

Investigation and Research on Construction Technology of Tenon and Mortise in Traditional Chinese Architecture

Authors : Liang Zhang

Abstract : Chinese traditional architecture has developed a school of its own in the world. It has a different structure and construction technology from western architecture. Tenon and mortise structure and construction technology, as the key to the construction of traditional Chinese architecture, have been inherited for thousands of years by traditional craftsmen in various regions of China. However, the traditional architecture varies greatly in different times and regional cultures in China. It is still a lack of research whether this difference extends to mortise and tenon technology. In this study, we measured the mortise and tenon of traditional buildings in Fujian province, Yunnan province, and Northern China; Interviewed some old craftsmen about their traditional construction methods, And compared the today's traditional mortise and tenon technology with that of Song and Qing Dynasties. The results showed that although Chinese traditional architecture has the same origin, the mortise and tenon construction technology systems have been developed at different times, regions, and cultures. For example, tenon and mortise technology in Yunnan Province needs to ensure the ability of buildings to resist earthquakes, while that in Fujian Province needs to ensure the ability of buildings to withstand typhoons. People in different regions, cultures, and times have a different understanding of architectural aesthetics, and the evolution of tools also has different effects on mortise and tenon technology. This study explains the manifestations and causes of these differences. At the same time, due to the impact of modern architectural technology, mortise, and tenon, traditional technology is also rapidly disappearing. As a sorting and collection of mortise and tenon techniques of traditional Chinese architecture, this paper puts forward the corresponding traditional technology protection strategy, to guide the protection and maintenance of local traditional buildings.

Keywords : tenon and mortise, traditional Chinese architecture, traditional craftsmen, construction technology

Conference Title : ICAHUCE 2019 : International Conference on Architecture, Human, Urban and Civil Engineering

Conference Location : New York, United States

Conference Dates : August 08-09, 2019