



دائرة البلديات والنقل  
DEPARTMENT OF MUNICIPALITIES  
AND TRANSPORT  
بلدية مدينة أبوظبي  
ABU DHABI CITY MUNICIPALITY

**Department of Municipalities and Transport**  
**Abu Dhabi Municipality**  
**Municipal Infrastructure and Assets Sector**

**BUILDING INFORMATION MODELLING (BIM) DOCUMENTATION**

**Pre-Qualification Questionnaire (PQQ)**

**Version 2.0**

November 2020

## Table of Contents

<b>1. Introduction</b>	<b>3</b>
1.1. Pre-Qualification Questionnaire (PQQ) Definition	3
1.2. Notes for Completion	3
1.3. Verification of Information Provided	3
1.4. Applied Standards	4
1.5. Structure of the Pre-Qualification Questionnaire	4
<b>2. Scope</b>	<b>5</b>
<b>3. Responsibility</b>	<b>6</b>
<b>4. General Information</b>	<b>7</b>
4.1. Company Information	7
4.2. Organisation and Team Information	8
<b>5. Exceptional Assessment</b>	<b>9</b>
<b>6. Capability Assessment</b>	<b>10</b>
6.1. BIM gateway questions	10
6.2. Areas of BIM	12
6.3. BIM Project Experience	17
6.4. BIM Knowledge	17
6.5. Capability Assessment Validation	19
<b>7. Capacity Assessment</b>	<b>21</b>
7.1. Organization's Capacity Assessment	21
7.2. Capacity Assessment Validation	22
<b>8. Information Technology (IT) Assessment</b>	<b>23</b>
8.1. Information Production & Distribution Policies	23
8.2. Availability of Information Technology (IT)	25
8.3. Capacity Assessment Validation	25
<b>9. Employer's evaluation</b>	<b>27</b>
<b>10. Bibliography:</b>	<b>28</b>

## List of tables

<i>Table no. 1 - Pre-Qualification Questionnaire (PQQ) Contents .....</i>	<i>4</i>
<i>Table no. 2 – Company Information .....</i>	<i>7</i>
<i>Table no. 3 – Organisation and Team Information.....</i>	<i>8</i>
<i>Table no. 4 - BIM gateway questions .....</i>	<i>11</i>
<i>Table no. 5 – Areas of BIM.....</i>	<i>16</i>
<i>Table no. 6 – BIM Project experiences .....</i>	<i>17</i>
<i>Table no. 7 – BIM knowledge .....</i>	<i>19</i>
<i>Table no. 8 – Tenderer(s) resources.....</i>	<i>21</i>
<i>Table no. 9 - Information Production &amp; Distribution.....</i>	<i>24</i>
<i>Table no. 10 – Availability of Information Technology (IT).....</i>	<i>25</i>

## 1. Introduction

This Pre-Qualification Questionnaire (“PQQ”) document has been issued by the Employer in connection with a competitive services provision to Abu Dhabi Municipality in order to know the BIM capability, BIM capacity and availability of Information Technology (IT) of your organisation.

### 1.1. Pre-Qualification Questionnaire (PQQ) Definition

Pre-Qualification Questionnaire (PQQ) document is a series of questions for Organization(s) to answer regarding their level of BIM experience, BIM capability, BIM capacity, and availability of Information Technology (IT). The answers to these questions enable the Employer to appropriately evaluate the Organization(s) regarding their acquired BIM knowledge and experience during pre-qualification stage.

The aim is to confirm and demonstrate the capability and capacity of the Organization (s) (Consultant or Contractor) to follow ADM BIM requirements.

### 1.2. Notes for Completion

Many procurements generate a great deal of interest from Potential Providers, so please ensure that you complete the questionnaire as requested. If the question does not apply to you, please write N/A, if you don't know the answer please write N/K.

“We” or “Employer” means Abu Dhabi Municipality.

“You” or the “Organization” means the business or company which is completing this Pre-Qualification Questionnaire (PQQ).

You must inform the Employer of any material changes to the information provided by the Pre-Qualification Questionnaire (PQQ) as soon as you become aware of the change.

### 1.3. Verification of Information Provided

The higher the risk of the procurement, the higher the level of verification is likely to be required. Not all questions require supporting documents up front at this stage (for example certificates, statements with this questionnaire). However, the Employer may ask to see these documents at a later stage, so it is advisable you

ensure they can be made available upon request. You may also be asked to clarify your answers or provide more details about certain issues.

#### 1.4. Applied Standards

- ISO 19650-1:2018 - Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM) — Information management using building information modelling — Part 1: Concepts and principles
- ISO 19650-2:2018 - Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM) — Information management using building information modelling — Part 2: Delivery phase of the assets
- PAS 91:2013 – Construction prequalification questionnaires

All Organization Member(s) must understand the critical purpose of applied standards, understanding the core principles of significant collaborative information production, management, and the integrated approach to design and construction.

#### 1.5. Structure of the Pre-Qualification Questionnaire

The Pre-Qualification Questionnaire core content and requirements are split into the following sections 6, 7, and 8 in this document and represented as headings of the Pre-Qualification Questionnaire contents – see **Table no. 1** below. These sections will be used as the framework in which to define in detail the sections' questions that will be answered.

Section 6 – Capability Assessment	Section 7 – Capacity Assessment	Section 8 – IT Assessment
<ul style="list-style-type: none"> <li>• BIM Gateway Questions</li> <li>• Areas of BIM</li> <li>• BIM Project Experience</li> <li>• BIM Knowledge</li> </ul>	<ul style="list-style-type: none"> <li>• Supplier Capacity Assessment</li> </ul>	<ul style="list-style-type: none"> <li>• Project Information Production and Distribution Policies</li> <li>• Availability of Information Technology (IT)</li> </ul>

**Table no. 1 - Pre-Qualification Questionnaire (PQQ) Contents**

## 2. Scope

The Pre-qualification process should be followed by ADM relevant departments during ADM's overall pre-qualification process(es). The aim is to confirm the capability and capacity of the Organization(s) (Consultant or Contractor) to follow ADM BIM requirements. This questionnaire has been integrated with other pre-qualification methods of ADM to filter out any Organization that did not demonstrate solid BIM execution skills.

This Pre-Qualification Questionnaire (PQQ) has been issued to all service providers that have expressed an interest in tendering for the BIM Requirements. Organization(s) shall demonstrate that they possess or have access to the governance, qualifications, expertise and competence to be considered appropriate to undertake the work and deliver services for ADM.

The Pre-Qualification questionnaire assesses the following:

1. Capability Assessment
2. Capacity Assessment
3. Information Technology (IT) Assessment

In your response to the Pre-Qualification Questionnaire (PQQ), you will need to demonstrate that you have the appropriate qualities and resources to be capable of successfully delivering the BIM Requirements.

The Pre-Qualification Questionnaire (PQQ) document assures compliance to ADM BIM Requirements as outlined in **BIM Documentation Guidelines** Section 5.5 and **EIR-Exchange Information Requirements** Section 5.2.

With Reference to **BIM Documentation Guidelines** document section 3.3.3, The Supplier (lead appointed party) can hire a BIM qualified (third party) to carry out the BIM production of information on his behalf, in this case, the appointed party to include the third-party pre-certification or the assessment forms to be filled by the third-party.

With Reference to **EIR-Exchange Information Requirements** document section 4.12, ADM Assessment forms to be carefully responded and the lead appointed party to revitalize the defect points to work on the enhancements needed. Or to decide on appointing another organization for internal support at the early stages of the Project. This party will respond on behalf of the appointed party to all BIM-related requirements.

### **3. Responsibility**

The BIM representative of the Company is required to oversee the correct application of these processes within their Organizations and she/he is responsible to ensure this document has been filled by Company during pre-qualification stage.

It is the responsibility of the Company to comply with the processes set out in this document.

This document was established and maintained by Municipality of Abu Dhabi, being the owner and responsible for its implementation in the pre-qualification process.

#### 4. General Information

##### 4.1. Company Information

Please provide the following general information on your firm together with details of key personnel who are likely to be involved in information exchange.

Company Name	
Headquarter Location	
Provided services	
Trade License no.	
Company Representative Name and Occupation	
Company Representative's Contact Details (work phone, mobile, and Email Address)	

**Table no. 2 – Company Information**



#### 4.2. Organisation and Team Information

Team Member Position	Name	Telephone	E-Mail
Overall Company Representative			
Company BIM Representative			
Company CAD Representative			
Company IT Representative			
Person completing the Capability Assessment Section			
Person completing the Capacity Assessment Section			
Person completing the Information Technology Assessment Section			

**Table no. 3 – Organisation and Team Information**

## 5. Exceptional Assessment

The assessment sections below (sections 6, 7 and 8) are not required to be completed, if the Organization holds a third-party certificate of compliance with ISO 19650 from an Organization with a related accreditation. Accordingly, the Organization has to provide valid certificate as part of his pre-qualification response.

## 6. Capability Assessment

The capability assessment will help in identifying the key strategic capabilities that are critical to the delivery of services.

### 6.1. BIM gateway questions

Question	Answer	Evidence (If applicable)
Are you prepared to issue your native CAD / BIM format files?		
If you are not prepared to issue native CAD / BIM format files, why not?		
Do you work to a CAD / BIM Standards? If yes, specify.		
If you do not work to a CAD / BIM Standard. Why not?		
Do you work to any national (e.g. US, Australian etc.) and international standard (ISO 19650)?		
If your Standards are not as per ISO 19650, what are they based upon?		
Do you produce a BIM model as an iterative process? E.g. Royal Institute of British Architects (RIBA) Plan of Work stages.		
Do you understand the 'Level of Information Need' required at each of the project delivery stages?		
How do you demonstrate or what measures do you have		

in place to ensure compliance with your CAD / BIM Standard?		
Are you prepared to comply with the Employer's Standards?		
If you aren't prepared to comply with the Employer's Standards, please explain why?		
Are all your CAD / BIM Tools covered by a yearly maintenance agreement?		
Do you train your staff In the use of your CAD / BIM tools? If yes, How often?		
If you train staff, who provides the training and how often?		
Can you provide CAD / BIM related qualifications and Continuing Professional Development (CPD) Certification for proposed team members?		
How do you carry out spatial co-ordination using CAD / BIM?		
In a single paragraph please explain your experiences with linked, attached and embedded attribute data within 3D models?		

**Table no. 4 - BIM gateway questions**

## 6.2. Areas of BIM

The Employer has identified areas or functions that will be benefited from BIM Tools, Applications and Data Management. Please complete the following table to show your understanding of each of the areas and which areas you could support the Employer. Please include supporting evidence.

Application / Area	Examples	Benefits Expected	Understanding	Supporting Evidence
Design / Construction Intelligent (data rich) 3D-Modelling	<ul style="list-style-type: none"> <li>• Architectural</li> <li>• Structural Design (Pre-cast)</li> <li>• MEP Design and Manufacture.</li> <li>• Civil</li> <li>• Landscaping</li> </ul>	<ul style="list-style-type: none"> <li>• Accurate and visual design, no shortcuts (completed design in all details). 'As-built' re-measured and verified with adequate detail to enable Asset Type and Asset Unique Numbering and Location to be applied.</li> <li>• Project Common Design Elements and Product Components in use, libraries and catalogues</li> <li>• Information on materials and components available from model to meet O&amp;M/FM</li> </ul>		

Application / Area	Examples	Benefits Expected	Understanding	Supporting Evidence
Quantity take-Off, costing	<ul style="list-style-type: none"> <li>• Schedules</li> <li>• Material lists</li> <li>• Component lists</li> <li>• BOQ</li> </ul>	<ul style="list-style-type: none"> <li>• Rapid and accurate take-off of materials quantities (but needs care)</li> <li>• Easier to evaluate design changes and impact on costs (5D design)</li> <li>• Supports rapid optioneering</li> <li>• Easier to connect quantities to costing, scheduling and procurement</li> </ul>		
Visualizations	<ul style="list-style-type: none"> <li>• Bid &amp; Tender</li> <li>• Visualization</li> <li>• Marketing</li> <li>• Client sign off</li> </ul>	<ul style="list-style-type: none"> <li>• Visualizations of highways and buildings for marketing</li> <li>• Virtual models and animations, “fly over/through” highways and tunnels, buildings inside and outside</li> <li>• Supports customer interface, choices etc (assortments, catalogues, selection tools - shopping lists)</li> </ul>		

Application / Area	Examples	Benefits Expected	Understanding	Supporting Evidence
Safety Planning	<ul style="list-style-type: none"> <li>• Roof access</li> <li>• Confined spaces</li> <li>• Future safe operations</li> <li>• Enhanced toolbox talk / safety briefings</li> <li>• Visual review of planned work prior to commencement</li> <li>• Improved method statements</li> </ul>	<ul style="list-style-type: none"> <li>• Safety details and structures in libraries (standardization)</li> <li>• Safety installations pre-planned, railings and fixings for safety equipment</li> <li>• Visual safety tours / area plans and presentations</li> </ul>		
Clash Detection	<ul style="list-style-type: none"> <li>• 2D in Plan</li> <li>• 3D Co-ordination</li> <li>• Rule based clash</li> <li>• 'Hard &amp; Soft' clash</li> <li>• Virtual snagging</li> <li>• Plant &amp; equipment installation</li> </ul>	<ul style="list-style-type: none"> <li>• Zero error design: No defects in construction phases, below ground and above ground assets/services</li> <li>• Better production planning with sub-contractors, visual plans</li> <li>• Project checking rules: better design quality</li> <li>• Zero clash through collaboration and sharing</li> </ul>		

Application / Area	Examples	Benefits Expected	Understanding	Supporting Evidence
4D-Scheduling	<ul style="list-style-type: none"> <li>• Materials deliveries</li> <li>• Crane &amp; Hoist/ site plant positioning</li> <li>• Targeted sequencing</li> <li>• Construction site layout</li> </ul>	<ul style="list-style-type: none"> <li>• Information for scheduling from model based quantity take-off</li> <li>• 4D design – 4D simulations Virtual Design and Construction (VDC) possibilities, optimized schedules</li> <li>• Visualization of schedules for workers and suppliers</li> </ul>		
Production BIM	<ul style="list-style-type: none"> <li>• Targeted rehearsals</li> <li>• Progress monitoring</li> <li>• Planned vs Actual</li> <li>• Sub contractor payment</li> </ul>	<ul style="list-style-type: none"> <li>• Virtual design and construction methods: 4-D schedule simulations</li> <li>• Constructability analyses, prints of 3D details and drawings, visual planning</li> <li>• Exact material lists for production: pavement, reinforcement, concrete, fixings</li> </ul>		



Application / Area	Examples	Benefits Expected	Understanding	Supporting Evidence
Procurement	<ul style="list-style-type: none"> <li>• Accurate quantities</li> <li>• Re-informed Cost Plans</li> <li>• Sub contractor payment</li> <li>• Reduced tender periods</li> <li>• Optimised procurement plans</li> </ul>	<ul style="list-style-type: none"> <li>• Codes for identification, RFID tags, follow-up with model viewers</li> <li>• Location based material / component deliveries</li> <li>• Just On Time (JOT) deliveries (easier to manage and plan, delivery times in models)</li> </ul>		
Supply Chain Management	<ul style="list-style-type: none"> <li>• Secondary Clash Prevention</li> <li>• Reduced tender periods</li> <li>• Early warning</li> </ul>	<ul style="list-style-type: none"> <li>• Exact material / component definitions and codes from models (libraries)</li> <li>• Bills of materials from models, accurate quantities per locations</li> <li>• Follow-up of deliveries (Radio-frequency identification - RFID – tags)</li> <li>• Transparency project status for all key suppliers and sub-contractors</li> </ul>		

**Table no. 5 – Areas of BIM**

### 6.3. BIM Project Experience

Please provide details of a minimum of three recent projects using BIM undertaken for reference

	Project 1	Project 2	Project 3
Title			
Sector / Type			
Customer			
Consultant/Contractor			
Contact Name			
Telephone Number			
Project Value			
Contract duration			
Scope of BIM Services			
Benefits realised by BIM			
Number of task team members			

**Table no. 6 – BIM Project experiences**

### 6.4. BIM Knowledge

The following BIM Knowledge questions are intended to help the BIM Team identify training, coaching and support required for your organisation.

Question	Answer / Understanding	Supporting Evidence
What does BIM mean to your organisation?		
What does BIM mean to your staff?		
Who drives BIM within the organisation?		

Who drives BIM on each project, what are their titles and responsibilities?		
Does your organisation have BIM standards?		
Have you experience of implementing client standards and where?		
How have your design contracts been influenced by BIM?		
Have there been any changes to your design deliverables with respect to BIM?		
What is your current status and future plan for BIM rollout?		
What are your future plans for BIM implementation in respect to staff and their command and process training?		
What does coordinated design mean to you?		
Has / would BIM enable you to engage in 'Optioneering' early in the design process and how?		
What has BIM enabled you to do differently and to what benefit and to whom?		
What impact has BIM had / will have on projects?		
How does BIM affect staffing on a project?		
How has BIM affected design fees? (by what %)		
What in-house tools do you have? Demonstrate usage		

Have Tools been specified to you and have you / would you use them?		
Where on a project does BIM start?		
Where on a project does BIM finish?		
What is your definition of 'Collaboration'?		
How do you 'Collaborate'?		
What do you 'Collaborate' with?		

**Table no. 7 – BIM knowledge**

*Remarks/Comments*

### 6.5. Capability Assessment Validation

BIM Assessment Completed By.....(Organization Assessor/BIM Manager)

Date.....

Recommendation



Approved By.....(Technical Director)

Date.....

Technical Director Comments

--

Score	<u>    </u> /40
-------	-----------------

Score is only for Employer's use.

## 7. Capacity Assessment

The capacity assessment aims to provide a clear picture of an Organization's capacity in terms of strengths, weaknesses and available assets. It is a structured approach for analysing capacity across three dimensions: individuals, organizations and the enabling environment.

### 7.1. Organization's Capacity Assessment

Please indicate in the table the resource available to the Project to produce and manage the deliverable data at each stage of the Project. Indicate resource by profession, training, academic achievement and years of experience

The Tenderer(s) resources for the project should be stated by completing the Table below.

Please ensure that by providing this information all data protection principles are adhered to.

Primary BIM Role	Secondary BIM Role (Where applicable)	Number of organisation's member	Years of Experience (interval)
Lead Designer			
Project Manager			
Information Manager			
Task Team Manager			
Task Team Information Manager			
Task Team Interface Manager			
Task Team BIM Authors			
Any other role(s)			

**Table no. 8 – Tenderer(s) resources**

*Remarks/Comments*

## 7.2. Capacity Assessment Validation

BIM Assessment Completed By.....(Organization Assessor/BIM Manager)

Date.....

Recommendation

--

Approved By.....(Technical Director)

Date.....

Technical Director Comments

--

Score	<u>    </u> /20
-------	-----------------

Score is only for Employer's use.

## 8. Information Technology (IT) Assessment

The Information Technology (IT) assessment is a comprehensive and thorough review of an Organization's technology systems and environment. The assessment will appraise how the technology helps or hinders the core business. The assessment can include, but is not limited to, network and systems performance, software audits, concept testing and development, strategic evaluations, technical reviews, and risk management.

### 8.1. Information Production & Distribution Policies

Please indicate in the table below the information that you normally produce or are expecting to produce on a Project. Also list the types and formats of information that you are prepared to share electronically with other Project team members.

Information Production					Information Distribution		
Information Type	To be Produced on the project		Will be Distributed Electronically		Preferred Electronic Distribution Format		
	Y	N	Y	N	Software Vendor	Package	Version
Paper Drawings							
Sketch Drawings							
Survey Drawings							
Mark Ups							
Drawing Print Files							
2D BIM / CAD Models							
3D BIM / CAD Models							
3D Visualisations							
Specifications							



Schedules							
Bills of Quantities							
Correspondence							
Minutes of Meetings							
Diaries							
Reports							
Surveys							
Site Investigations							
Cost Plans							
Programmes							
Requests for Information							
Change Orders							
Valuations							
Photos							
Videos							
Tender Documents							
Tender Package Information							
Tender Submissions							
Tender Returns							

**Table no. 9 - Information Production & Distribution**

Remarks/Comments

### 8.2. Availability of Information Technology (IT)

Question	Answer / Understanding	Supporting Evidence
Do you have Information Technology (IT) schedule (software and hardware)?		
Can you provide specification and quantity of the Organisation's hardware?		
Can you provide the architecture, maximum capacity and current utilization of the task team's IT infrastructure?		
Do you have the associated support and service level agreements available to the task team?		

**Table no. 10 – Availability of Information Technology (IT)**

### 8.3. Capacity Assessment Validation

IT Assessment Completed By.....(Organization/Company Assessor)

Date.....

Recommendation

Approved By.....(Technical Director)

Date.....

Technical Director Comments

--

Score	/40
-------	-----

Score is only for Employer's use.

## 9. Employer's evaluation

This section is to be filled by the Employer during Tender evaluation process.

Capability Assessment	<u>    /40</u>
Capacity Assessment	<u>    /20</u>
Information Technology (IT) Assessment	<u>    /40</u>
<b>Total Score</b>	<b><u>    /100</u></b>

### Remarks/Comments

### Recommendation

Reviewed

By.....(Director)

Date.....

## 10. Bibliography:

- **ISO 19650-1:2018** - Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM) — Information management using building information modelling — Part 1: Concepts and principles
- **ISO 19650-2:2018** - Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM) — Information management using building information modelling — Part 2: Delivery phase of the assets
- **PAS 91:2013** – Construction prequalification questionnaires
- CPlx (Construction Project Information Committee – CPlc's forms) document protocol for BIM assessment forms (UK)
- BIM Documentation Guidelines-Standards for Infrastructure (please insert unique ID for doc. number as reference)
- EIR-Exchange Information Requirements (please insert unique ID for doc. number as reference)