



PLANNING & DEVELOPMENT DEPARTMENT

# **MID-RANGE HOUSING SUBMISSION & QUALITY MANAGEMENT CRITERIA**

## 1.0 SUBMISSION (DELIVERABLES AND CRITERIA)

### 1.1 CONCEPT DESIGN STAGE

Concept drawings should focus on how it is integrated to site and surrounding context. All floor plans should indicate the usage of specific floor spaces with its area as well as built Up Area (BUA) along with gross floor area (GFA).

Format of submission should include (but is not limited to) a PowerPoint presentation of the concept design stage submission. A compiled PDF of the above documents should be submitted in digital format. AutoCAD drawings should be submitted for all the drawings.

Concept design should include the following drawings & documents (minimum requirement);

#### A. ARCHITECTURAL

1. Concept brief
2. Location plan
3. Site plan showing the surrounding context
4. Parking layouts
5. Vehicular and pedestrian circulation layout addressing the surrounding context
6. Floor plans, sections and elevations
7. Relevant blow-up details
8. Proposed material schedule and mood board
9. Interior and exterior perspective images (3D rendered visuals)

#### B. STRUCTURAL

Structural concept will include the following drawings and documents;

1. Layout plan drawing showing the structural members (such as column, beam, slabs, sheer wall. etc.) with estimated size & location. Details regarding selection of member size without effecting architectural concepts. (Details of clear heights achieved in specific locations can be highlighted)
2. A report stating:
  - a) Pro and cons of the preferred structural system with respect to the architectural design.
  - b) Explain the structural system in relation to structure's durability for the intended lifetime of the building.
  - c) Explain the Structural design including the design code, design parameters (considered loads) & analysis method preferred by structural design engineer, details of the software(s) to be used for design, formats of design sheets (if any).
  - d) Details of proposed foundation system based on the available geotechnical parameters. It should be noted that the wind speed for the design can be obtained from local metrological department.
  - e) Assessment of the environmental conditions and the requirement that is applicable for the design with reference to code of practices. This includes, but not limited to covers to be provided for reinforcement, grade of steel, water proofing for foundation, min concrete grade with maximum water cement ratio, admixtures to be used for concrete etc. based on standards.
  - f) Minimum cement content details for different grades of concrete, in order to achieve a durable concrete for its intended life time
  - g) Details regarding fire rating of the building

#### C. BUILDING SERVICES

Proposals for the following systems must be submitted as a report

1. Air-Conditioning System and proposed locations
2. Mechanical Ventilation System and proposed locations
3. Fire Safety Design
  - a) Fire Detection and Alarm System

- b) Portable extinguisher
- c) Fire blankets
- d) Dry riser system
- e) Hose reel system
- f) Wet Riser System
- 4. Water, Drainage and plumbing proposal
- 5. Vertical Transportation Services (Lift)
- 6. Lighting and Power System
- 7. Emergency Lighting System
- 8. Earthing System
- 9. Lightning Protection System
- 10. Emergency Electrical Supply (Generator Set)
- 11. GPON in building network
- 12. Building Access Control
- 13. CCTV System
- 14. Public Address System
- 15. Carpark Barrier Gate System

## 1.2 DETAILED DESIGN STAGE

Detailed design will be submitted after concept design approval as follows:

1. Architectural drawings (by a locally registered professional architect) of all plans, elevations and major sections. (Refer to local planning guidelines)
2. Structural drawings and calculations, methodology (stamped and signed by a locally registered professional engineer)
3. Foundation protection method
4. Building services drawings (electrical, water plumbing and sewage, GPON, HVAC, Vertical transport, Fire Safety)
5. Material and finishing schedule
6. Local authority approvals, including but not limited to Fire Drawings and Panel board drawings.
7. Soil Investigation/Geotechnical Survey report (If required)
8. Environmental Impact Assessment report

Minimum three (3) sets of the above-mentioned drawings and documents should be submitted. Drawings Submission Form with the appropriate parts filled and signed by Registered Architect and Engineer.

## 1.3 SHOP DRAWINGS AND AS BUILT

The following drawings shall be submitted after completion of construction and prior to usage of the building.

- As built Architectural drawings
- As built Structural drawings
- As built Services drawings (Water, Sewage, Electrical, Ventilation & Air-conditioning, Firefighting and Communication/GPON)
- Copy of approvals given by Authorities, such as but not limited to MNDF Fire, Ministry of Health, STELCO, MEA, MWSC

With the submission of required documents, HDC would provide the necessary feedback for each stage. In giving feedbacks we would check whether it fits the development guidelines, design guidance documents, international standards and the standards set by HDC. A two-way dialogue to attain a satisfactory level of work will be pursued. Upon submission of the documents HDC reserves a duration of 14 working days to process and provide comments or approval. A period of 14 working days will be taken to provide comments for concept drawing. If the drawings are not approved and comments are sent after checking, revised drawings are to be submitted within 14 working days. Please note that for each submission 14 working days will be taken to comment. In addition to that, the duration taken to comment on Detail drawings stage will be minimum of 10 working days and maximum is 20 working days

If the party fails to correct after sending comments twice, the party needs to apply again as a new project proposal along with the application fee. This is to encourage carefulness from the client and to maximize efficiency from both stakeholders.

Once the concept drawings are approved, the detail drawings shall comply to the approved concept drawings and if in any case if there are changes to such as floor plans sections and elevations in the detail stage, a revised concept drawings approval should be submitted. It is mandatory to approve concept if the changes need to be brought to aforementioned drawings.

Physical implementation process can be initiated once drawing approval is given by HDC. Any modifications or amendments to the drawings should be informed and applied for approval prior to initiating any physical works on site which contradicts the approved drawings. Drawings and documents mentioned in shop drawings and as-built drawings can be submitted during implementation or after construction prior to applying for building usage permit. With the Successful completion and submission of the documents and drawings and after fulfilling of other mandatory requirements set by the Building Control Unit, Building Usage Permit will be awarded.



## 2.0 REQUIREMENTS OF THE CONSULTANT

Developer is required to hire a locally registered Project Management (PM) consultant for the quality assurance of the building. The PM consultant should be a 3<sup>rd</sup> party independent person or a firm that is locally registered under Ministry of National Planning, Housing & Infrastructure. This consultant should be unbiased in the works and while reporting to HDC. The consultant should be hired prior to the commencement of any site works. Once hired, the consultant should approve and submit a Construction Quality Management Plan (CQMP) from the Developer or Contractor before any physical works on site are carried. Duties and responsibilities of the consultant are as follows:

### 2.1 RESPONSIBILITIES

#### A. ASSURANCE OF CONSTRUCTION QUALITY

Necessary tests should be carried out on site and off site to ensure the quality of the final product. This includes, but not limited to compressive strength of concrete, tests done to ensure strength of steel, Slump test, Sieve Analysis and material specifications.

#### B. ASSURANCE OF FINISHING QUALITY

Consultant should ensure that the works are carried out according to the approved standards, methodologies, CQMP and drawings and if not mentioned as per the best practices followed. Consultant should also ensure that all works are carried out using approved materials which meets the standards as per the guidelines and the intended purpose for quality, safety and durability.

#### C. MATERIAL APPROVAL

All the materials used in the building structure, services and finishing shall be approved by the consultant. In approving the materials, the consultant shall ensure it meets the standards as per the guidelines and the intended purpose for quality, safety and durability. All the records of approved materials and its specifications should be kept and shared to HDC according to the reporting criteria.

#### D. APPROVE METHODOLOGIES

Prior to commencement of any construction works, Consultant should evaluate, suggest any improvements and approve method statements submitted by the developer. Consultant should ensure that the approved methodologies meet the intended purpose. All the methodology approvals should be kept on record and shared with HDC according to the reporting criteria.

#### E. ISSUING SITE INSTRUCTIONS

Issued site instructions should be recorded and submitted to HDC as per the reporting criteria.

#### F. APPROVE AS-BUILT DRAWINGS

The consultant should ensure the approved as-built drawings are accurate and meets onsite physical development.

## 2.2 REPORTING

All the following reports should be signed or stamped by the consultant. All the monthly reports should be submitted by the consultant before 10<sup>th</sup> of every month.

### A. INITIAL REPORT

- i. Construction Quality Management Plan (CQMP)
- ii. Safety Plan
- iii. Work methodologies

### B. MONTHLY REPORT

- i. Project Brief
- ii. Ongoing works and upcoming works for the next month
- iii. Overall construction progress showing the planned vs actual progress in the form of a Gantt chart
- iv. Accidents report
- v. Challenges faced during implementation
- vi. Test & Analysis reports
- vii. List of attended inspections and its reports
- viii. List of instructions given on site
- ix. Documentation of approved methodologies
- x. Documentation of approved materials

### C. PROJECT COMPLETION REPORT

- i. Summary of Project
- ii. Challenges faced during the implementation
- iii. Maintenance requirements
- iv. Services systems manuals
- v. As-Built Drawings

