

## **Mechanical Properties of Ancient Timber Structure Based on the Non Destructive Test Method: A Study to Feiyun Building, Shanxi, China**

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**Abstract :** The structural assessment is one of a crucial part for ancient timber structure, in which this phase will be the reference for the maintenance and preservation phase. The mechanical properties of a structure are one of an important component of the structural assessment of building. Feiyun as one of the particular preserved building in China will become one of the Pioneer of Timber Structure Building Assessment. The 3-storey building which is located in Shanxi Province consists of complex ancient timber structure. Due to condition and preservation purpose, assessments (visual inspections, Non-Destructive Test and a Semi Non-Destructive test) were conducted. The stress wave measurement, moisture content analyzer, and the micro-drilling resistance meter data will overview the prediction of Mechanical Properties. As a result, the mechanical properties can be used for the next phase as reference for structural damage solutions.

**Keywords :** ancient structure, mechanical properties, non destructive test, stress wave, structural assessment, timber structure

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