



Acoustics: Sound Insulation in Mid-Rise Wood Buildings

<https://research.thinkwood.com/en/permalink/catalogue37>

Author: Stefan Schoenwald
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Ivan Sabourin

Organization: National Research Council of Canada

Year of Publication: 2014

Country of Publication: Canada

Format: Report

Material: CLT (Cross-Laminated Timber)
Light Frame (Lumber+Panels)

Application: Floors
Walls

Topic: Acoustics and Vibration

Keywords: Acoustics
Mid-Rise
Sound Insulation

Language: English

Research Status: Complete

Online Access: Free

Resource Link

<http://doi.org/10.4224/21274579>



Acoustics Summary: Sound Insulation in Mid-Rise Wood Building

<https://research.thinkwood.com/en/permalink/catalogue750>

Author: Stephan Schoenwald
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Ivan Sabourin

Organization: National Research Council of Canada

Year of Publication: 2014

Country of Publication: Canada

Format: Report

Material: CLT (Cross-Laminated Timber)
Light Frame (Lumber+Panels)

Application: Wood Building Systems

Topic: Acoustics and Vibration
Design and Systems


Keywords: Mid-Rise
Sound Insulation
Impact Sound Transmission
Airborne Sound Transmission

Language: English

Research Status: Complete

Online Access: Free

Resource Link

<http://doi.org/10.4224/21274554> 



Analytical Study on Seismic Force Modification Factors for Cross-Laminated Timber Buildings

<https://research.thinkwood.com/en/permalink/catalogue1201>

Author: Shiling Pei
Marjan Popovski
John van de Lindt

Publisher: Canadian Science Publishing

Year of Publication: 2013

Country of Publication: Canada

Format: Journal Article

Material: CLT (Cross-Laminated Timber)

Application: Wood Building Systems

Topic: Seismic

Keywords: Force Modification Factors
Numerical Model
National Building Code of Canada
Mid-Rise

Language: English

Research Status: Complete

Series: Canadian Journal of Civil Engineering

Abstract:

With two producers in operation and over 20 buildings already constructed or in planning process, use of cross-laminated timber (CLT) is gaining popularity in Canada. Since CLT as a structural system is currently not included in the National Building Code of Canada...

Online Access: Payment Required

Resource Link

<https://doi.org/10.1139/cjce-2013-0021>



Assessing Cross Laminated Timber (CLT) as an Alternative Material for Mid-Rise Residential Buildings in Cold Regions in China—A Life-Cycle Assessment Approach

<https://research.thinkwood.com/en/permalink/catalogue1209>

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

Publisher: MDPI

Year of Publication: 2016

Country of Publication: Switzerland

Format: Journal Article

Material: CLT (Cross-Laminated Timber)

Application: Wood Building Systems

Topic: Energy Performance

Keywords: Life-Cycle Assessment
Cradle-to-Grave
China
Cold Regions
Severe Cold Regions
Energy Consumption
Mid-Rise
Residential

Language: English

Research Status: Complete

Series: Sustainability

Abstract:

Timber building has gained more and more attention worldwide due to it being a generic renewable material and having low environmental impact. It is widely accepted that the use of timber may be able to reduce the embodied energy of a building. However, the development of timber buildings in China...

Online Access: Free

Resource Link

<https://doi.org/10.3390/su8101047>



The ASTC Ratings of Mid-Rise Wood Constructions Using CertainTeed SilentFX® QuickCut Gypsum Board [2nd Edition]

<https://research.thinkwood.com/en/permalink/catalogue1278>

Author: Jeffrey Mahn
Organization: National Research Council of Canada
Year of Publication: 2018
Country of Publication: Canada
Publication:
Format: Report
Material: CLT (Cross-Laminated Timber)
Application: Wood Building Systems
Topic: Acoustics and Vibration
Keywords: Apparent Sound Transmission Class
Mid-Rise
Gypsum
Fiberglass Insulation
Type X Gypsum Board
Language: English
Research Status: Complete
Online Access: Free

Resource Link

<http://doi.org/10.4224/23002826>



Behaviour of Mass Timber Panel-Concrete Connections with Inclined Self-Tapping Screws and Insulation Layer

<https://research.thinkwood.com/en/permalink/catalogue1984>

Author: Md Abdul Hamid Mirdad
Yng Hei Chui

Year of Publication: 2018

Country of Publication: South Korea

Format: Conference Paper

Material: Timber-Concrete Composite
CLT (Cross-Laminated Timber)

Application: Floors

Topic: Mechanical Properties
Connections

Keywords: Self-Tapping Screws
Insulation
Mid-Rise
High-Rise
Stiffness
Strength

Language: English

Conference: World Conference on Timber Engineering

Research Status: Complete

Online Access: Free

Resource Link

<https://indico.conference4me.psnr.pl/event/171/session/341/contribution/107/material/paper/1.pdf>



Building Envelope Summary: Hygrothermal Assessment of Systems for Mid-Rise Wood Buildings

<https://research.thinkwood.com/en/permalink/catalogue250>

Author: Khaled Abdulghani
Steve Cornick
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Michael Lacasse
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Travis Moore
Phalguni Mukhopadhyaya
Mike Nicholls
Hamed Saber
Michael Swinton
David van Reenen

Organization: National Research Council of Canada

Year of Publication: 2014

Country of Publication: Canada

Format: Report

Material: CLT (Cross-Laminated Timber)
Light Frame (Lumber+Panels)

Application: Wood Building Systems

Topic: Design and Systems
Fire
Moisture

Keywords: National Building Code of Canada
Mid-Rise
Building Envelopes

Language: English

Research Status: Complete

Online Access: Free

Resource Link

<http://doi.org/10.4224/21274555>



Building Higher with Light-Weight Timber Structures: The Effect of Wind Induced Vibrations

<https://research.thinkwood.com/en/permalink/catalogue89>

Author: Marie Johansson
Andreas Linderholt
Åsa Bolmsvik
Kirsi Jamerö
Jörgen Olsson
Thomas Reynolds

Organization: Inter-noise

Year of Publication: 2015

Country of Publication: United States

Format: Conference Paper

Material: CLT (Cross-Laminated Timber)
Light Frame (Lumber+Panels)
Glulam (Glue-Laminated Timber)

Application: Wood Building Systems

Topic: Acoustics and Vibration
Wind

Keywords: Mid-Rise
High-Rise
Vibration Properties

Language: English

Conference: Inter-noise 2015

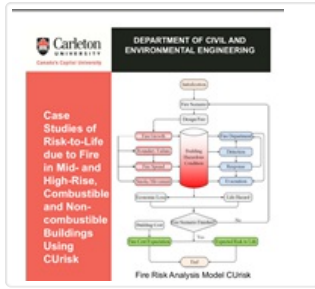
Research Status: Complete

Notes: August 9-12, 2015, San Francisco, California, USA

Online Access: Free

Resource Link

<https://reynoldstom.files.wordpress.com/2013/08/internoise.pdf>



Case Studies of Risk-To-Life Due to Fire in Mid- and High-Rise, Combustible and Non-Combustible Buildings Using CURisk

<https://research.thinkwood.com/en/permalink/catalogue279>

Author: Xia Zhang
Jim Mehaffey
George Hadjisophocleous

Organization: Carleton University

Year of Publication: 2015

Country of Publication: Canada

Format: Report

Material: CLT (Cross-Laminated Timber)

Application: Wood Building Systems

Topic: Fire

Keywords: High-Rise
Mid-Rise
Residential
Tall Wood
Office Buildings
CURisk
Risk-to-Life

Language: English

Research Status: Complete

Abstract:

Both the BCBC and the NBCC are objective_based codes whose provisions are deemed to be acceptable solutions. Alternative solutions are permitted; however, they must be demonstrated to provide a level of performance equivalent to that of the acceptabl...

Online Access: Free

Resource Link

<http://www.bcfii.ca/system/files/reports/public/fii416-2014-15-newbuilds-case-studies-of-risk-to-life-due-to-fire-using-curisk.pdf>



Chapter 11: Environmental Performance of Cross-Laminated Timber

<https://research.thinkwood.com/en/permalink/catalogue830>

Author: Jennifer O'Connor
Lisa Podesto
Alpha Barry
Blane Grann

Organization: FPInnovations
Binational Softwood Lumber Council

Year of Publication: 2013

Country of Publication: Canada
United States

Format: Book Section

Material: CLT (Cross-Laminated Timber)

Application: General Application

Topic: Environmental Impact

Keywords: Life-Cycle Assessment
Mid-Rise
Volatile Organic Compounds
Environmental Footprint
North America
Sustainable Forest Practices
Indoor Air Quality

Language: English

Research Status: Complete

Series: CLT Handbook - US Edition

Abstract:

The environmental footprint of CLT is frequently discussed as potentially beneficial when compared to functionally equivalent non-wood alternatives, particularly concrete systems. In this Chapter, the role of CLT in sustainable design is addressed. The embodied environmental impacts of CLT in a mid-rise building are discussed, with preliminary results from a comprehensive life cycle assessment (LCA) study. We also discuss other aspects of CLT's environmental profile, including impact on the forest resource and impact on indoor air quality from CLT emissions. The ability of the North American forest to sustainably support a CLT industry is an important consideration and is assessed from several angles, including a companion discussion regarding efficient use of material. Market projections and forest growth-removal are applied to reach a clear conclusion that CLT will not create a challenge to the sustainable forest practices currently in place in North America and safeguarded through legislation and/or third party certification programs. To assess potential impact on indoor air quality, CLT products with different thicknesses and glue lines were tested for their volatile organic compounds (VOCs) including formaldehyde and acetaldehyde emissions. CLT was found to be in compliance with European labeling programs as well as the most stringent CARB limits for formaldehyde emissions. Testing was done on Canadian species, as there was no U.S. supplier of CLT at the time of this writing; because VOC emissions are affected by species, this work should be repeated from products made from different species.

Online Access: Free

Resource Link

<https://info.thinkwood.com/clt-handbook> 