

- 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 3m height or 1/3rd of the building height and maximum upto 10m). Plastic/tarpaulin sheet covers shall be provided for vehicles bringing in sand, cement, murrum and other construction materials prone to causing dust pollution at the site as well as taking out debris from the site.
- vi) No Excavation of soil shall be carried out without adequate dust mitigation measures in place.
- vii) No loose soil or sand or construction & demolition waste or any other construction material that causes dust shall be left uncovered.
- viii) No uncovered vehicles carrying construction material and waste shall be permitted
- ix) All the topsoil excavated during construction activities should be stored for use in horticulture / landscape development within the project site.
- x) Grinding and Cutting of building material in open area shall be prohibited. Wet jet shall be provided for grinding and stone cutting.
- xi) Unpaved surfaces and loose soil shall be adequately sprinkled with water to suppress dust.
- xii) All construction and demolition debris shall be stored at the site within earmarked area and road side storage of construction material and waste shall be prohibited. All demolition and construction waste shall be managed as per the provisions of the Construction and Demolition Waste Rules 2016.
- xiii) The diesel generator sets to be used during construction phase shall be low sulphur diesel type and shall conform to Environmental (Protection) prescribed for air and noise emission standards.
- xiv) The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution. Low sulphur diesel shall be used. The location of the DG set and exhaust pipe height shall be as per the provisions of the Central Pollution Control Board (CPCB) norms.
- xv) For indoor air quality the ventilation provisions as per National Building Code of India.
- xvi) Roads leading to or at construction site must be paved and blacktopped (i.e. metallic road)

- xvii) Dust Mitigation measures shall be displayed prominently at the construction site for easy public viewing.
- xviii) Construction and Demolition Waste Processing and Disposal site shall be identified and required dust mitigation measure be notified at the site. .

**III. Water quality monitoring and preservation**

- i) The natural drain system should be maintained for ensuring unrestricted flow of water.
- ii) 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.
- iii) Buildings shall be designed to follow the natural topography as much as possible. Minimum cutting and filling should be done.
- iv) The total water requirement for the project will be 269 KL/day, which shall be met through GMADA supply. Total fresh water use shall not exceed the proposed requirement as provided in the project details.
- v) a)The total wastewater generation at the outlet of STP and WWTP from the project will be 220 KLD out of which 154 KL/day (black water) and remaining quantity (66 KLD) , grey water which will be treated in STP of capacity @ 200 KLD and WWTP of 100 KLD receptivity, within the project premises. As proposed, reuse of treated wastewater and discharge of surplus treated wastewater shall be as under: -

S. No.	Season	For Flushing purposes (KLD)		HVAC (KLD)	Green Area (KLD)	Into GMADA Sewer (KLD)
		Treated Grey water	Treated Black Water	Treated Black Water	Treated Black Water	Treated Black Water
1.	Summer	66	48	100	6	0
2.	Winter	66	48	100	2	4
3.	Rainy	66	48	100	0.5	5.5

b) Storage tank of adequate capacity shall be provided for the storage of treated wastewater and all efforts shall be made to supply the same for construction purposes.

c) During construction phase, the project proponent shall ensure that the waste water being generated from the labour quarters/toilets shall be treated and disposed in environment friendly manner. The project proponent shall also exercise the option of modular bio-toilets or will provide proper and adequately design septic tanks for the treatment of such waste water and treated effluents shall be utilized for green area/plantation

- vi) The project proponent shall ensure safe drinking water supply to the habitants. Adequate treatment facility for drinking water shall be provided, if required.
- vii) The waste water generated from swimming pool(s) shall not be discharged and the same shall be reused within the premises for purposes such as horticulture, HVAC etc.
- viii) 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.
- ix) 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.
- x) 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.
- xi) 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.
- xii) The respective project proponent shall discourage the installation of R.O. plants in their projects in order to save the wastage in form of RO reject. However, in case the requirement of installing RO plant is utmost necessary then the rejected stream from the RO shall be separated and shall be utilized by storing the same within the particular component i.e. (Tower/Mall) or in a common place in the project premises.
- xiii) The project proponent shall also adopt the new/innovating technologies like less water discharging taps (faucet with aerators)/urinals with electronic sensor system /water less urinals / twin flush cisterns/ sensor based alarming system for overhead water storage tanks and make it a part of the environmental management plans / building plans so as to reduce the water consumption/ground water abstraction in their Building Construction & Industrial projects.
- xiv) The project proponent will provide plumbing system for reuse of treated wastewater for flushing/ HVAC/ other purposes etc. and colour coding of different pipe lines carrying water/wastewater from different sources / treated wastewater as follows:

<b>Sr. No</b>	<b>Nature of the Stream</b>	<b>Color code</b>
a)	Fresh water	Blue Color

b)	Untreated wastewater from Toilets/ urinal & from Kitchen	Black color
c)	Untreated wastewater from Bathing/shower area, hand washing (Washbasin / sinks) and from Cloth Washing	Grey color
d)	Reject water streams from RO plants & AC condensate (this is to be implemented wherever centralized AC system and common RO has been proposed in the Project). Further, in case of individual houses/establishment this proposal may also be implemented wherever possible.	White color
e)	Treated wastewater (for reuse only for plantation purposes) from the STP treating black water	Green
f)	Treated wastewater (for reuse for flushing purposes or any other activity except plantation) from the STP treating grey water	Green with strips
g)	Storm water	Orange Color

- xv) Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred.
- xvi) The CGWA provisions on rain water harvesting should be followed. Rain water harvesting recharge pits (10 Nos) /storage tanks shall be provided for ground water recharging as per the CGWB norms.
- xvii) 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.
- xviii) All recharge should be limited to shallow aquifer.
- xix) No ground water shall be used during construction phase of the project. Only treated sewage/wastewater shall be used. A proper record in this regard should be maintained and available at site.
- xx) 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.
- xxi) 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.
- xxii) Sewage shall be treated in the STP with tertiary treatment. STP shall be installed in phased manner viz a viz in module system designed in a such a way so as to efficiently treat the waste water with increase in its quantity due to rise in occupancy. The treated effluent from STP shall be recycled/re-used for flushing, AC make up water and gardening. No treated water shall be disposed in to municipal stormwater drain.
- xxiii) No sewage or untreated effluent water would be discharged through storm water drains. 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.

- xxiv) Periodical monitoring of water quality of treated sewage shall be conducted. Necessary measures should be made to mitigate the odour problem from STP.
- xxv) 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.

#### **IV. Noise monitoring and prevention**

- iv) 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.
- v) 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.
- vi) 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.

#### **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.
- ii) Outdoor and common area lighting shall be LED.
- iii) Concept of passive solar design that minimize energy consumption in buildings by using design elements, such as building orientation, landscaping, efficient building envelope, appropriate fenestration, increased. day lighting design and thermal mass etc. shall be incorporated in the building design. Wall, window, and roof u-values shall be as per ECBC specifications.

- iv) Energy conservation measures like installation of CFLs/ LED for the lighting the area outside the building should be integral part of the project design and should be in place before project commissioning.
- v) Solar, wind or other Renewable Energy shall be installed to meet electricity generation equivalent to 1 % of the demand load or as per the state level/ local building bye-laws requirement, whichever is higher.
- vi) Solar power by utilizing at least 30% of the roof top area 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.

## **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.
- ii) Disposal of muck during construction phase shall not create any adverse effect on the neighboring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.
- 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.
- 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 for treatment and disposal of the waste.
- 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.
- vi) Any hazardous waste generated during construction phase, shall be disposed of as per applicable rules and norms with necessary approvals of the State Pollution Control Board.
- vii) Use of environment friendly materials in bricks, blocks and other construction materials, shall be required for at least 20% of the construction material quantity. These include Fly Ash bricks, hollow bricks, AACs, Fly Ash Lime Gypsum blocks, Compressed earth blocks, and other environment friendly materials.

- viii) Fly ash should be used as building material in the construction as per the provision of Fly Ash Notification of September, 1999 and amended as on 27<sup>th</sup> August, 2003 and 25<sup>th</sup> January, 2016. Ready mixed concrete must be used in building construction.
- ix) Any wastes from construction and demolition activities related thereto shall be managed so as to strictly conform to the Construction and Demolition Rules, 2016.
- x) Used CFLs and TFLs should be properly collected and disposed off/sent for recycling as per the prevailing guidelines/ rules of the regulatory authority to avoid mercury contamination.

## **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).
- ii) At least single line plantation all around the boundary of the project as proposed shall be provided. The open spaces inside the plot should be suitably landscaped and covered with vegetation of indigenous species/variety. A minimum of one tree for every 80 sqm of total project 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. The plantation should be provided as per SEIAA guidelines.
- 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.
- 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.
- v) The project proponent shall not use any chemical fertilizer /pesticides /insecticides and shall use only Herbal pesticides/insecticides and organic manure in the green area.

- vi) The green belt along the periphery of the plot shall achieve attenuation factor conforming to the day and night noise standards prescribed for residential land use.

### **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.
  - i) Hierarchy of roads with proper segregation of vehicular and pedestrian traffic.
  - j) Traffic calming measures.
  - k) Proper design of entry and exit points.
  - l) Parking norms as per local regulation.
- ii) 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.
- iii) A detailed traffic management and traffic decongestion plan shall be drawn up to ensure that the current level of service of the roads within a 05 kms radius of the project is maintained and improved upon after the implementation of the project. This plan should be based on cumulative impact of all development and increased habitation being carried out or proposed to be carried out by the project or other agencies in this 05 Kms radius of the site in different scenarios of space and time and the traffic management plan shall be duly validated and certified by the State Urban Development department 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.
- iv) 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.

### **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.
- ii) For indoor air quality the ventilation provisions as per National Building Code of India.



- iii) Emergency preparedness plan based on the Hazard identification and Risk Assessment (HJRA) and Disaster Management Plan shall be 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, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- v) Occupational health surveillance of the workers shall be done on a regular basis.
- vi) A First Aid Room shall be provided in the project both during construction and operations of the project.

#### **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 project proponent shall adhere to the commitments made in the proposal for CER activities for spending at least minimum amount of Rs. 1.70 crore towards following CER activities. The details are given below: -

<b>S. No.</b>	<b>Activities</b>	<b>Annual expenditure (in Lakhs)</b>	<b>Timeline</b>	<b>Total expenditure in 5 years (in Lakhs)</b>
1.	Government Public Library, Phase-4, Mohali. <ul style="list-style-type: none"> <li>• Maintenance of the Building</li> <li>• Upgradation of the facilities in library by providing more aid in order to purchase books.</li> </ul>	25	2 years	50
2.	Government High School, Sector-61, Mohali. <ul style="list-style-type: none"> <li>• Adoption of school for their better regulation and expansion of facilities as per their needs.</li> </ul>	30	3 years	90
3.	Government Dispensary Phase 9, Mohali. <ul style="list-style-type: none"> <li>• Providing Ambulance</li> </ul>	30	One time	30

		85 Lakhs		1.7 Crores
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- 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 of six-monthly report.
- 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.
- 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. The project proponent shall spend minimum amount of Rs 126 Lacs towards capital cost and Rs 6.1 Lacs/annum towards recurring cost in Construction phase of the project including the environmental monitoring cost and shall spend minimum amount of Rs 23 Lacs/annum towards recurring cost in operation phase of the project including the environmental monitoring cost. The entire cost of the environmental management plan will continue to be borne by the project proponent until the responsibility of environmental management plan is transferred to the occupier/residents society under proper MOU under intimation to SEIAA, Punjab. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.

#### **XI. Validity**

- i) This environmental clearance will be valid for a period of seven years from the date of its issue or till the completion of the project, whichever is earlier.

#### **XII. Miscellaneous**

- i) The project proponent before allowing any occupancy shall obtain completion and occupancy certificate from the Competent Authority and submit a copy of the same to the SEIAA, Punjab.
- ii) The project proponent shall comply with the conditions of CLU, if obtained.

- iii) The project proponent shall prominently advertise it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days indicating that the project has been accorded environment clearance and the details of MoEFCC/SEIAA website where it is displayed.
- iv) 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.
- v) 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.
- vi) The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at Environment Clearance portal.
- vii) 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.
- viii) 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.
- ix) The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
- x) 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.
- xi) 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).
- xii) 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.
- xiii) The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
- xiv) The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.

- xv) 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.
- xvi) The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.
- xvii) 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.

The meeting ended with a vote of Thanks to the Chair

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