

Construction Industry Council
BIM Certification and Accreditation Schemes

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

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 Coordinators.

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 Coordinators

2.1 The Certification of BIM Coordinator is targeted at BIM practitioners who already have relevant practical experience in BIM projects, meet the relevant academic requirement 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 professional conduct and ethical behaviour, as all CIC-Certified BIM Coordinators are expected to uphold the standing and reputation of the CIC and the BIM profession.

3. Core Competencies of a BIM Coordinator

The Core Competencies of a BIM Coordinator are:

- (a) BIM Initiation (Ability to describe BIM concept definitions and scope, BIM standards and guidelines in Hong Kong and global contexts). [Level 2]
- (b) BIM Software and Technologies (Ability to operate BIM software¹ 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]

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

4. Assessment Criteria for Normal Route

4.1 The following assessment criteria will be adopted for Certification of BIM Coordinator:

- (a) Qualification – A diploma (or equivalent) in Qualifications Framework (QF) Level 4 or above qualification accredited or recognised by a CIC-recognised professional body² in architecture, engineering, surveying, building or construction, or equivalent, as recognised by CIC, plus 3 years of full-time relevant work experience (with at least 6 months stationed in Hong Kong).
- (b) 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 Certification of BIM Coordinators. *Examples of BIM project coordination and related task 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*

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 List of CIC-recognised professional body is available on website of BIM Department of CIC (<http://www.bim.cic.hk/>).

related meeting internally or externally, performing BIM data quality control/checking or assurance in BIM projects, etc.. Or refer to Annex B for more examples.

- (c) BIM education – successful completion of:
- a. A CIC-Accredited BIM Coordinator Course, or a CIC-Accredited BIM Coordinator Top-up Course for CCBMs, **PLUS**;
 - b. 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 7) OR any equivalent as accepted by CIC.
- (d) Client³ and Employer⁴ 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. Online Employer and Client (if appropriate) evaluation forms of selected project(s) will be sent to your Employer and Client (if appropriate) by the system 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).
- (e) Professional conduct and integrity demonstrated by the Client and Employer Evaluation Forms, applicant's professional disciplinary history and conviction records (if any) and applicant's interview performance (if any). 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 BIM Certification and Accreditation Board (BIMCAB) and removed from the 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.

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.

4.2 A 'Supplementary Guide on Preparing the Application for Certification as CCBC 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 required to read through the supplementary guide.

5. Adept Route for Applying Certification of BIM Coordinators

5.1 Applicants, who do not have the required academic qualification under the Normal Route, can consider to apply through an Adept Route. The assessment criteria of Adept Route are as follows:

- (a) Qualification – No need to possess a CIC-recognised diploma (or equivalent) in Qualifications Framework (QF) Level 4 accredited or recognised by a CIC-recognised professional body in architecture, engineering, surveying, building or construction, or equivalent, as recognised by CIC, but need to possess 6 years of full-time relevant work experience (with at least 2 years stationed in Hong Kong).
- (b) Practical experience in BIM project coordination and related tasks – at least 2 years full-time relevant BIM experience in BIM projects in the latest five years (with at least 1 year stationed in Hong Kong), that able to demonstrate the applicant possessing the required levels of the Core Competencies as stipulated in the Certification of BIM Coordinators. *Examples of BIM project coordination and related task 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.. Or refer to Annex B for more examples.*
- (c) BIM education – successful completion of:
 - a. A CIC-Accredited BIM Coordinator Course, or a CIC-Accredited BIM Coordinator Top-up Course for CCBMs, **PLUS**;
 - b. 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 7), OR any equivalents accepted by CIC.
- (d) Client and Employer 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. Online Employer and Client (if appropriate) evaluation forms of selected project(s) will be sent to your Employer and Client (if appropriate) by the system 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).

- (e) Professional conduct and integrity demonstrated by the Client and Employer Evaluation Forms, applicant's professional disciplinary history and conviction records (if any) and applicant's interview performance (if any). 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 BIM Certification and Accreditation Board (BIMCAB) and removed from the 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. Processing and Assessment of Applications for Certification of BIM Coordinators

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

- (a) completed an online application form through "MyPortal" in CIC BIM Portal (www.bim.cic.hk);
- (b) application fee (HK\$500);
- (c) certified true copies of academic qualification certificates related to a diploma (or equivalent) in Qualifications Framework (QF) Level 4 or above qualification 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 3 years of full-time relevant work experience (with at least 6 months stationed in Hong Kong));
- (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 by CIC. The applicant should ask his/her client and employer to fill in the standardised evaluation forms and return to CIC 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

BIM Assessment Panel (BIMAP) can have a more thorough understanding of the applicant's experience and capability in BIM coordination works;

- (e) evidence of completing
 - a. 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**
 - b. 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 7);
- (f) A curriculum vitae; and
- (g) A portfolio of BIM work examples (*for the selected project(s)*).

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.**

6.2 The CIC BIM Assessment Panel (BIMAP) will review the content 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 BIMAP could recommend "Approve without interview" to the BIMCAB. Otherwise, the BIMAP 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 (cannot submit all documentary evidence in 5.1) or loose application (with irrelevant BIM experience or loose description of practical experience in BIM) may result to "Disapprove without interview".

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

The certification status of a BIM Coordinator 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 Coordinator will be placed on the CIC-Certified BIM Coordinator Register.

6.3 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 Construction Digitalisation Department of CIC.

- (b) assessment or interview assessment performed by BIMAP after reviewing the submitted documents.
- (c) approval/disapproval by BIMCAB.

7. Guideline on BIM Education in Operation Level

7.1 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 CIC, 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 CIC Construction Digitalisation Department. 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. Please note that 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 course 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).

7.2 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: Please note that the possession of such certificate (or equivalent) is only one of the assessment criteria of the Certification of the BIM Coordinators but does not indicate that the applicant possesses the required minimum competency level of Core Competency 2 (Level 3) as stipulated in this Certification.

8. Notification of Assessment Result

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

9. Payment

9.1 Fee payable

A non-refundable application fee of HK\$500 is required for the application.

9.2 Payment Method

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

10. Certification Validity

10.1 The certification status of a BIM Coordinator 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 Coordinator will be placed on the CIC-Certified BIM Coordinator Register.

11. Renewal of Registration

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

11.2 Upon receipt of the renewal application form, the CIC-Certified BIM Coordinators 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) submit renewal application form in “MyPortal” (www.bim.cic.hk), confirming that they have undertaken at least 12 hours of BIM-related Continuing Professional Development (CPD) in the past year, and associated documents if applicable; and
- (b) renewal fee (HK\$250).

The CIC-Certified BIM Coordinators should keep records of the BIM-related CPD undertaken during the year (including attendance at any CIC-recognised courses, conferences, talks or seminars, documented self-study, etc.). They may be requested to provide evidence of the BIM-related CPD 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 if required. On completion of the assessment, BIMAP will make a recommendation to BIMCAB.

11.3 There would be a remark column indicating “Expired” status in the CIC-Certified BIM Coordinator 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 CCBC title and logo would be prohibited after the date of expiry of their certification.

12. Application for reinstatement

12.1 A person, whose CIC-Certified BIM Coordinator status is expired, can apply for reinstatement of the certification within 2 years of the date of expiry of the last certification. Applications for reinstatement should be made in “MyPortal” (www.bim.cic.hk) following the procedure described in Section 11.2. 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.

12.2 A person whose name has been removed from the CIC-Certified BIM Coordinators Register 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 Coordinator and the procedure given in Section 4 applies.

13. Appeal Cases

13.1 An applicant for certification as a BIM Coordinator, 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 the issue date of the result notification letter :

- (a) a completed application form for appeal (Form PN03-F-03); and
- (b) an application fee (HK\$1,500).

13.2 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.

13.3 Applicants will be informed of the result by mail.

14. Application

14.1 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.

14.2 The completed Application Form with all necessary supporting documents should be submitted by email to bimcas@cic.hk or by post to the Construction Digitalisation Department of CIC at the following address:

Private and Confidential - Application for Certification of BIM Coordinator

Construction Digitalisation Department - Construction Industry Council

38/F, COS Centre

56 Tsun Yip Street

Kwun Tong, Kowloon

15. Enquiry

Construction Digitalisation Department - Construction Industry Council

38/F, COS Centre

56 Tsun Yip Street

Kwun Tong, Kowloon

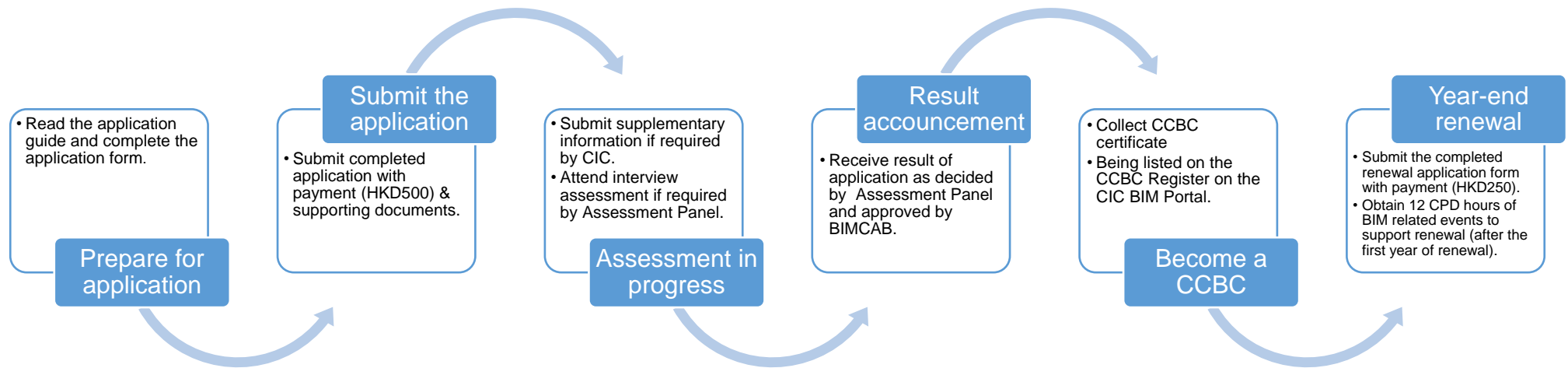
Tel : 2100 9000

Fax : 2100 9090

Email : bimcas@cic.hk

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How to become a CIC-Certified BIM Coordinator?



List of Core Subjects of a BIM Coordinator 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. 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. BIM Uses and Processes	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			✓	

-	Core Subject	L1	L2	L3	L4
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			✓	

-	Core Subject	L1	L2	L3	L4
4. Digital Information Management, Collaboration and Integration	<i>4.1. Digital Information Management</i>				
	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			✓	
	<i>4.2. Common Data Environment (CDE)</i>				
	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		✓		
	<i>4.3 – Data Quality Control & Assurance across various stages</i>				
	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			✓	