KOSHIHARA LAB.

[Symbiosis of forest and city -Timberize City as recycling resource]

Department of Humans and Social Systems
Wood Engineering

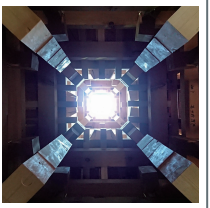
Department of Architecture http://wood.iis.u-tokyo.ac.jp

Traditional Timber Building

Our aim is to preserve cultural properties and to build new traditional wooden building from an engineering perspective.

Five-story pagoda of Joanji Temple (2019/Yamagata)

A wooden five-story pagoda has no record of collapsing due to an earthquake. Based on the knowledge gained from seismic observation, shaking table tests and structural analysis of seismic performance, we have developed an earthquake resistant design. A newly designed five-story pagoda was built. The five-story pagoda was born here, combining the empirical knowledge of carpenters and the engineering knowledge of researchers. The team will continue to observe the completed five-story pagoda as they continue to investigate traditional wooden construction techniques.



Timberize City

Timber buildings have changed according to the lifestyle and social system of the times.
We are proposing the future of timber construction built in urban areas.

Timberize 200 (2018)

In densely developed contemporary urban environments, the high verticality and multi storied composition of buildings is premised upon the effective use of high-value property. Thee are few historically based techniques for timber high-rises in Japan, yet several elements that inspired urban timber construction can be seen. Toward rationalization in contemporary architecture, the aim is to achieve simple and clear structural forms, however in traditional timber construction, a traditional measuring formula to determine the dimensions for each member, called *kiwari*, was used.
In contemporary timber structures, posts and beams with large cross-sections and thick floors and walls are made possible by engineered wood materials such as Laminated lumber or CLT, and through their application, processing and construction methods, and structural and fire-proof design methods are being established. Timber high-rises suitable for urban environments will be realized through the incorporation timber construction in modern-day building technology.