CALL FOR CONSULTANCY/Resident Engineer

On-site monitoring and reporting of the rehabilitation and restoration works of the historical buildings by Hassan Fathy in New Gourna, Luxor

Type of contract: Contract for an individual consultant
Organizational Unit: Culture Unit, UNESCO Regional Bureau for Sciences in the Arab States
Place: Luxor, Egypt
Estimated duration: 11 months
Closing date: 4 June 2020

Background

Within the framework of the project “Safeguarding of Hassan Fathy's Architectural Legacy in New Gourna Site”, the rehabilitation/restoration works of the public buildings under the ownership of the Egyptian Ministry of Culture designed by Hassan Fathy in New Gourna will commence to start with the following priority buildings; Package 1: The Mosque, Package 3: The Theatre, Package 4: The Khan (Existing), Package 6: The Khan (Missing). The works will be conducted by the Contractor Company selected by UNESCO in Cairo as per the Invitation to Bid (402EGY4003 Rehabilitation Architecture Hassan Fathy 217/2019 ed1). The rehabilitation/restoration works will be carried out by UNESCO through the selected/contracted contractor under the overall supervision of UNESCO Cairo and with the direct supervision of the Lead Engineer hired by UNESCO Cairo as the technical advisor of UNESCO in Cairo.

Work Assignment:

Under the overall supervision of the Director of UNESCO Regional Bureau for Sciences in the Arab States and the Programme Specialist for Culture, and under the direct supervision of the Lead Engineer who reports to UNESCO, the consultant/Resident Engineer will provide resident/on-site services to supervise, monitor, document and report the progress in the implementation of the works undertaken in New Gourna by the Contractor as per the ITB 402EGY4003 Rehabilitation Architecture Hassan Fathy 217/2019 ed1 (see technical scope of the ITB in Annex I) and the contract between the Contractor and UNESCO.

In this regard, and under the overall supervision of UNESCO Cairo (Director and Culture Specialist) as well as the direct supervision and direction of the Lead Engineer, the consultant/resident Engineer shall:
i) supervise, monitor and ensure that the Contractor follows the guidelines for restoration and conservation of the project, keeping the original design, the authenticity and techniques of the historical buildings and following the UNESCO rules and regulations.

ii) prepare an initial plan for site control and provide resident/on-site supervision, monitoring and support to the implementation of the rehabilitation/restoration works by taking the following steps:

**Step I: Preparation, investigations and documentation phase to report to the Lead Engineer:**

A. Review and check all the primary architectural documentation, conditional survey and documentation of all the spaces wall by wall as well as all floorings and ceilings in addition to a full documentation for all architectural elements, features with all internal and external facades.

B. Review and check all restoration and conservation plans, intervention procedures and protocols recommended by the Contractor and review and determine the level of intervention for all spaces according to the current status of each space.

C. Review and check the submission of all the calculation sheets and shoring plans for the whole buildings which will be provided by the Contractor.

D. Review and check needed actions for removing the plaster if required and resurvey of the space according to the current situation and as per walls, ceiling and plaster condition.

E. Review, check and handle the approved contractor’s method of statements for all intervention activities, restoration and conservation.

F. Review, check and handle the approved contractor’s shop drawings for each space.

After the approval of the works under Step I by UNESCO Cairo and the Lead Engineer, the consultant Resident Engineer will undertake the following;

**Step II: Intervention phase to report to UNESCO Cairo and the Lead Engineer:**

A. Review, check and approve with the Lead Engineer all material supply, material installation and all intervention technique carried out by the Contractor.

B. Review, check and approve with the Lead Engineer all material tests, all samples and review any recommended material by the contractor in comparison with the original one.

C. Review, check and approve with the lead Engineer the condition survey for each space and review it with the original drawings.

D. Review, check and control the work procedure and conditions as well as all the recommended material and technique for restoration.

E. Review, check and approve with the Lead Engineer the shoring design if it is needed on site.

F. Review, check, follow up, document, and control the Contractor’s work progress on site.

G. Review, check, follow up, document, and control the Contractor’s time schedule and progress plan for site activities.

H. Review, check, inspect, and approve all materials, tools, equipment, and fittings and fixtures needed to pursue the work on site.

I. Review and check the Contractor’s payments claims based on the work accomplished and report the lead Engineer to take needed actions.
J. Submit weekly report to UNESCO Cairo and the Lead Engineer who shall report on the comprehensive progress of the restoration work being supervised, for the duration of the implementation of the restoration work. Co-write the monthly report with the Lead Engineer which will include mission briefings, technical reports and the final report upon completion of the contract.

K. In close coordination with UNECO Cairo and the Lead Engineer, supervise the coordination between the Contractor, the local authorities, community members, and local stakeholders, as it is part of the contractor’s mission.

iii) The consultant Resident Engineer shall be based on site in New Gourna / Luxor for approximately 11 months, with possible extension.

Deliverables and Timelines:

The Resident Engineer shall submit weekly report to UNESCO Cairo and the Lead Engineer who shall report on the comprehensive progress of the restoration work being supervised, for the duration of the implementation of the restoration work. The Resident Engineer shall co-write the Lead Engineer the monthly report which will include mission briefings, technical reports and the final report upon completion of the contract.

Qualifications:

- B.A degree in Engineering and member of the Egyptian Engineering Syndicate.
- Masters’ degree in a related field would be an asset.
- Minimum of 2 years’ experience in conversation and /or restoration of historical buildings.
- Excellent skills in preparing reports of projects in English.

Interested individuals are invited to submit their updated CVs and cover letter, indicating fees to cairo@unesco.org, with copy to s.moustafa@unesco.org and a.el-sheikh@unesco.org by 4 June 2020.
ANNEX I: SCOPE OF WORKS, TECHNICAL SPECIFICATIONS

Scope of Works

The proposed works to be contracted, focus on the urgent reconstruction and/or restoration works to prevent further deterioration of five unique buildings of the master pieces built by the Architecture legend Hassan Fathy and restore them to their original standing. These buildings were built in the New Gourna village in Luxor, in the mid of the twentieth century using traditional earthen architecture (mud bricks). This includes the provision of adequate basic services required to complete restoration work of those buildings to their original state, using the same architectural methodology, methods, and techniques of Hassan Fathy, and equip them with appropriate and adequate facilities (electricity, water facilities and public toilets) that can allow the proper functioning of the buildings reuse plan.

These five buildings are registered under the Egyptian Law No. 144/ 2006 for significant buildings of value, and the Law No. 119/ 2008 for the basis and standards of the National Organization for Urban Harmony for significant buildings and sites of heritage value, issued by the National Organization for Urban Harmony and declared by the Supreme Council of Urban Planning and Development.

The restoration phase of the turn-key project will be upheld in accordance with the precept and guidelines of the UNESCO 1972 Convention concerning the Protection of the World Cultural and Natural Heritage. Therefore, it is imperative, that contractors’ bid proposal demonstrate relevance and knowledge of these conservation and restoration precepts and codes in the method of statement.

The offer should be made for this turn-key/ lump sum reconstruction and restoration project tender for each of the 8 packages. This is not a re-measure binding contract. The project should be executed over the course of one calendar year. The eight packages differentiate between the existing structures and the missing ones. While the existing structures require restoration work on the areas that are structurally fragile and prone to collapse, the missing parts would require almost total reconstruction of the original architectural structure that Hassan Fathy created. UNESCO maintains the right to contract the restoration of all packages or a selection of the packages (one or more), during the contracting period.

Each package will be priced in a lump sum, and each lump sum amount will be the limit of payment for each package. Payments, under contract, will be based on a clear cash flow plan adopted by the contractor and with approval of UNESCO. Final payment in the cash flow plan should comprise of at least 15% of the contract value. The eight packages are identified in the below table, including the functions required for each:

<table>
<thead>
<tr>
<th>Package #</th>
<th>Package Name</th>
<th>Proposed Function</th>
<th>Proposed timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Package #1:</td>
<td>The Mosque</td>
<td>Community Main Mosque</td>
<td>12 months</td>
</tr>
<tr>
<td>Package #2:</td>
<td>The Hassan Fathy’s House</td>
<td>Hassan Fathy’s Museum</td>
<td>12 months</td>
</tr>
<tr>
<td>Package #3:</td>
<td>The Theatre</td>
<td>Cultural Centre</td>
<td>12 months</td>
</tr>
<tr>
<td>Package #4:</td>
<td>The Khan (Existing)</td>
<td>Boutique Hotel</td>
<td>12 months</td>
</tr>
<tr>
<td>Package #5:</td>
<td>The Market (Existing)</td>
<td>Shops and Bazars</td>
<td>6 months</td>
</tr>
<tr>
<td>Package #6:</td>
<td>The Khan (Missing)</td>
<td>Guest House</td>
<td>12 months</td>
</tr>
<tr>
<td>Package #7:</td>
<td>The Market Western Gate</td>
<td>Gate, Pigeon tower, and facilities</td>
<td>9 months</td>
</tr>
<tr>
<td>Package #8:</td>
<td>The Market Eastern Gate (Missing)</td>
<td>Gate, Restaurant, and facilities</td>
<td>9 months</td>
</tr>
</tbody>
</table>

Reconstruction and restoration work of respective packages will be expected to advance in parallel and not package by package.
The contracted construction company / Join venture (if applicable) shall review and provide detailed designs, drawings, and work plans needed for all works that are in line with the original method of mud brick architecture, to be approved by UNESCO. Those will have to be executed in accordance with and not limited to the guiding indicative bills of quantities, technical specifications, restoration drawings, previous studies, reports and scheduling, as provided in Annexes VI, VII and VIII of this ITB, to the best construction and restoration standards and under the contractual terms and conditions of UNESCO, as provided in Annexes X and XI of this ITB.

In line with the standards of the 1972 Convention concerning the Protection of the World Cultural and Natural Heritage and with the authentic Earthen Architecture of Hassan Fathy; the architectural and constructive features, the conservation, restoration, and rehabilitation works for all five buildings/8 packages will require - besides regular construction works – the mastering in traditional construction and restoration techniques to include structural stone masonry, mud bricks and mud based mortars, renders and paintings, considering, the use of authentic local materials originally used in their construction phase and knowledgeable skilled local masons.

Aiming to halt the continuous deterioration of the existing five structures (packages # 1, 2, 3, 4, 5) the rehabilitation / restoration works, as well as the total reconstruction of the missing parts identified in packages # 6, 7, and 8 will include the following:

- Repair and restore the walls, arches, ceilings, flooring and foundations of the buildings, surface and underground water drainage, collection and storage systems to protect structural elements from decay, by preventing water infiltration; dismantling and replacement of seriously degraded masonry and timber structural elements; reconstruction of collapsed structures, etc.

- Installation of basic and appropriate infrastructural services, utilities, and facilities foreseeing expansion for future functions and re-use: basic electrical power supply system and lighting, fire alarm, basic water supply and sewage treatment systems and visitors’ toilets, etc.

- The capacity of the firm/s to propose a strategy for the execution of the restoration works involving available competencies within the local community to a maximum extent will be an advantage in the technical evaluation.

1. General Notes for Bidders:
   i. This turnkey / lump sum project is about “SAFEGUARDING OF HASSAN FATHY’S ARCHITECTURAL LEGACY IN NEW GOURNA SITE”. So, the proposed intervention methodology should stand for the preservation of his vision, mission, project objectives, in addition to his authentic Architectural, Urban Design, and Planning products and outcomes.

   ii. The technical offer is used for the evaluation of the bidders’ capabilities, and also for examining the overall approach and methodology of the bidders in each step of the project implementation.

   iii. The method of statement for all works identified in the BOQ is the master technical document of the technical offer and it is used as a reference for price evaluation and it is a binding document for the bidder until the contract signature. The method of statement of the awarded bidder will be used to evaluate the deliverables of the
iv. All drawings BOQ’s for the eight packages are guiding indicative tools to the bidder to do calculations based on a lump sum turnkey offer, bearing in mind that such restoration projects can have unexpected and unforeseen factors during the work.

v. All reference drawings, BOQs, Specifications for this bid is based on previous studies, consultants recommendations and the historical documents, photos, and images provided as annexes to this bid listed below. This is in addition to site observations and analysis reports previously conducted on the structures in New Gourna.

vi. Bidding construction companies can have joint ventures with other entities with qualifying experience in conservation and/or earthen architecture.

2. Project implementation Plan; Step by Step:
All bidders should commit to the following steps in their project implementation plan as part of their technical offer, and their contractual work plan and cash flow plan for the lump sum turnkey project for each package:

i. Methodology review including detailed drawings, implementation plan, and project method of statement per each line item. For this step of the implementation plan, it is estimated to be 5% of the work for each package.

ii. Site mobilization; not limited to but including material storage areas, staff offices and shelters, staff and team formation and structure, site cleaning and reuse plan for the buildings ruins and debris, scaffolding and shoring erection. For this step of the implementation plan, it is estimated to be 5% of the work for each package.

iii. Space by Space detailed documentation at least in scale 1/20: showing all material, details brick by brick when needed, condition survey for each part and object in the space, identification of historical layers of intervention for each. For this step of the implementation plan, it is estimated to be 5% of the work for each package.

iv. Space by Space detailed intervention plan at least in scale 1/20: showing all material, details brick by brick if required, detailed intervention plan as per the project approved method of statement per each line item for each part and object in the space. For this step of the implementation plan, it is estimated to be 5% of the work for each package.

v. Material supplies and preparation for needed interventions including testing and inspection shall be elaborated in the method of statement. For this step of the implementation plan, it is estimated to be 40% of the work for each package.

vi. Application of planed detailed intervention plan for each part, space and objects of the project as per shall be elaborated in the method of statement. For this step of the implementation plan, it is estimated to be 25% of the work for each package.

vii. Project integration and preparation for buildings inauguration including but not limited to: scaffolding and shoring dismantling, site clean-up, systems launching if any, etc. For this step of the implementation plan, it is estimated to be 15% of the work for each
package.
3. **Evaluation and selection process:**

Bids evaluation will be based on pass and fail system according to the detailed criteria below.

   a. **Checklist for technical qualification:**

Pass and fail test will be effected in accordance to the requirements set in the checklist below:

<table>
<thead>
<tr>
<th>No</th>
<th>Requirements set by the ITB call for qualifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Documentation required in Bid Data Sheet Article 4 including Annex III Bid Submission Form, Annex IV Intention to Bid Form, Annex V Bidder Information Form, Annex VII Bill of Quantities, Annex VIII Technical Specifications and Annex XIV Vendor Registration Form</td>
</tr>
<tr>
<td>2</td>
<td>Annex XII Models for Security Forms especially the Bid Security</td>
</tr>
<tr>
<td>3</td>
<td>Construction company legal registration documents</td>
</tr>
<tr>
<td>4</td>
<td>The annual financial amount of construction work should be at least US$ 20,000 / year within the last 2 years</td>
</tr>
<tr>
<td>5</td>
<td>Information regarding any litigation, current or during the last 5 years, in which the bidder was/is involved, the parties concerned and the disputed amounts and awards</td>
</tr>
<tr>
<td>6</td>
<td>Financial report for the past 2 years signed by a certified auditor</td>
</tr>
<tr>
<td>7</td>
<td>List of implemented projects of similar size and nature of the last 7 years, including starting dates and end dates and references of client who may be contacted</td>
</tr>
<tr>
<td>8</td>
<td>Experience as prime contractor in the earthen construction or conservation work of a nature and complexity equivalent to the Works over the last 5 years</td>
</tr>
<tr>
<td>9</td>
<td>Credentials and proof of their individual experience of over 5 years of contract manager, verification consultant, project manager, project architect, project civil engineer, technical personnel and/or foreman of restoration sites</td>
</tr>
<tr>
<td>10</td>
<td>Evidence of adequacy of working capital for this Contract (access to line(s) of credit and availability of other financial resources)</td>
</tr>
<tr>
<td>11</td>
<td>Site visit analysis report submitted</td>
</tr>
<tr>
<td>No.</td>
<td>Criteria</td>
</tr>
<tr>
<td>-----</td>
<td>----------</td>
</tr>
<tr>
<td>12</td>
<td>Compliance with requirements relating to the Specifications, Scope of Works and Drawings</td>
</tr>
<tr>
<td>13</td>
<td>Compliance with pricing conditions set in the ITB and specifically the Bills of Quantities</td>
</tr>
<tr>
<td>13</td>
<td>Methodology and work plan relevance to the project Aim</td>
</tr>
<tr>
<td>14</td>
<td>Demonstrated technical capacity to perform the required works as per required Technical Proposal documents (key personnel, machinery capacity to implement the works)</td>
</tr>
<tr>
<td>15</td>
<td>Relevance of delivered method of statement to conservation and restoration international and relevant codes dealing with this type of architecture</td>
</tr>
<tr>
<td>16</td>
<td>Relevance of work break down structure</td>
</tr>
<tr>
<td>17</td>
<td>Demonstrated ability to honor important responsibilities and liabilities allocated to the contractor in this ITB (e.g. quality, insurance coverage, etc...)</td>
</tr>
</tbody>
</table>
b. Contents of Technical offer:
Please note that the following items should be present in the ITB offer by the bidders that are critical in the evaluation process:

<table>
<thead>
<tr>
<th>1</th>
<th>Site visit analysis Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Context analysis</td>
</tr>
<tr>
<td>1.2</td>
<td>Building condition</td>
</tr>
<tr>
<td>1.3</td>
<td>Level of interventions indicator</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2</th>
<th>Company Profile &amp; Team Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Company registration documents</td>
</tr>
<tr>
<td>2.2</td>
<td>Relevant projects of the company</td>
</tr>
<tr>
<td>2.3</td>
<td>Relevant projects of team members</td>
</tr>
<tr>
<td>2.4</td>
<td>Team BIOs and CVs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3</th>
<th>Project Methodology Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>Approach outline</td>
</tr>
<tr>
<td>3.2</td>
<td>Contextual and sustainability relevance of approach</td>
</tr>
<tr>
<td>3.2.1</td>
<td>Natural Aspects</td>
</tr>
<tr>
<td>3.2.2</td>
<td>Social Aspects</td>
</tr>
<tr>
<td>3.2.3</td>
<td>Economic Aspects</td>
</tr>
<tr>
<td>3.2.4</td>
<td>Operational Aspects</td>
</tr>
<tr>
<td>3.2.5</td>
<td>Cultural Aspects</td>
</tr>
<tr>
<td>3.2.6</td>
<td>Technical Aspects</td>
</tr>
<tr>
<td>3.3</td>
<td>Outline for Project method of statement for each line item of the BOQ</td>
</tr>
<tr>
<td>3.4</td>
<td>Project work plan and time schedule</td>
</tr>
<tr>
<td>3.5</td>
<td>Project work Breakdown structure</td>
</tr>
<tr>
<td>3.6</td>
<td>Risk management and OSH measures</td>
</tr>
</tbody>
</table>
Please note that elements mentioned in items 3a and 3b should be included in the offer in document form clearly indicating _in headings_ the following items:

- The **method of statement** will show the understanding of the scope of work and the items of the indicative BOQ with relevance to the building conditions and expected details of interventions as per the annexed drawings, HBRC reports for structural analysis, and the previous missions’ reports. The method of statement shall address the elements mentioned in _Annex VIII Technical Specifications_. This method of statement should specify conservation and restoration international codes that the bidder identifies relevant as this will reflect whether the Hassan Fathy Architecture heritage is respected.
The work plan will show the project timeline and efficiency of time management of intervention in each building with respect to the Project implementation Plan.

The work breakdown structure will show the bidders understanding of the conservation process for the needed work identified in ITB.

c. Evaluation:
The bidders who pass the “pass and fail” evaluation will be considered for the financial evaluation which will be used to identify the lowest price for the lump sum of the selected package(s). This will be the selected bidder to be awarded the contract.

All financial offers should be in Lump Sum values for each of the eight packages identified in the ITB document and architectural drawings, in USD binding for a project period of one year.

UNESCO retains the right to contract the reconstruction and restoration of all packages or a selection of the packages (one or more), during the contracting period.

The maximum number of package(s) will be selected pending on available budget; and based on priority and criticality of required reconstruction and restoration.
1. General:

This bid is about “SAFEGUARDING OF HASSAN FATHY’S ARCHITECTURAL LEGACY IN NEW GOURNA SITE”. Therefore, the proposed intervention methodology should stand for the preservation of his vision, mission, project objectives, and his authentic architectural, urban design, and planning products and outcomes. Meanwhile, levels of intervention afterwards need to be identified, documented, and illustrated for historical relevance.

This bid is about a lump sum turnkey project. This is due to the critical rapidly deteriorating conditions of the buildings.

Each bidder will be expected to have their technical verification consultant revise the proposal so that the method of statement is prepared for all works identified in the bid indicative BOQ and this Annex VII. The bid indicative BOQ is the master technical document of the technical offer and it will be used as a reference not only for price evaluation, but also as the technical specifications road map for the bidders.

All bidders should note that the guidance of the indicative bid BOQ’s and architecture drawings, offered by UNESCO should be used to help and guide their bid lump sum offers. Therefore, all final documents submitted and priced bids are completely the responsibility of the bidders only. Noting that it is not a re-measure contract by any means, it is as well the contractor’s responsibility in the post-contracting period to maintain the estimated costs proposed in the bid.

To that effect, the technical recommendations and specifications within the HBRC reports for the five buildings are the most updated reference for the bidder developing the work methodology, but it is not limited to those reports. Moreover, all given UNESCO reports should be considered as important sources of information and guidelines for the bidders. Innovative solutions of the bidders are also welcomed in relation to the use of same or other natural materials that can be used for the restoration works, as long as it complies with the standards of the 1972 Convention concerning the Protection of the World Cultural and Natural Heritage, and with the authentic Earthen Architecture of Hassan Fathy adopted in these buildings; the mosque, the theatre, the market, the Khan and the house of Hassan Fathy’s architectural and constructive features.

All the conservation, restoration, and rehabilitation works will require - besides regular construction works – the mastering of traditional construction and restoration techniques to include structural stone masonry, mud bricks and mud based mortars, renders and paintings, considering, as much as possible, the use of authentic local materials originally used in their construction phase and knowledgeable skilled local masons and workmanship.

Maintaining the safety and security of personnel and passers-by; and the safety and cleanliness of the site, the buildings facades, public and private properties, and surrounding sidewalks and streets; and maintaining the safety of all utilities works (electricity, potable water, sanitation, gas, telephone networks, paving, etc.) are all the responsibility of the contractor. Repair of any damage caused by the contractor’s work is the sole responsibility of the contractor.
Obtaining work and excavation permits; prior and timely coordination with the City Management, and with all relevant utilities’ departments (electricity, potable water, sanitation, gas if any, telephone networks, paving, etc.) are all the responsibilities of the contractor.
All works should be based on the approved shop drawings identified as the treatment drawings submitted by the contractor, space by space and element by element for approval by UNESCO and endorsement of NOUH. All relevant treatments for restoration works should be as per the approved restoration method of statement.

All materials and accessories should be approved by UNESCO and endorsed by NOUH prior to procurement.

- Removal of the remnants and debris of collapsed elements and structures materials inside each building domain should be done manually and carefully, and stored outside each building in an identified and agreed on place within the site, this should be coordinated with UNESCO, NOUH, and the local administrative authority, in order to be reused in the manufacturing of adobe (mud bricks) and mortar manually.
- Removal of the added elements and structures materials within each building (the added walls and arches to the khan as an example) should be done manually and carefully, and stored outside each building in an identified and agreed on place within the site, this should be coordinated with UNESCO, NOUH, and the local administrative authority.

Shoring with cautions and precautions for all critical parts before starting any type of intervention with appropriate techniques. This is to be used, but not limited to, appropriate number of metal jacks, which ends with wooden pieces or new wooden members. All intervention proposals should be approved by UNESCO and endorsed by NOUH. All details should be determined according to site conditions and as per verified calculations from the contractor’s verification consultant, highlighted in the project method of statement in a separate chapter.

### 2. Level of Intervention (LOI):

The Level of Intervention (LOI) shall be utilized by the bidders when elaborating their method of statement, and work break down structure. In order to maintain the original architectural style and integrity of the structures, bidders should develop a proposal that seeks the least amount of intervention whenever possible. Any level of intervention foreseen should be justified in the method of statement within the bid proposal, and will need to be revised, verified, and then approved by UNESCO and endorsed by NOUH before the contractor proceeds with the restoration process.

The site visit report submitted by the bidder should indicate in each package from package 1 to package 8 the average level of intervention in the overall work (LOI) on a scale from 1 to 10, where 1 stands for minimum conservation interventions and 10 is for complete reconstruction for each line item shown in the indicative BOQ.

The following table shows an example for the level of intervention proposal for masonry work restoration as an indicative guiding tool for the bidders to identify their level of intervention to be justified in their project method of statement.
### 3. General Technical Specification:

The technical specifications will be the basis of the contract and the method of statement should ensure to address it.

The contractor is responsible for all structures stabilization and shoring, for all external forces mitigation, this includes but not limited to: surface, and subsurface water movement, weathering, lateral forces, forces created from paving process, previous disoriented treatments.
and uses, forces of the soil due to concrete structures in the surrounding area...etc, removal, including applying all needed modifications in the building context as a comprehensive sustainable solution for the area directly surrounding the building. This includes but is not limited to all paved and sanitary infrastructure works for the area adjacent to all structures of this ITB, within the radius of 2 meters.

Each case of the foundations, walls, arches, domes, vaults, roofs, flooring, plaster, electrical connections, and sanitary works should be considered separately in the insulation, treatment, conservation, restoration, consolidation and maintenance.
4. Specification of Materials should be used

General Notes:

- All suggested material needed for the restoration work will have to be fully tested by the contractor, reported, accredited by a certified lab, and authenticated by the contract’s verification consultant in order to be approved by UNESCO and endorsed by NOUH before the restoration work commences.
- No cement based mortars and treatments are allowed in the interventions for all activities in the original buildings and structures of the five buildings built by Hassan Fathy: the mosque, the theatre, the market, the Khan and the house of Hassan Fathy, even if suggested in any of the annexed reports of previous missions and consultants.

4.1 Buildings bricks/ adobe

- Construction works shall be carried out for the parts that have been dismantled or for the parts to be removed for their structural integrity and rebuilt once again using the same bricks used in the original construction, by the following steps:
  - The old bricks used in the construction (the crushing and crushing debris of the site).
  - The mixture is well blended and then kneaded with water to give a cohesive mix.
  - Brick is pressed into special presses and left to dry for a suitable period within 3 weeks.
  - All tests shall be carried out in accordance with the instructions of the Implementation Consultant prior to the actual commencement of the use.
  - In the case of the insufficiency of the demolition product, new bricks shall be made with the same old brick components (clay and straw). The mixing percentages shall be determined by the analysis of the old bricks and the appropriate mixing ratios shall be determined. The possibility of adding materials to improve bricks shall be approved by UNESCO and endorsed by NOUH before use including the use of hand presses suitable stamp to determine the date of manufacture to distinguish between the new and old units.

4.2 Construction mortar

- The construction mortar shall be used from the same mortar used in the manufacture of bricks mentioned in detail in the previous item, but not limited to, it should be also identified case by case as per the original mortar used in each part of the buildings. Each type of mortar has to be fully tested by the contractor, reported, accredited by a certified lab, and authenticated by the contract’s verification consultant in order to be approved by UNESCO and endorsed by NOUH before the restoration work commences.

4.3 Plastering mortar

- Use the same mortar as previous with increasing straw to reduce shrinkage. But it should not be limited to that, it should be also identified case by case as per the original mortar used in each part of the buildings. Each type of mortar has to be fully tested by the contractor, reported, accredited by a certified lab, and authenticated by the contract’s verification consultant in order to be approved by UNESCO and endorsed by NOUH before the restoration work commences.

4.4 Repair mortar

- Use the same mortar as previous taking into consideration the use of palm fibres with Arab Natural glue mixed with water (1:7). But it should not be limited to that, it should be also identified case by case as per the original mortar used in each part of the buildings. Each type of mortar has to be fully tested by the contractor, reported,
4.5 Wood  
- Wood of good quality should be used, free from moisture and isolated against moisture and treated against insects by the appropriate materials. Type of wood should be also identified case by case as per the original wood used in each part. Each type of wood has to be fully tested by the contractor, reported, accredited by a certified lab, and authenticated by the contract’s verification consultant in order to be approved by UNESCO and endorsed by NOUH before the restoration work commences.

4.6 Stone  
- Low-density stones should be used, which varies between (1.76 t/m3 – 2.16 t/m3) and the strength varies between (120 – 280 kg/cm2). The necessary tests shall be carried out to ensure that it is free from any harmful substances. But it should not be limited to that, it should be also identified case by case as per the original stone used in each part of the buildings. Each type of stone has to be fully tested by the contractor, reported, accredited by a certified lab, and authenticated by the contract’s verification consultant in order to be approved by UNESCO and endorsed by NOUH before the restoration work commences.

4.7 Electricity materials supplies  
- El-Sewedy cables or equivalent; Bticino or Schneider switches, sockets, PVC sunk boxes, etc. or equivalent; and Alaa Eddin flexible conduits or equivalent. But it should not be limited to that, it should be also identified case by case as per the function of each part of the buildings. Each type has to be fully tested by the contractor, reported, accredited by a certified lab, and authenticated by the contract’s verification consultant in order to be approved by UNESCO and endorsed by NOUH before the procurement of it.
- Unless otherwise stated, Rates in Bill of Quantities shall include all necessary materials (Cables, conduits, PVC sunk box, bulbs, switches etc.) and labour required to complete the electrical installation to good working order.
- Unless otherwise stated, all costs associated with provision of all holes, openings, chases, ducts and other builders’ work required for installation and make them good, shall be included in the rates.
- Unless otherwise stated, testing and commissioning of the electrical installation is to be carried out by the contractor and Cost of such testing and reports to be included in the rates.

4.8 Plumbing and sanitary supplies  
- Grade A Duravit or equivalent equipment and fixtures, Smart drainage UPVC pipes and rooms or equivalent, BR pipes and connections or equivalent But, it should not be limited to that, it should be also identified case by case as per the function of each part of the buildings. Each type has to be fully tested by the contractor, reported, accredited by a certified lab, and authenticated by the contract’s verification consultant in order to be approved by UNESCO and endorsed by NOUH before the procurement of it.
5. Specification of work items:

- **Ground & surface water protection work**

5.1 Installation of a comprehensive sustainable solution / system to control the groundwater level and prevent any harmful conditions to the building in addition to the surface water drainage system within the building domain and its adjacent context. This is as per and not limited to the designs of HBRC, included in their reports and drawings. All relevant works should be approved by UNESCO and endorsed by NOUH, before detailing and submitting as part of the construction method of statement. All works should be implemented as per the approved method of statement.

All this work should be identified and detailed in the contractor’s shop drawings and method of statement to be submitted for approval to UNESCO and endorsed by NOUH. This work including safe excavation work for the width of 1 meter in the lower level with min depth of 1.80 meters. This should start not less than 2 meters away from the building outline

- Removal of debris into the storage area of the site to be used in the manufacturing of adobe and mortars needed for the restoration works.
- The layers of work as per the HBRC designs is as follows:
  - 10 cm of plain concrete of strength 250 kg/cm2
  - Installation of up surface perforated PVC pipes covered with fiberglass mesh with a slope not less than 1%.
  - Conduct the needed back filling layers including 50 cm of homogeneous gravel layer
  - Layer of geotextile
  - Backfill of 130 cm of well graded sand

- **Masonry works**

5.2 Conduct all stone / adobe / brick masonry walls / works restoration activities with relevant treatments and restoration works for all foundations (stones) and all masonry walls including all conservation treatments, cleaning, restoration, all necessary stone / adobe / brick replacement, rebuilt and reconstruct all missing parts as per the attached drawings. All materials and mortars should be similar / equivalent to the original as per each condition and situation. This should be identified in the treatment drawings submitted by the contractor space by space and element by element to be approved by UNESCO and endorsed by NOUH. All works should be as per the approved restoration method of statement.

Masonry work of the foundations:

- Shoring for all walls, arches, vaults and domes in relation to the part of the foundation should be secured by the contractor, and approved by UNESCO
- All work in the foundation restoration starts with excavation up to the foundation level from the outer-side first, then the inner-side. This is to secure drying of the foundation and the soil covering it. In order to be air and sun dried to evaporate any humidity harming the original structure and stone. This is including the removal of any violations and newly cement based restorations to avoid salt generation and crystallization.
- Lose, decayed, infected, and cracked stones should be dismantled, and stocked in the material storage area on site.
- Stone replacement should use the above-mentioned specifications for stone and mortars.
To prevent the stone foundations from humidity, five layers of brush applied diluted in water and boiled natural Arabic glue in ratio 1(glue):7(water) up to the water stop liner not lower than 20cm above the ground level.

After applying all needed treatments including the horizontal water stopping liners, and upon the approval of UNESCO, the foundations should be back filled with clear sand above a layer of geotextile.

- **Masonry work above ground level:**
  - Shoring for all walls, arches, vaults and domes, in relation to the part of wall, subject to intervention should be secured by the contractor, and approved by UNESCO.
  - All work in the stone restoration starts with plaster removal and surface cleaning for the deteriorated area. This includes the removal of any violations and newly cement based restorations to avoid salt generation and crystallization.
  - Loose, decayed, infected, and cracked stones should be dismantled, and stocked in the material storage area on site.
  - Stone replacement should be within the allowed stone from the same type identified in material section of this ITB specs.
  - All work in the adobe restoration starts with plaster removal and surface cleaning for the deteriorated area. This includes the removal of any violations and newly cement based restorations to avoid salt generation and crystallization.
  - Loose, decayed, infected, and cracked adobe should be dismantled, and stocked in the material storage area on site.
  - Adobe replacement should be within the allowed adobe from the same type identified in material section of this ITB specs.
  - For any crack treatment, the crack should be cleaned by direct gentle air gun to be inspected, and then the mortar should be removed if needed as per the cases identified in HBRC reports for each building.
  - Any reconstruction or adobe replacement should use the above-mentioned specifications for brick/adobe and mortars.
  - Any reconstruction or stone replacement should use the above-mentioned specifications for stone and mortars.

5.3 Conduct all adobe/brick domes, vaults and intersected vaults restoration activities with relevant treatments and restoration works for all domes and vaults including all conservation treatments, cleaning, restoration, all necessary adobe/brick replacement, rebuilt and reconstructed all missing parts as per the attached drawings. All materials and mortars should be similar/equivalent to the original as per each condition and situation. This should be identified in the treatment drawings submitted by the contractor space by space and element by element to be approved by UNESCO and endorsed by NOUH. All works and activities should be per the approved project intervention plan and the approved restoration method of statement.

All this work should be identified and detailed in the contractor’s shop drawings and method of statement to be submitted for approval to UNESCO.

- Shoring for all walls, arches, vaults and domes in relation to the vaults or domes subject to intervention should be secured by the contractor, and approved by UNESCO.
- In case of removing the dome or the vault, dismantling should be done manually from the above and should take place with care ensuring the safety of the buildings and the labour in charge.
- Arches and walls connected to the vault or the dome subject to intervention should be repaired first according to their condition.
- Domes or vaults has to be reconstructed again using the bricks and mortar mentioned above by highly experienced builders.
The bearing dome is repaired from the front end.

The restored part of the dome shall be properly supported by a sufficient number of jacks and in an engineering way, which shall be verified by the contractor’s verification consultant and approved by UNESCO.

The new parts is to be attached to the old part in every row as per identified in the HBRC reports, or the approved method of statement.

Construction of the new part is done with the laying of the connecting units according to the methods of building the domes, using experienced labour in this field.

They are to be built from the bottom up according to trade fundamentals, norms, and code of practice.

5.4 Conduct all adobe / brick arches restoration activities with relevant treatments and restoration works for all arches including all conservation treatments, cleaning, restoration, all necessary adobe / brick replacement, rebuilt and reconstruct all missing parts as per the attached drawings. All materials and mortars should be similar / equivalent to the original as per each condition and situation. This should be identified in the treatment drawings submitted by the contractor space by space and element by element, to be approved by UNESCO and endorsed by NOUH. All works and activities should be as per the approved project intervention plan and the approved restoration method of statement.

All this work should be identified and detailed in the contractor’s shop drawings and method of statement to be submitted for approval to UNESCO.

- Shoring for all walls, arches, vaults and domes in relation to the arch subject to intervention should be secured by the contractor, and approved by UNESCO.

- All work in the arches restoration starts with plaster removal and surface cleaning for the deteriorated area. This is including the removal of any violations and newly cement based restorations to avoid salt generation and crystallization.

- Lose, decayed, infected, and cracked adobe, brick, or stone forming the arch should be dismantled manually, and to be stocked in the material storage area on site.

- Adobe, brick, or stone replacement should be within the allowed adobe, brick, or stone from the same type identified in material section of this ITB specs.

- For any crack treatment, the crack should be cleaned by direct gentle air gun to be inspected, and then the mortar should be removed if needed as per the cases identified in HBRC reports for each building.

- Any reconstruction or adobe, brick, or stone replacement should use the above-mentioned specifications for brick/ adobe and mortars.

5.5 Conduct all adobe / brick decorative panels restoration activities with relevant treatments and restoration works for all decorative elements including all conservation treatments, cleaning, restoration, all necessary adobe / brick replacement, rebuilt and reconstruct all missing parts as per the attached drawings. All materials and mortars should be similar / equivalent to the original as per each condition and situation. This should be identified in the treatment drawings submitted by the contractor space by space and element by element to be approved by UNESCO and endorsed by NOUH. All works and activities should be as per the approved project intervention plan and the approved restoration method of statement.

All this work should be identified and detailed in the contractor’s shop drawings and method of statement to be submitted for approval to UNESCO.

- Shoring for all walls, arches, vaults and domes in relation to the part of wall subject to intervention should be secured by the contractor, and approved by UNESCO.
All work in the adobe/brick restoration starts with plaster removal and surface cleaning for the deteriorated area. This is including the removal of any violations and newly cement based restorations to avoid salt generation and crystallization.

- Lose, decayed, infected, and cracked adobe should be dismantled, and stocked in the material storage area on site.
- Adobe/brick replacement should be within the allowed adobe from the same type identified in material section of this ITB specs.
- For any crack treatment, the crack should be cleaned by direct gentle air gun to be inspected, and then the mortar should be removed if needed as per the cases identified in HBRC reports for each building.
- Any reconstruction or adobe replacement should use the above-mentioned specifications for brick/adobe and mortars.

**Water insulation**

5.6 Supply and install proper horizontal membrane/liner between the foundations and the walls and in other identified areas in the project approved intervention plan for waterproofing and insulation works as per the approved project intervention plan and the approved method of statement by UNESCO and endorsed by NOUH.

All this work should be identified and detailed in the contractor’s shop drawings and method of statement to be submitted for approval to UNESCO.

- Inspection of the supplied membrane should take place as per the approved samples for minimum 4mm polyethylene fibre reinforced bitumen sheets (Betonile or equivalents).
- Shoring for all walls, arches, vaults and domes in relation to the part of wall subject to intervention should be secured by the contractor, and approved by UNESCO.
- At least 20cm from the ground floor level is to be identified by the contractor for liner placement level.
- Careful removal of the upper raw of brick, adobe, or stone with for no longer than 2 meters length.
- Clean the upper level of the stone by direct gentle air.
- Place the membrane with at least overlap of 20 cm with the next portion of walls.
- 2cm of the above-mentioned mortar to be placed then put back the original layer of brick, adobe, or stone with replacement with the same type of material when needed.

**Plastering**

5.7 Conduct all internal clay plasters restoration activities with relevant treatments and restoration works including all conservation treatments, cleaning, restoration, all necessary replacement, redo all missing parts as per original and according to the attached drawings. All materials and mortars should be similar/equivalent to the original as per each condition and situation. This should be identified in the treatment drawings submitted by the contractor space by space and element by element to be approved by UNESCO and endorsed by NOUH. All works and activities should be as per the approved project intervention plan and the approved restoration method of statement.

All this work should be identified and detailed in the contractor’s shop drawings and method of statement to be submitted for approval to UNESCO.
5.8 Conduct all external clay plasters restoration activities with relevant treatments and restoration works including all conservation treatments, cleaning, restoration, all necessary replacement, redo all missing parts as per original and according to the attached drawings. All materials and mortars should be similar / equivalent to the original as per each condition and situation. This should be identified in the treatment drawings submitted by the contractor space by space and element by element to be approved by UNESCO and endorsed by NOUH. All works and activities should be as per the approved project intervention plan and the approved restoration method of statement. All this work should be identified and detailed in the contractor’s shop drawings and method of statement to be submitted for approval to UNESCO.

- Proper scaffoldings is to be erected carefully and safely by the part of wall subject to intervention should be secured by the contractor, and approved by UNESCO.
- Old plaster removal when needed and surface cleaning for the deteriorated area. This is including the removal of any violations and newly cement based restorations to avoid salt generation and crystalization.
- The plastering is to be restored using the previous mentioned mortar.
- The thickness is not more than 4-5 cm. In the case of increase, wood-wedges are to be made every 35 cm in both directions to stick with the wall to prevent any separation.
- To prevent the external plaster from rain and weathering five layers of airbrush applied diluted in water and boiled natural Arabic glue in ratio 1(glue):7(water) on the external surfaces of the buildings including the top surfaces of vaults and domes plastered.

5.9 Conduct all stone / brick / others floorings restoration activities with relevant treatments and restoration works for all flooring materials and the subsurface layers including all conservation treatments, cleaning, restoration, all necessary stone / brick / others replacement and reconstruct all missing parts as per the attached drawings. All materials and mortars should be similar / equivalent to the original as per each condition and situation. This should be identified in the treatment drawings submitted by the contractor space by space and element by element to be approved by UNESCO and endorsed by NOUH. All works should be as per the approved restoration method of statement.

All this work should be identified and detailed in the contractor’s shop drawings and method of statement to be submitted for approval to UNESCO.

- All flooring in place should be investigated and cleaned by the contractor.
- The ground floor is to be tiled by the same stone as in place, and with the same pattern as well. Documented, then identified in the shop drawings.
be verified by the contractor’s verification consultant and approved by UNESCO.

- The upper floors are to be tiled by the same red brick as in place, and with the same pattern as well. Documented, then identified in the shop drawings. Which shall be verified by the contractor’s verification consultant and approved by UNESCO.
- Missing parts of stone or red brick tiles should be identified in the shop drawings. Which shall be verified by the contractor’s verification consultant and approved by UNESCO.
- The contractor with his verification consultant can propose different tiles to be in place of total loss area with no reference available to be investigated and approved by UNESCO.

• Wood works

5.10 Conduct all doors and windows restoration activities with relevant treatments and restoration works for all doors and windows including all conservation treatments, cleaning, restoration, all necessary replacement and remanufacturing all missing parts as per original and according to the attached drawings. All materials and accessories should be similar / equivalent to the original as per each condition and situation. This should be identified in the treatment drawings submitted by the contractor space by space and element by element to be approved by UNESCO and endorsed by NOUH. All works should be as per the approved restoration method of statement.

All this work should be identified and detailed in the contractor’s shop drawings and method of statement to be submitted for approval to UNESCO

- Dismantling all the wooden units from its places, this is to be done in care with referencing codes. This needs to be documented in the shop drawings. Which shall be verified by the contractor’s verification consultant and approved by UNESCO.
- All the dismantled units should be stocked in a proper workshop to be identified on site.
- Identifying experience labours in this field to be performing according to trade fundamentals, norms, and code of practice and approved by UNESCO.
- Old paints and finishing removal should take place first.
- Sanding and surface cleaning for all the pieces including the deteriorated areas
- Dismantling of any infected wooden pieces.
- Manufacturing same size and design for each piece as per the shop drawings. Which shall be verified by the contractor’s verification consultant and approved by UNESCO.
- Putting the new pieces in place and re-assembling of the units according to trade fundamentals, norms, and code of practice.
- Natural oils such as lean seed oil, almond oil, or any other natural oil to be verified by the contractor’s verification consultant and approved by UNESCO should be used in wood treatment and finishing. Noting that no industrial material is allowed for wood finishes.
- Re-installing the wooden units in place according to trade fundamentals, norms, and code of practice.

5.11 Conduct all wooden roofs / pergolas restoration activities with relevant treatments and restoration works for all wooden roofs including all conservation treatments, cleaning, restoration, all necessary wood replacement, rebuilt and reconstruct all missing parts as per original and according to the attached drawings All materials and accessories should be similar / equivalent to the original as per each condition and situation. This should be identified in the treatment drawings submitted by the
contractor space by space and element by element to be approved by UNESCO and endorsed by NOUH. All works should be as per the approved construction method of statement.

All this work should be identified and detailed in the contractor’s shop drawings and method of statement to be submitted for approval to UNESCO

- Inspection of the supplied wooden sections should take place as per the approved samples.
- All wooden sections for beams and flooring, including types of wood shall be verified by the contractor’s verification consultant and approved by UNESCO.
- All wooden sections should be of good quality, free from moisture and isolated against moisture by the appropriate materials.
- Natural oils such as lean seed oil, almond oil, or any other natural oil to be verified by the contractor’s verification consultant and approved by UNESCO should be used in wood treatment and finishing. Noting that no industrial material is allowed for wood finishes.
- Geotextile cover should be in place covering the wooden blanks to receive the layers of flooring materials as per the shop drawings which shall be verified by the contractor’s verification consultant and approved by UNESCO.

5.12 Conduct all wooden sills restoration activities with relevant treatments and restoration works for all wooden sills including all conservation treatments, cleaning, restoration, all necessary wood replacement, rebuilt and reconstruct all missing parts as per original and according to the attached drawings. All materials and accessories should be similar / equivalent to the original as per each condition and situation. This should be identified in the treatment drawings submitted by the contractor space by space and element by element to be approved by UNESCO and endorsed by NOUH. All works should be as per the approved construction method of statement.

All this work should be identified and detailed in the contractor’s shop drawings and method of statement to be submitted for approval to UNESCO

- Inspection of the supplied wooden sections should take place as per the approved samples.
- All wooden sections for sills including types of wood shall be verified by the contractor’s verification consultant and approved by UNESCO.
- Dismantling all the wooden sills from its places when needed, this is to be done in care with referencing codes. This needs to be documented in the shop drawings. Which shall be verified by the contractor’s verification consultant and approved by UNESCO.
- Some restoration work could be done in place, but Proper scaffoldings and shoring is to be erected carefully and safely by the part of wall subject to intervention should be secured by the contractor, and approved by UNESCO.
- Identifying experienced labour in this field who will perform according to trade fundamentals, norms, and code of practice and approved by UNESCO.
- Old paints and finishing removal should take place first.
- Sanding and surface cleaning for all the pieces including the deteriorated areas
- Dismantling of any infected wooden pieces.
- Manufacturing same size and design for each piece as per the shop drawings. Which shall be verified by the contractor’s verification consultant and approved by UNESCO.
- Putting the new pieces in place and re-assembling of the units according to trade fundamentals, norms, and code of practice.
- Natural oils such as lean seed oil, almond oil, or any other natural oil to be verified by the contractor’s verification consultant and approved by UNESCO should be used in wood treatment and finishing noting that no industrial material is allowed for wood finishes.
• Electrical works

5.13 Supply, install, test and commission Electrical Distribution Panel Board (36 lines) Sigma or equivalent; including MCCB 63 A, all circuit breakers (Hager or equivalent), PVC insulated PVC sheathed (2 x 4 mm) copper cables and concealed PVC conduits between the Panel and the distribution points, and any other accessories and ancillary work required to complete the work subject to approval by UNESCO and endorsement of NOUH.

All this work should be identified and detailed in the contractor’s shop drawings and method of statement to be submitted for approval to UNESCO.

- Inspection of the supplied materials should take place as per the approved samples.
- All concealed PVC conduit and boxes should be aligned with the approved routs and levels identified in the shop drawings which shall be verified by the contractor’s verification consultant and approved by UNESCO.
- All conduits should be at least 12cm depth inside the walls, this is in order to be stable enough and prevent plaster cracks in the future.
- Identifying experience labours in this field to be performing according to trade fundamentals, norms, and code of practice and approved by UNESCO.
- Wiring should take place before plastering.
- All finishing work should be after the testing and approval of circuits and engineering assessment approved by UNESCO.

5.14 Supply and install wall/ceiling-mounted luminaire complete with 2 LED lamps (18 Watt, min 1,500 Lumens, Venus or equivalent) as per the approved sample by UNESCO and endorsed by NOUH, suitable for indoor and outdoor use (IP 65) with plastic diffuser (Ocean type from Egylux or equivalent) including approved type: PVC insulated PVC sheathed (2 x 2 mm) copper cable, concealed PVC conduit, switches, and any other accessories and ancillary work required to complete the work as per the approved construction method of statement by UNESCO and endorsed by NOUH.

All this work should be identified and detailed in the contractor’s shop drawings and method of statement to be submitted for approval to UNESCO.

- Inspection of the supplied materials should take place as per the approved samples.
- All concealed PVC conduit and boxes should be aligned with the approved routs and levels identified in the shop drawings which shall be verified by the contractor’s verification consultant and approved by UNESCO.
- All conduits should be at least 12cm depth inside the walls, this is in order to be stable enough and prevent plaster cracks in the future.
- Identifying experience labours in this field to be performing according to trade fundamentals, norms, and code of practice and approved by UNESCO.
- Wiring should take place before plastering.
- All finishing work should be after the testing and approval of circuits and engineering assessment approved by UNESCO.
5.15 Supply and install approved local product double socket outlet (Schneider or Bticino or equivalent) including approved type: PVC insulated PVC sheathed (2 x 3 mm)
copper cable; accessories and all other ancillary work required to complete the work as per the approved construction method of statement by UNESCO and endorsed by NOUH.

All this work should be identified and detailed in the contractor’s shop drawings and method of statement to be submitted for approval to UNESCO

- Inspection of the supplied materials should take place as per the approved samples.
- All concealed PVC conduit and boxes should be aligned with the approved routes and levels identified in the shop drawings which shall be verified by the contractor’s verification consultant and approved by UNESCO.
- All conduits should be at least 12cm depth inside the walls, this is in order to be stable enough and prevent plaster cracks in the future.
- Identifying experienced labour in this field to perform according to trade fundamentals, norms, and code of practice and approved by UNESCO.
- Wiring should take place before plastering.
- All finishing work should be after the testing and approval of circuits and engineering assessment approved by UNESCO.

5.16 Supply and install washing machines / A.C / water heater 32 Amp switch (Schneider or Bticino or equivalent) including approved type: PVC insulated PVC sheathed (2 x 6 mm) copper cable, conduits, accessories and all other ancillary work required to complete the work as per the approved construction method of statement by UNESCO and endorsed by NOUH.

All this work should be identified and detailed in the contractor’s shop drawings and method of statement to be submitted for approval to UNESCO

- Inspection of the supplied materials should take place as per the approved samples.
- All concealed PVC conduit and boxes should be aligned with the approved routes and levels identified in the shop drawings which shall be verified by the contractor’s verification consultant and approved by UNESCO.
- All conduits should be at least 12cm depth inside the walls, this is in order to be stable enough and prevent plaster cracks in the future.
- Identifying experienced labour in this field to perform according to trade fundamentals, norms, and code of practice and approved by UNESCO.
- Wiring should take place before plastering.
- All finishing work should be after the testing and approval of circuits and engineering assessment approved by UNESCO.

5.17 Supply and install approved local product telephone socket outlet (Schneider or Bticino or equivalent) connecting it to the main assembly point including approved type copper cables, conduits, accessories and all other ancillary work required to complete the work as per the approved method of statement by UNESCO and endorsed by NOUH.

All this work should be identified and detailed in the contractor’s shop drawings and method of statement to be submitted for approval to UNESCO

- Inspection of the supplied materials should take place as per the approved samples.
- All concealed PVC conduit and boxes should be aligned with the approved routes and levels identified in the shop drawings which shall be verified by the contractor’s verification consultant and approved by UNESCO.
- All conduits should be at least 12cm depth inside the walls, this is in order to be stable enough and prevent plaster cracks in the future.
- Identifying experienced labour in this field to perform according to trade fundamentals, norms, and code of practice and approved by UNESCO.
5.18 Supply and install approved local product dual data/telephone socket outlet (Schneider or Bticino or equivalent) connecting it to the main assembly point including approved type copper cables, conduits, accessories and all other ancillary work required to complete the work as per the approved method of statement by UNESCO and endorsed by NOUH.

All this work should be identified and detailed in the contractor’s shop drawings and method of statement to be submitted for approval to UNESCO

- Inspection of the supplied materials should take place as per the approved samples.
- All concealed PVC conduit and boxes should be aligned with the approved routs and levels identified in the shop drawings which shall be verified by the contractor’s verification consultant and approved by UNESCO.
- All conduits should be at least 12cm depth inside the walls, this is in order to be stable enough and prevent plaster cracks in the future.
- Identifying experience labours in this field to be performing according to trade fundamentals, norms, and code of practice and approved by UNESCO.
- Wiring should take place before plastering.
- All finishing work should be after the testing and approval of circuits and engineering assessment approved by UNESCO.

5.19 Supply and install approved local product TV socket outlet (Schneider or Bticino or equivalent) and waterproof plastic outdoor cable junction box including approved type copper cables, conduits connecting the socket to the junction box, accessories and all other ancillary work required to complete the work as per the approved construction method of statement by UNESCO and endorsed by NOUH.

All this work should be identified and detailed in the contractor’s shop drawings and method of statement to be submitted for approval to UNESCO

- Inspection of the supplied materials should take place as per the approved samples.
- All concealed PVC conduit and boxes should be aligned with the approved routs and levels identified in the shop drawings which shall be verified by the contractor’s verification consultant and approved by UNESCO.
- All conduits should be at least 12cm depth inside the walls, this is in order to be stable enough and prevent plaster cracks in the future.
- Identifying experience labours in this field to be performing according to trade fundamentals, norms, and code of practice and approved by UNESCO.
- Wiring should take place before plastering.
- All finishing work should be after the testing and approval of circuits and engineering assessment approved by UNESCO.

5.20 Supply and install approved sound system including speakers’ outlets and waterproof plastic outdoor cable junction box including approved type copper cables, conduits connecting the socket to the junction box, accessories and all other ancillary work required to complete the work as per the approved method of statement by UNESCO and endorsed by NOUH.

All this work should be identified and detailed in the contractor’s shop drawings and method of statement to be submitted for approval to UNESCO

- Inspection of the supplied materials should take place as per the approved samples.
• Plumbing and sanitary works

5.21 Supply, install, test and commission floor mounted, white color, Porcelain, siphon jet water closet/toilet (Grade A Duravit or equivalent) with an elongated bowl, seat with open front and check hinge, and carrier including necessary accessories, 9 lit capacity cistern, valves, fittings, stop angle valves, hose, heavy duty side hand shower, connection to drainage and water systems, and any other accessories and ancillary work required to complete the work as per the approved method of statement by UNESCO and endorsed by NOUH.
All this work should be identified and detailed in the contractor’s shop drawings and method of statement to be submitted for approval to UNESCO.

- Inspection of the supplied materials should take place as per the approved samples.
- All concealed PVC conduit and inspection boxes should be aligned with the approved routs and levels identified in the shop drawings which shall be verified by the contractor’s verification consultant and approved by UNESCO.
- All conduits should be at least 12cm depth inside the walls if any, this is in order to be stable enough and prevent plaster cracks in the future.
- Identifying experienced labour in this field to perform according to trade fundamentals, norms, and code of practice and approved by UNESCO.
- All finishing work should be after the testing and approval of connections and pressure through engineering assessment approved by UNESCO.
- To prevent the WC plaster from humidity and water five layers of airbrush applied diluted in water and boiled natural Arabic glue in ratio 1(glue):7(water) on the surfaces of the buildings including the inner surfaces of vaults and domes plastered.

5.22 Supply, install, test and commission 40 x 60 cm wall mounted, slab type, vitreous china lavatory (Grade A Duravit or equivalent) with faucet holes; including cold and hot water faucet, siphon, valves, connection to drainage and water systems, and any other accessories and ancillary work required to complete the work as per the approved method of statement by UNESCO and endorsed by NOUH.
All this work should be identified and detailed in the contractor’s shop drawings and method of statement to be submitted for approval to UNESCO.

- Inspection of the supplied materials should take place as per the approved samples.
- All concealed PVC conduit and inspection boxes should be aligned with the approved routs and levels identified in the shop drawings which shall be verified by the contractor’s verification consultant and approved by UNESCO.
- All conduits should be at least 12cm depth inside the walls if any, this is in order to be stable enough and prevent plaster cracks in the future.
Identifying experienced labour in this field to perform according to trade fundamentals, norms, and code of practice and approved by UNESCO.

All finishing work should be after the testing and approval of connections and pressure through engineering assessment approved by UNESCO.

To prevent the WC plaster from humidity and water five layers of airbrush applied diluted in water and boiled natural Arabic glue in ratio 1(glue):7(water) on the surfaces of the buildings including the inner surfaces of vaults and domes plastered.

---

5.23 Supply, install, test and commission wall mounted, vitreous china urinal (Grade A Duravit or equivalent) with faucet holes; including cold water faucet, siphon, valves, connection to drainage and water systems, and any other accessories and ancillary work required to complete the work as per the approved method of statement by UNESCO and endorsed by NOUH.

All this work should be identified and detailed in the contractor’s shop drawings and method of statement to be submitted for approval to UNESCO

- Inspection of the supplied materials should take place as per the approved samples.
- All concealed PVC conduit and inspection boxes should be aligned with the approved routs and levels identified in the shop drawings which shall be verified by the contractor’s verification consultant and approved by UNESCO.
- All conduits should be at least 12cm depth inside the walls if any, this is in order to be stable enough and prevent plaster cracks in the future.
- Identifying experienced labour in this field to perform according to trade fundamentals, norms, and code of practice and approved by UNESCO.
- All finishing work should be after the testing and approval of connections and pressure through engineering assessment approved by UNESCO.
- To prevent the WC plaster from humidity and water five layers of airbrush applied diluted in water and boiled natural Arabic glue in ratio 1(glue):7(water) on the surfaces of the buildings including the inner surfaces of vaults and domes plastered.

---

5.24 Supply, install, test and commission 70 x170 cm vitreous china shower tray/bathtub (Grade A Duravit or equivalent); including cold and hot water faucet, handle shower, siphon, valves, connection to drainage and water systems, and any other accessories and ancillary work required to complete the work as per the approved method of statement by UNESCO and endorsed by NOUH.

All this work should be identified and detailed in the contractor’s shop drawings and method of statement to be submitted for approval to UNESCO

- Inspection of the supplied materials should take place as per the approved samples.
- All concealed PVC conduit and inspection boxes should be aligned with the approved routs and levels identified in the shop drawings which shall be verified by the contractor’s verification consultant and approved by UNESCO.
- All conduits should be at least 12cm depth inside the walls if any, this is in order to be stable enough and prevent plaster cracks in the future.
- Identifying experienced labour in this field to perform according to trade fundamentals, norms, and code of practice and approved by UNESCO.
- All finishing work should be after the testing and approval of connections and pressure through engineering assessment approved by UNESCO.
- To prevent the WC plaster from humidity and water five layers of airbrush applied diluted in water and boiled natural Arabic glue in ratio 1(glue):7(water)
5.25 Supply, install, test and commission floor drain (Smart or equivalent) including: 4” chrome plated threaded 15x15 cm cast brass cover, multi inlet adjustable with trap floor drain, floor clean out plug, HDPE/PVC siphon or equivalent, connections with fixtures and main drain pipes, and any other accessories and ancillary work required to complete the work as per the approved method of statement by UNESCO and endorsed by NOUH. All this work should be identified and detailed in the contractor’s shop drawings and method of statement to be submitted for approval to UNESCO.

- Inspection of the supplied materials should take place as per the approved samples.
- All concealed PVC conduit and inspection boxes should be aligned with the approved routs and levels identified in the shop drawings which shall be verified by the contractor’s verification consultant and approved by UNESCO.
- All conduits should be at least 12cm depth inside the walls if any, this is in order to be stable enough and prevent plaster cracks in the future.
- Identifying experienced labour in this field to perform according to trade fundamentals, norms, and code of practice and approved by UNESCO.
- All finishing work should be after the testing and approval of connections and pressure through engineering assessment approved by UNESCO.
- To prevent the WC plaster from humidity and water five layers of airbrush applied diluted in water and boiled natural Arabic glue in ratio 1(glue):7(water) on the surfaces of the buildings including the inner surfaces of vaults and domes plastered.

5.26 Supply, install, test and commission floor drain (Smart or equivalent), and 2-inch rain drain pipe for balconies. Rain includes repair of plastering, painting, etc., and any other accessories and ancillary work required to complete the work as per the approved method of statement by UNESCO and endorsed by NOUH. All this work should be identified and detailed in the contractor’s shop drawings and method of statement to be submitted for approval to UNESCO.

- Inspection of the supplied materials should take place as per the approved samples.
- All concealed PVC conduit and inspection boxes should be aligned with the approved routs and levels identified in the shop drawings which shall be verified by the contractor’s verification consultant and approved by UNESCO.
- All conduits should be at least 12cm depth inside the walls if any, this is in order to be stable enough and prevent plaster cracks in the future.
- Identifying experienced labour in this field to perform according to trade fundamentals, norms, and code of practice and approved by UNESCO.
- All finishing work should be after the testing and approval of connections and pressure through engineering assessment approved by UNESCO.
- To prevent the WC plaster from humidity and water five layers of airbrush applied diluted in water and boiled natural Arabic glue in ratio 1(glue):7(water) on the surfaces of the buildings including the inner surfaces of vaults and domes plastered.

5.27 Supply and apply 2 cold layers of bituminous emulsion waterproofing (CMB or equivalent) including but not limited to surface preparation, surface levelling work,
primer, and any other item and ancillary work required to complete the work as per the approved method of statement by UNESCO and endorsed by NOUH.

All this work should be identified and detailed in the contractor’s shop drawings and method of statement to be submitted for approval to UNESCO

- Inspection of the supplied materials should take place as per the approved samples.
- All surfaces should be cleared, and cleaned by air brush guns.
- All surfaces should be levelled with the appropriate material as per the approved verified method of statement.
- Identifying experienced labour in this field to perform according to trade fundamentals, norms, and code of practice and approved by UNESCO.
- All finishing work should be after the testing and approval of application and permeability through engineering assessment approved by UNESCO.
- To prevent the WC plaster from humidity and water five layers of airbrush applied diluted in water and boiled natural Arabic glue in ratio 1(glue):7(water) on the surfaces of the buildings including the inner surfaces of vaults and domes plastered.

5.28 Supply, install, test and commission water faucets for mosque ablution; including cold and hot water, siphon, valves, connection to drainage and water systems, and any other accessories and ancillary work required to complete the work as per the approved construction method of statement by UNESCO and endorsed by NOUH.

All this work should be identified and detailed in the contractor’s shop drawings and method of statement to be submitted for approval to UNESCO

- Inspection of the supplied materials should take place as per the approved samples.
- All concealed PVC conduit and boxes should be aligned with the approved routs and levels identified in the shop drawings which shall be verified by the contractor’s verification consultant and approved by UNESCO.
- All conduits should be at least 12cm depth inside the walls, this is in order to be stable enough and prevent plaster cracks in the future.
- Identifying experienced labour in this field to perform according to trade fundamentals, norms, and code of practice and approved by UNESCO.
- All finishing work should be after the testing and approval of connections and pressure through engineering assessment approved by UNESCO.
- To prevent the ablution plaster from humidity and water five layers of airbrush applied diluted in water and boiled natural Arabic glue in ratio 1(glue):7(water) on the surfaces of the buildings including the inner surfaces of vaults and domes plastered.

5.29 Supply, install, test and commission single compartment stainless steel sink (120 cm), drop-in, self-rimming, ledge-type, connected with a drain with faucet holes; including faucet, siphon, valves, connection to drainage and water systems, and any other accessories and ancillary work required to complete the work as per the approved construction method of statement by UNESCO and endorsed by NOUH.

All this work should be identified and detailed in the contractor’s shop drawings and method of statement to be submitted for approval to UNESCO.

- Inspection of the supplied materials should take place as per the approved samples.
All concealed PVC conduit and boxes should be aligned with the approved routes and levels identified in the shop drawings which shall be verified by the contractor’s verification consultant and approved by UNESCO.

All conduits should be at least 12cm depth inside the walls, this is in order to be stable enough and prevent plaster cracks in the future.

Identifying experienced labour in this field to perform according to trade fundamentals, norms, and code of practice and approved by UNESCO.

All finishing work should be after the testing and approval of connections and pressure through engineering assessment approved by UNESCO.

To prevent the ablution plaster from humidity and water five layers of airbrush applied diluted in water and boiled natural Arabic glue in ratio 1(glue):7(water) on the surfaces of the buildings including the inner surfaces of vaults and domes plastered.

6. Contract Termination Conditions:

- If the work is not compliant to ANNEX X – General Terms and Conditions for Large Scale Works.
- When the contractor cannot commit to the approved work plan and agreed deadlines UNESCO keeps the right to partially or totally withdraw works and directly contract other contractor/s to finish the withdrawn work and deduct the billed works and services from the contractor’s payments and security bonds.
- If the contractor receives three warning letters regarding safety issues on site, destructive accidents for the authentic buildings, any clashes with local community, using un-approved materials or techniques, proved corruption cases regarding the project assigned work, and/or any other actions violating the norms of practice, UNESCO keeps the write to contract termination.