



**Republic of Maldives**

**REQUIREMENTS OF THE CLIENT**

for

**Design and Construction of  
100 Housing Units at B. Thulhaadhoo**

**Ministry of Housing and Urban Development**

**Issued on: April 2019**

## 1.0 Requirements of the Client

### 1.1 Scope of Works

The project requires design and construction of 100 social housing units in the form of single story housing units at B. Thulhaadhoo. The plot size for each housing unit is approximately 148.64 square metres (1600 square feet) The plot dimensions are 32 feet by 50 feet (9.75 by 15.25m). Setbacks, accessibility and such shall be taken into consideration and shall be designed and constructed in accordance with the local and internationally accepted building codes and standards.

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

a. Design requirement are as follows;

- Detailed design of
  - 100 single story housing units on individual plots of land, the distances from the plot boundary to the building should be even for all the plots
  - The development should include but should not be limited to the design of water supply, electrical, sewerage, drainage and fire-fighting layouts.
  - 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 92.9 square meters (1000 square feet) excluding the balconies, voids and staircases.
- All common areas and the apartments located on the ground floor shall be accessible by wheel chair.
- The building should be elevated for 0.3m 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 5m in height up to roof apex level.
- Prepare detailed architectural, structural, services drawings (electrical, plumbing and firefighting) for above mentioned buildings.
- Provisions for other services such as cable TV, and internet should be provided.

b. Prepare Bill of Quantities for the above mentioned buildings. Bill of quantities shall

- include the building's whole of the works and in order to minimize any variation.
- c. Final drawings, BOQ and technical specifications shall be provided by the Contractor and shall include provisions for all civil, architectural, structural, electrical, plumbing and firefighting disciplines.
  - d. Bills of Quantities and the drawings shall be provided separately for the individual building types.
  - e. All plans and specifications must be in English.
  - f. 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, drives, parking areas, curbs, storm drainage and end-walls, 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 heating, air conditioning and/or ventilation systems, as may be applicable.
    - vi) Plumbing layouts should be complete with pipe diagrams, schedules, fixtures, etc., for each housing unit and for the development (shall include water provisions for irrigation).
    - vii) Waste water disposal systems should be complete with all the elements required and all the internal connections leading up to the main sewer.
    - viii) Fire-fighting drawings complete with all the approvals from the relevant authorities.
  - g. All designs shall comply with the Building Act and all regulations stipulated under the Act as well as the relevant International Standards.
  - h. 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.
  - i. 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 concept drawings, detailed drawings, the BOQ and the Technical Specification.
- j. 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.
  - k. 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.
  - l. The contractor shall submit a hardcopy of the BOQ and the Technical Specifications.
  - m. The Contractor shall apply for and obtain the Environmental Impact Assessment (EIA) permit if required.

### 1.1.2 Specific requirements:

1. Boundary walls of minimum 2m height should be provided around all the plots and an entrance shall be located to access the premises.
2. An adequate size of a reserve water tanks (overhead tanks and for rain water storage) shall be included in the buildings.
3. Project shall include allocation of parking zones, landscaping and installation of benches, swings and children's outdoor play units.
4. Installation of ground well and connection of utilities (electricity, water & sewerage) to that main lines shall be included.
5. Site clearing and demarcation of work zones and bypasses.
6. For additional Information, submit the sectional drawings with the dimensions.
7. Label the roads on site plans.
8. Identify motorbike and car parking zones at ground level
9. Specify boundary wall height and material. (we highly encourage boundary wall to be designed with perforations or with a natural green facade)
10. Submit pedestrian and vehicle circulation layout.
11. Identify the spaces required for the installation or provision of supporting facilities of transformers, pump rooms, storage tanks and service stations within the given area for the development.
12. Dedicated utility space at either ground floor or first floor level should be provided for the provision and or installation of relevant services as required.

13. Garbage collection area should be separated from common area. A central collection area at ground floor with ease of loading/unloading vehicular access should be provided.
14. A children's play area should be provided within the development.
15. The main entrance of the housing unit should be minimum 900mm wide.
16. Minimum width of the toilet or a bath room should be 1.2m.
17. The built-up area for each housing unit, excluding balconies and voids should be approximately 92.9 square meters (1000 square feet))
18. The Minimum dimensions for the following spaces are as specified:
  - i. Master bedroom- 13 feet x 12 feet
  - ii. Master bedroom toilet- 5 feet x 7 feet
  - iii. Bedroom 2 toilet- 4 feet x 7 feet
  - iv. Bedroom 3 toilet- 4 feet x 6 feet
  - v. In addition to the specified spaces above, bedroom 2, bedroom 3, living room, kitchen, dining, laundry and a small store need to be accommodated within the area allocated for the single story housing unit.
  - vi. The parking area should be 2.5 percent of the built-up area for each unit and should be provided within the plot.
  - vii. An appropriately sized garbage disposal location should be provided within each plot.

### 1.1.3 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 socket 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:** ~~shall include Fire fighting wet riser and hose reel system.~~ Portable fire extinguishers, fire blankets, and microprocessor based addressable automatic fire smoke and heat detector should be provided. ~~and alarm services~~

**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 with the local standards and legislature. ~~industrial standards and practice, specifications, manuals and guidelines used in Maldives and as approved by MNPI.~~

**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) Security Services Card Access system** shall be provided to the housing blocks/floors, lift lobby and CCTV shall also be provided to all lift lobby entrances.~~

~~**i) Security Fences** shall be provided to all boundaries other than road sides with electronic monitoring systems.~~

**j) 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.

**k) 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
Parking area / Basement	30-50 lux (parking area) at working plane of 0.2m
Premises within Landscaped area	100-150 lux at working plane of 0.2m

#### 1.1.4 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 10 days from the date of receipt of the Letter of Acceptance, indicating the price break down and the durations for each task. The proposed work schedule will then be finalized following negotiations with the Client.
4. Finalized work schedule- The Finalized work schedule will then be used as a basis for measuring the works completed in order to issue the interim payments.
5. The Contractor shall obtain all the permits required from regulatory authorities / service providers etc.
6. Demolition waste and debris shall be transported to a designated waste management site.
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.

## 1.2 Expected Schedule of Finishes

Location/Area	Floor	Skirting	Wall	Ceiling	Partiti on	Doors/window
<b>Ground floor / Parking area</b>	Epoxy flooring system		Matte wall paint	-	Brick wall	Powder coated aluminum frame with tinted / clear glass
<b>Common areas</b>	Homogeneous/ Porcelain tiles	Homogeneous/ Porcelain tiles	Skim coating and emulsion paint	-	Brick wall	Powder coated aluminum frame with tinted, clear or frosted glass where appropriate.
<b>Corridor at typical floors</b>	Homogeneous/ Porcelain tiles	Homogeneous tiles	Skim coating and emulsion paint	-	Brick wall	Powder coated aluminum frame with tinted, clear or frosted glass where appropriate.
<b>Sitting room &amp; living area</b>	Homogeneous/ Porcelain tiles	Homogeneous tiles	Skim coating and emulsion paint	-	Brick wall	Powder coated aluminum frame with tinted frosted glass / Timber door frame with timber panels
<b>Store room / Services room</b>	Homogeneous/ Porcelain tiles	Homogeneous/ Porcelain tiles	Skim coating and emulsion paint	-	Brick wall	Powder coated aluminum frame with aluminum panels
<b>Toilets</b>	Non- slippery homogeneous tiles + 2 coats of waterproofin	-	Ceramic wall tiles	Fibrous plaster board ceiling	Brick wall	Powder coated aluminum frame with tinted frosted glass / Timber door



	g (brush bond)					frame with timber panels
<b>Services room</b>	Titanium finish	-	Skim coating and emulsion paint	-	Concrete / Brick wall	Powder coated aluminum frame with aluminum panels
<b>Outdoor tiled area</b>	Homogeneous tiles + 2 coats of waterproofing (brush bond)	Homogeneous tiles	Ceramic wall tiles	-	Concrete / Brick wall	Powder coated aluminum frame with tinted / clear glass
<b>Garbage room</b>	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.

### 1.3 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 spaces defined in the Specific Requirements. 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 preliminary designs, which includes floor plans, sections and elevations for the approval of the Employer. Once the preliminary design is approved by the Client, Contractor shall submit the 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. 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 Contractor shall submit the following with the bid**

1. Conceptual layout drawings of the proposed buildings and a site plan of the development.
2. Conceptual 3D drawings of the buildings and the development.
3. 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.
4. Proposed equipment for works and work methodology.

5. 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.