CONVERTING DRAWINGS AND SPECIFICATIONS OF BUILDING STOCK TO BIM MODEL

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1. Introduction

Now, the conservation of a large amount of building stock constructed during the period of high economic growth is the problem to be solved immediately in Japan. Most of these buildings have drawing and specifications of paper media. Considering the degradation of paper, the maintenance not only building but also its drawings and specifications is important for the conservation.

Building Information Modeling (BIM) is paid attention as the method of recording design information these days. And we can choose converting design information to electronic form from various information methods (Picture, CAD, BIM etc.). In this circumstance we need to grasp the feature of BIM to convert the paper media to electronic form. And we need to know how we could convert from original design documents.

The purpose of this paper is to study the converting drawings and specifications to BIM model toward the conservation of building stock.

2. Research Processes

In this research, we use design documents of paper media as a reference to make BIM model. To know the present conditions of the building, design documents are required to cover everything from the construction to today. Since national university keeps drawings and specifications under such conditions, we use them. This research will be divided into three steps.
First, we convert the paper media to the digital image, and create BIM model using this as a reference. We use the documents of the building of University at Tsukuba in this study. University at Tsukuba is one of National Universities. MEXT (2013) reported the building of National Universities are becoming deteriorated. And we (2012) carried out questionnaire survey to staff of facility division at National University to know actual situation of maintenance of drawings and specifications. Second, we study the record of BIM model in comparison with paper media. Studying will be divided into three, Architecture, Structure, and MEP. Third, we study the difference of BIM model and the actual one. Studying also will be divided into three.

3. Future works

Today we are in the middle of making BIM model. Some results show as follows: (1) In BIM model, we can treat building and air-conditioning/plumbing simultaneously, which were edited separately in paper media. (2) To make BIM model precisely, we need to prepare lots of classes from the original. And there is a little information to make a class.

Future works show as follows: (1) Electric drawings are added to create BIM model. (2) We will progress with the third task. And this research aims at converting paper media of building stock to BIM model as an electronic form.

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References