BIM Initiatives by Construction Industry Council

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About the Construction Industry Council

- Construction Industry Council (CIC) was established under the Laws of Hong Kong: Chapter 587 - CIC Ordinance - to coordinate Hong Kong’s construction industry including Government, public and private works

- Vision & Mission:
  - To drive for construction industry’s unity & excellence
  - To strengthen the sustainability of construction industry

Committee on Environment, Innovation & Technology

Working Group on Roadmap for BIM Implementation

Task Group on Establishment of Industry Standard for BIM Implementation
Positioning of BIM from Hong Kong’s Perspective

• Building Information Modelling (BIM) is not just a three dimensional drawing tool but a new way of holistically managing information related to construction projects, from planning to design, construction and operations.

• It offers a new method of working that uses modern technology to facilitate project management and execution. BIM enables better control of the construction process and enhance cross-disciplinary collaboration, internal coordination, external communication, problem solving, decision-making support, productivity management and risk management.
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Comparison of Leading Practice Countries and Hong Kong Practice
The General Services Administration (GSA) is a pioneer in advocating the adoption of BIM for public sector projects. GSA has developed a suite of BIM guidelines for submission for major federal government projects.

Since 2006, the GSA has included spatial programme BIMs as part of the minimum requirements for submissions to the Office of Chief Architect for final concept approvals.

USA is a mature BIM market leading the BIM best practice.
BIM Adoption in the Leading Practice Countries – Singapore’s Initiatives

- The nationwide BIM implementation roadmap was issued in 2011.

- BIM submission for regulatory approval via CORENET is being implemented.

- BIM is used as part of the public sector building project procurement process. BIM submission has been mandatory for new building projects over 5,000m² since 2015.

- The Building Information Model (BIM) fund is offered by Building and Construction Authority (BCA) with an aim to help firms build up BIM collaboration capability by defraying part of the cost incurred in training, consultancy, software or hardware.
The UK Government has explicitly set a minimum target in achieving Level 2 of BIM Maturity for all public-sector work by 2016 so as to enable all members of the supply chain to work collaboratively through BIM.

It requires fully collaborative 3D BIM (with all project and asset information, documentation and data being electronic).

BIM Adoption in the Leading Practice Countries – UK’s Initiatives (cont.)

Source: https://www.google.com.hk/search?q=BIM+Standards+BS1192:2007&espv=2&biw=1164&bih=777&source=lms&tbm=isch&sa=X&ved=0CAYQ_AUoAWoVChMi5Ou40qOtxwIVzJGUCh2IDw0P&dpr=1.1#imgrc=o9OPhO7HFnVvM%3A
BIM Adoption in Hong Kong – Public Housing

Site Planning & Sequence Simulation

Financial Control & Progress Tracking
BIM Adoption in Hong Kong – Railway

Shatin to Central Link

Express Rail Link
BIM Adoption in Hong Kong – Airport

Midfield Concourse

CX Cargo Terminal
BIM Projects in Hong Kong – Public Facilities

3D Laser Scanning & Photogrammetry for Heritage Information Management

Kai Tak Nullah Improvement Works
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BIM Collaboration with CIC

• Hong Kong BIM stakeholders are being collaborated through the CIC to work together towards strategic implementation of BIM in Hong Kong’s construction industry.

• The BIM implementation in Hong Kong’s construction industry by CIC is taking both:
  1. Push Strategy
     - to advocate project clients and asset owners to adopt BIM
  2. Pull Strategy
     - to facilitate industry-wide buy-in and industry-wide ready

• CIC has collaborated around 30 stakeholder organisations from public clients, private clients, architectural, engineering, surveying, BIM professional institutes, trade unions, academia, etc, in Hong Kong.
Working Group on Roadmap for BIM Implementation

Professionals / Specialists

The Association of Architectural Practices

Project Clients

The Development Bureau

Contractors

HK General Building Contractors Association

Academics

The Chinese University of Hong Kong
Roadmap for BIM Strategic Implementation in Hong Kong’s Construction Industry

Aims:
- Identify current benefits & constraints of BIM implementation
- Blueprint and set out industry-wide BIM implementation strategies

Work started in 2011 with final version published in 2014
The 17 recommended initiatives in 9 areas:

1. Collaboration
2. Incentive & Proven Benefit
3. Standard & Common Practice
4. Legal & Insurance
5. Information Sharing & Handover
6. Promotion & Education
7. Compliant BIM Tool
8. Audit & Risk Management
9. Global Competitiveness
Imminent Actions

**PROMOTION & AWARENESS PROGRAM** – to carry out promotions targeting industry stakeholders who are not familiar with the use and benefits of BIM, or who are observers or new to the idea of adopting BIM, especially the top management of major project clients. As the key drivers of BIM adoption, it is important that these stakeholders appreciate the benefits of BIM and prepare their organisation to adopt BIM. Promotion should not be limited to local practitioners but also include regional and international practices;

**ESTABLISHMENT OF STANDARD** – to devise a set of standards or specifications to facilitate the wider use of BIM in construction projects. Standards should include, but are not limited to: (i) Project Execution Plan; (ii) Modelling Methodology; (iii) Level of Detail; and (iv) Component Presentation Style and Data Organisation. The scope should include, but not be limited to architectural, structural, civil engineering, and MEP BIM models in stages of conceptual, preliminary design, detailed design, construction and as-built;

**TRAINING** – to develop the industry’s BIM capacity by driving curricular change in construction-related and computer science academic programmes, and provide BIM training in three areas: BIM model development; management of BIM; and use of BIM models.
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Promotion and Awareness Program

BIM Year 2014 - To Arouse BIM Awareness
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Promotion & Awareness Program
- Conferences, Seminars, Exhibitions, Official Meetings
Promotion & Awareness Program - Publication & Media Exposure
Promotion & Awareness Program
-BIM Excellence Awards 2014

• An industry-wide BIM excellence awards

• Awards: BIMer of the Year, Young BIMer of the Year, Construction Innovator by BIM

• To recognise practitioners who have spearheaded an effort in the harnessing of BIM technology & process
- Purpose
  To establish a set of industrial specifications & common practice to facilitate the wider use of BIM in construction projects.

  Drafting started in early 2014 with consultation from industry-wide stakeholders.

- Scope
  Architectural & structural & MEP models in the entire project life-cycle including conceptual / preliminary design, detailed design, construction & as-built.

- Available at the CIC website: -
Standard & Common Practice
- CIC Building Information Modelling Standards

Four major chapters

1. Project Execution Plan
   Define project management and execution on strategy, collaboration process, production, and data segregation

2. Modelling Methodology
   Enable model development/build-up which facilitates efficient use, re-use of BIM data and model with modelling data consistency by own discipline and other disciplines

3. Level of Development
   Specify the intended graphical scale and how much details are needed for architectural and structural models for stages of conceptual, preliminary design, detailed design, submission to approving authority, construction and as-built

4. Component Presentation Style & Data Organisation
   Facilitate standard appearance, style, size, properties, categories, units and measurement, data structure and naming conversion, etc.
**Aim**
- With local practice, to provide a quick third party method in quality checking of drawings using BIM technology before submission to statutory authorities & concerned Gov’t Depts.

**Benefits**
- Reduce time in manual checking
- Avoid errors & rejections

**Deliverables**
- A set of specifications, steps, and methods to achieve a semi-automatic or automatic computational solution
- Target to launch in 2016
BIM Standards for the Submission of General Building Plan to Statutory Authorities and Concerned Government Departments

Scope
To check for:

- Fundamental standards as per current Practice Notes issued by statutory authorities and concerned Gov’t Depts
- Gross Floor Area
- Means of Escape
- Sanitary Fitment Provision
- Fire Compartment
- Fire Resisting Construction
BIM Training
- Build up Intelligence and Share Good Practice

4 Levels of Training Program
- BIM Management
- BIM Coordination
- BIM Modelling
- Use of Built BIM Model

Focus on BIM Management
- Management of BIM Process
- Collaboration Through BIM
- Corporate Strategy for BIM Adoption
- Culture Change for New Management Decision Making Support by BIM
- Sustainability by BIM
- Contract & Legal Aspects in Relation to BIM
BIM Training
- CIC BIM Innovation and Development Centre

• Hong Kong’s largest BIM Innovation and Development Centre

• Equip with the latest BIM solutions & 3D technologies (e.g. 3D printer, 3D scanner, photogrammetry, etc.)

• Support SME

• Repository of best practice, for examples, BIM families library & demo projects

• To be launched in 2015
To facilitate project clients in the development of their own BIM implementation strategies

To develop action plan & implementation strategy for each of the private, public and government sectors

Strategy Reports will be published for the project clients’ reference in 2015
BIM Training
- BIM-FM Demo Project at ZCB

A joint BIM project between CIC & EMSD

To demonstrate the use of BIM-FM in:
• Energy performance analysis
• Facilities / assets management
• Mobile platform
• Integration with BMS system
• Real-time location tracking with RFID
• Renovation / alteration planning
BIM Training
- Course Accreditation & Registration for BIM Professionals

BIM Training Accreditation Program
- Provide quality assurance & confidence level of training program
- Standardise training courses requirements
- Support Registration for BIM Professionals

Registration for BIM Professionals
- Build up capacity of BIM professionals
- Build up ladder for BIM professionals
- Facilitate the quality & continuous development of BIM practitioners
- Standardise BIM qualification & recognition of BIM professionals
- Provide employer to have a fair view of BIM skill level of their employee
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Way Forward

Collaboration
- Pursing regional collaboration of BIM

Training
- Driving Hong Kong as one of the leading markets of BIM professionalism

Promotion
- Being an active collaborating body in promoting BIM adoption
Submission Deadline: 1 September 2015
Website: http://cicinnovationaward2015.hkcic.org/en/home