The development of a Discovery-enriched and self-sustained Teaching and Learning Package for Construction Site Layout Planning Analysis adopting the Interactive Augmented Reality technology (DESLA-Package)

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Abstract:

The design for each building project is unique and the construction site layout planning is one of essential topics in construction management courses. The Discovery-enriched and self-sustained Teaching and Learning Package for Construction Site Layout Planning Analysis adopting the Interactive Augmented Reality technology (DESLA-Package) will enable the students to conduct the self-motivated study to explore new approaches, share of findings and develop an up-to-date repository about the construction site layout planning analysis for local building projects.

In this teaching development project, students will be requested to visit and record the construction site layout of a current local building project and transform the site map into the Augmented Reality QR-code Display Cards. Students then can use the off-the-shelf augmented reality software with their site map Display Cards and the Display Cards for the standard temporary production facilities such as tower cranes to generate 3-D images for construction site layout. Students can analyze different scenarios by simply adjusting the position of the site facilities by hand and changing different type of Display Cards for construction site map, tower crane and building types. This facilitates students to compare the actual construction project site layout with their analyses and draft comments for each scenario. Students can then capture the 3-D construction site layout analyses together with their comments and submit them to a Database of a website through a tailor-made Smart Mobile Phone App. Students are welcome to share their comments on the submissions by their classmates in the website. A Database for the site layout analysis for local building projects with student comments will gradually be developed as the essential self-learning materials and this self-sustaining database can also be used for further research work in this area.