

Scope of work and Terms of Reference

For the establishment of Routine Maintenance Frame Agreement for UNHCR offices in Jordan

UNHCR – Jordan

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GENERAL

Introduction

UNHCR is seeking to hire a contractor under a Frame Agreement (FA) to conduct routine maintenance works (civil, electrical, plumbing and AC works) in its Offices in Jordan (Amman BO, MENA Office, Mafraq, Irbid, Ruwayseid) office for 2020. The Obligations of both UNHCR and the Contractor are stipulated in section "Terms of Reference".

Pre-Construction Work

Notice to Proceed will be issued within 3 days after signing the contract. The contract period begins on the day the Notice to Proceed is issued.

The UNHCR Technical Unit and Contractor will carry out a joint condition-in survey using video or digital photographs to record the condition of the site upon handover to the Contractor. The Contractor will carry out a detailed site set out survey for the works.

The contractor may not proceed with on-site mobilization or construction works before the UNHCR Technical Unit approves the following documentation that shall be covered in Program:

- Condition-in Survey
- Site Survey
- Work Method Statement
- Program
- Quality Assurance / Quality Control Plan (QA/QC).
- Health and Safety Plan (H&S) as per minimum requirement.
- Environmental Protection Plan as per minimum requirement
- Dust and Noise Protection Plan
- Schedule of Materials and Installed Equipment
- Detail plan of execution
- Selection of any sample of equipment (i.e. tiles, sanitary equipment, painting colour, etc.)
- Detailed technical drawings

A Pre-Construction Meeting will be held between the UNHCR Technical Unit and the Contractor to review the above documentation. If the documentation is incomplete, the Contractor will have 3 calendar days to revise and resubmit the documentation for approval.

Site restrictions

Site security limitations: Comply with any restrictions on site area, access or working times advised by the UNHCR Technical Unit.

Access: Access on to and within the site, use of the site for temporary works and constructional plant, including working and storage areas, location of offices, workshops, sheds, roads and parking, is restricted to the areas shown on the general layout of UNHCR Khalda office or as agreed with the UNHCR Technical Unit. This document will be communicated to the contractor during the Pre-Construction Meeting.

Occupied Areas of Site or Buildings

For the parts of the site designated as occupied areas in the Occupied Areas schedule:

- Allow occupants to continue using the area for the required period.
- Make available safe access for occupants.
- Arrange work to minimise nuisance to occupants and ensure their safety.
- Protect occupants against weather, dust, dirt, water or other nuisance, by such means as temporary screens

Protection of persons and property

Temporary works: Provide and maintain required barricades, guards, fencing, shoring, temporary roadways, footpaths, signs, lighting and traffic flagging.

Access ways, services: Do not obstruct or damage roadways and footpaths, drains and watercourses and other existing services in use on or adjacent to the site. Determine the location of such services. If damage occurs, immediately repair it at the Contractors cost.

Property: Do not damage property which is to remain on or adjacent to the site, including adjoining property encroaching onto the site. If damage occurs, immediately repair it at the Contractors cost.

Existing services

Attend to existing services as follows:

- If the service is to be continued, repair, divert or relocate as required.
- If the service is to be abandoned, cut and seal or disconnect, and make safe.

Submit proposals to the UNHCR Technical Unit for action for existing services before starting this work. Minimise the number and duration of interruptions.

Adjacent facilities to the construction site

The Contractor is to inspect any other buildings adjacent to the construction site with the UNHCR Technical Unit before start of work.

Make detailed records of conditions existing within the properties, especially structural defects and other damage or defacement. Arrange for at least 2 copies of each record, including drawings, written descriptions, and photographs, to be endorsed by the occupant (UNHCR Jordan – Administrative Unit) as evidence of conditions existing before commencement of work. Submit one endorsed copy of each record to the UNHCR Technical Unit. The Contractor is to keep the other endorsed copy.

Construction plant

Access

Access route and site access point are as shown on general layout of UNHCR Khalda office or as agreed with the UNHCR Technical Unit during the Pre-Construction Meeting.

Use of Existing Services

Existing services may be used as temporary services for the performance of the contract.

Contractors Facilities and Work Practices

The Contractor is required to provide adequate toilet and washroom facilities for his staff.

Alternatively, it might agree with UNHCR Technical Unit, that temporary access to certain toilet on the ground floor of the existing building will be granted to contractors. These facilities shall be kept clean and serviceable at all time.

The Contractor is required to provide adequate first aid equipment on-site, failure of the Contractor to ensure the availability of first aid equipment on-site will result in an immediate 'stop work' order being issued. All costs and time delays resulting from any such 'stop work' order is entirely the Contractors responsibility. At the discretion of the contractor, a site office will be / can be established by the Contractor at the work site. The location of the site office will be identified by the UNHCR Technical Unit to the Contractor. The office will have a complete set of the contract documents. The Contractor is to maintain a safe, healthy and tidy worksite at all time and all work activities are to be performed with protective and safety equipment appropriate for the task. The Contractor is entirely responsible for workplace safety and unsafe work practices will be identified and recommendations made for revised work methods as appropriate.

The Contractor will be required to comply to the approved Health and Safety Plan.

Project Signboards

Provide project-specific signboards and the following:

- Location, size and wording as directed by UNHCR Technical Unit.
- Maintain in good condition for duration of the work.
- Remove on completion. Obtain approval before display of advertisements or provision of other signboards.

Building the Works

Surveys

Setting out: Set out the works from the dimensioned drawings

Check surveys: Check the set out regularly on site

Final survey: Confirm final set out of roads, services and buildings on the as constructed drawings after Practical Completion

Survey marks

Definition: The term "survey mark" means a survey peg, bench mark, reference mark, signal, alignment, level mark or any other mark used or intended to be used for the purpose of setting out, checking or measuring the work.

Care of survey marks: Preserve and maintain the survey marks in their true positions. The Contractor shall check survey marks for consistency and if there are inconsistencies, the Contractor shall give written information to the UNHCR Technical Unit with his proposed corrections. If the survey marks are damaged, the Contractor shall immediately advise the UNHCR Technical Unit and rectify the damage.

Contractor's Representative

The contractor must employ a suitably experienced engineer as the Site Manager. This person must be on site during working hours, and fluent in English and technical terminology. The Contractor's Site Manager will have the authority to make all decisions concerning the project on behalf of the Contractor.

Program of Work

The Contractor is to provide a construction baseline program with MS Project which has the following information:

Sequence of Work. (Work Breakdown Structure)

Activity inter-relationships. (Should be closed loop)

Activity durations with start and finish dates

Periods within which various stages or parts of the work are to be executed.

Time scale: Calendar Days

Line items in program are to be based on UNHCR Bill of Quantities numbering system (see index). Update the program weekly. Submit hardcopy and softcopy. Identify changes since the previous version, and show the actual starts and finishes, actual percentage of completion for each item of work.

Site Meetings

Hold and attend weekly site meetings throughout the contract and ensure attendance of appropriate (if any) subcontractors, the Site Manager and representative of the UNHCR Technical Unit. The meeting schedule may be modified by the UNHCR Technical Unit. The meeting will consider the following items:

- Technical issues
- Commercial issues
- Program
- Quality of work

Completion of the Works

Final Cleaning

Before Practical Completion, clean throughout, including interior and exterior surfaces exposed to view. Clean carpeted and soft surfaces. Clean debris from the site, roofs, gutters, downpipes and drainage systems. Remove waste and surplus materials.

Reinstatement

Before practical completion, clean and repair damage caused by installation or use of temporary work and restore existing facilities used during construction to original condition, at the cost of the contractor.

Adjoining Adjacent facilities to the construction site

At practical completion, for adjacent buildings/superstructures described in the Adjoining adjacent facilities to the construction site to be Recorded schedule inspect the adjacent facilities and superstructures with the UNHCR Technical unit, recording any damage that has occurred since the pre-commencement inspection.

Post Construction Works

The Contractor will provide the following documentation after all site construction has been completed:

- Warranty Statement
- Material Test Certificates
- As-Built Drawings
- List of the suppliers with their contact information
- Spare materials, where applicable

A condition-out survey will be conducted with the Contractor and the UNHCR Technical Unit at which damages caused by the Contractor will be identified. The UNHCR Technical Unit will determine if the Contractor is to make repairs or if the damage will be deducted from the Contractor's final invoice.

Removal of plant

Within 10 working days after practical completion, remove temporary works and construction plant and or equipment no longer required.

Miscellaneous

Compliance with the Law

The Contractor is responsible for compliance with all requirements of authorities. On behalf of the client (UNHCR Jordan) the Contractor, before entering into the contract, has approached the relevant authorities and get any required permission for the presented construction project.

GENERAL REQUIREMENTS

Contract documents

Drawings

Large scale drawings take precedence over small scale drawings. Written or calculate able dimensions take precedence over scaled dimensions. If there are any errors in dimensions, set out or size, immediately notify the UNHCR Technical Unit. It is understood that any drawings presented by UNHCR Technical Unit are not the final drawings. It is the responsibility of the contractor to verify them, validate them and develop and present its own technical drawings including details drawings and section views.

Schedule

The schedule forms part of the specification. Information in the schedule will take precedence over information in the specification.

Bill of Quantities

If there are any errors in description of items or omissions in the BOQ, immediately notify the UNHCR Technical Unit. If there are any items which are unclear or are not available within the project program, immediately notify the UNHCR Technical Unit.

Services diagrammatic layouts

Layouts of service lines, plant and equipment shown on the drawings are diagrammatic only, except where figured dimensions are provided or calculable. Before commencing work:

- Obtain measurements and other necessary information.
- Coordinate the design and installation in conjunction with all trades

Site Level

Spot levels and identified levels on drawings take precedence over contour lines and ground profile lines.

Inspections

Inspection Notification Schedule

The Contractor is to notify the UNHCR Technical Unit when the items identified in the Inspection notification schedule are ready for inspection.

Written Notice

Minimum notice for inspections to be made on site is 24 hours for off-site personnel, 4 hours for onsite personnel. If notice of inspection is required in respect of parts of the works that are to be concealed, advise when the inspection can be made before concealment.

Submissions

Samples

The UNHCR Technical Unit must approve the laboratory used for testing. Submit nominated samples for approval of the UNHCR Technical unit. If it is intended to incorporate samples into the works, submit proposals for approval. Only incorporate samples in the works which have been approved. Do not incorporate other samples. Keep endorsed samples in good condition on site, until practical completion.

Shop Drawings General:

If required, submit dimensioned drawings showing details of the fabrication and installation of services and equipment, including relationship to building structure and other services, cable type and size, and marking details. Diagrammatic layouts: Coordinate work shown diagrammatically in the contract documents and submit dimensioned set out drawings.

PRODUCTS

Tests

Notice

Give notice of time and place of nominated tests.

Attendance

The Contractor is to carry out and attend all tests were nominated in this specification. The independent approved testing laboratory shall perform the required tests and report results of all

tests noting if the tested material passed or failed such tests and shall furnish copies to the UNHCR Technical Unit.

Materials and Components

Consistency

For the whole quantity of each material or product use the same approved manufacturer or source and provide consistent type, size, quality and appearance.

Manufacturers' or Suppliers' Recommendations

Proprietary items: Select, if no selection is given, and transport, deliver, store, handle, protect, finish, adjust, prepare for use, and provide manufactured items in accordance with the current written recommendations and instructions of the manufacturer or supplier.

Proprietary systems/assemblies: Assemble, install or fix in accordance with the current written recommendations and instructions of the manufacturer or supplier.

Project modifications: Advise of activities that supplement, or are contrary to, manufacturer's or suppliers' written recommendations and instructions.

Proprietary Items

Identification of a proprietary item does not necessarily imply exclusive preference for the item so identified but indicates the necessary properties of the item.

Alternatives: If alternatives are proposed, submit proposed alternatives and include samples, available technical information, reasons for proposed substitutions and cost. If necessary, provide an English translation. State if provision of proposed alternatives will necessitate alteration to other parts of the works and advise consequent costs.

EXECUTION

Use of explosives will not be permitted.

Completion

Warranties

Name the owner as warrantee in conformance with the Warranty schedule. Register with manufacturers as necessary. Retain copies delivered with components and equipment.

Commencement: Commence warranty periods at practical completion or at acceptance of installation if acceptance is not concurrent with practical completion.

Operation and Maintenance manuals

General

General: Submit operation and maintenance manuals for installations.

Format – hard copy

These will be A4 size loose leaf, in commercial quality files with hard covers, each indexed, divided and titled. Include

the following features:

- Cover: Identify each binder with typed or printed title “OPERATION AND MAINTENANCE MANUAL”, to spine. Identify title of project and date of issue.
- Drawings: Fold drawings to A4 size and accommodate them in the files so that they may be unfolded without being detached from the rings.
- Text: Manufacturers’ printed data, including associated diagrams, or typewritten, single-sided on paper, in clear concise English.

Number of copies: 3.

Format – soft copy

- In PDF, Auto Cad or Microsoft Word, Excel format.

- On compact disk properly identified as above

Number of copies: 3

CONTRACTOR QUALITY CONTROL PROGRAM

General

When the specification requires a Contractor Quality Control Program, the Contractor shall establish, provide, and maintain an effective Quality Control Program that details the methods and procedures that will be taken to assure that all materials and completed construction required by this contract conform to contract plans, technical specifications and other requirements, whether manufactured by the Contractor, or procured from subcontractors or vendors. Although guidelines are established and certain minimum requirements are specified herein and elsewhere in the contract technical specifications, the Contractor shall assume full responsibility for accomplishing the stated purpose. The intent of this section is to enable the Contractor to establish a necessary level of control that will:

- Adequately provide for the production of acceptable quality materials.
- Provide sufficient information to assure both the Contractor and the UNHCR Technical Unit that the specification requirements can be met.
- Allow the Contractor as much latitude as possible to develop his or her own standard of control.

The Contractor shall be prepared to discuss and present, at the preconstruction conference, his/her understanding of the quality control requirements. The Contractor shall not begin any construction or production of materials to be incorporated into the completed work until the Quality Control Program has been reviewed by the UNHCR Technical Unit. No partial payment will be made for materials subject to specific quality control requirements until the Quality Control Program has been reviewed.

The quality control requirements contained in this section and elsewhere in the contract technical specifications are in addition to and separate from the acceptance testing requirements. Acceptance testing requirements are the responsibility of the UNHCR Technical Unit.

Description of Program

General description

The Contractor shall establish a Quality Control Program to perform inspection and testing of all items of work required by the technical specifications, including those performed by subcontractors. This Quality Control Program shall ensure conformance to applicable specifications and plans with respect to materials, workmanship, construction, finish, and functional performance. The Quality Control Program shall be effective for control of all construction work performed under this Contract and shall specifically include surveillance and tests required by the technical specifications, in addition to other requirements of this section and any other activities deemed necessary by the Contractor to establish an effective level of quality control.

Quality Control Program

The Contractor shall describe the Quality Control Program in a written document that shall be reviewed by the UNHCR Technical Unit prior to the start of any production, construction, or off-site fabrication.

The UNHCR Technical Unit will choose an adequate period for review. A minimum of 5 days before the Pre-Construction Meeting or the start of work is recommended.

Submittal of the written Quality Control Program prior to the Pre-Construction Meeting will allow the UNHCR Technical Unit to review the contents and make suggestions at the preconstruction meeting. Submittal of the written Quality Control Program prior to the start of work will allow for detailed discussion of the requirements at the preconstruction meeting. This will give the Contractor a better understanding of the requirements before developing the Quality Control Program.

When selecting the required days for the contractor to submit the Quality Control program, adequate time should be allowed for the Quality Control Program to be a supplement to the Owner's Construction Management Plan.

The Quality Control Program shall be organized to address, as a minimum, the following items:

- a. Quality control organization;
- b. Project progress schedule;
- c. Submittals schedule;
- d. Inspection requirements;
- e. Quality control testing plan;
- f. Documentation of quality control activities; and
- g. Requirements for corrective action when quality control and/or acceptance criteria are not met.

The Contractor is encouraged to add any additional elements to the Quality Control Program that he/she deems necessary to adequately control all production and/or construction processes required by this contract.

Quality control organization

The Contractor Quality Control Program shall be implemented by the establishment of a separate quality control organization. An organizational chart shall be developed to show all quality control personnel and how these personnel integrate with other management/production and construction functions and personnel.

The organizational chart shall identify all quality control staff by name and function and shall indicate the total staff required to implement all elements of the Quality Control Program, including inspection and testing for each item of work. If necessary, different technicians can be utilized for specific inspection and testing functions for different items of work. The organizational chart shall indicate which personnel are Contractor employees and which are provided by an outside organization.

The quality control organization shall consist of the following minimum personnel:

- a. **Program Administrator:** The Program Administrator shall be a full-time employee of the Contractor, or a consultant engaged by the Contractor. The Program Administrator shall have a minimum of 5 years of experience in building construction and shall have had prior quality control experience on a project of comparable size and scope as the contract. Additional qualifications for the Program Administrator shall include at least 1 of the following requirements:

- (1) Professional engineer with 1 year of building construction acceptable to the Engineer.
- (2) Engineer-in-training with 2 years of building construction experience acceptable to the Engineer.
- (3) An individual with 3 years of building construction experience acceptable to the Engineer, with a Bachelor of Science Degree in Civil Engineering, Civil Engineering Technology or Construction.
- (4) Certified Construction materials technician

The Program Administrator shall have full authority to institute any and all actions necessary for the successful implementation of the Quality Control Program to ensure compliance with the contract plans and technical specifications. The Program Administrator shall report directly to a responsible officer of the construction firm.

The UNHCR Technical Unit may require a full time, on-site Program Administrator, should the project be of sufficient scope and size.

- b. **Quality Control Technicians.** A sufficient number of quality control technician's necessary to adequately implement the Quality Control Program shall be provided. These personnel shall be either engineers, engineering technicians, or experienced craftsman with qualifications in the appropriate field higher construction materials technician and shall have a minimum of 2 years of experience in their area of expertise.

The quality control technicians shall report directly to the Program Administrator and shall perform the following functions:

- (1) Inspection of all materials, construction, plant, and equipment for conformance to the technical specifications
- (2) Performance of all quality control tests as required

- b. **Staffing Levels.** The Contractor shall provide sufficient qualified quality control personnel to monitor each work activity at all times. Where material is being produced in a plant for incorporation into the work, separate plant and field technicians shall be provided at each plant and field placement location. The scheduling and coordinating of all inspection and testing must match the type and pace of work activity. The Quality Control Program shall state where different technicians will be required for different work elements.

Project progress schedule

The Contractor shall submit a coordinated construction schedule for all work activities. The schedule shall be prepared as a network diagram in Critical Path Method (CPM), PERT, or another format, or as

otherwise specified in the contract. As a minimum, it shall provide information on the sequence of work activities, milestone dates, and activity duration. Ms Project and soft copy has to be submitted. The Contractor shall maintain the work schedule and provide an update and analysis of the progress schedule on a twice monthly basis, or as otherwise specified in the contract. Submission of the work schedule shall not relieve the Contractor of overall responsibility for scheduling, sequencing, and coordinating all work to comply with the requirements of the contract.

Inspection requirements

Quality control inspection functions shall be organized to provide inspections for all definable features of work, as detailed below. All inspections shall be documented by the Contractor.

Inspections shall be performed daily to ensure continuing compliance with contract requirements until completion of the particular feature of work. These shall include the following minimum requirements:

- a. During plant operation for material production, quality control test results and periodic inspections shall be utilized to ensure the quality of aggregates and other mix components, and to adjust and control mix proportioning to meet the approved mix design and other requirements of the technical specifications. All equipment utilized in proportioning and mixing shall be inspected to ensure its proper operating condition. The Quality Control Program shall detail how this and other quality control functions will be accomplished and utilized.
- b. During field operations, quality control test results and periodic inspections shall be utilized to ensure the quality of all materials and workmanship. All equipment utilized in placing, finishing, and compacting shall be inspected to ensure its proper operating condition and to ensure that all such operations are in conformance to the technical specifications and are within the plan dimensions, lines, grades, and tolerances specified. The Program shall document how this and other quality control functions will be accomplished and utilized.

Documentation

The Contractor shall maintain current quality control records of all inspections and tests performed. These records shall include factual evidence that the required inspections or tests have been performed, including type and number of inspections or tests involved; results of inspections or tests; nature of defects, deviations, causes for rejection, etc.; proposed remedial action; and corrective actions taken.

These records must cover both conforming and defective or deficient features and must include a statement that all supplies and materials incorporated in the work are in full compliance with the terms of the contract. Legible copies of these records shall be furnished to the UNHCR Technical Unit. The records shall cover all work placed subsequent to the previously furnished records and shall be verified and signed by the Contractor's Program Administrator.

Corrective action requirements

The Quality Control Program shall indicate the appropriate action to be taken when a process is deemed, or believed, to be out of control (out of tolerance) and detail what action will be taken to bring the process into control. The requirements for corrective action shall include both general requirements for operation of the Quality Control Program as a whole, and for individual items of work contained in the technical specifications.

The Quality Control Program shall detail how the results of quality control inspections and tests will be used for determining the need for corrective action and shall contain clear sets of rules to gauge when a process is out of control and the type of correction to be taken to regain process control. When applicable or required by the technical specifications, the Contractor shall establish and utilize statistical quality control charts for individual quality control tests. The requirements for corrective action shall be linked to the control charts.

Surveillance by the UNHCR Technical Unit

The UNHCR Technical Unit reserves the right to inspect at any time All items of material and equipment at the point of production, manufacture or shipment to determine if the Contractor, producer, manufacturer or shipper maintains an adequate quality control system in conformance with the requirements detailed herein and the applicable technical specifications and plans. In addition, all items of materials, equipment and work in place shall be subject to surveillance by the UNHCR Technical Unit at the site for the same purpose.

Surveillance by the UNHCR technical Unit does not relieve the Contractor of performing quality control inspections of either on-site or off-site Contractor's or subcontractor's work.

Noncompliance

The UNHCR Technical unit will notify the Contractor of any noncompliance with any of the foregoing requirements. The Contractor shall, after receipt of such notice, immediately take corrective action. Any notice, when delivered by the UNHCR Technical Unit or his/her authorized representative to the Contractor or his/her authorized representative at the site of the work, shall be considered sufficient notice.

In cases where quality control activities do not comply with either the Contractor Quality Control Program or the contract provisions, or where the Contractor fails to properly operate and maintain an effective Quality Control Program, as determined by the UNHCR Technical Unit, the UNHCR Technical unit may:

- Order the Contractor to replace ineffective or unqualified quality control personnel or subcontractors.
- Order the Contractor to stop operations until appropriate corrective actions are taken.

Health and Safety

General

Responsibility for safety

The contractor shall be responsible for the safety of all operations in connection with the Contract and shall take all necessary actions and precautions to ensure the safety of all persons who may be in, on or adjacent to the Site.

Compliance with UNHCR Workplace Safety and Health Policy & Procedures

The Contractor shall comply with the compliance with the UNHCR Workplace Safety and Health Policy & Procedures for the purposes of this clause including all sub clauses under it and any amendment or re-enactment thereto and including but not limited to:

Any other rules and regulations, Standards and Codes of Practices related and relevant to the promotion of safe practices and conduct at the worksite.

It shall be the duty of the Contractor to comply with all such requirements of the Workplace Safety and Health Policy & Procedures, as affect him or any person or persons employed by him, and as related to any work, act or operation performed or about to be performed by him. The Contractor shall not permit any person to do anything not in accordance with the generally accepted principles of safe and sound practices.

The Contractor shall ensure a safe environment on the site at all times. All safety provisions shall be properly maintained and shall not be removed. The Contractor shall ensure that necessary and sufficient precautions are taken by his workmen when safety provisions are used. The Contractor shall not allow any of the safety provisions to be used unless he has satisfied himself that the provisions are safe.

Site safety program

The Contractor shall not begin any construction or production of materials to be incorporated into the completed work until the Contractor's Health and Safety Plan has been reviewed by the UNHCR Technical Unit. The relevant safety equipment and safe method of work employed at each stage of construction shall be described in detail. Special risks involving specialized equipment shall also be highlighted. The programme shall also include company safety policy, risk assessment, safety rules and regulations, small group activities, safety promotion programme (safety slogans, safety campaign, slide shows etc), safety training, emergency procedures and other such activities. The safety programme must be displayed outside the site office. The Contractor shall display safety posters at the site office, site canteen, exit/entry points of buildings and passenger cum material hoist area.

Monthly safety review

The Contractor shall carry out monthly safety review of the measures contained within the Safety Programme to demonstrate that the required level of safety is being achieved and maintained and make a full report to UNHCR Technical Unit on each such review. The UNHCR Technical Unit will review the Safety Programme from time to time and will advise the Contractor of any matter with which he is not satisfied, and the Contractor shall take such steps as are necessary to satisfy UNHCR. The UNHCR Technical unit will carry out such safety studies or audits, as considered necessary. The Contractor shall make available, specialist personnel as the UNHCR may consider necessary for the performance of such safety studies or audits.

Risk Management

The contractor shall conduct a risk assessment in relation to the safety and health risks posed to any person who may be affected by his undertaking prior to the commencement of work in accordance to UNHCR Health and Safety Policy & Procedures.

The contractor shall take all reasonably practicable steps to eliminate any foreseeable risk to any person who may be affected by his undertaking.

The contractor shall maintain a record of risk assessments conducted, including any control measures taken or to be taken and any safe work procedures.

The contractor shall ensure that his employees are informed of the nature of the risk involved, the measures implemented to control the risk and applicable safe work procedures. Whenever the assessment of a risk is revised, or where control measures or safe work procedures are changed, employer shall inform employees of such changes.

Site safety measures

Physical measures

The contractor must develop procedures in a fall protection plan for the construction site if his worker at the work site may fall 3 metres or more and the worker is not protected by guardrails.

The contractor must have a fall protection system in place and available at the construction site before work with a risk of falling begins.

The contractor must have the following devices and system in place prior to start of the work:

- fall arresting devices such as rope grabs, guard rails etc
- safety belts, body harness, lanyards consisting of carabiners, D-rings, O-Rings, ovals rings, self-locking connectors and snap hooks

Metal access scaffold and working platforms

The Contractor shall provide, erect and maintain metal access scaffold for any work required on building blocks of 2 storey and above or 3.0 m in height and above.

The scaffold shall be erected ahead of the structural work from the second storey and supported by cantilevered platforms erected according to the reasonable safety standards. The cantilevered platforms shall project about 1.1m from the edge of the building or any other distance. The scaffold shall be erected within 300mm from the building edge. Where the structure does not allow the scaffold to be erected from the second storey or where the building is less than 12.0m in height, the Contractor may erect the scaffold from the first storey subject to review by UNHCR Technical Unit.

The Contractor and his Engineer shall ensure that the building structure can resist the load imposed by the scaffold. The scaffold shall be designed to carry metal working platforms and two working levels in use concurrently. The maximum average loading per working level per bay is 220 kg per m². Signboards showing the maximum loading allowed on the scaffold may be displayed on the scaffold.

The Contractor shall provide, erect and maintain continuous metal work platforms or other types of work platforms at every alternate lift starting from the second lift of the scaffold, the immediate level below the top most level and the roof level of the building block under construction.

Where the height between the work platform at the roof level and the platform directly below is two lifts or less, the latter work platform may not be necessary. No omission from the Contract Sum shall be made in the event that such a work platform is not necessary.

The material used for the metal work platform shall be steel. Work platforms shall be adequately secured to scaffolding frames at the required levels. The connections between work platform and scaffolding frame, and between the work platforms shall be subject to review by UNHCR Technical Unit.

For any portion of the work platform where the use of metal is not suitable, the Contractor may use timber platform. The platform shall be completed with at least 90 mm high coloured toe boards and metal guardrails at least 1.0 m above the work platform.

The work platform shall be at least 500mm in width. The platform shall be used for:

- (i) Erecting and dismantling of formwork of structural elements;
- (ii) Transferring of formwork or other materials from one working level to another; and
- (iii) External finishing works.

The Contractor shall provide, erect and maintain an overlying screening net to cover the entire external face of the scaffold. The installation of the net shall follow the erection of the scaffold closely. A 90mm high coloured toe board shall be provided at the base of the net. After installation, there shall

be no opening between separate sets of the net and any torn net shall be replaced or repaired immediately. The scaffold shall be effectively tied to the building structure by means of tie-backs. All tie-backs shall be painted with bright colour for easy identification.

For buildings, next to areas less than 30m away from the Site boundary, the Contractor shall provide special mid-height platform supporting metal access scaffold at the building elevation directly facing public areas, walkways, children playgrounds, schools and other locations with public traffic.

The special mid-height work platform shall be installed from the floor level at the mid height of the building and shall project 6m from the edge of the floor. They shall be supported at the floor level below by diagonal members. Tension tie backs to upper floors shall not be used.

Around the edges of the 6m platform, guardrails and toe boards shall be provided. Guardrail shall have sufficient strength and rigidity to withstand, without permanent deformation or failure, a 50 kg loads applied in any direction at right angles to the guardrail.

The work platform and its supports shall be designed by an Engineer to a uniformly distributed live load of 1.5 kg per m² and the loading from the scaffold. Supports for platform shall be spaced at not more than 1.8m centre to centre.

Personal protective equipment

The Contractor shall provide and maintain suitable personal protective equipment for all workmen employed on the Site.

- The Personal Protective Equipment consists of the following:
- Hearing protection equipment such as ear defenders, ear plugs etc. (where required)
- Eye protection such as safety eye wear, welding goggles and shields etc.
- Foot protection such as safety shoes/boots etc.
- Head protection such as hard hats
- Limb and body protection such as gloves, reflective vests etc.
- Respirators, as necessary and adequate

The Contractor shall ensure that such personal protective equipment comply with the requirements of UNHCR.

The Contractor shall also ensure that all equipment is properly used by his workmen during the course of their work. The Contractor shall record the issuance of all equipment to his workmen in the prescribed forms and such forms shall be kept in the site office and made available for inspection at all times.

Overhead shelters

The Contractor shall provide, erect and maintain overhead shelters at every point of entry/exit of buildings two or more storey in height. The overhead shelters shall be constructed immediately below the second storey. The overhead shelters shall project at least 3.0m from the building edge and shall be at least 1.5m wide. The overhead shelters shall be made of curved metal roofing with a diameter of at least 1.5m or pitched metal roofing with a slope greater than one in two, with timber boarding below supported by steel pipes resting on rigid bases.

The access to, along and egress from the entry/exit points shall be kept free from obstructions and accumulation of oil, grease, water and other substances that may cause slipping and tripping.

Overhead shelters shall also be provided for person(s) exposed to falling objects.

Peripheral Overhead Shelters

The Contractor shall provide peripheral overhead shelters for buildings of 15.0m or more in height. It shall be erected in place when the construction reaches the third storey slab. The overhead shelter shall be at least 2.0m wide, and inclined so that the outer edge is at least 150mm higher than the inner edge. The overhead shelter shall be sufficiently strong to support a weight of at least 75 kg point load.

Barricades to Lift Openings, Voids, Open Sides of Buildings and Excavations

The Contractor shall barricade all lift openings, internal voids, open sides of buildings and excavations where a person is liable to fall. The barricade shall be at least 1.1m high and shall have sufficient strength and rigidity to withstand a lateral point load of 50 kg.

Suspended Scaffolds

In case of any need of suspended scaffolding, a suspended scaffold system shall only be used for touching up, repair and redecoration and minor work. Where suspended scaffold system is to be used, the Contractor shall notify UNHCR Technical Unit prior to its installation and usage. The safe working load will be prominently displayed. The Contractor shall ensure that there are weekly checks and additional check after inclement weather by his supervisor and monthly check by an Engineer (Civil). Where the use of access scaffolding is not stipulated, suspended scaffold may be used for finishing works. Independent lifelines shall be provided for suspended scaffold riggers and users to anchor their safety harness attached with shock absorbing device.

Ladders

In case of any need of ladders, the Contractor must ensure that ladders are in an acceptable sound condition and submit a written inspection report to UNHCR Technical Unit.

If the ladder is made of a material other than steel, the contractor must ensure that the ladder is in sound condition.

If the ladder is constructed of lumber/timber, the contractor must ensure that the timber is free of loose knots or knot holes, must not have a split and must be strong and sturdy.

The contractor's worker must ensure that:

- the ladder is secured against movement and placed on a base that is stable;
- the base of an inclined ladder is no further from the base of the wall or structure than 1.4 of the height to where the ladder contacts the wall or structure.

Mobile cranes

In case of any need of mobile crane, no person shall install, repair, alter or dismantle a mobile crane unless he is an approved mechanic. The contractor/mechanic shall ensure, so far as is reasonably practicable, that the mobile crane is erected, installed or modified in such a manner that it is safe, and without risk to health, when properly used.

The Contractor shall ensure that the crane access is properly constructed and weekly check by supervisor is carried out. The boom of the mobile crane with hoisted load shall not be allowed to swing outside the contract boundary without the review by UNHCR Technical Unit. All hoisting areas must be effectively barricaded.

The Contractor shall ensure there is installation of barriers to warn the crane operator of depressions, excavated areas and other obstructions.

The Contractor shall station a lifting supervisor on the Site to oversee and guide the crane operator during positioning, hoisting and slewing. The Contractor shall ensure daily checks are carried out by the crane operator. The cranes must have overhaul checks before being used on the Site.

Temporary Chute for The Removal of Construction Debris

The Contractor shall provide adequate number of temporary chutes to dispose construction debris from the upper story of all building blocks 2 story and above. It shall be erected to follow the

structural work. A large bin at the lower end of each chute shall be provided and emptied regularly. "DANGER - KEEP OUT" in the official languages shall be posted at the bin area.

Warning Signs and Lights

The Contractor shall display warning signs of sizes 900 mm x 600 mm at strategic points around the periphery of the Site where trespassing is likely to occur. Such signs shall have the words "DANGER - KEEP OUT" in the two languages (Arabic & English) painted in red on a white background in gloss finishing paint. Warning lights shall be placed at similar positions at night to serve as warnings.

Housekeeping

The Contractor shall maintain and ensure a safe working environment by keeping the Site neat and tidy, and free from hazards and debris. Materials shall be stacked up safely. All work areas and access thereto shall be kept free from hazards and debris.

Housekeeping shall be carried out in such a manner and at such times so as not to cause any inconvenience to either the adjoining occupiers or the public. Debris shall be wetted to minimize the risk of dust. Containers for debris and rubbish are to be provided at the designated places.

Temporary Staircases

In case of any need of temporary staircases, the Contractor shall provide and maintain a minimum 0.8m wide temporary metal staircase from one working floor to another. The staircase shall be placed against the adjacent staircase wall or formwork of the staircase walls that are under construction. The outer sides of the staircases shall be provided with metal handrails 1.1m above the outer staircase strings. The bottom of the staircase shall be covered fully with metal plate.

Safety Information Signboard and Assembly Stage

The Contractor shall erect and maintain a Safety Information Signboard and Assembly Stage. The signboard shall be 6.0m x 3.0m, made of timber plywood and fixed at a steel frame. The signboard shall consist of safety posters, safety theme and pictures, safety news, photos of good safety measures, one 600mm x 1500mm mirror. The safety posters, news and photos shall be protected from weather.

The arrangement and size of display of all items referred herein shall be submitted to the UNHCR Technical Unit. The stage shall be constructed in front of the signboard and made of concrete. The stage shall consist of a raised platform of 4.5m x 1.0m with at least one step.

The location of the signboard and stage shall be review by UNHCR Technical Unit. As and when instructed by UNHCR, the Contractor shall remove or relocate and reconstruct the signboard and stage and reinstate all the affected ground to the satisfaction of UNHCR, all at the cost and expense of the Contractor. On Substantial Completion of the Works, the signboard and stage shall be cleared away upon the review of UNHCR Technical Unit.

Gas Cylinders and Related Equipment

The Contractor shall use gas cylinders, each fitted with a low-pressure gauge, a high-pressure gauge, a reducing valve with pressure regulator, and a safety relief device. The gas cylinders shall not be kept in the same room where welding, cutting or heating is being carried out or placed within five metres of any source of heat. The gas cylinders must always be kept upright in a wheeled-trolley. When lifted by crane, hoist or derrick, cylinders must be placed in cradles or skip box design. Protective valve caps shall also be in place.

The hose connecting a gas cylinder to an apparatus for cutting, welding, heating or other related works shall be of good construction and sound material, free from defect, properly maintained, and not entangled or kinked. Valves and fittings shall be tested for leak with “soap water” every day before use.

Safety Reflective Apparel (Traffic Control)

A worker designated to control traffic shall wear approved type of reflective apparel during all hours of the day when so engaged.

Health measures

Noise management

The contractor shall as far as practicable, ensure that all processes, machines and equipment used, do not cause workers to be exposed to excessive noise, i.e. above an equivalent sound level of 85 dBA for 8-hour workday. This can be done by implementing one or more of the following measures:

- Engineering noise control, e.g., modifying noisy processes, machines and equipment, relocating noisy processes or isolating them within enclosures, erecting sound barriers, reducing kinetic or potential energy and regularly maintaining machines and equipment;
- Administrative noise control, e.g., rotating noisy jobs among workers so that they are not exposed to noise above the permissible exposure limit;
- Using quiet machines and equipment when such machines and equipment are available in the market. Examples are generators, compressors and concrete breakers. The contractor shall provide hearing protectors for workers who are exposed to excessive noise and ensure that they are worn at all times. Warning signs to remind workers that hearing protectors must be worn shall be put up at areas with excessive noise.
- Contract workers should be trained and educated on the hazards of noise, noise control and the prevention.

First aid

All workplaces as specified within the class or description shall establish and implement a first-aid programme to provide emergency treatment to victims of accidents, chemical poisoning or excessive exposure to toxic substances.

The programme shall include: -

- First-aid facilities;
- First-aid boxes;
- First-aid room, where there are 500 or more workers at site;
- First-aid treatment procedures;
- First aid for exposure to toxic or corrosive substances
- Standard procedures;
- Maintenance of first-aid facilities.

All first-aid provisions shall comply with the UNHCR Health & Safety (First-Aid) Regulations

Electrical Works

Where work to be carried out involves electricity/power, installing temporary wiring, usage of power tools and equipment, no worker shall connect, maintain or modify electrical tools, equipment or installation unless the worker is a qualified electrician.

The contractor shall take every reasonable precaution to prevent hazards to workers from energized electrical equipment, installations and conductors.

No person, other than a person authorized to do so by the contractor of the project, shall enter or be permitted to enter a room or other enclosure containing exposed energized electrical parts. The entrance to a room or other enclosure containing exposed energized electrical parts shall be marked by conspicuous warning signs stating that entry by unauthorized persons is prohibited.

All electrical equipment, installations, conductors and insulating materials shall be suitable for their intended use and shall be installed, maintained, modified and operated so as not to pose a hazard to a worker.

Contractor shall use mats, shields or other protective devices or equipment, including personal protective equipment, adequate to protect the worker from electrical shock and burns.

Work in Confined Space

Where work is to be carried out in any confined space as defined in UNHCR Technical Unit, code of practice for entry into and safe working in confined spaces shall be followed.

Excavations and Tunnels

No person shall enter or be permitted to enter an excavation that does not comply with this Part.

Work shall not be performed in a trench unless another worker is working above ground in close proximity to the trench or to the means of access to it.

The type of soil in which an excavation is made shall be determined by visual and physical examination of the soil,

- at the walls of the excavation; and
- within a horizontal distance from each wall equal to the depth of the excavation measured away from the excavation.

Before an excavation is begun,

- gas, electrical and other services in and near the area to be excavated shall be accurately located and marked; and
- if a service may pose a hazard, the service shall be shut off and disconnected.
- An excavation in which a worker may work shall have a clear work space of at least 450 mm between the wall of the excavation and any formwork or masonry or similar wall.

The walls of an excavation shall be stripped of loose rock or other material that may slide, roll or fall upon a worker.

A level area extending at least one metre from the upper edge of each wall of an excavation shall be kept clear of equipment, excavated soil, rock and construction material.

The stability of a wall of an excavation shall be maintained where it may be affected by stockpiling excavated soil or rock or construction materials.

No person shall operate a vehicle or other machine and no vehicle or other machine shall be located in such a way as to affect the stability of a wall of an excavation.

If a person could fall into an excavation that is more than 2.4 metres deep, a barrier at least 1.1 metres high shall be provided at the top of every wall of the excavation that is not sloped.

Where the excavation is a trench and the depth exceed six metres or the width exceeds 3.6 metres, a support system shall be consisting of either timber or of an engineered support system designed for the specific location and project shall be installed.

Control of Traffic

If vehicle traffic at the construction site is dangerous to workers, pedestrians, the contractor and his workers must ensure that the traffic movement is controlled to protect against accident related injuries and fatalities.

The contractor must designate a worker to control traffic on the construction site, the contractor must ensure that the designated traffic controller wears a reflective vest, safety footwear and hard hat.

The passage of vehicles across a footpath shall be supervised to remove danger to the public.

The contractor and his workers must be vigilant at all times and must ensure that pedestrians (staffs and visitors) DO NOT cross the safety barriers and enter the construction site.

Others

The Contractor shall provide and maintain guards, fences or barriers around the construction site, excavations, lift pits or other similar potential places of danger to prevent accidents. The guards, fences and barriers shall be of sound material, good construction and possess adequate strength.

Non-compliance with contract safety specifications

In the event of contravention or non-compliance with the safety specifications, UNHCR shall suspend the progress of works or any part of them if necessary for the safety of the works or if he is of the opinion that the working environment or procedure is unsafe for the works to continue. In such event, the Contractor shall not be entitled to any claims for compensation or extension of time for completion.

Environmental impacts and recommended mitigation measures

General

Project works are to be assessed by UNHCR Technical Unit to identify any significant impacts on environmental or social characteristics of the project area. This notwithstanding, some impact can be expected to occur during the course of construction activities. These impacts can be appropriately managed or mitigate by the measures contained in the following environmental mitigation list.

Climate and air quality

Impacts to local air quality during construction can be anticipated due to fugitive dust generation in and around the construction area. Mitigation measures shall be implemented to avoid any significant impact.

Construction activities will also result in the generation of diesel exhaust from heavy equipment and generators. Following mitigation measures shall be implemented to avoid any significant impact:

Mitigation 1:

The generation of dust during construction shall be mitigated through avoidance strategies as follow:

- Subcontractor shall be required to spray water during windy conditions
- Truck carrying earth, sand and stone shall be covered to avoid spilling
- Open burning shall be prohibited on the construction site.

Mitigation 2

The generation of diesel exhaust emissions during construction shall be mitigated through avoidance strategies as follows:

- All equipment shall be in good operating condition.
- Machinery shall not be left idling unless necessary during winter operations.

Surface water

Construction activities can result in increased turbidity of runoff water due to soil erosion. Mitigation measures shall be implemented to avoid any significant impact.

Construction activities can also result in contamination of runoff due to leaking fuel or lubricants from construction equipment. Mitigation measures shall be implemented to avoid any significant impact.

Construction of the facilities will result in an increase in hardscaping, with a resulting incremental increase in surface water runoff. If minor paving is planned, then little runoff will leave the construction site and may not impact on surrounding drainages.

To avoid significant impacts following mitigations shall be implemented:

Mitigation 1

Impacts due to soil erosion shall be mitigated by careful grading of the construction site such that significant amounts of water is not allowed run off of the construction site into adjacent drainages. Where excavated soils are stored on site, adequate measures shall be implemented to control runoff, including covering exposed soils, construction of settling basins, or erection of physical barriers.

Mitigation 2

Machinery and equipment shall be maintained in good working condition and shall be regularly inspected for leaks. Any maintenance of equipment or machinery onsite could only occur over non-permeable areas with adequate containment measures to capture spills.

Fuel storage shall be provided with adequate containment measures to capture spills.

Groundwater

Construction activities can result in contamination of runoff due to leaking fuel or lubricants from construction equipment.

Mitigation 2 will also prevent groundwater contamination.

Construction of the facilities will result in an increase in hardscaping resulting in an incremental decrease in groundwater percolation. If minor paving is planned, it may not decrease and will not impact on groundwater supplies. In most cases Mitigation 1 will prevent groundwater contamination.

Terrestrial ecology

If the project site is urban site and is with no natural habitats or significant natural flora or fauna, then no impacts are anticipated and no mitigation measures will be required. Otherwise the subcontractor shall contact UNHCR for mitigation measures requirement policy and guidance prior to commencing site works.

Socioeconomics

Construction of projects, depending to the type of the project, will result in a significant number of construction jobs. Employment will result in multiplier effects by generating commerce with benefits provided throughout the local economy.

If the program includes capacity building component, which will promote on-the-job skills training in construction methods, quality control, and/or construction safety, the skill transfer will result in improved capacity of local contractors to successful undertake future construction projects.

Improved and expanded educational facilities will result in improved learning opportunities and provide long-term benefits to the local economy.

In such cases, the following mitigations shall be implemented:

Mitigation 1

The program shall include capacity building, including classroom and on-the-job training, in construction methods, quality control, and construction safety.

Mitigation 2

The use of local subcontractors shall be encouraged wherever possible.

Traffic and transportation

Construction activities will result in additional truck traffic and potential traffic congestion on local streets, depending on the site location. The truck traffic will also result in potential threats to pedestrian safety. Following mitigation measures shall be implemented to avoid any significant impact if the project site is in urban:

Note: Operational impacts may need to be assessed should construction activities alter the current usage of the sites or traffic flow patterns.

Mitigation 1

Delivery of materials and equipment to the site shall be scheduled during periods of light traffic (e.g. early morning or late afternoon).

Mitigation 2

Where necessary, pedestrian access-way improvements shall be provided prior to commencing construction activities. These improvements could include sidewalks, fencing, or alternate routes.

Mitigation 3

The construction contractor shall provide flag men and other traffic control measures to avoid conflicts between construction traffic and other vehicles and /or pedestrians.

Visual quality

Construction activities may result in a short-term impact to the visual quality of buildings. In particular, buildings in progress are generally stark in appearance. Additionally, construction material and wastes may result in a cluttered site. Following mitigation measures shall be implemented to avoid any significant impact on this issue:

Mitigation 1

The subcontractor shall be required to maintain a site free from rubbish. The contractor shall be required to conduct regular housekeeping to include removal of rubbish, construction waste, and proper storage of construction material.

Recreation

As per architectural principles, new buildings are usually sited to minimize the impact on available recreational fields. Although no mitigation is practically required, sufficient space shall be maintained for the existing recreational fields.

Cultural

Depending to the location of the project, if buried cultural or archaeological resources may be uncovered during construction activities, following mitigation measures shall be implemented to avoid any significant impact:

Mitigation 1

If potential cultural or archaeological resources are unearthed during construction, activities in that area shall immediately cease. The appropriate government office shall be contacted until such time as the government office provides authorization.

Noise

Construction activities will result in noise impacts resulting from the use of heavy equipment and machinery. Noise levels will be typical for construction sites and no significantly loud equipment should be avoided if possible (i.e., pile drivers, crushers, etc.). Following mitigation measures shall be implemented to avoid significant impact:

Mitigation 1

The contractor shall as far as practicable, ensure that all processes, machines and equipment used implement one or more of the following measures:

- Engineering noise control, e.g., modifying noisy processes, machines and equipment, relocating noisy processes or isolating them within enclosures, erecting sound barriers, reducing kinetic or potential energy and regularly maintain machines and equipment.

- Using quiet machines and equipment when such machines and equipment are available in the market. Examples are generators, compressors and concrete breakers. The contractor shall provide hearing protectors for workers who are exposed to excessive noise and ensure that they are worn at all times. Warning signs to remind workers that hearing protectors must be worn shall be put at areas with excessive noise.

Mitigation 2

To the extent practicable, construction activities shall occur during normal working times. Where necessary to conduct operations in late evening or early morning, or even during week-end, these operations shall be short in duration and shall be coordinated in advance with the project team and nearby inhabitants.

Mitigation 3

A community outreach program shall be implemented to ensure that local residents are aware of the purpose of the construction activities and have the opportunity to report any impacts.

Solid, hazardous and special wastes

Construction activities, including demolition and excavation, will result in solid wastes requiring disposal. There could also be evidence of hazardous or special wastes on the project sites that may result in contamination through spillage or unearthing.

Construction activities may result in the generation of hazardous wastes, including oils and lubricants. Accidental release of these wastes may result in impacts. To avoid such impact following mitigation measures shall be considered:

Mitigation 1

Solid wastes shall be transported off the site and disposed of in a disposal site previously approved by the relevant authority and/or Ministry of Urban Development, or any other competent Ministry(ies).

Mitigation 2

In the event buried hazardous wastes are uncovered during excavation, all construction activities shall cease.

Geologic and seismic hazards

In areas considered as high seismic risk zones, infrastructure will be designed in accordance with approved seismic codes. Therefore, impacts related to geologic and seismic hazards are considered unlikely and no mitigation measure seems required.

Unexploded ordinance

Construction sites have mostly been surfacing survey and cleared of UXO in urban areas. However, heavy rains, frost heaves, or other factors in urban areas and at any case in rural areas can result in UXOs being uncovered. Disturbance or handling of UXOs can result in loss of life or limb.

To avoid significant impacts on this issue following mitigation measures shall be considered:

Mitigation 1

If a potential UXO is identified, the area shall be immediately vacated and secured. UNMACA or other qualified and authorized disposal organization shall be immediately notified and arrangements made to dispose of the potential UXO.

Mitigation 2

If excavation is required below the depth which has already been cleared, or if excavation is required outside the area that is not known as a clear zone, a certified demining organization shall be employed to survey and clear the area prior to any works.

Mitigation 3

UXO safety training shall be provided onsite to all workers. Training shall incorporate how to identify potential UXO and the appropriate response as described in Mitigation 1.

Demolition

General

Interpretation

Demolished materials classes

Salvaged for re-use: Demolished materials scheduled for re-use in the works.

Salvaged for disposal: Demolished materials scheduled for re-use elsewhere.

Demolished for re-use: Non-scheduled demolished materials proposed by contractor for re-use in the works.

Demolished for removal: Other demolished materials

Inspection

Notice

Give sufficient notice so that inspection may be made of the following:

Adjacent structures before commencement of demolition.

Propping of structures prior to demolition works.

Structure after stripping and removal of roof coverings and other external cladding.

Underground structures after demolition above them.

Products

Demolished Materials

Ownership: Ownership of demolished materials is described in the Demolished Materials Classes table

class	Ownership
Salvaged for reuse	Principal / Proprietor
Salvaged for disposal	Principal / Proprietor
Salvaged for re-use	Principal / Proprietor
Demolished for removal	Contractor

Reuse: If it is proposed to reuse demolished materials in the works, submit proposals.

Salvage: Recover without damage materials to be salvaged, for reuse in conformance with the Salvaged Materials for Reuse Schedule or for disposal in conformance with the Salvaged Materials for Disposal Schedule.

Removal: Remove from the site demolished materials which are the property of the contractor. Do not burn or bury on site.

Transit: Prevent spillage of demolishing materials in transit.

Execution

Support

Temporary Support

If temporary support is required, certification for its design and installation is required from a professional engineer engaged by the contractor.

Until permanent support is provided, provide temporary support for sections of existing buildings which are to be altered and which normally rely for support on work to be demolished.

Support excavations for demolition of underground structures. Provide supports to adjacent structures where necessary, sufficient to prevent damage resulting from the works.

Permanent Supports

If permanent supports for adjacent structures are necessary and are not described, give notice and obtain instructions.

Protection

Encroachment

Prevent the encroachment of demolished materials onto adjoining property, including public places.

Weather Protection

If walls or roofs are opened for alterations and additions or the surfaces of adjoining buildings are exposed, provide temporary covers to prevent water penetration. Provide covers to protect existing plant and equipment and materials intended for re-use.

Dust Protection

Provide dust-proof screens, bulkheads and covers to protect existing finishes and the immediate environment from dust and debris.

Security

If a wall or roof is opened for alterations and additions, provide security against unauthorised entry to the building.

Demolition

Explosives

Do not use explosives in the demolition process.

Hazardous materials

General

General: Hazardous materials that have already been identified are set out in the Identified Hazardous Materials Schedule.

Hazardous Materials

General: Give notice immediately hazardous materials or conditions are found, including the following:

- Asbestos or material containing asbestos.

- Flammable or explosive liquids or gases.
- Toxic, infective or contaminated materials.
- Radiation or radioactive materials.
- Noxious or explosive chemicals.
- Tanks or other containers which have been used for storage of explosive, toxic, infective or contaminated substances.

Completion

Notice of completion

Give at least 3 working days' notice of completion of demolition so that adjacent structures may be inspected following completion of demolition.

Make good any damage arising out of demolition work. Obtain written acceptance from the owner of each adjoining property of completeness and standard of making good.

Temporary Support

General: Clear away at completion of demolition.

Site preparation

Aims

Responsibilities

The aim of this work section is to clear the site and put in place adequate environmental controls to allow the commencement of earthworks and/or building works.

Submissions

Execution

Submit the methods and equipment proposed for the earthworks, including the following:

- Dewatering and groundwater control and disposal of surface water;
- Control of erosion and contamination of the site, surrounding areas and drainage systems;
- Dust control;
- Noise control.

Execution

Trees

Work near trees

Keep the area within the dripline free of construction material and debris. Do not place bulk materials and harmful materials under or near trees. Do not place spoil from excavations against tree trunks.

Prevent wind-blown materials such as cement from harming trees and plants.

Prevent damage to tree bark. Do not attach stays, guys and the like to trees. Protect, by fencing if necessary, all trees or native growth from any damage caused by construction operations.

If excavation is required near trees to be retained, give notice and obtain instructions. Open up excavations under tree canopies for as short a period as possible.

Use hand methods to locate, expose and cleanly remove the roots on the line of excavation. If it is necessary to excavate within the drip line, use hand methods such that root systems are preserved intact and undamaged.

Backfill to excavations around tree roots with backfill free from weed growth and harmful materials. Place the backfill layers, each of 300 mm maximum depth, compacted to a dry density similar to that of the original or surrounding soil. Do not backfill around tree trunks to a height greater than 300 mm above the original ground surface. Immediately after backfilling, thoroughly water the root zone surrounding the tree.

Water trees as necessary, including where roots are exposed at ambient temperature > 35°C.

Existing services

Maintain existing utilities that are to remain in service. Before excavating over or adjacent to existing utilities, notify UNHCR Technical Unit to ensure protective work will be coordinated and performed in accordance with requirements. If existing service lines, utilities and utility structures, which are to remain in service, are uncovered or encountered during these operations, safeguard and protect from damage. Before commencing earthworks, locate and mark existing underground services in the areas which will be affected by the earthwork operations including clearing, excavating and trenching.

Within limits of excavation, remove existing piping, subsoil drainage systems, conduit, manholes and relocated items, which are to be abandoned. Plug open ends of utilities to remain with concrete.

Re-route existing subsoil drains which obstruct work around new construction or incorporate them into new drainage systems.

Existing Facilities: Protect and maintain in satisfactory manner, existing pavements, curbs, gutters, structures, conduits, fences, walls and other facilities to remain above and below grade. Restore facilities damaged by construction operations.

Pumping and Draining: Excavate areas in such manner as to afford adequate drainage. Control grading in vicinity of excavated areas so ground surface will slope to prevent water running into excavated areas. Until work is completed, remove water from areas of construction that may interfere with proper performance of work or that may result in damage to the soil sub-grade and provide sumps, pumps, well points, electric power and attendance required for this purpose on a 24-hour basis if necessary. Protect construction from water during construction, including prevention of erosion of completed work during construction and until permanent drainage and erosion controls are operational. Repair adjoining properties, facilities and streets damaged due to improper protection.

Do not excavate by machine within 1 m of existing underground services.

Environmental protection

Dust Protection

Provide dust-proof screens, bulkheads and covers to protect existing finishes and the immediate environment from dust and debris.

Dewatering

Keep groundworks free of water. Provide and maintain slopes and drains on excavations and embankments to ensure free drainage. Place construction, including fill, masonry, concrete and

services, on ground from which free water has been removed. Prevent water flow over freshly laid work.

Site clearing

Extend

Clear only the following site areas:

- Areas to be occupied by works such as buildings, paving, excavation, regrading and landscaping.
- Other areas designated to be cleared.

Contractor's site areas: If not included within the areas specified above, clear generally only to the extent necessary for the performance of the works.

Clearing and grubbing

The work includes clearing and grubbing areas within the boundary limits shown on the plans or staked by the UNHCR Technical Unit. This work also includes protecting from harm all trees, bushes, shrubs or other objects selected to remain.

- "Clearing" means removing and disposing of all unwanted material from the surface such as trees brush, down timber or other natural materials.
- "Grubbing" means removing and disposing of all unwanted vegetative matter from the underground such as sod, stumps, roots, buried logs or other debris.
- "Debris" means all non-usable natural material produced by clearing and grubbing.
- Remove everything on or above the site surface, including rubbish, scrap, grass, vegetable matter and organic debris, scrub, trees, timber, stumps, boulders and rubble.

Remove tree stumps and roots over 75 mm diameter to a minimum depth of 500 mm below subgrade under buildings, embankments or paving, or 300 mm below finished surface in unpaved areas. Holes remaining after grubbing shall be backfilled with sand material to prevent ponding of water. The material shall be compacted to the relative density of the existing adjacent ground material.

Old works: Remove old works, including slabs, foundations, paving's, drains and manholes found on the surface unless identified on the drawings to remain intact.

Top soil

Topsoil is the upper portion of a soil, usually dark coloured and rich in organic material.

All topsoil shall be stripped over the area on which construction or grading takes place. This topsoil shall be carefully stockpiled to be reused for landscaping on completion of the building operations or otherwise disposed of as directed.

Disposal of materials

Remove cleared and grubbed material from the site.

Terms of Reference for the establishment of Routine Maintenance Frame Agreement for UNHCR offices in Jordan

Obligations of UNHCR

1. UNHCR will identify maintenance needs as per the FA and notify the Contractor accordingly
2. UNHCR will provide access for the Contractor and its workforce to BO Khalda in an organized manner and based on pre-approval
3. UNHCR will issue separate Work Orders to the Contractor specifying the scope of works for each item of maintenance work to be carried out in accordance with the FA.
4. UNHCR will supervise the maintenance works and acceptance/rejection of the completed works will solely depend on compliance with the specifications as detailed in the FA.
5. Upon satisfactory completion, UNHCR will pay the Contractor the amounts due based on the Work Orders and the BOQ.
6. The quantities in the BOQ are estimated and may not implemented in full, and/or may be exceeded for selected items by UNHCR. The basis of any work order is the unit price and the total ceiling of the contract.

Obligations of the Contractor

7. The Contractor will provide the materials, tools and workmanship for the proper execution of all maintenance works in accordance with the terms and conditions of the FA and in full compliance with the specifications as stipulated in the FA and directed by UNHCR Engineer
8. The Contractor's workforce must be skilled and specialized to address all the different maintenance needs such as; plumbing, electricity, painting, tiling, carpentry, civil, mechanical, A/C, etc... works. The contractor's workforce will be retained in the contractor's offices and need not be retained on standby in UNHCR offices BO Compound, unless instructed otherwise by UNHCR.
9. The contractor must have the the organizational and technical capacity to deal with the works as stipulated in the BOQ. The Contractor shall also provide details of the experience and qualifications of the key personnel proposed for the project.
10. The Contractor's unit rate should include material and workmanship costs and shall also include all direct and indirect costs (transportation, communication, admin, etc...)
11. The Contractor will need to seek permission from UNHCR to enter the offices for maintenance works.
12. The Contractor will report to UNHCR offices within the time specified by UNHCR to conduct the required maintenance works.
13. The Contractor will have to comply with urgent requests to attend to UNHCR offices, in case of emergencies/urgent needs on weekends, public holidays and night shifts. No additional cost will be paid to the Contractor in such cases*.
14. "Normal maintenance works", as identified by UNHCR Engineer, will be addressed by the contractor within maximum 48 hours of notification by UNHCR Engineer, whether the notification is verbal through the phone or written through e-mail, fax, etc...
15. Urgent (emergency) maintenance works, as identified by UNHCR Engineer, will be addressed by the contractor within maximum 2 hours of notification by UNHCR Engineer, whether the notification is verbal through the phone or written through e-mail, fax, etc...

16. The Contractor will only be paid based on the quantity of items satisfactorily executed and based on their corresponding unit rates as stipulated in the FA and BOQ.
 17. The contractor shall provide details of the manufacturer, working drawings and the technical specifications for each item of equipment included in the quotation. This shall include separate details for all components parts of each installation.
 18. All designs, installation works and equipment shall comply with local and international regulations and standards. The Contractor shall include for all necessary equipment, materials and work practices in order to comply with these standards and regulations, even where not precisely specified in this outline specification. The contractor shall be responsible for ensuring that waste materials, packaging, and any other items associated with these installations, do not get blown or otherwise distributed around the site. They shall also be careful not to create excessive dust or debris in any area. Any costs incurred in cleaning wastes or debris generated by the contractor shall be charged to the contractor.
 19. The contractor shall be responsible for repairing and/or replacing anything which has been damaged by the contractor or their sub-contractors within the site. They shall also be responsible for the cleaning of any debris, wastes or other items created during these works according to the Laws, norms and regulations of the Kingdom of Jordan. No additional cost for cleaning the site of the maintenance debris and wastes.
 20. UNHCR has the right to request the contractor to hire one or more resident maintenance foremen according to Annex-2 and item GEN-010 in the BOQ.
 21. If the situation requires, the contractor shall provide a temporary structure to be placed in UNHCR premises as agreed with UNHCR engineer to be utilized as a store for the spare parts, tools, etc.... UNHCR will provide this structure with electricity but will not reimburse the contractor for construction or installation of this structure.
 22. The contractor should provide the maintenance team with a uniform and safety tools.
 23. The contractor should perform constant supervision on the maintenance team, and assures that all safety precautions are taken into consideration. The contractor will be held responsible of any hazardous installation caused by implementation of the maintenance teams.
 24. The contractor is responsible for the safety of the maintenance teams, therefore, if any injury occurs to any member of the maintenance team during the maintenance works, UNHCR will not be responsible and will not compensate the contractor or any of the workers.
- *) UNHCR official working hours are from 8 am to 4 pm, Sunday to Thursday.

TOR of the maintenance foreman

UNHCR has the right to request the contractor to hire one or more resident maintenance foremen in UNHCR Khaldi BO to perform the below maintenance works. It is the responsibility of the maintenance company to fully equip the foremen with tools needed for the general maintenance, however, this maintenance shall not include any spare part, and the company will be paid for the maintenance foreman services through item GEN-010 in the BOQ and the number of days the foremen work in through a work order form.

If the problem needs spare parts to be fully fixed, then UNHCR can instruct the maintenance foreman to fix the problem under his capacity according to the below tasks, and the contractor will be only paid for the goods as per the prices in the BOQ through a work order form. If the problem requires a specialist, then the company will be asked to provide the goods and services, and will be paid as per the prices BOQ for the goods and services through a work order form.

The maintenance foremen should also have the skills to be able to respond -as a minimum- on a timely manner to the below areas of work (Civil works, Electrical works, Plumbing works, and A/C repairs):

A) Civil works (Includes but not limited to):

- 1- Repair and adjust aluminum windows.
- 2- Repair and adjust wooden steel doors and sliding gates.
- 3- Replacement of door handles, locks and cylinders.
- 4- Apply minor welding to different sections for doors, windows, hinges, grills, handrails, frames, trusses, beams, etc...
- 5- Installation of door closers.
- 6- Installation of exhaust fans.
- 7- Adjust the gypsum board tiles false ceiling.
- 8- Apply silicone or cement sealant wherever needed to stop leakage.
- 9- Carpentry works and repairs to furniture, including the removal and installation of partitions whether wood, gypsum board or sandwich panels.
- 10- Install and adjust curtains.
- 11- Welding.
- 12- Repair of sliding gates.
- 13- Dismantling and installation of doors.
- 14- Dismantling and reinstallation of the fabric shading.
- 15- Uninstallation or installation of American tents (5m*5m).
- 16- Uninstallation and installation of steel stairs and handrails.

B) Electrical works (Includes but not limited to):

- 1- Installation of gang switches.
- 2- Installation of sockets.
- 3- Replacing indoor and outdoor light bulbs, spotlight, flood lights and lighting fixtures.
- 4- Installation of joint boxes.
- 5- Inspect electrical short circuit replacing wires and circuit breakers as necessary.
- 6- Install motors for the sliding gates

C) Plumbing (Includes but not limited to):

- 1- Replace flushing system.
- 2- Replace water taps, water mixers, valves, chrome pipes and floating valves.
- 3- Replace plastic seat cover for W.C.
- 4- Replace broken water pipes with accessories (T, elbow, push, etc...).
- 5- Replace broken sewer pipes with accessories (T, elbow, push, etc...).
- 6- Cleaning and unblocking all kinds and size of sewer pipes, full traps and manholes.
- 7- Cleaning and unblocking of all kinds of wash basins, sinks, bidets, urinals etc.
- 8- Installation of electric water heater.
- 9- Installation of water pumps.
- 10- Replacing Negara fixtures.
- 11- Replacing plastic siphon drain and full traps.
- 12- Replacing plastic spray hoses.
- 13- Replacing and releasing air from water pumps.

- 14- Inspection and, cleaning and minor maintenance of the central heating system (boilers' room, pipes and releasing air from all radiators).
- 15- Regularly check the diesel tanks (diesel level, leakages, etc...)
- 16- Regularly check the water tanks and reservoir, and operate the water pumps as needed.
- 17- Start and stop the central heating system.

D) A/C (Includes but not limited to):

- 1- Cleaning filters.
- 2- Cleaning external units.
- 3- Un-block the A/c drains.
- 4- Settings of the A/Cs.
- 5- Check and report faulty A/Cs.

E) Any other minor maintenance request as instructed by UNHCR supervisor.

F) The maintenance foreman should take safety precautions into consideration as instructed by the supervisor.

E) Make sure that the site is cleaned after the implementation of the maintenance work.

G) Undertake daily maintenance inspection and report any maintenance need in the office.

F) Duty hours: 8am to 4pm, Sundays to Thursdays.

E) UNHCR reserve the right to request the contractor to replace the maintenance foreman if the performance of the appointed foreman was not satisfactory.