Integrating CANVAS in BIM-facilitated Quantity Surveying Education at CAVE Room: Case Study of Kwong Wah
Hospital (Phase I) Re-development in Hong Kong

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Abstract

Nowadays, the AEC (Architecture-Engineering and Construction) industry is facing a technological change represented by the transition from CAD-based (Computer Aided Design) documentation to BIM (Building Information Modeling). BIM takes architectural design to the next level by offering expanded range of possibilities due to the immense amount of information which can be encapsulated and later extracted from digital models. BIM will also become the DNA of future construction. In addition to the traditional 3D design modelling, BIM facilitates collaborative working amongst various project parties in 4D (time), 5D (cost), and 6D (operations) manner. BIM can be used to assist in performing quantity surveying and cost estimation from the beginning of the design process. This BIM-facilitated quantity surveying process allows the project team to make informed decisions on project constructability and curb excessive budget overruns due to project modifications, especially on some mega-specialist projects, such as re-development of hospital, etc.

Kwong Wah Hospital, located in the Yau Ma Tei district of Kowloon, was established in 1911, and most of the buildings are more than half a century old. The redevelopment, slated for completion by 2025, will solve a number of problems the hospital faces including overcrowding, outdated facilities and deteriorating structural conditions. So, this case is picked up by team members for the proposed TDG.

The concept of BIM will certainly improve and enhance the quality and efficiency of the surveying services to the Hospital Authority. The awareness of adopting BIM in building construction has been rapidly increasing in Hong Kong. Many AEC professionals are beginning to use and gain acquaintance on BIM. According to a survey study conducted by the Royal Institution of Chartered Surveyors (RICS, 2011), quantity surveyors nowadays believe that guidance and training on BIM are needed. In fact, the Hong Kong Institute of Surveyors (HKIS) has been actively involved in promoting the use of BIM among its members and already set up a BIM sub-committee to foster knowledge exchange between quantity surveying (QS) practitioners. In addition, the Housing Authority of Hong Kong aims for all new projects from 2014/15 onwards to use BIM.

BIM is a new way of working in the AEC and Hospital Redevelopment industry. BIM facilitated quantity surveying is a definite trend that the young generation should start to learn and use now in order to gain the competitive advantages

in the QS profession. CityU should take the leading role in integrating this innovative and emerging BIM education into the current HKIS accreted ACE programs.

One of the main advantages of BIM is facilitating interactive and cooperative information sharing and understanding amongst project team members. A flexible and engaging learning platform is thus important for students to understand the complexity of working in interdisciplinary teams and managing collaborative design and production. The CANVAS system, an existing CITYU e-learning management system which aims to create online learning environment with a focus on interaction and collaborative construction of content, is thus proposed to be incorporated at the CAVE room (@Library, CityU) in the teaching curriculum for this new technology.