

2. A .TECHNICAL SPECIFICATION for STP

1. Bar Screen	
MOC	MSEP
Coating	Red Oxide + Epoxy
Angle of inclination	45 Deg
Distance between bar	10 mm
Qty	1 No

2. Sewage Transfer Pump	
Type	Self-Priming, non-clog, centrifugal
Capacity	25 m3/hr. @ 12 m head
Power	1.5 Kw / 1.5 hp/ 3 Phase
MOC	CI
Make	Kirloskar/CG/JP/Equiv
Qty	2 No (1W+1SB)

3. Sludge Transfer Pump	
Type	Self-Priming, non-clog, centrifugal
Capacity	5 m3/hr @ 12 m head
Power	0.75Kw / 1.02 hp/3 Phase
MOC	CI
Make	Kirloskar/CG/JP/Equiv
Qty	1 No

4. PAC Dosing System	
Type	Electronic Diaphragm
Capacity	6-12 LPH @ 4 Kg/cm2
Power	0.0025 kW
Make	Positive/Initiative/Equiv.
Tank capacity	100 Lit
MOC	LDPE
Quantity	1 no.

5. Tube Media	
MOC	PVC
Shape of Tube	Hexagonal
Thickness	1.0To 1.2 mm
Working Temp	500C
Qty	1 lot
Make	Cool deck/Marvellous/Equiv

6. Air Blower	
Type	Twin Lobe, Root Blower
Capacity	500 m3/hr @0.5 kg/cm2
Make	KPT/TMVT/ Everest/IR/Equiv
Qty	2 no.(1W+1SB)

7. Electric Motor for Blower	
Type	Foot Mounted
RPM	1440
Power	20-25 HP
Make	Crompton/Siemens
Qty	2 no(1W+1SB)

8. Diffuser Membrane	
MOC Membrane	EPDM
MOC Base	PP
Make	Rehau/Scogen/Jaegers/Equiv
Qty	1 lot

9. MEDIA FOR BIOREACTOR (MBBR)	
Shape	Cylindrical
MOC	PP
Make	MM Aqua/Equiv
Qty	1 LOT
Density of Media	0.93 gm/cm3
Media Specific Gravity	0.90 – 0.95 gm/cm3
Effective SA	400 m2/m3
Media Size	15mm ht x 22 mm Dia

10. Filter feed pump	
Type	Monobloc, Centrifugal
Capacity	25 m3/hr @ 28 m head
Duty	To pump water from IST to Filter
Accessories	Standard Base Frame
Power	5.5 KW /5 hp/3 phase
Make	Kirloskar /CRI/Wilo/ Equiv.
Quantity	2no.(1W+1SB)

11. Sand Filter	
Capacity	25 m3/hr
Size	1600 x 1500 mm
MOC	MSEP
Piping	80 NB
Valve	Butter Fly valve
Filter media	Fine sand and supporting pebbles
Quantity	1No.

12. Activated Carbon Filter	
Capacity	25 m3/hr
Size	1600 x 1500 mm
MOC	MSEP
Piping	80 NB
Valve	Butter fly valve
Filter media	sand and carbon
Quantity	1No.

13. Centrifuge system	
Capacity	4 kg/day
MOC	CI body, SS internal
Piping	40 NB
Motor power	0.75 kw
No. bags	3 nos
Quantity	1No.

14. Control panel	
Qty	1 no
Specification	DOL Starter panel,
Type	Semi-automatic
Cable	Flexible
Make	SGM

15. Ozonator	
Ozonator	150 G/Hr.
Type	Corona Discharge
Dose	5-10 ppm
Cell MOC	SS 316 Electro Polished With Dielectric,
No. Of Cells	04 Nos. Air Cooled
Power Supply	High Frequency High Voltage Circuit.
Weight	Approximate 500 Kg.
Size	36 ” H X 24” D X 36” W Approximate
Ozone Out Put	150 Gram / hr.

Oxygen Flow	25-50 Lpm, 90 % Purity @ 1 kg/cm2 pressure per kg of Ozone.
Ozone Concentration	30 - 40 g/m3
All Contact Parts	In SS 316
Ozone Tube	Silicon / Teflon ½" X 5 meter Long
Supply Fuse	5 Amp.
Power	2.25 KW
ORP	550 – 650 mV

3. UTILITY CONSUMPTION

To operate STP plants following overheads are to be considered.

a. Electricity consumption
b. Chemicals
c. Manpower

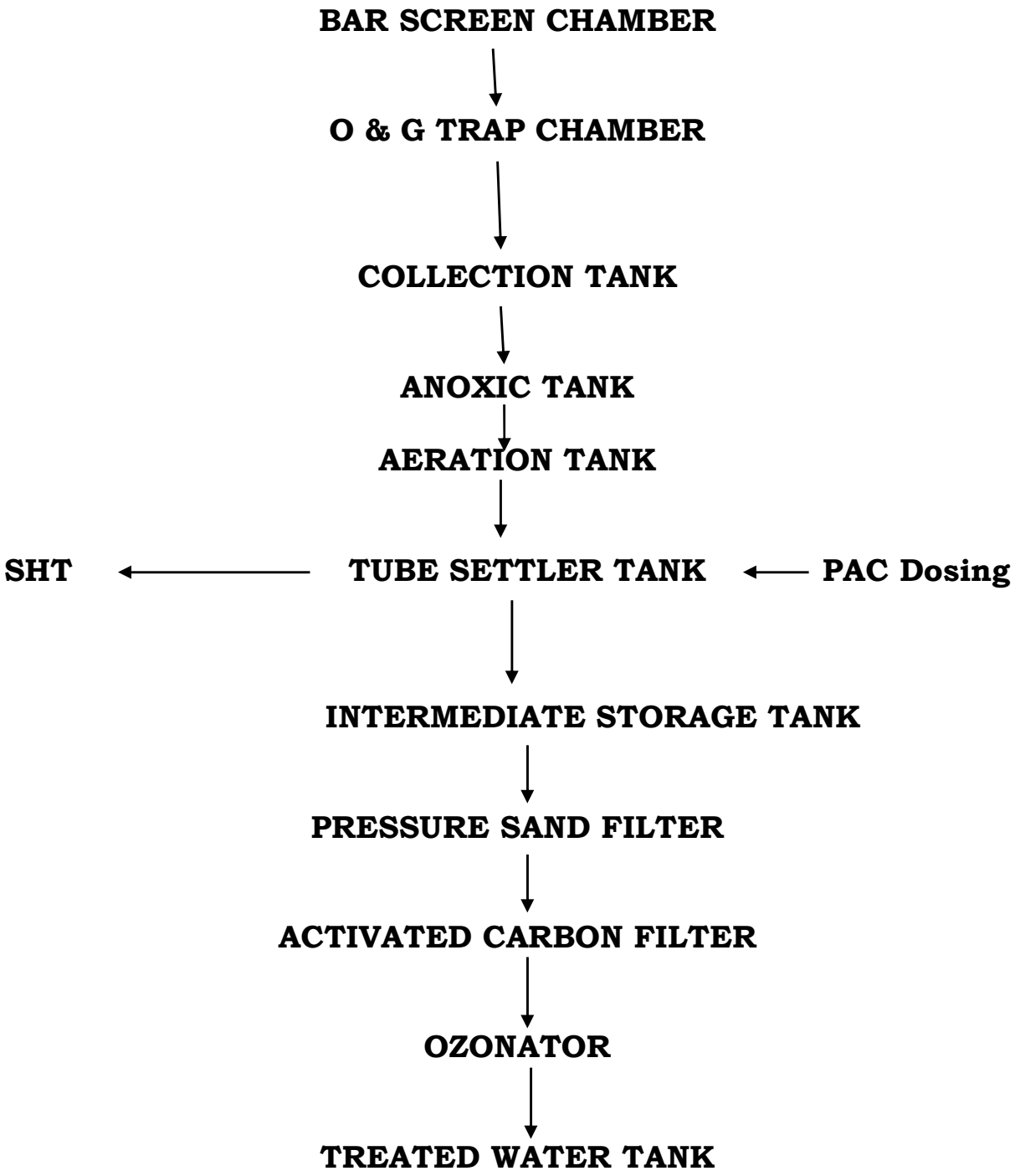
a. Electrical Load

Sr No.	Description	Installed load, KW	Working load, kW/hr	Working hours in a day	Electricity consumption/day
01	Sewage Transfer pump	1.10	1.10	20hr	22
02	PAC dosing	0.0025	0.0025	20hr	0.05
03	Sludge transfer pump	0.75	0.75	10hr	7.5
04	Air Blower	11.18	11.18	20 hr.	223.6
05	Filter feed pump	3.7	3.7	20 hr.	74
06	Ozonator	2.25	2.25	20 hr.	45
	Total power required per day in KW/day				374.15

b. Chemical & Manpower

Sr. No.	Description	Quantity
1	PAC	Approx. 0.5 kg / day
2	Man Power	One man Power

STP SCHEMATIC FLOW CHART



4. PLANT OPERATION COST FOR 500 KLD- STP

Per day operating cost of Plant as follows:

Sr.No	Utility consumption/day	Qty/day	Rate/unit	Price in Rs.
1	Electricity Consumption	374.15 KW	Rs.10	3741.5
	Chemical -PAC	5.5 kg	Rs.25	137.5
2	Man power	1/Shift	Rs.500	500.00
			TOTAL PRICE FOR 1 DAY	**4379**
			TOTAL PRICE FOR 30 DAYS	**131370**
Treated water testing charges per month for 1 time				**2000**
Miscellaneous charges monthly				**5000**
Total O & M per month				**138370/-**
Total O & M per Year				**1660440**

Capital cost of Plant as follows:

Sr.No	Particular	Qty	Rate(Rs.)	Price in Rs.
1	Civil work	1 no	7500000/-	75,00,000/-
	Plant Equipment's	1 lot	3500000/-	35,00,000/-
			TOTAL PRICE	**1,10,00,000/-**

DESIGN CALCULATIONS

- BAR SCREEN CHAMBER–

- Capacity – 500 m^3/day
- Flow - 25 m^3/hr.
- Retention Time for Bar screen = 1 to 3 min

Now, considering Retention Time =1.62 Min
Therefore, Tank Volume=25 × 0.027 hr. = 0.675 m^3

- Considered Volume of Tank – 0.675 m3

- Let SWD of Tank – 0.3 m

- Area of Chamber – 0.675/0.3 = 2.25 m^2

Consider Length of Tank = 1.5 m
Therefore Width of Tank = 1.5 m

Therefore Tank Size is 1.5 m ×1.5 m × 0.3 m SWD+3.1 m FB – 1 no.

- O & G CHAMBER –

- Capacity – 500 m^3/day
- Flow - 25 m^3/hr.
- Retention Time for O&G Chamber = 6 -10 min

  Now, considering Retention Time – 5.04 min
  Therefore, Tank Volume = 25× 0.084 = 2.1 m^3

- Considered Volume of Tank – 2.1 m^3

- Let SWD of Tank – 0.5 m

- Area of Chamber –2.1/0.5= 4.2 m^2

Consider Length of Tank = 2.8 m
Therefore Width of Tank = 1.5 m

Therefore Tank Size is 2.8 m × 1.5 m × 0.5 m SWD + 3.1 m FB – 1 no.

- COLLECTION CUM EQUALIZATION TANK –

Flow – 25 m^3/hr
Retention Time for Collection Tank = 6 – 8hrs.

Consider retention time = 8 hrs

Therefore, Tank Volume = 25 × 8 = 200 m^3

Considered Volume of Tank – 200 m^3

- Let SWD of Tank – 2.9 m
- Area of Chamber –200/2.9= 68.96 m^2

Consider Length of Tank = 6.9 m
Therefore Width of Tank = 10.0 m

Therefore Tank Size is 10 m x 6.9 m × 2.9 m SWD + 3.1 m FB = 1 No

- ANOXIC TANK –

- Flow – 25 m^3/hr.
- Retention Time for Collection Tank = 3 – 5 hrs. considered

  Therefore, Tank Volume = 25× 4.08 = 102.12 m^3
- Considered Volume of Tank – 102.12 m3
- Let SWD of Tank – 3.7 m
- Area of Chamber –102.12/3.7 = 27 m^2

Consider Length of Tank – 4.0 m
Therefore Width of Tank = 6.9 m

Therefore Tank Size is 6.9 m × 4.0 m × 3.7 m SWD + 0.3 m FB – 1 no.

- AERATION TANK

Flow – 25 m^3/hr

Retention Time for Aeration Tank = 4 - 7hrs

Considered retention time of 6.5 hrs

Therefore, tank volume = 25 × 6.5 = 163.7 m3

Considered Volume of Tank – 163.7 m^3

Let SWD of Tank – 3.65 m
Area of Chamber – 163.7/3.65 = 44.84 m^2
Consider Length of Tank – 6.9 m

Therefore Width of Tank = 6.5 m

Therefore Tank Size is 6.9 m x 6.5 m × 3.65 m SWD + 0.35 m FB – 2 no

MBBR Media Qty Calculation:-

BOD Load = 291 x 500
= 88755 gm. of BOD

16 gm. of BOD : - 1 m^2 media area

88755 gm. of BOD: - 5547.188 m^2area

1 m^3 of MBBR Media: - 400 m^2 area

Total MBBR Media Required = 5547.188/400
= 13.86 m3
Therefore MBBR Media Required for Aeration Tank = 14 m^3

- AIR BLOWER –

- BOD Load In aeration Tank – (300-20)=280 mg/lit
- BOD Load = 500 × 280/1000

= 140 kg/day

- Air Requirement for BOD Reduction:

1 kg of BOD required 1-1.5 kg of Oxygen, considering 1.5 kg of Oxygen.
Therefore,

Theoretical oxygen requirement per day= 140 X 1.5 kg O_2

Hence, Theoretical oxygen requirement per day = 210 kg/day of O_2

Theoretical oxygen requirement per hour = 210/24
= 8.75 kg/hr.

$$\text{Standard oxygen requirement} = \frac{\text{Theoretical oxygen requirement}}{\text{AlphaX [BetaXCsW-DO] XTheta}^{(Tww-20^0C)}}$$
Css

Where,

Alpha = 0.5
Beta = 0.95
Theta = 1.024
Waste water temperature, Tww = 27^{0}C
DO maintained for designed flow = 2 mg/lit
Surface saturation C = 7.97
Site basin saturation Csw = 9.26
Standard basin saturation Css = 10.57

Therefore,

$$\text{Standard oxygen requirement} = \frac{8.75}{((0.5X\ (0.95X9.26-2)/10.57)\ X\ (1.024\text{^}\ (27-20)))}$$

$$= 18.12 \text{ kg of } O_2/hr$$

$$\text{Total air requirement} = \frac{\text{Actual } O_2 \text{ requirement}}{\text{Density of air X\% of } O_2 \text{ in air by weight X SOTE\%}}$$

Where,
Density of air = 1.19 kg/m^3
Considering, SOTE % per Mtr SWD of Aeration tank – 6 % per Mtr
SOTE = Standard oxygen transfer efficiency = 21% (calculated)
% of O_2 in air by weight = 0.2306

Therefore,

$$\text{Total air requirement for Aeration Tanks} = \frac{\text{Actual } O_2 \text{ requirement}}{1.19\ X\ 0.2306\ X\ 0.21}$$

$$= \frac{18.12}{1.19\ X\ 0.2306\ X\ 0.21}$$

= 382.5 m^3/hr
Air required for Equalization tank, sludge holding tank, Intermediate tank & Treated water tank = 30 %
Therefore Total air requirement will be = 382.5 X 30 % = 114.75 m^3/hr

Therefore air blower capacity = 382.5 +114.75 = 497.25 m^3/hr

Therefore we select air blower capacity is 500 m^3/hr

- DIFFUSER MEMBRANES FOR AERATION TANK–

Consider size of diffuser membranes as 90 mm OD X 1500 mm length
Considering average 382^3/hr air required for Aeration tank
Number of diffusers = (Air to be supplied to aeration tank) / (minimum air flux Rating)
= 382/12.5
= 30.56 Nos.

Therefore, number of diffusers will be 30 in aeration tank.

- TUBE SETTLING TANK –

- Flow – 25 /hr
- Retention Time for Tube Settling Tank = 3 to 5 hrs

Now, considering Retention Time = 4.43 hr
Therefore, Total Tank Volume –25 × 4.43 hr = 110.8 m^3
- Considered volume of tank – 110.8 m^3
- Let SWD of Tank – 3.6 m

- Area of Tank – 110.8/3.6 = 30.78 m^2
- Consider Length of Tank – 4.4 m

- Therefore Width of Tank = 6.9 m

Therefore Tank Size is 6.9 m × 4.4 m × 3.6 m SWD +0.4 m FB – 1 No.

- TUBE SETTLER MEDIA –

- Flow – 25 m^3/hr
- Height of media – 0.55 m
- Tube Media required for Each Tank = length X width X height of media

=6.1 X 4.4 X 0.55 = 14.76 m^3

Therefore, Tube media required for Settling Tank will be 15 m^3

- FILTER FEED TANK/INTERMEDIATE STORAGE TANK –

- Flow – 25 m^3/hr
- Retention Time for Filter feed Tank = 1 to 4 hr
  Now, considering Retention Time = 1.6 hr
  Therefore, Tank Volume –25 × 1.6 = 41 m^3
- Considered volume of tank – 41 m3
- Let SWD of Tank – 3.55 m

- Area of Chamber – 41/3.55 = 11.54 m^2

- Consider Length of Tank – 3.3 m

- Therefore Width of Tank = 3.5 m

Therefore Tank Size is 3.5 m x 3.3 m × 3.55 m SWD + 0.45 m FB – 1 no.

- PRESSURE SAND FILTER –

- Flow – 500 m^3/day

– 25 m^3/hr.

- Design Velocity – 12 $m^3/m^2/hr$.
- Continuity Equation,
- Q = A × u
- Filtration Area – Q / u
- 25/12
- 2.02 m^2

Area = $\prod D^2/4$

D = $\sqrt{((2.02 \times 4)/\prod)}$
D = 1.602m

Diameter Considered = 1600 mm

HOS = 1500mm
Media Depth = 1000 mm
Density of Media = 1800 kg/cm^3
Media Quantity = Area × 1800 × Media Depth
= $\prod/4 \times 1.2^2 \times 1800 \times 1$
= 2034 kg ≈ 2500 kg

- ACTIVATED CARBON FILTER –
- Flow – 500 m^3/day
– 25 m3/hr
- Design Velocity – 12 $m^3/m^2/hr$
- Continuity Equation,
- Q = A × u
- Filtration Area – Q / u
- 25/12
- 2.02 m^2

Area = $\prod D^2/4$

D = $\sqrt{((2.02 \times 4)/\prod)}$
D = 1.601m

Diameter Considered =1600 mm
HOS = 1500 mm
Supporting Media Depth = 300 mm
Density of Media = 1800 kg/m^3
Media Quantity = Area × 1800 × Media Depth

= $\prod/4 \times 1.2^2 \times 1800 \times 0.3$

$= 610\ kg \approx 650\ kg$

Activated Carbon Depth = 700 mm
Density of Media = 600 kg/m³
Media Quantity = Area × 600× Media Depth

$= \prod/4 \times 1.2^2 \times 600 \times 0.7$

$= 474\ kg \approx 500\ kg$

- TREATED WATER TANK –
- Flow – 25 m³/hr
- Retention Time for Filter feed Tank = 2 to 4 hr
  Now, considering Retention Time = 1.5 hr
  Therefore, Tank Volume –.25 × 1.5 = 36.26 m³
- Considered volume of tank – 36.26 m3
- Let SWD of Tank – 3.7 m
- Area of Chamber – 36.26/3.7 = 9.8 m²
- Consider Length of Tank – 3.5 m
- Therefore Width of Tank = 2.8 m

Therefore Tank Size is 2.8 m x 3.5 m × 3.7 m SWD + 0.3 m FB – 1 no.

- SLUDGE HOLDING TANK –
- BOD Load = (300 × 500)/1000

= 150 kg/day

1 kg of BOD generates 0.2-0.25 kg of dry sludge per day.

1 Kg of BOD = 0.25 kg of dry sludge
Hence, 150 kg BOD = 37.5 kg of dry sludge

Considering 1 % slurry consistency

Therefore volume of slurry generated = 37.5 /1%
= 3750 liters
I.e. approximately 3.75 m³ per day

- Considering Retention Time for Sludge Holding Tank =16.67 days

Therefore, Tank Volume = 3.37 m³/day×16.67 days = 56.17 m³
- Considered Volume of Tank –56.17 m³

- Flow – 25 m^3/hr
- Retention Time for Filter feed Tank = 2 to 3 hr
  Now, considering Retention Time = 2.25 hr
  Therefore, Tank Volume – 25 × 2.25 = 56.17 m^3
- Considered volume of tank – 56.67 m3
- Let SWD of Tank – 3.7 m
- Area of Chamber –56.67/3.7 = 15.31 m^2
- Consider Length of Tank – 6.9 m
- Therefore Width of Tank = 2.2 m

Therefore Tank Size is 6.9 m x 2.2 m × 3.7 m SWD + 0.3 m FB – 1 no.

- OZONE DOSING SYSTEM

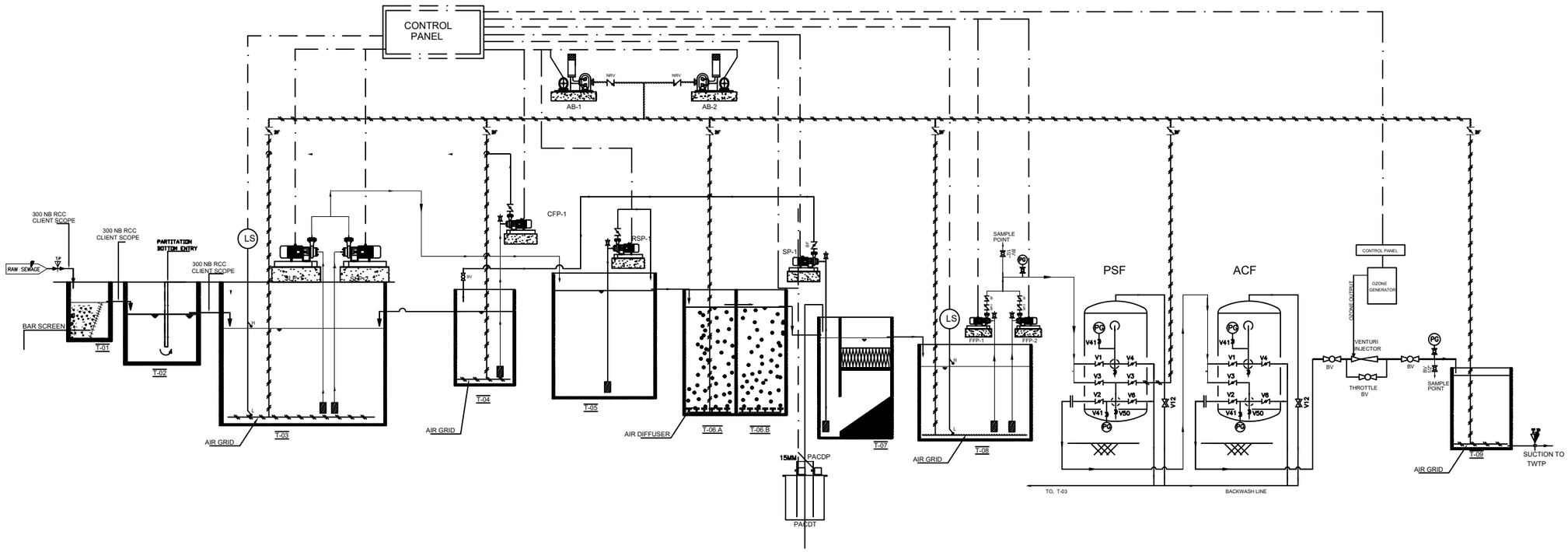
Dosage rate = 5 gm/hr Flow rate = 25 m^3/Hr
Concentration of Ozone = 85 % to 95% Consider
Concentration of Ozone = 90%

$$\text{Ozonator Capacity} = \frac{\text{Flow } (m^3/\text{Hr}) \times \text{Dosage (gm/hr)}}{90\%}$$

= 25 x 5/ 90%
= 138.9 = 150 Grm/Hr

Consider Ozonator Capacity as 150 Grm/Hr

ORP value for Ozonator= 550 – 650 mv



PIPING & INSTRUMENTATION DIAGRAM

COLOUR LEGEND :-

SR. NO.	COLOUR CODE	DESCRIPTION
01	———	PROCESS LINE
02	———	AIR LINE
03	———	TREATED LINE
04	———	DRAIN, LETCHATE BACKWASH LINE
05	———	SLUDGE LINE
06	———	DOSING LINE
07	———	GRAVITY LINE
08	———	OZONE LINE

VALVE LEGEND:-

NO	LEGEND	MARK	DISCRIPTION
01		BF	BUTTERFLY VALVE
02		NRV	NON RETURN VALVE
03		BV	BALL VALVE
04		PRV	PRESSURE RELIF VALVE

UNIT DETAILS :-

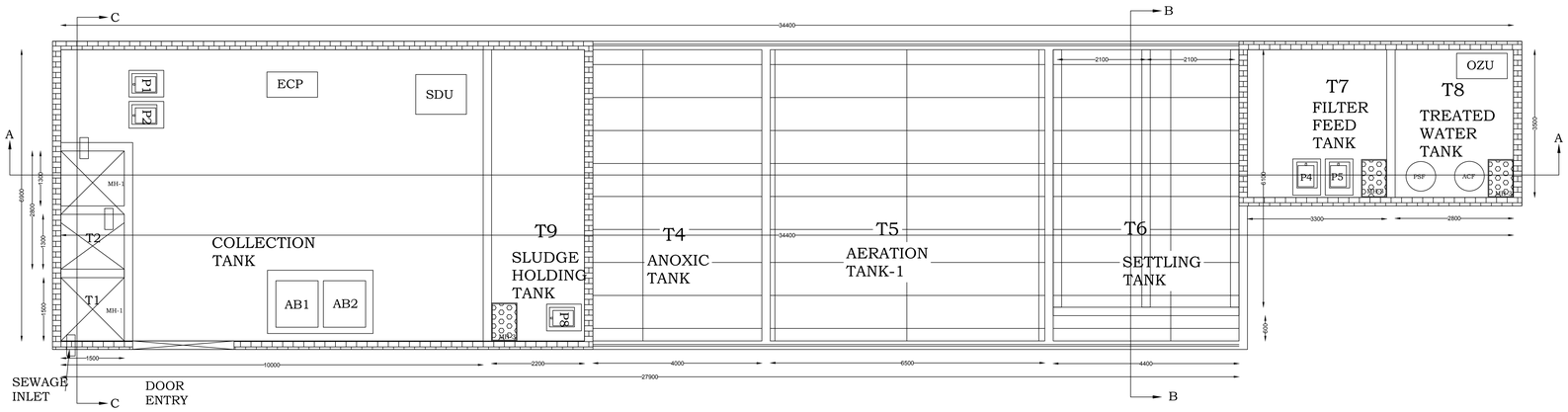
SR NO	DESCRIPTION	TAG NO.	SR NO	DESCRIPTION	TAG NO.
1	Bar Screen	BS	10	Tube Media	TM
2	Sewage Transfer Pump	SLP	11	Sludge Pump	SP
3	Air Blower	AB	12	PAC Dosing Tank	PAC DT
4	Air Grid	AG	13	PAC Dosing Pump	PAC DP
5	Diffuser Membrane		14	Filter Feed Pump	FFP
6	Media for Bioreactor	MBBR	15	Pressure Sand Filter	PSF
7	CENTRIFUGE	CF	16	Activated carbon Filter	ACF
8	CENTRIFUGE FEED PUMP	CFP	17	OZONATOR	OZ

INSTRUMENT LEGEND:-

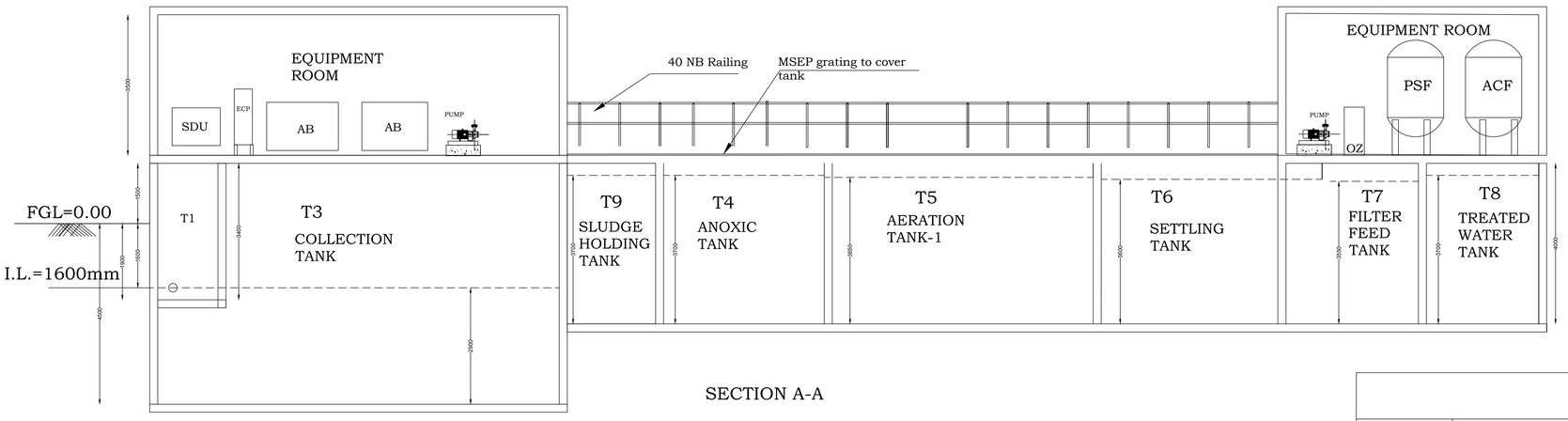
SR.	LEGEND	DISCRIPTION
1	PG	PRESSURE GAUGE
2	LS	LEVEL SWITCH
3		VENTURI

CLIENT:-	**SHANTI MOHON DEVELOPERS , PUNE**	
PROJECT:-	**500 KLD SEWAGE TREATMENT PLANT**	
SCALE: UTS	**CAPACITY: 500 CUM/DAY**	DATE: 04/12/2021
DRAWN: VARSHA	**SEWAGE TREATMENT PLANT**	DWG NO.: DUS/01/20-21
CHECKED: LAWANYA	**PIPING & INSTRUMENTATION DIAGRAM**	**REV. NO.:- 01**

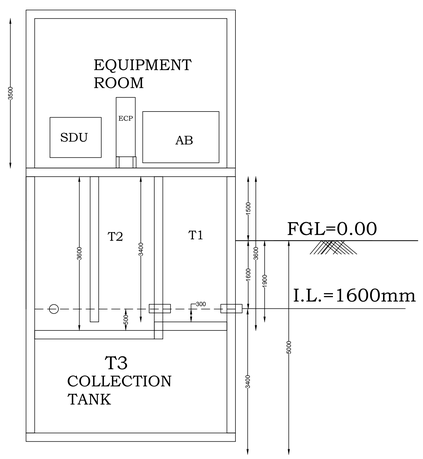
SUSTAINERA SOLUTIONS PVT.LTD



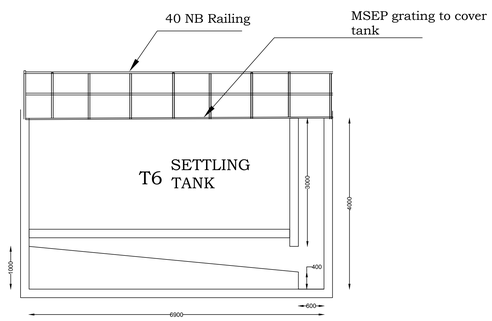
TOP PLAN WITH EQUIPMENT ROOM



SECTION A-A



SECTION C-C



SECTION B-B

PLEASE NOTE:	
SN	**DESCRIPTION**
1	ALL DIMENSIONS ARE IN MM.
2	WALL THICKNESS IS ASSUMED TO BE 200 MM.
3	PVC/MSEP GRATING SHOULD BE PROVIDED BY CLIENT = 50 MM OR 100 MM THICKNESS.
4	INTERNAL CORE CUTTING SIZES IS OF 100 MM AND MAY GET CHANGED AS PER SITE
5	INTERNAL PIPING LAYOUT MAY CHANGE AS PER SITE CONDITION.
6	PROVISION OF VENTILATION DUCT/EXHAUST IN THE EQUIPMENT ROOM.
7	TYPE AND NUMBER OF WINDOWS TO BE DECIDED BY ARCHITECT.
8	PROVISION OF INSERTS/PUDDLES/RUNGS IN EACH TANK WILL BE IN CLIENT SCOPE.
9	A CLEAR HEIGHT OF EQUIPMENT ROOM 3.5 MTR SHALL BE ENSURED TO ALL UNOBSTRUCTED MOVEMENT OF EQUIP.

EQUIPMENT DETAILS	
TAG NO.	**DESCRIPTION**
P1 & P2	SEWAGE TRANSFER PUMP (1W + 1SB)
P3	SLUDGE RE-CIRCULATION PUMP (1W)
P4 & P5	FILTER FEED PUMP (1W + 1SB)
SDU	SLUDGE DEWATERING UNIT
P8	FILTER PRESS FEED PUMP
AB1 & AB2	AIR BLOWER (1W + 1SB)
PSF	PRESSURE SAND FILTER
ACF	ACTIVATED CARBON FILTER
PDS	POLY DOSING SYSTEM
OZU	OZONIZATION UNIT
FP	FILTER PRESS
ECP	ELECTRICAL CONTROL PANEL

TANK DETAILS					
TAG	**DESCRIPTION OF TANKS**	**DIMENSION**	**LD (MTR)**	**VOLUME (M3)**	**EFFECTIVE VOLUME**
T1	BAR SCREEN CHAMBER	1.5 M x 1.5 M x 3.4 M	0.3	7.65	0.675
T2	OIL N GREASE CHAMBER	2.8 M x 1.5 M x 3.6 M	0.5	15.12	2.1
T3	EQUALIZATION TANK	10.0 M x 6.9 M x 6.0 M	2.9	414	200.1
T4	ANOXIC TANK	6.9 M x 4.0 M x 4.0 M	37	110.4	102.12
T5	AERATION TANK	6.9 M x 6.5 M x 4.0 M	3.65	179.4	163.7
T6	SETTLING TANK	4.4 M x 6.9 M x 4.0 M	3.6	121.44	110.81
T7	FILTER FEED TANK	3.5 M x 3.3 M x 4.0 M	3.55	46.2	41
T8	TREATED WATER TANK	3.5 M x 2.8 M x 4.0 M	3.7	39.2	36.26
T9	SLUDGE HOLDING TANK	6.9 M x 2.2 M x 4.0 M	3.7	66.79	56.17
	TOTAL AREA FOR STP	227.7 M			

MANHOLE DETAILS	
TAG NO.	**DESCRIPTION**
MH1	1500 MM X 1500 MM
MH3	600 MM X 900 MM

CLIENT:-	**SHANTI MOHAN DEVELOPER LLP, PUNE**	
PROJECT:-	**RESIDENTIAL , GANGA ASMI, PUNE**	
SCALE: UTS	**CAPACITY: 500 CUM/DAY STP**	DATE: 13/12/2021
DRAWN: VARSHA	**SEWAGE TREATMENT PLANT**	DWG NO.: DUS/08/20-21
CHECKED: LAWANYA	**GA AND SECTIONAL DRAWING**	**REV. NO.:- 02**

SUSTAINERA SOLUTIONS PVT.LTD

FLOORWISE FSI STATEMENT: (A BUILDING)

FLOORS	FSI AREA				BALCONY				TERRACE	STAIR	PASSAGE	LIFT	LIFT M/C ROOM	COMMERCIAL UNIT	TOTAL FSI AREA
	RESIDENTIAL	COMMERCIAL	INDUSTRIAL	SPECIAL	PERM.	PROP.	EXCESS	ENCLOSE	OPEN	AREAS	PAID	PAID	PAID			
PARKING FLOOR	0.00	0.00	0.00	0.00	-	0.00	-	0.00	0.00	0.00	17.35	15.67	0.00	0.00	-	0	0.00
FIRST FLOOR	0.00	270.57	0.00	0.00	-	71.71	-	71.71	0.00	49.81	17.35	15.67	97.70	6.48	-	02	270.57
SECOND FLOOR	0.00	304.50	0.00	0.00	-	68.67	-	68.67	16.21	5.36	17.35	15.67	73.10	0.00	-	13	304.50
THIRD FLOOR	0.00	304.50	0.00	0.00	-	68.67	-	68.67	16.21	5.36	17.35	15.67	73.10	0.00	-	13	304.50
FOURTH FLOOR	0.00	290.28	0.00	0.00	-	85.60	-	85.60	16.30	28.54	17.35	15.67	73.42	0.00	-	13	290.28
FIFTH FLOOR	0.00	304.50	0.00	0.00	-	68.67	-	68.67	16.21	5.36	17.35	15.67	73.10	0.00	-	13	304.50
SIXTH FLOOR	0.00	290.28	0.00	0.00	-	85.60	-	85.60	16.30	28.54	17.35	15.67	73.42	0.00	-	13	245.79
SEVENTH FLOOR	0.00	304.50	0.00	0.00	-	68.67	-	68.67	16.21	5.36	17.35	15.67	73.10	0.00	-	13	304.50
EIGHTH FLOOR	0.00	232.69	0.00	0.00	-	61.32	-	61.32	5.73	28.54	17.35	15.67	73.42	0.00	-	11	232.69
TERRACE FLOOR	0.00	0.00	0.00	0.00	-	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.80	0	0.00
Total	0.00	2301.78	0.00	0.00		578.91		86.96		156.87	156.15	141.03	610.36	6.48	24.80	89 + 2 +91	2301.78

BUILDING WISE FSI STATEMENT

BUILDING NAME	COMM. AREA	RESI. AREA	MHADA. AREA	TENEMENTS			
				MHADA	SHOP	Restaurant	
(WING 1)		27054.69	5534.87 Sq.m.	255			
(WING 2)		28028.70		284	88	—	—
(WING 3)	193.90	27054.69		255		08	—
A BUILDING	2301.78			—		—	91
TOTAL	2495.68 Sqm.	82138.08 Sqm.		794	88	08	91
	84633.76 Sqm.						

PROPOSED AREA STATEMENT (WING -1 ,WING-2 WING-3 & BUILDING A + MHADA

SR NO.	FLOOR	PROPOSED BUILDING					A BUILDING	PROPOSED MHADA	
		WING-1	WING-2	WING-3	TOTAL			FLOOR	AREA
1	GROUND FLOOR / PARKING LVL -1	172.10	278.56	366.00	816.66	PARKING FLOOR	—	PARKING FLOOR	239.03
2	PARKING LVL - 2	118.92	155.35	118.92	393.19	1ST FLOOR	270.57	1ST FLOOR	1021.58
3	PARKING LVL - 3	118.92	155.35	118.92	393.19	2ND FLOOR	304.50	2ND FLOOR	1067.42
4	PARKING LVL - 4	118.92	155.35	118.92	393.19	3RD FLOOR	304.50	3RD FLOOR	1067.42
5	PARKING LVL - 5	118.92	155.35	118.92	393.19	4TH FLOOR	290.28	4TH FLOOR	1067.42
6	PARKING LVL - 6	138.29	155.35	138.29	431.93	5TH FLOOR	304.50	5TH FLOOR	1072.00
7	PODIUM FLOOR	919.36	942.93	919.36	2781.65	6TH FLOOR	290.26		
8	1ST FLOOR (REFUGE)	853.89	881.00	853.89	2588.78	7TH FLOOR	304.50		
9	2ND FLOOR	919.36	942.93	919.36	2781.65	8TH FLOOR	232.69		
10	3RD FLOOR	919.36	942.93	919.36	2781.65	———	———		
11	4TH FLOOR	919.36	942.93	919.36	2781.65				
12	5TH FLOOR	919.36	942.93	919.36	2781.65				
13	6TH FLOOR (REFUGE)	853.89	881.00	853.89	2588.78				
14	7TH FLOOR	919.36	942.93	919.36	2781.65				
15	8TH FLOOR	919.36	942.93	919.36	2781.65				
16	9TH FLOOR	919.36	942.93	919.36	2781.65				
17	10TH FLOOR	919.36	942.93	919.36	2781.65				
18	11TH FLOOR (REFUGE)	853.89	881.00	853.89	2588.78				
19	12TH FLOOR	919.36	942.93	919.36	2781.65				
20	13TH FLOOR	919.36	942.93	919.36	2781.65				
21	14TH FLOOR	919.36	942.93	919.36	2781.65				
22	15TH FLOOR	919.36	942.93	919.36	2781.65				
23	16TH FLOOR (REFUGE)	853.89	942.93	853.89	2588.78				
24	17TH FLOOR	919.36	942.93	919.36	2781.65				
25	18TH FLOOR	919.36	942.93	919.36	2781.65				
26	19TH FLOOR	919.36	942.93	919.36	2781.65				
27	20TH FLOOR	919.36	942.93	919.36	2781.65				
28	21TH FLOOR (REFUGE)	853.89	881.00	853.89	2588.78				
29	22TH FLOOR	919.36	942.93	919.36	2781.65				
30	23TH FLOOR	919.36	942.93	919.36	2781.65				
31	24TH FLOOR	919.36	942.93	919.36	2781.65				
32	25TH FLOOR	919.36	942.93	919.36	2781.65				
33	26TH FLOOR (REFUGE)	853.89	881.00	853.89	2588.78				
34	27TH FLOOR	919.36	942.93	919.36	2781.65				
35	28TH FLOOR	919.36	942.93	919.36	2781.65				
	TOTAL	27054.69	28028.70	27248.59	82331.98		2301.78	MHADA TOTAL AREA	5534.87
	PROPOSED TOTAL BUILT UP AREA 82331.98 + 2301.78 = 84633.76 SQ.M.								

WATER REQUIREMENT

WING 1

NO OF TENEMENTS	255
PERSONS PER TENEMENT	5
WATER / PERSON ... liters	135.00
WATER REQUIREMENT...	172125.00
FIRE WATER ... liters	60000.00
TOTAL OHWT CAPACITY	232125.00

WING 2

NO OF TENEMENTS	284
PERSONS PER TENEMENT	5
WATER / PERSON ... liters	135.00
WATER REQUIREMENT...	191700.00
FIRE WATER ... liters	60000.00
TOTAL OHWT CAPACITY	251700.00

WING 3

NO OF TENEMENTS	255
PERSONS PER TENEMENT	5
WATER / PERSON ... liters	135.00
WATER REQUIREMENT...	172125.00

SHOPS

NO OF SHOPS	8
CARPET AREA	153.33
NO. OF PERSONS @ 3 / sqm	51.11
WATER / PERSON ... liters	45.00
WATER REQUIREMENT...	2299.95
WATER REQD. WING 3... liters	174426.00
FIRE WATER ... liters	60000.00
TOTAL OHWT CAPACITY	234426.00
UG TANK CAPACITY (1.50) x OHT	807375.00
FIRE UGWT CAPACITY	180000.00
TOTAL UGWT CAPACITY ... liters	987375.00

WATER REQUIREMENT

MHADA

NO OF TENEMENTS	88
PERSONS PER TENEMENT	5
WATER / PERSON ... liters	135.00
TOTAL OHWT CAPACITY	59400.00
UG TANK CAPACITY (1.50) x OHT	89100.00

WATER REQUIREMENT

"A" BUILDING (EXISTING)

RESTAURANT

Nos. OF PERSONS	180
WATER / PERSON ... liters	70.00
WATER REQUIREMENT...	12600.00

HOSTEL

Nos. OF ROOMS	0
OCCUPANTS / ROOM	2
WATER / PERSON ... liters	135.00
WATER REQUIREMENT...	0.00
TOTAL OHWT CAPACITY	12600.00
UG TANK CAPACITY (1.50) x OHT	18900.00
FIRE UGWT CAPACITY	50000.00
TOTAL UGWT CAPACITY ... liters	68900.00

PARKING STATEMENT

PARKING REQUIREMENT (as per UDCPR)

WING – 1

	CARS	SCOOTERS
FOR EVERY 2 TENEMENTS HAVING CARPET AREA BETW. 40.00 – 80.00 sqm	1	5
NO OF UNITS 137	69	343
FOR EVERY TENEMENTS HAVING CARPET AREA ABOVE 80.00 sqm	1	3
NO OF UNITS 118	118	354
TOTAL PARKING REQUIRED - WING	187	697

WING – 2

	CARS	SCOOTERS
FOR EVERY 2 TENEMENTS HAVING CARPET AREA BETW. 40.00 – 80.00 sqm	1	6
NO OF UNITS 223	112	559
FOR EVERY TENEMENTS HAVING CARPET AREA ABOVE 80.00 sqm	1	3
NO OF UNITS 61	61	183
TOTAL PARKING REQUIRED - WING	173	741

WING – 3

	CARS	SCOOTERS
FOR EVERY 2 TENEMENTS HAVING CARPET AREA BETW. 40.00 – 80.00 sqm	1	6
NO OF UNITS 137	69	343
FOR EVERY TENEMENTS HAVING CARPET AREA ABOVE 80.00 sqm	1	3
NO OF UNITS 118	118	354
TOTAL PARKING REQUIRED - WING	187	697
10% ADDITIONAL PARKING FOR VISITORS	37	139
NET PARKING REQD. FOR RESIDENTIAL	374	2242

SHOPS

	CARS	SCOOTERS
FOR EVERY 100.00 sqm (Carpet Area) CARPET AREA ... sqm 153.33	2	6
	1	3

LODGE

	CARS	SCOOTERS
FOR EVERY 80.00 sqm (RESTAURANT) CARPET AREA ... sqm 292.49	4	11
FOR EVERY 5 ROOM 89.00	1	5
ROOMS	18	107
NET PARKING REQD. FOR COMMERCIAL	23	147
NET PARKING REQUIRED	599	2389

PARKING PROPOSED

		CARS	SCOOTERS
PARKING LEVEL 1	GROUND FL.	116	199
PARKING LEVEL 2	1ST FLOOR	114	366
PARKING LEVEL 3	2ND FLOOR	130	365
PARKING LEVEL 4	3RD FLOOR	130	365
PARKING LEVEL 5	4TR FLOOR	130	365
PARKING LEVEL 6	5TH FLOOR	131	365
OPEN PARKING		54	00
WING 1 , WING 2 & WING 3 TOTAL		805	2025
A BUILDING	GROUND FL.	17	368
TOTAL PARKING PROVIDED		822	2393

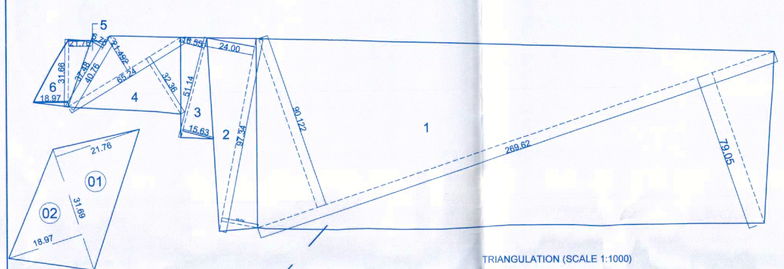
	F.S.I. AREA	NON F.S.I. AREA								TOTAL CONSTRUCTION
	F.S.I	OTHER	REFUSE AREA	BALCONY	PASSAGE	STAIRCASE	TERRACE	LIFT	LIFT M/C ROOM	TOP TERRACE	
WING-1	27054.69	-----	393.30	-----	-----	-----	-----	-----	-----	877.75	
WING-2	28028.70	-----	371.58	-----	-----	-----	-----	-----	-----	903.44	
WING-3	27248.59	-----	393.30	-----	-----	-----	-----	-----	-----	854.86	
"A" BUILDING	2301.78	-----	----	578.91	610.36	297.18	156.87	6.48	24.80	380.51	
MHADA	----	5534.87									
U.G.WATER TANK	----	258.75									
O.H.TANK	----	160.00									
STP Area	----	167.14									
Transformer Room+DG	----	260.26									
Security Cabin	----	9.00									
Parking LVL 1	----	4833.00									
Parking LVL 2		3863.24									
Parking LVL 3		4159.70									
Parking LVL 4		4159.70									
Parking LVL 5		4159.70									
Parking LVL 6		4107.00									
Podium slab		2828.31									
Ramp	----	2511.12									
Architect Projection		10247.15									
F.S.I TOTAL	84633.76										84633.76
NON F.SI TOTAL		47258.94	1158.18	578.91	610.36	297.18	156.87	6.48	24.80	3016.56	53108.28
										TOTAL	137742.04

TENEMENT STATEMENT

FLOOR NO.	WING -1	WING -2	WING -3	SHOP
GROUND FLOOR				8
PODIUM FLOOR	9	10	9	
1ST FLOOR (REFUGE)	8	9	8	
2ND FLOOR	9	10	9	
3RD FLOOR	9	10	9	
4TH FLOOR	9	10	9	
5TH FLOOR	9	10	9	
6TH FLOOR (REFUGE)	8	9	8	
7TH FLOOR	9	10	9	
8TH FLOOR	9	10	9	
9TH FLOOR	9	10	9	
10TH FLOOR	9	10	9	
11TH FLOOR (REFUGE)	8	9	8	
12TH FLOOR	9	10	9	
13TH FLOOR	9	10	9	
14TH FLOOR	9	10	9	
15TH FLOOR	9	10	9	
16TH FLOOR (REFUGE)	8	9	8	
17TH FLOOR	9	10	9	
18TH FLOOR	9	10	9	
19TH FLOOR	9	10	9	
20TH FLOOR	9	10	9	
21TH FLOOR (REFUGE)	8	9	8	
22TH FLOOR	9	10	9	
23TH FLOOR	9	10	9	
24TH FLOOR	9	10	9	
25TH FLOOR	9	10	9	
26TH FLOOR (REFUGE)	8	9	8	
27TH FLOOR	9	10	9	
28TH FLOOR	9	10	9	
TOTAL	255	284	255	8
TOTAL TENEMENTS	255 + 284 + 255 = 794			8

A BUILDING TENEMENT	
1ST FLOOR (Restaurant)	02
2ND FLOOR	13
3RD FLOOR	13
4TH FLOOR	13
5TH FLOOR	13
6TH FLOOR	13
7TH FLOOR	13
8TH FLOOR	11
TOTAL	91

MHADA	
1ST FLOOR	16
2ND FLOOR	18
3RD FLOOR	18
4TH FLOOR	18
5TH FLOOR	18
TOTAL	88



TRIANGULATION (SCALE 1:500)

ROAD WIDENING AREA CALCULATIONS

01) 0.50 X 31.69 X 21.76 = 344.79 SQ M

02) 0.50 X 31.69 X 18.97 = 300.58 SQ M

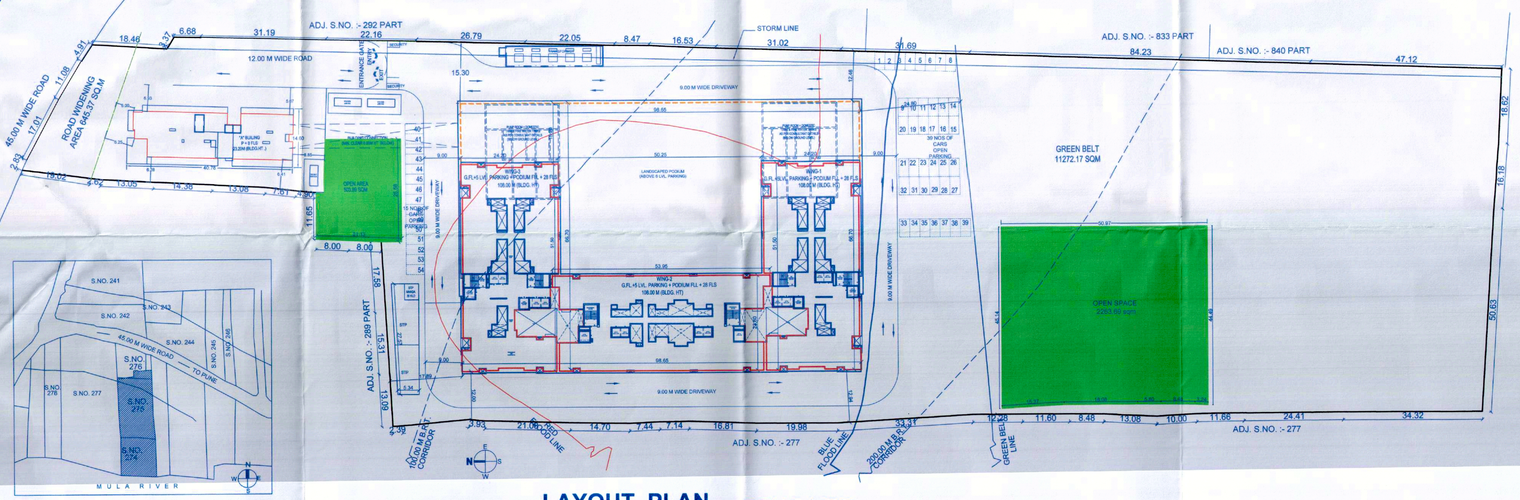
ROAD WIDENING AREA 645.37 SQ M

TRIANGULATION (SCALE 1:1000)

PLOT AREA

1) 269.62 X (90.122 + 79.05) X 0.50 = 22806.13 SQ.M
2) 37.54 X (24.00 + 20.234) X 0.50 = 2160.92 SQ.M
3) 51.14 X (16.55 + 15.63) X 0.50 = 822.90 SQ.M
4) 65.24 X (21.492 + 32.36) X 0.50 = 1756.71 SQ.M
5) 37.48 X 6.73 X 0.50 = 126.17 SQ.M
6) 33.39 X (18.97 + 21.76) X 0.50 = 645.37 SQ.M

TOTAL PLOT AREA = 28310.20 SQ.M



LOCATION PLAN

LAYOUT PLAN (SCALE 1:500)

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

1 / 1

STAMP OF APPROVAL

Sanctioned No. B.P. /T.P. Wakad /2021
Subject to conditions mentioned in the
Office Order No.
even dated - 26/08/2021.
Pimpri
Date : 26/08/2021

ESTD. 11/1/82

O. C. Signed by
Joint City Engineer

for City Engineer,
Building Permission Dept.
PCNC, Pimpri, Pune-18.

– FOR THE PURPOSE OF ENVIRONMENTAL CLEARANCE ONLY –

PROFORMA - I AREA STATEMENT

PROPOSED RESIDENTIAL COMPLEX ON S.NO.274/1,274/2,275/1/1275/1/2A, 275 / 1 / 2B , 275 / 1 / 3 / 1,275 / 1 / 3 /2 , 275 / 1 / 3 / 3 , 275 / 2 ,276 / 2 (P) , VILLAGE-WAKAD	DRAWING SHEET
STAMPS OF APPROVAL OF PLANS	
AREA STATEMENT	
1 AREA OF PLOT	
(MINIMUM AREA OF a, b, c TO BE CONSIDERED)	28310.20 SQM
a) AS PER OWNERSHIP DOCUMENT	28310.20 SQM
b) AS PER MEASUREMENT SHEET	28310.20 SQM
c) AS PER SITE	25635.20 SQM
2 DEDUCTIONS FOR	
a) PROPOSED D.P. /D.P. ROAD WIDENING AREA SERVICEROAD / HIGHWAY WIDENING	645.37 SQM
b) GREEN BELT	11272.17 SQM
(TOTAL a +b)	11917.54 SQM
3 BALANCE AREA OF PLOT (1-2)	13717.66 SQM
4 GREEM SPACE (as per clause 6.8)	11272.17 SQM
a) REQUIRED -	———
b) ADJUSTMENT OF 2(b), IF ANY -	———
c) BALANCE PROPOSED -	———
5 NET PLOT AREA (3 - 4 c)	24989.83 SQM
6 RECREATIONAL OPEN SPACE(IF APPLICABLE)	
a) REQUIRED -	2766.48 SQM
b) PROPOSED -	2767.68 SQM
7 INTERNAL ROAD AREA	
8 PLOTABLE AREA (IF APPLICABLE)	N.A
9 BUILT UP AREA WITH REFERENCE TO BASIC F.S.I. AS PER FRONT ROAD WIDTH (SR.NO. 5X BASIC FSI) (1.00)	24989.83SQ.M
10 ADDITION OF FSI ON PAYMENT OF PREMIUM	
a) MAXIMUM PERMISSIBLE PAYMENT FSI - - BASED ON ROAD WIDTH / TOZ ZONE 24989.83 X 0.5	12494.91 SQ.M
b) PROPOSED FSI ON PAYMENT OF PREMIUM	
11 IN SITU FSI / TDR LOADING	
a) IN SITU AREA AGAINST D.P. ROAD (2.0 X SR. NO. 2a) IF ANY	
b) IN SITU AREA AGAINST AMENITY SPACE IF HANDED OVER	
c) TDR AREA (1.75 %) 24989.83 X 1.75	43732.20 SQ.M
d) TOTAL IN SITU / TDR LOADING PROPOSED (11a + b +c)	15424.50 SQ.M
12 ADDITIONAL FSI AREA UNDER CHAPTER NO. 7	
13 TOTAL ENTITLEMENT OF FSI IN THE PROPOSAL	52909.24SQ.M
a) (9+10)) WHICHEVER IS APPLICABLE	
a1) DEDUCTION :- BUILT UP AREA / FSI / UTILIZED AREA / FSI TO BE RETAINED AS PER OLD DC RULE	84633.76
a2) BALANCE ENTITLEMENT FOR ANCILLARY AREA (a-a1)	
b) ANCILLARY AREA FSI UPTO 60% OR 80% WITH PAYMENT OF CHARGES 52909.24 X 60 % = 31745.54	31745.54SQ.M
b1) ANCILLARY AREA FSI REQUIRED	31745.54 SQ.M
c) TOTAL ENTITLEMENT (a+b)	84654.78SQ.M
14 MAXIMUM UTILIZATION LIMIT OF FSI (BUILDING POTENTIAL) PERMISSIBLE AS PER ROAD WIDTH (AS PER REGULATION NO. 6.1 OR 6.2 OR 6.4 AS APPLICABLE) X 1.6 OR 1.8)	
15 TOTAL BUILT UP AREA IN PROPOSAL (EXCLUDING AREA AT SR.NO. 17 b)	
a) EXISTING BUILT - UP AREA (AS PER OLD SANCTIONED)	
b) PROPOSED BUILTUP AREA (AS PER P- LINE)	84633.76 SQ.M
c) TOTAL (a+b)	84633.76 SQ.M
16 FSI CONSUMED (15 / 13) (SHOULD NOT BE MORE THAN SERIAL NO. 14 ABOVE)	1.85
17 AREA FOR INCLUSIVE HOUSING , IF ANY	
a) REQUIRED (20% OF SR.NO. 5)	5532.97 Sqm.
b) PROPOSED	5534.87 Sqm.

Certificate of Area :

Certified that the plot under reference was surveyed by me on _____ and the dimensions of sides etc. of plot stated on plan are as measured on site and the area so worked out tallies with the area stated in document of Ownership/T.P.Scheme Records/Land Records Department /City Survey records.

KIMAYA ASSOCIATES
OFF.NO.1,YASHOPURAM,NEAR HOTEL EAGLE EXCELUTIVE,PIMPRI,CHINCHWAD LINK ROAD,CHINCHWAD,PUNE.-411035
web site: www.kimayagroup.com
Email: architect@kimayagroup.com
Ph.9552502704 , landline. 02064104203

Signature
Ar.Mahtik Buchade
Lic.No.CA/03/32518

SPACE DESIGNERS' SYNDICATE
MEGASPACE, FIRST FLOOR, 13, SOLAPUR ROAD, OFF EAST STREET, PUNE.-411001.
PHONE : 26363841, 26356234. FAX - 020-26342631.

Signature
Ar.Shaikh Zuber Rashid
Lic. No.CA/83/7569

Owner's Declaration -

I/We undersigned hereby confirm that I/We would abide by plans approved by Authority /Collector. I/We would execute the structure as per approved plans.Also I/We executive the work under supervision of proper technical person so as to ensure the quality and safety at the work site.

ATUL JAIPRAKASH GOEL & SAMEER DARSHAN SHAH

Signature

Architect / Licensed Engineer / Supervisor name and signature

Job No.	Drawing No.	Scale	Drawn by	Checked by	Registration No.of Architect/License no.of Licensed Engineer / Supervisor
		1:100	Mrs.Pathak		Lic.No.CA/03/32518

Ganga ASMI 21/07/2023

ाची जोड हवी : दिवाकर जुवेकर

'आचार्य पुरस्कार' प्रदान

ा : प्राचीन संहिता गुरुकुल तर्फे वैद्य दिवाकर जुवेकर व वैद्य अनंत धर्माधिकारी पुरस्कार' प्रदान करतेवेळी वैद्य हरीश पाटणकर, वैद्य स्नेहल पाटणकर आदी.

देतले आणि योग्य उपचार पद्धती बाकरल्या, तर जनमानसात आयुर्वे द रुजायला मदत होईल. हीच गोष्ट लक्षात घेऊन वैद्य हरीश पाटणकर यांनी रुग्णांना आयुर्वेद उपचारांना तंत्रज्ञानाचा जोड दिली आहे.

वैद्य अनंत धर्माधिकारी ण्याले, पाटणकर यांनी अल्प काळात आयुर्वेदाला लोकप्रिय करण्यासाठी केलेले प्रयत्न कौतुकास्पद आहेत. आयुर्वे दाचा अभ्यास करणे, आयुर्वेदाची जीवनशैली जगणे हे पुण्यकारक आहे.

बदलासाठी

ातोबतच नादुरुस्त किंवा जळालेले र बदलण्याची कार्यवाही तत्परतेने ्याचे निर्देश मुख्य अभियंता . राजेंद्र पवार यांनी दिले आहेत. ागनिहाय आढाव्यानंतर नवीन श्योडगी देण्यातोबतच नादुरुस्त ा बदलायचे आहेत त्या विभागात ा संख्येत व तातडीने नवीन मीटर लब्ध करून देण्यात येत आहेत. या नियोजनामुळे कोटेशनची ा भरलेल्या (पेडपेंडिंग) तसेच भूत यंत्रणा अस्तित्वात असलेल्या ागी नवीन बीजजोडणी कार्यान्वित ाची प्रक्रिया आगखी गतीमान ी आहे. त्यामुळे गेल्या १८ संबध्ये पुणे परिमंडलामध्ये तब्बल हजार ६८७ नवीन बीजजोडण्या ित करण्यात आल्या आहेत.

ीकरीता पूर्णपणे बंद

स्वरुपाच्या घटना घडतात. ा व वित्त हानी टाळण्याच्या अवजड वाहनांसाठी पावसाळा ा निर्णय घेण्यात आला आहे. हवामानशास्त्र विभागाच्या ाऱ्याच्या वेळी सर्व प्रकारच्या ातल्या प्रकारच्या वाहनांच्या बंद राहील. नारंगी आणि ्या कालावधीत सदर घाट हनांच्या वाहतुकीसाठी खुला मनूद करण्यात आले आहे.

ER NOTICE

n, Pune invites E-Tenders from EDCL for following works under gloves/06/2023-24 Tender for / Hand Gloves) Tender cost Rs. 2023-24 Tender For Supply of 3,00,000 /- EMD Rs. 2000/- 3. of T & P for for Shivajinagar

जाहीर नोटीस

CTS. No. 11, 11/1, F.P. No. 207, बोटक्लब रोड, संगमवाडी, पुणे, महाराष्ट्र राज्य, या मिळकतीवरील "गोयल गंगा कन्स्ट्रक्शन्स अॅन्ड रियल इस्टेट प्रा. लि." यांचे घन बोट क्लब या प्रकल्पाला पर्यावरणविषयक मंजुरी देण्यात आली आहे. सदर पर्यावरणविषयक मंजुरीची प्रत महाराष्ट्र प्रदूषणनियंत्रण मंडळ यांचे कार्यालयामध्ये तसेच पर्यावरण मंत्रालय यांचे वेबसाईटवर http://environementclearance.nic.in उपलब्ध आहे.

जाहीर नोटीस

S.No. 274 (P) S.No. 275 (P) S.No. 276 (P) गांव मौजे बाकड, ता. मुळशी, जि. पुणे, महाराष्ट्र राज्य या मिळकतीवरील मे. शांती मोहन डेव्हलपर्स एलएलपी यांचे "गंगा अस्मी प्रकल्प" याला पर्यावरणविषयक मंजुरी देण्यात आली आहे. सदर पर्यावरणविषयक मंजुरीची प्रत महाराष्ट्र प्रदूषणनियंत्रण मंडळ यांचे कार्यालयामध्ये तसेच पर्यावरण मंत्रालय यांचे वेबसाईटवर http://environementclearance.nic.in उपलब्ध आहे.

जाहीर नोटीस

CTS. No. 5993 (P) + 5996 (P) + CTS. No. 5999 (P) + 6000 (P) + CTS. No. 6001 (P) + 6006 (P), i.e. S.No. 36 (P) S.No. 141 (P) S.No. 151 (P) गांव – मौजेपिंपरी-मोरवाडी, ता. हवेली, जि. पुणे, महाराष्ट्र राज्य या मिळकतीवरील मे. गोयल गंगा प्रमोटर्स यांच्या "मोरवाडी एस.आर.ए. प्रकल्प" याला पर्यावरणविषयक मंजुरी देण्यात आली आहे. सदर पर्यावरणविषयक मंजुरीची प्रत महाराष्ट्र प्रदूषणनियंत्रण मंडळ यांचे कार्यालयामध्ये तसेच पर्यावरण मंत्रालय यांचे वेबसाईटवर http://environementclearance.nic.in उपलब्ध आहे.

सहाय्यक निबंधक सहकारी संस्था (परसेवा)
पुणे जिल्हा नागरी सहकारी पतसंस्थेचे सहकारी फेडरेशन लि., पुणे
सांगवी विभागीय कार्यालय : क्रांती चौक,
नवी सांगवी, पुणे ४११ ०२७

जाहीर समन्स

देवयप्पा ग्रामीण बिगरशेती सहकारी पतसंस्था मर्या. अर्जदार
पत्ता : निरा, ता. पुरंदर, जि. पुणे.

विरुद्ध (जाब देणार)

क्र.	प्रतिवादीचे नाव	प्रतिवादी क्र.	दावा क्र.	दावा रक्कम
१	पिलाने किरण अमृतराव मु.पो. जेजुरी, ता. पुरंदर, जि. पुणे.	१	२८६/२०२३	७५,३३१/-
२	रोमन संदीप निवृत्ती मु.पो. पांडेश्वर, ता. पुरंदर, जि. पुणे.	२	२८६/२०२३	७५,३३१/-
३	उबाळे अश्विन सुरेश मु.पो. जेजुरी, ता. पुरंदर, जि. पुणे.	३	२८६/२०२३	७५,३३१/-
४	घोरपडे मंगेश राजेंद्र मु.पो. वाघळवाडी, ता. बारामती, जि. पुणे.	१	२८८/२०२३	१,३०,१८७/-
५	सकुंडे रोहित शिवाजी मु.पो. वाघळवाडी, ता. बारामती, जि. पुणे.	२	२८८/२०२३	१,३०,१८७/-
६	सकुंडे तुषार राजकुमार मु.पो. वाघळवाडी, ता. बारामती, जि. पुणे.	३	२८८/२०२३	१,३०,१८७/-
७	चव्हाण सचिन अशोक मु.पो. मुरूम, ता. बारामती, जि. पुणे.	१	२८९/२०२३	४,०६,४६२/-
८	भापकर विठ्ठल रावसाहेब मु.पो. मुरूम, ता. बारामती, जि. पुणे.	३	२८९/२०२३	४,०६,४६२/-
९	घोरपडे प्राची मंगेश मु.पो. वाघळवाडी, ता. बारामती, जि. पुणे.	१	२९०/२०२३	१,१६,३२१/-
१०	शिंदे अमित रामचंद्र मु.पो. वाघळवाडी, ता. बारामती, जि. पुणे.	२	२९०/२०२३	१,१६,३२१/-
११	घोरपडे मंगेश राजेंद्र मु.पो. वाघळवाडी, ता. बारामती, जि. पुणे.	३	२९०/२०२३	१,१६,३२१/-
१२	पवार दत्तात्रय उत्तम मु.पो. वाल्हे, ता. पुरंदर, जि. पुणे.	१	२९२/२०२३	४७,०३४/-
१३	पवार कृष्णा आबु मु.पो. वाल्हे, ता. पुरंदर, जि. पुणे.	२	२९२/२०२३	४७,०३४/-
१४	मेमाने गोरख अंकुश मु.पो. वाल्हे, ता. पुरंदर, जि. पुणे.	३	२९२/२०२३	४७,०३४/-
१५	रणनवरे अजय शरदराव मु.पो. राख, ता. पुरंदर, जि. पुणे.	३	२९५/२०२३	४६,६४६/-

सदर दाव्याचे कामी अर्जदार यांनी दाखल केलेल्या अर्जातील प्रतिवादींना रजिस्टर पोस्टाने समन्स पाठविण्यात आलेले आहे. परंतु प्रतिवादी यांना समन्स रूजू न झाल्याने/त्यांचा नवीन पत्ता उपलब्ध नसल्याने जाहीर समन्स देत आहोत.

उपनिर्दिष्ट अर्जासंबंधी आपले म्हणणे मांडण्यासाठी स्वतः जातीने दि. २७/०७/२०२३ रोजी ११-३० वाजता दाव्यासंबंधी कागदपत्रांसह आपण या न्यायालयात हजर रहावे. या नोटीशीद्वारे उपरोक्त प्रतिवादी यांना असेही कळविण्यात येते की, वरील तारखेस आपण वेळेवर हजर न राहिल्यास आपल्या गैरहजेरीत अर्जाची सुनावणी घेण्यात येईल, याची कृपया नोंद घ्यावी. त्याचप्रमाणे वरील तारखेस अगर तत्पूर्वी आपला संपूर्ण पत्ता कळविण्यात कसूर केल्यास आपला बचाव रद्द समजण्यात येईल.

म्हणून आज दिनांक १३/०७/२०२३ रोजी माझी सही व कार्यालयीन मुद्रेसह हे जाहीर समन्स दिले आहे.

श्री. एस. एम. तांदळे
सहाय्यक निबंधक सहकारी संस्था (परसेवा)
पुणे जिल्हा नागरी सहकारी पतसंस्थेचे सहकारी फेडरेशन लि., पुणे.

ग्रामपंचायत पारगाव तर्फे अवसरी बु., जि. पुणे

निविदा नोटीस क्र. १

सन २०२३-२०२४

ग्रामपंचायत पारगाव तर्फे अवसरी बु., ता. आंबेगाव, जि. पुणे खालील प्रमाणे कामाच्या सिलबंद निविदा जिल्हा परिषद पुणेकडील खाली नमूद केलेल्या अर्हताधील नोंदणीकृत ठेकेदारांकडून (दोन पाकिटे पद्धतीने) निविदा मागवीण्यात येत आहे. सदरच्या निविदा ग्रामपंचायत पारगाव

ANNEXURE 2

EHS MATRIX
PRIVATE LIMITED

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TEST REPORT

Report No:	**EHSM/2025/Nov/282**	**Issue Date**	**17/11/2025**
Name and Address of Customer	**M/s Shanti Mohan Developers Site – Ganga Asmi S.No.274P, 275P, 276P, Wakad, Pune**		
Sample Name	**Water**	**Sample Description**	**Borewell Water**
Date of Sampling	08/11/2025	**Sampling Time**	12.30 PM
Sampling Location	-	**Sampling Procedure**	APHA 1060
Sampling done by	EHS Matrix Pvt. Ltd., Pune.	**Sample Quantity**	02 L
Start Date of Analysis	10/11/2025	**End Date of Analysis**	15/11/2025

Results

Sr. No.	Parameters	Results	Unit(s)	Specifications IS 10500:2012	Methods
1	Colour	<2.0	Hazen	<5	APHA 2120 B ,24th Ed.2023
2	Odour	Agreeable	--	Agreeable	IS 3025 (Part 5):2018
3	pH at 25^{0}C	7.30	--	6.5 to 8.5	APHA 4500 H^+ B, 24th Ed.2023
4	Taste	Agreeable	--	Agreeable	IS 3025 (Part 8):2017
5	Turbidity	<1.0	NTU	<1	APHA 2130 B, 24th Ed.2023
6	Total Dissolved Solids TDS	349	mg/L	<500	APHA 2540 C, 24th Ed.2023
7	Calcium (as Ca)	44.5	mg/L	<75	IS 3025 (Part 40):2019
8	Chloride (as Cl)	66.0	mg/L	<250	APHA 4500 Cl^- B, 24th Ed.2023
9	Fluoride (as F)	0.72	mg/L	<1.0	APHA 4500 F^- D , 24th Ed.2023
10	Residual Free Chlorine	0.37	mg/L	<0.2	APHA 4500 Cl -B, 24th Ed.2023
11	Iron (as Fe)	<0.1	mg/L	<0.3	APHA 3111 B, 24th Ed.2023
12	Magnesium (as Mg)	20.0	mg/L	<30	IS 3025 (Part 46):2019
13	Nitrate(as NO_3)	43.2	mg/L	<45	APHA 4500 NO_3^- B, 24th Ed.2023
14	Sulphate (as So_4)	150.1	mg/L	<200	IS 3025 (Part 24/Sec 1):2022
15	Total Alkalinity (as $CaCO_3$)	165.2	mg/L	<200	IS 3025 (Part 23):2019
16	Total Hardness (as $CaCO_3$)	170	mg/L	<200	IS 3025 (Part 21):2019
17	E. coli	<2	MPN/100ml	<2	IS 1622:2019
18	Total Coliform	<2	MPN/100ml	<2	IS 1622:2019

Remark- The above water sample complies with required limit as per 10500:2012.

EHS Matrix Pvt. Ltd. Pune

Authorized Signatory
Mr. Rahul Patil
(Director)

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TEST REPORT

Report No:	**EHSM/2025/Nov/284**	**Issue Date**	**17/11/2025**
Name and Address of Customer	**M/s Shanti Mohan Developers Site – Ganga Asmi S.No.274P, 275P, 276P, Wakad, Pune**		
Sample Name	Soil	**Sample Description**	Soil
Date of Sampling	08/11/2025	**Sampling Time**	11.39 AM
Sampling Location	**Near Office**	**Sampling Procedure**	--
Sampling done by	EHS Matrix Pvt. Ltd., Pune	**Sample Quantity**	02 Kg
Start Date of Analysis	10/11/2025	**End Date of Analysis**	15/11/2025

Results

Sr. No.	Parameters	Results	Unit(s)	Methods
1	pH at 25^{0}C	7.47	--	IS 2720(Part 26) 1987
2	EC at 25^{0}C	145.0	µS/cm	IS 14767 : 2000
3	Total Kjeldahl Nitrogen	186.1	mg/Kg	Manual of Soil Testing
4	Water Retention Capacity	51.0	%	Manual of Soil Testing
5	Sulphate	19.3	mg/Kg	IS 2720 (Part 27)
6	Chloride	13.1	mg/Kg	EHS SOP
7	Calcium (Ca)	11.0	mg/Kg	Manual of Soil Testing
8	Potassium (as K)	94.96	mg/Kg	Manual of Soil Testing
9	Copper (as Cu)	0.36	mg/Kg	Manual of Soil Testing
10	Zinc (as Zn)	3.5	mg/Kg	Manual of Soil Testing
11	Iron (as Fe)	1.4	mg/Kg	Manual of Soil Testing
12	Manganese	1.2	mg/Kg	Manual of Soil Testing
13	Boron	BDL	mg/Kg	Manual of Soil Testing
14	Total Phosphate	2.42	mg/Kg	Manual of Soil Testing
15	Nickel	BDL	mg/Kg	EHS SOP
16	Cadmium	<0.01	mg/Kg	
17	Lead (Pb)	<0.01	mg/Kg	
18	Sodium	127.2	mg/Kg	Manual of Soil Testing

EHS Matrix Pvt Ltd. Pune

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TEST REPORT

Report No:	**EHSM/2025/Nov/285**	**Issue Date**	**17/11/2025**
Name and Address of Customer	**M/s Shanti Mohan Developers Site – Ganga Asmi S.No.274P, 275P, 276P, Wakad, Pune**		
Sample Name	**Water**	**Sample Description**	**Drinking Water**
Date of Sampling	08/11/2025	**Sampling Time**	11.05 AM
Sampling Location	PMC Water	**Sampling Procedure**	APHA 1060
Sampling done by	EHS Matrix Pvt. Ltd., Pune.	**Sample Quantity**	02 L
Start Date of Analysis	10/11/2025	**End Date of Analysis**	15/11/2025

Results

Sr. No.	Parameters	Results	Unit(s)	Specifications IS 10500:2012	Methods
1	Colour	<2.0	Hazen	<5	APHA 2120 B ,24th Ed.2023
2	Odour	Agreeable	--	Agreeable	IS 3025 (Part 5):2018
3	pH at 25^{0}C	8.01	--	6.5 to 8.5	APHA 4500 H^+ B, 24th Ed.2023
4	Taste	Agreeable	--	Agreeable	IS 3025 (Part 8):2017
5	Turbidity	<1.0	NTU	<1	APHA 2130 B, 24th Ed.2023
6	Total Dissolved Solids TDS	174	mg/L	<500	APHA 2540 C, 24th Ed.2023
7	Calcium (as Ca)	31.4	mg/L	<75	IS 3025 (Part 40):2019
8	Chloride (as Cl)	14.4	mg/L	<250	APHA 4500 Cl^- B, 24th Ed.2023
9	Fluoride (as F)	0.18	mg/L	<1.0	APHA 4500 F^- D , 24th Ed.2023
10	Residual Free Chlorine	0.35	mg/L	<0.2	APHA 4500 Cl -B, 24th Ed.2023
11	Iron (as Fe)	<0.1	mg/L	<0.3	APHA 3111 B, 24th Ed.2023
12	Magnesium (as Mg)	15.2	mg/L	<30	IS 3025 (Part 46):2019
13	Nitrate(as NO_3)	4.33	mg/L	<45	APHA 4500 NO_3^- B, 24th Ed.2023
14	Sulphate (as So_4)	11.4	mg/L	<200	IS 3025 (Part 24/Sec 1):2022
15	Total Alkalinity (as $CaCO_3$)	106.0	mg/L	<200	IS 3025 (Part 23):2019
16	Total Hardness (as $CaCO_3$)	141	mg/L	<200	IS 3025 (Part 21):2019
17	E. coli	Absent	CFU/100ml	<2	IS 1622:2019
18	Total Coliform	Absent	CFU/100ml	<2	IS 1622:2019

Remark- The above water sample does Comply with required limit as per 10500:2012.

EHS Matrix Pvt Ltd. Pune

Authorized Signatory
Mr. Rahul Patil
(Director)

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TEST REPORT

Report No:	**EHSM/2025/Nov/283**	**Issue Date**	**17/11/2025**
Name and Address of Customer	**M/s Shanti Mohan Developers Site – Ganga Asmi S.No.274P, 275P, 276P, Wakad, Pune**		
Sample Name	Waste Water	**Sample Description**	Septic Tank
Date of Sampling	08/11/2025	**Sampling Time**	12.20 PM
Sampling Location	--	**Sampling Procedure**	APHA 1060
Sampling done by	EHS Matrix Pvt. Ltd., Pune	**Sample Quantity**	02 L
Start Date of Analysis	10/11/2025	**End Date of Analysis**	15/11/2025

Results

Sr. No.	Parameters	Results	Unit(s)	Methods
1	pH at 25^{0}C	7.51	--	APHA 4500 H^+ B, 24th Ed.2023
2	Total Suspended Solids TSS	34.0	mg/L	APHA 2540 D, 24th Ed.2023
3	Biochemical Oxygen Demand BOD at 27°C for 3 days	21.3	mg/L	IS 3025 (Part 44):2019
4	Chemical Oxygen Demand COD	71.6	mg/L	IS 3025 (Part 58):2017
5	Residual Free Chlorine	<0.1	mg/L	APHA 4500 Cl -B, 24th Ed.2023
6	Floating Matter	<5.0	mg/L	APHA 2540 D, 24th Ed.2023
7	Detergent	<0.1	mg/L	APHA 5540 C, 24th Ed.2023
8	Fecal Coliform	84	CFU/100ml	IS 1622:2019

Remark-

EHS Matrix Pvt. Ltd. Pune

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TEST REPORT

Report No:	**EHSM/2025/Nov/283-1**	**Issue Date**	**17/11/2025**
Name and Address of Customer	**M/s Shanti Mohan Developers Site – Ganga Asmi S.No.274P, 275P, 276P, Wakad, Pune**		
Sample Name	Solid	**Sample Description**	**OWC Manure**
Date of Sampling	08/11/2025	**Sampling Time**	12.10 PM
Start Date of Analysis	10/11/2025	**End Date of Analysis**	15/11/2025
Sampling Location	**OWC**	**Sampling Procedure**	--
Sampling done by	EHS Matrix Pvt Ltd, Pune	**Sample Quantity**	02 Kg

Results

Sr. No.	Parameters	Results	Limit As per FCO	Unit(s)
1.	pH	7.1	**6.5-7.5**	--
2.	Moisture	15.0	**≤ 25**	%
3.	Colour	Blackish Brown	**Dark Brown to Black**	--
4.	Odour	Absence of foul smell	**Absence of foul smell**	--
5.	Bulk Density	0.45	**≤ 1.0**	gm/cm^3
6.	Total Organic Carbon	35.0	**≥ 14**	%
7.	Total Nitrogen (as N)	1.60	**≥ 0.8**	%
8.	Total Phosphate (as P_2O_5)	0.80	**≥ 0.4**	%
9.	Potash(as K_2O)	1.50	**≥ 0.4**	%
10.	C:N Ratio	15.0	**≤ 20:1**	--
11.	Particle Size	87 % pass through 4.0 mm Sieve	**Min 90% material pass through 4.0 mm IS sieve**	%

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TEST REPORT

Report No:	**EHSM/2025/Nov/275**	**Issue Date**	**14/11/2025**
Name and Address of Customer	**M/s Shanti Mohan Developers LLP Site – Ganga Asmi S.No.274P, 275P, 276P, Wakad, Pune**		
Sample Name	Air	**Sample Description**	Ambient Air
Date of Sampling	08/11/2025	**Sampling duration**	1440 Min
Sampling Location	**Main Gate (Entrance)**	**Sampling Procedure**	CPCB Guideline for measurement of Ambient Air pollutants Volume I
Dry bulb temperature	30^0C	**Wet bulb temperature**	27^0C
Relative Humidity	70 %	**Sampling done by**	EHS Matrix Pvt Ltd, Pune
Start Date of Analysis	10/11/2025	**End Date of Analysis**	14/11/2025

Results

Sr. No.	Parameters	Results	Unit(s)	Specifications (NAAQ Standards)	Methods
1	Sulphur Dioxide(SO_2)	14.0	$\mu g/m^3$	≤ 80	IS 5182 (Part 2)
2	Oxides of Nitrogen(NO_2)	18.0	$\mu g/m^3$	≤ 80	IS 5182 (Part 6)
3	Particulate Matter PM_{10}	60.0	$\mu g/m^3$	≤ 100	CPCB Guideline for measurement of Ambient Air pollutants Volume I
4	Particulate Matter $PM_{2.5}$	27.0	$\mu g/m^3$	≤ 60	

Remark- All above results is within National Ambient Air Quality standards.

EHS Matrix Pvt Ltd. Pune

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TEST REPORT

Report No:	**EHSM/2025/Nov/276**	**Issue Date**	**14/11/2025**
Name and Address of Customer	**M/s Shanti Mohan Developers LLP Site – Ganga Asmi S. No. 274P, 275P, 276P, Wakad, Pune**		
Sample Name	Air	**Sample Description**	Ambient Air
Date of Sampling	08/11/2025	**Sampling duration**	1440 Min
Sampling Location	**Sales Office**	**Sampling Procedure**	CPCB Guideline for measurement of Ambient Air pollutants Volume I
Dry bulb temperature	30^0C	**Wet bulb temperature**	28^0C
Relative Humidity	70 %	**Sampling done by**	EHS Matrix Pvt Ltd, Pune
Start Date of Analysis	10/11/2025	**End Date of Analysis**	14/11/2025

Results

Sr. No.	Parameters	Results	Unit(s)	Specifications (NAAQ Standards)	Methods
1	Sulphur Dioxide (SO_2)	12.0	$\mu g/m^3$	≤ 80	IS 5182 (Part 2)
2	Oxides of Nitrogen (NO_2)	14.0	$\mu g/m^3$	≤ 80	IS 5182 (Part 6)
3	Particulate Matter PM_{10}	55.0	$\mu g/m^3$	≤ 100	CPCB Guideline for measurement of Ambient Air pollutants Volume I
4	Particulate Matter $PM_{2.5}$	24.0	$\mu g/m^3$	≤ 60	

Remark- All above results is within National Ambient Air Quality standards.

EHS Matrix Pvt Ltd. Pune

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(Director)

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TEST REPORT

Report No:	**EHSM/2025/Nov/277**	**Issue Date**	**14/11/2025**
Name and Address of Customer	**M/s Shanti Mohan Developers LLP Site – Ganga Asmi S. No. 274P, 275P, 276P, Wakad, Pune**		
Sample Name	Air	**Sample Description**	Ambient Air
Date of Sampling	08/11/2025	**Sampling duration**	1440 Min
Sampling Location	**In Front of Wing 1**	**Sampling Procedure**	CPCB Guideline for measurement of Ambient Air pollutants Volume I
Dry bulb temperature	30^0C	**Wet bulb temperature**	27^0C
Relative Humidity	70 %	**Sampling done by**	EHS Matrix Pvt Ltd, Pune
Start Date of Analysis	10/11/2025	**End Date of Analysis**	14/11/2025

Results

Sr. No.	Parameters	Results	Unit(s)	Specifications (NAAQ Standards)	Methods
1	Sulphur Dioxide(SO_2)	13.0	$\mu g/m^3$	≤ 80	IS 5182 (Part 2)
2	Oxides of Nitrogen(NO_2)	15.0	$\mu g/m^3$	≤ 80	IS 5182 (Part 6)
3	Particulate Matter PM_{10}	64.0	$\mu g/m^3$	≤ 100	CPCB Guideline for measurement of Ambient Air pollutants Volume I
4	Particulate Matter $PM_{2.5}$	32.0	$\mu g/m^3$	≤ 60	

Remark- All above results is within National Ambient Air Quality standards.

EHS Matrix Pvt Ltd. Pune

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TEST REPORT

Report No:	**EHSM/2025/Nov/279**	**Issue Date**	**14/11/2025**
Name and Address of Customer	**M/s Shanti Mohan Developers LLP Site – Ganga Asmi S.No.274P, 275P, 276P, Wakad, Pune**		
Sample Name	Source Emission	**Sample Description**	Stack Material : MS Stack Height :7.5 Stack Type : Round
Date of Sampling	08/11/2025		
Sampling Location	**DG Set-1- 125 KVA**		
Sampling done by	EHS Matrix Pvt. Ltd., Pune	**Sampling duration**	30 Min
Sample Quantity	Thimble 1 Nos and 30 ml Solution	**Sampling Procedure**	CPCB Guideline on methodologies for source emission monitoring
Start Date of Analysis	10/11/2025	**End Date of Analysis**	14/11/2025

Results

Sr. No.	Parameters	Results	Unit(s)	Specifications (MPCB Consent)	Methods
1	Flue Gas Temperature	398	K	---	---
2	Velocity	4.8	M/s		
3	Gas Volume	432.0	NM^3/Hr		
4	Particulate Matter	42.0	mg/NM^3	≤ 150	CPCB Guideline on methodologies for source emission monitoring
5	SulphurDioxide (SO2)	1.5	Kg/day	---	

➢ **Remark-** All above results is well within MPCB Limit.

EHS Matrix Pvt. Ltd. Pune

Authorized Signatory
Mr. Rahul Patil
(Director)

EHS MATRIX
PRIVATE LIMITED

Sr. No.30/7, Office No. 202, 203, Chintamani Industrial Estate,
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www.ehsmatrix.co.in ehsmatrixpune@gmail.com

TEST REPORT

Report No:	**EHSM/2025/Nov/280**	**Issue Date**	**14/11/2025**
Name and Address of Customer	**M/s Shanti Mohan Developers LLP Site – Ganga Asmi S.No.274P, 275P, 276P, Wakad, Pune**		
Sample Name	Source Emission	**Sample Description**	Stack Material : MS Stack Height :7.5 Stack Type : Round
Date of Sampling	08/11/2025		
Sampling Location	**DG Set-2- 125 KVA**		
Sampling done by	EHS Matrix Pvt. Ltd., Pune	**Sampling duration**	30 Min
Sample Quantity	Thimble 1 Nos and 30 ml Solution	**Sampling Procedure**	CPCB Guideline on methodologies for source emission monitoring
Start Date of Analysis	10/11/2025	**End Date of Analysis**	14/11/2025

Results

Sr. No.	Parameters	Results	Unit(s)	Specifications (MPCB Consent)	Methods
1	Flue Gas Temperature	390	K	---	---
2	Velocity	4.0	M/s		
3	Gas Volume	421.0	NM^3/Hr		
4	Particulate Matter	38.0	mg/NM^3	≤ 150	CPCB Guideline on methodologies for source emission monitoring
5	Sulphur Dioxide (SO2)	1.1	Kg/day	---	

➢ **Remark-** All above results is well within MPCB Limit.

EHS Matrix Pvt Ltd. Pune

Authorized Signatory
Mr. Rahul Patil
(Director)

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TEST REPORT

Report No:	**EHSM/2025/Nov/278**	**Issue Date**	**14/11/2025**
Name and Address of Customer	**M/s Shanti Mohan Developers LLP Site – Ganga Asmi S.No.274P, 275P, 276P, Wakad, Pune**		
Sample Name	Noise	**Sample Description**	**Ambient Noise**
Date of Sampling	08/11/2025	**Sampling duration**	Spot Time
Sampling done by	EHS Matrix Pvt Ltd, Pune		

Results

Sr. No.	Locations	Result dB(A) Day	Result dB(A) Night	Specifications (CPCB Standards dB(A)	Method
1.	In Front of Sales Gate	50.2	40.0	55/45	CPCB Guideline
2.	In Front of Wing 1	51.4	39.2		
3.	Main Gate Entry	52.0	41.1		

Remark-

- All above Noise level results are within Central Pollution Control Board Standards limit.
- Day/Night -55/45 dB.

EHS Matrix Pvt Ltd. Pune

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(Director)

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TEST REPORT

Report No:	**EHSM/2025/Nov/281**	**Issue Date**	**14/11/2025**
Name and Address of Customer	**M/s Shanti Mohan Developers LLP Site – Ganga Asmi S.No.274P, 275P, 276P, Wakad, Pune**		
Sample Name	DG Noise (DG Set Insertion loss)	**Date of Sampling**	08/11/2025
Sampling done by	EHS Matrix Pvt Ltd, Pune		

DG Noise Monitoring Report

Sr. No.	Test Location	Reading in dB(A) 0.5 mtr. Away from DG				Avg.	Difference dB(A)
		North Side	East Side	South Side	West Side		
1	**125 KVA DG Set-1**						
1A	Without Enclosure	101.0	97.4	98.1	97.9	98.1	**28.3**
1B	With Enclosure	68.9	70.4	69.8	70.2	69.8	
2	**125 KVA DG Set-2**						
2A	Without Enclosure	101.5	100.2	101.2	100.7	100.9	32.0
2B	With Enclosure	69.4	70.5	68.5	67.3	68.9	

Remark-

Maharashtra Pollution Control Board has prescribed minimum 25 dB (A) Noise as DG Insertion loss difference during with and without enclosure of DG.

EHS Matrix Pvt Ltd. Pune

Authorized Signatory
Mr. Rahul Patil
(Director)

ANNEXURE 3


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Nilkamal
MATERIAL HANDLING
For more details, contact any of the below:
Toll free # : 1800 890 9115
Email : marketing@nilkamal.com
Visit : www.nilkamalmaterialhandling.com
स्वच्छ भारत
एक कदम स्वच्छता की ओर


पानी बचाओ
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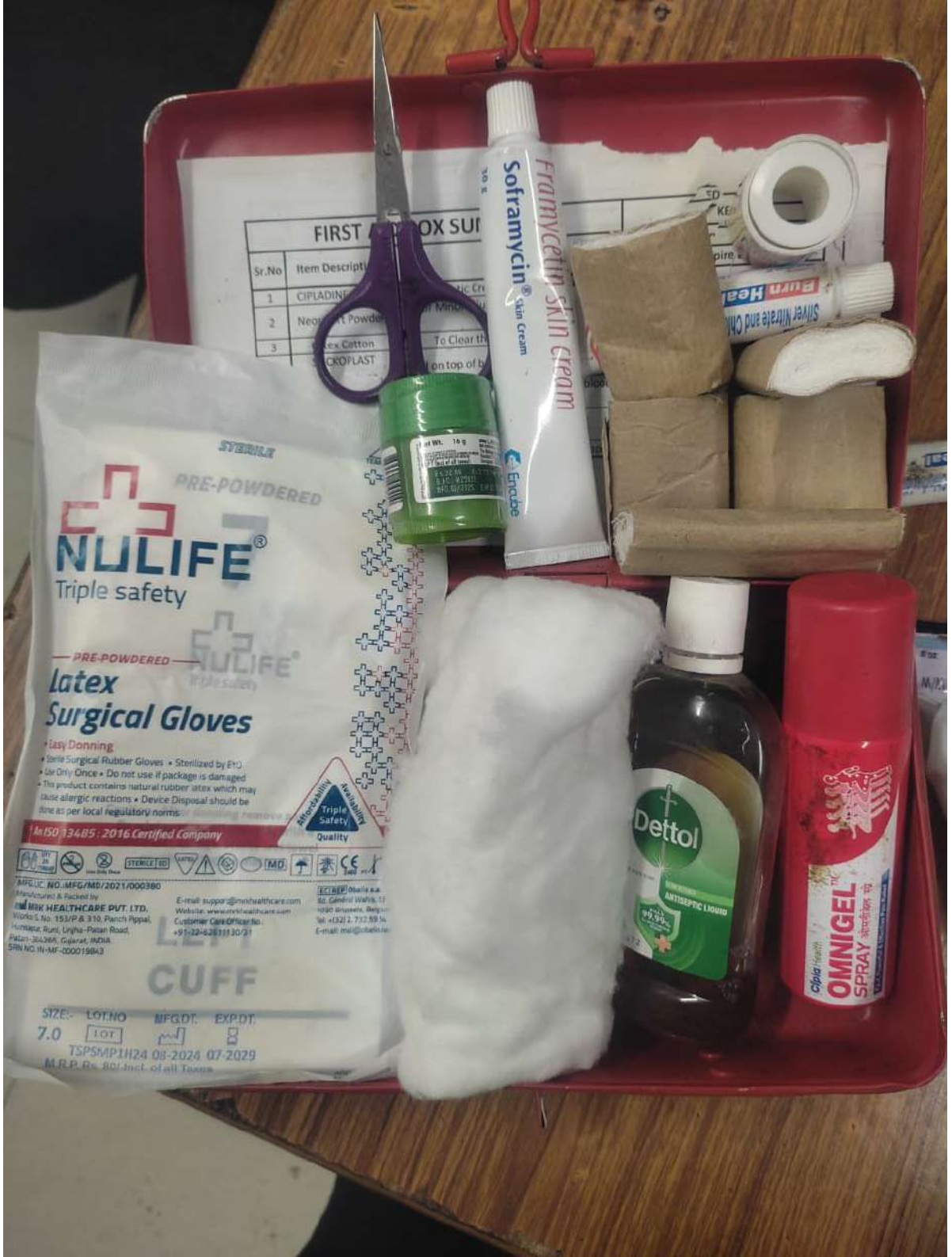
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