

Existing Building Approval Submission Process Improvement Effect Analysis thru Utilization of BIM

Yeo, Chang-Jae¹ and Yu, Jung-ho²

Abstract: Advanced countries have mandated applying BIM in construction projects. Also, Public Procurement Service has planned to mandate applying BIM to all construction project that ordered in PPS from 2016 in KOREA. However, now Seumter that is building administration system is not supported BIM based construction license BIM information from Seumter. Thus, despite the applicant is preparing a BIM model, they do not take advantage of BIM information in Seumter. In previous studies. We developed a BIM based building approval submission system. In this study, we verified the system that developed in previous research. As a result, requirement information input time reduction in Seumter system showed high satisfaction. But there was as low usability because building approval submission system cannot support some information for building approval in seumter. If the system will do utilization and management with the building approval system, the applicant can be using BIM base design document information and saving the time that takes at building approval submission. Study about the system improvement is required for application to building approval system.

Keywords: BIM, Building Approval System, Seumter, IFC

I. INTRODUCTION

The U.S., UK, Singapore and other advanced countries have mandated the use of BIM in construction projects. As an example, in Singapore since 2013, the Building & Construction Authority (BCA) has developed and implemented a system that extracts BIM design information and reviews propriety, etc. In Korea, the Public Procurement Service plans to mandate the use of BIM in all public construction projects from 2016. Currently, however, Seumter (the Korea Building approval system), a building administration system does not support a BIM-based construction license application process. Building approval submissions thru Seumter encounter the following problems. First, a considerable amount of time is spent because of file management confusion, with repeated requests for data on each building and each floor. Additionally, this is input is usually done by one person. Second, the possibility of error is high due to the manual nature of this work. As such, we reviewed the building approval submission process to make process improvements and apply BIM.

We distinguished information that can take advantage of BIM information in the license application process. We further created a BIM-based building approval submission process.

We analyzed process improvement effects that came about due to application of BIM though design work and applying Seumter System. As a result, the BIM based process can reduce process time over existing process. Additionally, automation reduces possible user errors in submitting information. The use of BIM information for the building approval submission process can increase productivity. Future studies can further verify and

examine the effectiveness of transitioning current manual processes to BIM-based approaches.

ACKNOWLEDGE

This research was supported by a grant(15AUDP-C067809-01) from Architecture & Urban Development Research Program funded by Ministry of Land, Infrastructure and Transport of Korean government.

REFERENCES

- [1] CORENET e-Submission system, <https://www.corenetess.gov.sg/ess>
- [2] Ministry of Land, Transport and Maritime Affairs, BIM Adaption Guide for Architecture area, 2010.
- [3] Seumter, <https://www.eais.go.kr/>
- [4] GOV.UK, <https://www.gov.uk/>
- [5] Karam Kim, Jungho Yu and Ingan Kim, "Methodology for Generating Information Requirement for BIM based Building Permit Process", Transactions of the Society of CAD/CAM Engineers, vol. 20, no1, pp 1- 10, 2015.
- [6] Seungeun, Yu, Karam Kim, Jungho Yu and Ingan Kim, "A BIM-based Building Approval Submission System", Transactions of the Society of CAD/CAM Engineers, vol. 20, no2, pp 171- 181, 2015.

¹ Research Assistant, Kwangwoon University, yeocj89@kw.ac.kr

² Associate Professor, Kwangwoon University, myazure@kw.ac.kr(*Corresponding Author)