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Construction Management in Renovation Engineering Projects

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Abstract. The management renovation engineering is more and more important in the construction industry. The aim of this study is to frame the key points and essential insights for the renovation engineering project. There are five dimensions, including environment, space use, time, economy and society. All of them have to be analyzed and discussed at different stages in the maintenance and renovation project. With the expectations to reduce the impact on community, we also take into account the efficiency of construction and operation status under construction.

1. The Characteristics of Renovation Engineering Projects

1.1 Renovation Projects

Renovation is an important link to extend service life of facilities or products. Renovation work can be applied to any facility and equipment such as factories, buildings, public construction, hydropower piping, electromechanical equipment, machinery and so on. Much of the renovation work, capable of being seen everywhere, is necessary and closely related to everyday food, clothing, housing, transportation, education, and entertainment. Renovation work can cover usual cleaning, checking and adjustment, as well as the usual or regular maintenance, replacement, and upgrade. Renovation may be defined as a sort control to keep construction facilities at the state immediately after they were finished. Therefore, to put it briefly, renovation management involves managing these renovation activities [1]. “Renovation management” refers to continual recurrent work, aimed to keep facilities at the state of achieving their best productivity consistently, and then improve their efficiency to make them have the necessary functions for market competition. Renovation management includes reducing the loss due to failure of facilities and equipment, i.e., enhancing facility function and extending their service life [2]. The purpose of the so-called “renovation management” is to keep facilities at a state of continual recurrent work, i.e., the original or designed energy and efficiency of the facilities can be usually available [3].

1.2 The Specialties of Renovation Engineering

In “A scheduling model for the renovation of a building maintained in operation". Guan [4] mentioned that renovation engineering aims to restore original functions of old buildings by transforming them to extend their service life. During construction, renovation engineering was limited by the space of the original buildings, and the necessities of maintaining operation of users within the buildings, which would cause conflicts between construction dynamics and space users. Hence it is necessary to achieve the best construction efficiency to reduce the affected time for the building users during construction when the progress of renovation engineering was planned.

2. Dimensions of Renovation Engineering

Figure 1 shows the analysis of renovation engineering for each stage, including renovation engineering analysis for each stage, affected people of renovation engineering, demand evaluation

for each stage and operating procedures. Through the operating procedures of renovation engineering, the affected people and the role of the team at each stage were analyzed to investigate how the stage demand evaluation for different roles was.

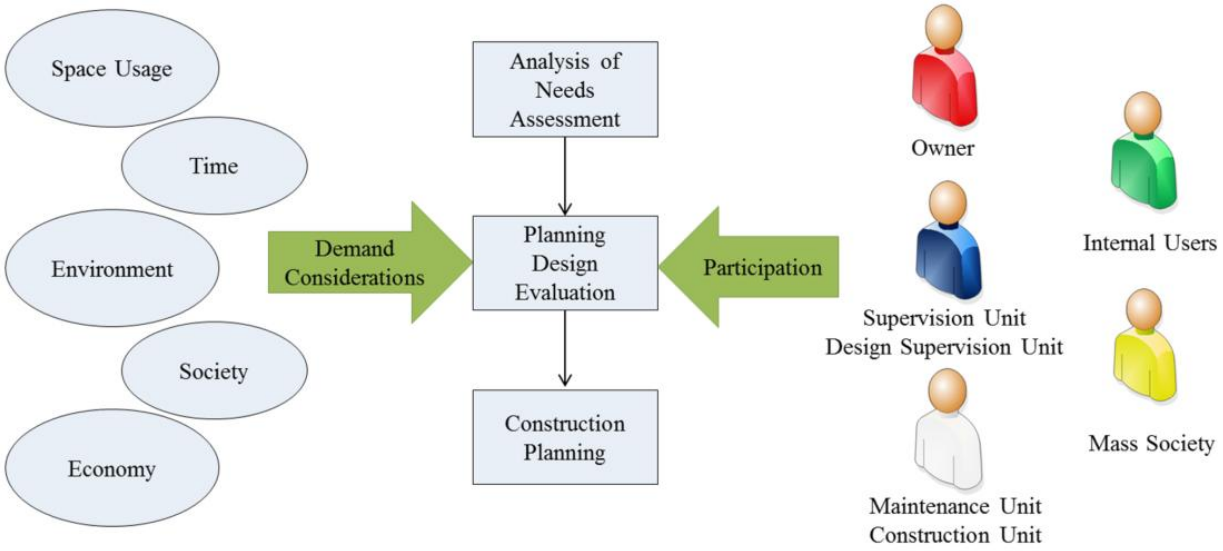

Fig. 1. The management of renovation engineering projects

Although being able to extend engineering service life, able to increase users' comfort and safety, and able to maximize engineering competitiveness, renovation engineering usually causes numerous problems during the construction process. Domestic and foreign literature has discovered that renovation engineering may encounter rather extensive problems. In the preliminary architecture of the renovation engineering outlines, there are five aspects: environment, space use, time, economy, and society, under which, based on impact items, sub-rules are classified and analyzed at each stage of the renovation engineering.

3. Conclusions

This research contributes to the key points of renovation engineering project management. It provides an initial framework for the project manager. However, more detailed management principles are necessary to establish. It will be beneficial for the renovation management development in the future.

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