EMPLOYER'S REQUIREMENTS

FOR

HULHUMALE OFFICE BUILDING

on

ENGINEERING, PROCUREMENT, CONSTRUCTION & FINANCING (EPC+F) MODE

Maldives Ports Limited

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Employer's Requirement (ER)

1. Project Name: HMT OFFICE BUILDING

Maldives Ports Limited (MPL) is a vital player in the Maldivian maritime economy, managing and operating major ports. It promotes trade, tourism, and commerce, which are critical to the national economy. MPL manages port infrastructure, including cargo handling and passenger terminals, to ensure efficiency and safety. MPL, located strategically in the Indian Ocean, acts as an important link for worldwide trade, stressing connectivity and sustainability. MPL supports economic growth and infrastructural development in the Maldives through partnerships and innovation, encouraging prosperity and improving the marine sector's excellence.

A significant challenge that MPL's is currently encountering is the scarcity of office space to accommodate its expanding personnel. The project aims to address MPL's growing operational needs by replacing the existing MPL building situated on a government lease in Male' City with a purpose-built facility. The new 10-story building will provide enhanced office spaces, amenities, and state-of-the-art infrastructure to support MPL's evolving port operations in the Maldives.

The new MPL's head office construction signifies a significant step towards improving operational efficiency, employee satisfaction, and stakeholder engagement. By enhancing infrastructure and supporting MPL's strategic objectives, this project stands to foster growth, innovation, and collaboration within the port operations in Hulhumalé. Furthermore, this new office building will serve as a model for a sustainable and cutting-edge environmental management system.

2. Project Location & Background

The Hulhumale Office Building project is situated in Hulhumale, Maldives. It is specifically located in the Fithuroanu Magu, infront of Hulhumale Terminal as in Figure 1.

The project aims to address MPL's growing operational needs by replacing the existing MPL building situated on a government lease in Male' City with a purpose-built facility. The new 10-story building will provide enhanced office spaces, amenities, and state-of-the-art infrastructure to support MPL's evolving port operations in the Maldives.

The new MPL head office construction signifies a significant step towards improving operational efficiency, employee satisfaction, and stakeholder engagement. By enhancing infrastructure and supporting MPL's strategic objectives, this project stands to foster growth, innovation, and collaboration within the port operations in Hulhumalé.

3. Project Overview

The primary objective of the project is to develop a 10 storey building in Hulhumale Terminal, in accordance with the requirements set by the Employer (the Maldives Ports Limited, 'MPL'). The Project's Scope of Work includes, but is not limited to, the design, supply, installation, construction, testing and quality assurance, and commissioning and maintenance for the contract period for the major works undertaken to develop the building.

3.1. General

The new office building shall be comparable in all respects with international standards and meet the requirements of all applicable National Building Codes and Standards as well as the UK standards for office building. The building is to be a BREEAM Certified green building.

The new office building is designed to host different activities and cater to modern office facilities as well. This building should serve as both MPL's and other governments / private office requirements. However, it will have commercial & public spaces on the ground, first and Terrace level which will attract the general public. The Eight and Ninth level will have residential with the amenities.

3.2. Objectives

The primary objective of the project is to develop a 10-storey building in Hulhumale Terminal, in accordance with the requirements set by the Employer (the Maldives Ports Limited, 'MPL'). The Project's Scope of Work includes, but is not limited to, the design, supply, installation, construction, testing and quality assurance, and commissioning and maintenance for the contract period for the major works undertaken to develop the building.

3.3. Development information

- Plot area: 890.3 sqm (9,582.1sqft)
- Buildable area: 643.1 sqm (6,922.2 sqft)
- Total building height. 35.0 meters (an additional 4m can be used for the lift machine room)
- Total number of the floor: 10 floors (excluding basement)

4. Site Analysis

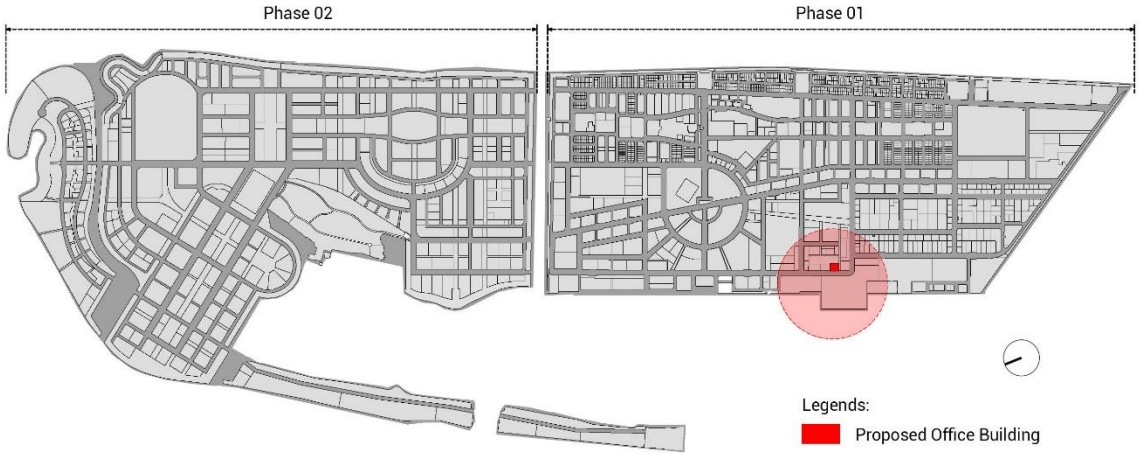
4.1. Introduction

Hulhumalé is the first fully reclaimed, pre-planned city of Maldives with 432 hectares. Hulhumalé Phase 1 is the first development and Phase 2 is second development as reclaimed city. Located 4 km off the North-East coast of Malé, the capital city of Maldives, and 3 km from the Velana International Airport.

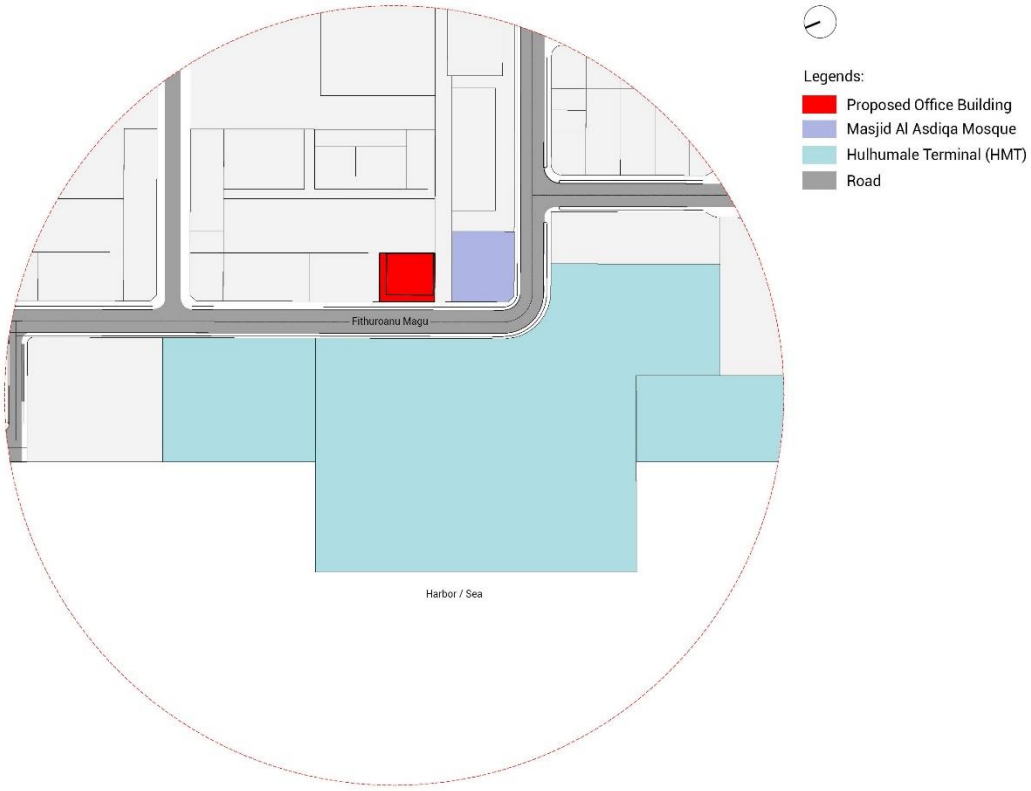
People from all over the country began to populate Hulhumalé in 2004. Major developments in terms of economy and infrastructure have been seen in the past few years. The connection of Malé, Hulhulé, and Hulhumalé with one of the biggest infrastructure projects, the bridge has brought significant changes to the greater Malé region, and it has diverse development opportunities.

4.2. Location Map

The Proposed Hulhumale Office Building project site is situated in Hulhumale phase-1, Maldives. It is specifically facing Fithuroanu Magu, Infront of Hulhumale Terminal and adjacent to the Masjid Al Asdiqa Mosque.



4.3. Site Context



4.4. Vegetation

5. General Requirements

5.1. Contract Documents

The Employer's Requirements is part of the contract documents and shall be read in concurrence with the complimentary contract documents. In particular the Definition Drawings if any shall be referenced.

5.2. Objective

The main objective of this Employer's Requirements document is to set out the minimum standard of works (in terms of function, quality, and performance) required by the Contact. The works shall be prepared in accordance with these requirements as an absolute minimum and where possible aim to exceed these requirements for the benefit of the project and the port as a whole.

5.3. Definitions

"Project" – means this Project as described in the Contract.

"Site" / "Project Site" – means the site of the Port Complex Building at Male' City as defined in the Definition Drawings.

Definition Drawings – Means the drawings used to define the project as included within the Contract.

Information Drawings – Means the drawings provided for information purposes only, not forming part of the contract.

Contract – means the suite of documents for the EPC+F contract for Port Complex Building at Male' City, as defined in the Conditions of Contract.

Employer – Means the Maldives Ports Limited, 'MPL'. Work Description

5.3.1. Overview

The project covers the development of Office Building works for the plot located in the Fithuroanu Magu of Hulhumale infront of the Hulhumale Terminal Port.

The final building will be a 10 storey building with facilities for restaurants, retail, health and wellness, entertainment and events, office spaces, and residences.

5.3.2. Scope of Works

The scope of works shall include design and construction (including supply and installation of materials and provision of necessary labour, tools, other equipment, provision of storage, space and other temporary works required to fully complete the works) of the new Office Building at Hulhumale Terminal as shown on the Definition Drawings and described within this Employer's Requirements (including but not limited to):

- Design, supply of materials and construction of building complete with landscaped grounds including building services, security system, furniture, with as required.
- Design and construction of a firefighting system including saltwater pumping facilities, fire mains and hydrants.
- Design and construction of a water supply, drainage and sewerage system for the building.
- Design and construction of a power, lighting and electrical power distribution system (with provisions to link into the main power supply) for the building together with a backup power supply.
- Establishing, constructing, and subsequently removing all necessary temporary works.
- Survey and compliance testing in relation to the Works.
- The permanent works items mentioned above are described in detail in separate sections within this document.
- Any additional ground investigations or any other site investigations and surveys as required by the contractor to undertake detailed design of the project.

More details on each scope item are given within the relevant chapters of this Employer's Requirements.

5.4. The Site

5.4.1. Site Definition and Limits

Working areas at the Site shall be as outlined on the Definition Drawings.

Areas for site offices, material storage shall be prepared within the working area. The Contractor shall provide plans of their proposed working areas for the Employer's Representative's acceptance.

If the Contractor wishes to establish any working areas outside of that defined in the Definition Drawings, they shall do so entirely at their own risk and cost. The Employer shall be given unimpeded access to these locations.

The Contractor may occupy working areas at the commencement of the works at no cost to them. The Contractor shall avoid use of the areas outside of the site as much as reasonably practicable.

5.4.2. Site Security

During the construction period the contractor shall provide, erect and maintain temporary hoarding, fencing and gates etc. as required to maintain and secure access to the site. Such security provision shall be erected by the Contractor upon taking possession of the Site. Site offices shall be securely locked after working hours. All windows and all other openings shall be closed and made secure.

A system of access to the Site being by site pass only is required. The Contractor shall also maintain a list of personnel complete with CPR numbers of every person, including all Sub-Contractors' personnel, who have access to the Site. This list should be regularly updated, and the Employer's Representative may inspect the list at any time.

The Contractor shall confirm the intended security measures by submitting a Security Plan for review by The Employer within 14 days of the commencement of the Contract, including a security risk assessment and any identified mitigation measures.

5.4.3. Site Cleanliness

The Contractor shall keep the site maintained and free from rubbish and debris. Furthermore, the Contractor's activities shall remain within agreed limits and all local legislation.

Only materials to be used on the contract shall be stored on site. All materials shall be positioned and stored in an orderly manner in a secure compound. All materials, equipment and other items shall be removed from site after they are no longer required for the execution of the Contract.

5.5. Consents and Approvals

The EIA has to be undertaken by the Client prior to this contract. The contractor shall obtain all required subsequent consents and approvals for the undertaking of the Contract from the applicable government agencies and authorities.

The Employer or their representatives shall be entitled to attend any meetings required and shall be copied into all correspondence relating to obtaining said approvals. Once obtained, copies of all approvals shall be made available to the Employer.

In the Event of a conflict between the legal requirements of Statutory authorities and the Employer's Requirements, the precedence will be set by the legal requirements.

5.6. Health and Safety

5.6.1. General

The Contractor shall be responsible to implement Health and Safety Measures in accordance with OHSAS 45001 and local authority requirements. All personnel at site shall be provided with (and required to use) safety PPE or specialist safety equipment as required in order to perform their duties in a safe manner. As a minimum all site personnel shall wear a hard hat, safety glasses, high visibility jacket and safety shoes. All accidents at site shall be immediately reported to the Employer's Representative.

The Contractor shall submit a Health and Safety Management Plan to the Employer's Representative for approval within 28 days following commencement of the Works. The plan shall cover safety for Contractor's employees, the Employer's Representatives, potential visitors, and the Employer's Representative's Representatives. The Contractor shall prepare plans for keeping track of staff and the Employer's Representatives at the working areas at the Site.

The Contractor shall prepare a Designer's Risk Assessment (DRA) which shall identify the most significant risks and any practicable mitigation measures to be taken to reduce these risks.

The Contractor shall appoint a safety officer to look after safety at each working area. The methods of construction shall comply with safety plans, and working staff shall be well informed of safe working methods and potential risks through daily or weekly safety meetings. These meetings shall be open for the Employer, Employer's Representative and their staff to join.

The Contractor shall ensure that the public and all other non-authorised persons are kept away from the construction sites during delivery and installation of materials at the designated locations.

5.6.2. Training

All staff working on the site shall be appropriately trained and competent to do the work undertaken by them. This includes both general, but also site-specific training regarding conditions of the site and any other site-specific matters. All workers shall be subject to a site induction prior to their commencement of work on the project. It is the Contractor's responsibility to ensure that this requirement is followed.

The Employer's representative shall be authorised to review the competency of any employee, including requesting documentation to confirm qualifications and training undertaken by them.

5.6.3. Medical Facilities

The Contractor shall ensure that appropriate medical facilities are provided on site at all times, including first aid equipment and qualified first aid personnel to the satisfaction of the Employer's Representative.

5.6.4. Fire

The Contractor shall be responsible for operating fire prevention measures on site and shall ensure that the risk of fire is reduced throughout the site as much as practicable. This includes both outside, but also within stores, offices and any other places connected to the works. The contractor shall prepare a fire hazard risk assessment and submit to the Employer's Representative for review prior to works commencing on site so show that all fire hazards and

risks have been considered and that appropriate measures will be put in place. This shall include all requirements with regards to the storage of dangerous or explosive materials as well as provision of sufficient firefighting equipment along with appropriately trained personnel (fire officers) in the use of such equipment. The fire hazard risk assessment shall be periodically updated as and when required.

Any fire prevention measures put in place shall be maintained throughout the duration of the contract and shall be regularly reviewed by the Employer's Representative.

5.7. Quality Management System

5.7.1. General

The Contractor shall establish and maintain a Quality Management System based on the ISO 9000 systems and their method and sequence of construction.

The Contractor shall submit a Quality Plan to the Employer's Representative for approval within 28 days following commencement of the Works. The Quality Plan should be separated such that parts of the Works are carried out with a quality control which can document conformance with the Technical Requirements and the Drawings. The plan must clearly specify the QA personnel and their minimum qualifications.

The Quality Plan shall specify the records and documentation required for assuring fulfilment of the requirements set out. The Contractor shall test, survey and document the materials used in the works to assure compliance with the Technical Requirements and the Drawings.

Prior to any materials test required by this Contract, the Contractor shall give notice to the Employer's Representative at least one day ahead. On a weekly basis, the Contractor shall prepare a plan for all tests and surveys to be carried out and issue a copy of the plan to the Employer's Representative. Changes in the planned activities shall be reported to the Employer's Representative. The Employer's Representative will usually participate in tests and surveys and the results of the joint quality control and assurance shall be a part of the quality system.

Documentation shall at all times be available for inspection by the Employer's Representative, and copies of documentation shall be issued to the Employer's Representative as requested. At completion of the works, complete documentation shall be well organised and handed over to the Employer after agreement with the Employer's Representative. The certificate of completion of works will not be issued before the documentation of the Works including as-built drawings is carried out to the satisfaction of the Employer's Representative.

5.7.2. Design

The Contractor shall submit a separate quality plan for the design works. The Employer's Representative's acceptance of material for construction shall be included in the plan.

5.8. Environmental Controls

In undertaking the Environmental Impact Assessment Report (EIA). In particular, excavation and foundation works shall be undertaken using construction methods to minimise impact on the ground at the Site.

The Contractor shall prepare an environmental plan for the works and submit to the Employer's Representative for review at least 2 weeks before works commence on site. Works on site shall not commence until the plan is accepted by the Employer's Representative.

The Contractor shall provide unhindered access to the Site and to their equipment or survey vessels for parties undertaking environmental monitoring.

5.9. Project Controls

5.9.1. Project Controls Manual

The contractor has the overall responsibility for the technical ICT requirements and procedures within the project.

The Contractor shall produce and maintain a project control manual and an ICT manual.

The contractor shall provide an ICT assistant manager, who is in charge of elaborating the content of the ICT manual and to continuously update and disseminate the content. This is to assure that the ICT manual always reflects the process applicable to the project.

5.9.2. Document Control

5.9.2.1. *List of Drawings and documents*

The contractor shall produce and maintain an up-to-date list of drawings and documents. This shall be shared with the Employer's Representative as and when it is updated.

5.9.2.2. *Written* communication

The Written communication (e-mails, project documentation, meeting minutes, etc.) shall be digital. Written communication material shall be filed digitally.

5.9.2.3. *File Format*

5.9.2.3.1. Drawings

The drawing files are to be exchanged both as pdf and dwg file formats, discipline models only in dwg format. The drawing files are to be delivered with relevant referenced discipline models and shall not be binded / merged, eTransmit is to be used instead.

5.9.2.3.2. Other files

The Excel files as well as survey data text files shall be exchanged in original format. Other files shall be exchanged in pdf format.

5.9.2.3.3. Meta data

As minimum each file shall be identified with following metadata:

- Company
- Project name
- Project id
- Document name
- Revision
- Revision date

5.9.2.4. *File Exchange*

The Contractor shall provide a communication platform for sharing of files. The Client organisation shall be provided access for a minimum of 20 users.

The communication platform shall meet the following minimum requirements:

- accessible to the relevant parties at all times of the day.
- have single-user access control.
- able to advise on changes.
- All content retrievable from the system by the Client and transferred to other systems (where required).

The communication platform shall remain accessible until 60 days after issue of the Completion Certificate.

The Contractor shall handle all administration activities for the communication platform including (but not limited to):

- Creating users.
- Assignment of rights.
- Folder structure setup.

5.10. Progress Meeting

5.10.1. Construction Programme

A comprehensive construction programme shall be submitted within 21 days of the Commencement Date of the Works. The Programme shall be in the form of a precedence network-linked Gantt chart in Microsoft Project or similar computer software to show the critical paths for completion of the Works and shall indicate all major work activities, their sequence of work and expected duration, sequence and relation of all major operations or activities, and shall highlight all critical operations or activities which will directly affect the Time for Completion. The Construction Programme shall be updated as appropriate and included within the Monthly Progress Reports.

5.10.2. Monthly Progress Report

A Monthly Contract reports shall be prepared by the Contractor and submitted to the Employer's Representative.

Monthly reporting shall continue until the Works are complete and the Certificate of Completion for the whole of the Works has been issued. Each report shall include comprehensive information on the following:

- Comparisons of actual and planned progress each month using Gantt (or similar) and schematic charts together with detailed descriptions of progress, details of any events or circumstances that may delay or cause potential delays to the contract's completion, and corrective measures being (or to be) adopted to overcome delays,
- Photographs showing the status of construction and progress on the Site,
- Problems encountered during construction at the Site,
- Site Safety Report including summary safety statistics and details of any hazardous incidents, accidents, or points of interest, including near misses,
- A rolling cash-flow forecast in respect of Contractor's claims for payment versus base line cash-flow established at the outset of the Contract.
- Any additional information either required by the Contract Documents or requested by the Employer or the Employer's Representative as part of the monthly report.

5.10.3. Progress Photographs

The contractor shall prepare progress photographs for each month of the contract, to be included within the Monthly Progress Report. Each photograph shall include a date and timestamp. These photographs shall record the progress of the works within that given month and shall be submitted within the report with an appropriate caption outlining (as a minimum) the following information:

- Name of the Project

- Location of photograph
- Nature of works shown on photograph

Further to the above, all originals of progress photos shall be submitted in Jpeg format electronically, via a means to be agreed with the Employer's Representative.

5.10.4. Design Review Meeting

The Employer's Representative will conduct Design Review meetings which are to be held at significant design milestones. Construction of elements of the Works will not be allowed to proceed until the relevant designs have been checked and accepted by the Employer's Representative in line with the method outlined in Section 4.17.2. For purposes of this document the Drawings shall include all such final design drawings once accepted by the Employer's Representative.

5.10.5. Site Progress Meeting

The Employer's Representative will conduct site progress meetings at weekly intervals or as appropriate, which the Contractor will be required to attend. The meetings will be chaired by the Employer's Representative who shall also prepare and issue minutes of the meetings within three working days after the meeting.

The purpose of the meetings is to facilitate the administration of the Contract and the completion of the Works. The agenda shall be agreed prior the first meeting and thereafter adjusted as necessary by the Employer's Representative to reflect the progress of the Works and any matters that require particular attention.

5.10.6. Method Statements

The Contractor shall be responsible for preparing comprehensive Method Statements for the supply, transportation, and construction of all parts of the Works for the Employer's Representative's approval.

Method statements shall describe the materials, type of plant, equipment, labour requirements, timeframe and schedule including Subcontractors, prerequisite conditions, details, and order of activities for each technical operation, temporary works, safety measures and any other relevant aspects.

Any aspect of a proposed Method Statement which does not conform with a requirement of the Contract shall be brought to the attention of the Employer's Representative. Method Statements shall be prepared in sufficient detail to allow the Contractor's and Employer's Representative's field staff to clearly understand the work methods to be adopted for the Site. Acceptance by the Employer's Representative of Method Statements does not relieve the Contractor of their obligation to comply fully with the Contract.

Method statements with drawings, sketches, tables, and schedules attached as necessary shall be submitted to the Employer's Representative for approval twenty-one (21) days prior to the commencement of any parts of the Works. The Employer's Representative shall approve or request revisions or reject the Method Statement within fourteen (14) days of its receipt. Construction on any section of the Works shall not be commenced until the Method Statement has been accepted by the Employer's Representative. Preliminary works may be commenced before a part of Method Statement is accepted by seeking specific acceptance for the proposed activities.

5.10.7. Notice of Operations

The Contractor shall give the Employer's Representative not less than 24 hours' notice in writing of their intended operations to enable the Employer's Representative to make their arrangements for the supervision of operations on the Site. They shall also give to the Employer's Representative at least seven (7) days written notice of the preparation at a place not within the Site of any article or material to be used in the Works, whether by themselves or by Sub-Contractors, stating the time and place of preparation so that the Employer's Representative may arrange to make whatsoever inspection or tests they may require.

5.10.8. Daily records

The Contractor shall maintain daily written records of construction activities including but not limited to working times, locations, equipment and labour usage, material quantities placed in the Works, details of any stoppages or disruptions to activities, surveys, inspection and testing, and material deliveries. The Contractor shall submit daily records to the Employer's Representative on the following day of the activities taking place.

5.11. Contractor's Design

5.11.1. General

The contractor shall prepare their design with the Employer's best interests as a core philosophy. In this regard the design and construction shall be prepared in a way to minimise disruption and cost through maintenance as much as practicable. Furthermore, the Contractor's identified forms of construction shall consider environmentally friendly aspects throughout the detailed design and construction process.

The design of the works shall be undertaken by a recognised competent design house. The Design subcontractor(s) will be defined as Nominated Subcontractor in of Conditions of Contract.

During the construction period, the Contractor's designer shall be present to provide verification of the works undertaken, most notably their suitability and accuracy with the design. It shall be

the Contractor's responsibility to determine the extent of temporary works required to safeguard the stability of all structures during the execution of the contract.

All detailed design of the works and the associated design responsibility shall be included in the Contractor's obligations in accordance with the Conditions of Contract.

The proposed concept as shown in the Definition Drawings shall be understood as a combination of requirements and typical sample solutions. The latter are given only for illustration of the Employer's intentions (Reference Design) and may be further optimised by the Contractor in respect of all functional requirements. The contractor shall be deemed to have included within their tender all work, materials and facilities necessary to complete the contract in accordance with this Employer's Requirements.

The Contractor shall complete all the design to the extent needed for the Employer's review of the design and for the execution of the works. Deviation from these Employer's Requirements shall be considered as an alternative design and shall be submitted to the Employer for consideration and approval in each case in accordance with procedures as specified/agreed for approval of changes/deviations.

The contractor is responsible for developing comprehensive 3D renders and walkthroughs that showcase the final layout of the proposed building design. The 3D renders and walkthroughs should be highly detailed and visually appealing, providing a realistic representation of the building's design and functionality. The contractor should use advanced computer-aided design (CAD) software and visualization techniques to ensure accuracy and quality in their deliverables.

Furthermore, the contractor is expected to incorporate additional information and guidelines into the 3D renders and walkthroughs as required. This may include signage, safety features, designated traffic lanes, access points, and any other relevant elements necessary for efficient and safe usage of the building. The purpose of these visual representations is to enable stakeholders, including authorities, investors, and potential clients, to gain a comprehensive understanding of the building's layout, functionality, and overall aesthetic appeal. The 3D renders and walkthroughs will serve as valuable tools for decision-making, marketing, and promotional purposes.

Structural details, as shown in the Definition Drawings, shall in general be considered 'Reference Designs' which may become subject to modification and optimisation subject to the Contractor's detailed design process.

5.11.2. Design Codes, Standards and Regulations

The preparation of designs and the supply of materials for this contract shall be in compliance with the following documents and references, in the stated order of precedence. If the

contractor believes that an issue is not covered by the below, they shall highlight the issue to the Employer's Representative as a priority for their judgement. No claims by the contractor for altering their designs or supplies to comply with any of the below requirements shall be entertained.

- Maldives Guidelines, Rules, and Regulations (Including legal requirements of Statutory authorities)
- Definition Drawings
- Employer's Requirements
- European Codes, Standards and Regulations

The contractor shall carry out all the necessary procedures, checks and revisions against National standards/regulations, and acquire permits, approvals and other legal validation of technical documents, as part of the "Contractor's Detailed Design Documentation".

5.11.3. Limiting Environmental Conditions

The Contractor shall design the building to the following limiting environmental conditions. For forces on structures, the wind direction shall be taken as the most unfavourable for the member under consideration. The contractor shall propose their own design conditions based upon their own investigations and remain liable for their accuracy.

5.12. Setting out and demarcation of works

Setting out of the building structure shall be based on setting out points shown on the Definition Drawings and established at Site by the Contractor. All other works shall be based upon their location from these setting out points as laid out in the definition drawings.

Setting out may be accomplished by a suitable electronic RTK-DGPS positioning system or similar with accuracy such that positional errors do not exceed 0.05m in any direction. Any such positioning system shall be fully calibrated and documented for the Employer's Representative's acceptance before any use in the works.

The calibration shall be checked at least once a month.

5.13. Contractor's Documents

5.13.1. General

All detailed design documents shall be considered 'Contractor's Documents' and as such presented to the Employer for review in accordance with the provisions of the Conditions of Contract.

The Contractor's documents, defined as the documents which the Contractor shall submit to the Employer for review, shall cover, but not be limited to, the following documentation:

- The Contractor's detailed design documentation (specifications, drawings, calculations, 3D renderings and walkthroughs, and modelling software outputs etc).
- Material samples and mock-ups for the Clients approval.
- Method statements and other planning documentation including description of major equipment.
- High level weekly progress reports
- Full progress reports on a monthly basis.
- Certificates and other quality records of materials ordered/supplied on site.
- As-built documentation

Furthermore, the Employer's staff shall be free to inspect at any time during working hours all equipment used, including driving equipment, and all records made.

5.13.2. Employer's Review of Documents

The Contractor shall submit all design documents for review by the Employer's Representative. The Employer's Representative shall provide a reply within 14 days of receipt. Upon completion of the review of each Contactor's Document, the Employer's Representative shall reply with comments as necessary. Each comment (and the review overall) shall be given a rating by the Employer's Reviewer as outlined in Table 4.3

Response Category	Definitions	Action to be taken by the Contractor
1	The Contractor's as submitted document is acceptable.	The Employer has no further comments, and the Contractor may proceed with construction.
2	The Contractor's as submitted document is acceptable, pending clarification or amendments as noted.	The Contractor shall amend the document as requested and provide clarification as sought. However, once completed the Contractor may proceed with construction and no further submission is required, as long as the changes are reflected in the works and as-built documentation.
3	The Contractor's as submitted document is not acceptable	The Contractor shall amend the document as requested and provide clarification as sought and re-submit to the Employer for further review.

Table 4.3: Employer Review ratings

If a submitted Contractor's document is amended following the award of a "1" rating, then the rating will revert to 3 and the Contractor shall re-submit the document for review.

5.13.3. As-Built Documents

Upon completion of the project (or areas of the project as relevant), The Contractor shall provide an electronic copy of all as-built records to the Employer for Review. As built records shall contain at least (but not limited to) the following:

- Final detailed design calculations amended as required during the employer's review as well as the construction phase.
- As-built drawings, updated to reflect the works undertaken on site.
- Operation and Maintenance Manuals.
- Copies of submissions made to the Regulatory Authorities up to and including the construction phase.
- All applicable permits, licenses, certificates etc received from the relevant Regulatory Authorities.

5.13.4. Operation and Maintenance Manuals

Electronic copies of Operation and Maintenance (O&M) Manuals shall be submitted by the Contractor for all structural, civil, electrical, and mechanical work items. As a minimum, each manual shall contain the following:

- Description of the work item, including its function.
- Component schedules including.
    I. name and overview description of the component.
    II. product serial number.
    III. name and contact details of manufacturer.
    IV. name and contact details of supplier used.
    V. whether the component is a long lead item.
    VI. detailed instructions for operation and maintenance of the work item.

5.14. Facilities and Equipment

5.14.1. Contractor's Facilities

The Contractor shall provide, install, and maintain all temporary offices, stores, together with all electricity supply, water supply, sanitary installations, telephone services and internet communication systems and other utilities required for the proper execution of the Works. Upon completion of the contract, the offices, facilities, and stores shall be fully removed to the satisfaction of the Employer's Representative.

The Contractor's facilities shall be located within a secure compound and subject to the following restrictions:

- size, type, condition, location, and services of the Contractor's facilities shall be of an acceptable standard to the Employer's Representative.
- details shall be submitted to the Employer's Representative for review, in line with design documentation.
- shall be identified with the name of the Contractor.
- shall not inconvenience and/or impede the Employer's current or proposed operations or facilities.
- shall be fenced off securely against both the public and the works.

- shall be properly maintained and kept clean and tidy at all times.

5.14.2. Temporary Works

In their tender, The Contractor shall describe the overall layout and organisation of their proposed temporary works. The description shall include, but not be limited to, information of:

- Major site installations
- Location of the Employer's facilities
- Planned arrangements regarding other contractors on site.
- Proposed equipment and staffing in the testing laboratory

The selected Contractor shall, not later than three weeks after the Commencement Date, submit to the Employer for their approval detailed plans of all temporary works, including access roads, site buildings and installations.

The plans shall include:

- Access points
- Areas for installation of office and plant and construction materials
- Possible levelling and preparation of ground surfaces
- Layout and design and of facilities to be provided for the Employer's use.
- Layout of signboard

5.14.3. Services

During the execution of this contract, the contractor shall provide, install, and maintain all required electricity supply, water supply, sanitary installations, telephone services and internet communication systems and all other services and utilities required for the proper execution of the Works and in accordance with this Employer's Requirements.

5.14.4. Equipment

Mobilisation of Contractor's construction plant and equipment shall include (but not be limited to).

- Assembly, preparation and loading for shipment of all plant and equipment at the Contractor's home station or source of supply.
- Transportation of plant, equipment, and material from the home station or source of supply to the site; and
- Unloading and installation of all plant and equipment ready for use.

5.14.5. Laboratory and field-testing equipment

5.14.5.1. *On site testing*

Sampling and testing shall be used to confirm the compliance of materials used in the works, prior to their use. All materials shall be tested in accordance with the relevant standard to their use in the works.

The Contractor shall establish an on-site laboratory or utilise an established laboratory, providing that it is near to the site, accredited to ISO IEC 17025 and is accepted by the Employer's Representative. The laboratory shall be equipped by the Contractor with all necessary apparatus, electricity, water supply, and portable gas supply. Any laboratory established on site shall be fully compliant with ISO IEC 17025. It shall be staffed by qualified Materials Engineers and technicians operating in accordance with ISO 9000 and its related documents.

The Contractor shall staff the laboratory with qualified technicians capable of carrying out tests as well as making and keeping records of tests. The technicians shall be experienced in concrete and soil mechanics testing techniques.

The Contractor shall organise for independent audits of the laboratory to be undertaken at an interval of no more than once every 4 months by an appropriate independent testing agency to the acceptance of the Employer's Representative. The independent audit reports shall be provided to the Employer's Representative within 48 hours of their issue to the Contractor.

The Contractor shall submit samples of materials to be used in the work and the relevant testing results / certificates to the Employer's Representative for review prior to their use in the works. The Employer's Representative shall review these samples and retain the samples for compression with materials used in the works. Further batches of each material ordered shall be to at least equal to the sampled batch of material.

To the extent the Contractor can make arrangements with existing local laboratory facilities acceptable to the Employer's Representative for the prompt and reliable execution of tests on concrete and other structural materials, they need not include the corresponding equipment in their own laboratory.

5.14.5.2. *Material source testing*

In the country of origin for stones or aggregates for concrete, the Contractor shall additionally provide approved testing facilities for testing of stones produced for the Works at the quarry source. The Employer's Representative shall have access to the laboratory

and the quarry. The contractor shall provide evidence of the origin of stones and the stone class when arriving at the project site.

The laboratory shall be equipped by the Contractor with all necessary apparatus, electricity, water supply, and portable gas supply.

The Employer's Representative reserves the right to supervise and direct the testing. All costs relating to the Employer's Representative's visit to the quarry source and any other manufacturer's facilities are to be borne by the Contractor.

Laboratory equipment shall cover, but shall not be limited to the following tests:

- Equipment for determination of specific weight of saturated and surface dry stone material in accordance with EN13383 Part 2, Clause 8;
- Suitable screens to be used for breaking core material down into fractions, (it is assumed that stones with diameter larger than 250mm are sorted manually).
- Dynamometers (spring scales)
- 2 nos. 0 - 10t
- 2 nos. 0 - 1,000kg

Even though the dynamometers are listed under the site laboratory it is the intention that they shall be used on site at the locations where the stones are delivered, and the actual stonework is carried out.

The Contractor shall ensure that the accuracy of the dynamometers are checked from time to time under the supervision of the Employer's Representative.

5.15. Facilities for the Employer

5.15.1. Office for the Employer's Representative

The Contractor shall provide and maintain temporary offices at the site for the sole use of the Employer's Representative and their staff. The site office shall be made available from commencement to the completion of the work.

The office shall be located within the working area in the proximity of the Contractor's site office, and as accepted by the Employer's Representative. The Employer's Representative's office may be established by individual portacabins providing the required facilities.

5.15.2. Personal Protective Equipment

The Contractor shall provide and maintain all required safety gear for the Employer's Representative and their staff during the execution of works. This includes (but is not limited to):

- Helmets (hard hats)
- raincoats
- high visibility vests
- safety shoes/boots
- safety glasses
- gloves

All safety gear shall be of recognised brand and subject to acceptance of the Employer's Representative.

5.15.3. Standards and code of practice

The Contractor shall provide one original hard copy of each standard or code of practice referred to in the Contract for the use of the Employer's Representative not later than 28 days following commencement of the Works. All relevant particulars and conditions in any standard or code of practice referred to in the Contract relating to material, quality and workmanship shall be complied with and all tests specified shall be conformed to.

The versions of all standards and codes of practice to be used for purposes of this Contract shall be those current at the tender date.

5.16. Inspection and test plans

Inspection and Test Plans (ITP) shall be prepared for each of all on-and-off the Site operations which requires inspections or tests to be performed. ITP shall describe all inspections and test required, the criteria for acceptance and the person in charge and responsible for each inspection or test.

Proforma Inspection Test Plan (ITP) shall be issued in time for the Employer's Representative's review and at least fourteen (14) days before the relevant operation is first undertaken. Failure to issue such Proforma ITP within the specified time may result in the rejection of the material or component.

The Employer's Representative will respond within fourteen (14) days. Operations which are subject to inspection or test shall not commence until the ITP is agreed by the Employer's Representative.

ITP shall clearly state the times within which each activity will be completed. Test reports and/or certificates shall be made available to the Employer's Representative immediately after they are produced. All costs of testing and obtaining of certificates shall be borne by the Contractor. The Employer's Representative may be present at tests. Failure to produce satisfactory test reports within the specified time may be considered to demonstrate that the work to which the test report relates is unsatisfactory and the Employer's Representative may reject and order remedial works to be undertaken forthwith.

5.17. Training

The Contractor shall provide training for both user-level and maintenance-level staff. The training programmes shall include high-level professional training (Training of Trainers) for the installed equipment and port machinery supplied as part of the Contract.

The supplier shall provide a minimum of ten (10) full days of training to be given on dates to be nominated by the Employer's Representative. The Employer's Representative will nominate up to twenty (20) staff members to attend each training session. The supplier shall issue a training booklet to each member trained, giving instructions on the operation of the system, and troubleshooting guide.

The Contractor shall maintain a record of training given and the names of the Employer's staff members who attended. Detailed manuals shall be prepared for the operation of all types of equipment, machinery and vehicles supplied within the Contract.

5.18. Demobilisation

On completion of the Contract all temporary works, plants, equipment and surplus material shall be removed unless otherwise specified or agreed on and the Contractor shall clean up all the premises of the Works.

Demobilisation shall include (but not be limited to):

- The dismantling, preparation and loading for removal of all Contractor's plant, installations, and equipment at the Site.
- The transportation of all above plant, equipment, and materials from the site to the home station or somewhere else outside the Site.
- Dismantling and removing of all temporary building structures and temporary works.
- Clean up and clear away all materials from the site and working areas.

The site shall be left clean and tidy, free of debris and rubbish to the satisfaction of the Employer's Representative. This clause is to be fully satisfied prior to release of the retention payment by the Client.

6. Material Requirements

6.1. General

6.1.1. Material Selection

The contractor ensure that all materials procured under this contract are in accordance with this Employer's Requirements, recognised good practice and current European Standards or

Codes of Practice. All materials shall comply with the fire protection requirements of EN 1991-1-2, EN 1992-1-2, EN 1993-1-2 and EN 1995-1-2.

Materials known generally within the construction industry to cause harm or damage to health and safety of personnel, or to the use they are intended, shall not be used within the works.

All materials and plant shall be of new manufacture, of good quality and suitable for use in the environment for which they will be working in.

For proprietary materials or processes, the Contractor shall submit copies of current instructions and explanatory brochures of the material or process for review and acceptance by the Employer's Representative at least 4 weeks prior to ordering.

6.1.2. Suppliers

The Contractor shall provide a detailed list of suppliers for which they intend to source the materials and plant required for the works within 14 days of the signing of the Contract.

Each type of material shall be sourced from one supplier for the duration of the contract. The Contractor shall provide written statements from product manufacturers that the proposed products are suitable for use in the Maldives for the works and are in accordance with the requirements of this Employer's Requirements in terms of at least (but not limited to)

- Design Life
- Life to first maintenance
- Durability requirements
- Strength requirements

If required, the Contractor shall send samples of nominated materials to an independent laboratory nominated by the Employer's Representative for third party confirmation testing.

6.1.3. Use of Materials

All materials shall be stored and used on site in accordance with guidance and requirements from the manufacturer.

6.2. Concrete

6.2.1. Scope

The works specified in this chapter prescribes the minimum requirements for the mix design, mixing, curing, transportation and placing of concrete to be used in the Works.

All workmanship, materials, tests and performances in connection with the concrete work are to be in conformity with the latest edition of the EN 1992-1- 1:2004+A1:2014 "Eurocode 2:

Design of concrete structures. General rules and rules for buildings" and EN 206:2013+A1:2016 "Concrete. Specification, performance, production, and conformity".

Precast concrete shall be supplied and cast in a manner which fulfils the requirements of the relevant Eurocodes.

6.2.2. Design Codes and Standards

Design, construction, and testing of all concrete work shall be in accordance with the following standards and codes.

- BS EN 1992-1-1:2004+A1:2014 Eurocode 2: Design of concrete structures. General rules and rules for buildings
- BS EN 206:2013+A1:2016 Concrete. Specification, performance, production, and conformity
- BS EN 13670 Execution of concrete structures
- BS 8500-1 Concrete – Complementary British Standard to BS EN 206-1 – Part 1: Method of specifying and guidance for the specifier.
- BS 8500-2 Concrete – Complementary British Standard to BS EN 206 Part 2: Specification for constituent materials and concrete
- BS EN 450 Fly ash for concrete
- BS EN 197-1:2011 Cement. Composition, specifications and conformity criteria for common cements
- BS EN12620:2002+A1:2008 Aggregates for concrete
- BS EN 1008:2002 Mixing water for concrete. Specification for sampling, testing and assessing the suitability of water, including water recovered from processes in the concrete industry, as mixing water for concrete.
- BS 1881-122:2011 Testing concrete. Method for determination of water absorption
- BS EN 480-1 to 13: 2014 Admixtures for concrete, mortar, and grout.
- BS EN 934-2:2009+A1:2012 Admixtures for concrete, mortar, and grout. Concrete admixtures. Definitions, requirements, conformity, marking and labelling.
- BS EN 12390-1:2012 Testing hardened concrete. Shape, dimensions and other requirements for specimens and moulds
- BS EN 196 Methods for testing cement (10 parts)
- BS 812-2:1995 Testing aggregates. Methods for determination of density
- BS EN 12350-2:2009 Testing fresh concrete. Slump-test.

6.2.3. Materials

6.2.3.1. *Cement*

Cement shall conform to BS EN 197-1:2011 "Cement. Composition, specifications, and conformity criteria for common cements".

Cement shall be tested as per BS/EN 196 or equivalent. Cement manufacturer's test certificates will be required.

6.2.3.2. *Aggregates*

Each source of the fine and coarse aggregate shall be tested initially. All aggregate should preferably be from a single source.

6.2.3.3. *Reinforcement*

Reinforcement shall have a specified characteristic strength of 500 MN/m2 and conform to the ductility classes in BS EN 1992-1-1.

6.2.3.4. *Admixtures*

Admixtures shall consist of chemical products specifically formulated for use in concrete works, which shall comply with BS EN 480-1 to 13 and BS EN 934-2.

Alkali-Silica Reaction shall be controlled in accordance with the recommendations of BRE Digest 330.

6.2.4. Concrete production

Designed concrete mixes, including (but not limited to) reinforcement cover and exposure class shall be appropriate to the required exposure conditions and use. They shall be designed to meet the requirements for the appropriate grade of concrete according to BS EN 1992-1-1 and BS EN 206-1 and BS 6349-1-4. Concrete crack widths shall not exceed the limits given in EN 1992 (Eurocode 2): Design of concrete structures having taken into account the effects of early age stresses in the concrete due to the effects of restraint during the curing process.

Prior to the use of any concrete mix in the Works, the Contractor shall prepare trial mixes to demonstrate that the Technical Requirements are met. The selected concrete mix proportions shall be tested in laboratory conditions to achieve the required concrete strength based on 7-day and 28-day strength and other requirements.

6.2.5. Crack widths

Concrete crack widths shall not exceed the limits given in the relevant sections of BS 6349, having taken into account the effects of early age stresses in the concrete due to the effects of restraint during the curing process.

6.2.6. Concrete Identity testing

Concrete identity testing in accordance with EN 206 shall be undertaken at a minimum of every 20m^3 of concrete apart from concrete in slender reinforced concrete structural elements such as beams, columns, and piles, when identity testing in accordance with EN 206 shall be undertaken at a minimum of every 10m^3 of concrete.

6.2.7. Concrete Finishes

6.2.7.1. *Formed Finishes*

Surface finishes shall be generally in accordance with the UK Specification for Highway Works Series 1700.

The minimum standards for formed finishes required are as follows:

- Class F1 finish for surfaces against which backfill, or concrete is to be placed.
- Class F2 finish for surfaces that are to be permanently exposed, but where special finishes are not required.

6.2.7.2. *Rough Surface*

Any concrete which has concrete subsequently cast against it, for example casting the deck slab on top of/against in-situ beams or precast planks: a surface with at least 3mm roughness at about 40mm spacing, shall be achieved by raking, exposing of aggregate or other methods.

6.2.8. Finishing and curing

Finished concrete shall be sound, dense, durable and free from honeycombing, cracking or spalling. Surfaces shall be smooth and free from blemishes or marks.

6.2.9. Delivery and installation.

Any defects shall be made good using methods and materials which ensure that the design life is able to be achieved.

6.2.10. Reinforcement

Reinforcement shall conform to BS 4449. Mesh fabric reinforcement shall comply with the requirements of BS 4483.

The Contractor shall supply the Employer's Representative with test certificates for the reinforcement supplied.

Reinforcement shall be bent in accordance with BS 8666.

6.3. Steelwork

6.3.1. General Requirements

6.3.1.1. *Protective coating*

Corrosion protection shall be provided on all steel components as described in the Requirements for Corrosion Protection (Section 5.4).

6.3.1.2. *Electrical continuity*

All structural steelworks shall be electrically bonded to earth by suitably sized copper cables or strips to form main equipotential bonding.

6.3.2. Materials

6.3.2.1. *Structural steelwork*

Structural steelwork shall comply with the requirements of BS EN 10025 as appropriate to grades as shown on the Drawings.

The minimum design temperature for material selection, with respect to notch ductility for S355J0 in the permanent works, for 0°C or above.

6.3.2.2. *Stainless steel*

Stainless steel to be used in marine structures shall be to BS EN 10088-1, Table 9. For structural components the stainless steel shall have a Charpy impact of at least 40J when tested in accordance with BS EN 10045-1 at the material selection temperature.

6.3.2.3. *Stainless steel fasteners*

Stainless steel fasteners shall be grade A4 to BS EN ISO 3506-1.

6.3.2.4. *Bolts in General*

Structural steel bolts whether temporary or permanent shall be grade 8.8. Class 8 nuts shall be used at all times other than for nominal bolt diameters less than M16 where nuts shall be class 5.

6.3.2.5. *Materials, Anchors*

Steel anchors shall be delivered from a recognised plant with a certificate in accordance with BS / EN 10204 with an indication of melt analysis and mechanical values. A breaking strain of at least 10% and the ratio between breaking stress and yield stress, fu/fy > 1.10.

If the Contractor wishes to use sleeves for the assembly of anchors, the Employer's Representative must first be presented with a control program for securing the full engagement of the anchor rods in the sleeves and for corrosion protection of the assembly for approval.

The hardness, HV, of the supplied anchors must be less than HV 300. When varying the hardness and the yield stress through the cross section of the anchor rods, the Contractor must take this into account when designing and calculating the necessary corrosion allowance.

6.3.2.6. *HSFG bolts*

All bolts shall be HSFG or TCB bolts to BS EN 14399.

6.3.2.7. *Sherardizing of bolts*

All bolts, etc. with their nuts and washers shall be Class 1 sherardized to BS 4921 except for bolts with their nuts and washers which will be built into concrete or masonry.

6.3.3. Fabrication and Workmanship

6.3.3.1. *Levelling and straightening*

All plates, bars and shapes shall be carefully trued, straightened and taken out of winding by pressure before they are drilled. Heating or rolling sections and plates for purposes of straightening will not be permitted.

6.3.3.2. *Fitting of stiffeners*

Where fitting of stiffeners is required, they shall be machined so that the maximum gap over 60% of the contact area does not exceed 0.25mm.

6.3.3.3. *Preparation of edges*

Hand flame cutting or shearing will not be permitted.

Flame cutting procedure trials shall be carried out if the material is not grade S275 or S235 and on the assumption that the edge is subject to applied stress and not incorporated in a weld.

All arises of plates or sections which are to receive corrosion protection shall be smoothed by grinding or filing to a radius of 3mm.

6.3.3.4. *Holes For bolts*

The diameter of made holes shall be 2mm larger than the nominal diameter of the bolt as manufactured. All holes shall be drilled or drilled small and reamed and conform to BS 5400-6 clause 4.5.

6.3.3.5. *Marking*

All parts of the structures shall be marked to an approved reference system designating their position in the completed assembly. All marks shall be maintained until after completion of site erection. The marks shall be shown on the fabrication and assembly drawings.

Plate identification markings from the mills shall be carefully preserved and transferred so that any plate can be identified in its place in the structure.

6.3.4. Welding

6.3.4.1. *Welding procedures and quality*

Written welding procedures shall be provided for all types of welds in the Works in accordance with BS EN ISO 15609-1. These shall include details of welders approved to BS EN 287-1, BS EN ISO 9606 or BS EN 1418 where appropriate.

Welding shall be by metal-arc process complying with BS EN 1011: Part 1.

Weld procedures will be verified in accordance with BS EN ISO 15614-1.

6.3.4.2. *Welding and flame cutting procedure trials.*

Trials shall be carried out using representative samples of materials to be used in the work, and no welding or cutting of material for the Works shall commence until the procedures have been successfully established from the trials. Should the Contractor wish to modify either welding or flame cutting procedures similar trials of the new proposals shall be carried out to demonstrate suitability before the new procedures are used.

Main structural welds require ‘comprehensive’ quality procedures.

Welds to ancillary items taking no permanent structural load require ‘elementary’ quality procedures except for temporary lifting lugs which require at least ‘standard’ quality procedures.

6.3.4.3. *Qualifications and testing of welders*

Evidence of competence of all welding operatives and supervisors shall be provided in accordance with BS EN 287, BS EN ISO 9606 or BS EN 1418 where appropriate routine re-testing of welding operators may be required at six monthly intervals.

6.3.4.4. *Records of welds*

A record of each weld carried out shall be kept by the Contractor to enable all welds of all types to be identified with the welders responsible for the work.

6.3.5. Handling, Transport and Erection

6.3.5.1. *Washers*

All bolts shall be provided with washers under the nuts, and washers shall be appropriately tapered on the insides of flanges of bevelled structural steel sections. In all cases bolts shall project not less than two full threads through the nut after tightening up.

6.3.5.2. *Site Handling*

All structural steelwork assemblies shall be handled with care and shall be transported around site using approved slinging methods to prevent damage and ensure safety.

6.3.5.3. *Handling of anchor rods during construction*

In connection with anchor assembly, the Contractor must prepare an assembly plan for acceptance by the Employer's Representative beforehand. It must be ensured that the anchors are mounted in such a way that there are no unwanted loads and consequent moments in the anchor rods.

In connection with the design of anchor rods, The Contractor must take into account and prescribe tolerances for the anchor assembly itself. The Contractor must ensure that special and documented supervision is carried out with the execution of the anchor installation, including the delivery and handling of the anchors prior to the installation itself.

6.3.6. Inspection and Testing

6.3.6.1. *General*

Testing shall be undertaken according to EN 1090-2 but to a minimum as stated below.

6.3.6.2. *Testing of Fillet Welds*

50% of fillet welds, including temporary works, shall be NDT tested. Proposals for NDT test procedures shall be submitted to the Employer's Representative for approval.

6.3.6.3. *Testing of Butt Welds*

100% of butt welds, including temporary works, shall be NDT tested. Proposals for NDT test procedures shall be submitted to the Employer's Representative for approval.

6.4. Corrosion Protection

6.4.1. General

All exposed steelwork shall be protected against corrosion with a protective paint system for a minimum design life of 15 years. Any damage to corrosion protection systems shall be made good by the Contractor to ensure that there are no local or global loss of the protection offered.

The Contractor shall take appropriate measures to ensure that pre-painted piles make allowance for any variation in toe level of the piles.

7. Building Program and Facilities

7.1. General

Numerous facilities will be required to enable the normal operation of the building. The Contractor shall seek to utilize these requirements and work with the Employer and Employer's Representatives during the design process to ensure that facilities are appropriate for their intended use.

The actual layouts of the buildings shall be prepared by the Contractor in partnership with the Employer and the relevant stakeholders, complying with the requirements contained within this Employer's Requirements document.

7.1.1. Basic Requirements

7.1.1.1. *Scope of Works*

The Scope of Works for the design and construction of the Hulhumale Office Building includes, but is not limited to, the design, supply, installation, construction, testing and quality assurance, commissioning, and maintenance for the following functions as a minimum.

- Parking
- Loading and unloading / Garbage Collection / Services area
- Securiry Gurd post
- Entrance / Reception / Lobby
- Café
- Retail
- Conference / Events Floor
- Office Spaces for Leasing
- Office Spaces for MPL
- Residential
- Rooftop Restaurant

7.1.1.2. *Functional Requirements*

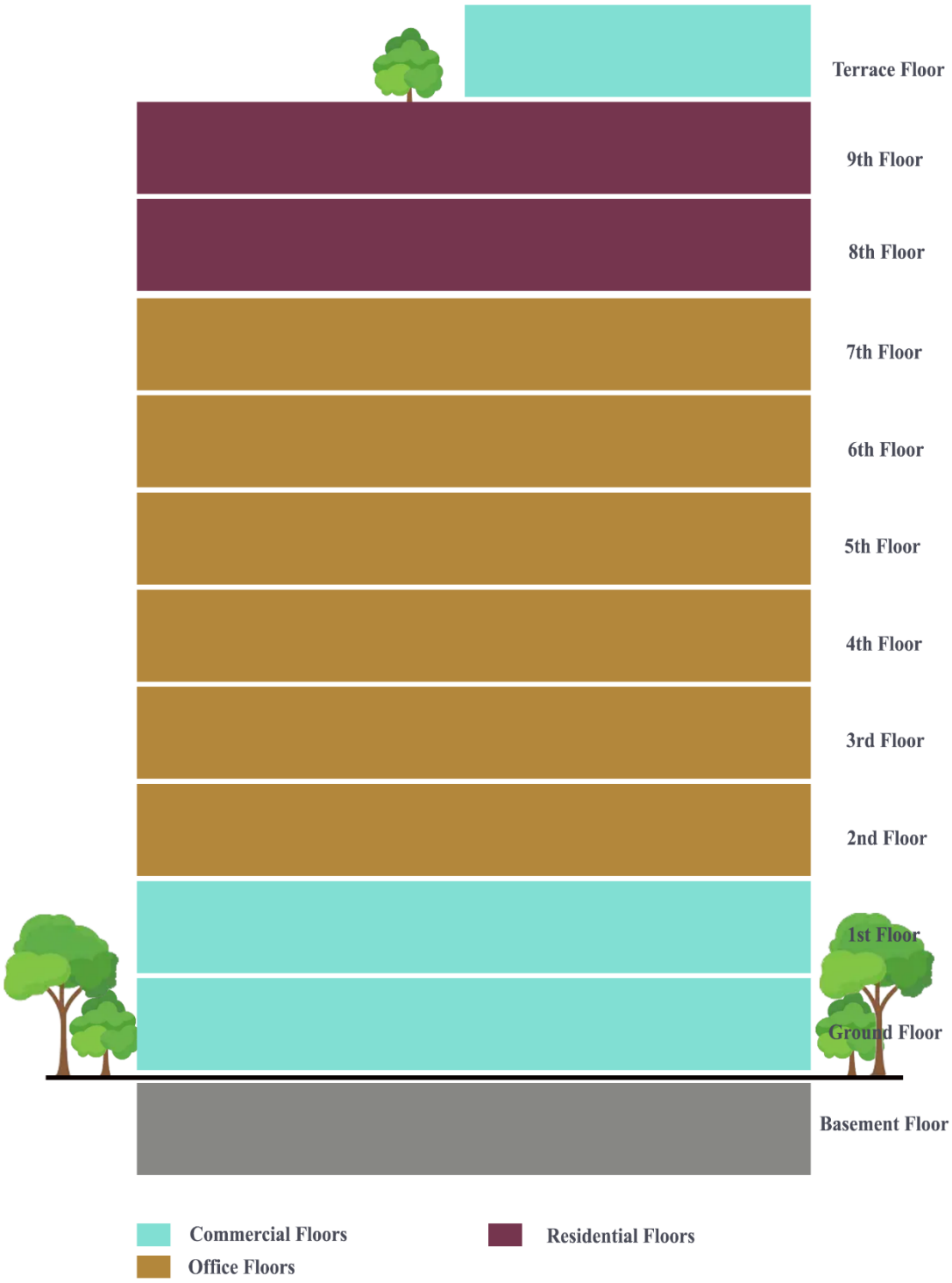
The Hulhumale Office Building will be used to facilitate café', retail, conference & events, office spaces for leasing and MPL use, rooftop restaurant and residences, aligning with the client's specifications. It shall occupy a minimum floor area of 643.1 sqm / 6,922.2 sqft (Build-up area) and shall be 10 stories high. During the design phase, contractors must

prioritize employing a variety of passive methods and alternative approaches to minimize building energy consumption, thereby ensuring its status as a green building

7.1.1.2.1. General Requirements

a) Cantilever glass and metal canopies shall be installed at all entrances, to provide reasonable shade and cover, depending on the expected level of footfalls. The canopy at the main entrance shall protrude at least 3 meters, and other entrances should have a minimum canopy extending to a minimum of 1 meter.
b) The building shall be served by a minimum of three (3) lifts, one (1) service lift, one (1) main stairwell and one (1) emergency stairwell. Each stairwell shall have a direct emergency exit from the stairwell to outside, as well as emergency access to each floor of the building. The staircase must comply with the fire safety standards set by Maldivian authorities and adhere to the building design code.
c) Windows shall be liberally provided on all floors.
d) Power points and data/telephone points shall be provided to each workstation. In every instance where data/telephony (ICT) and power connections are required, the Contractor shall consult Employers Representative during the detailed design stage to confirm the minimum outlets and connections to be installed.
e) During the detailed design process, the contractor shall analyze the requirements for common areas and if required increase the floor area to ensure that sufficient spaces are provided.
f) The Office Building shall conform to accessibility standards, allowing easy access to the Public for the procurement of various services. The office spaces must be clearly demarcated, access-controlled and segregated for safe and secure administrative procedures.
g) Accessibility features all office sections and public access areas must be equipped with accessibility features, visual aids, and signage to provide inclusivity for people with disabilities.
h) Safety and Emergency evacuation: Fire escape, emergency lights, visual and audible alarms and necessary equipment/signs must be installed on each floor, to ensure the safe evacuation of users in case of an emergency.
i) Unsurfaced areas within the Office Building shall undergo landscaping, incorporating grass and trees as depicted in the Definition Drawings. The contractor is responsible for designing and implementing landscaping features that create a serene and inviting environment. The landscaping design shall be prepared to appear aesthetically pleasing and in partnership with MPLs'.

Schematic Diagram of the Building

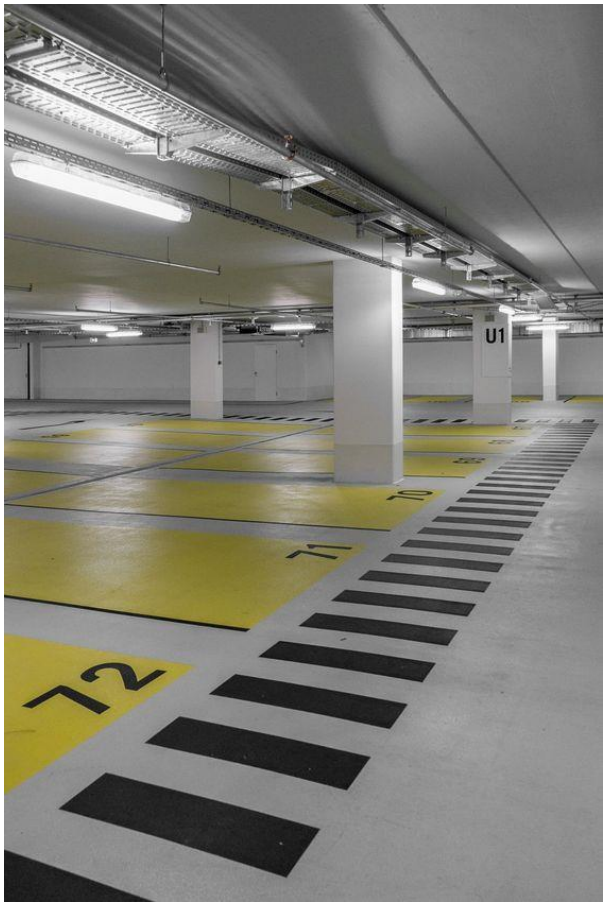


7.1.1.2.2. **Basement Floor**

7.1.1.2.2.1. Parking

The Hulhumale Office Building will accommodate many different facilities, therefore appropriate parking will be needed. The basement floor of the building will be allocated for parking, ensuring sufficient space for the building's needs and occupants. Include provisions for both car and motorcycle parking.

Controlled/structured parking and surface can be located at the perimeter of the lot adjacent to the access roads. Demarcate signage and markings and provide appropriate lighting on pedestrian routes. Separate parking aisles from primary vehicle circulation routes and entry drives whenever possible. Use design elements that are visually interesting and consistent with other streetscape materials used in the overall development. Utilize Universal Design techniques where feasible to provide a separation between driveway curb cuts and drop-off areas to minimize turning conflicts; provide a clear separation of vehicular traffic between drop-off zones and access to either a parking lot or parking structure, and design drop-off lanes so as not to obstruct traffic flow when motorists are stopped to discharge passengers. Use scored, colored, textured, and or similar paving that is distinguishable from the travel lane at the drop-off area. Exterior lighting is to be considered in all areas including landscaping, parking area, and building exterior lighting. Wherever parking is provided appropriate floor paint markings and signage must be given.



7.1.1.2.2.2. Lobby Area

The basement should have a lobby area with access from two sides with fire-rated doors. This lobby should be access controlled. All the passenger elevators will start from this lobby.

7.1.1.2.2.3. Loading & Unloading

There will be a dedicated loading and unloading area in the basement followed by a room to unload the items. The Services elevator will have direct access to this room. This room should have firerated doors and a firefighting system.

7.1.1.2.2.4. Waste Collection Room

There will be a separate waste room for the building in the basement. All the wastes generated by the building will be kept in this room till the waste disposal team collects them. Since its dealing with waste there should be mechanical ventilation. Moreover, a water connection and drainage system also should be there. Wall and floor finishing should be done with a material that can be easily washable.

7.1.1.2.2.5. Services Room

There will be two dedicated services rooms for the building in the basement. All the services-related works will be carried out in this room. These spaces should be airconditioned and should have a firefighting system.

7.1.1.2.3. **Ground Floor**

7.1.1.2.3.1. Main Lobby

The main entrance of the building is to be positioned on the ground floor and there should be space for a main lobby, accessible directly from the main entrance to the building. There should be two separate entrances for private and public areas of the building separated by key card access doors as well as a separate service entrance. The logo and building name shall be prominently displayed in the lobby area, preferably in the vicinity of the reception area. Members of the public must be able to access the common waiting area in the lobby. A fixed counter elegantly constructed from granite, polished stone, brushed metal/alloys, or a combination of such materials, of at least 2m long shall be

installed to allow the operation of the reception by receptionists. The reception desk shall be supplied with appropriate power and data connections.

The staff access areas leading to the office space and the main lift lobby shall be access-controlled, with turnstiles. The turnstiles shall have face recognition and card readers for staff entry and exit. The main lift lobby will provide access to all other areas of the building, commercial and residential subject to authorizations and access; this includes card-operated authorizations for lift access. All public access areas and entrances must be equipped with accessibility features, visual aids, and signage to provide inclusivity for people with disabilities. A restricted and access controlled area will be allocated for security in this floor. The Port Security Department will also host the surveillance station for the CCTV camera systems.

7.1.1.2.3.2. Retail/ Banking/ ATMs/ Café

The ground floors shall provide for commercial spaces, including retail shops, cafés, as well as banking and ATM facilities. These commercial spaces should be easily accessible and should user-friendly. All the units should have more than one entrance

and should dedicate one entrance for services and other operational use. The design must adhere to the finishing and aesthetics outlined in the concept design provided by the client. This entails ensuring that the design language and overall feel of these levels align with the concept design's vision and specifications.

Two escalators shall be provided to integrate public & private spaces of the development. Moreover, there should be a separate passenger lift for PWD and the general public. The lift should accommodate a minimum of one person with a wheelchair and a helper. (lift spec. to be decided during the design stage).

Accessibility features: all public access areas such as corridors, toilets, etc, must be equipped with accessibility features, visual aids, and signage and a PWD toilet to provide inclusivity for people with disabilities.

Safety and Emergency evacuation: Fire escape, emergency lights, visual and audible alarms and necessary equipment/signs must be installed, to ensure the safe evacuation of users in case of an emergency.

7.1.1.2.3.3. Services Room

There should be two dedicated services rooms for each tower. All the services-related works shall be carried through this room. These spaces should be airconditioned and should have a firefighting system installed.

7.1.1.2.3.4. Common & Public Space

The ground floor design should prioritize the creation of a cohesive communal space that caters to the needs of the public. This space will include internal pedestrian pathways, providing ease of movement for visitors and residents alike. Additionally, ample seating arrangements will be strategically placed throughout the area to encourage relaxation and social interaction. Dedicated spaces will be allocated for gatherings and meetings, fostering community engagement and collaboration. Overall, this integrated communal space aims to enhance the accessibility and functionality of the ground floor, aligning with the vision of creating a welcoming environment for all.

7.1.1.2.3.5. Common Toilet

The commercial area should have fully equipped common toilet facilities on the ground floor and it should be open for the staff and the general public who are occupying the commercial facilities in the building. Furthermore, a separate PWD toilet (for all categories of use) is also to be provided with adequate circulation space.

7.1.1.2.3.6. Internal Road & Drop Off

An internal road will be designated solely for drop-off and pick-up purposes for the building. This initiative aims to alleviate traffic congestion on surrounding roads while ensuring a secure area for drop-off activities. The road infrastructure will be designed to accommodate staff buses efficiently, facilitating smooth transportation operations. Additionally, a dedicated shaded zone will be provided for drop-off and pick-up, enhancing convenience and comfort for individuals accessing the office premises.

7.1.1.2.4. **First Floor**

7.1.1.2.4.1. Conference & Events

The first floor of the building is designated exclusively for conferences and events. The floor will offer an open and adaptable layout, facilitated by movable partition walls to suit different event configurations. With high ceilings providing ample vertical space, the floor will be equipped with advanced AV infrastructure, including built-in projectors, screens, and light & sound systems and other required services required, to cater to presentations and performances. All the services required for this space should be controlled by a separate control room.

Accessibility features: all public access areas such as corridors, toilets, etc, must be equipped with accessibility features, visual aids, and signage and a PWD toilet to provide inclusivity for people with disabilities.

Safety and Emergency evacuation: Fire escape, emergency lights, visual and audible alarms and necessary equipment/signs must be installed, to ensure the safe evacuation of users in case of an emergency.

7.1.1.2.4.2. Services Room

There should be two dedicated services rooms for each tower. All the services-related works shall be carried through this room. These spaces should be airconditioned and should have a firefighting system installed.

7.1.1.2.5. **Second, Third & Fourth Floor**

7.1.1.2.5.1. Office Spaces (Leasing)

The second to fourth floor will be designated for office spaces available for lease, featuring an open-plan working environment. The design concept prioritizes flexibility, allowing for partitioning where necessary, such as in meeting rooms and directors' rooms. These partitions will consist of floor-to-ceiling tempered glass, providing both transparency and delineation of space. Details regarding glass specifications and fixing

will be determined during the technical design stage. The general office area will feature exposed ceilings, promoting an airy and modern atmosphere. However, specific areas such as meeting rooms will have ceilings for enhanced privacy and acoustics. To facilitate efficient cable management and service integration, a raised floor system will be installed throughout the general office area. This system will conceal floor-mounted network and electrical services, ensuring a clutter-free and streamlined workspace.

Power points and data/telephone points shall be provided for office spaces. In every instance where data/telephony (ICT) and power connections are required, the Contractor shall consult Employers Representative during the detailed design stage to confirm the minimum outlets and connections to be installed.

Accessibility features: all public access areas such as corridors, toilets, etc, must be equipped with accessibility features, visual aids, and signage and a PWD toilet to provide inclusivity for people with disabilities.

Safety and Emergency evacuation: Fire escape, emergency lights, visual and audible alarms and necessary equipment/signs must be installed, to ensure the safe evacuation of users in case of an emergency.

7.1.1.2.5.2. Lobby & Waiting Area

Each office floor will feature a small waiting area positioned in front of the office entrance. This designated space serves as a buffer zone before entering the main office area, allowing for a seamless transition. To maintain consistency and continuity, the waiting area will utilize a raised floor system, ensuring that it is finished at the same level as the main office space. This design approach enhances the overall flow and functionality of the office environment while providing visitors with a comfortable and welcoming reception experience. There should be a drop ceiling connected to the ceiling of the outdoor area and corridor.

7.1.1.2.5.3. Outdoor Area

Each office floor will include outdoor areas consisting of a corridor and a cantilevered balcony. These spaces are intended to provide staff with outdoor retreats for breaks or moments of privacy. Featuring comfortable seating areas and lush tropical plants lining their full length, these outdoor areas offer a serene and rejuvenating environment. To ensure safety and durability, the floor finishing of these spaces will comprise outdoor materials with non-skid properties. Additionally, an outdoor ceiling system will be installed, seamlessly integrated with the beam soffit level for a cohesive aesthetic. This design concept aims to enhance employee well-being by offering accessible outdoor spaces within the office environment.

7.1.1.2.5.4. Common Services Area

A specified area of the floor shall be dedicated for the common services of the building including toilets, pantry, storage area, fire staircase and services.

- **Storage Room:** Each floor should have its own dedicated storage area with appropriate services installed.
- **Pantry:** Each office level should have a pantry space. Each panty should have a dining table with a minimum of 4 chairs, and amenities such as a sink, fridge, and provision for a microwave oven. The exposed wall surface area should be finished with glossy paint.
- **Toilets:** All the office floors should have fully equipped common toilet facilities on the floor and it should be open for the staff. Furthermore, a separate PWD toilet (for all categories of use) is also to be provided with adequate circulation space.
- **Prayer Room:** Each office floor will be equipped with a dedicated prayer room designed to accommodate approximately five individuals at a time, featuring separate areas for males and females along with an ablution area.
- **Fire staircase:** There should be 01nos. of fire staircases in the building located in the common service corner. All the fire staircases should be designed in accordance with local or international fire standards.

7.1.1.2.5.5. Services Room

There should be two dedicated services rooms for each tower. All the services-related works shall be carried through this room. These spaces should be airconditioned and should have a firefighting system installed.

7.1.1.2.6. **Fifth & Sixth Floor**

7.1.1.2.6.1. Office Spaces (MPL Corporate Office)

The fifth and sixthh floors will be designated MPL Corporate Office Hulhumale Wing featuring an open-plan working environment. The design concept prioritizes flexibility, allowing for partitioning where necessary, such as in meeting rooms and directors' rooms. These partitions will consist of floor-to-ceiling tempered glass, providing both transparency and delineation of space. Details regarding glass specifications and fixing will be determined during the technical design stage. The general office area will feature exposed ceilings, promoting an airy and modern atmosphere. However, specific areas such as meeting rooms will have ceilings for enhanced privacy and acoustics. To

facilitate efficient cable management and service integration, a raised floor system will be installed throughout the general office area. This system will conceal floor-mounted network and electrical services, ensuring a clutter-free and streamlined workspace.

Power points and data/telephone points shall be provided for office spaces. In every instance where data/telephony (ICT) and power connections are required, the Contractor shall consult Employers Representative during the detailed design stage to confirm the minimum outlets and connections to be installed.

Accessibility features: all public access areas such as corridors, toilets, etc, must be equipped with accessibility features, visual aids, and signage and a PWD toilet to provide inclusivity for people with disabilities.

Safety and Emergency evacuation: Fire escape, emergency lights, visual and audible alarms and necessary equipment/signs must be installed, to ensure the safe evacuation of users in case of an emergency.

7.1.1.2.6.2. Lobby & Waiting Area

Each office floor will feature a small waiting area positioned in front of the office entrance. This designated space serves as a buffer zone before entering the main office area, allowing for a seamless transition. To maintain consistency and continuity, the waiting area will utilize a raised floor system, ensuring that it is finished at the same level as the main office space. This design approach enhances the overall flow and functionality of the office environment while providing visitors with a comfortable and welcoming reception experience. There should be a drop ceiling connected to the ceiling of the outdoor area and corridor.

7.1.1.2.6.3. Outdoor Area

Each office floor will include outdoor areas consisting of a corridor and a cantilevered balcony. These spaces are intended to provide staff with outdoor retreats for breaks or moments of privacy. Featuring comfortable seating areas and lush tropical plants lining their full length, these outdoor areas offer a serene and rejuvenating environment. To ensure safety and durability, the floor finishing of these spaces will comprise outdoor materials with non-skid properties. Additionally, an outdoor ceiling system will be installed, seamlessly integrated with the beam soffit level for a cohesive aesthetic. This design concept aims to enhance employee well-being by offering accessible outdoor spaces within the office environment.

7.1.1.2.6.4. Common Services Area

A specified area of the floor shall be dedicated for the common services of the building including toilets, pantry, storage area, fire staircase and services.

- **Storage Room:** Each floor should have its own dedicated storage area with appropriate services installed.
- **Pantry:** Each office level should have a pantry space. Each panty should have a dining table with a minimum of 4 chairs, and amenities such as a sink, fridge, and provision for a microwave oven. The exposed wall surface area should be finished with glossy paint.
- **Toilets:** All the office floors should have fully equipped common toilet facilities on the floor and it should be open for the staff. Furthermore, a separate PWD toilet (for all categories of use) is also to be provided with adequate circulation space.
- **Prayer Room:** Each office floor will be equipped with a dedicated prayer room designed to accommodate approximately five individuals at a time, featuring separate areas for males and females along with an ablution area.
- **Fire staircase:** There should be 01nos. of fire staircases in the building located in the common service corner. All the fire staircases should be designed in accordance with local or international fire standards.

7.1.1.2.6.5. Services Room

There should be two dedicated services rooms for each tower. All the services-related works shall be carried through this room. These spaces should be airconditioned and should have a firefighting system installed.

7.1.1.2.7. **Seventh Floor**

7.1.1.2.7.1. MPL CEO Bureau

The CEO's bureau will be outfitted with a spacious desk, comfortable seating for guests, and ample storage for documents and personal items. Emphasizing privacy and professionalism, the design will include soundproofing and controlled access to ensure confidentiality. Additionally, there will be a separate toilet for the CEO and their PA, providing convenience and privacy. A pantry will also be incorporated to offer light refreshments. The PA area within the bureau will be equipped with a desk, computer, and communication tools to facilitate efficient administrative support. Privacy screens or

partitions may be installed to delineate the PA workspace while maintaining an open and collaborative environment.

7.1.1.2.7.2. Executive Lounge

The executive lounge will be furnished with premium-quality seating, elegant decor, and ambient lighting to create a welcoming atmosphere. Design features may include natural materials, such as wood and stone, to convey a sense of luxury and sophistication. The lounge will also offer amenities such as refreshment stations, reading materials, and charging stations for electronic devices.

7.1.1.2.7.3. Meeting Rooms

Meeting rooms will be designed to accommodate various group sizes and meeting formats, with flexible seating arrangements and modular furniture. State-of-the-art audiovisual equipment, including video conferencing capabilities and interactive displays, will be integrated to support multimedia presentations and remote collaboration. Ergonomic furnishings and adjustable lighting will enhance comfort and productivity during extended meetings.

7.1.1.2.7.4. Common Services Area

A specified area of the floor shall be dedicated for the common services of the building including toilets, pantry, storage area, fire staircase and services.

- **Storage Room:** Each floor should have its own dedicated storage area with appropriate services installed.
- **Pantry:** Each office level should have a pantry space. Each panty should have a dining table with a minimum of 4 chairs, and amenities such as a sink, fridge, and provision for a microwave oven. The exposed wall surface area should be finished with glossy paint.
- **Toilets:** All the office floors should have fully equipped common toilet facilities on the floor and it should be open for the staff. Furthermore, a separate PWD toilet (for all categories of use) is also to be provided with adequate circulation space.
- **Prayer Room:** Each office floor will be equipped with a dedicated prayer room designed to accommodate approximately five individuals at a time, featuring separate areas for males and females along with an ablution area.

- **Fire staircase:** There should be 01nos. of fire staircases in the building located in the common service corner. All the fire staircases should be designed in accordance with local or international fire standards.

7.1.1.2.7.5. Services Room

There should be two dedicated services rooms for each tower. All the services-related works shall be carried through this room. These spaces should be airconditioned and should have a firefighting system installed.

7.1.1.2.8. **Eighth & Ninth Floor**

7.1.1.2.8.1. Residential

Assign the eighth and ninth floors exclusively for residential apartments. These floors will feature high-end apartments available for both sale and leasing, offering varying room capacities to cater to different preferences and needs.

Accessibility features: all public access areas must be equipped with accessibility features, visual aids, and signage disabled toilet to provide inclusivity for people with disabilities.

Safety and Emergency evacuation: Fire escape, emergency lights, visual and audible alarms and necessary equipment/signs must be installed, to ensure the safe evacuation of users in case of an emergency.

7.1.1.2.8.2. Common Outdoor Area

A common outdoor area that serves as a communal space for residents to relax and socialize shall be provided. This area will be thoughtfully landscaped and furnished, providing seating areas and greenery to enhance the overall ambiance. Access to outdoor spaces is vital for promoting a sense of community and well-being among residents. The floor finishing of this space should be an outdoor material with non-skid properties. A ceiling system (out-door) is to be provided, which should be flushed with beam soffit level.

7.1.1.2.8.3. Services Room

There should be two dedicated services rooms for each tower. All the services-related works shall be carried through this room. These spaces should be airconditioned and should have a firefighting system installed.

7.1.1.2.9. **Terrace**

7.1.1.2.9.1. Staff Lounge

This area will serve as an exclusive staff lounge for MPL employees, offering a relaxing environment for breaks and leisure activities. It will feature gaming facilities and a designated movie area with all necessary equipment provided.

7.1.1.2.9.2. Indoor Dining Area

The terrace will function as a canteen for MPL staff and provide dining services to external guests. The indoor dining area will offer coworking spaces and a buffet area, creating a dynamic and collaborative atmosphere. Equipped with air conditioning, exposed ceilings, and floor-to-ceiling glass walls, the space will offer a comfortable dining experience. Co-working tables will feature built-in charging ports for laptops and mobile devices.

7.1.1.2.9.3. Outdoor Dining Area

Adjacent to the indoor dining space, the outdoor dining area will feature lush gardens and ample seating, allowing diners to enjoy their meals in a serene outdoor setting. A designated handwashing area will be incorporated to maintain hygiene standards.

7.1.1.2.9.4. Kitchen

The restaurant's kitchen will comply with regulations set by the Maldivian regulatory authority, ensuring adherence to safety and hygiene standards. It will be fully equipped to meet the culinary needs of the restaurant and support its diverse menu offerings.

7.1.1.2.10. **Exterior Façade**

There will be main three elements in the exterior of this building. The main exterior element of the building shall be of unitized façade system, except for the internal corridor area. The glass on the façade shall be of double glazing with a min. of 10mm air gap and exterior layer to be treated with heat reflective coating. To reduce the heat gain on the façade a decorative design element will be incorporated as a part of the façade. The glass wall on the corridor also shall be double glazed with a thermal break aluminium frame system with heat reflective properties on glass.

The building is envisaged to be a concrete structure, with insulated fire-rated cladding. However, the Contractor may propose a form of construction, suitable to meet the Employer's Requirements and after getting approval from the Employer's Representative during the Detailed Design Phase. Construction of the building shall be in accordance to the Approved Design and shall start after the completion of detailed design phase. Employers Representative may at his own discretion allow parts of the Works to be carried out upon the request of the Contractor.

7.1.1.3. *Design Requirements*

As a landmark building, the Hulhumale Office Building shall be architecturally designed so that its external appearance reflects its standing within the port and the Greater Male Area.

The building shall be designed in accordance with the Employer's Requirements for Buildings.

The Contractor shall submit the following documents/specifications to the Employers Representative for review, selection, and approval. Any proposed changes shall be incorporated and re-submitted prior to approval and finalization:

- Presentation of Building Exterior Design Concepts
- Interior design concepts/layout, finishing material, fixtures and fittings and colour palette; the Contractor shall engage a demonstrably qualified interior designer (firm), to consult on various aspects of interior design including (but not limited to) the following: interior space concept development, fixtures and fittings, finishing materials, colour selection.
- In case the Employer's Representative requests to provide sample artefacts/material of proposed designs, the contractor shall present them for review and acceptance.

All required services and utilities such as (but not limited to) Electrical, lighting, ICT, fire protection systems, potable water supply, sewerage etc. shall be designed to be integrated into the building.

In addition to the requirements specified in the sections and documents referred to, the following aspects of design are outlined for emphasis. The following requirements shall be included in the design and construction of the Building. It should be noted that the following list is not exhaustive, and the completed building shall have all the necessary spaces, equipment, facilities, services etc. for proper functioning of the building (unless otherwise specifically stated), ready for operations.

F. General Construction of 10 Storey, Building

1. Site Area: 9590.64sqft / 890sqm
2. No. of Floors: 10
3. Durability and Protection to elements of weather:
    a. All construction materials and exposed structures must be resistant to salinity, environmental and atmospheric conditions.

G. Architectural

1. Complete Architectural design as specified in the relevant parts of this Employer's Requirements including, but not limited to, Floor Layouts, Section, Door/Window schedules, Ventilation Schedules, Floor Finishing Schedules, etc.
2. Design aesthetics: The look and feel of the office spaces should emanate an ergonomic, functional, minimalist, modern sleek impression. All materials, colour schemes and other design elements shall be consistent with these guidelines.
3. The building's signage (name and Port logo) should be prominently dis- played at the top of the building, with a minimum height of 2m (for each letter); the signage shall be clearly visible from a fair distance and should be lit for greater visibility at night.
4. Raised Floor System to be applied to all areas (including all office spaces) on all floors of the building for flexible utilization of office space.
5. Walls: Waterproof material shall be used for all the external walls and all walls enclosing lavatories.
6. Internal Walls: Internal Walls are to be made from a modular, demountable, movable partition wall system; walls facing the corridor must consist of wall-system panels and glass-panels.
7. External walls: Most of the external walls shall be of tinted, heat-resistant, and insulated glass, and the remaining area to be covered with fire- resistant wall cladding.
8. Finishes: All material and finishes shall be low-maintenance and durable.
9. Ceiling: Drop ceiling with ceiling tiles, moisture and microorganism-resistant
10. Façade: Structural Glazing shall be tinted in an aesthetically pleasing hue and must be constructed from reflective, enhanced UV resistant glass, blocking 99% of UV (UV/A, UV/B) rays and providing sufficient heat and glare resistance; glass shall be

capable of letting in natural light adequately into the building. The façade mounting frame and fit- tings should be resistant to the effects of elements, and anti-corrosive against exposure to high-salinity in the coastal area.

11. Waterproofing: Rooftop and all wet-area surfaces must be water-proofed and properly sealed and insulated.
12. The Main Entrance Door shall be an automated Sliding door with frame-less tempered glass.
15. Cantilevered Roof for the Main Entrance of the Building for passenger pick-up & drop-off. Access turnstiles providing access to controlled area on the second floor shall meet the following minimum standards and features:
    a. Optical Turnstile
    b. Waist high swing glass panel
    c. Elegant and functional stainless-steel material construction (AISI 304 or better)
    d. Passage speed 60 persons per minute
    e. Bi-directional allowing passage for single person.
    f. Tailgating detection
    g. LED lights for user guide and direction indication
    h. 3rd party access control systems integration
    i. Audio warning for unauthorized access
    j. Obstacle detection
16. All the remaining entrance doors shall be frameless swing doors.
17. Lifts: Minimum 03nos Passenger Lift (6 to 8-person capacity) and 01 service lift
13. Staircases: Minimum 1no main staircase accessible up to Terrace and 1no emergency stairwell

H. Structural

1. Complete structural design of the building as specified in the relevant parts of this Employer's Requirements including, but not limited to floor slabs, Floor Beams, Floor Slabs, structural section, detailing, etc.
2. Steel Work Finish
    a. Paint system for corrosivity category C5-M (ISO 12944) should be used for all surfaces. The contractor shall follow the instructions provided by the manufacturer. Paints shall be applied on power brush cleaned surfaces.
3. Loads in general shall be taken from Eurocode 1: Actions on structures and as specified in Appendix B. Under no circumstance, the loading shall not be less than the following.
    a. Wind Speed: 25 m/s
    b. Variable Load: 3.5 KN/m^2 for Office Spaces and 5.0 KN/m^2 for Meeting Rooms, Classrooms and Conference Hall.

I. Services

1. Complete Building services design as specified in the relevant parts of this Employer's Requirements including but not limited to conceptual design, detailed design, calculations, etc.
2. Plumbing (water and sewer network):

a. All the internal & external plumbing works plumbing works with fittings and accessories. 3. Electrical Works: a. All the electrical & networking works (wiring, accessories etc.). An adequate panel room must be provided for electrical net- work cabling and termination. 4. Fire Protection Systems: a. Fire protection systems including but not limited to sprinkler systems, alarm systems, extinguishers, pumps etc. as required under Appendix B, NFPA codes, Eurocodes and Local rules & regulations shall be provided. b. The CCTV system, fire-prevention, suppression, and alarm systems must be integrated for improved versatility and management of interdependent systems. c. All construction material, especially in structures susceptible to risk, must be validated for fire-ratings. 5. Monitoring and ICT Infrastructure a. Building perimeter b. Interior coverage including all aisles/corridors, stairwells with- out any blind spots (Recognition level CCTV) c. Internal ICT Systems Cabling, ducts, and connectivity to Central ICT Backbone. d. A Datacenter must be provided for the cabling and termination of all ICT network infrastructure. 6. HVAC Systems a. Ducted Central air-conditioning system (VRF)
J. Additional Specifications:
1. All structures must be treated for resistance against pests, termites, and other microorganisms. 2. The design elevation of the project is +0.000, the relative positions determined at the site. 3. Construction of Building to be planned, to maximize ease, comfort, and accessibility for building users. 4. Energy Efficiency. It is recommended that the construction of the building, materials and technologies must lean towards energy efficient fac- tors such as utilization of smart energy-saving technologies, maximization of natural lighting. 5. All materials exposed to the elements must have corrosion resistant properties and suitable to coastal environments with high ambient salinity.

7.1.1.3.1. Workmanship

The national Building Regulations for the United Kingdom, including 'Approved Documents' and most current revisions, shall be used as referential standards and guidance for the workmanship and skills used to deliver the project. All construction works must adhere to up-to-date European Standards (EN).

The welds used in the manufacture of welded parts and sections of the building (where applicable), should be continuous, and should have all stop/start positions inspected for welding defects and if not complying they shall be repaired to comply with the relevant ISO specifications.

In cases where parts are affixed, bolted, fastened together with bolts, screws, studs, and nuts made of carbon steel, these works must be qualified by subjecting it to torque and clamp-force testing in compliance with corresponding ISO/EN standards.

Treatment of all surfaces and surface preparation works carried out, including painting, chemical treatment, surface treatment for anti-corrosion must be at- tested and the quality of works carried out checked against ISO/EN standards.

7.1.2. Services Requirement

7.1.2.1. *Drainage System*

The soil and waste will be through individual pipes and will be carried to the MWSC sewer line. The drainage system will be a “Two pipe system “. Two pipe systems as per ANSI standards shall be connected to soil and waste fixtures separately to have redundancy during maintenance. It shall also allow trapping the waste at bottom of the stack from the kitchen/washing basin/shower, which is likely to prevent proper flow in horizontal runs. The soil, waste, and vent system shall be watertight and gas-tight designed to prevent the escape of foul gas and odor from various fixtures. All vertical soil and waste stacks for toilets will be upvc pipes. The drainage system shall be designed according to Uniform Plumbing Code or any relevant standards.

7.1.2.2. *Water Supply System*

The primary source of water supply is the MWSC. The main water supply pipe shall enter the building from the side lane of the building. Water meters and booster pumps are housed in the designated room on the basement floor. A separate water meter should be installed for every outlet in the water meter room. Each outlet will be provided with one direct water pipe from the water meter and a lockable tap will be fixed on every outlet. The concept is that the tenants will have to do their internal plumbing if required. The pipe water supply system shall be designed according to Uniform Plumbing Code or any relevant standards.

7.1.2.3. *Rainwater Supply System*

It is proposed to harvest the rainwater from the building roof terrace. The harvested rainwater is to be stored in the basement rainwater storage stand. The stored rainwater is pumped to all the toilet water closet flush tanks after a sand filtration and disinfection

process. Two variable frequency drive pumps and two filtration systems shall be provided for the rainwater flushing system. One pump shall be on standby mode while the other pump shall be on duty mode and each pump shall be designed to run 12 hours per day and shall have an automatic change over system built into the pump control system.

7.1.2.4. *Fire Alarm and Fire Fighting System*

7.1.2.4.1. Fire Detection and Alarm System

The fire detection and alarm system shall be designed to give a warning to the occupants and visitors of the building to vacate the building when a fire occurs. It should be a fully addressable type of intelligent fire detection and alarm system with an automatic battery charger of 24 volts sealed lead acid batteries sufficient for 48 hours of normal working and capable of operating the system for 30 minutes during an emergency condition as per NFPA-72 guidelines and shall consist of the following items.

- Analogue addressable fire alarm control panel
- Smoke detector
- Heat detector
- Manual call point (Resettable)
- Electronic sounder with flasher
- Interface unit
- 48 hours' standby battery
- Fire-resistant cable

The fire detection and alarm system shall be designed to comply with the Maldives National Defence Force (MNDF) or to an equivalent approved standard. All the detailed design drawings shall be approved by the fire department of MNDF before any work is carried out at the site.

7.1.2.4.2. Fire Fighting System

The firefighting system shall be designed to fight fire by the tenants of the building by the automatic sprinkler system and by the firefighters. The type of firefighting to be proposed for the building are:

- Sprinkler system
- Hose reel system
- Dry riser system

- Portable Fire extinguisher H2O
- Portable Fire extinguisher CO2
- Fire pump

All the design drawings shall be approved by the fire department of MNDF before any work is carried out at the site.

7.1.2.5. *Emergency Voice Communication System*

Emergency voice communication shall be designed and installed to be used in the event of a fire or any other emergency that requires the occupants and users of the building to communicate to the security room or to give announcements in case the building has to be evacuated. This system should cover the whole building including the basement floor and the roof terrace. This system shall comply with NFPA 72 Chapter 24 “Emergency Communications Systems” or any relevant standards. This system shall house next to the Automatic Fire Alarm Control Panel.

7.1.2.6. *Emergency Power System*

The emergency power system shall be designed to cater to the emergency uninterrupted power to the following area.

- Offices
- Fire Lifts
- Commercial Units
- Fire pump
- Booster pumps
- Sump pump
- BMS

An air-cooled emergency generator (3-phase, 400V, 50 Hertz) shall be sized to cater for the above areas plus to cater another 25 percent extra power. The generator shall be sound-proof (65Dba) with a built-in fuel tank. The generator starter panel should be designed to start the generator and load automatically (within 30 seconds) once there is a power interruption and power the above areas and systems through an automatic transfer switch. Once the mains power comes back, the generator should be stopped automatically and shall go back to standby mode.

7.1.2.7. *Solar PV System*

Solar PV panels shall be designed and installed on the rooftop of the building. The lithium-ion storage batteries shall be used for solar power storage with all the accessories. This system shall be designed with a battery bank that can store up to 5

days of continuous power. The proposed usage of a standalone solar power system shall power the following equipment and areas.

- Rainwater pump (Toilet flushing)
- CCTV system
- Corridors and stairs lighting
- Toilets lighting
- Pantry lighting
- Storage lighting
- Common walkway lighting (Ground floor)
- Loading and Unloading lighting
- Basement parking lighting
- Lift lobby lighting
- Services room lighting (Electrical, Mechanical, Control room, and Storage)
- Entrances and Exits lighting
- The perimeter of the building lighting

7.1.2.8. *Lighting System*

The proposed lighting system levels for this building are as follows:

Description	Lux Level
Offices	500 Lux
External Parking	75 Lux
Restrooms	150 Lux
Lobby	200 Lux
Corridors and Stairs	100 Lux
Lifts	100 Lux
Entrance and Exits	200 Lux
Switchboards	300 Lux
Electrical Rooms	100 Lux
Mechanical Rooms	150 Lux
Pantry	200 Lux

Loading & Unloading Area	150 Lux
Storage	100 Lux
Common Walkway (Ground Floor)	200 Lux
Apartments	150 Lux

The above areas shall be designed to give appropriated homogenous lighting levels with energyefficient LED light, appropriate for designated areas. The lighting design shall comply with CIBSE or any equivalent standards.

7.1.2.9. *Earthing System*

The earthing system will be designed as per the guidelines laid down in the international standard to keep the earth's resistance as low as possible. Distribution earthing shall be carried all along with the LT distribution system, or through local earth station and effectively bonding the cables/equipment i.e., Metallic enclosures of panels, DB, machinery, motors, metallic frames provided for different equipment supports. The entire network will be designed with a GI strip laid over the tray and connected to the provisions for enclosure earth connectivity will be detailed in the earthing schematic drawing. Earthing for light and power points shall be carried out with insulated copper earth wire running throughout the length of circuits and shall be terminated at the boxes, fixtures, etc. with effective bonding to the main earth. The size of the earth wire shall be as per IEC standards. Separate and distinct earth stations and electrodes shall be provided for telecommunications and other data systems. Resistance for clean earth and the electrical system earth shall be kept below one ohm. Dedicated earthing will be tapped from the earth pits which will be installed for clean earthing. The entire network is designed with PVC-insulated copper conductor wires laid over the tray and terminated at the copper earth bus.

7.1.2.10. *Lightning Protection System*

Lightning protection in this building shall be designed and installed according to BS EN/IEC 62305 lightning protection standard or the NFPA 780 latest edition. The system shall provide safety for the building and the occupants by preventing damage to the structure caused by lightning. The lighting design shall cover the entire building and shall protect all the roof terrace, all the equipment installed on the roof terrace, building structural, electrical, and all other major equipment installed in the building. The lightning protection system shall consist of grounding conductors, lightning arrestors, and bonding. All the components design shall be certified by Underwriter's Laboratory, Inc (UL) 96A standard, latest edition.

Main protection measures against injury to living beings due to touch and step voltages are intended to:

- Reduce the dangerous current flowing through bodies by insulating exposed conductive parts and/or by increasing the surface soil resistivity.
- Reduce the occurrence of dangerous touch and step voltages by physical restrictions and/or warning notices.

The vertical air terminal is located at the edge of the highest point of the building. Several earth pits considered is as per the Type B earthing system. Ring earthing is to be installed at the depth of 1 meter from the protected structure and laid at the depth of 0.5 meters around the building perimeters. Following are the parts of a conventional lightning protection system:

- Grid of horizontal conductors above the roof
- Down conductors
- Joints and connectors
- Testing joints
- Earth termination

7.1.2.11. *Emergency Lighting System*

Self-contained emergency lighting of 3 hours' duration must be designed to the local Fire Protection Authority's requirement. The self-contained emergency lights during mains healthy conditions would operate from the main supply while simultaneously charging the battery. During the main power failure and the gen-set supply failure, the same lamp while is utilized except that it would now operate from the battery. When the mains supply and or the gen-set supply resume, the lamp would revert to normal operations from the main supply and or the Gen Set supply.

- Position the emergency and exit lights at points of emphasis on escape routes.
- At each exit door
- To illuminate exit and safety signs
- Near call points
- Near each staircase
- Change of direction
- Near firefighting equipment
- Change of floor level
- Near the intersection of escape routes
- Outside final exits

7.1.2.12. *Heat Ventilation & Air- Conditioning*

7.1.2.12.1. Purpose

The section outlines HVAC system design parameters, system selection, and the extent of provisions for the project. The air-conditioning will be designed to maintain specified temperature, humidity, and supply of outdoor air within occupied spaces. All conditioning and ventilation systems shall conform with the ASHRAE 62.1-2017 for the following purpose.

- Creating a comfortable and safe HVAC environment for development is a prime objective.
- To maintain a good indoor environment in terms of temperature, humidity & air movement, and air quality.
- To create a relatively quiet and low vibration control AC system
- To make the HVAC system energy efficient eco-friendly and easily maintainable.

7.1.2.12.2. Code of Standards

Relevant Standards:

- Indoor Air Quality as per ASHRAE 62.1 - 2016
- ANSI/ASHRAE/IESNA standards 90.1 – 2016: Energy Standards for buildings
- Air Filters as per ASHRAE 52.1 – 1992 and 52.2 – 2017
- ASHRAE Standard 55: Thermal Comfort.

7.1.2.12.3. Basis of Design

7.1.2.12.3.1. Ambient Condition

- Outside condition – 31.6 Degree Celsius dry bulb & 26.8 Degree Celsius wet bulb
- Inside condition – 23.33 Degree Celsius and 55 percent relative humidity (RH)

7.1.2.12.3.2. Building Data Assumptions

- All outer walls, U = 0.36 Btu / HrSq.ft Degree Fahrenheit
- Roof, U = 0.32 Btu / HrSq.ft Degree Fahrenheit
- Floor, U = 0.32 Btu / HrSq.ft Degree Fahrenheit
- Glass Specifications, SHGC 0.44 U Value = 0.56 Btu / HrSq.ft

7.1.2.12.4. Proposed HVAC System

Hybrid VRF / VRV System for Offices, Services rooms, and Commercial units.

Benefits:

- Provides simultaneous heating and cooling with full heat recovery
- Energy saving
- Use Less material and equipment
- Flexible design and modularity allow for a manageable phased installation
- Water instead of refrigerant is at the heart of the indoor units
- Reduce maintenance costs and maximize safety by minimizing the need for leak detection
- Quieter operation through water-based fan coils
- High sensible cooling and stable room temperatures
- Combat the rising cost of R410A refrigerant
- R32 minimal global warming impact with 66 percent less GWP than R410A

7.1.2.13. *Mechanical Ventilation*

7.1.2.13.1. Basement Floor

The basement of this building consists of a car and a motorcycle parking area and a rainwater circulation area. Car park ventilation shall be designed to extract air from floor level and ceiling level. The fresh air supply is taken from one side of the building and exhaust air is vented from the opposite side of the building. This concept is proposed to avoid any cross-contamination of fresh supply air and exhaust air. The car park ventilation shall be designed according to 2015 ASHRAE Handbook Section 15.19 – Heating, Ventilating, and Air-conditioning (Enclosed Vehicular Facilities)

7.1.2.13.2. Staircase Pressurization

All staircases are to be compartmented and provided with fresh air fans once the fire detection system is triggered creating a positive pressure inside the staircase until building evacuation is completed. Staircase pressurization shall comply with NFPA 92 Standard for Smoke Control Systems 2018 Edition.

7.1.2.13.3. The emergency generator room

It shall be mechanically ventilated by using a wall-mounted exhaust fan with rainproof flaps. The required ventilation rate shall be decided by the ventilation requirement of the emergency generator

7.1.2.13.4. Toilet

Toilet ventilation shall be provided with a mechanical ventilation system. It shall be designed as per 6-10 ACPH as per ASHRAE Standards.

7.1.2.14. *IT system, Security Camera System, Building Access Control & Phone System*

7.1.2.14.1. Design Criteria

1. Card Access System will be provided for building access and access to the office spaces

2. CCTV system must be using Dome/Bullet IP Camera capable to record HD Video and Audio

3. GPON fibre- -optic cables must be provided to each unit & services stations wherever required.

7.1.2.14.2. Building Access Control

1. All necessary systems including Card Readers, Pedestrian and Vehicular Barriers, Access control Management systems and software, and Card management systems including RFIDenabled cards and Card writers should be provided.

2. The access control system should use RFID Cards compatible with MPL Staff ID cards as a medium of access.

3. All authorized personnel must carry their RFID Card at all-time, otherwise will be treated as a visitor.

4. A visitor will be issued with a visitor card and entry should be accompanied by authorized personnel.

5. Any forced entry will be noticed with an alarm to access the control room/security room.

6. All the personnel/authorized persons should be able to access the common areas of the building by using an RFID card.

7. All the staff should be able to access their department/floors in the building by using an RFID card. 8. The Access system should be managed in such a way that the same card can be used to access the common areas and departments

9. A pedestrian barrier should be provided to ensure authorized access into the lift lobby.

7.1.2.14.3. CCTV System

1. Complete CCTV monitoring system including IP cameras (indoor/outdoor). Cable, NVR, Monitors, and any other equipment for the functioning of the CCTV monitoring system should be provided.

2. The CCTV system must be designed to provide 24 hours video recording facility in Security Control Room for individual cameras installed in the building.

3. Cameras must be provided at the entrance guardhouse and entrance lobby point, which will be connected to a DVR and TV monitor.

4. The CCTV system must be able to capture the surrounding area, perimeter, entrance elevator lobby, Walkways, common areas, staircases, and car parks.

5. All activities within the premises & perimeter surrounding to keep track and recorded for playback if necessary.

7.1.2.14.4. Carpark Barrier Gate System

1. The same card (Staff ID) used for the access control should be utilized for the carpark barrier gate system.

2. The contractor must propose a car park barrier gate system near the entrance to the car park consisting of:

a) Controller

b) Ingress/egress barriers

c) Access card reader

d) Manual switch

The same card (Staff ID) used for the access control should be utilized for the carpark barrier gate system.

7.1.2.14.5. GPON (Internet) and WIFI

GPON/Internet Device should be placed in the following areas.

a) All the departments/units/office spaces

b) Shops and commercial spaces

c) Cafeteria and restaurant

2. Internal Telecommunication Network The internal network of the office spaces, providing network points for all the required spaces should be designed and provided by the contractor based on the requirements of Employer. The contractor shall provide

a) All and any Network points necessary

b) POE Switches for the spaces as necessary

*Consideration should be given to provide reasonable provision for any future expansion beyond the designed usage.

3. Wi-Fi should be provided for the following area through a Wi-Fi Mesh Network

a) All the MPL occupied Floors

b) Provision for non-MPL occupied floors

c) Pantries and Recreational Spaces.

*The Internal Telecommunication network can be utilized to provide Wi-Fi

7.1.2.15. *Vertical Transport System*

An efficient and effective vertical transportation system plays an important role in the successful operation of a building. The passenger handling requirements adopted will greatly influence the design and operation of the system.

7.1.2.15.1. Codes & Standards

The latest edition of the following statutory codes, regulations, and specifications will be complied with:

- BS 5655: Part 1 to Part 13 Safety rules for the construction and installation of electric lifts, hydraulic lifts published by the British Standards Institution (BSI)
- EN81: Part 1 to Part 13 Safety rules for the construction and installation of electric lifts, hydraulic lifts published by the European Committee for Standardization (CEN)
- BS 7255: BS Code of Practice for safe working on lifts, published by the British Standards Institution (BSI)
- CIBSE Guide D, Transportation Systems in Buildings

7.1.2.15.2. Design Criteria

The design criteria to be adopted will be as follows:

Occupancy Rate	Based on Room Occupancy
5 minutes (Handling Capacity – Minimum)	12 percent to 15 percent
Average Interval (Maximum)	40 seconds to 60 seconds

Lifts: All lifts will have machine room less and will have voltage variable frequency drives with microprocessor-based control panels. All cars and door finishes will be as per the Architects. One lift shall be designated as fire lifts. All lifts are proposed with an Automatic Rescue Device (ARD). There will be centralized monitoring and display unit in the control room. The other feature with the lifts will be Overload Protective Device (OPD) which makes the car inoperative when overloaded. Emergency car lighting shall be through a maintenance-free battery complete with a rectifier/charger. Furthermore, during the fire alarm, all the lifts shall be programmed home to the ground floor. One lift shall be designated as fire lifts and lift operation buttons shall be provided outside the lift.

7.1.2.16. *Car Park Barrier Gate System*

A car park gate barrier system will be installed at all vehicular access and exit points. These include the vehicular entrance and exit at the back of the building for vehicles that come on the basement floor. The gate barriers for basement floor car park entry – exit with token system, etc. all as required will be designed and necessary power provisions will be made in the electrical design. At the main entrance the system with access through a smart card for security provisions.

7.1.2.17. *Building Management System*

A building management system (BMS) has become an essential and vital means for good estate management of modern building developments. The system provides effective remote control of all building service systems and equipment. It also assists in essential tasks such as energy audit/consumption management, maintenance management of all mechanical and electrical services, failure and other important event records, etc.

Substantial operating cost savings can be possible from optimum energy usage, minimizing equipment failures, minimizing human resources for estate management, etc. All these are expected from the proper implementation and operation of the BMS.

The scope of the BMS installations works will generally consist of the following:

- Central equipment comprising a dual microcomputer-based server, CRT monitor, keyboard, mouse, backup tape drive, printer, ethernet switch, mimic panel, etc. located in the control room for central monitoring and control purposes.
- High-speed communication link and distributed intelligent field panels with complete integration of local communication loops and Direct Digital Control (DDC) to control and monitor mechanical and electrical systems. Status and fault monitoring, sequenced and scheduled starting and stopping, optimization of plant operation, duty cycling of standby/duty plants, runtime totalization, etc. are some of the typical functions.
- Interfacing between building mechanical/electrical systems inclusive of security systems, HVAC, mechanical ventilation fans, electrical high voltage, low voltage, generator, Solar PV system, lighting timing control, pump control, monitoring, etc.

By utilizing the BMS, the building manager will be able to gather operation information on all the equipment including total energy consumption, energy usage pattern, cyclical and seasonal factors, utility time of usage and occupant behaviours, CO2 levels, and air temperature of the basement car park. This information is important in saving energy, increasing sustainability, and better building energy management.

7.1.2.18. *Solid Waste Disposal*

The section covers the general requirements of the Solid Waste Disposal Services. Generally, the works for the Solid Waste Disposal Services must include the following a) Commercial Garbage Collection Area Regulations, Standards, and code The following standards, codes of practice, and regulations, and any other subsequent revision or amendment must apply to all Solid waste management and disposal systems carried out in this contract. 1. Ministry of Environment, Climate Change, and Technology 2. Maldives Utilities Regulatory Authority 3. Waste Management Corporation Limited 4. Solid Waste disposal Acts, Regulations, and standards of Maldives 5. The relevant British Standard Specification (BS) 6. Local Fire Protection Authority 7. Maldives National Building Code 8. National Fire Protection Association. (NFPA)

7.1.2.18.1. Design Considerations

The garbage collection area should be located away from the common area and should be easily accessible by the servicing vehicle.

7.1.2.18.1.1. Garbage Collection Area

a) Mechanical ventilation or equipment necessary for odor management should be provided for the Garbage collection areas.
b) The Garbage collection area should be designed in such a way it deters the access of vermin and other scavengers
c) Freshwater supply and Wastewater drainage should be provided for the garbage collection area
d) Garbage Collection should be designed to fulfill the requirements under Solid Waste Management Guideline R-58/2013 and R-109/2021 and any relative or subsequent act, regulation, the standard by the relevant regulatory body.
e) Waste Management / Garbage collection area on each floor should have enough space and equipment to segregate waste into the required categories. Namely the following
    I. Compostable or Organic Waste
    II. Plastic Bottles
    III. Glass
    IV. Metals/Tins/Cans
    V. Paper
    VI. Other Waste
f) Necessary equipment such as dustbins for the garbage collection area for each floor shall be provided. These should adhere to the design requirements highlighted above. The garbage should be segregated by dedicated dustbins for the above requirements. The garbage dustbins should be colored as below

I. Compostable or Organic Waste - Green
II. Plastic Bottles - Yellow
III. Glass - Black
IV. Metals/Tins/Cans - Brown
V. Paper - Red
VI. Other Waste – Gray

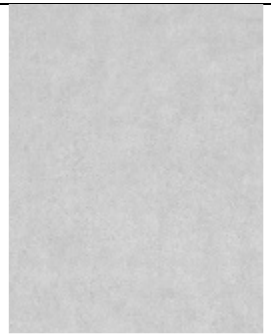
g) It is the responsibility of the contractor to adequately design and size the garbage bins for the garbage collection areas on each floor.

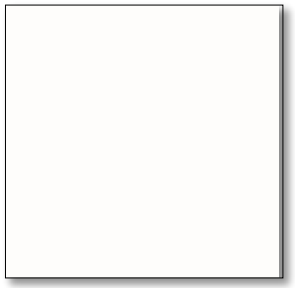
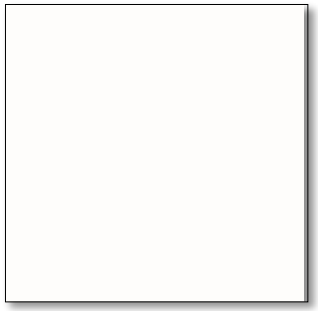
h) The garbage bins provided should be made of a material that is durable and easy to clean. At the same time, garbage bins should be able to be easily moved, on their own without the need for other equipment, to the ground floor

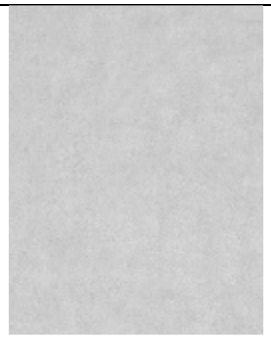
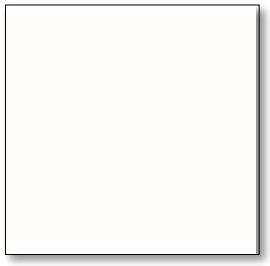
i) Common garbage bins, adhering to the segregation categories above should be adequately provided for the common areas. These dustbins should be aesthetically pleasing and blend in with the interior design of the space.

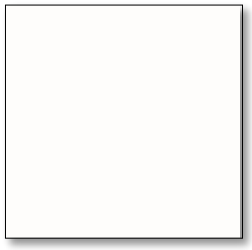
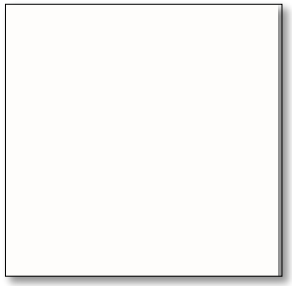
7.1.3. Finishing Schedule

7.1.3.1.1. Finishing Schedule

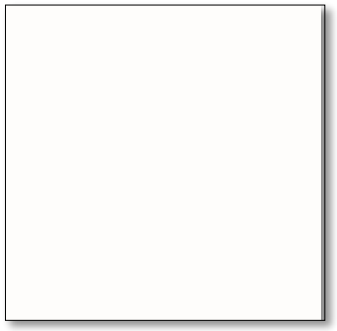
Space	SR.No	Specification	Image	Ceiling Height
Parking Area	1	WALL: All walls finished with wall paint		2400mm minimum clearance
	2	FLOORING: Heavy-duty vehicular epoxy resin paint finishing with thermos plastic reflective road marking. Skirting to be matched with the floor finishing.		
	3	**CEILING:** soffit of the slab with smooth putty plaster and emulsion paint finish		
Lift Lobby (Basement)	1	**WALL** Exterior painted with white polished paint **-** Interior plastered smooth putty with white paint finish		2400mm minimum clearance

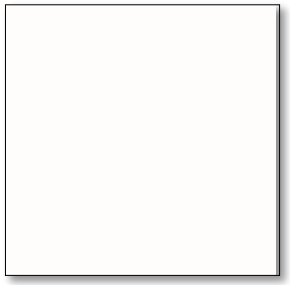
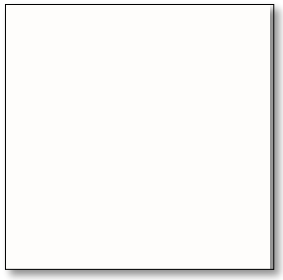
	2	**TILE FLOORING** 600x600 Homogenous grey tile finish. Skirting to be matched with the floor finishing.		
	3	**CEILING** soffit of the slab with smooth putty plaster and emulsion paint finish		
Services Room	1	**WALL -** Interior plastered smooth putty with white paint finish		2800mm minimum clearance

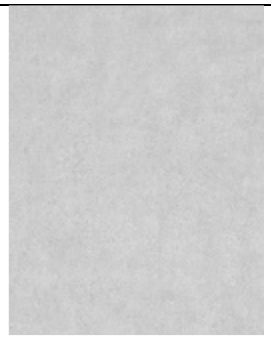
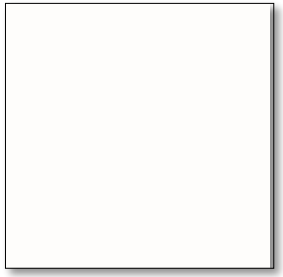
	2	**TILE FLOORING** 600x600 Homogenous grey tile finish. Skirting to be matched with the floor finishing		
	3	**CEILING** soffit of the slab with smooth putty plaster and emulsion paint finish		
	4	**DOOR** 1hr fire rated door with grey paint finish		

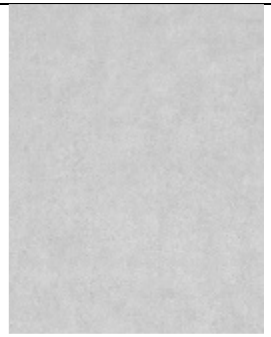
Commercial Areas	1	**WALL -** Interior plastered with putty finish		2800mm minimum clearance
	2	**CURTAIN WALL-** Curtain wall with 12mm full height tempered laminated glass with only vertical frames. All glass needs to have a heat-reflective coating or film.		
	3	**CEILING** soffit of the slab with sealer		
	4	**DOOR** 2100x900mm Glassdoor		

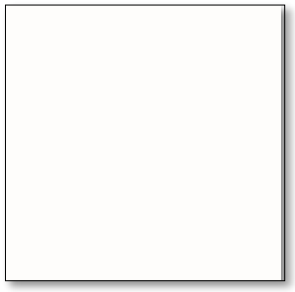
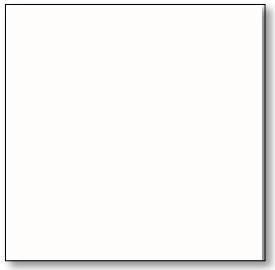
Main Lobby	1	**WALL -** Interior walls with large laminate wall sheets		6000mm minimum clearance
	2	**CURTAIN WALL-** Curtain wall with 12mm full height tempered laminated glass with only vertical frames. All glass needs to have a heat-reflective coating or film.		
	3	**TILE FLOORING** White polished granite flooring Skirting to be matched with the floor finishing		

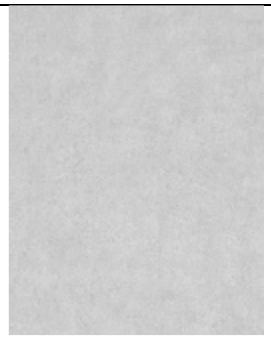
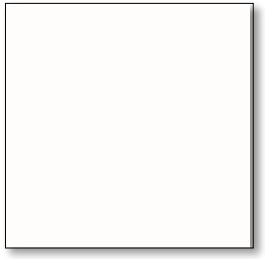
	4	**CEILING** soffit of the slab with smooth putty plaster and emulsion paint finish		
	5	**DOOR** 12mm tempered laminated glass double door. Glass texture and colour should match with the curtain wall.		
Lift Lobby (Ground to Ninth Floor)	1	**WALL -** I Interior walls with large laminate wall sheets		2800mm minimum clearance

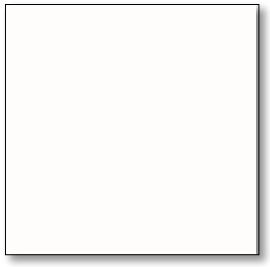
	2	**RAISED FLOOR SYSTEM.** 100MM raised from slab level to floor finished level. It should be topped with high durability scratch-resistant vinyl finishing. This system should be waterproof and should be fire-resistant. Skirting to be matched with the floor finishing		
	3	**EXPOSED CEILING. The** soffit of the slab with smooth putty plaster and emulsion paint finish		
Toilet	1	**WALL –** polished white wall granite finishing 600x1200mm		2800mm minimum clearance

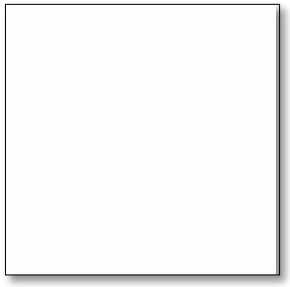
	2	**TILE FLOORING** 600x600 Homogenous grey tile finish. Skirting to be matched with the floor finishing		
	3	**CEILING** Moisture-resistant suspended plasterboard ceiling. Fuller coordination of ceiling recessed services must be made, including final positions for light fittings, air supply, extract grilles, and sprinkler heads.		
	4	**DOOR** Main toilet entrance door finished with laminate		

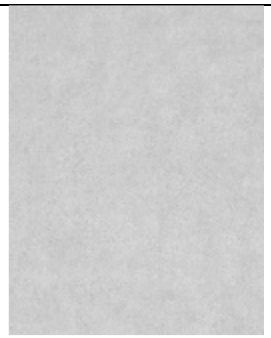
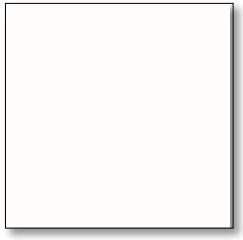
	5	**DOOR** internal toilet door finished with laminate		
Pantry	1	**WALL** - polished white wall granite finishing 600x1200mm		2800mm minimum clearance
	2	**TILE FLOORING** 600x600 Homogenous grey tile finish. Skirting to be matched with the floor finishing		

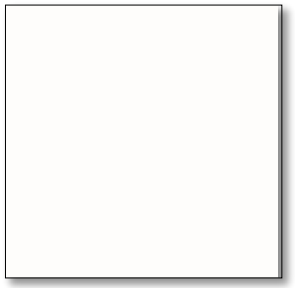
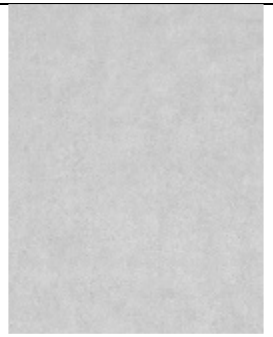
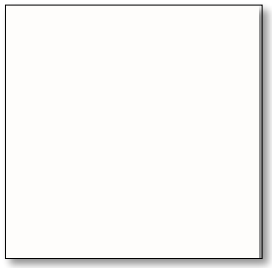
	3	**CEILING** Moisture-resistant suspended plasterboard ceiling. Fuller coordination of ceiling recessed services must be made, including final positions for light fittings, air supply, extract grilles, and sprinkler heads.		
	4	**DOOR** 900x2100 Door finished with laminate		
Waste Room	1	**WALL -** Interior plastered smooth putty with white paint finish		2800mm minimum clearance

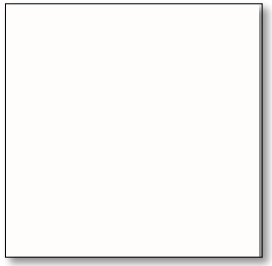
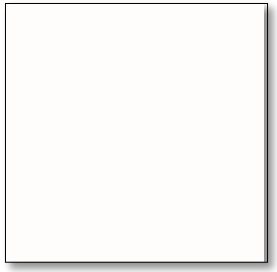
	2	**TILE FLOORING** 600x600 Homogenous grey tile finish. Skirting to be matched with the floor finishing		
	3	**CEILING** soffit of the slab with smooth putty plaster and emulsion paint finish		
	4	**DOOR** 1hr fire rated door with wood texture finish		

Office Spaces	1	**WALL -** All Interior walls with large laminate wall sheets		2800mm minimum clearance
	2	**RAISED FLOOR SYSTEM -** 100MM raised from slab level to floor finished level. It should be topped with high durability scratch-resistant vinyl finishing. This system should be waterproof and should be fire-resistant		
	3	**CEILING -** Soffit of the slab with smooth putty plaster and emulsion paint finish		

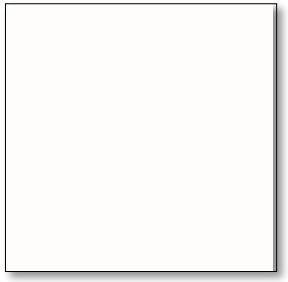
	4	**DOOR** 1hr fire rated door with wood texture finish		
	5	**INTERIOR PARTITIONS –** All interior partitions should be made from 12mm full height glass. All the walls should be frosted up to 1500mm.		
Outdoor Area	1	**WALL -** Outdoor plastered smooth putty with white paint finish		2600mm minimum clearance

	2	**TILE FLOORING** 600x600 Homogenous grey tile finish. Skirting to be matched with the floor finishing		
	3	**CEILING** soffit of the slab with smooth putty plaster and emulsion paint finish		
	4	**DOOR** Glassdoor with the access control system.		

Storage	1	**WALL -** Interior plastered smooth putty with white paint finish		2800mm minimum clearance
	2	**TILE FLOORING** 600x600 Homogenous grey tile finish. Skirting to be matched with the floor finishing		
	3	**CEILING** soffit of the slab with smooth putty plaster and emulsion paint finish		

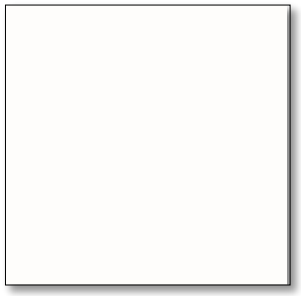
	4	**DOOR** 1hr fire rated door with wood texture finish		
Kitchen	1	**WALL –** Interior plastered with putty finish		2600mm minimum clearance
	2	**CEILING - S**offit of the slab with sealer		

	3	**DOOR - Door finished with laminate**		
Restaurant	1	**WALL –** I Interior walls with large laminate wall sheets		2800mm minimum clearance
	2	**Aluminium framed glass wall -** 12mm full height tempered laminated glass with only vertical frames. All glass needs to have a heat-reflective coating or film		

	3	**FLOORING** – High durability scratch-resistant vinyl finishing. Skirting to be matched with the floor finishing		
	4	**CEILING - S**offit of the slab with smooth putty plaster and emulsion paint finish		
	5	**DOOR -** 12mm tempered laminated glass door. Glass texture and colour should match with the curtain wall.		

Outdoor Dining Area	1	**RAILING –** 12mm Tempered Glass railing on top of 600mm wall (wall for planting area). Total railing height 1200mm from finished floor level.		
	2	**FLOORING** – White granite flooring (non-slippery) Skirting to be matched with the floor finishing		

	3	**DOOR -** 12mm tempered laminated glass door. Glass texture and colour should match with the curtain wall.		
Staff Lounge	1	**WALL -** All Interior walls with large laminate wall sheets		2600mm minimum clearance
	2	**RAISED FLOOR SYSTEM -** 100MM raised from slab level to floor finished level. It should be topped with high durability scratch-resistant vinyl finishing. This system should be waterproof and should be fire-resistant		

	3	**CEILING -** Soffit of the slab with smooth putty plaster and emulsion paint finish		
	4	**DOOR** 1hr fire rated door with wood texture finish		
	5	**INTERIOR PARTITIONS –** All interior partitions should be made from 12mm full height glass. All the walls should be frosted up to 1500mm.		

Outdoor Terrace Area	1	**RAILING –** 12mm Tempered Glass railing on top of 600mm wall (wall for planting area). Total railing height 1200mm from finished floor level.		
	2	**FLOORING** – White granite flooring (No slippery). Skirting to be matched with the floor finishing		
	3	**DOOR -** 12mm tempered laminated glass door. Glass texture and colour should match with the curtain wall