

# Study on Disaster Prevention Planning of Wooden Important Cultural Properties

Yohei Kondo

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## 1. The Background and the Purpose of This Study

In Japan, a large number of buildings have been constructed of wood throughout long history. Some of them constitute the precious properties. Among them, famous buildings nominated as important cultural properties by law have innovated advanced equipments since Meiji-period in order to prevent disaster beforehand. These cases are the valuable materials for the study on the disaster prevention planning of cultural properties and other precious properties. This study will deal with those important cultural properties of wood. Investigating the history and substances of disaster prevention planning, the study aims to show the historical transition of equipments, the change in the method of design, and current trend in introducing new equipments, and to reveal the problems of them.

## 2. The Procedure for the Study

### (1) Comprehension of relevant laws

The disaster prevention planning of cultural properties has relation to various laws. So, it is necessary to comprehend the fundamentals of these laws in advance. Therefore, I will summarize the relevant part of the Cultural Properties Protection Law, the Building Standards Act, and the fire laws, and also examine the transition of policy as well as position of these laws toward the disaster prevention of cultural properties.

### (2) Research into reports

About large-scale or specific constructions of the disaster prevention properties out of those actually done, there remains 'the report of construction'. In this part, I will compare them in income, outgo, and kind of equipments introduced. And also referring to the contents of constructions, I will overview the transition in constructions of disaster prevention equipments.

### (3) Research on actual cases – Hearing –

Hieizan-Enryakuji, Toudaiji, Himeji-jo –, they are large-scale projects for disaster prevention recently finished. About these three cases, I have carried out hearing research on designer, owners, and companies that engaged in maintenance, as well as investigated the intent of planning from 'the report of construction'. Also, in this part, I will notice the coordination between equipments and people.

## 3. The Results of Researches and Conclusions

From researches above, two points as below could be noted.

First, complication of the systems; It is always the most advanced equipments of the day which are introduced to the system. Especially, automatic fire alarm equipments are the case. Moreover, we can control the extensive areas all together by means of conditioned observation service. Controlling information from the sensors and the observation service at once makes the system more and more complicated.

Second, the mechanization of the disaster prevention systems; We have illustrated about Hieizan-Enryakuji, Toudaiji, and Himeji-jo how people and equipments functions respectably and one another when a fire brakes out. In consequence, we found that people and equipments work in series. However mechanization is developing, such as remote extinction system introduced in Toudaiji and a sprinkler system in Himeji-jo, so the role people expected to play become less. Now that improved reliability of equipments seem to be required.

According to this study, we discovered that innovation of the equipments causes rising in cost of maintenance and difficulty of keeping perfectly. Flexible ways of planning appropriated to the situation of each cases are called for. While advanced equipments have been innovated, people have not yet got new and concrete strategies for the disaster prevention. Moreover, the less role people play in it, the less they might be conscious of it. So the function of disaster prevention could become synthetically weaker. Therefore, I think it is also required to plan the disaster prevention from the view to take advantage of the power of people.