

**Government of the People's Republic of Bangladesh  
Information and Communication Technology Division  
Ministry of Posts, Telecommunications and Information Technology**

**Bangladesh Environmental Sustainability and Transformation (BEST)  
Project.**

**Terms of Reference (TOR)  
For  
Design & Supervision Firm  
Package No.: EIEWMP-BHTPA-S-1**

**Terms of Reference for Consultancy Services for Design and Supervision Firm**

1. The establishment of the Bangladesh Hi-Tech Park Authority (BHTPA) under the Bangladesh Hi-Tech Park Authority Act of 2010 is a strategic move to foster the growth of hi-tech industries within the country. By setting up Hi-Tech Parks and creating a conducive business environment, the BHTPA aims to attract both public and private investment in the technology sector, which is expected to accelerate economic development and create job opportunities. The Government of Bangladesh's (GoB) recognition of Information and Communications Technology (ICT) as a "thrust sector" demonstrates its commitment to leveraging technology to achieve its goal of becoming a middle-income country. This initiative is part of a broader effort to modernize the economy and enhance Bangladesh's competitiveness in the global market.
2. The Bangladesh Hi-Tech Park Authority Act, 2010, defines both 'Park' and 'hi-tech industries' to create a legal framework for the development of these specialized zones. The incentives provided by GoB, such as tax exemptions, duty-free import of capital machinery, bonded warehouse facilities, and full ownership and profit repatriation for foreign investors, are designed to attract both local and international businesses to invest in these parks. These incentives aim to create a conducive environment for the growth of IT, software technology, biotechnology, renewable energy, and other knowledge and capital-intensive industries. By offering such benefits, the government hopes to encourage the development of eco-friendly and advanced technology industries, which can contribute to the diversification and modernization of the country's economy, as well as create high-skilled job opportunities for the local workforce.
3. Rapid economic development and population growth in Bangladesh have led to high pollution discharges (including greenhouse gases [GHGs]) and severe degradation of the country's environmental quality and ecosystems. This is causing high economic costs to the country while threatening its competitiveness for sustained growth in the long run. Over the past three decades, Bangladesh has gradually developed its regulatory framework and institutional setups to control pollution and protect its environment and has also made progress in mainstreaming the environmental agenda into its economic development plans and strategies. To continue addressing its environmental challenges, the World Bank is supporting GoB to implement a comprehensive environmental management project. Based on extensive consultations led by Ministry of Environment Forest and Climate Change (MoEFC) during preparation of the Project, the final design of the Bangladesh Environmental Sustainability and Transformation (BEST) Project has focused on two top priorities: strengthening environmental management capacity and increasing private sector participation in green investments. Stakeholders confirmed strong interest and demand for (a) improvements in environmental management capacity through regulatory and institutional reforms; capacity strengthening; and deployment of advanced environmental monitoring, analytical, and information technology (IT) infrastructure and (b) exploration of new green financing mechanisms and public-private partnership (PPP) arrangements to promote private sector participation in green investments in the long run. It is expected that successful project implementation will lay a solid foundation for Bangladesh to enhance its performance in pollution control and green, resilient, and inclusive economic recovery and development in future. The Project started implementation 27 September 2023.
4. The rapid economic growth in Bangladesh and the increasing consumer market for electronic gadgets and home appliances have led to a rise in locally produced electronics. This growth, while beneficial for the economy, also brings about the challenge of managing electronic waste (e-waste), which can pose significant environmental and health hazards if not handled properly. The informal and semiformal sectors often handle the refurbishing and recycling of e-waste, which may not always adhere to the safest and most environmentally friendly practices. The lack of awareness and

information about the dangers of e-waste contributes to the risks associated with improper disposal and recycling. By integrating efficient systems for e-waste management, Bangladesh can improve the efficiency and lifespan of electronic products, reduce transmission loss, and create a greener environment. This initiative would also support the country's economic development by creating jobs in the recycling sector and fostering a circular economy where materials are kept in use for as long as possible. It's important for such a plan to involve all stakeholders, including government agencies, manufacturers, consumers, and recycling companies, to ensure a coordinated and effective approach to e-waste management. Education and awareness campaigns can also play a crucial role in informing the public about the importance of proper e-waste disposal and the benefits of recycling.

**4.1.** The head office of Bangladesh Hi-Tech Park Authority is located on the Level-9 of ICT Tower, Agargaon, Dhaka. Bangladesh Hi-Tech Park Authority is working there is no alternative to building knowledge-based human resources to establish Bangladesh in the world arena as a 'middle income country'. Initiatives were taken to set up Hi-Tech / IT Parks in all the divisions / districts of the country to achieve the Sustainable Development Goals (SDGs) announced by the United Nations ahead of schedule. So far, 39 high-tech / IT parks have been set up. Among them, work has been completed at Vision 2021 Tower-1 in Karwan Bazar, Dhaka, Software Technology Park in Agrabad, Lapte karnal shek jamal software park in Chittagong and Sheikh Hasina Software Technology Park in Jashore and Sheikh Kamal IT Training and Incubation Center in Natore, Rajshahi and Khulna (Kuwait). Bangabandhu Hi-Tech City in Kaliakair, Establishment of IT Business Incubator at Chittagong University of Engineering & Technology & "Bangabandhu Sheikh Mujib Hi-Tech Park, Sylhet" Establishment of Bangabandhu Sheikh Mujib Hi-Tech Park in Rajshahi, Establishment of Basic Infrastructure of Bangabandhu Hi-Tech City-2, "Establishment of Sheikh Kamal IT Training and Incubation Center" Project (2nd revised) "Project (8\_IT), Establishment of IT / Hi-Tech Parks at district level (in 12 districts)", Sheikh Kamal IT Training and Incubation Center Establishment (11) Project", Digital Entrepreneurship and Innovation Eco-System Development Project is in full swing.

**2.1.** The BHTPA is planning establishment of the Integrated E-Waste Management infrastructure at Bangabandhu Hi-Tech City kaliakoir, Gazipur. The BHTPA has a land there of about 20,000 Sqm. To implement E-Waste Management plant related infrastructure (Construction of 3 or 4 storied height steel structure industrial shed) and basic infrastructure (Internal Road, Drainage & Utility duct, landscaping, boundary wall, Gate etc). To establish E-Waste of secondary collection station, Office building interior decoration & relevant facilities, internal & external electrification & electro-Mechanical works.

**Project Development Objective.** The Project Development Objective (PDO) is to strengthen the capacity of the Government of Bangladesh in environmental management and to pilot new financing mechanisms to promote green investments in targeted sectors.

#### **Project Components.**

**The project has four components.**

**The components are:**

- **Component 1: Strengthening environmental governance for integrated pollution management;**
- **Component 2: Green Financing Schemes;**
- **Component 3: Vehicle Inspection; and**
- **Component 4: E-Waste Management**

**2.2. Component 4**, which will be implemented by the BHTPA, The existing waste management system are facing various challenges including the inappropriate application of laws, limited results in 3R strategy, insufficient plastics and waste management facilities, limited control on waste and no tracking of high risks waste etc. The initiatives under this project will include with the circular solution (3R strategies-Reduce, recycle and reuse) or circular economy-based interventions, improve e-waste separation technology, storage and disposal facilities improvement, training and capacity building, awareness raising, and promote green jobs through circular economy etc. These initiatives will be helpful for the better environmental cleanliness and sustainability, improve people's health and conservation of biodiversity and resources towards the sustainable environmental governance. The waste to resources-based economy and promotion of circular economic system will be supportive for growth and development of sustainable healthy and green city. Under the Component 4 and in response to the plastics and waste management, the project will support Hi-Tech Park Authority (HTPA) to develop e-waste processing facility to be accommodated within the Kaliakair HTPA. HTPA also proposed to set up a small hazardous waste storage area and develop an integrated facility to recycle other types of wastes (including plastics) to promote circular economy in high-tech parks of the country.

**2.3. Establishment of Integrated E-Waste Management infrastructure at Bangabandhu Hi-Tech City kaliakoir, Gazipur.**

1.Integrated E-Waste Management System established and functioned, 2.Reduced e-waste generation and pollution, 3.Health status improved, 4.Green job created, 5.Law, policy and strategy are properly functioned, 6.Improved OHS and security status, 7.Sustainable e-waste management, 8.Circular economy, 9.Sustainable cleaner and green city

**2.4. Project Location. Bangabandhu Hi-Tech City Kaliakoir, Gazipur.**

**3.0. Objective of the Consultancy services.** The objective of the assignment is to provide all the relevant works of design of the Integrated E-Waste Management plant such as (i) detailed engineering design (architectural and structural for civil, electrical and electro-mechanical works), (ii) technical specifications, (iii) preparation of bidding documents, (iv) cost estimates and (v) construction supervision, monitoring and relevant services from design stage to final handover of the construction works for :

- i. To build Integrated E-Waste Management plant**
- ii. Given the risk for natural disasters in the area, and developing a greener and climate resilient structure, the consultant will be responsible for designing/developing the infrastructure stated above with enhanced resilience to climate impacts. The consultant will integrate measures resilient to flood and seismic risks to help catalyze the development of state-of-the-art green building concept and set an example for sustainable, resilient and environmentally sound industrial development in Bangladesh. This will be a paradigm shift towards a more sustainable form of development in the country.**

#### 4.0. Scope of Consulting Services.

The D&S consultant will provide services across the following stages and activities:

Preparation of site-specific concept to detailed engineering design and environment and social management plan (ESMP) following ES assessment of infrastructure, preparation of bidding documents & providing inputs during bidding process, evaluation of bids and award of related works contracts.

Relevant key experts will be deployed as and when required to meet the objective of assignment.

##### **Stage 1: Reconnaissance of the Selected Land, Soil Testing, and Design & Estimates of Boundary Wall, Prepare IEE Report / Checklist (if necessary) and ToR for ESIA and ESIA Report etc.**

The D&S Consultant shall visit the site, collect data and carry out required activities such as measurement etc. to ascertain how many numbers of soil testing requires, determine the fencing arrangement (say boundary wall including entry etc.). And also to consult with the stakeholders and through transect for preparing Initial Environmental Examination (IEE) Report / Checklist (if necessary) and to prepare ToR for Environmental and Social & Impact Assessment (ESIA) etc. following Bangladesh Environmental Conservation Act, 1995 (BECA, 1995), Bangladesh Environmental Conservation Rules, 1997 (ECR, 1997) and the World Bank Environmental and Social Safeguard Policies / Guidelines. The consultant would carry out, but not limited to, the following activities:

**Activity 1.1:** Carried out soil testing in different locations as per requirement for design purposes.

**Activity 1.2:** Design and cost estimate with technical specification to prepare bidding document for construction of fencing / boundary wall, land development, construction of artistic gate including guard room, RCC road/Flexible pavement road, construction of duct with drainage facilities, landscaping, security and site office building, Underground water system, Deep Tubewell, Establish of Submersible pump with Pump house building, Construction of gas distribution line, Solar system, Power supply installation( Substation, substation building, Generator, HT Meter, Cable and others electrifications), electro-mechanical works & other Infrastructure etc.

1.2A: Design of an office cum dormitory building of 3(?) story of about 350Sqm with all facilities for Construction

1.2B: Construction of duct facilities in along with drainage linking with other adjacent area.

**Activity 1.3:** Prepare Initial Environmental Examination (IEE) report / checklist including a ToR of ESIA to submit Department of Environment (DoE) and to obtain necessary approval / clearance.

**Activity 1.4:** Prepare draft Environmental and Social Assessment Reports (ESIA) for the Structure to submit PIU for review and onwards concurrence from the World Bank (if necessitate) to obtain necessary clearance / approval on ESIA reports for each TC from DoE.

**Activity 1.4: Design and construction/installation of electric sub-station, gas pipe line, pump house and solar system as required and suggested by the BHTPA.**

## **Stage 2: Site Evaluation and Design Concepts.**

This stage involves pre-construction activities related to site evaluation, and preparation of design based on Feasibility Study Reports (FPRs), ESIA report, and other relevant pertaining issues in consultation with PIU. The D&S Consultant is expected to keep the following objectives in mind while preparing the concept design:

- World class facility to facilitate delivery of the proposed services;
- Eco-friendly to minimize the adverse environmental and social impact (e.g. rainwater harvesting, solid waste and water effluent management, sanitary and kitchen wastewater management, sound and vibration management, renewable energy, use of eco-friendly material, etc.);
- Energy efficient design;
- Economical to reduce the total cost of ownership;
- Flexible with respect to usage and expansion /contracting in the future;
- Architecture influenced by the local heritage and culture of the region;
- Friendly for physically challenged people.

The stage consists of following activities:

### **Activity 2.1: Site Evaluation.**

The D&S Consultant shall carry out following investigations/assessments at the project site to generate relevant data required for designing the facility:

- Contour survey of the plot;
- Geotechnical investigation for soil bearing capacity;
- Geotechnical investigation for mechanical and chemical analysis of substrata;
- Geotechnical investigation for Ground Water Table and chemical analysis of water;
- Electrical resistivity test;
- High Tension Power Transmission Lines if in vicinity;
- Natural / seasonal water bodies / streams in site and in vicinity of < 2 Km
- Location of plants and trees on site >1.5 m height which need to be cut / relocated
- Signal strength for various telecommunication services providers;
- Collecting metrological data pertaining to maximum, minimum temperatures, humidity

and rainfall from the Meteorological Department.

- Solar system assessment
- Sub-station and Generator assessment.
- Water level for submersible pump
- Gas line system

**Activity 2.2:** Concept design.

The Design shall be as per the design basis report prepared by D&S Consultant and agreed by the Client. The D&S Consultant shall prepare two distinct concept layouts considering effective usage of area and space, natural elements as wind, sunlight, aesthetic values. The concept layouts / presentations shall essentially consist of following CAD Drawings in 2D and 3D, Digital walkthrough.

**Stage 3: Master Plan Preparation**

This stage involves preparation of detailed master plan for the entire land plot consisting of the following:

- Buildings outline;
- Roads, ramps approaches, and main gates layouts;
- Open spaces, amenity spaces including landscapes, garden and parking areas;
- Coordinated services layout;
- External firefighting / hydrant system layout;
- Electrical substation, backup power generation (Generator and Solar);
- Storm / rainwater drainage layout including rainwater harvesting scheme;
- Sewer system layout including connections to local sewer system if available or locations of STP/ ETP if required including discharge management of treated sanitary and effluent water;
- Water supply network, including connection;
- Renewable energy generation plan (solar) and location of such facility;
- Solid waste reusable facility;
- Gas line system
- Area statement including broad sizing of the utilities viz. Connected Electrical Load, Firewater reservoir and pump sizes, HVAC TR rating, etc.
- Carry out consultations with the relevant stakeholders and incorporate the relevant feedbacks in the master plan design

**Stage 4: Preparation of Detailed Drawings, Technical Specifications, Bill of Quantities (BOQ), Cost Estimates and Bidding Documents.**

- (a) The two distinct design concepts for the all infrastructures shall be prepared by the consultant. These will be reviewed by the Project Director and with the help of BHTPA and after approval of final design concept, the D&S Consultant shall prepare the bidding documents considering all detailed drawings, technical specifications, BOQ, cost estimates and savings and / or benefits of the green building elements.
- (b) The detailed design shall be with respect to the finalized Master Plan. The designers are expected to visit the project site at set frequency with minimum one visit per month and in addition as and when required or demanded by the client / site manager. The consultant will choose appropriate materials,

optimize the designs and select least cost options that meet technical requirements and estimate quantities of construction, material, etc. for preparation of bidding documents; Prepare technical specifications, engineering drawings needed for tender documents, bill of quantities (BOQs) and bidding documents.

- (c) All goods, works, financed under the Project will be procured in accordance with the WB Procurement Regulations for IPF Borrowers, dated July 1, 2016, and as revised in November 2017 and August 2018. The bidding documents would be prepared in accordance with the formats and standards defined in the World Bank guidelines / Central Procurement Technical Unit (CPTU) for procurement of such working consultation with BHTPA. For large contracts to be procured under International Competitive Bidding (ICB) procedure, the Bidding Documents would be prepared using World Bank Standard Bidding Documents for Works. For National competitive bidding, the consultant would prepare the bidding documents based on the bidding documents for works prepared by CPTU and approved by the World Bank;
- (d) The Consultant will prepare specifications for Environmental, Social, Health and Safety (ESHS) requirements to be included in the bidding document. In preparing detailed specifications for ESHS requirements, the specialists should refer to and consider project reports (e.g. ESIA/ESMP) along with the project related E&S documents, required standards including World Bank Group EHS Guidelines, relevant international conventions or treaties etc., national legal and/or regulatory requirements and standards (where these represent higher standards than the WBG EHS Guidelines), relevant international standards e.g. WHO Guidelines for Safe Use of Pesticides, relevant sector standards e.g. EU Council Directive Concerning Urban Waste Water Treatment etc.

For Integrated E-Waste Management plant, the Consultant will prepare detailed engineering designs, drawings, BOQ, bidding documents, cost estimates, technical specifications, contract packages etc. and ensure that designs are carried out in accordance with appropriate international/national engineering standards. Consultant shall review Part 3 General Building Requirements, Control and Regulation of Bangladesh National Building Code (BNBC) 2020 and reflect the requirements in the plan and design as applicable for E-Waste Management plant and any other ancillary buildings, office cum dormitory building. Resource conservation and pollution prevention and/or management will be a primary consideration during design to promote the sustainable use of resources, including energy, water, soil, and raw materials. For providing the services in connection with all the components stated in stage 4 above, the consultant would carry out, but not limited to, the following activities:

**The firm will prepare all the necessary design but not limited to :-**

**Activity 4.1: Architectural Design Scope**

Detail Architectural Design shall comprise the following:

- Detail design of the building (considering the purpose, functional aspects and operation);
- Detail design of the boundary wall, guard room, artistic gate, substation building, pump house, duct with drainage facilities, RCC/Flexible pavement road, solar system, Gas distribution line, Under- ground water system with tubewell (considering the purpose, functional aspects and operation);
- Three dimensional studies for coordination of various services;
- Preparation of schedule for doors, windows, plumbing etc.;
- Issue of Good for construction drawings;

- Preparation of infrastructure development plan;
- Preparation of site development plan;
- Interact with various disciplines to incorporate utility requirements;
- Drawings & documentation for approval of various statutory authorities;
- Application for approval from statutory / local authority;
- Technical support for various approvals & sanctions.

#### **Activity 4.2: Structural Design of Buildings Scope**

The D&S Consultant consistent with applicable laws, statutory permissions, construction requirements, Bangladesh National Building Code (BNBC) and other regulatory codes and preliminary Design Basis Reports, shall prepare and compile the detailed design & engineering requirements for the STP.

- Prepare alternative structural schemes interacting with architect / client;
- Detail structural analysis for building and other structures;
- Detail structural analysis for substation building, pump house and other structures;
- Prepare detail specifications of items proposed to be used in construction;
- Issue of good for construction structural drawing; and
- Implementation of Green Building Concept.

The ADR (Architectural Design Report) and DBR (Design Basis Report) prepared by the D&S Consultant shall be submitted to the Client for approval. The approval to such ADR and DBR shall be to the context of the functionality intended for the STP. However, D&S Consultant shall be responsible for correctness and adequacy of the Design.

#### **Activity 4.3: Electrical Design Scope**

Detail Engineering & Design shall comprise all temporary / permanent / internal / external / backup power distribution, including agreement computation, engineering drawing & safety installations as under:

- Preparation of single line diagram for LT distribution & lighting distribution;
- To review equipment, load list & submit distributed generation (DG), transformer, panel & cable sizing calculations;
- Preparation of high tension & low-tension substation layout;
- Electrical layout and Piping and Instrumental diagram (P&ID) for Cable tray, Illumination, power, earthing & route plan for power cable & control cable etc.;
- Preparation of control wiring diagram for interlocks & alarms wherever applicable;
- Designing internal lightning, street lighting, yard lightning etc.;
- Specifications & layout of emergency lights provision, wherever required;
- Emergency power supply & distribution including internal provision in main switch gear to switch over emergency power;
- System power flow & fault level analysis;
- Relay coordination & setting;
- Earthing & lightning protection system design;
- Scheme for Data / Voice cabling & computer systems and networking;
- Bill of quantities for items to be procured;

- Issue “good for construction drawings”; and
- Coordinating with electricity Supply Company / board for sanction and release of power load.
- Based on design parameters as per relevant Bangladeshi / International standard of all the electrical equipment, the Consultant will prepare and submit the design basis report to client for review and approval. After getting the approval, the Consultant will create the distribution network area wise / system wise to meet the power requirement in terms of single line diagrams, substation layouts, earthing and lightning layouts and lighting layouts and detailed specification for all equipment included data sheets etc.
- Preparation of layout and scheme for extra low voltage system includes fire detection system, public address system, telephone, data, TV system, access control system, CCTV, integrated building management system etc. However, D&S Consultant shall be responsible for correctness and adequacy of the Design.

#### **Activity 4.4: HVAC System Design Scope**

Detail design & engineering of HVAC system shall comprise designing, detailing, value engineering and specifying with schedule of quantities for all works pertaining to air-conditioning, ventilation, smoke exhaust and fresh air supply system. It conforming to the standards, statutes, regulations and safety codes of BNBC etc. and design to efficiently and effectively operate for maximum energy efficiency and low noise level in all climatic conditions and as under:

☛ The Consultant team shall conduct and develop site specific ESIA and ESMP (respectively) to identify both environmental and social risks associated with the sub project interventions. The ES team and design team should closely work to formulate a fruitful ESMP and ensure to incorporate the ES recommendations in the design. .

- Review of existing information (relevant all documents);
- Provide a full description of the sub- project (such as project location, layout, components, construction materials, etc.);
- Provide a description of the environment (such as baseline data on physical, biological and socioeconomic characteristics of the building site along with area of influence);
- Analysis of alternatives to the proposed infrastructure
- Address occupational health and safety (H & S) requirements in the line of ESS2 and ESS4 and green building concepts in the line of ESS3;
- Identify relevant stakeholders to be consulted during preconstruction, construction and operation phases of the project. Design and conduct a public consultation programme in accordance with provisions of ESS10
- Ensure that all provisions of GOB and WB ESF are complied with,
- Devise a mitigation plan (ESMP) for all project-related impacts;

- Assess BHTPA's institutional capacity to execute and monitor the EMP and recommend necessary institutional capacity building including additional professional for environmental Management.
- Load Estimate-Cooling & Heating;
- Designing of Entire Ventilation system;
- Determine room-by-room loads and airflows using standard manual calculation procedures;
- Layout duct system on floor plan, accounting for the direction of joists, roof hips, firewalls, and other potential obstructions;
- Determine conflict locations and types, duct lengths, and connections required to produce layout given construction constraints;
- Size duct system according to standard manual calculation procedures;
- Size HVAC equipment to sensible load using standard manual procedures;
- Equipment selection based upon design calculations and green concepts;
- Closely interact with the architect / clients and prepare preliminary schemes for approval;
- Issue "good for construction drawings".

**Activity 4.5: Fire & Life Safety Design Scope.**

Design and Engineering shall comprise fire hydrant system, fire alarm, firewalls with fire doors, fire escape staircases, doors etc. As per Part 4 of Bangladesh National Building Code (BNBC) (2006 or latest) and suitably incorporating leading practices as per global standards and as follows:

- Prepare detailed Master Design Document List & Design Basis;
- Prepare a scheme for the Fire Fighting System.  
Fire Hydrant System consists of wet riser cum down comer; hydrants, hose reel and hose box; booster pump, sprinkler pump, main pump, jockey pump and diesel engine driven pump; automatic fire hydrant panel etc. Fire Alarm System consists of smoke detectors. Heat detector etc.; manual call point; local controls panels and main control panels; public address system and hooter.
- Closely interact with the architect / clients and prepare preliminary schemes for approval;
- Issue of good for construction drawings;
- Provisional and final Fire No Objection Certificate (NOC) from relevant local fire authority.

**Activity 4.6: Environmental Engineering & Design Scope.**

Detail design & engineering of ETP / STP, Rainwater harvesting design etc. shall comprise the following:

- Prepare design brief after collecting inputs;
- Closely interact with architect / clients & prepare preliminary schemes for approval;
- Preparation of drawing for obtaining required statutory approvals;

- Study of effluent characteristics;
- Effluent testing;
- Department of Environment's clearance certificate to establish and operate;
- Waste disposal and sewage treatment systems design;
- Development of water harvesting and irrigation methods;
- Process study for soft water, DM (de-mineralized) water, cooling water, chilled brine, steam etc.;
- Process study for solar system, gas line system, power supply system (substation, generator), underground water system etc.;
- Process requirement study for waste and sewage water system and selecting appropriate treatment;
- Preparing Piping & Installation Diagrams (P&IDs) for various systems for approvals;
- Detail design for piping and routes;
- Installation and testing supervision; and
- Issue of good for construction drawings.

#### **Activity 4.7: Office Interior Work Design Scope**

Detail interior design shall comprise the following:

- Formulation of the concept;
- Prepare drawings in accordance with concept finalized with client;
- Finalization of detail specification of all items & bought out items with client;
- Preparation of drawings for interior fit outs; and
- Issue of good for construction drawings.

#### **Activity 4.8: Landscaping Design Scope.**

Detail design & engineering of landscape design shall comprise the following:

- Formulation of the concept considering local flora and fauna;
- Prepare drawings in accordance with concept finalized with client and issue of good for construction drawings;
- Study current substrata condition of landscape area;
- Design grass, trees & shrubs pattern as per climatic conditions & availability of substrata at site; and
- Design good irrigation system for landscaping work using recycled water.

#### **Activity 4.9: Building Management System (BMS) Design.**

Detail design & engineering of BMS design for the structure shall comprise the following:

- HVAC control system design & detailing;
- Electrical distribution controls design & detailing;
- Water supply control design & detailing;
- Power supply (Sub-station, Generator, Solar) system design and detailing;
- Lighting control design & detailing;

- Access control design & detailing;
- Security, surveillance and safety design & detailing;
- Advanced communication system design & detailing.

The above engineering brief and concept design. The BOQ prepared by the D&S Consultant must be vendor neutral.

#### **Activity 4.10: Detailed Cost Estimation.**

The D&S Consultant/s will be required to prepare the cost estimate based on the detail design and seek approval of the same from the Project Director. The Cost estimate should be good enough to be used for budget authorization and must have suitable contingency for the construction work. The estimate will also include the required E&S provisions.

#### **Activity 4.11: Risk Identification and Mitigation.**

The D&S consultant shall identify the key risks for y related to construction/up gradation /execution of the STPs. The D&S Consultant/s shall analyze each of the risks and will suggest mitigation plan for it.

#### **Stage 5. Construction Supervision and Monitoring and Contract Management.**

The consultant shall ensure the quality construction by supervision such as:

**Activity 5.1:** The Consultant shall provide comprehensive construction and contract management services during construction in order to ensure that the works implemented, and goods provided are in accordance with the designs, specifications and terms and conditions of the relevant contracts and standards. The Consultant would ensure construction quality and contractors performance. The consultant shall conduct full time technical supervision of all construction /erection activities by the contractors & would be responsible for all construction supervision contracts covering all project activities Core services shall include but not necessarily be limited to the following:

- Review and approve the contractors work program and progress schedules ensuring that the Contractors' have incorporated / followed the most effective and expeditors methodology for carrying out the works and submit to PMU for approval.
- Supervision and monitoring of works based on the work program submitted by the contractors.
- Supervise all construction works during implementation as per contract agreement through establishing procedures for systematic on-site checking and monitoring of quality and quantities of all work items, including field checks to confirm integrity of survey data, application of improved and modern methods for construction of the STP.
- Work closely with field engineering staff in order to ensure quality and timely completion of the works.
- For the civil and Electro-Mechanical works, goods, and equipment supply and installation contracts, the consultant would be responsible for inspection and supervision of the construction works,

installation of equipment and testing of construction material, in order to ensure that the works implemented, and goods supplied are in accordance with the designs, specifications and terms and conditions of the relevant contracts and standards.

- Provide strong on-site project supervision team of key and non-key experts, with an onsite project office, report daily progress of the works and monitor deliverables strictly against the agreed work plan submitted by the contractor;
- Verify the test results to ensure the quality of works and goods conducted by the contractors as stated in the bidding documents.
- Ensure that the tests and frequency of tests stated and compliance of the test results are being done by the contractors as outlined in the bidding documents.
- Inspect borrow pits, and crushing plants, and order tests of materials and ensure adherence to specifications and approve the sources of materials
- Contract administration and management
- All contract and construction documentation, administration and record keeping.
- Supervision of construction activities.
- Ensure that the contractors are maintaining site order books and recording their activities as per the work program.
- Ensure complete presence of their staff during all casting executed by the contractors.
- Make arrangement to check the quality of the materials brought to site, ensure quality of construction consistent with the specifications.
- Ensure implementation of Quality Assurance Check List for all category of works in order to establish a systematic construction procedure
- The measurement book (MB) to be signed by the Consultant
- In the event of contractual dispute which may result in legal action, adjudication or arbitration between the contractor and the employer, and on the instruction, will assist client in collating and preparing factual documentation which describes the circumstances of the dispute.
- Liaise with the Environmental and Social Specialists of the Bank/ Project Management Unit and provide data, information and all other requested assistance to them.
- Monitor implementation of site specific Environmental and Social Management Plans and compliance with Social and Environmental safeguards as per World Bank guidelines
- Ensure compliance of safeguard instruments for all contract packages.
- Ensure implementation of safeguard compliances stated in BOQs of the bidding documents.
- Ensure withholding of interim payments to the contractors if they failed to implement the items for safeguard compliance of BOQ items for all Contract Packages.
- Variations and claims management. Prepare Variation Orders considering contract agreement and recommend for approval, if required. In this case, proper attention should have to be paid during design and preparation of BOQ so that the numbers of Variations could be kept minimum.
- Ensure the provision of warranties, guarantees and insurance management.
- Assist client concerning the Schedule of handing over the sites, and possible delays due to lack of possession with a view to assuring that the Contractors are given possession of the Site in accordance with the agreed work program.
- Jointly inspect with client the completed civil works and assist informal taking over, and review and approve or prepare “as built” drawings and plans (as the case may be), and provide reports testifying satisfactory completion of the contracts.
- Presence of Team Leader in all monthly progress review meetings.
- Assurance for proper demobilization and restoration of the construction sites after completion, O&M during warranty period by the contractors
- Preparation of monthly and Quarterly progress reports

- Prepare Project Completion Report and handover the Project Director and its operation and management team so that they are familiar with the uses and operation of the facilities and to allow for effective operations of the facilities.
- Monitor and supervise the enforcement of Code of Conduct (CoC) on sexual exploitation (SEA) and sexual harassment (SH) of the contractor, along with other relevant community health and safety related concerns, such as STDs, HIV/AIDs, etc.
- Ensure that consultation with the stakeholders and other engagement measures are followed-on and the relevant feedback from these engagement measures are incorporated in design of the site and in its implementation and operational modalities.

### **Activity 5.2: Certification of Bills**

The D&S Consultant shall be responsible for reviewing and certifying the bills of work done submitted by the Contractor (s):

- Checking and certifying of bills submitted by the Contractor in accordance with the contract;
- Review and certify measurement as per applicable standards and the contract;
- Deduct / hold appropriate amount from the bills in case of any non-compliance observed with respect to quality and safety, till such non-compliance is addressed by the Contractor (s);
- Review and approve rate analysis in consultation with PIU for any extra / non-scheduled items executed by the Contractor(s);
- Review and comment any claims made by the Contractor (s);
- Assessment of cost over-runs / savings with every bill;
- Preparation of deviation statements (financial) at predetermined stages;
- Manage change orders;
- Review and certify final bills of the Contractor (s) to facilitate payment; and
- Maintain accurate records of all date and quantities of work carried out. In addition, maintain all payments made to the Contractor(s), and all materials and equipment supplied to the site.
- Provide a Project Completion Report and handover the Project to the Project Director and its operation and management team so that they are familiar with the uses and operation of the facilities and to allow for good operations of the facilities.

### **Activity 5.3: Completion Certification and Handing Over.**

The D&S Consultant shall assess the completeness of works as per the contract and shall certify the completion, allowing the client to initiate occupying process into the premises. Following activities are expected under acceptance / handing over:

- Visit the works completed as announced by the Contractor, generate list of snags, and issue the same to the Contractor for action;
- Monitor performance during defects liability period and enforcing rectification of defects;
- Document relevant material, work test reports, measurements, commissioning reports pertaining to each section of the work;
- Check for signage, markers for cables, trench covers, PT enclosure, proper functioning of various systems;
- Review as built drawings submitted by the Contractor (s);

- Review the status of relevant statutory approvals;
- Certify the virtual completion and the final completion of works as applicable;
- Testing, commissioning and handing over the facility with relevant password;
- Detailed inspection at completion of work and during defect liability period, Co-ordination with the contractors to rectify the defects during the defects liability period which shall be one year after the handing over of the site; and
- Recommending release / forfeiture of securities / guarantees.
- Certify on E&S compliance of the contractor as per the bid provisions.

#### **Activity 5.4: MIS Reporting.**

- Develop an integrated construction schedule on MS Project (or similar widely accepted tool) with two-week micro plans for activities covering all trades and monitor compliance. The plan must clearly articulate the critical path (CPM);
- The D&S Consultant shall bring to prompt attention to the Project Director/PIU any activity which is slipping from critical path (CPM or baseline);
- The D&S Consultant shall conduct fortnightly reviews and recasting of schedules where necessary to make up for lost time;
- The D&S Consultant shall submit a monthly report on the progress made and hold apart from regular meetings with the Contractors where it shall brief the progress of the STP construction works; and
- The D&S Consultant shall use on-line secure report mechanism for STP construction works to report progress, status update so that all stakeholders including the Government, PD, PIU, World Bank and other stakeholders can view it.

**Activity 5.5: For Environment, Social, Health and Safety (ESHS),** the scope of services of the consultant for civil works supervision should be based on the following:

The Consultant shall ensure that the Contractor's ESHS performance is in accordance with good international practice and delivers the Contractor's ESHS obligations.

The ESHS and RSMF related services will include but are not limited to:

- Review the Contractor's Environment and Social Management Plan (C-ESMP) prepared based on the Strategies and Management Plans as are necessary to manage the ESHS risks and impacts of ongoing works including all updates and revisions;
- Review the Code of Conduct submitted by the bidders including its implementation arrangement that will be apply to the Contractor's employees and subcontractors. The Code of Conduct shall ensure compliance with the ESHS provisions of the contract, including those as may be more fully described in the Works Requirements in Section of the bidding document.
- Review ESHS and RSMF (to the extent applicable) provisions of method statements, implementation plans, GBV/SEA prevention and response action plan, drawings, proposals, schedules and all relevant Contractor's documents;
- Play an active role to ensure that the Contractors, Labor *Sardars*, and laborers are made fully aware of the GRM and its objectives and functions, as well as the hearing and redress process. The Consultant will also ensure that Grievance Redress Committees (GRCs) are established at the work sites.
- Monitor closely and prepare bi-monthly reports which the Implementing Agency would share with the Bank. The report will contain implementation status of all plans that have operationalized the

Bank's social safeguard policies, as well as the corporate requirements on gender, citizen engagement, GBV/SEA, GRM and the like.

- Review and consider the ESHS risks and impacts of any design change proposals and advise if there are implications for compliance with ESIA, ESMP, consent/permits and other relevant project requirements;
- Supervise regularly Contractor's compliance with ESHS requirements in accordance with the approved safeguard documents including its GBV/SEA obligations, with and without contractor and/or client relevant representatives, as necessary, but not less than once per month
- Undertake audits and inspections of Contractor's accident logs, community liaison records, monitoring findings and other ESHS related documentation, as necessary, to confirm the Contractor's compliance with ESHS requirements;
- Agree remedial action/s and their timeframe for implementation in the event of a noncompliance with the Contractor's ESHS obligations;
- Ensure appropriate representation at relevant meetings including site meetings, and progress meetings to discuss and agree appropriate actions to ensure compliance with ESHS obligations;
- Check that the Contractor's actual reporting (content and timeliness) is in accordance with the Contractor's contractual obligations and submit a monthly report to IA;
- Review and critique, in a timely manner, the Contractor's ESHS documentation (including regular reports and incident reports) regarding the accuracy and efficacy of the documentation;
- Undertake liaison, from time to time and as necessary, with project stakeholders to identify and discuss any actual or potential ESHS issues;
- Establish and maintain a grievance redress mechanism including types of grievances to be recorded and how to protect confidentiality e.g. of those reporting allegations of GBV/SEA.
- Ensure any GBV/SEA instances and complaints that come to the attention of the consultant are registered in the grievance redress mechanism.

#### **Stage 6: Support Management of Contracts.**

The Consultant would assist Project Director on management of contract activities and advise necessary measures towards smooth implementation of the construction Contracts. The Consultant would also keep provision of any other specialist services as may be required from time to time.

#### **Stage 7: Statutory' Approvals and Certificates**

The D&S Consultant shall identify and obtain all pre-construction stage statutory approvals. The D&S Consultant shall also identify all the approvals required during and after completion of the construction that shall be included in the scope of the Contractor (s). The D&S Consultant shall prepare time schedule for submission of all statutory approvals and certificates applicable as per government rules /regulation. Any expenditure related to these approvals like statutory fee etc. shall be borne by the Project. The D&S Consultant shall prepare time schedule for submission of all statutory approvals and certificates applicable as per government rules / regulation.

#### **Stage 8: Facilities and Equipment to be Provided by the Client.**

The Project will provide the Consultant all readily available reports and data relating to the consulting services, including resettlement and environmental documents.

**Stage 9: Facilities to be Provided by the Consultant.**

The Consultant should have at least the following facilities (but not limited to) during the construction supervision/ monitoring period:

- I. Suitable office space with consumables and communication both in field and main office;
  - II. Suitable equipment for all supervision /monitoring works;
  - III. Vehicles, office equipment including telephones, computers and printers, etc.
  - IV. Required support personnel.
- No separate / additional payment is required from the Project for the Consultant's facilities

**6. DURATION OF CONTRACT AND FORM OF CONTRACT**

Total duration of the contract will be 30 months.

**Stage 10. Reporting Requirements.**

The Consultant will report implementation progress of the Project to the Project Director through monthly and quarterly progress reports. The monthly and quarterly progress reports should include project implementation status, major issues, and proposed corrective actions. The Consultant will prepare the following reports in English and submit in the number of copies indicated below to the Project Director. All reports submitted must have signatures of the author, checker and approver, with seals of the Consultant. For each report submitted, an electronic copy of the same should be provided. Electronic copies will be in the format used in their preparation with all links, formulas, and fields active. For all reports, an executive summary will be included:

Type of Report	Total Quantity	Submission Time
<b>Inception Report and Work Plan:</b> The Inception Report (IR) will update the methodology and the program of work including deployment of personnel that will be included in the Consultant's proposal and used as a basis for agreed pricing, noting the changes and detailing any difficulties encountered, together with a proposal on how they may be overcome. The PIU will review and comment on IR and finally will be approved / acceptance by the Project Director. The Consultant's established Work-Plan may be revised from time to time, but acceptance by the Project Director must be requested each time.	7 copies	30 days after the effectiveness of contract
<b>Monthly Progress Reports:</b> The report will briefly describe activities for the month and comparison of progress of work with the projected work plan. The report will cover both the design and the construction/upgradation	7 copies	day of each calendar month.

supervision phase's activities. Accordingly, in both the cases, different stage wise activities progress report to be reported in applicable cases. The construction phase reports at least shall include (i) the performance of the contractors; (ii) highlight issues observed during construction; (iii) present solutions for observed issues.		
<b>Report including a ToR for Environmental and Social Impact Assessment (ESIA) for DoE approval for each Structure</b>	7 copies	60 days after the effectiveness of contract.
<b>Quarterly Progress Report:</b> which will summarize all project activities including progress of works, contracts variations and change orders, achievements and utilization of resources over the previous three months, implementation of the environment management framework, highlight key issues identified, and present the Consultants work plan for the coming three months.	7 copies	the end of each quarter month from the date of commencement
<b>Implementation Completion Report (ICR)</b> at the end of the assignment of contracts when the assignment reaches a substantial completion. This report must be submitted immediately after taking over of contracts and shall summarize the concepts and methods of design, construction, construction supervision performed and recommendations with lessons learnt for future projects of similar nature to be undertaken by the employer.	7 copies	weeks before the date of termination

#### **Stage 11: Minimum Required Experiences of the Consultant and Indicative Key Team Composition.**

*Following indicative inputs are provided to carry out the assignment. However, consultant may adjust the input of respective resources or engage additional resources with appropriate skills to meet the scopes of the assignment without additional claim, , since it is LS contract..*

The consultant having experience and have strong capabilities and proven record in designing and carrying out of establishing of similar type of assignment in national / international level are necessary. The Consultant must also have demonstrated expertise in the supervision of similar type's structures. The firm shall provide a team consisting of experts with adequate background and experience in designing (preferably having international experience) and construction supervision. The expected team would include a set of key experts comprising a Team Leader, Architects, Civil Structural Design Engineers, Construction Supervision Engineers, Electrical Expert, Utility Service Expert and Environmental and Social Safeguard Expert. The curriculum vitae of the key experts should contain information of the assignments they have successfully completed within last 5 years, with complete names and addresses of the clients and the name and contact information of the

immediate supervisors. The procuring entity may contact any of those clients of the first ranked firm, for verification of the information provided by the firm, prior to signing the contract. Following is the indicative key experts' team structure required from the D&S Consultant in order to deliver the assignment. The Consultant can propose some of their key experts as intermittent positions and some of may be in full time positions. This table is for guidance only participants are expected to present their own version of key team structure and composition:

**Activity 11.1: Proposed Key Experts:**

Sl. No	Expert position	Educational qualification & experiences	Total person month	Indicative Number of positions
1	Team Leader	Minimum Bachelor's degree in Civil Engineering. Any relevant / project management professional qualification will be an added advantage. Having at least total 20 years of relevant experience. Of which at least 10 years' experience in project management, coordination on design & drawings, contract management, quality control, monitoring, reporting & top supervision of similar type of projects. Should have experience as Team Leader at least 3 similar type of projects.	18	1 (Full time)
2	Senior Architect	Minimum Bachelor's degree in Architecture with at least 15 years of relevant experience. Preferably, have international experiences in architectural designing & planning similar nature of projects and have experience to provide enough flexibility to integrate future requirements. Having also experienced in energy efficient architectural designs that reflect green building principles following the most up to date standards etc.	6	1 (Incremental, and/or Intermittent)
3	Architect	Minimum Bachelor's degree in Architecture with at least 10 years of relevant experience. At least 3 years experiences in architectural designing & planning in similar nature of projects to provide enough flexibility to integrate future requirements. Having also experienced in energy efficient architectural designs that reflect green building principles following the most up to date standards etc.	6	1 (Incremental, and/or Intermittent)

Sl. No	Expert position	Educational qualification & experiences	Total person month	Indicative Number of positions
4	Senior Structural Design Engineer	At least Bachelor's degree in Structural / Civil Engineering with 15 years of relevant experience. At least 10 years of experience in designing of similar types of structure in home / abroad. Well known about the BNBC code and its practice. Well conversant about energy efficient / green built structure and its designing. Experience in Bangladesh for the similar type of structure desires.	6	1 (Incremental, and/or Intermittent)
5	Structural Design Engineer	At least Bachelor's degree in Structural / Civil Engineering with 10 years of relevant experience. At least 3 years of experience in designing of similar types of structure. Well known about the BNBC code and its practice.	6	1 (Incremental, and/or Intermittent)
6	Utility Services Engineer	Minimum Bachelor's degree in Mechanical / Electrical / Civil Engineering with 10 years of relevant experience. At least 5 years' in the design, selection and installation of mechanical / electro-mechanical devices in similar types of works. Experience in HVAC, different service including sanitary & water supply connections and well known to get approval for different utility connections for getting services.	6	1 (Incremental, and/or Intermittent)
7	Electrical Engineer	Minimum Bachelor's degree in Electrical Engineering with at least 10 years of relevant experience. At least 5 years of practical experience in the design, selection and installation of electrical /electro-mechanical devices TCs or similar types of works. Assist in testing transformer and all other related electromechanical equipment. Carry out all other tasks and activities as needed.	5	1 (Incremental, and/or Intermittent)
8	Mechanical Engineer	Minimum Bachelor's degree in Electrical Engineering/Mechanical Engineer with at least 10 years of relevant experience. At least 5 years of practical experience in the design, selection and installation of electrical /electro-mechanical devices TCs or similar types of works. Assist in testing transformer and all other related electromechanical equipment. Carry out all other tasks and activities as needed.	3	1 (Incremental, and/or Intermittent)

Sl. No	Expert position	Educational qualification & experiences	Total person month	Indicative Number of positions
9	Environmental & Social Safeguard Expert	Minimum Bachelor's degree in environmental / social science with 10 years of relevant experience. At least 5 years professional experience in environmental / social study & implementation of environment plan including preparation of EIA, EMP, SIA reports etc. The Expert should be well conversant with laws relating to land acquisition, state procedures in implementation plans & framework. The Expert/s should also be well conversant about national / the World Bank environmental and social safeguard policies.	6	1 (Incremental, and/or Intermittent)
		Total	62	

**Activity 11.2:** Proposed Non-key Experts: In addition, it is envisaged that the following Non-Key Experts inputs would be required intermittently. The inputs of these non-key staff should be calculated in such a way that, all the responsibilities envisaged in the scope of work are completely met:

Sl. No	Non-Key Expert position	Educational qualification & experiences	Total person month	Indicative Number of positions
1	Construction Supervision Engineer.	Minimum Bachelor's degree in Civil Engineering with 10 years of relevant and practical experience in the supervision of multi-storeyed buildings and STPs.	18	1 (Incremental, and/or Intermittent)
2	Water Supply and Drainage Expert	Minimum Bachelor's degree in Civil Engineering with 10 years of relevant experience in the design of water supply, roads, bridges, culverts and drainage structures, etc.	5	1 (Incremental, and/or Intermittent)
3	Mechanical Engineer	Minimum Bachelor's degree in Mechanical with at least 10 years of relevant experience in supervision and installation of mechanical / electro-mechanical devices in similar types of works. Experience in HVAC, different service including sanitary, water supply connections and different utility connections	4	1 (Incremental, and/or Intermittent)

Sl. No	Non-Key Expert position	Educational qualification & experiences	Total person month	Indicative Number of positions
		for getting services.		
4	Quantity Surveyor and Estimator (Civil, Electrical & Mechanical)	Minimum Diploma in Engineering with 10 years of relevant experience. At least 8 years' experience in surveying and estimation. Well conversant in preparing cost estimates and its analysis based on standard and market value. Carry out all other tasks and activities as needed.	16	2 (Incremental, and/or Intermittent)
5	CAD Operator	Minimum Diploma in Civil Engineering /Architect with 10 years of relevant experience. At least 5 years' experience in project drawings. Carry out all other tasks and activities as needed.	18	1 (Incremental, and/or Intermittent)
		Total	61	

### Activity 11.3: Field/Support Staff:

In addition to key professional inputs, following support pool comprising technical and general staffs national only are anticipated to be required for the potential staffs. The qualification of the support staff will not be evaluated for selection.

SL	Staffs Position	Man-months (MM)
1	Office cum Accounts Manager	18
2	Site Engineer (Electrical/Mechanical)	16
3	Site Engineer (Civil) (2 nos)	18
	<b>Total</b>	<b>52</b>

## 12. Code of Conduct.

**For supervision of civil works contracts:** All experts and support staff of the Consultant:

- (i) Comply with applicable laws, rules, and regulations

- (ii) Comply with applicable health and safety requirements to protect the local community (including vulnerable and disadvantaged groups), the Consultant's Experts, the Client's personnel, and the Contractor's personnel, including sub-contractors and day workers (including wearing prescribed personal protective equipment, preventing avoidable accidents and a duty to report conditions or practices that pose a safety hazard or threaten the environment)
- (iii) Must not use of illegal substances
- (iv) Must follow Non-Discrimination in dealing with the local community (including vulnerable and disadvantaged groups), the Consultant's Experts, the Client's personnel, and the Contractor's personnel, including sub-contractors and day workers (for example, on the basis of family status, ethnicity, race, gender, religion, language, marital status, age, disability (physical and mental), sexual orientation, gender identity, political conviction or social, civic, or health status)
- (v) Must show respect while Interactions with the local community(ies), members of the local community (ies), and any affected person(s) (for example to convey an attitude of respect, including to their culture and traditions)
- (vi) Must prohibit Sexual harassment (for example to prohibit use of language or behavior, towards women and/or children, that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate)
- (vii) Must avoid Violence, including sexual and/or gender-based violence (for example acts that inflict physical, mental or sexual harm or suffering, threats of such acts, coercion, and deprivation of liberty)
- (viii) Must prohibited Exploitation including sexual exploitation and abuse (for example the prohibition of the exchange of money, employment, goods, or services for sex, including sexual favors or other forms of humiliating, degrading behavior, exploitative behavior or abuse of power)
- (ix) Must Protect of children (including prohibitions against sexual activity or abuse, or otherwise unacceptable behavior towards children, limiting interactions with children, and ensuring their safety in project areas)
- (x) Should ensure Sanitation requirements (for example, to ensure workers use specified sanitary facilities provided by their employer and not open areas)
- (xi) Must avoid of conflicts of interest (such that benefits, contracts, or employment, or any sort of preferential treatment or favors, are not provided to any person with whom there is a financial, family, or personal connection)
- (xii) Protection and proper use of property (for example, to prohibit theft, carelessness or waste)
- (xiii) Duty to report violations of this Code

- (xiv) Non-retaliation against personnel who report violations of the Code, if that report is made in good faith

Each Expert shall sign indicating that they have:

- (i) received a copy of the code;
- (ii) had the code explained to them;
- (iii) acknowledged that adherence to this Code of Conduct is a condition of employment; and
- (iv) understood that violations of the Code can result in serious consequences, up to and including dismissal, or referral to legal authorities.

**13.** The design should be tested by third party such as BUET/RUET/CUET/MIST.

**14.** The project will have the copy right of all design (CAD/Drawings) developed under this assignment.