



## Investigation of Hardwood Cross-Laminated Timber Design

<https://research.thinkwood.com/en/permalink/catalogue510>

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Year of Publication: 2014

Country of Publication: Canada

Format: Conference Paper

Material: CLT (Cross-Laminated Timber)

Topic: Mechanical Properties

Keywords: Low-Grade  
Hardwood

Language: English

Conference: World Conference on Timber Engineering

Research Status: Complete

Notes: August 10-14, 2014, Quebec City, Canada

**Summary:**

Sustainable solutions to building construction can help improve material utilization efficiency while providing economic development. This paper focuses on the development of low-grade hardwood CLT made with Yellow-Poplar (*Liriodendron tulipifera*) as an exemplar species. Analysis programs developed at Virginia Tech (CLT-VT) investigate whether design methods developed for softwood species are suitable for use with the mechanical properties of hardwoods to predict structural behaviour of CLT panels. The CLT-VT programs will include the analytical design methods defined in the CLT Handbook for floor/roof and wall systems, and beams/intels [1]. The study will assist in further development of a sustainable building product while adding value to under-utilized low-grade hardwood lumber and creating a road map for the production of CLT materials from most every domestic wood species available in the United States. This study examines if Cross-Laminated Timber (CLT) design methods approved for softwood species can be used with hardwood species, specifically low-grade hardwoods. Analytical predictions from researcher-generated computer programs will be compared to data from experimental evaluations of hardwood CLT. Successful completion will allow for an under-utilized timber resource to be incorporated into CLT production.

Online Access: Free

**Resource Link**

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