



Republic of Maldives

REQUIREMENTS OF THE CLIENT

for

**Design and Construction of
100 Housing Units at
Th. Thimarafushi**

**Ministry of Housing and Urban Development
Issued on: September 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 apartment blocks at Th. Thimarafushi. The development area will be approximately 12077.40 square meters (130, 000 square feet). 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.

1.1.1 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
 - Three apartment buildings with 24 apartment units per building (8 units per floor).
 - One apartment building with 28 apartment units (8 units per floor up to second floor, 4 apartment units on the 3rd floor).
 - The Contractor shall accommodate for any amendments regarding the layout and the distribution of the blocks as requested by the Client.
 - The development should include but should not be limited to the detailed design of the water supply, electrical, sewerage, drainage and fire-fighting layouts for the whole development up to the connection to the main services on the island where applicable.
 - The provisions for exterior electrical sockets for the development and water supply for irrigation and maintenance of the development should be appropriately provided.
- 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.
- Two staircases should be provided for each block and the distance from the apartment entrance to the nearest staircase should not exceed 20m.
- 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 15m in height up to roof apex level.
 - 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 buildings whole of the works and should 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) Air conditioning and ventilation layout
 - vi) Plumbing, including pipe diagrams and schedules, fixtures, etc.
- g. All designs shall comply with the Building Act and all the 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. The Contractor shall ensure the future availability of water supply and the main sewerage connection on the island and provide alternative solutions within the premises such as ground wells if such systems are unavailable.
2. Connection layout of utilities (electricity, water & sewerage) within the development up to the main systems on the island shall be included.
3. Project shall include allocation of parking zones, landscaping and installation of benches, swings and children's outdoor play units for the development.
4. Site clearing and demarcation of work zones and bypasses.
5. For additional Information, submit the sectional drawings with the dimensions.
6. Label the roads on site plans.
7. Identify motorbike and car parking zones at ground level
8. Specify boundary wall height and material. (we highly encourage boundary wall to be designed with perforations or with a natural green facade)
9. Submit pedestrian and vehicle circulation layout.
10. Identify the spaces for the installation or provision of facilities such as pump rooms, electrical, internet and cable TV and fire-fighting ducts or rooms.
11. 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.
12. A children's play area should be provided within the development.

13. The main entrance of the housing unit should be minimum 900mm wide.
14. Minimum width of the toilet or a bath room should be 1.2m.
15. 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 housing unit.
16. A parking area of 5 percent of the habitable area for each unit should be provided within the 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 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 the Ministry of National Planning and Infrastructure.

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
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 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.

1.2 Expected Schedule of Finishes

Location/Area	Floor	Skirting	Wall	Ceiling	Parti on	Doors/window
Ground floor / Parking area	Epoxy flooring system		Matte wall paint	-	Brick wall	Powder coated aluminum frame with tinted / clear glass
Commercial space / entrance lobby	Marble	Homogeneous/Porcelain tiles	Skim coating and emulsion paint	-	Brick wall	Powder coated aluminum frame with tinted, clear or frosted glass where appropriate.
Stair lobby/ common areas	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.
Corridor at typical floors	Homogeneous/Porcelain	Homogeneous	Skim coating and	-	Brick wall	Powder coated aluminum frame

	tiles	tiles	emulsion paint			with tinted, clear or frosted glass where appropriate.
Sitting room & living area	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
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
Roof top / Terrace / Balconies	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	-	Homogeneous/ Porcelain tiles	-	Brick wall	Powder coated aluminum frame with aluminum

	waterproofing (brush bond)					panels
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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 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. The materials used for construction shall be of good quality and should be able to withstand salty air conditions. Where necessary, sustainable design elements should be incorporated.

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.