

Development of Project Delivery System for Modular Building in Korea

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Abstract: Recent research has been ongoing for modular buildings in the country, and interest increases. However, in accordance with legal restrictions in the country with regard to Project Delivery system of Modular Building, the activation of modular buildings industry is obstructed. In Korea, in accordance with national contract law, the construction contract is apply to the project delivery system of modular buildings, and in accordance with Framework Act on the Construction Industry, The project delivery system of modular buildings has to be a separate order. The definition of separate order in contract as defined in the law is that the electric work and Communication work and digestion facility work has to be separate each contract in order to be ensured professionalism. In accordance with law, the project delivery system of modular buildings is that the contract for construction is concluded with the Owner and the Construction Contractor and the contract for goods is concluded with the construction Contractor and modular manufacturer. Due to these project delivery system, the domestic factory production rate when making a modular unit is significantly reduced compared to the rate of factory production abroad and the domestic factory production rate is estimated to 10-20%. Due to the factory production rate is also low, despite what can be done at the factory the workload in construction field increases. According to the workload in field increases, the effect of the schedule reduction can be reduced. It resolved to form a consortium with a modular manufacturer and construction companies or the contract is concluded with Owner, modular manufacturer and construction companies in each. In this paper, we propose a specific project delivery system for modular building to solve the problem of the low factory production rate and the problem of schedule reduction. Through this paper, due to the variety of project delivery system on modular buildings is expected to contribute to the activation of modular buildings.

Keywords: modular, modular building, project delivery system, contract

I. INTRODUCTION

A. Background

In the Korea, Modular building was starting the school enlargement construction in 2003. And modular building industry is to being expanded in Korea domestic. In 2010, the Ministry of Land, Infrastructure and Transport (MOLIT) in Korea adopted a policy to activate the manufacturing house.

According to this situation, Modular building-related research is continued for the activation of modular building industry. And modular building project type has been expanded in the BOQ (Bachelor Officer's Quarter), school facilities, research facilities and business facilities. However, the project delivery system of modular building in Korea is using traditional project delivery system. Therefore, modular building has to problem that the advantage of modular building, reducing construction period and good quality, didn't be highlights.

Therefore, this research purpose is propose the project delivery system of the modular building for the highlight the advantages of modular buildings and activating modular buildings business.

B. Scope

The study suggests an alternative regarding the project delivery system to activate the modular building business in public sector.

To achieve research purpose, this study is analysis to the project delivery system and law regarding of the modular building in public sector. And identify the problem regarding the project delivery system for modular buildings. And suggest the optimal alternative regarding the project delivery system for modular buildings

II. LAW OF CONTRACT

A. Type of project delivery system

In the public law of government contracts, the type of contract is divided into the tree "construction contract", "Goods purchase contract", "service contracts"

And the type of construction contracts is divide in to the two "Design-Build contract", "multiple prime contract"

The Design-Build contract is that the owner make the single contract with the builder in charge of design and construction.

The multiple prime contract is that the owner divide the project into a number of discipline to select the suitable construction companies. Some discipline (electrical, fire fighting, communication) must separate to contract in public sector.

B. Project Delivery system for modular buildings

1) The Status of project delivery system

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As shown in figure 1, under the Design-Build contract, the owner makes the contract with builder in charge of design and construction. And the representative of builder usually is civil construction company.

This company makes the contract with the modular manufacture company by goods purchase contract.

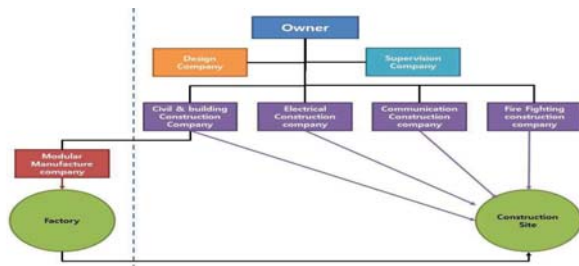


Figure 1. Design-Build contract

As shown in figure 2, under the multiple prime contract, the owner has to make the contract with civil construction company, electrical construction company, Firefighting construction company and communication construction company in each.

Same as the Design-Build contract, the civil construction company makes the contract with the modular manufacture company by goods purchase contract.

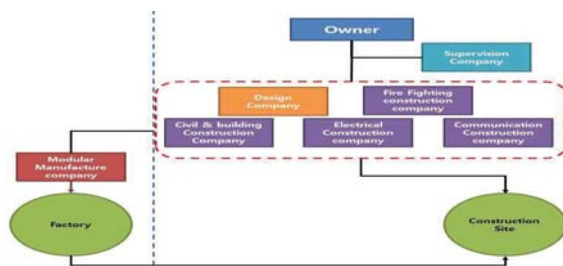


Figure 2. Multiple prime contract

2) Problem

Due to the type of the contract mentioned before, the factory production rate around 10%~20% in domestic is significantly lower than abroad. Since the work is increased by as the workload in construction site is increased by these influences, the effect of reducing construction period is reduced and the building quality is deteriorated.

Also Due to the goods purchase contract regarding modular building units, the warranty period is different with it in construction contract. In case of defects, it is difficult to clarify who is responsible.

C. Development of Alternative

It is important that how to attract the modular manufacture company into the legal system of construction.

Therefore, to be able to create the form of a consortium between a modular manufacture company and construction companies is a key solution to improve the

project delivery system for modular buildings. Through that, the project delivery system for modular buildings derived is shown in figure 3.

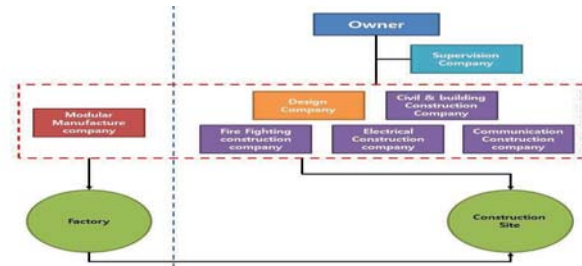


Figure 3. New alternative

Above mentioned the project delivery system for modular buildings is to allow a modular manufacture company to engage in construction in the same location with construction companies.

Through that, it is considered to increase the factory production rate and to be able to solve the problem about the warranty period under the law of the construction industry.

III. SUMMARY AND CONCLUSIONS

This study shows that the type of contract for modular building were identified through the analysis of domestic contract and contract type and the new project delivery system were proposed to solve those problem and improve it

Due this study is in progress as part of a research study for integrated project delivery system for modular buildings, the suggestion of project delivery system for modular buildings in this paper is still insufficient to verify and reflect the opinion in construction industry.

Afterwards, the project delivery system improved through the reflection of opinion in industry and the verification of project delivery system is considered to increase the factory production rate and to improve quality. Through it, the market for modular buildings could be activated.

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