

SECTION 3 – ANNEX 3

SCOPE OF WORK AND TECHNICAL REQUIREMENTS

1. THE PROJECT

The proposed project is the rehabilitation of Air Conditioning System of GREEN ONE UNITED NATION HOUSE located at 304 Kim Ma, Hanoi, Vietnam.

2. PROJECT DESCRIPTION

2.1. OBJECTIVE

General objective of the proposed project is to improve and resolve the lingering indoor environmental quality issues in particular to overheating, noise and stuffiness.

3. SCOPE OF WORKS

3.1. GENERAL

The Contractor is required to demolish, supply, deliver, install, test, commission and set to work the systems complete with all necessary permits, ancillary and items, whether expressly indicated on the drawings or specification or not.

3.2. PERMITS AND AUTHORITY APPROVAL

The Contractor shall be responsible for securing all types of permits and statutory approvals deemed necessary for the contract implementation and occupancy.

It shall include construction permit, PCCC licenses (if deemed necessary) before, during and after the works.

3.3. DEMOLITION AND RESTORATION WORKS

The Contractor shall;

- Demolish existing ductworks, pipe works, conduits, cables and other accessories not necessary for the rehabilitation works;
- Cut necessary wall and floor openings for pipe/duct penetrations and embedments;
- Restore and make good openings/penetration to acceptable state.

3.4. DESIGN

- The Contractor shall prepare and submit shop drawings and calculation for approval by UNDP.
- The Contractor shall submit technical catalogue, data and calculation of the proposed equipment and materials.
- It shall be the Contractor's responsibility to calculate the resistance head for all fans and verify capacities.
- The Contractor shall ensure that the system operates in accordance to the design intent.

3.5. INSTALLATION OF AIR CONDITIONING EQUIPMENT

- Check and verify equipment capacities, resistances in accordance to the design and actual requirements;
- Coordinate with appointed supplier to receive delivery of VRV equipment bought by UNDP;
- Install VRV equipment;
- Manage VRV equipment commissioning with supplier.

3.6. SUPPLY AND INSTALLATION OF AIR CON SYSTEM

The Contractor shall supply, deliver and install the following:

- Equipment plinths, equipment foundation and supports;
- Supply air fans including electrical, control, acoustic box, hanger and supports, accessories;
- Refrigerant pipeworks including insulation, joints, trays/glands, hangers/supports and accessories necessary to complete the system;
- Ductworks, volume control dampers, fire dampers, insulation, hangers and supports and related accessories;
- Condensate drain pipeworks, insulation and accessories;
- Equipment electrical works including power supply, controls and accessories;
- And others necessary to complete and put the system in operation.

3.7. POWER SUPPLY AND CONTROLS

- The Contractor shall responsible for verifying location, position and sizing of power supply and Building Management System connections.
- It is therefore the Contractor's responsibility to ensure sufficiency of power supply associated with the air conditioning system.
- The contractor shall install necessary cables, conduits, modules, DDC (if any) and other accessories to connect the VRV system to the existing BMS system.
- Provision of manual override switch at Fire Services control room to switch off all fans of the new air conditioning system in the event of a fire alarm.

3.8. NOISE AND VIBRATION

The Contractor is responsible for ensuring noise and vibration criteria are met as defined in the technical specifications and elsewhere in the tender documents.

Noise and vibration control shall include but not limited to the following;

- Check and verify air distribution duct velocities applied;
- Internal duct insulation;
- Wall and floor penetration acoustic treatment;
- Plantrooms noise transmission thru gaps – seals or any other type of noise insulating materials;
- Check, verify and replace AHU and other equipment anti – vibration elements if necessary to meet the required noise level.

3.9. TESTING AND COMMISSIONING

The Contractor shall:

- Develop commissioning plan and procedure;
- Pre-commissioning test of the system;
- Performance and functional test of the system.

3.10. OPERATION AND MAINTENANCE

- The Contractor shall prepare and submit operations and maintenance manual including as-built documents.
- The Contractor shall include maintenance period of 6 months from hand-over date.
- The Defects and Liability Period shall be 52 weeks from Hand-over Date certified by UNDP

3.11. OTHERS

- All concrete equipment plinths and concrete piers in plant rooms keyed to the floor slab and graded where required.
- Making good and painting.
- All painting and identification of ductwork, pipework and equipment and the like.
- Necessary Fire Stopping, Contractor shall check and verify fire compartmentalization plan of GOUNH building.

4. COORDINATION AND REPORTS

The Contractor shall report, co-ordinate and furnishes all necessary information as required to the engineer so that works can be carried out without undue delay to the construction programme.

5. PROJECT SCHEDULE

Tenderers must submit detailed working schedule showing clearly all items of works required to finish the scope of works mentioned in the Contract including clear sequence of the works, date of completion, time for preparation of shop drawings and submission, etc...

5.1. PRICING METHOD

Unit price shall include but not limited to: direct costs of materials, labor, machinery, and other direct costs. Preliminaries shall be quoted in separate bill include all items indicated in the BOQ as well as all necessary works that the Tenderer deem necessary to complete the works.

If there is any unclear or missing detail in tender drawing, Tenderer can request for clarification or Tenderer with their experience and qualification will propose the equivalent detail that is possible to be executed and fulfill into offer quotation for these additional items. Draft detailed drawing can be enclosed in the Tender

5.2. ALTERNATIVES AND VALUE ENGINEERING

The Tender shall contain at least an offer conforming to Tender documents. However, the tenderer can submit in addition proposed an alternative offer with alternatives material, schedule, etc. or value engineering.

In that case, the alternative offer shall include all necessary information to understand and evaluate the proposal, such as drawings, specifications, unit price, construction method and any other relevant information.

6. LIST OF SUPPLIERS, SUBCONTRACTORS USED FOR THE CONTRACT

Tenderers must make a list of all subcontractors, suppliers of materials, equipments that they intend to use in the Contract using the form "List of subcontractors and suppliers". Tenderer is not allowed to intentionally add or remove items listed in this list without official Employer's or Project Manager's approval or Supervisor. Amount of works to give subcontractors shall not exceed 30% of contract value

7. LIST OF MATERIALS FORMING PART OF THE WORKS

The Tenderer shall clearly state the origin of material, equipment, as well as reference or name (if any) of the material, machinery, equipment that will form part of the Works, using the form "List of material". The Tenderer shall also provide supporting documents to confirm that those items meet the Tender requirements (such as CO, CQ, etc.)

The origin means the country or territory where the entire production materials, machinery, equipment or processes where the last substantial processing for materials and machinery and equipment in the case of countries or territories involved in the manufacturing process of materials, machinery and equipment there.

8. SITE ORGANIZATION/ORGANIZATON CHART

Tenderers must submit the project organization chart of Tenderers, including name and CV of personnel proposed for participating the project and manmonth schedule must show the working roles of personnel participating the project: full time or part time. CV of key personnel such as Project Manager, Construction Manager, Contractual Manager, Technical and Site Manager, Supervision Engineer, and Site Leader, Safety Manager and labour safety management system considered oblige parts of tender offer.

9. METHOD STATEMENT

Tenderers must submit specific statement method in tender offer for major items of the works.

- Statement method specific for each step
- Quantity of essential machine, equipment and personnel are used on site during construction.
- Plan of construction quality management and construction safety management
- Strategy of mobilizing local material equipment and imported material including establishing list of material equipment proposed to be imported for the project
- Any condition or assumption in the offer of Tenderers

9.1. **BESIDE THE CONSTRUCTION STATEMENT REQUIRED TO COMPLY WITH SPECIFIED IN THE TENDER DOCUMENTS, THE TENDERER CAN PROPOSE CONSTRUCTION METHODS FOR DIFFERENT ITEMS OF WORK IN ACCORDANCE WITH THEIR ABILITIES AND PROPERTIES OF THE PACKAGE BUT MUST MEET THE TECHNICAL REQUIREMENTS TO COMPLETE THE CONSTRUCTION.**

10. PROVISION OF MONITORING AND PROGRESS CONTROLS AND QUALITY ASSURANCE

The contractor has to register all the tool, manpower with GOUNH Common Service (CS) and security team.

UNDP engineer will supervise the works performed by the contractor at site. The next step will only be implemented if the previous step is accepted by UNDP engineer

The Contractor is required to regularly report to UNDP Engineer on the progress of the work

The contractor will liaise with the GOUNH Facility Manager in the course of performing the work.

11. DURATION OF THE WORK AND CONTRACT IMPLEMENTATION TIME

- Contractors need to send to GOUNH the list of their personels working in GOUNH for applying access cards.
- All contractor's personels will be security screened before coming to GOUNH
- All the works will be carried out after the normal working time of the building (after 6PM to 7:30am next day) and at the weekend or under the arrangement of UNCS team.
- The contractors are responsible for:
 - The health and safety of their personals
 - Keep the clean in their work places during and after completion of their works
- The contractors should follow:
 - The security Regulation of GOUNH
 - the environmental requirements of GOUNH (see GOUNH environmental policy and procedures)
 - the fire protection and firefighting regulations of GOUNH
- All installation works should not effect the normal working of UN staffs
- Contractors must be moved all waste from their works from GOUNH

12. DUTY STATION

- Preparation works: storage for machine, equipment, tool and process the support and any other preparation works will be carried at contractor's workplace.