

‘From Ideas to Building Elements’ Learning Package (I2Be): A discovery-enriched 4-stage learning package for construction technology of local building projects

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Abstract

Traditionally, students learn construction technology topics through lecture notes, textbooks and photos. Videos and interactive animations are then commonly adopted as an effective mean to illustrate the essential knowledge such as construction work sequence. The learning process about construction technology can be further extended from virtual learning materials to real objects by using 3-D printing technology. This does not only enhance both teaching and learning through student engagement, but also promote creative thinking and discovery learning while students are able to put their new ideas into practice.

‘From Ideas to Building Elements’ Learning Package (I2Be) is a unique interactive discovery-enriched learning tool that facilitate a 4-stage learning process to construction technology of local building projects. The four stages are defining functional requirements based on the characteristics of the proposed building element, proposing construction details to meet the functional requirements, proposing innovative ideas taking into account the sustainable design and buildability concept for improving the building element design, and making the model of the proposed design to verify its feasibility in practice as well as to enhance students’ construction communication skill via 3-D printing technology.

A Website will be developed as the platform for the operation of the I2Be. A student-contributed database for the innovative design of the common building elements will also be gradually built up and this repository will serve as the essential self-learning materials for building technology of local projects.