

## DISASTER RISK ASSESSMENT METHODS AND RESPONSE PLANS FOR CULTURAL HERITAGE IN TAIWAN

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In recent years, cultural heritage and historical buildings have been damaged due to both manmade causes (management negligence and arson) and natural factors (earthquakes and floods). These events expose Taiwan's weakness in disaster prevention, hazard assessment, and emergency planning for historic architectures. Despite cooperation between the official and applied fields, a complete and coherent disaster risk assessment and management approach is lacking.

Precaution and preparation are essential for disaster prevention and heritage protection. Plans must be made based on an overview evaluation of cultural heritage assets, including their buildings, structures, surroundings and landscapes. These are common, basic viewpoints shared worldwide. However, the current legislation (Cultural Asset Preservation Law) and related regulations in Taiwan, do not fully enable Taiwan to achieve the goal of preserving cultural heritage. In some cases the requirements for preservation given the actual hazard situation are not met. To correct this situation, precaution and preparation must link detailed hazard assessment with damage-control management strategies to have a thorough plan for preventing damage to cultural heritage.

This project analyzes hazard assessment for historical architectures, including fire, flood, earthquake and compound disasters as well as preservation techniques in cultural heritages. Then, applying the damage prevention plans as a standard module and supplement, management of a cultural heritage property, as well as of related organizations, are able to construct a disaster prevention and damage control plan that is suitable to a specific case (or region), its historical buildings, surroundings, people and its urban characteristics. In this way, the goal of heritage preservation and damage prevention can be fulfilled.

This study is a long-term development project. Currently this study focuses on Taiwan's cultural heritage features and the present disaster prevention systems. This study's preliminary results are listed below:

Establishment of a classification system for cultural heritage based on the viewpoint of disaster risk assessment using categories such as construction based, environmental based and response-rescue based, in which different categories would have different demands for their response plans or different parameter weights used for its risk evaluation.

Establish risk assessment guidelines for different types of heritage buildings (according to construction, regional, and management characteristics) to help propose reasonable prevention measures and countermeasures that meet the demands and probable scenarios of each type of heritage property.

This study further proposes a policy and technology based analysis using a risk assessment approach. In addition, in promoting incorporation of all local stakeholders (manager, local community groups, cultural and firefighting units) into the response plan, this study formulated a disaster response guideline using case studies to serve as a supplement to help heritage managers, users, and related units reach its heritage preservation and risk prevention goals.

### Keywords

cultural heritage, hazard assessment, disaster risk management, damage-control management