

UNIVERSITI TEKNOLOGI MARA

**A STUDY ON THE EFFECTIVENESS
OF 3D SOFTWARE IN THE
ARCHITECTURE DESIGN PROCESS**

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Thesis submitted in fulfillment
of the requirements for the degree of
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AUTHOR'S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

3D software and renderings have become the everyday feature of an architecture design process. The aim of using 3D technology is to reinforce and serve as a foundation for architects and engineers in their process of designing, structuring, and managing the projects as well as utilised for promoting property in order to boost viewer's purchasing confidence. It is particularly challenging to select the best 3D software and its feature, that can deliver effectiveness and increase efficiency in the overall development process. This attributed to issues of which is the best 3D software for architecture industry and how far has the features of the 3D software being utilized. Taking Malaysian architecture industry as a sample, this research project has investigated the extent, nature, and reasons for the problems that have arisen. In particular, it has focused on examining the quality and effectiveness of the 3D software associated in facilitating information in the architecture design process and supporting property buyer experiences. The analysis has been conducted empirically, by first comparing the architecture design process, the 3D software associated with it and the role of 3D software and rendering against best practice, as described in the international literature. An ethnographic study was then undertaken to discover how the 3D software is used and utilised in the architecture design process, and to investigate the stakeholders (architects, engineers and contractors) perceptions of its usability and effectiveness. Finally, to understand how issues may have arisen, a review of the development process has been undertaken and it has been compared to development methods recommended in the literature, as well as the guidelines provided by the software publisher. The outcomes of the project include an empirical evaluation of the usage of 3D software among Malaysian architects at present; the identification of other issues that have affected its uptake; an evaluation of the roles of 3D software in the design process and as well as its effectiveness in promoting property via visualisation, out of this, an extended set of principles to guide the choice of efficient 3D software and effective 3D to ensure that it accommodates the various stakeholders needs.

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