

# **Terms of Reference (Design Services for Emergency Construction of Patient Wards at Kulhudhuffushi Island in Maldives)**

## **1. Background**

### **1.1. BACKGROUND INFORMATION – UNOPS**

The United Nations Office for Project Services' (UNOPS) mission is to serve people in need by expanding the ability of the United Nations, governments and other partners to manage projects, infrastructure and procurement in a sustainable and efficient manner.

Within these three core areas of expertise, UNOPS provides its partners with advisory, implementation and transactional services, with projects ranging from building schools, hospitals, administrative offices etc to procuring goods and services and training local personnel. UNOPS works closely with governments and communities to ensure increased economic, social and environmental sustainability for the projects we support, with a focus on developing national capacity.

Working in some of the world's most challenging environments, our vision is to advance sustainable implementation practices in development, humanitarian and peace building contexts, always satisfying or surpassing partner expectations.

We employ more than 6,000 personnel and on behalf of our partners create thousands more work opportunities in local communities. Through our headquarters in Copenhagen, Denmark and a network of offices, we oversee activities in more than 80 countries.

UNOPS' work in this region focuses on the construction and operation of high quality sustainable infrastructure and sustainable procurement, project management, timely provision of services, and the use of most relevant technologies. Such projects provide social and economic benefits to vulnerable populations across the country, and contribute to poverty eradication. This includes construction of schools, hospitals, water networks, urban sewerage and drainage facilities, harbors and anchorages, waste management facilities, climate change mitigation, as well as a range of "soft" support in Capacity Building, operations and maintenance of public assets, local governance, etc.

### **1.2. ABOUT THE PROJECT**

The Maldives have been deeply affected by the COVID-19 pandemic. The country weathered the pandemic with a high vaccination rate. However, the last two years exposed gaps in health care provision with regards to handling infectious and highly transmissible diseases. Therefore the Government, working with its development partners, has started filling those gaps on a priority basis.

As a part of this programme The Government, working with the World Bank, Asian Infrastructure Investment Bank and United Nations Office for Project Services, is implementing a project for Emergency Construction of Patient Wards at Kulhudhuffushi Island in Maldives. The project addresses a critical lack of medical facilities dealing with

highly contagious and transmissible diseases. A two-storied patient ward building within the existing Kulhudhuffushi regional hospital, Maldives is a key deliverable of this project.

### 1.3. PROJECT LOCATION

The project location is the Kulhudhuffushi regional hospital. The exact location of the proposed building is shown below.



**Kulhudhuffushi Island in Maldives**



**Regional Hospital in Kulhudhuffushi**



### Proposed land within the hospital premises

GPS Coordinates of Kulhudhuffushi Hospital : 6.6178° N, 73.0686° E



View 01 of the propose land



**View 02 of the propose land**

## **2. SCOPE OF WORK FOR DESIGN SERVICES**

UNOPS intends to engage a suitable consultant for design services through the procurement process for the design of the new patient ward building for the Kulhudhuffushi regional hospital in Maldives. It is intended to recruit a suitable, qualified, and experienced consulting firm for the Design Services of the project.

### **2.1 Functional Requirement**

The client submitted the below mentioned functional requirement of the patient ward building. The concept design in terms of arranging the space for all functional requirements of the patient ward has already been developed by UNOPS and it has been agreed by the Ministry of Health, Maldives in principle. However, it is the consultant's responsibility to verify the partly developed concept design and to complete the concept design including the approach, material selection, services, MEP requirements, Architectural drawings etc.. and present it to the client & UNOPS for their approval before they move on to the developed design.



| First Floor Amenities  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• Two meeting halls; (auditorium and small meeting room)</li> <li>• Four toilets with a washing area</li> <li>• One storeroom</li> </ul>  |   |
| Ground Floor Amenities   |   |
| <ul style="list-style-type: none"> <li>• Fourteen individual patient rooms, of which two rooms for critical care patients. (for both male &amp; female)</li> <li>• Accident &amp; Emergency area</li> <li>• Nurses Station and Waiting area</li> <li>• General store, Equipment &amp; Medical Store</li> <li>• Laundry and clean store</li> <li>• Biomedical waste area for autoclave and waste segregation</li> </ul> | <ul style="list-style-type: none"> <li>• Donning &amp; doffing area (Admin Room with small meeting room for 4 occupants)</li> <li>• Counseling room (for max 3 people)</li> <li>• Tea room for staff</li> <li>• Prayer room</li> <li>• Staff meeting room for 4-6 people with attached toilets</li> <li>• Dialysis Unit (room)</li> </ul> |

## 2.2 Concept Design

Refer Annex I for the partly developed concept design by UNOPS.

You shall follow / incorporate following requirements during the process of the design service.

- Choose suitable approach for designing & construction of the patient ward building by understanding the context of the project site in-depth
- Speedy construction is one of the priorities of this project. Therefore the consultant is advised to look into the option of designing & building the patient ward using prefabricated elements ( structural & non structural)
- Make provision to accommodate physically challenged people
- Integrate gender perspectives into the design service and the design of the building
- It is preferable to finish the external surface of the building with metal cladding (The client willingness)
- The building should be environmentally sustainable and green elements must be considered during the design.

## 2.3 The Scope of Design Services

The scope the design services of patient ward to the Kulhudhuffushi regional hospital shall include but not limited to following,

- Consult with the end user and MoH, Maldives to verify the functional requirement of the proposed patient ward building.
- Visit the project site and collect all necessary information relevant to the design service.
- Discuss with relevant Local Authorities and understand the requirements of obtaining building approvals.
- Perform land surveying of the Kulhudhuffushi regional hospital.
- Review the partly developed concept design provided and revise them as required.
- Complete concept design including but is not limited to the approach, material selection, MEP requirements, HVAC requirements, medical gas system, finishes, services and tentative budget.
- Development of Architectural, structural and services designs including finishes
- Design of necessary elements for the complete functioning of the building including but is not limited to, Mechanical, Electrical, Water Supply (cold & hot), Sewerage, Fire detection & protection and HVAC system etc
- Develop specifications, BOQ, design report etc. and virtual 3D model (walk through) at the final stage of the design
- Design of partitions, interior & exterior finishers such as ceiling, walls, floor, external cladding etc & painting.
- Doors & windows
- Waste water, sewer plumbing and treatment/management system
- Internal & external lighting /power supply system
- Signage and disabled friendly infrastructure
- Fire detection and protection system
- Design of intercom system
- Design CCTV security system
- Design of access control system
- Public calling system
- Landscaping and necessary external works in a way to integrate this new building with the existing hospital.
- Submission of necessary design packages in three stages to UNOPS for review and incorporating their comments or submitting clarification. Obtain approval from UNOPS before moving to the next stage of design.
- Any other functions and features that may be requested by the client, end users and donor of the project during the design process.

The design for the new infrastructure will have to be innovative by considering sustainable elements as much as practical and fit for purpose and cost effectiveness. The Design consultant must pay special attention to provide effective services to the occupants. The

building should be environmentally sustainable and green elements must be considered provided.

UNOPS will conduct a design review for the design of new building infrastructure in order to assure that the design complies with acceptable international best practices in addition to the standards of Maldives and ensure adequacy of the design and quality of the design documentation. The review will take place in three stages, in parallel, along with the development of the detailed design (at the end of draft & detailed designs). UNOPS design manual indicating basic requirements on health and safety and disabled friendly aspects will be made available for the design consultant for reference and compliance. Further the Ministry of Health, Maldives will review the design in order to assure that the design complies with their requirements and best practices.

UNOPS design review team and MOH, Maldives may come up with their comments on the design during the time of their review. Either incorporating or defending the comments with acceptable justification is part and parcel of the design consultancy service. The Employer representative will act as a facilitator during the process of design reviews.

The Consultant shall carry out necessary stakeholder consultations, presentation of concept design, design development, detailed design and prepare cost estimates, Bill of Quantities (BOQ), pricing preambles and specifications based on the applicable design standards in Maldives and design guidelines provided by UNOPS.

## **2.4 The Objectives of the Service**

The objective of the required service from the design consultant are,

### **Design Phase**

- Offers expert advice on incorporating aesthetics and functionality of the proposed patient ward building based on needs of the end user and the client
- Present concept design with proper documentation for review and obtain approval from the end user and UNOPS before further development.
- Present developed design with the complete documentation for review and obtain approval from UNOPS before further development
- Perform detailed design and prepare complete package of design including but is not limited to design report, drawings, statement of works, bill of quantities, pricing preambles and detailed technical specifications.
- Present detail design with the complete documentation for review and obtain approval from MoH and UNOPS. Employer's representative of UNOPS will coordinate among the design consultant, UNOPS design reviewer and MoH, Maldives during the all three stages of design review. Design review process will run one or several rounds based on the quality of the design package.

### **Construction Phase**

- Provide solutions to design related issues and submit missing details, if any as and when required by UNOPS during the construction. The consultant shall include the cost of such services in their financial proposal.

### 3. DESIGN REQUIREMENTS

The consultant is required to strictly follow the following guidelines, in addition to other requirements mentioned in the TOR.

- The consultant is required to follow and adopt as necessary, Design Standards applicable in Maldives. Consultant shall provide a Design Brief that defines the key elements and approach to the design before finalizing the concept design
- The consultants must ensure that the design of new infrastructure shall be designed to both disaster resilience and local climate conditions. The detailed calculations and design parameters shall be clearly stated in the design report.
- It is mandatory to incorporate provisions of the UNOPS design planning manual in their designs as minimum.
- The consultants shall prepare all drawings, specifications and designs using the metric system and embody the latest design criteria.
- The technical specifications should be detailed enough to ensure the sustainability and quality of all materials including those used for finishing works, sanitary works and fittings, flooring, electrical and other items so that type and quality of the items can be easily identified, checked and approved. The consultant shall propose the methodology and quality control mechanisms to ensure the items used are equivalent to those used for preparing the cost estimates.
- Consultant shall ensure that physically challenged people can access the facility
- The safety of the people in case of fire or other possible hazards.
- The building design shall be incorporating sustainable elements and green building requirement as much as practicable to meet the requirement and available budget. The consultant should pay attention to the areas of energy efficiency, renewable energy, water efficiency, waste management and suitable material selection.
- Consultant shall prepare a user guide to brief end users about the sustainable design, application of green technology and required maintenance.
- Designs of new building infrastructure should be innovative and attractive.
- The building design should tally with the available construction budget.
- AutoCAD drawings should be standardized with international drafting standards including Standards scale, font, font sizes, line thickness etc. UNOPS AutoCAD standards guidelines should be followed in drafting.
- The consultant should not refer to shop drawings for contractors. The design shall include detailed drawings for all elements of the design.



## 4. DESIGN PROCESS

The services provided by of the Consultant shall include but not be limited to the following activities:

1. Before proceeding with detailed design, the consultant shall undertake the study of the topography, geography and geology of the site to assess the suitability of the proposed concept design. The consultant shall explore the option of designing the building with prefabricated elements hence the construction can be done within the minimum duration.
2. Verification of the partly developed conceptual design (will be provided by UNOPS) including the approximate cost estimates for construction of the works ( all-inclusive cost for the construction of the infrastructure shall be reasonable within the acceptable norms of the building industry in Maldives for similar construction)
3. Design brief giving basic information about the approach, tentative floor areas, services requirement, cost estimates and other important information such as norms and standards to be adopted for the design including architectural drawings in isometric view.
4. Finalized concept design (after incorporating comments), shall be presented to UNOPS including virtual 3D model (walk through) by the Consultant and obtain approval of UNOPS and the MoH, Maldives before proceeding with the detailed design development.
5. The Consultant shall develop layout drawings for the arrangement of furniture with the key dimensions under the architectural drawings.
6. On completion of the design phase, the Consultant shall submit/present a draft design report complete in all aspects. The report shall consist of, but not be limited to, the following; design concepts, design criteria, final architectural drawings, construction drawings, design calculation sheets, reference Standards and Codes of Practices used, safety factors, and other important details pertaining to the design of the building and related components.
7. The consultant shall coordinate with UNOPS design reviewers and obtain the UNOPS approval for the Draft designs and prepare the Final design reports incorporating their comments/observations.
8. Consultants design shall include the basic landscaping including access to the adjoining hospital buildings, walkways, external lights, parking area etc. around the infrastructures.
9. Consultant shall design services including Electrical, Mechanical, Plumbing, Fire, CCTV, HVAC, Telephone, Networking, etc.
10. Consultant shall obtain approval from UNOPS before they submit the final deliverables
11. Provide additional drawings and design documentations for obtaining approval from the local authority/UDA and any other government institution as necessary.

## 5. FINAL DELIVERABLES

### Design stage

The following deliverables shall be made available to UNOPS at a sequence as per the time schedule. Timely submission of interim deliverables are important to have the designs reviewed and obtain approval for the next stage of the design

1. **Inception Report** including but is not limited to field assessment, verification of functional requirement of the patient ward, work plans (human & other resources, timeline etc.. ), comments on the TOR (if any).
2. **Design brief** including but is not limited to approach, finalized functional requirement, material selection, design standards to be followed,
3. **Concept design** including but is not limited to land survey plan, lay out of building & external works, architectural drawings which includes AutoCAD 3D drawings and virtual 3D model (walk through), MEP requirements, HVAC requirements, medical gas system, finishes, services and tentative budget - 2 printed copies in A2/A3 size and in electronic form acceptable to UNOPS
4. **Developed design** for final review. It includes but not limited to,
  - complete set of drawings (Architectural, Structural, Service-MEP, MVAC, Medical Gas, external works etc), design report including – 02 printed copies in A2/A3 size and in electronic form acceptable to UNOPS
  - Design report including concept, design criteria, design standards & code of practices used, important calculations, health & safety aspects etc - electronic form acceptable to UNOPS
  - Bill of quantity & Pricing preambles - electronic form acceptable to UNOPS
  - Technical specification - electronic form acceptable to UNOPS
5. **Final design (after the review & approval of developed design by UNOPS). It includes but not limited to,**
  - Complete set of construction drawings (Architectural, Structural, Service-MEP, MVAC, Medical Gas, external works etc), design report including – 02 printed copies in A2/A3 size and in electronic form acceptable to UNOPS
  - Complete set of construction drawings (Architectural, Structural, Service-MEP, MVAC, Medical Gas, external works etc) and other necessary documents (hard copy as required) with the endorsement of authorized (licenced) Engineers & Architecture for the submission to local authority for obtaining building approval
  - Final Design report including concept, design criteria, design standards & code of practices used, important calculations, health & safety aspects etc - electronic form acceptable to UNOPS

- Engineer's Estimate & Pricing preambles - electronic form acceptable to UNOPS
- Technical specification - electronic form acceptable to UNOPS

Further to the printed materials as listed above, all drawings and documents are required to be submitted in the relevant digital formats in compact discs;

1. Drawings – in AutoCAD (Latest Version ) and PDF formats
2. Design report - PDF formats
3. Specifications, Bill of quantity, estimates and final report – in Microsoft Word/Excel format

## **6. EXPERTISE OF CONSULTING COMPANY / PROJECT STAFFING AND COST**

Design consultant Firm duly incorporated in the country of business.  
~~Duly Registered Design Consultant Firm with Certificate of Incorporation in Maldives.~~

Relevant specialized knowledge of Building and Infrastructure design works and having experience of more than 10 years with private and public sector organizations in the same geographic locations/regions. Completion of at least 03 similar projects, copies of previous contracts and certificates of satisfactory performance from clients.

The consultant shall include suitable staffing arrangements, and their specific responsibilities in their proposal. A competent Team leader/ Project Manager having relevant experience shall lead the team of experts from the consultant and liaise with UNOPS, other stakeholders and relevant local authorities.

The Team leader/ Project Manager appointed by the consultant should be in house staff (Direct staff members) who will have overall responsibility of the deliverables and the process involved during the design. He will organize bi-weekly discussions with UNOPS to update on the progress of the study and to decide on any issues arising during the design process.

Key members of the design team to be proposed by the consultants are;

- Team Leader- Degree in Architecture or Engineering; minimum 10 years of experience in building infrastructure design, project management; Demonstrated experience in managing/leading designing of buildings.
- Architect – Chartered Architect with minimum 10 years' experience of Architectural designs
- Structural Engineer – Chartered Engineer with minimum 10 years' experience of structural design of Buildings
- Building Services/MEP Engineer – Chartered Engineer (Mechanical/Building Services) with minimum 10 years' experience of Building Services
- Electrical Engineer – Chartered Engineer with minimum 10 years' experience of Building Services

- Biomedical Engineer - Relevant degree with minimum 5 years of experience.
- Quantity Surveyor– Relevant degree with minimum of 10 years of work experience in quantity surveying in building infrastructure
- Civil Engineer- Relevant degree with min 5 years of experience
- AutoCAD draftspersons (2 Numbers) – Diploma/Certificate/Similar in AutoCAD with minimum 5 years' experience of architectural, structural and MEP.

Notes:

- a) The consultants are free to propose additional personnel they feel appropriate to complete the assignment successfully on time.
- b) The consultant's financial proposal shall be all-inclusive for personnel, office establishment, equipment, transportation, logistics, stationery, technical, documentation, reporting, and any other facilities necessary to carry out the services.
- c) The consultants must strictly ensure that proposed personnel are available for the services throughout the contract period. Letter of consent from each expert should be included in the technical proposal. Failure to engage the specified professionals may lead to the termination of the contract.

## 7. TIME SCHEDULE AND REPORTING

### 7.1 Tentative Schedule

The consultant shall complete the assigned scope of work within 09 months. The specified deliverables shall be submitted to UNOPS on or before the scheduled completion date of each deliverable. Time schedule for each activity to be agreed beforehand and the tentative timeline is as below:

| #            | Activity  | Duration  |
|--------------|---|---|
| Activity # 1 | Inception Report  | 2 weeks from the date of signing the agreement  |
| Activity # 2 | Design Brief  | 2 weeks from the date of signing the agreement  |
| Activity # 3 | Concept Design  | 3 weeks from the date of signing the agreement  |
| Activity # 4 | First design review by UNOPS and incorporation of comments by the Consultant  | 2 weeks   |
| Activity # 5 | Developed design  | 3 weeks from date of completion of Activity # 4 |
| Activity # 6 | Second design review by UNOPS and incorporation of comments by the Consultant | 2 weeks   |
| Activity # 7 | Final design  | 2 weeks   |

|              |  |         |
|--------------|--|---------|
| Activity # 8 | Final design review by UNOPS and incorporation of comments by the Consultant | 2 weeks |
|--------------|--|---------|

The Consultant shall attend progress review meetings scheduled by the Employer bi-weekly and other ad hoc meetings as & when required during the design phase.

## 7.2 Contract Duration

The overall contract period shall be nine (09) months from the date of signing the contract.

- First 14 weeks from the date of signing the contract is to complete the assigned scope of design services as explained in the schedule. Liquidated damages will be claimed by the Employer in the event of delay in completing the final detailed design.
- The remaining weeks are to continue support during the construction stage including attending clarification requests from contractors, review and approve shop drawings, special materials and equipment proposed by contractors, especially for MEP works. .

## 8. INFORMATION AND SERVICES TO BE PROVIDED BY UNOPS

- Partly developed concept design
- UNOPS design Planning Manual for Building & Design checklist.
- Geotechnical Investigation Report
- CAD drawings guidelines
- Review and approve the design in three stages (Concept design, developed design & final design)
- Participate in bi-weekly meetings to assess the progress of the design service
- Timely payments

## 9. SCHEDULE OF PAYMENT

### 9.1 Design Services

| Payment Milestone | Milestones.  | Percentage of Total Design Cost |
|-------------------|--|---------------------------------|
| 1                 | Upon submission and acceptance of the final concept design (after the review of UNOPS) | 20%                             |
| 2                 | Upon submission and acceptance of the developed design. (after the review of UNOPS)    | 40%                             |
| 3                 | Upon submission and acceptance of the final design package (after the review of UNOPS) | 40%                             |



|  |                                  |             |
|--|----------------------------------|-------------|
|  | <b>TOTAL AMOUNT (CUMULATIVE)</b> | <b>100%</b> |
|--|----------------------------------|-------------|

## 9.2 Service during the construction period

| # | Description  | Remarks         |
|---|--|-----------------|
| 1 | Attending clarification requests from contractors with regards to the design, review and approve shop drawings, special materials and equipment proposed by contractors, especially for MEP works. | Provisional Sum |