Construction Industry Council
BIM Certification and Accreditation Schemes

Application Guide for
Certification of Building Information Modelling (BIM) Managers

1. Background

1.1 This Application Guide sets out the approach and procedures to be adopted in the processing and assessment of applications for certification of BIM Managers.

1.2 A "Roadmap for BIM Strategic Implementation in Hong Kong's Construction Industry" was prepared by the Working Group on Roadmap for BIM Implementation under the then Committee on Environment and Technology of the Construction Industry Council (CIC) in 2014. One of the key initiatives in the Roadmap was to expedite the building up of BIM capacity and capability.

1.3 In 2017, the HKSAR Government decreed that BIM technology must be used in the design and construction of all major government capital works projects with a project cost estimate of more than HK$30 million that were scheduled to start during or after 2018, and that the use of this technology in private construction projects should also be promoted. This has generated a surge in demand for BIM personnel and training needs.

1.4 To ensure that construction professionals have appropriate skill levels and competency in using BIM technology, and that the scope and quality of BIM courses provided in the market meet the needs of the industry, it was important to establish a certification body for BIM personnel and an accreditation body for BIM courses in Hong Kong.

1.5 To facilitate the healthy development of BIM in Hong Kong, CIC has introduced the BIM Certification and Accreditation Schemes to ascertain the competency of BIM personnel and the quality of local BIM training courses.

2. Eligibility Criteria for Certification of BIM Managers

2.1 The Certification of BIM Manager is targeted at BIM practitioners who already have relevant practical experience in BIM projects[1], such as in development of BIM standards; planning, design, contract administration and execution of BIM projects in the areas of

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[1] Practical experience in BIM should be gained from construction projects which necessitate the use of BIM and the associated deliverables are to meet certain objectives of the projects. These deliverables as products of BIM applications have to be reviewed by the responsible person(s) of the projects and adopted in the implementation of the projects to distinguish them from merely experiential experiences, i.e. without formal verification by the project team.

quantity surveying, construction management, project management, cost and programme management, design management and specification, and property management; BIM education; quality assurance, etc., meet the relevant academic and / or professional qualification requirements, and have completed a CIC-accredited BIM Manager Course, or a CIC-Accredited BIM Manager Top-up Course which is applicable for CIC-Certified BIM Coordinators (CCBCs).

2.2 The targeted BIM practitioners should be able to observe a high standard of professional conduct and ethical behaviour, as all CIC-Certified BIM Managers are expected to uphold the standing and reputation of the CIC and the BIM profession.

2.3 Core Competencies of a BIM Manager

The Core Competencies of a BIM Manager are:

(a) BIM Initiation (Ability to describe BIM concept definitions and scope, BIM standards and guidelines in the Hong Kong and global contexts). [Level 2]

(b) BIM Software and Technologies (Ability to explain BIM software and the modelling process, and current and upcoming technologies). [Level 2]

(c) BIM Uses and Processes (Ability to understand BIM uses and BIM software applications, and to design and manage the overall process of a BIM project). [Level 4]

(d) Digital Information Management, Collaboration and Integration (Ability to plan and execute the setting-up of a common data environment and data quality control system for effective use and sharing of digital information in a BIM project). [Level 4]

(e) Commercial and Contractual Aspects (Ability to describe commercial and financial issues of BIM as well as BIM-related contractual issues). [Level 2]

(f) Communication Skills (Ability to apply effective interpersonal and communication skills in a variety of public and interpersonal settings, such as presentations, meetings, report / training material writing, etc.). [Level 4]

(g) Leadership, Management and Integrity Aspects (Ability to represent the CIC and uphold a high standard of professionalism, integrity and ethical behavior)

Core subjects of a BIM Manager Course under the BIM Certification and Accreditation Schemes are listed in Annex A of this Application Guide.

3. Assessment Criteria

3.1 The following assessment criteria will be adopted for Certification of BIM Managers:

(a)   the applicant has obtained:

- a CIC-recognised professional qualification, i.e. full membership of The Hong Kong Institute of Architects (HKIA)[2], The Hong Kong Institution of Engineers (HKIE)[3] or The Hong Kong Institute of Surveyors (HKIS)[4], OR

- a degree accredited or recognised by a CIC-recognised professional body[5] in architecture, engineering, surveying, building or construction, or equivalent, as recognised by CIC, plus 5 years of relevant post-degree experience (stationed in Hong Kong for at least 6 months);

(b)   the applicant has in the past 5 years gained at least 2 years of practical experience in BIM (stationed in Hong Kong for at least 6 months), such as in development of BIM standards; planning, design, contract administration and execution of BIM projects in the areas of quantity surveying, construction management, project management, cost and programme management, design management and specification, and property management; BIM education; quality assurance, etc.;

(c)   Submit a competency statement (incorporated in application form), of between 1,500 and 2,500 words, to demonstrate the applicant's practical experience in BIM and English writing skills;

(d)   Successful completion of a CIC-accredited BIM Manager Course, or a CIC-Accredited BIM Manager Top-up Course which is applicable for CCBCs; and

(e)   Professional conduct and integrity demonstrated by applicant's professional disciplinary history and conviction records (if any) and applicant's interview performance.   An applicant who has

a. committed misconduct or neglect in any professional respect,

b. been disqualified from the BIM Certification and Accreditation Schemes by the CIC Certification and Accreditation Board (BIMCAB) and removed from the CIC-Certified BIM Managers or CIC-Certified BIM Coordinators register,

c. been disqualified from being registered or certified as a BIM personnel by other BIM certification body for disciplinary reasons, or

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2 The Hong Kong Institute of Architects (http://www.hkia.net).

3 The Hong Kong Institution of Engineers (https://www.hkie.org.hk).

4 The Hong Kong Institute of Surveyors (https://www.hkis.org.hk).

5 List of CIC-recognised professional body is available on website of Construction Digitalisation Department of CIC (http://www.bim.cic.hk/).

d. been convicted of any criminal offence involving bribery, fraud, dishonesty or malfeasance, or any offence which may bring the CIC and the BIM profession into disrepute,

will not be considered for certification unless the BIMCAB has other considerations after taking into account of all circumstances.

3.2 A 'Supplementary Guide on Preparing the Application for Certification as CCBM' can be downloaded in CIC BIM Portal (www.bim.cic.hk). The Supplementary Guide is to provide guidance to applicants for their preparation of application submissions and interview assessments. Helpful tips and information are included in the guide for reference. Applicants are highly recommended to read through the supplementary guide.

4. Processing and Assessment of Applications for Certification of BIM Managers

4.1 An applicant for certification as a BIM Manager must submit the following to the Construction Digitalisation Department of CIC for assessment:

(a) completed an online application form through "My Portal" in CIC BIM Portal (www.bim.cic.hk);

(b) application fee (HK$1,000);

(c) certified true copies of membership certificates–related to a CIC-recognised professional qualification, i.e. full membership of HKIA, HKIE or HKIS, **OR** certified true copies of academic qualification certificates related to a degree accredited or recognised by a CIC-recognised professional body in architecture, engineering, surveying, building or construction, or equivalent, as recognised by CIC, plus proof of 5 years of relevant post-degree experience (stationed in Hong Kong for at least 6 months);

(d) (i) A portfolio of work examples that proves the applicant has in the past 5 years gained at least 2 years of practical experience in BIM (stationed in Hong Kong for at least 6 months), such as in development of BIM standards; planning, design, contract administration and execution of BIM projects in the areas of quantity surveying, construction management, project management, cost and programme management, design management and specification, and property management; BIM education; quality assurance, etc.; **AND** (ii) a completed and signed Certification of Practical Experience in BIM;

(e) a competency statement, of between 1,500 and 2,500 words, to demonstrate the applicant's practical experience in BIM (see (d) above) and English writing skills (the 6 core competencies required for a BIM Manager are given in Section 2.3);

(f) evidence of completing a CIC-Accredited BIM Manager Course, or CIC-Accredited BIM Manager Top-up Course which is applicable for CCBCs (e.g. completion certificate); and

(g) a curriculum vitae.

Upon receipt of an application, the Construction Digitalisation Department of CIC will assess the completeness of the documents submitted and will request the applicant to provide further details to substantiate the application, if needed. The application will be regarded as withdrawn if the applicant fails to provide the necessary details within 3 months from the date of request made by CIC.

4.2 The CIC BIM Assessment Panel (BIMAP) will review the content of the submitted documents, and if considered to be satisfactory, will invite the applicant to attend an interview. The purpose of the interview is to assess whether the applicant possesses the core competencies and practical experience required for a BIM Manager.

Upon completion of the assessment, BIMAP will make a recommendation to the BIMCAB for approval or disapproval.

The certification status of a BIM Manager shall be valid from the date of granting the certification status up to the end of that calendar year, and the names of the CIC- Certified BIM Managers will be placed on the CIC-Certified BIM Managers Register.

4.3 It is expected that the application process will take around 4 to 6 months in normal circumstances. The application process consists of 3 stages:
  (a)   documents verified by Construction Digitalisation Department of CIC.
  (b)   assessment interview performed by BIMAP after reviewing the submitted documents.
  (c)   approval/disapproval by BIMCAB.

5. Special Path for CIC-Certified BIM Coordinators (CCBCs) to apply for the Certification of BIM Managers

5.1 To be eligible for applying for Certification of BIM Managers via this special path, the CCBC should meet the requirements below:
  (a)   the applicant possessesa degree accredited or recognised by a CIC-recognised professional body in architecture, engineering, surveying, building or construction, or equivalent, as recognised by CIC, plus 2 years of relevant post-degree and 3 years of post-CCBC certification working experience (with at least 6 months stationed in HK);
  (b)   the applicant has 2 year of post-CCBC certification practical experience in BIM (stationed in Hong Kong for at least 6 months), such as in development of BIM standards; planning, design, contract administration and execution of BIM projects in the areas of quantity surveying, construction management, project

management, cost and programme management, design management and specification, and property management; BIM education; quality assurance, etc.;

(c) Submit a competency statement (incorporated in application form), of between 1,500 and 2,500 words, to demonstrate the applicant's practical experience in BIM and English writing skills;

(d) Successful completion of a CIC-accredited BIM Manager Course, or a CIC-Accredited BIM Manager Top-up Course as appropriate; and

(e) Professional conduct and integrity demonstrated by applicant's professional disciplinary history and conviction records (if any) and applicant's interview performance.   An applicant who has

a. committed misconduct or neglect in any professional respect,

b. been disqualified from the BIM Certification and Accreditation Schemes by the CIC Certification and Accreditation Board (BIMCAB) and removed from the CIC-Certified BIM Managers or CIC-Certified BIM Coordinators register,

c. been disqualified from being registered or certified as a BIM personnel by other BIM certification body for disciplinary reasons, or

d. been convicted of any criminal offence involving bribery, fraud, dishonesty or malfeasance, or any offence which may bring the CIC and the BIM profession into disrepute, will not be considered for certification unless the BIMCAB has other considerations after taking into account of all circumstances.

6. Notification of Assessment Result

6.1 Applicants will be recommended for the CIC-Certified BIM Manager qualification if the assessment is favourable. Applicants will be informed of the result by mail.

7. Mechanism of Re-sitting Interview Assessment

7.1 The BIMCAB approved setting up the re-sitting mechanism for certification assessments under the BIMCAS in late February 2023.

7.2 The BIM Assessment Panel (BIMAP) will have a discretion to grant the applicant, who failed in only one Core Competency (CC), an opportunity to re-sit interview assessment on the failed CC.

7.3 The CIC Secretariat will notify the applicant on the re-sitting arrangement with the date and time (the re-sitting will be held within 3 months from the previous interview date).

7.4 The applicant cannot attend the re-sitting interview within 3 months, unless otherwise agreed by the BIMCAB Secretariat, his/her application would be disapproved.

7.5 The applicant has to re-apply for the certification and be assessed on all the CCs if the re-sitting interview assessment is also failed,

8. Payment

8.1 Fee payable

A non-refundable application fee of HK$1,000 is required for the application.

8.2 Payment Method

Applicants should pay the required application fee online or by cheque, which should be made payable to "Construction Industry Council". All payments received are non-refundable, non-endorsable and non-transferable.

9. Certification Validity

9.1 The certification status of a BIM Manager shall be valid from the date of granting the certification status up to the end of that calendar year, and the names of the CIC-Certified BIM Managers will be placed on the CIC-Certified BIM Manager Register.

9.2 Renewal of Registration

9.2.1   The Construction Digitalisation Department of CIC will send a renewal reminder to the CIC-Certified BIM Managers on a yearly basis at least 3 months prior to the date of expiry of their existing certification.

9.2.2   The CIC-Certified BIM Managers should submit the following to the Construction Digitalisation Department of CIC for renewal at least 1 month prior to the date of expiry of the existing certification:

(a)   online renewal application through "My Portal" in CIC BIM Portal (www.bim.cic.hk), confirming that they have undertaken at least 12 hours of BIM-related Continuing Professional Development (CPD) in the past year including the number of CPD hours on mandatory key topics as stipulated by CIC from time to time, and associated documents if applicable; and

(b)   renewal fee (HK$500).

9.3 The CIC-Certified BIM Managers should keep records of the BIM-related CPD and mandatory key topics undertaken during the year (including attendance at any CIC-recognised courses, conferences or seminars, documented self-study (maximum 3 CPD hours), etc.). They may be requested to provide evidence of the BIM-related CPD and mandatory key topics completed in the past 3 years, without which the renewal application may not be considered.

Once a renewal application is found to be in order, the Construction Digitalisation

Department of CIC will pass it to BIMAP for assessment. On completion of the assessment, BIMAP will make a recommendation to BIMCAB.

9.4 There would be a remark column indicating "Expired" status in the CIC-Certified BIM Manager Register three months after expiry of their existing certification, if they fail to return the signed renewal application form and associated documents, together with the renewal fee, by that time. The use of the CCBM title and logo would be prohibited after the date of expiry of their certification.

10. Application for reinstatement

10.1 A person whose CIC-Certified BIM Managers status expired may, within 2 years of the date of expiry of the last certification, apply for reinstatement of the certification. Applications for reinstatement should be made through "My Portal", following the procedure described in Section 9.2. The applicant is required to pay any other outstanding subscription since the date of expiry of the certification and /or registration, and submit associated documents, if requested.

10.2 A person whose CIC-Certified BIM Managers status expired for more than 2 years from the date of expiry of the last certification/registration, will need to submit a fresh application for certification as a BIM Manager and the procedure given in Section 4 applies.

11. Appeal Cases

11.1 An applicant for certification as a BIM Manager, including renewal/ reinstatement of registration, who is dissatisfied with a decision of BIMCAB may appeal to the CIC BIM Appeal Board (BIMAB). An applicant exercising the right of appeal should submit the following to the Construction Digitalisation Department of CIC, no later than 21 calendar days after receiving notification of the decision of BIMCAB:

(a)   a completed application form for appeal (Form PN01-F-03); and

(b)   an application fee (HK$1,500).

11.2 Upon receipt of an appeal case, BIMAB will review the case upon receipt of all necessary documentation about the case. BIMAB's decision is final. BIMAB will inform BIMCAB of its decision. The application fee will be refunded to the applicant if the appeal is found to be valid.

11.3 Applicants will be informed of the result by mail.

12. Application

12.1 Email is the primary communication channel between CIC and the applicants. Applicants are recommended to regularly check the mailbox of their email address(es) provided to CIC in their application forms.

12.2 The completed Application Form with all necessary supporting documents should be submitted through "MyPortal" in CIC BIM Portal (www.bim.cic.hk).

13. Enquiry

Construction Digitalisation Department - Construction Industry Council
38/F, COS Centre
56 Tsun Yip Street
Kwun Tong, Kowloon
Tel : 2100 9000   Fax : 2100 9090
Email : bimcas@cic.hk

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List of Core Subjects of a BIM Manager Course under the Building Information Modelling (BIM) Certification and Accreditation Schemes (the "Schemes")

Minimum Level of Competency:

Level 1(L1) : General appreciation of the subject and an understanding of how the subject may affect, or integrate with other subjects.

Level 2 (L2): Knowledge and understanding of the subject and its application.

Level 3 (L3): Ability to perform the subject independently or under supervision.

Level 4 (L4): Ability to perform the subject without supervision and advise others.

	Core Subject		L1	L2	L3	L4
	1.1.	*BIM Concept*				
	1.1.1	BIM definitions and terminology		✓		
	1.1.2	The difference between 2D CAD, 3D CAD and BIM	✓			
	1.1.3	Concept of BIM in the whole life cycle of a built asset	✓			
	1.1.4	Value and benefits of adopting BIM	✓			
	1.1.5	Value of BIM for AM & FM	✓			
	1.1.6	Collaborative working in BIM		✓		
	1.1.7	Limitation of BIM	✓			
	1.1.8	Challenges within existing working practices & how BIM addresses these		✓		
	1.1.9	How BIM affect the current practice in AECO industry		✓		
	1.2.	*Local & Global Contexts, BIM standards and guidelines*				
	1.2.1	Local BIM standards & resources		✓		
		1.2.1.1 CIC BIM Standards		✓		
		1.2.1.2 Government BIM standards & resources		✓		
	1.2.2	Global context in BIM development	✓			
	1.2.3	Global BIM standards & resources		✓		
		1.2.3.1 ISO 19650		✓		
		1.2.3.2 BIM FORUM LOD Specification		✓		
		1.2.3.3 OpenBIM and collaborative formats		✓		

1. BIM Initiation (row label spanning section 1)

		Core Subject	L1	L2	L3	L4
	2.1.	*BIM Software*				
	2.1.1	Overview of common BIM software		✓		
	2.1.2	Characteristic, file format & version, strength and limitation of common BIM software and platform		✓		
	2.1.3	Interoperability across common BIM authoring software	✓			
	2.2.	*Technologies*				
	2.2.1	Internet & cloud	✓			
	2.2.2	Laser scanning & photogrammetry		✓		
	2.2.3	Unmanned Aircraft System (UAS) / Drone		✓		
	2.2.4	GIS		✓		
	2.2.5	Internet of Things (IoT), mobile or smart devices		✓		
	2.2.6	VR/AR/MR		✓		
	2.2.7	RFID		✓		
	2.2.8	VDC	✓			
	2.2.9	Robotics	✓			
	2.2.10	Programming, automation and API	✓			
	2.2.11	MiC, DfMA and MiMEP		✓		
	2.2.12	Indoor positioning	✓			
	2.2.13	Upcoming trend of technology	✓			

2. BIM Software and Technologies

		Core Subject	L1	L2	L3	L4
		3.1. – Client BIM Strategic Stage				
	3.1.1	BIM strategy, BIM uses, BIM processes		✓		
	3.1.2	Key personnels in relation to BIM and their roles and responsibilities	✓			
	3.1.3	Determine the information management & CDE strategy				✓
	3.1.4	Determine the BIM / AIM / GIS strategy				✓
	3.1.5	Determine level of development in the context of graphics and information under LOIN				✓
	3.1.6	Determine level of integration of digital information into asset & facility management				✓
	3.1.7	Case study		✓		
		3.2. – Client Pre-tender Project Stage				
	3.2.1	Determine & oversee the development of Appointing Party requirements				✓
		3.2.1.1 Organisational Information Requirements (OIRs)				✓
		3.2.1.2 Asset Information Requirements (AIRs)				✓
		3.2.1.3 Project Information Requirements (PIRs)				✓
		3.2.1.4 Security Information Requirements (SIRs)				✓
	3.2.2	Exchange Information Requirements (EIRs)				✓
	3.2.3	Determine project technology & systems requirement & integration				✓
	3.2.4	Determine project delivery requirements and identify appropriate BIM Uses				✓
	3.2.5	Contract & consultancy requirement		✓		
	3.2.6	Assessment on supply chain capability & capacity				✓
	3.2.7	Case study		✓		
		3.3. – Definition & Design Stage				
	3.3.1	BIM Execution Plan developed by supply chain				✓
		3.3.1.1 Pre-appointment BIM Project Execution Plan				✓
		3.3.1.2 Post-appointment BIM Project Execution Plan				✓
	3.3.2	Supervision in fulfilling BIM uses in planning & design stages listed in CIC BIM Standards				✓
	3.3.3	Project Information Model (PIM) data exchanges and validation				✓
	3.3.4	BIM PIM file setup				✓
		3.3.4.1 BIM origin point & orientation setup				✓
		3.3.4.2 Model division				✓
		3.3.4.3 Modelling methodology				✓

3. BIM Uses and Processes

	Core Subject	L1	L2	L3	L4
	3.3.4.4 Project-based industry and BIM standards				✓
3.3.5	Direct BIM related meetings				✓
	3.3.5.1 Meeting with Appointing Party and Appointed Parties				✓
	3.3.5.2 Meeting for multidiscipline design collaboration				✓
	3.3.5.3 Internal steering and coordination meeting				✓
	3.3.5.4 Meeting with or giving presentation to external stakeholders				✓
3.3.6	Case Study		✓		
3.4. – Construction Stage					
3.4.1	BIM Execution Plan developed by supply chain				✓
	3.4.1.1 Pre-appointment BIM Project Execution Plan				✓
	3.4.1.2 Post-appointment BIM Project Execution Plan				✓
3.4.2	Supervision in fulfilling BIM uses in construction stage listed in CIC BIM Standards				✓
3.4.3	Project Information Model (PIM) data exchanges and validation				✓
3.4.4	Direct BIM related meetings				✓
3.4.5	Case study		✓		
3.5. – Handover Stage					
3.5.1	As-built information verification				✓
3.5.2	Oversee data transfer from PIM to Asset Information Model (AIM)				✓
3.5.3	Supervision in fulfilling BIM uses in handover stage listed in CIC BIM Standards				✓
3.5.4	Case study		✓		
3.6. – Operation & Maintenance Stage					
3.6.1	Update Assets Information Model (AIM)		✓		
3.6.2	Roles, responsibilities and authorities for maintaining the AIM		✓		
3.6.3	Post occupancy evaluation		✓		
3.6.4	Case Study		✓		

		Core Subject	L1	L2	L3	L4
		4.1. Digital Information Management				
	4.1.1	Value of data & how it should be managed		✓		
	4.1.2	Interoperate data/information to facilitate cross-disciplinary and cross-BIM platform collaboration		✓		
	4.1.3	Limitation of BIM software in relation to information management		✓		
	4.1.4	Determine level of development in the context of graphics and information in different stages under LOIN				✓
	4.1.5	Determine level of integration of digital information into asset & facility management				✓
	4.1.6	Oversee the process and quality of information exchange in different formats (BCF, IFC, IDM, bsDD, COBie, MVD, etc.)				✓
		4.2. Common Data Environment (CDE)				
	4.2.1	CDE solution and workflow		✓		
	4.2.2	Overview of CDE solutions in the market		✓		
	4.2.3	Setup of CDE			✓	
	4.2.4	Assessment and selection of CDE			✓	
	4.2.5	Management of CDE				✓
	4.2.6	Limitation of CDE		✓		
		4.3 – Data Quality Control & Assurance across various stages				
	4.3.1	System checking (including software and hardware)				✓
	4.3.2	Model audit				✓
	4.3.3	Model checking				✓
	4.3.4	Audit reporting				✓

Left column (rotated): 4. Digital Information Management, Collaboration and Integration

	Core Subject	L1	L2	L3	L4
	5.1 Commercial Issue				
	5.1.1 Establishing BIM ready environment to support the corporate			✓	
	5.1.1.1 BIM strategy in organisation level		✓		
	5.1.1.2 Challenges in BIM implementation		✓		
	5.1.1.3 Phases in BIM implementation				✓
	5.1.1.4 Hardware requirement for BIM		✓		
	5.1.1.5 Software requirement for BIM		✓		
	5.1.1.6 Manpower management for BIM				✓
	5.1.1.6.1 Staff plan				✓
	5.1.1.6.2 Staff recruitment				✓
	5.1.1.6.3 Staff training				✓
	5.1.2 Promotion of adopting BIM in office/to appointing party		✓		
	5.1.2.1 Value and benefit of adopting BIM	✓			
	5.1.2.2 Value and benefit of data and information from BIM	✓			
	5.1.2.3 Evaluating Return on Investments (ROI) of adopting BIM		✓		
	5.2. Contract Issue				
	5.2.1 Ownership of data		✓		
	5.2.2 Intellectual property right		✓		
	5.2.3 Legal implication and potential liability		✓		
	5.2.4 Professional indemnity	✓			
	5.2.5 Introducing NEC4 and Option X10 for BIM	✓			
	5.2.6 Commercial implications for contracts & insurances in relation to BIM		✓		

(Left vertical header spanning the table: 5. Commercial and Contract)