

Warawit Sangkaew 2007: Three-Dimensional Object Oriented Model for Building Information Modeling in Java Environment. Master of Engineering (Civil Engineering), Major Field: Civil Engineering, Department of Civil Engineering. Thesis Advisor: Mr. Suphawut Malaikrisanachalee, Ph.D. 113 pages.

A three-dimensional building model can minimize building design errors, improve communication within a construction project, and is a useful tool for construction project management throughout the project life cycle. Although a number of existing commercial software can generate a 3D building model, each software presents its own limitations and most of them are expensive. Most importantly, the software are proprietary and restricted for further research and development. Java offers an alternative platform for developing a 3D building model without having to rely on commercial software. This research investigated a practical approach for developing a 3D object-oriented building model in java environment where a three-storey reinforced concrete building was used as a case study. The result shows that java is a promising approach where the 3D object-oriented building model developed in java environment can 1) show both 2D and 3D views of the building from all angles; 2) automatically generate section and plan views of the building based on the section plane defined by user; 3) display in transparency mode to show inside details and reinforcing steels; 4) display in wireframe mode; 5) display in shading mode where user can easily define color and texture of each member; and 6) automatically calculate volume, formwork area, and painting area of each member.



Student's signature



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