



Republic of Maldives

EMPLOYER'S REQUIREMENT

for

**Design and Completion of
100 Housing Units at
Hdh.Hanimaadhoo**

**Ministry of Housing and Urban Development
Issued on: January 2020**

1.0 Employers Requirement

Scope of Works

This project consists of two components

1. Remedial works and Completion of 52 Housing Units

- a) This project includes 52 Housing units terminated at different stages of construction.

CATEGORY		QTY
Green		1
Yellow		1
Orange		1
Dark Brown		4
Cyan		3
Blue		4
Grey		4
Dark Green		9
White		5
Magenta		10
Red		10
TOTAL		52

- b) The stages are categorized based on the progress of work as per annex 2.
- c) Progress of each of these housing units is presented in annex 3. Bidders are to check and verify and give prices accordingly.
- d) A typical floor plan for the Housing units is given in annex 4. Floor plan may vary.
- e) 52 housing unit completions is a continuation of partially completed structures, thus the Contractor is required to do a detailed assessment of the remaining works.
- f) Contractor is required to submit detailed drawings for the existing structures. The contractor shall submit the raw soft copies of all the below mentioned detailed design documents
- Architectural drawings
 - Electrical drawings including wiring diagrams, lighting fixtures, control panels, etc.
 - Mechanical, including air conditioning and/or ventilation systems

- d. Plumbing layout including pipe diagrams and schedules, fixtures, etc.
- g) The Works shall be carried out in accordance with the approved drawings, Bill of Quantities and standard technical specifications
- h) The Contractor shall be responsible for acquiring all the materials required for the completion of the housing units.
- i) Contractor is required to propose appropriate solutions and submit work methodology for repair of the existing structures which includes mould remediation, cracks, corrosion of exposed steel bars and repair of damp patches.
- j) Contractor is required to remove all fixed elements of the units which are not complying structural standards.
- k) All purlins and rafters which are defected must be removed and replaced with an appropriate material and specification
- l) All existing roofing sheets must be removed and replaced with an appropriate material and specification
- m) All Rockwool insulations must be removed and replaced with an appropriate material and specification
- n) Ceiling areas damaged needs to be replaced with an appropriate material and specification.
- o) All doors and windows that are already fixed needs to be sealed with an appropriate material.
- p) Damaged Tiling areas need to be replaced.
- q) Finishing works are to be carried out as per sub-clauses below
- r) An elementary Bill of Quantities for the housing units are required to be submitted by the bidders as per the format attached at annex 6
- s) Final drawings, detailed BOQ and technical specifications shall be provided by the Contractor and shall include provisions for all civil, architectural, structural, electrical, plumbing and firefighting disciplines, once detailed drawings are approved by the employer.
- t) Contractor is required to remove and transport all construction waste and debris including the existing construction waste and debris to a waste management facility such as K.Thilafushi.

2- Design and Construction of 48 Housing Units

The project requires design and Construction of 48 single Housing Units. The Proposed location of the housing units will be adjacent to the existing site. Setbacks, accessibility and such should be taken into consideration and the project should be designed and constructed in accordance with the local and internationally accepted building codes and standards.

2.1 Design and Preparation of Architectural, Structural and Services drawings, Bill of Quantities and Technical specifications

- a. Design requirement are as follows;
 - Design and construction of 48 housing units
 - The Contractor shall accommodate for any amendments regarding the layout and the distribution of the blocks as requested by the Client.
 - Site investigations including site surveying, soil investigation and appropriate geotechnical surveys where applicable.
 - Each housing unit shall cover a minimum built-up area of 1300 sqft. (Applies for newly constructed 48 housing units).
 - The building should be elevated for 0.2m from ground level (the finished floor level of ground floor should be 0.3m from the ground level).
 - Height of the buildings should not exceed 4m in height up to roof apex level.
 - Prepare detailed architectural, structural, services drawings (electrical, plumbing and firefighting) based on the concept drawings provided.
 - Provisions for other services such as cable TV, and internet should be provided.
- b. An elementary Bill of Quantities for the housing units are required to be submitted by the bidders as per the format attached at annex 5
- c. Final drawings, detailed BOQ and technical specifications shall be provided by the Contractor and shall include provisions for all civil, architectural, structural, electrical, plumbing and firefighting disciplines, once detailed drawings are approved by the employer.
- d. All plans and specifications must be in English.
- e. Design drawings, BOQ and detailed technical specifications shall include all considerations and details necessary for a builder to construct the Works, such as, but not limited to:
 - i) Site Work, sewage disposal system, storm drainage, etc.

- ii) Architectural, including plans, elevations, wall sections, construction details, hardware and finishing schedules, waterproofing, sundries, etc.
- iii) Structural, including framing and concrete reinforcement layout, bar schedules and bending diagrams, bearings and connection details, etc.
- iv) Electrical, Security, and Communications including wiring diagrams, lighting fixtures, control panels, etc.
- v) Mechanical, including air conditioning and/or ventilation systems, as may be applicable.
- vi) Plumbing, including pipe diagrams and schedules, fixtures, etc.
- f. All designs shall comply with the Building Act/ National Planning regulation and all the regulations stipulated under the Act/Regulation as well as the relevant International Standards.
- g. For interior space management of the buildings, the Contractor shall maintain overall uses specified in the Specific Requirements. However Contractor may redesign any component of the building/s based on the Design team's recommendations, and subject to prior approval of the Employer.
- h. The Contractor shall make a minimum of seven amendments to the design proposed at no additional cost, upon receipt of comments and requests for the amendment of the prepared detailed drawings, the BOQ and the Technical Specification.
- i. The contractor shall submit the raw soft copies of all the detailed design documents, including but not limited to drawings in AutoCAD format, the Technical Specifications in MS Word format, the BOQ and the Structural Calculations in MS Excel.
- j. The Contractor shall provide one hard copy of the finalized approved drawings complete with architectural checker stamp, structural checker stamp, along with all other permits and stamps required, from the relevant authorities.
- k. The contractor shall submit a hardcopy of the BOQ and the Technical Specifications.
- l. The Contractor shall apply for and obtain the Environmental Impact Assessment (EIA) permit if required.

2.1.1 Specific requirements:

1. Installation of ground well and connection of utilities (electricity, water & sewerage) to that main lines shall be included for each individual units
2. Boundary demarcation for individual units must be provided with concrete marking pegs at all corners of the boundary. Boundary demarcation for the

continuation of 48 housing units to be provided as the given drawings. Boundary demarcations for the proposed newly constructed units are to be provided as per the approved drawings based on the layout drawings submitted by the contractor.

3. Site clearing and demarcation of work zones and bypasses. Contractor is required to remove and transport all construction waste and debris including the existing construction waste and debris to a waste management facility such as K.Thilafushi
4. For additional Information, submit the sectional drawings with the dimensions.
5. Label the roads on site plans.
6. The main entrance of the housing unit should be minimum 900mm wide.
7. Minimum width of the toilet or a bath room should be 1.2m.
8. The Minimum dimensions for the following spaces are as specified:
 - Master bedroom- 13 feet x 12 feet
 - Master bedroom toilet- 5 feet x 7 feet
 - Bedroom 2 toilet- 4 feet x 7 feet
 - Bedroom 3 toilet- 4 feet x 6 feet

1.1.2 General guideline:

- a) **Electrical installation:** Wiring for lighting and power shall be concealed conduit except for spaces within DB's closet and area above false ceiling, which shall be exposed conduit/trunking. In each housing unit minimum of three electric sockets in each room and one data/media and telephone points shall be provided. All electrical wiring shall be in accordance with the guidelines set out by the State Electric Company Ltd (STELCO).
- b) **Fire Rating:** structural members and walls are to be designed to accommodate the requirement of the local fire department. All structures above the ground floor shall be designed for a minimum period of 2 hours fire rating.
- c) **Fire Protection System:** Portable fire extinguishers and microprocessor based addressable automatic fire detection and alarm services for life safety protection.

- d) Soil Investigation:** Bidders shall carry out soil investigation at their own cost, prior to commencement of detail design of the sub-structure.
- e) Site Visit:** The Bidder, at the Bidder's own responsibility and risk, is encouraged to visit and examine the Site of Works and its surroundings and obtain all information that may be necessary for preparing the Bid and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the Bidder's own expense.
- f) Supervision, inspection & test plan:** the supervision, inspection and testing of the materials and works shall be carried out in accordance to normal industrial standards and practice, specifications, manuals and guidelines used in Maldives and as approved by MHI.
- g) Earthing System:** shall be installed in accordance with the requirement of BS Code of Practice BS 7430, IEC 62305 and Rules and Regulations of "STELCO" and "MEA" to provide a low impedance earthing systems and connections for equipment earthing.
- h) Approval of Materials and Systems**
The materials and systems to be used in the building shall be approved by the Employer prior to use or installation.
- i) Luminaires**
Adequate lighting shall be installed and the illumination levels shall generally be in accordance to international IES and IEC standards.

Sitting Room / Dining Room / Kitchen / Toilets	300 - 500 lux
Services Room / Garbage Room	200 lux
Store Room	200 lux
Corridor / Lobby	150 lux
Premises within Landscaped area	100-150 lux at working plane of 0.2m

1.1.3 Additional Information

1. Final price should be exclusive of the import duty for any imported construction material, equipment, machinery, etc.
2. The price also should include electricity and water required for the project.

3. Project costing - The project is a lump sum contract. The Contractor shall submit a work breakdown schedule within ten working days from project award, indicating the price break down and the durations for each task. The work breakdown schedule will then be used as a basis for measuring the works completed in order to issue the interim payments.
4. It is contractors' responsibility to allow for and obtain all the permits required from regulatory authorities / service providers etc.
5. Demolition waste and debris shall be transported to designated waste management site.
6. Finalized work schedule- The contractor shall submit a finalized work schedule within 10 days from the date of receipt of the Letter of Acceptance.
7. Detailed design and 3D rendered images of the exterior of the buildings and the development as a whole, to be submitted in accordance with the timeline agreed with the Employer after signing of the Contract.

2.2 Expected Schedule of Finishes

Location/Area	Floor	Skirting	Wall	Ceiling	Partition	Doors/window
Entrance / Parking area	Epoxy flooring system		Matte wall paint	Fibrous plaster board ceiling	Brick wall	Powder coated aluminum frame with tinted / clear glass
Common areas	Homogeneous/ Porcelain tiles	Homogeneous/ Porcelain tiles	Skim coating and emulsion paint	Fibrous board ceiling	Brick wall	Powder coated aluminum frame with tinted, clear or frosted glass where appropriate.
Sitting room & living area	Homogeneous/ Porcelain tiles	Homogeneous tiles	Skim coating and emulsion paint	Fibrous board ceiling	Brick wall	Powder coated aluminum frame with tinted frosted glass / Timber door frame with timber panels

Store room / Services room	Homogeneous/ Porcelain tiles	Homogeneous/ Porcelain tiles	Skim coating and emulsion paint	-	Brick wall	Powder coated aluminum frame with aluminum panels
Toilets	Non- slippery homogeneous tiles + 2 coats of waterproofing (brush bond)	-	Ceramic wall tiles	Fibrous plaster board ceiling	Brick wall	Powder coated aluminum frame with tinted frosted glass / Timber door frame with timber panels
Services room	Titanium finish	-	Skim coating and emulsion paint	-	Concrete / Brick wall	Powder coated aluminum frame with aluminum panels
Outdoor tiled area	Homogeneous tiles + 2 coats of waterproofing (brush bond)	Homogeneous tiles	Ceramic wall tiles	-	Concrete / Brick wall	Powder coated aluminum frame with tinted / clear glass
Garbage room	Homogeneous tiles + 2 coats of waterproofing (brush bond)	-	Homogeneous/ Porcelain tiles	-	Brick wall	Powder coated aluminum frame with aluminum panels

Materials, fixtures and fittings used on exterior walls and surfaces shall be weather-proof, external finishing materials, including fixtures and fittings.

All the major materials, fixtures and fittings shall be submitted to the Client for approval prior to installation or application.

2.3 General Design Obligations of the Contractor

1. The Contractor shall carry out, and be responsible for the design of the Works. Basic

design shall be in accordance with the concept drawings provided. Detail Design shall be prepared by qualified designers who comply with the following criteria:

a) Architect

- i. A registered architect at his/her country with minimum 07 years of architectural design experience. Must have designed at least 2 buildings of similar scale within this period.

b) Civil/Structural Engineer

- i. A registered engineer at his/her country with 07 years of experience in structural design of buildings of similar scale.

c) Services Engineer

- i. Minimum bachelor's degree and 07 years of experience in service design of buildings of similar scale.

1.3.1 Tests on Completion

Upon completion of the building Contractor shall allow for testing of the services installed in the building as part of commissioning.

1.3.2 Contractors' Documents

The Contractor shall submit an assessment report which includes defects and work methodology for repair of the existing structures for approval of the Employer.

The Contractor shall submit preliminary designs, which includes floor plans, sections and elevations for the approval of the Employer. Once the preliminary design is approved the Contractor shall submit detailed design for approval. The detail design shall be signed by a locally registered Architect and Engineer and shall be certified by accredited architectural and structural checkers if required. Upon completion of civil work, contractor is required to submit as-built drawings and final progress payment will be released upon approval of the as-built drawings. The materials used for construction shall be of good quality, with a design life of 50 years and where necessary design shall incorporate renewable energy and sustainable design components where practical.

1.3.3 The Bidder shall submit the following with the bid

1. Elementary Bill of Quantities as per the given format
2. Conceptual layout drawings of the proposed buildings and a site plan of the development.
3. Conceptual 3D drawings of the buildings and the development.
4. The floor plans attached with the proposal should be to a scale of 1:100 or 1:200, and shall include the furniture layout, fixtures, fittings and the column positions.
5. Proposed equipment for works and work methodology.
6. Preliminary work schedule - The contractor shall submit a proposed work schedule with the bid. This work schedule shall indicate the major works to be carried out under the scope of the project. The work schedule shall clearly show the proposed start and end dates for all the project stages and the total project duration proposed.