

The Case for Tall Wood Buildings

<https://research.thinkwood.com/en/permalink/catalogue835>

Organization:	Michael Green Architecture
Edition:	Second
Year of Publication:	2017
Country of Publication:	Canada
Format:	Book
Material:	CLT (Cross-Laminated Timber) LSL (Laminated Strand Lumber) LVL (Laminated Veneer Lumber)
Application:	Wood Building Systems
Topic:	General Information Cost Environmental Impact Design and Systems
Keywords:	FFTT Tall Wood
Language:	English
Research Status:	Complete

Summary:

The report describes a new structural system in wood that is the first significant challenger to concrete and steel structures since their inception in tall building design more than a century ago. The introduction of these ideas is fundamentally driven by the need to find safe, carbon-neutral and sustainable alternatives to the incumbent structural materials of the urban world. The market for these ideas is quite simply enormous. The proposed solutions have significant capacity to revolutionize the building industry to address the major challenges of climate change, urbanization, sustainable development and world housing needs.

Online Access: Free

Resource Link

<http://thecasefortallwood.com/wp-content/uploads/2017/02/2017-01-24-THE-CASE-FOR-TALL-WOOD-SECOND-EDITION.pdf>



A Comparison of the Energy Saving and Carbon Reduction Performance between Reinforced Concrete and Cross-Laminated Timber Structures in Residential Buildings in the Severe Cold Region of China

<https://research.thinkwood.com/en/permalink/catalogue1207>

Author: Guo, Haibo
Liu, Ying
Meng, Yiping
Huang, Haoyu
Sun, Cheng
Shao, Yu

Publisher: MDPI

Year of Publication: 2017

Country of Publication: Switzerland

Format: Journal Article

Material: CLT (Cross-Laminated Timber)

Application: Wood Building Systems

Topic: Energy Performance
Environmental Impact

Keywords: Energy Consumption
Carbon Emissions
Residential
Severe Cold Regions
Simulation
Reinforced Concrete
Life-Cycle Assessment

Language: English

Research Status: Complete

Series: Sustainability

ISSN: 2071-1050

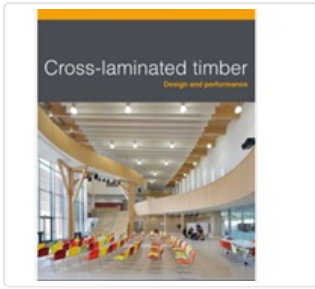
Summary:

This paper aims to investigate the energy saving and carbon reduction performance of cross-laminated timber residential buildings in the severe cold region of China through a computational simulation approach. The authors selected Harbin as the simulation environment, designed reference residential...

Online Access: Free

Resource Link

<https://doi.org/10.3390/su9081426> ↗



Cross-Laminated Timber: Design and Performance

<https://research.thinkwood.com/en/permalink/catalogue2271>

Editor: Exova BM TRADA
Publisher: TRADA
Year of Publication: 2017
Country of Publication: United Kingdom
Format: Book
Material: CLT (Cross-Laminated Timber)
Application: Wood Building Systems
Topic: Design and Systems
Fire
Acoustics and Vibration
Energy Performance
Environmental Impact
Mechanical Properties
Language: English
Research Status: Complete
ISBN: 978-1909594630

Summary:

This book has been written to cover the design and performance of CLT within construction. Chapter 1 showcases its uses for architects and building designers. Chapter 2 focuses on design principles and Chapter 3 covers CLT performance, including structural design, fire performance, acoustics, thermal performance, durability, appearance, and sustainability. Chapter 4 concludes the book with thirteen case studies based on several building types. Highly illustrated with photos and technical drawings, this book demonstrates the versatility of CLT as a sustainable, engineered timber solution and will assist architects, engineers and their clients looking to work with this material.

Online Access: Payment Required

Resource Link

<https://www.trada.co.uk/books-online/cross-laminated-timber-design-and-performance/>



Energy Saving and Carbon Reduction in the Operation Stage of Cross Laminated Timber Residential Buildings in China

<https://research.thinkwood.com/en/permalink/catalogue1208>

Author: Guo, Haibo
Liu, Ying
Chang, Wen-Shao
Shao, Yu
Sun, Cheng

Publisher: MDPI

Year of Publication: 2017

Country of Publication: Switzerland

Format: Journal Article

Material: CLT (Cross-Laminated Timber)

Application: Wood Building Systems

Topic: Energy Performance

Keywords: Energy Consumption
Carbon Emissions
Reinforced Concrete
China
Climate Zones
Simulation

Language: English

Research Status: Complete

Series: Sustainability

ISSN: 2071-1050

Summary:

This paper focused on energy consumption and carbon emission for heating and cooling during a building's operation stage, and examined the energy effects of using Cross Laminated Timber (CLT) as an alternative building material to reinforced concrete (RC) in China's 31 key cities located in different climate zones...

Online Access: Free

Resource Link

<https://doi.org/10.3390/su9020292>



Evolution of the Building Envelope in Modern Wood Construction

<https://research.thinkwood.com/en/permalink/catalogue1799>

Author: Wang, Jieying
Organization: FPInnovations
Year of Publication: 2017
Country of Publication: Canada
Format: Report
Material: CLT (Cross-Laminated Timber)
Glulam (Glue-Laminated Timber)
NLT (Nail-Laminated Timber)
Light Frame (Lumber+Panels)
LVL (Laminated Veneer Lumber)
Application: Building Envelope
Topic: Design and Systems
Energy Performance
Moisture
Site Construction Management
Keywords: Energy Efficiency
Building Envelope
Tall Wood
Wood Infill Walls
Podium Structures
Articulated Buildings
Language: English
Research Status: Complete

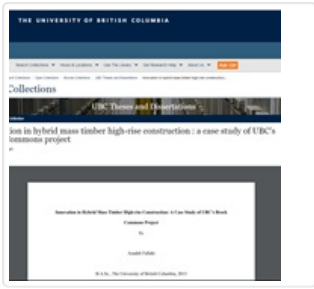
Summary:

This report provides an overview of major changes occurred in the recent decade to design and construction of the building envelope of wood and wood-hybrid construction. It also covers some new or unique considerations required to improve building envelope performance, due to evolutions of structural systems, architectural design, energy efficiency requirements, or use of new materials. It primarily aims to help practitioners better understand wood-based building envelope systems to improve design and construction practices. The information provided should also be useful to the wood industry to better understand the demands for wood products in the market place. Gaps in research are identified and summarized at the end of this report.

Online Access: Free

Resource Link

<https://www.bcfii.ca/sites/default/files/report/FPI/16327-PDFA.pdf>



Innovation in Hybrid Mass Timber High-Rise Construction: A Case Study of UBC's Brock Commons Project

<https://research.thinkwood.com/en/permalink/catalogue1273>

Author: Fallahi, Azadeh
Organization: University of British Columbia
Year of Publication: 2017
Country of Publication: Canada
Format: Thesis
Material: CLT (Cross-Laminated Timber)
Glulam (Glue-Laminated Timber)
PSL (Parallel Strand Lumber)
Application: Hybrid Building Systems
Topic: General Information
Keywords: High-Rise
Construction
Design
Prefabrication
Project Coordination
Virtual Design and Construction
Language: English
Research Status: Complete
Online Access: Free

Resource Link

<http://doi.org/10.14288/1.0345634>



Investigating the Performance of the Construction Process of an 18-storey Mass Timber Hybrid Building

<https://research.thinkwood.com/en/permalink/catalogue1269>

Author: Kasbar, Mohamed
Organization: University of British Columbia
Year of Publication: 2017
Country of Publication: Canada
Format: Thesis
Material: CLT (Cross-Laminated Timber)
Application: Hybrid Building Systems
Wood Building Systems
Topic: General Information
Market and Adoption
Keywords: Brock Commons
Construction
Efficiency of Construction
Language: English
Research Status: Complete
Online Access: Free

Resource Link

<http://doi.org/10.14288/1.0347252>



Modeling of Orthotropic Plates out of Cross Laminated Timber in the Mid and High Frequency Range

<https://research.thinkwood.com/en/permalink/catalogue1352>

Author: Winter, Christoph
Buchschmid, Martin
Müller, Gerhard

Publisher: ScienceDirect

Year of Publication: 2017

Country of Publication: Netherlands

Format: Journal Article

Material: CLT (Cross-Laminated Timber)

Application: General Application

Topic: General Information

Keywords: Finite Element Model
Statistical Energy Analysis
Frequency
Orthotropic Plates

Language: English

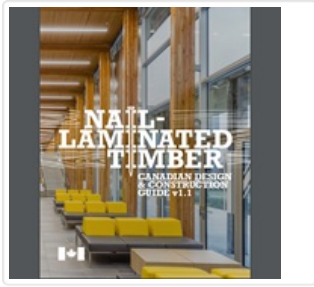
Research Status: Complete

Series: Procedia Engineering

Online Access: Free

Resource Link

<https://doi.org/10.1016/j.proeng.2017.09.373>



Nail-Laminated Timber Canadian Design and Construction Guide

<https://research.thinkwood.com/en/permalink/catalogue2243>

Editor:	Holt, Rebecca Luthi, Tanya Dickof, Carla
Edition:	1.1
Publisher:	Binational Softwood Lumber Council Forestry Innovation Investment
Year of Publication:	2017
Country of Publication:	Canada
Format:	Book
Material:	NLT (Nail-Laminated Timber)
Application:	Floors Roofs
Topic:	Design and Systems Acoustics and Vibration Connections Fire General Information Moisture Seismic Site Construction Management
Language:	English
Research Status:	Complete

Summary:

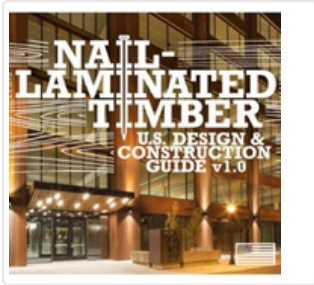
This Design and Construction Guide (the Guide) provides the Canadian design and construction industry with immediate support and guidance to ensure safe, predictable, and economical use of NLT. It is intended to offer practical strategies, advice, and guidance, transferring knowledge and lessons learned from those with experience.

This Guide focuses on design and construction considerations for floor and roof systems pertaining to current Canadian construction practice and standards. While NLT is being used for vertical elements for walls, stair shafts, and elevator shafts, this Guide provides the greatest depth of direction for common horizontal applications. The information included here is supplemental to wood design and construction best practices and is specific to the application of NLT. Built examples are included to illustrate real application and visual reference as much as possible.

Online Access: Free

Resource Link

<https://www.naturallywood.com/NLT> [↗](#)



Nail-Laminated Timber U.S. Design and Construction Guide

<https://research.thinkwood.com/en/permalink/catalogue834>

Editor: Holt, Rebecca
Luthi, Tanya
Dickof, Carla

Edition: 1.0

Publisher: Binational Softwood Lumber Council

Year of Publication: 2017

Country of Publication: United States

Format: Book

Material: NLT (Nail-Laminated Timber)

Application: Floors
Roofs

Topic: Acoustics and Vibration
Connections
Design and Systems
Fire
General Information
Moisture
Seismic
Site Construction Management

Language: English

Research Status: Complete

Summary:

This Design and Construction Guide (the Guide) provides the U.S. design and construction community with guidance to ensure safe, predictable, and economical use of NLT. It is intended to offer practical strategies, advice, and guidance, transferring knowledge and lessons learned from NLT project experience.

This Guide focuses on design and construction considerations for floor and roof systems pertaining to U.S. construction practice and standards. While NLT is being used for vertical elements for walls, stair shafts, and elevator shafts, this Guide provides the greatest depth of direction for more common horizontal applications. The information included here is supplemental to wood design and construction best practices and is specific to the application of NLT. Built examples are included to illustrate real application and visual reference as much as possible.

Online Access: Free

Resource Link

<https://www.thinkwood.com/products-and-systems/nltguide> 