

ANNEX A

TERMS OF REFERENCE FOR ELECTRICAL SERVICES (ELECTRICAL DESIGN, TESTING AND COMMISSIONING, EMERGENCY MAINTENANCE SUPPORT)

1. GENERAL INFORMATION

The UNHCR-Bangladesh Operation in Cox's Bazaar is one of the largest humanitarian assistance programmes of the agency in Asia and the Pacific Region. UNHCR has been carrying out various operational activities for the people of concern to UNHCR in Teknaf, Ukhiya, Cox's Bazaar, Bhasanchar and Dhaka.

UNHCR Sub-Office Cox's Bazar invites qualified and experienced vendors to submit their offers for the provision of external and internal electrical design works across the local UNHCR's area of operation in Bangladesh including the UNHCR Sub-Office Cox's Bazaar, Ukhiya, Teknaf, Bhasanchar, Noakhali and Dhaka.

2. OBJECTIVE

The objective of this TOR is to engage a well experienced and qualified Contractor to support the UNHCR operations providing a comprehensive electrical and fire safety design services, including the preparation of BOQs, Single Line Diagrams (SLDs), earthing, and fire systems, as well as testing, commissioning services, and emergency maintenance support service for UNHCR facilities in Cox's Bazar, Bhasanchar, Dhaka, and other relevant locations. The assignment is aiming to ensure safe, reliable, and cost-efficient electrical infrastructure for critical humanitarian facilities which does include but not limited to community centers, health facilities, distribution points etc., and these tasks need to be conducted in line with national codes and international best practices.

3. SCOPE OF WORK – ELECTRICAL SERVICES

Within the framework of the intended established agreement, the finally selected Contractor shall be responsible for the following services:

- **Design, testing and commissioning of:**
 - Main power systems, including main and sub-main electrical distribution boards (MDBs, SMDBs, DBs) and primary cabling.
 - Internal and/or external wiring, either concealed or in conduits, for MDBs and DBs to power various electrical appliances, including but not limited to circuit breakers, internal distribution boards (DBs), power sockets, fans, air conditioning systems, and perimeter lighting systems.
 - Power transformers.

- Earthing systems.
- Fire protection systems.
- Generator systems.

UNHCR will provide the Contractor with the floor plan and civil design layout of the facility whenever available, based on which the Contractor shall facilitate the electrical and fire safety design. If a site assessment is required to prepare the electrical and fire safety design, the Contractor shall be solely responsible for conducting the necessary assessment at its own expense. No costs related to the assessment shall be borne by UNHCR. The Contractor shall design electrical and/ or fire safety system for any given/ assigned project and/or conduct testing and commissioning services and need to submit written reports consisting of the following:

- **Load Calculation Sheets** - clear and easy to understand spreadsheet(s) showing circuit's current, voltage drop, power calculation and cable sizing; Contractor needs to clearly mention all the assumptions they made while doing the calculations i.e. demand factor, load factor, loads of appliances etc. these assumptions should be agreed upon with UNHCR designated technical focal person and aligned with standard best practices and needs of that facility. This sheet needs to be submitted in Excel and PDF versions to UNHCR for review and finalization unless communicated/ instructed otherwise by UNHCR.
- **Bill of Quantities (BoQ)** - for all electrical installations required for the designed project; a template BOQ shall be agreed by both parties beforehand to be used for all projects. In the BOQs the Contractor shall identify a comprehensive breakdown of items, specifications and works required to fulfil the service, all to be mentioned in a clear and measurable way which includes but not limited to number of different loads needed for a project i.e. number of lights, fans, air conditioning system, Mani Distribution Board (MDB), Distribution Boards (DBs) etc. depending upon the requirement and load calculation sheet, number of fitting and fixtures required i.e. light holder with screws and accessories to fix depending on the type of infrastructure, number of sockets with screws and accessories to fix depending on the type of infrastructure, backup generator sizing, transformer sizing, medium voltage fittings and transformer structure, length of cables respective to type, capacity and size etc. along with proper specification for each item. And the BOQ needs to be aligned with UNHCR provided item list in case it is given to the Contractor, so that it could be used in an effective way for project purposes. If any items or services are not included in the UNHCR shared sample list (if provided), they must also be mentioned in the BOQ in the same manner to ensure a complete and comprehensive BOQ for each project. This BOQ needs to be submitted in Excel and PDF version both to UNHCR for review and finalization unless communicated/ instructed otherwise by UNHCR. UNHCR may decide to share further guidance for the Contractor to follow to modify the BOQ or the item list for better usability and may

share a list of predefined items from where the Contractor needs to pick the necessary item to prepare the BOQ and design for any project.

It is important to note that the BOQ must neither be overestimated nor underestimated in its design and the BOQ needs to include every single electrical item, accessories and services which to be procured by UNHCR to implement the project.

- **Single-line Diagrams (SLD)** - for the system and for every distribution board covering the entire given facility. The vendor must provide a detailed, clear and easily understandable Electrical Single Line Diagram (SLD) that includes but not limited to:
 - Power Distribution Architecture – Depicting Main Distribution Board (MDB), Sub-Main Distribution Boards (SMDBs), and Distribution Boards (DBs).
 - Incoming Power Source Details – Including grid connection, generator, solar, UPS, etc.
 - Transformer Ratings and Configurations – If applicable.
 - Cable Routes and Sizing – Indicating main feeders, branch circuits, and busbar risers.
 - Protection Systems – Including circuit breakers, MCBs, MCCBs, RCDs, and fuses.
 - Earthing & Lightning Protection System – Showing ground connection details.
 - Fire Alarm and Emergency Power Connections – Indicating integration points.
 - Control and Automation Elements – If any (e.g., Automatic Transfer Switch, synchronizing panels).

This SLDs needs to be submitted in AutoCAD and PDF version both to UNHCR for review and finalization unless communicated/ instructed otherwise by UNHCR.

- **Design of earthing systems** – it is an integral part of any design carried on by the Contractor. The design shall comply with national electrical codes, guidelines and standards set by the country's utility companies, in close coordination with UNHCR technical Focal Point for advice on the type and methodology to apply while designing to achieve the maximum safety levels. Please note that UNHCR always prefer the application of **mechanical earthing systems** as opposed to chemical or earthing system developed by any other means.
- **Design of fire systems** - The fire safety system design must ensure comprehensive protection against fire hazards through the incorporation of essential safety measures. This includes fire detection and alarm systems and adequate fire extinguishers. The design must comply with international fire safety standards i.e. International Fire Code, IFC and national regulations and any local laws, regulations and certification from civil defense department or any regulatory government entity.

- **Testing and Commissioning-** The contractor shall need to be conducting the testing and commissioning of all electrical and fire system installations after completion of the overall installation task (the installation task will be performed by different vendor) to ensure compliance with design specifications, safety standards, and operational requirements. And then the contractor needs to submit a testing and commissioning report detailing test results, observations, and any corrective measures taken to UNHCR to verify and finalize performing the task which are included but not limited to:
 - Conduct a thorough inspection of installed electrical systems, including main power distribution boards (MDBs), sub-main distribution boards (SMDBs), distribution boards (DBs), wiring, transformers, generators, earthing systems etc.
 - Verify the quality, integrity and withstand ability of cable connections, circuit breakers, and protection devices.
 - Verify the quality, quantity etc. of all the installed electrical and electronic item and accessories.
 - Ensure all components are installed according to approved designs, manufacturer recommendations, and safety standards.
 - Perform continuity and insulation resistance tests for all electrical circuits.
 - Conduct voltage drop and phase balancing tests to ensure stable power distribution.
 - Test earthing and grounding systems for proper functionality and compliance with safety standards.
 - Verify the operation of standby power systems, including generator automatic transfer switches (ATS), UPS systems etc.
 - Perform load testing to ensure the system can handle expected electrical demand safely.
 - Test and validate the proper operation of lighting, socket outlets, air conditioning, and other electrical appliances.
 - Earth loop impedance test
 - Soil resistivity/earth circuits conductivity test
 - Earth fault current path test
 - Main earth resistivity test
 - Insulation resistance test
 - Conduct protection relay testing to ensure the effectiveness of safety devices.
 - Verify the functionality of the fire detection, alarm, and emergency lighting systems.

- **As-Built Drawings** – Upon successful completion of testing and commissioning the Contractor shall need to prepare and submit as-built drawings for the entire facility. These drawings must accurately reflect any modifications made during the commissioning phase, including updates to the electrical distribution system, cable routing, protection devices, and all other relevant components. The as-built drawings must be precise. It also needs to be

aligned with the final installed system to ensure effective operation, maintenance, and future troubleshooting.

To facilitate efficient facility management, the Contractor shall provide printed, laminated, and clearly legible copies of the as-built drawings. These drawings must be physically attached at each Main Distribution Board (MDB), Sub-Main Distribution Board (SMDB), and Distribution Board (DB) in a visible and accessible location. The documentation should need to be included essential circuit details, labeling, and key technical specifications, enabling the facility manager or designated personnel to identify and address any faults or maintenance requirements efficiently.

Additionally, the Contractor must submit both hard copy and digital versions of the as-built drawings in AutoCAD and PDF formats both to UNHCR. This ensures proper documentation and easy access for future reference.

Disclaimer: All design works, Bill of Quantities (BOQs), Single Line Diagrams (SLDs), technical reports, drawings, calculations, and any other project-related documentation developed under this contract shall be considered as exclusive property of UNHCR. The Consultant shall have no rights to use, reproduce, share, and/or distribute any part of these materials without prior written consent and approval from UNHCR.

Unless otherwise advised by UNHCR, the design and service work detailed in this TOR must be performed in accordance with the Bangladesh National Building Code and British Standard (BS) 7671 – Requirements for Electrical Installations. In case of any conflict between the two occur, BS 7671 shall prevail, or the Contractor must seek guidance from UNHCR for further clarification and confirmation.

The Contractor has total responsibility for the accuracy and completeness of the plans and related designs, specifications and estimates prepared and shall check all such item list accordingly. The plans will be reviewed by UNHCR for conformity with the requirements of the Agreement. Reviews by UNHCR do NOT include detailed review or checking of design or the accuracy with which such designs are depicted on the plans. The responsibility for accuracy and completeness of such items remains solely that of Contractor. The plans, specifications, estimates, calculations, and other documents furnished under the Agreement shall be of a quality acceptable to UNHCR. The criteria for acceptance shall be a product of neat appearance, well organized, technically, and grammatically correct, checked, and dated and having the maker and checker identified. The Contractor shall modify its work as necessary to meet the level of acceptability defined by the criteria above.

Furthermore, the Contractor shall ensure that all deliverables, including digital and hard copy formats, are handed over to UNHCR upon project completion and the design document will be considered as UNHCR property. UNHCR reserves the right to modify, replicate, or utilize these materials for any future projects without any obligation to the Contractor.

3. SCOPE OF WORK – EMERGENCY MAINTENANCE AND CALL-OUT SUPPORT:

The Contractor shall provide emergency maintenance and call-out support to promptly address any electrical faults, failures, and/or fire safety-related issues that may disrupt operations at any facility. The response time must be kept at minimal range to prevent prolonged downtime and to ensure the continuous and safe supply of electricity.

- **Immediate Response, Situation Securing, fault clearing**
 - Upon notification by UNHCR, the Contractor shall need to mobilize technical personnel to the site within the shortest possible time.
 - The Contractor shall assess the situation, isolate faulty components, and shall need to implement temporary safety measures to prevent escalation.
 - Strict electrical safety protocols must be followed to safeguard personnel, assets, and the surrounding environment.
 - The Contractor shall diagnose and troubleshoot electrical malfunctions, including issues with main power systems, distribution boards (MDBs, SMDBs, DBs), cabling, circuit breakers, generators, and power sockets.
 - In cases requiring major repairs or replacements, a detailed root cause analysis shall be conducted.

- **Reporting about the Spare Parts/ electrical item Procurement:** Following the on-site assessment, the Contractor shall prepare and submit a comprehensive report to the UNHCR Focal Point.

This report shall include:

- Diagnosis of the issue and actions taken.
- List of required electrical and/or fire safety-related items for permanent repairs.
- Bill of Quantities (BOQ) detailing the required electrical, fire safety item/ materials detailed in the BOQ preparatory guideline under the section of Scope of work – Electrical Services in this document above.
- Recommendations for preventive measures to reduce future incidents.

4. TYPE AND SIZE OF THE PROJECT

UNHCR Bangladesh operations is responsible for various services required for refugees in the country, primarily those living in camps in Cox's Bazar and Bhasanchar. UNHCR also extends support to host communities, particularly in areas adjacent to the refugee camps. These services include, but are not limited to, the construction of health facilities, distribution points, community centers, registration facilities, and office facilities. Under this

agreement, the Contractor will be responsible for carrying out the necessary services detailed in this TOR, primarily for the aforementioned types of facilities. Below is the table outlining different size of the project.

Table 1: Potential size/ scale of the project

Potential Scale	Estimated Area (sqm)	Estimated but not guaranteed number of projects per year
Small scale project	≤150 square meter	30
Medium scale project	151-500 square meter	20
Large scale project	501-1500 square meter	15
Extra large project	1501-2500 square meter	10

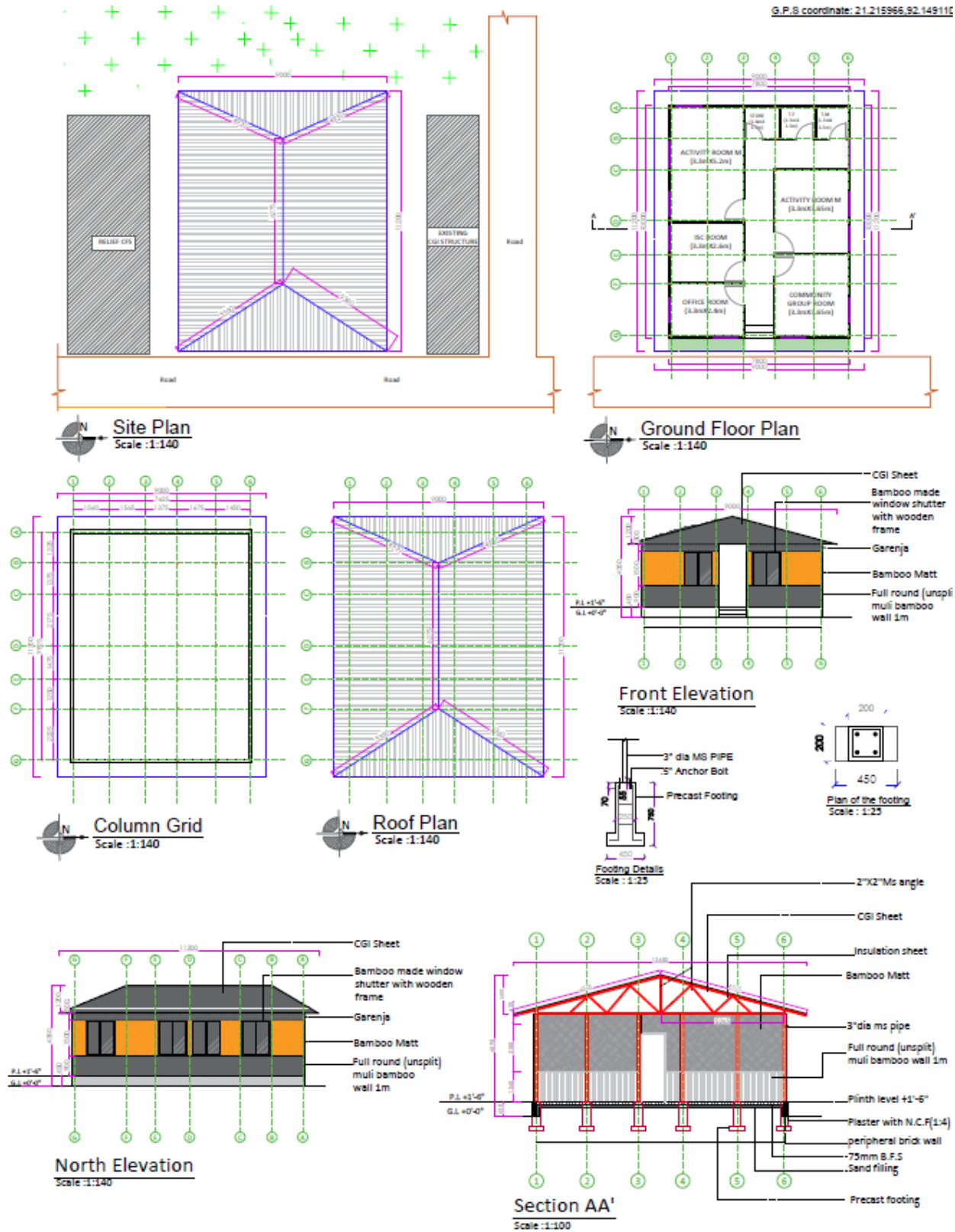


Figure 1: Sample civil design of a typical community center located in Camp 1W, with an approximate size of 100 square meters.

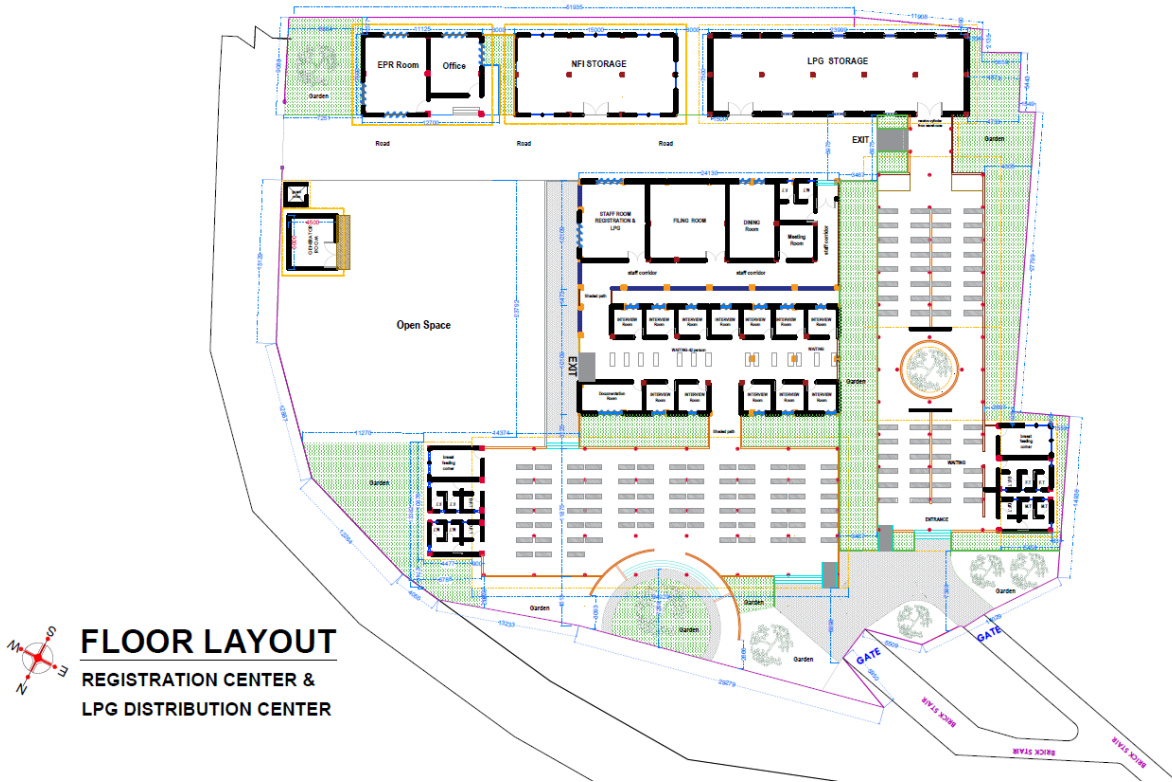


Figure 2: Sample civil design of a typical LPG distribution point and registration center in Camp 4, with an approximate size of 1600 square meters.

5. EXPECTED TIMELINE FOR ELECTRICAL DESIGN, BOQ, MAINTENANCE AND CALL OUT SUPPORT

The expected number of calendar days/hours for the Contractor to prepare the electrical design, drawings, BOQ, testing, and commissioning is provided below. The table below also contains the expected callout time for emergency maintenance and/ or fault clearing support. If the Contractor wishes to propose a different timeline from the one mentioned in the table below, they must prepare and submit a well-defined timeline specific to the project's scope and scale, outlining all types of deliverables. It is also important to note that the shortest proposed timeline is preferable to UNHCR and offers will be evaluated accordingly.

UNHCR wants the Contractor would provide the final detailed schedule of works for each activity detailed in the table below in the form of a Gantt Chart for all types of projects (in terms of scale) respective to each location.

Table 2: Expected timeline for various support to provide under this TOR

Area	Potential Scale	Estimated Area (Sqm)	Expected Turn Around Time (In Calendar Days) For Electrical Design Works to Submit Which Includes But Not Limited to Submission Of Load Calculation Sheets, Bill Of Quantities (BOQ), Single-Line Diagrams (SLD), Design Of Earthing Systems As Per The TOR	Expected Turn Around Time (In Calendar Days) For Testing and Commissioning Service Detailed in The TOR Including Report Submission	Expected Turn Around Time (In Hour) For Emergency Maintenance and Call-Out Support Detailed in The TOR To Conduct The Immediate Response, Situation Securing, and Fault Clearing Excluding Report Submission	Expected Turn Around Time (In Calendar Days) For Reporting About The Electrical Item Procurement Under Emergency Maintenance and Call-Out Support Service Detailed In The TOR
Cox's Bazar Sadar	Small scale project	≤150 square meter	4	3	2 to 3 hours	3
	Medium scale project	151-500 square meter	7	4	2 to 3 hours	4
	Large scale project	501-1500 square meter	9	5	2 to 3 hours	5
	Extra large project	1501-2500 square meter	11	6	2 to 3 hours	6
Ukhiya, Cox's Bazar	Small scale project	≤150 square meter	5	4	3 to 4 hours	4
	Medium scale project	151-500 square meter	8	5	3 to 4 hours	5
	Large scale project	501-1500 square meter	10	6	3 to 4 hours	6
	Extra large project	1501-2500 square meter	12	7	3 to 4 hours	7
Teknaf, Cox's Bazar	Small scale project	≤150 square meter	5	4	3 to 4 hours	4
	Medium scale project	151-500 square meter	8	5	3 to 4 hours	5
	Large scale project	501-1500 square meter	10	6	3 to 4 hours	6
	Extra large project	1501-2500 square meter	12	7	3 to 4 hours	7
Bhasanchar	Small scale project	≤150 square meter	8	7	24 to 36 hours	7
	Medium scale project	151-500 square meter	11	8	24 to 36 hours	8

	Large scale project	501-1500 square meter	13	9	24 to 36 hours	9
	Extra large project	1501-2500 square meter	15	10	24 to 36 hours	10
Noakhali	Small scale project	≤150 square meter	7	7	24 to 36 hours	7
	Medium scale project	151-500 square meter	10	8	24 to 36 hours	8
	Large scale project	501-1500 square meter	12	9	24 to 36 hours	9
	Extra large project	1501-2500 square meter	14	10	24 to 36 hours	10
Dhaka	Small scale project	≤150 square meter	4	3	2 to 3 hours	3
	Medium scale project	151-500 square meter	7	4	2 to 3 hours	4
	Large scale project	501-1500 square meter	9	5	2 to 3 hours	5
	Extra large project	1501-2500 square meter	11	6	2 to 3 hours	6

The bidder must complete and submit Annex B, and the offered timeline cannot exceed 40% of the expected timeline mentioned in Table 2.

6. GUIDANCE TO FOLLOW

During the service delivery phase, the Consultant/ Contractor will need to meet the following requirements:

- All work detailed under this TOR shall be coordinated with UNHCR
- Consultant shall furnish all necessary drawings for correction and change orders required by errors and omissions of the Consultant. The original tracing(s) of the drawings and contract wording for the change orders shall be submitted to UNHCR for duplication and distribution.
- Consultant will receive written notification of the award of service for any new project. Upon such notification, the Consultant will proceed with the services required by the Agreement.
- The Consultant is required to attend pre-construction meetings and any regular or ad-hoc meetings with relevant stakeholders upon notification by UNHCR. The Contractor must maintain close coordination with all relevant stakeholders, including but not limited to the civil/architectural design team, construction team, and the UNHCR-designated focal person, to ensure effective delivery of the services outlined in this TOR.

- Consultant shall be available as requested by UNHCR to resolve discrepancies in the contract documents. Consultant shall bring to the attention of UNHCR any defects or deficiencies in the work by the construction contractor which the Consultant may observe. Consultant shall have no authority to issue instruction on behalf of UNHCR, or to deputize another to do so.

7. PREVIOUS PROJECT EXPERIENCE

Contractor shall submit the work order and/ or purchase order and/ or project completion certificate to clearly prove and demonstrate that the contractor has previously conducted the similar service of facility level electrical and fire safety system design, drawing, SLD and BOQ preparations and testing and commissioning services. The contractor should have minimum 5 years of working experience in this sector to provide the service detailed in this TOR. To verify the claimed years of experience, the Contractor must submit at least one relevant purchase order or work order, with a minimum value of BDT 200,000, for each year.

8. OFFICE LOCATION OF THE COMPANY/ CONTRACTOR AND CAPACITY

The Contractor must provide the office address(es) and location when submitting the offer under this tendering package. The selected vendors will be required to have an office/satellite service support facility/ a team after receiving the award, at the project locations listed in the TOR. The Contractor must also specify the number of staff at each location, along with their respective experience, expertise, and capacity.

The Contractor must demonstrate the capability to use standard design tools, such as Autodesk software, with a valid corporate-level multi-user license that remains valid at least until the end of 2025.

The Contractor must also demonstrate having a team of qualified electrical, mechanical, and civil engineers with at least a completed Bachelor's degree. Additionally, the Contractor must have a team of assessors, servicing personnel, and design experts capable of conducting preliminary measurements, testing and commissioning, responding to emergency call-outs, and operating relevant design software.

The Contractor must provide a list of technical equipment and machinery proposed for the relevant works detailed in this TOR i.e. assessment, testing and commissioning, measurement, troubleshooting etc. including but not limited to; full set Personal Protective Equipment (PPE), mounting tools, Electrical tools and testing tools etc. Number, Specification and ownership of each of the equipment must be clearly mentioned (owned, rented, leased, etc.).

9. SAMPLE PROJECT WORK

The contractor needs to submit full set of load calculation sheets, SLD, BOQ, fire system, earthing system, generator system designed as per the detailed given in this TOR for two imaginary facilities/projects as per shown figure below (Figure 3 and figure 4). Figure 3 is

representing a typical community centre facility situated in the refugee camp in Bangladesh. Figure 4 is representing a typical LPG distribution point and registration center facility. Therefore, the Contractor needs to submit full set of load calculation sheet, SLD, BOQ, fire system, earthing system, generator system for both of the facility separately. An imaginary Testing and Commissioning report must also be submitted for both facilities separately assuming technical flaws and deviations are found 5% of the technical parameter. Please take a note of few special conditions given below and if any other technical information is required to complete the design, then the Contractor needs to assume those and specifically mention those assumption. The given special conditions are:

- The community center facility will not be having any air conditioning system
- The community center facility might be having solar system in future
- The community center facility might be expanded by another 50% in future
- The community center facility will be of bamboo structure so surface wiring will need to be implemented
- The LPG distribution point and registration center will be having air conditioning system at office and staff room only
- The LPG distribution point and registration center facility will be of brick structure except the waiting area which will be on bamboo made. So concealed wiring needs to be followed for brick structure and surface wiring needs to be followed in bamboo structure.
- Both facilities must be having lightening protection system using lightening rod
- Community centre facility must be connected with national grid with one back-up generator and the LPG distribution point and registration centre facility might be connected with the national electrical grid in future and will be having two generators to supply electricity.
- The voltage drop cannot be exceeded by more than 5% at any given length of cable
- The Contractor must design the system while ensuring electrical safety, security, standardization, and cost efficiency simultaneously.

The contractor will be evaluated on the basis of comprehensiveness of the project design in light of the guidance given above. And please find below a sample BOQ format (which needs to be submitted as an Excel file) for both community center facility and LPG distribution point and registration center facility.

Table 3: sample BOQ format (Please note that this table is an indicative sample list of items that must be completed for the design exercise accordingly for both facilities separately)

Sample List of Item and Services Which needs to be Procured and Performed for Community center Facility at Camp 1W, Cox's Bazar (Please note that this table is an indicative sample list of items that must be completed for the design exercise accordingly for both facilities separately.)										Comments
Item	Description	Unit of Measure	Quantity	Standardization	Methodology (All items and services must be quoted with the necessary labor charges included. No additional costs will be provided separately)	Estimated unit cost for supply and installation of the item or completing the service (BOT)	Total Estimated cost for supply and installation of the item or completing the service (BOT)	Product Warranty (minimum 1 year is required wherever the warranty is applicable)	Workmanship warranty (minimum 1 year is required wherever the warranty is applicable)	Special Note
SECTION 1: Distribution network items and services										
1.1	Single Phase 3 KW, 220V line construction, demand note processing and payment etc. for single phase power connection from commercial grid including supply and installation of transformer and all necessary accessories (like Service cables, Lugs etc.) of adequate rating as per demand note, availing necessary permission/verifications/license from all required Government authority, all complete with necessary line construction, energy meter installation, connection and power line energization on turn-key basis, including site survey.	Pcs	1	Electrical Components: IEC (International Electrotechnical Commission), BS (British Standards), or ISO standards Installation & safety: NFPA (fire safety), IFC (Building safety), Bangladesh National Building Code (BNBC) Materials: Specifications for cables, breakers, and panels (e.g., IEC 60847 for MCBs, IEC 61439 for distribution boards)	<p><u>For Distribution Boards & MCBs:</u></p> <p>Ensure all materials meet safety and compliance standards. Install boards and breakers following manufacturer guidelines. Conduct insulation resistance and continuity tests before commissioning.</p> <p><u>For Electrical Line Construction:</u></p> <p>Obtain required government approvals. Install transformers and necessary service cables. Ensure proper earthing and safety measures. Conduct load testing before handover.</p>	BDT 450,000.0	BDT 450,000.0	1 year		The existing grid pole is located more than 40 meters away from Camp 1W Community center.
Total For Distribution network items and services						BDT 450,000.00				
SECTION 2: Distribution Boards and Circuit breakers										
2.1	13 Way Plastic Distribution Board (for internal use, surface mount, high quality plastic, complete set with din rail wiring gasket, neutral, earth wire connector strip)	Nos	1	Havells, Legrand	<p>The Single Phase Distribution Board (SPDB) is designed for surface mounting, providing an organized and secure enclosure for electrical circuit management. The board is constructed using an 18 SWG mild steel (MS) sheet, featuring a hinged-type door with a locking arrangement. It is powder-coated with epoxy polyester resin on all surfaces, available in gray or off-white for enhanced durability and aesthetics. The front side of the board includes a minimum 8 mm thick tempered glass with rubber gaskets, allowing visibility of internal components while maintaining protection.</p> <p>The SPDB includes copper bars of approximate sizes 20" x 1" x 3 mm (two pieces) and 6" x 1" x 3 mm (one piece), which are mounted on insulators at both ends and have a capacity ranging from 60 A to 100 A.</p> <p>Additionally, the SPDB includes loop cables for power distribution from the phase bar to the SPACB (circuit and power). The cable size is IEC 5x2.5 sq mm (BMC), and the use of DPACB and SPACB.</p> <p>This distribution board ensures safe, standardized, and efficient power distribution in residential, commercial, and industrial electrical systems.</p>	BDT 2,500.00	BDT 2,500.0	1 year		
2.2	32 Amp DP MCB	Nos	1	ABB, Legrand, Schneider	For circuit protection and control, the one DPACB (main control) of 32 Amps is needed to install at SPDB. These components are manufactured, assembled, and tested according to relevant standards, including BS IEC 60898-1:2016, IEC, VDE, NEMA, BS, and IIS. The system has a minimum breaking capacity of 6/20 kA, ensuring reliable performance under thermal overload and instantaneous electromagnetic short circuit conditions.	BDT 850.00	BDT 850.0	1 year		
2.3	25 Amp DP MCB	Nos	2	ABB, Legrand, Schneider	For circuit protection and control, the two DPACB of 25 Amp is needed to install at SPDB. These components are manufactured, assembled, and tested according to relevant standards, including BS IEC 60898-1:2016, IEC, VDE, NEMA, BS, and IIS. The system has a minimum breaking capacity of 6/20 kA, ensuring reliable performance under thermal overload and instantaneous electromagnetic short circuit conditions.	BDT 800.00	BDT 1,600.0	1 year		
Total For Distribution Boards & Circuit Breakers						BDT 4,950.00				
Total For all the Supply and relevant services						BDT 454,950.00				

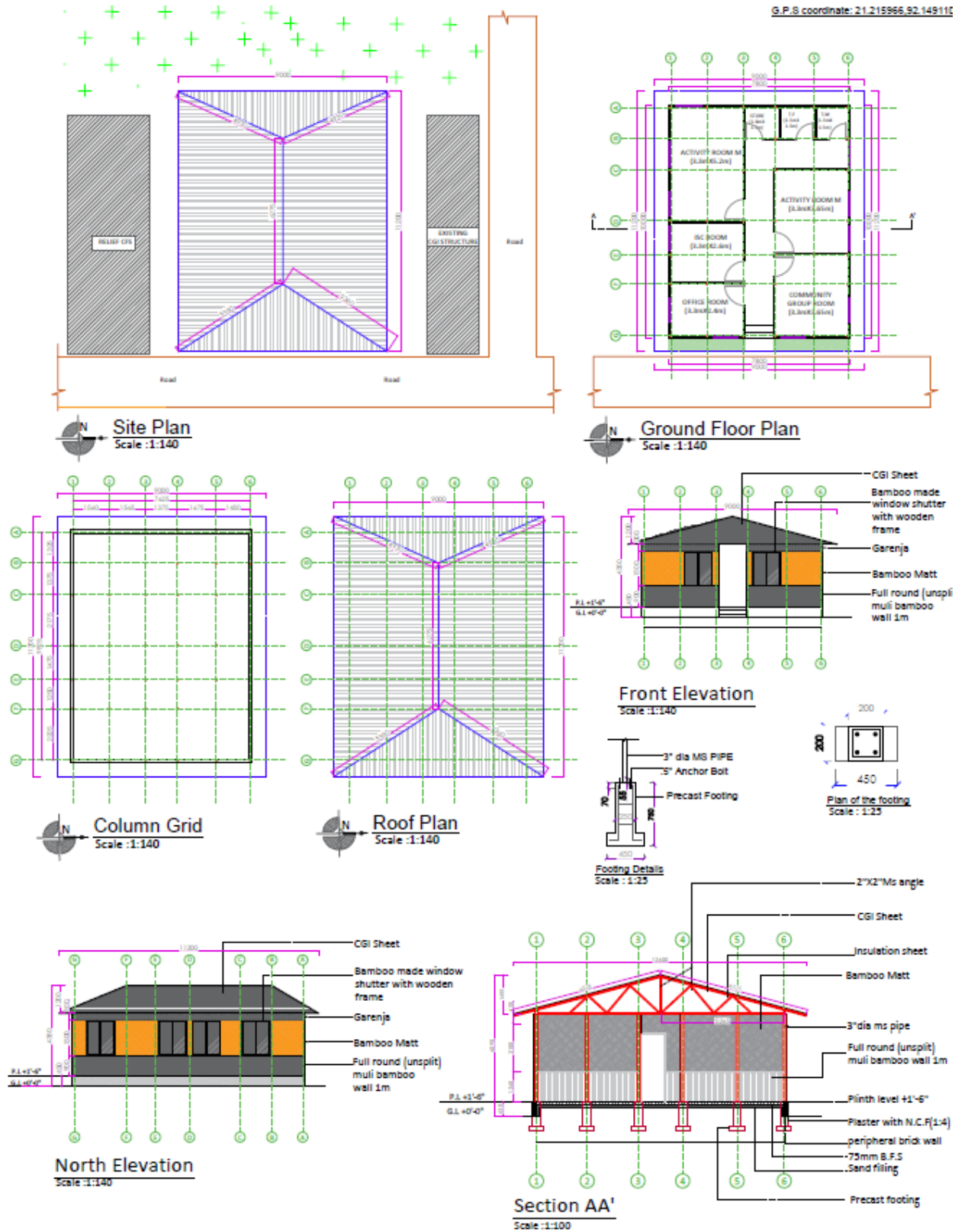


Figure 3: Sample civil design of a typical community center located in Camp 1W, with an approximate size of 100 square meters.

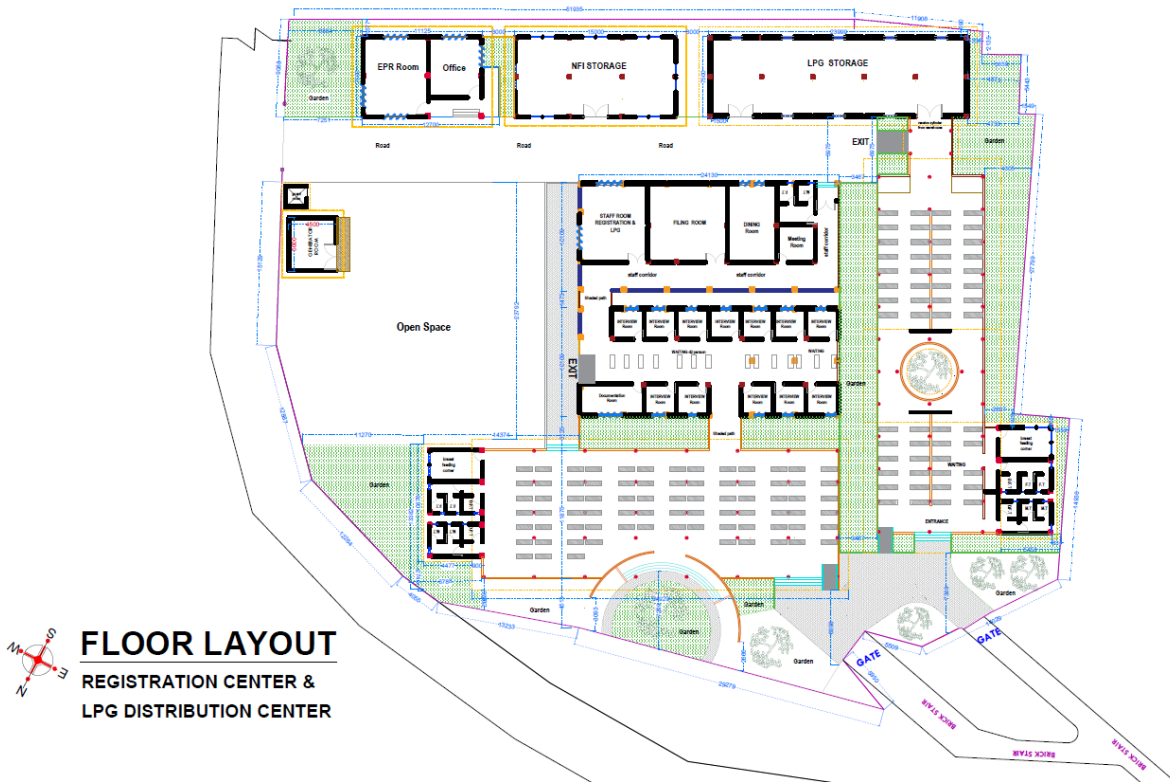


Figure 4: Sample civil design of a typical LPG distribution point and registration center in Camp 4, with an approximate size of 1600 square meters.

10. HEALTH AND SAFETY PLAN

UNHCR values the application of safety protocols in all aspects of operation, therefore, the contractor shall commit to applying **Health and safety Plan** during the assessment, design, testing and commissioning phase of any given project/ task, focusing on:

- Maintain a safe and healthy working environment.
- Provide adequate control and effective communication of health and safety risks arising from work activities.
- Provide adequate information, instruction, training and supervision for employees.
- Ensure all employees are competent to do their tasks.
- Allocate clear responsibilities.
- Consult the UNHCR Focal Point on matters affecting the health and safety.

The Contractor must adhere to the guidelines, which include but are not limited to the following:

- Installing warning signs and low noise while working in the offices' areas;

- Electrical insulated safety gear for the Contractor's staff members, which may include but should not be limited to safety helmets, reflective vests, electric insulation gloves, work gloves, electric safety shoes, aluminum ladders, safety harness and clamps, safety glasses;
- Provision of electrical testing devices, when required, such as Earth Resistivity Tester, cables insulation tester and voltage/current clamp multi-meter;
- Color-coded safety helmets: blue - for supervisors, white - for engineers, yellow - for electricians);
- Safety harness when climbing poles or working on high structures

11. PAYMENT TERMS AND CONDITIONS

Payments will be made on a milestone basis, linked to the successful completion of specific deliverables within each project as specified in this TOR. The vendor will be paid in full for each completed work step, subject to UNHCR's verification and acceptance of the deliverables and upon submission of invoice and other official documentation per Supply and Procurement guidelines.

- **Design Stage:** Upon completion and successful submission of the final design package (including BOQ, SLD, and related documents), the vendor will be paid for the design component.
- **Testing and Commissioning Stage:** Upon successful completion of testing and commissioning tasks, along with submission of the corresponding report, the vendor will be paid for this component.
- **Emergency maintenance and call out service:** For any emergency maintenance work the payments will be released following the same principle—upon successful completion of the task, submission of report along with necessary BOQ (listing all the required number of items if requires) as specified in this TOR under the relevant section.

All payments will be processed in line with UNHCR's financial rules and procedures.

END