



DELHI METRO RAIL CORPORATION LIMITED

Conditions of Contract on Environment
for

Civil Works of O&M for Contract Value above Rs.1.0 Crore

**Delhi Metro Rail Corporation Ltd.
Metro Bhawan
Fire Brigade Lane, Barakhamba Road,
New Delhi-110001**

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1.1 Scope

- 1.1.1 This document defines the principal requirements of the Employer on Environmental aspects associated with the contractor / sub-contractor to be practiced at construction work sites at all time.

1.2 Definition / languages

1.2.1 In this document

- i) The use of 'shall' indicates a mandatory requirement.
- ii) The use of 'should' indicates a guideline that is strongly recommended.
- iii) The use of 'may' indicates a guideline that is to be considered.
- iv) Employer means Delhi Metro Rail Corporation Ltd., (DMRC).
- v) Chief Environment Officer means an officer nominated by DMRC who is overall responsible for monitoring all environmental functions prescribed in this document.

1.2.2 Abbreviations

- (i) CPCB means Central Pollution Control Board.
- (ii) DPCC means Delhi Pollution Control Committee.
- (iii) NGT means National Green Tribunal

1.3 Application of this document

- 1.3.1 This document applies to all aspects of the contractor's scope of work, including all aspects carried out by sub-contractors and all other agencies. There shall be no activity associated to the contract, which is exempted from the purview of this document.

1.4 Purpose of this document

- 1.4.1 The objective of this document is to ensure that adequate precautions and measures are taken to avoid harmful effects on the environment during the execution of contract.
- 1.4.2 This document:
- i) Describes the environmental interface between Employer and the Contractor.
 - ii) Details the process by which the contractor shall manage environmental issues while carrying out the work under the contract.

1.5 Compliance

1.5.1 Indian statutory requirements

1.5.1.1 Primary statutory regulations

- 1.5.1.2 The construction works shall be undertaken in accordance with all applicable legislation and Indian statutory requirements listed below but not limiting to:

- i) Environment Protection Act, 1986 and Rules 1986
- ii) Air (Prevention and control of Pollution) Act, 1981 and Rules 1981
- iii) Water (Prevention and Control of Pollution) Act, 1974 and Rules 1974
- iv) The Noise Pollution (Regulation & Control) Rules, 2000
- v) Notification on Control of Noise from Diesel Generator (DG) sets, 2002

- vi) Notification, Central Ground Water Board, Act January 1997 (New Rule)
- vii) Manufacture, Storage & Import of Hazardous Chemicals Rules, 1989
- viii) Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016.
- ix) Delhi Tree Preservation Act (1994) and Rules 2010.
- x) Batteries (Management and Handling) Rules
- xi) Fly ash utilization notification, Sept 1999 as amended in August 2003
- xii) Guidelines of Delhi Urban Arts Commission and Central Vista Committee
- xiii) The Petroleum Act, 1934 and Rules 1976
- xiv) Solid waste management rule, 2016.
- xv) Construction and Demolition Waste Management Rule 2016.
- xvi) E-Waste (Management) Rules, 2016
- xvii) Plastic Waste Management Rule, 2016.

1.5.1.3 Applicable NGT Guidelines

1.5.1.4 Notwithstanding the above Act/Rules, there is nothing in those to exempt the contractor from the purview of any other Act or Rule in Republic of India for preservation of environment.

1.5.1.5 If the requirements stated in this document are less stringent than or in conflict with the country's applicable legislation, the later shall apply.

1.6 Contractor's Environmental Plan

1.6.1 Within 3 weeks of the notification of acceptance of the tender, the Contractor shall submit a detailed and comprehensive Contract specific Environmental Plan and get it approved by the employer. The Environmental Plan shall include procedures and regulations which, when implemented, will ensure compliance of the contract provisions. The format for the site Environment plan is given in **Annexure-I.**

1.6.2 If at any time the Environment plan is, in the Employer's opinion, insufficient or requires revision or modification, the Employer may instruct the Contractor to revise the Environment plan and the Contractor shall within one week submit the revised plan to the Employer for review.

1.6.3 Any omissions, inconsistencies and errors in the Environment Plan or the Employer's acceptance or rejection of the Environment Plan and/or supplements thereto shall be without prejudice to the Contractor's obligations with respect to environment and shall not excuse any failure by the contractor to adopt proper and recognized environmental practices throughout the execution of the Work.

1.6.4 The Contractor shall adhere to the Environment Plan and shall ensure, as far as practically possible, that all sub-contractors of all tiers require that contracting parties each have a copy of the Site Environment Plan and comply with its provisions.

1.7 Orientation training on Environment

1.7.1 The Contractor shall ensure that all personnel working at the site receive induction training on environment explaining the nature of the work, environmental hazards

that may be encountered during the site work and the particular hazards attached to their own functional area.

1.8 Environmental Inspection

- 1.8.1 The purpose of Environmental inspection is to ensure compliance of Conditions of Contract, legal requirements and its supplementary procedures and programs.
- 1.8.2 Whenever employer's representative conducts an environment inspection, Contractor shall depute its representative to accompany him/her.
- 1.8.3 All inspection records and reports will be properly kept and filed. The format for inspection report shall be as per **Annexure-II**.
- 1.8.4 Conformity Report & Action by Employer
- 1.8.4.1 Conformity report shall be submitted by the contractor within 1 week to the employer
- 1.8.4.2 In case of non-conformity of items, the Employer shall take necessary steps including stoppage of work and or imposing penalty for getting the item implemented.

1.9 Environmental Submittals to the Employer

- 1.9.1 The contractor should send the following reports to the Employer:
- i) Environment Management Plan
 - ii) Environmental Inspection conformity Reports

1.10 Environmental Sanitation

- 1.10.1 Environmental Sanitation refers to providing for a clean, hygienic, safe and aesthetically pleasing work area, as far as possible. It is also referred to as good housekeeping.
- 1.10.1.1 Each section of work site shall maintain the site reasonably clean, keep free from obstruction and properly store any construction equipment, tools, and materials. Any wreckage, rubbish shall be temporarily stored in wreckage and rubbish bins. These wreckage and rubbish bins shall be cleaned at frequent intervals.
- 1.10.1.2 General Housekeeping shall be carried out and ensured at all times at work sites, Labour Camps, Stores and Offices.
- 1.10.2 Avoidance of Nuisance
- 1.10.2.1 The Contractor shall take all precautions to avoid any nuisance which includes (i) Improper environmental sanitation (housekeeping), (ii) improper stacking of materials, (iii) lack of barricades where required, (iv) emission of dust, waste-water, waste and noise etc. which is a cause of complaint, arising from his operations. This shall be accomplished, wherever possible by suppression of nuisance at source rather than abatement of the nuisance once generated.
- 1.10.2.2 Following site clearing and before construction, the Contractor shall remove all trash, debris and other weeds.

- 1.10.2.3 The Contractor shall ensure that the work place is free of trash, garbage, debris and weeds.
- 1.10.2.4 Light used for construction can illuminate adjacent areas in undesired ways. Such lighting and glare shall be prevented from striking adjacent areas, where feasible, through directional shielding.
- 1.10.2.5 The other measures include but not limited to:
- (a) Careful positioning of construction equipments.
 - (b) Eliminating the possibility of stockpiles of material from being visible to public.

1.10.3 Prevention of Mosquito Breeding

- 1.10.3.1 Measures shall be taken to prevent mosquito breeding at site. The measures to be taken shall include, but not limited to, the following:

- (i) Construction run off shall not be allowed to stagnate at work sites specially at all construction locations, by executing an efficient drainage system and/ or leveling off low lying areas;
- (ii) Empty cans, oil drums, packing and other receptacles which may retain water shall be deposited at a central collection point and shall be removed from the site regularly;
- (iii) Fogging and anti larval measures should be carried out on regular basis.
- (iv) Temiphos should be put in at all drains and pits in construction site and labour colony
- (v) Contractor's Equipment and other items on the Site, which may retain water, shall be stored, covered or treated in such a manner that water could not get accumulated.

1.10.4 Top Soil Conservation

- 1.10.4.1 The contractor shall ensure that adequate measures are taken for the prevention of erosion of the top soil during the construction phase.

1.10.5 Felling of Trees & Tree preservation

- 1.10.5.1 The contractor shall identify the number and type of trees that are required to be felled as a result of construction of works and facilities related to Delhi Metro Project and inform the Employer.

- 1.10.5.2 All trees and shrubbery, which are not specifically required to be cleared or removed for construction purposes, shall be preserved and shall be protected from any damage that may be caused by Contractor's construction operations and equipment. The contractor shall not fell, remove or dispose of any tree or forest produce in any land handed over to him for the construction of works and facilities related to Delhi Metro except with the prior permission.

- 1.10.5.3 The Employer shall arrange permission from the forest department for trees to be felled or transplanted. The Employer will permit the removal of trees or shrubs only after prior approval.
- 1.10.5.4 The contractor shall ensure that no trees, existing or otherwise, shall be harmed and damage to roots during trenching, placing backfill, driving or parking heavy equipment, dumping of trash, oil, paint, and other materials detrimental to plant health.
- 1.10.5.5 The contractor shall avoid cut and fill in the root zones.
- 1.10.5.6 Special care shall be exercised where trees or shrubs are exposed to injuries by construction equipment, blasting, excavating, dumping, chemical damage or other operation and the Contractor shall adequately protect such trees by use of protective barriers or other methods approved by the Employer. Trees shall not be used for anchorage.
- 1.10.5.7 Trees should be protected around 1m periphery by providing caution tape and no construction or storage work shall be carried out within its premises.
- 1.10.6 Fly Ash
- 1.10.6.1 The contractor shall use fly ash as a percentage substitution of cement, in concrete for certain structures and works as prescribed in the latest MoEF&CC fly ash notification.
- 1.10.6.2 In all such uses of Fly Ash, the contractor shall maintain a detailed record of usage of Fly Ash. The contractor shall also collect related details and provide to the Employer. The reporting details on consumption of Fly Ash shall be as per Annexure-III
- 1.10.7 Landscape and Greenery
- 1.10.7.1 As far as is reasonably practicable, the Contractor shall maintain ecological balance by preventing deforestation and defacing of natural landscape. In respect of ecological balance, the Contractor shall observe the following instructions.
- 1.10.7.2 The Contractor shall, so conduct his construction operations, as to prevent any avoidable destruction, scarring or defacing of natural surroundings in the vicinity of work.
- 1.10.7.3 Where destruction, scarring, damage or defacing may occur as a result of operations relating to Permanent or Temporary works, the same shall be repaired, replanted or otherwise corrected at Contractor's expense. All work areas shall be smoothened and graded in a manner to conform to natural appearance of the landscape as directed by the Employer.
- 1.10.8 Energy management
- 1.10.8.1 The contractor should optimize the use of tools and plants and equipment to perform tasks with correct power. Optimizing cable sizes and joints can control voltage drops.

- 1.10.8.2 The contractor should use energy efficient pumps and motors having efficiency 70% as a minimum. The efficiency should be measured during installation and also after periodic maintenance.

1.11 Containment of Air Pollution

- 1.11.1 The Contractor shall erect barricades securely around all construction work sites during the entire phase of construction activity, to contain dust within the site area and also to reduce air turbulence caused by passing traffic. The barricades shall be safely secured to the ground to prevent from toppling.
- 1.11.2 At each construction site, the Contractor shall provide storage facilities for dust generating materials which shall be closed containers/bins or wind protected shelters or mat covering or walled or any combination of the above to the satisfaction of the Employer.
- 1.11.3 For production of concrete, the concrete mixer shall not be more than 5 years old. The Contractor shall demonstrate the age of the mixer.
- 1.11.4 The contractor shall not store any construction material/debris/soil outside barricaded area.
- 1.11.5 Soil & debris of any kind that is stored in the site shall be fully covered in all respects with tarpaulin or hazen cloth so that it does not disperse in the air in any form.
- 1.11.6 The dust emissions from the construction site should be completely controlled and all precautions taken in that behalf.
- 1.11.7 Unless the Employer has given consent otherwise, the Contractor shall restrict all motorised vehicles on the site to a maximum speed of 15 kilometers per hour and confine haulage and delivery vehicles to the designated roadways inside the site.
- 1.11.8 The contractor shall use wetjet in grinding and stone cutting works
- 1.11.9 At the Batching plant (if applicable) the following additional conditions shall be complied with:
- (i) The contractor shall provide sufficient number of openings in the cement godown/cement feeding area with industrial grade exhaust fans with ducting system. The ducts shall be connected to a container filled with water.
 - (ii) The contractor shall cover the conveyor belt used for carrying aggregate.
 - (iii) The contractor shall provide and ensure nose masks to all workers/labour/staff working at batching plant.
 - (iv) The Contractor shall undertake at all times the prevention of dust nuisance as a result of his activities.
 - (v) The Contractor shall frequently clean and water the concrete batching plant and crushing plant sites and ancillary areas to minimise any dust emission.
- 1.11.10 Minimum stack height of DG set should be as follows:
- (a) For DG set upto 1000kVA:
$$H=h+0.2 \times \sqrt{\text{KVA}}$$

Where H= height of exhaust stack

h =height of building

(b) For DG set above 1000 kvA

30m Height or 3m above the building height, whichever is higher.

- 1.11.11 Consent for height of stacks of Diesel Engines with rating more than 800 KV shall be obtained by the Contractor from statutory Government agency. Where the calculated height of stack is obtrusive and does not blend with the neighborhood, the contractor shall provide either alternative source of power or provide a solution that is acceptable to the employer. This may include but not limited to providing appropriate cladding for the stack.
- 1.11.12 The Contractor shall take precautions to minimize visible particulate matter from being deposited upon public roadways as a direct result of his operations. Toe dust along the barricade shall be cleaned regularly.
- 1.11.13 The vehicles carrying construction material and construction debris of any kind should be cleaned in all terms before it is permitted to ply on the road.
- 1.11.14 Any deposition of material/muck/soil on public streets due to construction should be removed by manual sweeping, or by deploying electro – mechanical devices.
- 1.11.15 Construction material and debris shall be carried in the trucks or other vehicles which are fully covered and protected so as to ensure that the construction debris or the construction material does not get dispersed into the air or atmosphere, in any form whatsoever.
- 1.11.16 Dust control activities shall continue even during work stoppages.
- 1.12 Containment of Water Pollution**
- 1.12.1 At batching plant temporary drainage works shall be maintained as necessary and all other necessary precautions should be taken for avoidance of damage by flooding and silt.
- 1.12.2 Sedimentation tanks or other acceptable measures, of sufficient capacity to trap silt-laden water shall be provided.
- 1.12.3 Any mud slurry, shall not be discharged into the drainage system unless treatment is carried out that will remove silt, mud particles, etc. The Contractor is not allowed to discharge water from the site without the approval of the Employer.
- 1.12.4 Oil separator/interceptors shall be provided to prevent the release of oil and grease into the drainage system. These shall be cleaned on a regular basis.

1.13 Containment of Noise

- 1.13.1 To the extent required to meet the noise limits the Contractor shall use reasonable efforts to include noise reduction measures listed below to minimize construction noise emission levels. Noise reduction measures – include, but not limited to the following:

- (i) Minimize the use of impact devices, such as jackhammers, and pavement breakers. Where possible, use concrete crushers or pavement saws for tasks such as concrete deck removal and retaining wall demolition.
 - (ii) Equip noise producing equipment such as jackhammers and pavement breakers with acoustically attenuating shields or shrouds recommended by the manufacturers thereof, to meet relevant noise limitations.
 - (iii) Pneumatic impact tools and equipment used at the construction site shall have intake and exhaust mufflers recommended by the manufacturers thereof, to meet relevant noise limitations.
 - (iv) Provide mufflers or shield paneling for other equipment, including internal combustion engines, recommended by manufacturers thereof.
 - (v) Employ prefabricated structures instead of assembling on-site.
 - (vi) Use construction equipment manufactured or modified to dampen noise and vibration emissions.
 - (vii) Schedule work to avoid simultaneous activities that both generate high noise levels.
- 1.13.2 To the extent feasible, configure the construction site in a manner that keeps noisier equipment and activities as far as possible from noise sensitive locations and nearby buildings.
- 1.13.3 Scheduling truck loading, unloading, and hauling operations so as to minimize noise impact near noise sensitive locations and surrounding communities.
- 1.13.4 The contractor's equipment and plant should not to be kept in idling condition when not in use.
- 1.13.5 The contractor shall use only well maintained plant & equipment at site, which should be serviced regularly.
- 1.13.6 If back alarms are used on construction equipment, their noise emission level near noise sensitive receptors such as residences, schools, hospitals and similar areas where silence is essential, should be regulated, especially at night time.
- 1.13.7 Select truck routes for muck disposal so that noise from heavy-duty trucks will have minimal impact on sensitive land uses (e.g., residential) and submit to the Employer for approval
- 1.13.8 The maximum permissible sound pressure level for new generator sets (upto 1000 KVA) run on diesel, shall be 75 dB(A) at one metre from the enclosure surface.
- 1.13.9 For diesel generator sets having no acoustic enclosures, the noise from the DG set shall be controlled by providing an acoustic enclosure or acoustic treatment of the room for DG sets. Such acoustic enclosures/acoustically treated rooms, shall be so designed for minimum 25 dB(A) insertion loss or for meeting the ambient noise standards, whichever is on higher side.

1.14 Waste Management

- 1.14.1 The contractor is required to develop, institute and maintain a Waste Management Programme (WMP) during the construction of the project for his works as per Annexure-IV. The WMP should be prepared and submitted to the Engineer for approval.
- 1.14.2 The Contractor shall handle waste in a manner that ensures they are held securely without loss or leakage thus minimizing potential for pollution following all legal requirements for handling and storage. The Contractor shall maintain and clean waste storage areas regularly.
- 1.14.3 The contractor shall transport and dispose of all waste properly complying all legal/statutory requirements. As such, transportation and disposal of all waste shall be strictly managed by the contractor as per applicable legal provisions.
- 1.14.4 The contractor shall make available Material Supply Data Sheet (MSDS) for material/chemicals/substances used, for which these are available to the Employer when requested.
- 1.14.5 Construction waste, arising out of various activities and its disposal methods and legal compliance, is summarized in **Table-** below:

Construction Wastes – Type and Disposal

Sl.No	Waste Type	Disposal	Legal requirement for handling, storage & disposal
1.	Vegetation/timber etc	As per forest clearance advice	Delhi Tree Preservation Act (1994) and Rules 2010
2.	General refuse	Re-use/Recycle/land fill	Plastic Waste management Rules, 2016 Solid Waste Management Rules, 2016
3.	Construction and Demolition (C&D) waste	Authorized recycling unit/re-use within site	Construction and Demolition Waste Management Rules, 2016
4.	Hazardous waste	Licensed Recycler	Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016.
5.	Excavated Material	Re-use/land fill	Construction and Demolition Waste Management Rules, 2016
6.	Bentonite	To land fill after draining out water	Water Prevention and control of Pollution Act, 1974
7.	Electronic waste	Licensed Recycler	E-waste (Management) Rules, 2016
8.	Metal scrap	Licensed contractor	
9.	Bio-medical waste	Bio-medical waste treatment and disposal facility	Bio-medical waste Management Rules, 2016
10.	Chemical waste	Licensed contractor	

- 1.14.6 To keep the area free of litter and garbage, specific locations shall be designated for consuming food and snacks to prevent random disposal of waste. All waste shall be deposited in the refuse containers. Suitable all weather signage shall be prominently displayed for compliance of these requirements.
- 1.14.7 Waste with residual value is to be disposed of by selling to recyclers. The remaining can be disposed off through collection and disposal by local municipal agency.
- 1.14.8 Office waste can be reduced through recycling of paper if volumes are large enough to warrant collection.
- 1.14.9 Burning of refuse at construction site is not permitted. Dumping of any type of waste is strictly prohibited along the bed of river Yamuna.
- 1.14.10 Color Coded Dustbin shall be used for segregation of waste during collection.

Collection of Waste

Waste	Colour	Sign
Landfill/Biodegradable	Green	Waste
Recyclable	Blue	Paper and plastic
Burning/Combustible	Red	Burning
Scrap Metal	Brown	Metal

1.14.11 Construction and Demolition Waste

- 1.14.11.1 "Construction and Demolition waste" means the waste comprising of building materials, debris and rubble resulting from construction, re-modeling, repair and demolition of any civil structure.
- 1.14.11.2 C&D waste shall be stored at a designated area. The waste shall be covered properly as long as stored at site.
- 1.14.11.3 The contractor shall be responsible for collection, segregation of concrete, soil and others and storage of construction and demolition waste generated, as directed or notified by the concerned local authority in consonance with the Construction & Demolition waste management Rules, 2016.
- 1.14.11.4 The C&D waste shall be disposed off in a manner in compliance with the procedure given in the Construction & Demolition waste management Rules, 2016.
- 1.14.11.5 The contractor shall ensure that other waste does not get mixed with this waste and is stored and disposed separately.
- 1.14.11.6 The contractor shall dispose C&D waste only at authorized processing facilities;
- 1.14.11.6.1 Disposal of C&D waste along the river bed, natural drainage and wet land is strictly prohibited.

1.14.12 Hazardous Waste Management

- 1.14.12.1 Waste classified as hazardous under the "Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016 shall be disposed off in a

manner in compliance with the procedure given in the rules under the aforesaid act.

- 1.14.12.2 Chemicals classified as hazardous chemicals under "Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 of Environment (Protection) Act, 1986 shall be disposed off in a manner in compliance with the procedure given in the rules under the aforesaid act.
- 1.14.12.3 The contractor shall identify the nature and quantity of hazardous waste generated as a result of his activities and shall file a 'Request for Authorization with Delhi Pollution Control Committee (DPCC) along with a map showing the location of storage area.
- 1.14.12.4 It shall be the responsibility of the contractor to ensure that hazardous wastes are stored, based on the composition, in a manner suitable for handling, storage and transport. The labelling and packaging is required to be easily visible and be able to withstand physical conditions and climatic factors.
- 1.14.12.5 Outside the storage area, the contractor shall place a 'display board', which will display quantity and nature of hazardous waste, on date. Hazardous Waste needs to be stored in a secure place
- 1.14.12.6 Drip pans of suitable size shall be used to collect oil leakages and spills. The area shall be cleaned after completion of maintenance/repair and generated waste disposed off in approved manner.
- 1.14.12.7 The contractor shall approach only Authorised Recyclers of Hazardous Waste for disposal of Hazardous Waste, under intimation to the Employer.

1.14.13 Chemical Waste

- 1.14.13.1 The contractor should ascertain if some paints and solvents are classified as chemical waste and, if used on site, shall be subject to the stringent requirements of the Waste Disposal of Chemical Waste. Empty paint cans shall be recycled or collected as waste.
- 1.14.13.2 Disposal of chemical waste shall be through a licensed waste collector duly authorized by MoEF & CC or State Pollution Control Board as the case may be under intimation to the Employer.
- 1.14.13.3 No lubricants, oils, solvents or paint products shall be allowed to discharge into water courses, either by direct discharge, or as contaminants carried in surface water runoff from the construction site.
- 1.14.13.4 In sum, even though the exact quantities of chemical waste that will be generated per contract are expected to be small, still, because of the potential environmental and health & safety hazard that these chemicals pose, they must be handled, stored and disposed of appropriately, in accordance with Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016

1.14.14 Metal Scrap

1.14.14.1 Steel and other metals should be recovered from the construction waste and recycled as far as practical.

1.14.14.2 Disposal of scrap shall be through a licensed waste collector/recycler under intimation to the Employer

1.15 Reporting System

1.15.1 Reporting under the Environmental Management System will contain results of inspection programmes.

1.16 Appointment of Environment Officer

1.16.1 The Contractor shall designate an engineer preferably having qualification in Environment Engineering or Science to oversee the implementation of environmental requirements.

1.16.2 This person will be designated as Contractor's Environment Officer and shall be in pay roll of Contractor till the completion of work.

1.16.3 The contractor must intimate the name and CV of the nominated engineer within 3 weeks of award of the work, failing which necessary penal provisions would be imposed.

1.17 Failure in Implementation of the environmental requirements

If the contractor fails to implement the above clauses to the satisfaction of the client, then DMRC may get the same done by engaging another agency and recovering the cost from the contractor. This, however, does not restrict the right of DMRC to impose penalty for non compliance.

1.18 Penalty for non-compliance

The employer may impose penalty for non-compliance in respect of each the clauses mentioned above, as follows:

Content	Clause reference	Penalty amount
Non-compliance of legal requirements	1.5	Rs. 10,000/- for single violation, compounded to a maximum Rs. 50,000/-
Non-submission of Environmental Plan	1.6	Rs. 10,000/- for delay in submission upto 3 weeks from stipulated time and Rs.10,000/- per week of delay thereafter
Failure on providing orientation training on Environment	1.7	Rs. 50,000/- as per clause 1.7.1
Non-compliance of the requirements of Environmental Inspection	1.8	Rs. 5,000/- for first instance and Rs. 10,000/- for subsequent instances.
Non-compliance of the requirements of Environmental Submission	1.9	Rs. 10,000/- for first instance and Rs. 25,000/- for subsequent instances.
Non-adherence to requirements of environmental sanitation	1.10.1, 1.10.2 &	Rs. 5,000/- for single violation, compounded to a maximum Rs. 25,000/-.

	1.10.3	
Non-adherence to requirements of top soil conservation, if applicable	1.10.4	Rs. 20,000/- for single violation
Non-compliance of the requirements of Felling of Trees & Tree preservation	1.10.5	Rs. 1,00,000/- on felling of each tree without permission
Non-compliance of the requirements of fly ash	1.10.6	Rs. 5,000/- for first instance and Rs. 10, 000/- for subsequent instances.
Non-compliance of the requirements of Landscape and Greenery	1.10.7	Rs. 2,000/- for first instance and Rs. 5, 000/- for subsequent instances.
Non-compliance of the requirements of Energy management	1.10.8	Rs. 3,000/- for first instance and Rs. 5, 000/- for subsequent instances.
Non-compliance of the requirements of Containment of air pollution	1.11	Rs. 5,000/- for single violation per occasion and maximum of 5% of contract value
Non-compliance of the requirements of Containment of water pollution	1.12	Rs. 5,000/- for single violation per occasion and maximum of 5% of contract value
Non-compliance of the requirements of Containment of noise	1.13	Rs. 5,000/- for single violation per occasion and maximum of 5% of contract value
Non-compliance of the requirements of waste management	1.14.1 to 1.14.10	Rs. 3,000/- for single violation.
Non-compliance of the requirements of construction and demolition waste management	1.14.11	Rs. 25,000/- for single violation, compounded to a maximum Rs. 50,000/- for first instance and compounded up to Rs.1,00, 000/- for subsequent instances.
Non-compliance of the requirements of Hazardous waste management	1.14.12	Rs. 5,000/- for first instance and Rs. 10, 000/- for subsequent instances.
Non-compliance of the requirements of chemical waste management	1.14.13	Rs. 5,000/- for first instance and Rs. 10, 000/- for subsequent instances.
Non-compliance of the requirements of appointment of Environment Officer	1.16	Rs. 25,000/- for up to 3 weeks from the designated time and Rs.50,000/- per month of delay thereafter

1.19 The ceiling limit of total penalty on account of environmental non compliance shall not exceed 10% of total contract value.

Annexure-I**Requirements & Format of Site Environmental Plan**

The Plan shall be as per the structure given below:

Sl.no.	Key points	Action plan
1	General	- Organisation Structure - Roles & responsibilities
2	Legal	- Applicable laws - How and where it is applicable - How it will be complied
3	Barricading	- General criteria
4	Top Soil preservation	- Areas from where top soil will be preserved - Estimated quantity of top soil - Location where top soil will be preserved - Methodology of top soil preservation
5	Tree Protection	- Number of trees to be felled - Number of tree to be protected - Methodology of tree protection
6	Material storage & Handling (Cement, sand, aggregate, steel, water, diesel, bentonite/ polymer, paints etc.)	- Estimated quantity - Source - Storage capacity at site - Storage area - Handling process
7	Waste Management	- Disposal method - Frequency of disposal - Name of authorised recycling agency where waste will be sent - Waste management plan as per attached format- <u>Annexure-IV</u>
8	Water management	- Source of water - Measures to reduce water consumption - How waste water will be disposed
9	Environmental training	- Training schedule - Topics to be covered - Number of staff/workers to be trained
10	Fly ash	- Fly ash details including estimated quantity

Annexure-II**Format for Inspection Report**

Sl.No	Location	Observation & Recommendation	Photographs	Concerned person/Deptt	Target Date	Remarks
1.						
2.						

Annexure-III**Details On Fly Ash**

The Employer shall give his consent to the civil contractor for using Fly Ash in concrete or brick works. The contractor shall record all relevant details on the consumption of Fly Ash from the date of initial consumption to date of final use.

The details on Fly Ash consumption shall be reported on a monthly basis in the contractor's monthly Environmental Management Report required to be submitted to the Employer.

The details on Fly Ash shall be reported in groups and sub groups as noted below: -

Fly Ash Utilization Detail

Contract No.: _____

Name of the Contractor: _____

Fly Ash utilization for the month of.....

Year

S.No.	Activity description	Quantity
1.	Fly ash bricks	No.
2.	Utilization in construction of walls	m ³
3.	Utilization in construction of slabs	m ³
4.	Utilization for back filling	m ³
5.	Other (Pls. Specify)	m ³
	Total (A)	

Annexure- IV

Waste Management Plan				
S.No	Waste type	Estimated Quantity (Units)	Adopted/Proposed disposal method	Remarks
1	Construction & Demolition waste			
	a. Concrete waste			
	b. Demolition waste			
	c. Bentonite/Polymer mixed soil			
	d. Good earth			
2	Hazardous waste			
	a. Waste oil, oil filters, air filters, used cartridges etc			
3	Recyclable waste			
	a. Paper, Plastic, wood, bottles, rubber etc			
4	Bio-degradable waste			
	a. Food waste, vegetable waste etc			
5	Bio-Medical waste			
	a. Used cottons, bandages, shredded needles, syringes etc			
6	Metal scrap			
7	E-Waste			
8	Miscellaneous (any other)			