



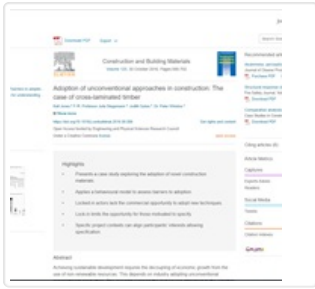
Actuarial Contribution to the Understanding of Insurable Risks Related to Non-residential High-rise Buildings in CLT

<https://research.thinkwood.com/en/permalink/catalogue2194>

Organization: Université Laval
Country of: Canada
Publication:
Material: CLT (Cross-Laminated Timber)
Application: Wood Building Systems
Topic: Market and Adoption
Keywords: High-Rise
Non-Residential
Course of Construction Insurance
Research Status: In Progress
Notes: Project contact is Étienne Marceau at Université Laval

Summary:

The objective of this project is to identify the risk factors taken into account in the pricing of an insurance contract for a construction site. This project aims to synthesize the quantitative approaches used in practice and presented in academic research for the pricing of home insurance and commercial insurance. Then, we aim to identify the preventive measures that can be taken to reduce the impact of different perils in the insurance of a construction site in wood or other.



Adoption of Unconventional Approaches in Construction: The Case of Cross-Laminated Timber

<https://research.thinkwood.com/en/permalink/catalogue1358>

Author: Jones, Kell
Stegemann, Julia
Sykes, Judith
Winslow, Peter

Publisher: ScienceDirect

Year of Publication: 2016

Country of Publication: Netherlands

Format: Journal Article

Material: CLT (Cross-Laminated Timber)

Application: Wood Building Systems

Topic: Market and Adoption

Keywords: United Kingdom
Construction

Language: English

Research Status: Complete

Series: Construction and Building Materials

Online Access: Free

Resource Link

<https://doi.org/10.1016/j.conbuildmat.2016.08.088> 



Advanced Wood Product Manufacturing Study for Cross-Laminated Timber Acceleration in Oregon & SW Washington, 2017

<https://research.thinkwood.com/en/permalink/catalogue715>

Organization: Oregon BEST
Year of Publication: 2017
Country of Publication: United States
Format: Report
Material: CLT (Cross-Laminated Timber)
Topic: Market and Adoption
Keywords: Market
US
Economic Impact
Language: English
Research Status: Complete
Online Access: Free

Resource Link

https://www.oregon4biz.com/assets/docs/CLT_Mfg_2017OregonBEST.pdf



An Overview of CLT Research and Implementation in North America

<https://research.thinkwood.com/en/permalink/catalogue759>

Author: Pei, Shiling
 Rammer, Douglas
 Popovski, Marjan
 Williamson, Tom
 Line, Philip
 van de Lindt, John

Year of Publication: 2016

Country of Publication: Austria

Format: Conference Paper

Material: CLT (Cross-Laminated Timber)

Topic: Market and Adoption

Keywords: Market
 North America
 Building Development
 Research

Language: English

Conference: World Conference on Timber Engineering

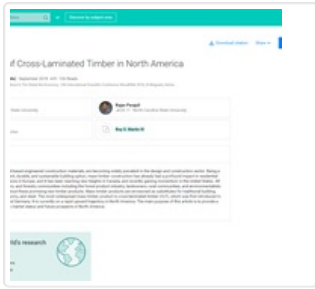
Research Status: Complete

Notes: August 22-25, 2016, Vienna, Austria

Summary:
 Although not yet seen as common practice, building with cross laminated timber (CLT) is gaining momentum in North America. Behind the scenes of the widely publicized project initiatives such as the Wood Innovation Design Centre Building in Canada and the...
 Online Access: Free

Resource Link

https://www.fpl.fs.fed.us/documnts/pdf2016/fpl_2016_pei001.pdf



An Overview of Cross-Laminated Timber in North America

<https://research.thinkwood.com/en/permalink/catalogue2138>

Author: Vlosky, Richard
Parajuli, Rajan
Gale, Charles
Martin III, Roy

Year of Publication: 2018

Country of Publication: Serbia

Format: Conference Paper

Material: CLT (Cross-Laminated Timber)

Application: Wood Building Systems

Topic: Design and Systems
Market and Adoption

Keywords: Mass Timber
Market Status

Language: English

Conference: International Scientific Conference WoodEMA

Research Status: Complete

Online Access: Free

Resource Link

https://www.researchgate.net/publication/328812198_An_Overview_of_Cross-Laminated_Timber_in_North_America [↗](#)

Application of Analysis Tools from
NEWBuildS Research Network in
Design of a High-Rise Wood Building



Application of Analysis Tools From Newbuilds Research Network in Design of a High-Rise Wood Building

<https://research.thinkwood.com/en/permalink/catalogue278>

Organization: NEWBuildS
Year of Publication: 2015
Country of Publication: Canada
Format: Report
Material: CLT (Cross-Laminated Timber)
Application: Wood Building Systems
Topic: Design and Systems
Market and Adoption
Keywords: High-Rise
British Columbia Building Code
Mixed-Use
Language: English
Research Status: Complete

Summary:

In this project, a conceptual but realistic 20-storey building of hybrid construction incorporating massive timber panels and other structural materials was identified. The project team, consisting of three practicing consultants and 6 graduate student and post-doctoral researchers from NEWBuildS, undertook an analysis and engineering design of the demonstration building. An advisory group that includes FPInnovations scientists, NEWBuildS supervisors of the graduate students and Post Doctoral Fellows, provides technical support to the project team. The performance attributes addressed in the project were structural performance under seismic and wind load, fire resistance and building envelope. . This publication documents the analysis and design of the demonstration building, and identifies technical issues that require further study.

Online Access: Free

Resource Link

<https://www.bcfii.ca/wp-content/uploads/2021/02/fii415-2014-15-newbuilds-application-of-analysis-tools-in-design-of-high-rise-wood-building-1.pdf>



Assessing the Market Opportunity for Treated Glued Wood Products

<https://research.thinkwood.com/en/permalink/catalogue2635>

Author: Fell, David
Toosi, B.
Organization: FPInnovations
Year of Publication: 2010
Country of Publication: Canada
Format: Report
Material: Glulam (Glue-Laminated Timber)
Application: Bridges and Spans

Topic: Market and Adoption
Keywords: Poles
Sound Abatement Barriers
Market Analysis
Language: English
Research Status: Complete

Summary:

In this study market opportunities for treated glue-laminated (glulam) products were investigated in the industrial wood sector. The main benefits of treated glulam are through-product treatment and the ability to manufacture treated products in shapes and sizes that do not fit into common treating chambers. These attributes provide for very durable and large glulam structures that are appropriate for outdoor use. For these reasons bridges, power poles, and sound abatement barriers were investigated. These are markets where wood has lost market share to or is being challenged by concrete and steel substitutes.

The vehicular bridge market was once heavy to the use of wood. Today wood accounts for only 7% of the number bridges in the US and less than 0.9% of the actual surface area of bridges in place. In interviewing municipalities in Canada it is clear that wood is not the preferred material with many wood bridges being replaced by concrete. Further, none of the municipalities contacted were planning wood bridges. However, wood bridges are still being installed. In the US 0.9% of the bridges installed by area in 2007 were wood. This is good news as wood is holding its market share. Steering clear of high volume or large bridges, local bridges are well suited for wood as they are plentiful, small in scale, and many are in disrepair. If 20% of local bridges were built with wood in Canada this would have equalled approximately \$51 million in wood bridge construction in 2007.

Municipalities are much more open to the use of wood for pedestrian bridges and overpasses. Their quick construction and aesthetics are positive attributes in this application. One municipality contacted is planning multiple wood pedestrian bridges in the next five years. However, for the purpose of this market review there is little published information on pedestrian bridges.

Noise abatement barriers are a good high-volume technical fit for treated glulam. Increases in traffic and current road infrastructure improvements will lead to more demand for sound abatement in the future. This market is dominated by concrete, but at a very high price. If treated glulam can give adequate durability and sound performance properties it would be approximately 20% cheaper than concrete. The market for sound barriers in Canada could utilize up to 10 mmbf of wood per year to construct 80 km of barrier. This product can also be marketed as a high-performance acoustic fence for residential markets.

Treated glulam was also considered for utility poles. It is transmission grade poles where glulam would best fit the market as the demand is for longer poles which are more difficult to get in solid wood. This type of pole is where wood is currently being displaced by tubular steel. If glulam poles were used in 25% of the replacement transmission poles per year this could equal 8 mmbf. Light poles or standards are another market to consider. While this is a relatively low volume market glulam light standards are a premium product in European markets.

Online Access: Free

Resource Link

<https://library.fpinnovations.ca/en/permalink/fpipub5728> 



Awareness, Perceptions and Willingness to Adopt Cross-Laminated Timber by the Architecture Community in the United States

<https://research.thinkwood.com/en/permalink/catalogue506>

Author: Laguarda Mallo, Maria Fernanda
Espinoza, Omar

Publisher: ScienceDirect

Year of Publication: 2015

Country of Publication: Netherlands

Format: Journal Article

Material: CLT (Cross-Laminated Timber)

Topic: Market and Adoption

Keywords: US
Market Potential
Barriers to Adoption
Architects

Language: English

Research Status: Complete

Series: Journal of Cleaner Production

Online Access: Free

Resource Link

https://ojs.cnr.ncsu.edu/index.php/BioRes/article/viewFile/BioRes_09_4_7427_Laguarda_Mallo_Crosslaminated_Timber/3136



Awareness, Perceptions and Willingness to Adopt Cross-Laminated Timber in the United States

<https://research.thinkwood.com/en/permalink/catalogue1435>

Author: Laguarda Mallo, Maria Fernanda
Organization: University of Minnesota
Year of Publication: 2014
Country of Publication: United States
Format: Thesis
Material: CLT (Cross-Laminated Timber)
Topic: Market and Adoption
Keywords: US
Awareness
Perceptions
Language: English
Research Status: Complete
Online Access: Free

Resource Link

<http://hdl.handle.net/11299/165560>



Building Affordable Housing with Mass Timber

<https://research.thinkwood.com/en/permalink/catalogue2783>

Organization: Sustainable Northwest
Hacienda Community Development Group

Country of Publication: United States

Application: Wood Building Systems

Topic: Market and Adoption

Keywords: Mass Timber
Residential Buildings
Life Cycle Analysis
Project Financing
Affordable Housing

Research Status: In Progress

Summary:

Sustainable Northwest (SNW) and Hacienda Community Development Group (HCDC), both based in Oregon, have proposed a plan to demonstrate pathways for building affordable housing with regionally sourced mass timber. In response to the region's housing shortage, the partners' proposal demonstrates the use of mass timber products while supporting efforts to educate stakeholders on wood product companies and forest restoration. The project outlines a plan to explore financing options, build one or more prototypes, and perform a structural material life cycle analysis.