



## A cost-based interior design decision support system for large-scale housing projects

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In the early stages of a large-scale housing project, many interior design alternatives remain to be confirmed after a rough review of the costs. The project participants move on to the later stages of budgeting and construction without the exact information on the interior costs, and several occasions may arise when costs increase or time delays occur, driven by interior design specification changes resulting from the client's evolving demands during construction. Therefore, it is necessary to determine the costs during the decision-making process for interior design items in an apartment unit plan. This study implements a decision support system for a large-scale apartment building project in which the clients can make cost-based decisions that meet their requirements, while the builders can control both resource planning and interior design construction costs. To perform a cost review for a housing project with a uniform apartment plan, it is necessary to manage the information for the basic apartment plan constituting the interior information. In this study, we developed an information model to support cost-based decision making in the interior design phase. An interior design object library was developed by analysing the relationship of the housing project hierarchy and interior information attributes. The proposed model was validated in an example study to show that the model could support the decision-making process of various project participants by providing real-time cost information when the interior design was created or changed.

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