The Hong Kong Institute of Surveyors

The HKIS BIM Certification Scheme
Application Guide for Listing under "Surveyor BIM Co"

1. Introduction

1.1 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.

1.2 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.

1.3 To facilitate the healthy development of BIM in Hong Kong, the Construction Industry Council (CIC) has introduced the BIM Certification and Accreditation Schemes to ascertain the competency of BIM personnel and the quality of local BIM training courses.

1.4 In order to meet the increasing demand of BIM personnel as project BIM team leaders and coordinators according to the BIM structure requirement specified in DevB's Technical Circular for the "Adoption of Building Information Modelling", it is essential to **build up capacity and capability of HKIS members** for adopting BIM in property and construction projects. In this regard, the HKIS sets up the BIM Certification Scheme and creates a listing system through which applicants may apply for admission to the List of "Surveyor BIM Coordinator (or Surveyor BIM Co)".

1.5 The objectives of listing are to ensure that the applicants have acquired the recognised BIM training and prescribed practical BIM experience and have attained a level of knowledge in technical practice acceptable to the HKIS for admission to the List of Surveyor BIM Co.

1.6 A streamline procedure is also agreed with CIC where if an applicant wishes to become a HKIS Surveyor BIM Co and CIC-Certified BIM Coordinator (CCBC), the applicant is only required to submit **one** application. No separate application is required to be submitted to CIC for certification as a CCBC. The HKIS will send one copy of the application documents to CIC for their review. To avoid duplication in assessment, the approval/disapproval of Surveyor BIM Co and CCBC will be bundled, i.e., applicants will be approved/disapproved by HKIS as Surveyor BIM Co with the same outcome of approval/disapproval of CCBC by the CIC BIM Certification and Accreditation Board (BIMCAB).

2. Eligibility Criteria for Listing of Surveyor BIM Co

2.1 The listing of Surveyor BIM Co is targeted at BIM practitioners who already have relevant practical experience in BIM projects, meet the relevant academic requirements and have completed a CIC-Accredited BIM Coordinator course, or a CIC-Accredited BIM Coordinator Top-up course which is applicable for CIC-Certified BIM Managers (CCBMs).

2.2 The targeted BIM practitioners should be able to observe a high standard of associate professional conduct and ethical behaviour, as all Surveyor BIM Co / CCBC (where applicable) are expected to uphold the standing and reputation of the HKIS / CIC (where applicable) and the BIM profession.

3. Core Competencies of a Surveyor BIM Co

The Core Competencies of a Surveyor BIM Co are as follows:

(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 operate BIM software[1] and the modelling process and describe current and relevant technologies). [Level 3]

(c) **BIM Uses and Processes**: Ability to understand BIM uses, apply BIM software applications, and to execute and administer the responsible BIM tasks for individual or cross-disciplinary BIM project coordination). [Level 3]

(d) **Digital Information Management, Collaboration and Integration**: Ability to execute and administer the operation of a common data environment and data quality control system for effective use and sharing of digital information in a BIM project). [Level 3]

(e) **Communication Skills**: Ability to apply interpersonal and communication skills in meetings, report / training material writing, etc.). [Level 3]

The above core subjects are listed in Annex A of this Application Guide in detail.

4. Assessment Criteria

4.1 The following assessment criteria will be adopted for listing of Surveyor BIM Co:

(a) the applicant has obtained the probationer (or above grade) membership of the HKIS[2];

(b) 3 years of full-time relevant work experience (with at least six months stationed in Hong Kong).

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[1] Commonly used BIM software could be found from the list of Construction Innovation and Technology Fund (CITF) pre-approved BIM software available on website of CITF (http://www.citf.cic.hk/?route=search).

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

(c)   practical experience in BIM project coordination and related tasks – at least one year full-time relevant BIM experience in BIM projects in the latest five years (with at least 6 months stationed in Hong Kong), that able to demonstrate the applicant possessing the required levels of the Core Competencies as stipulated in the listing of Surveyor BIM Co.
(Examples of BIM project coordination and related tasks such as implementation of BIM Execution Plan on a BIM project, BIM modelling production and collaborate information exchange amongst related stakeholders, maintain a Task Information delivery plan, performing BIM-related coordination (internally or externally) with the stakeholders, administration and maintenance of data exchange to the project Common Data Environment (CDE), assist in holding or facilitating various BIM related meeting internally or externally, performing BIM data quality control/checking or assurance in BIM projects, etc.)

(d)   BIM education - successful completion of:
(i) a CIC-Accredited BIM Coordinator course, or a CIC-Accredited BIM Coordinator Top-up course for CCBMs; and
(ii) at least one BIM software/platform training course in operation level as recognised by CIC, or possession of any certification of BIM software in operation level issued by respective software developers, or any equivalent as accepted by CIC;

(e)   Client[3] and Employer[4] Evaluation Forms – submission of at least one set of evaluation forms from both client and employer sides. Client Evaluation Form is not a mandatory document. Employer and Client (if appropriate) evaluation forms of selected project(s) will be sent to your Employer and Client (if appropriate) when you submit the application. The forms will be used to verify the applicant's BIM experience as stated in (b) and to evaluate the applicant's BIM capability obtained from the BIM experience stated in (b); and

(f)   Associate professional conduct and integrity demonstrated by the Client and Employer Evaluation Forms, applicant's associate professional disciplinary history and conviction records (if any) and applicant's interview performance. An applicant who has
(i) committed misconduct or neglect in any professional respect,
(ii) been disqualified and removed from the HKIS's List of Surveyor BIM Co or CIC-Certified BIM Coordinators Register,
(iii) been disqualified from being listing or certified as a BIM personnel by other BIM listing/certification body for disciplinary reasons, or

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[3] Client is the owner of the project. Client-Side Evaluator must be the employee of the Client or third party directly employed by the Client (e.g. main contractor, lead consultant, etc.) but not at the same organisation with the applicant. (For applicant who is the employee of the Client, the Client-Side Evaluator must be the employee of Client organisation). AND the Client-Side Evaluator should be Professional (i.e. MHKIA, MHKIE, MHKIS, or above), CIC-Certified BIM Manager (CCBM), Project Manager, Assistant Project Manager, BIM Manager or Facility Manager of the project team and in a supervisory level but not the direct supervisor in the same company/organisation of the applicant.

[4] Employer could be direct manager or supervisor of the project team.

(iv) been convicted of any criminal offence involving bribery, fraud, dishonesty or malfeasance, or any offence which may bring the HKIS/CIC (where applicable) and the BIM profession into disrepute,

will not be considered for listing/certification unless the HKIS/CIC (where applicable) has other considerations after taking into account of all circumstances.

5. Processing and Assessment of Applications for Surveyor BIM Co

5.1 An applicant for listing as Surveyor BIM Co must submit the following to the HKIS for assessment:

(a)   completed application form;

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

(c)   a copy of the probationer (or above grade) membership of the HKIS;

(d)   submission of at least one set of evaluation forms from both client and employer sides that prove the applicant has in the past 5 years gained at least 1 year full-time relevant practical experience in BIM project coordination and related tasks (with at least 6 months stationed in Hong Kong).   Standardised evaluation forms for client and employer sides will be provided. The applicant should ask his/her client and employer to fill in the standardised evaluation forms and return to the HKIS separately. In case Client Evaluation Form cannot be submitted or cannot cover the required period of the applicant's practical experience in BIM coordination and related tasks, the applicant's application will have to be assessed based on the available details. The submission of full Client Evaluation Form will have an edge in the application as the assessment panel can have a more thorough understanding of the applicant's experience and capability in BIM coordination works;

(e)   evidence of completing
(i) a CIC-Accredited BIM Coordinator course, or a CIC-Accredited BIM Coordinator Top-up course which is applicable for CCBMs (e.g. completion certificate); and
(ii) evidence of completing at least one BIM software/platform training course in operation level as recognised by CIC, or possession of any certification of BIM software in operation level issued by respective software developers; (Refer to Section 6);

(f)   a curriculum vitae; and

(g)   A portfolio of BIM work examples for selected project(s).

Upon receipt of an application, the HKIS 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 the HKIS.

5.2 The assessment panel will review the contents of the submitted documents, and if the submission is found to be complete and can successfully demonstrate that the applicant possesses the required Core Competencies of a BIM Coordinator, the assessment panel could recommend "Approve without interview" to the HKIS BIM Committee. Otherwise, the assessment panel could consider an interview assessment with the applicant or recommend "Disapprove without interview". The purpose of the interview is to assess whether the applicant possesses the core competencies and practical experience required for a BIM Coordinator. An incomplete or loose application (with irrelevant BIM experience or loose description of practical experience in BIM) may result in "Disapprove without interview".

Upon completion of the assessment, the assessment panel will make a recommendation to the HKIS BIM Committee for approval or disapproval. If the applicant selected to apply for certification as CIC-Certified BIM Coordinator in the same application, his application documents will also be passed to the CIC for review and approval/disapproval.

5.3 It is expected that the application process will take, after receiving all necessary documents, around 4 to 6 months in normal circumstances. The application process consists of 3 stages:

(a) documents verified by the HKIS.
(b) assessment or interview assessment performed by the assessment panel after reviewing the submitted documents.
(c) approval/disapproval by the HKIS BIM Committee/ CIC BIM Certification and Accreditation Board (where applicable).

6. Guideline on BIM Education in Operation Level

6.1 BIM software/platform training course in operation level as/to be recognised by CIC

In general, for any BIM software/platform training course to be recognised by the HKIS/CIC (where applicable), it should be able to provide adequate lecture session and hands-on session for the participants to acquire essential knowledge and skills on general operation of the respective BIM software/platform (Plugin, Add-on and non-BIM related software would not considered). A certificate of successful completion of the course (or equivalent) should be submitted by the applicant to the HKIS. For courses that are not on the list of CITF Pre-approved BIM training courses, they will be considered on a case-by-case basis. Applicants may be required to submit supplementary information about the course for our vetting as below:

(a) Proof of participation and completion of the course. (For courses such as company internal training or subjects/modules in an academic programme.)
(b) Course information such as course start/completion date, course duration, course outline, course learning outcome, course content, course assignment, name of instructor/tutor/lecturer, etc.
(c) School information such as name, address or website of the school/teaching premises, etc.

For CITF Pre-approved BIM Training Courses that are recognised by CIC:

Skill Level: 2 to 3 is expected (except for accredited BIM coordinator courses in the list).

6.2 Certification of BIM software in operation level issued by respective software developers

Alternatively, applicants can submit any Certification of BIM software/platform in operation level officially issued by respective software developers. Such as Autodesk Certified User, Autodesk Certified Professional, Certified ARCHICAD User, Tekla's Professional Certification, etc. Plugin, add-on and non-BIM related software would not be considered.

(Remarks: The possession of such certificate (or equivalent) is only one of the assessment criteria of the listing of the Surveyor BIM Co, but does not indicate that the applicant possesses the required minimum competency level of Core Competency 2 (Level 3) as stipulated in this certification.)

7. Notification of Assessment Result

7.1 Applicants will be recommended listing as a HKIS Surveyor BIM Co if the assessment is favourable. Applicants will be informed of the result by mail.

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 by cheque which should be made payable to "The Hong Kong Institute of Surveyors". All payments received are non-refundable, non-endorsable and non-transferable.

9. Validity of Listing

9.1 The listing/certification status of a Surveyor BIM Co shall be valid from the date of granting the listing status up to the end of that calendar year, and the name of the Surveyor BIM Co will be placed on the List of HKIS Surveyor BIM Co.

9.2 The Surveyor BIM Co should attend and keep records of the BIM-related CPD of at least 12 hours per year. They may be requested to provide evidence of the BIM-related CPD, without which the Surveyor BIM Co status will be removed from the List of Surveyor BIM Co.

9.3 If a Surveyor BIM Co who is also a CCBC, but cannot maintain his/her CCBC status for whatsoever reasons, the HKIS will remove him/her from the "List of Surveyor BIM Co".

10. Application for Reinstatement

10.1 A person whose Surveyor BIM Co status is removed may, within 2 years of the date of removal from the List, apply for reinstatement. The applicant is required to submit the relevant documents such as evidence of BIM-related CPD hours and others if requested.

10.2 A person whose Surveyor BIM Co status has been removed for more than 2 years, will need to submit a fresh application as a Surveyor BIM Co and the procedure given in Section 4 applies.

11. Appeal Cases

11.1 An applicant for listing as a Surveyor BIM Co, including reinstatement of listing, who is dissatisfied with a decision of the HKIS BIM Committee may appeal to the HKIS, no later than 21 calendar days after receiving notification of the decision:
(a)   a completed application form for appeal; and
(b)   an application fee (HK$1,500).

11.2 Upon receipt of an appeal case with all necessary documents, the HKIS will form an Appeal Panel to review the case. The decision of the Appeal Panel is final. The Appeal Panel will inform the HKIS BIM Committee 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 The completed Application Form, together with all necessary supporting documents, should be submitted to the HKIS by hand or recorded delivery.

13. Enquiry

The Hong Kong Institute of Surveyors
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                111 Connaught Road Central,
                Sheung Wan, Hong Kong.
Tel No: (852) 2526 3679
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Core Subjects for Assessment as a Surveyor BIM Co under the HKIS

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. BIM Initiation	**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 them		✓		
	1.1.9	How BIM affects 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		✓		

		Core Subject	L1	L2	L3	L4
2. BIM Software and Technologies		*2.1. BIM Software*				
	2.1.1	Overview of common BIM software		✓		
	2.1.2	Characteristics, file format & version, strength and limitation of common BIM software and platform		✓		
	2.1.3	General hardware and software requirements for common BIM software		✓		
	2.1.4	Operation of relevant BIM authoring software			✓	
	2.1.5	Technical advice on the operation of relevant BIM 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	✓			

	Core Subject	L1	L2	L3	L4
	3.1. – BIM Uses and Processes				
3.1.1	General understanding of the workflows in local construction projects	✓			
3.1.2	BIM strategy, BIM uses, BIM processes		✓		
3.1.3	Key personnels in relation to BIM and their roles and responsibilities	✓			
3.1.4	BIM related documents such as Exchange Information Requirements (EIRs), Asset Information Requirements (AIRs), BIM Execution Plan (BEP) throughout the full project life cycle			✓	
3.1.5	Applications of various technologies to achieve BIM uses		✓		
	3.2. – Administration of the BIM projects as a project BIM coordinator				
3.2.1	Project implementation following the BEP			✓	
3.2.2	Setup, creation and publishing of BIM models following BIM related documents such as BEP or BIM standards			✓	
3.2.3	Establish and maintain data structures or links throughout the BIM processes			✓	
3.2.4	Administration and maintenance of BIM models in BIM project				
	3.2.4.1 Monitor overall BIM models work progress			✓	
	3.2.4.2 Coordination of BIM models with internal or other disciplines			✓	
	3.2.4.3 Maintain the BIM models appropriately and compile with BIM documents such as BEP or BIM standards			✓	
	3.3. – Execution of BIM Uses for single and multi-disciplinary coordination in BIM project				
3.3.1	Spatial Coordination and 3D Construction Coordination (As stated in CIC BIM Standards General)			✓	
3.3.2	Phase Planning (4D Modelling) (As stated in CIC BIM Standards General)			✓	
3.3.3	Design Reviews (As stated in CIC BIM Standards General)			✓	
3.3.4	Drawing Production directly from BIM software / platform			✓	
	3.4. – Assist in BIM related meetings				
3.4.1	Meeting with appointing party			✓	
3.4.2	Meeting with Lead Appointed Party and/or Appointed Parties			✓	
3.4.3	Internal meeting			✓	
3.4.4	Multidiscipline collaboration meeting			✓	
3.4.5	Site co-ordination meeting			✓	

Row label (vertical): 3. BIM Uses and Processes

		Core Subject	L1	L2	L3	L4
4. Digital Information Management, Collaboration and Integration		***4.1. Digital Information Management***				
	4.1.1	Value of data & how it should be managed		✓		
	4.1.2	Common data formats and open formats for BIM (BCF, IFC, IDM, bsDD, COBie, MVD, etc.)		✓		
	4.1.3	Data exchange of relevant BIM software for single/multiple discipline(s) collaboration			✓	
	4.1.4	Limitation of BIM software in relation to information management		✓		
	4.1.5	Maintain proper Level of Development (graphics and information) of the dataset			✓	
	4.1.6	Establish and maintain data structures or links within the BIM software/platform protocol			✓	
	4.1.7	Maintain accurate data set such as templates, standards, libraries, project files, drawings, design specifications and project schedules			✓	
	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	Administration and maintenance of CDE including relevant project information standards and project information management methods and procedures			✓	
	4.2.4	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 including Clash avoidance strategies and Clash detection resolution methodologies			✓	
	4.3.4	Audit reporting			✓	