MASS TIMBER INSTITUTE

UNIVERSITY OF TORONTO
JOHN H. DANIELS FACULTY OF ARCHITECTURE, LANDSCAPE, AND DESIGN

News From MTI

Hello Mass Timber Colleagues!

Feature: Mass Timber Building Science Primer

This month we are very pleased to feature the Mass Timber Building Science Primer authored by Dr. Ted Kesik, Professor of Building Science at the John H Daniels Faculty of Architecture, Landscape, and Design at the University of Toronto.

The Mass Timber Building Science Primer is aimed at the average design practitioner and construction professional. It assumes that readers have little to no familiarity with mass timber building technology. This publication was made possible through the generous sharing of the collective wisdom held among the practice and thought leaders in our mass timber industry.

Building science holds the key to the mass timber revolution because it plays a critical role in building innovation. The need for building science is commonly recognized after the occurrence of building performance problems, rather than proactively at the planning and design stages of building projects, as well as throughout construction and commissioning. Innovation by trial-and-error is both costly and risky. For this reason, contemporary building science has taken on greater importance in response to an increasing trend toward innovative departures from traditional and proven building practices. Nowhere is the need for sound building science greater than for innovative mass timber building technology.

The development of this primer commenced shortly after the launch of the Mass Timber Institute (MTI) centered at the University of Toronto. Funding for this publication was generously provided by the Ontario Ministry of Natural Resources and Forestry. Although numerous jurisdictions have established design guides for tall mass timber buildings, architects and engineers often do not have an awareness of the specialized building science knowledge needed to deliver well performing projects. MTI worked collaboratively with industry, design professionals, academia, researchers and code experts to develop the scope and content of this mass timber building science primer.

One of the most important reasons this publication was developed was to identify gaps in building science knowledge related to mass timber buildings so that industry, government and academia can work together to address these gaps with relevant research, development and demonstration programs. The mass timber building industry in Canada is still a collection of seedlings that continue to grow and as such they deserve the stewardship of the best available building science knowledge to sustain them until such time as they become a forest that can fend for itself.

The web of mass timber stakeholders is vital to building technology transfer and innovation. The network of Canada's

nascent mass timber building industry is only as strong as its weakest link. For mass timber to thrive through the alliances that have naturally developed over more than a century for conventional building technologies, a conscious and consistent stewardship will have to be fostered and actively promoted.

A large number of exemplary mass timber building projects around the world demonstrate that the innovative use of wood for a diversity of building typologies can be implemented by architects, engineers and constructors. But the specialized building science knowledge needed to achieve high-performance mass timber buildings is confined to a relatively small group of experts. The mass timber revolution needs many more new recruits across many fields, while the existing building industry must become trained and educated in order to realize the full potential for engineered wood buildings.

This primer provides a concise outline of the relevant subject matter and serves as a “knowledge mapping” guide that allows users to download resources from a curated archive of journal papers, reports, handbooks and articles. While all of the downloadable resources are documents available free online, users of this primer have been spared the countless hours searching and culling among the vast and growing body of information about mass timber.

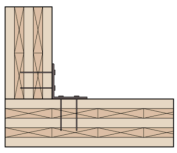
When mass timber building technology has enjoyed the same degree of penetration as steel and concrete, this primer will be long outdated and its constituent concepts will have been baked into the training and education of design professionals and all those who fabricate, construct, maintain and manage mass timber buildings. Until then, it is hoped this primer will be found useful by students, instructors, building industry professionals and all the other players and stakeholders involved in mass timber buildings.

You can get a copy of the Mass Timber Building Science Primer on our website.

News from the Institute

1. TimberCon

On March 18 and 19th, the Mass Timber Institute co-chaired the TimberCon mass timber conference with the Architect's Newspaper. The conference was a great success and included keynotes and panels on sustainability, engineering, how Indigenous architects are shaping mass timber, and filling in the gaps with mass timber among others. Thank you very much to those of you who attended and we hope to see you at the next one!



2. Information Bulletin: Mass Timber Connectors

We are very pleased to release our 5th information bulletin, this time about connections in mass timber. If you would like to learn about the methods and types of connectors used in joining mass timber elements together, be sure to check out our latest bulletin.

3. IT upgrades

You may have noticed some changes with our IT as we switch over to the Daniels Faculty system at the University. As a result, our @masstimberinstitute.ca email addresses are being phased out our website has moved. Don't worry, we are still around! If you would like to connect with us you can reach Anne at this address and Emmett at this address, or use the contact form on our site.

4. OPFA Conference

Foresters get excited! This year the MTI heads to the Ontario Professional Foresters Association virtual conference April 6-8 as an exhibitor. If you haven't already, check out the program here and be sure to register and stop by the MTI exhibit booth.

Updates from our Partners

- Congratulations to the Architect's Newspaper and Mark Gaglione from EllisDon for a very successful webinar as part of the AN Trading Notes Series. If you missed it, you can watch the recording here.
- Congratulations to John Robinson on his reappointment as presidential adviser on the environment, climate change and sustainability at U of T.
- Congratulations to Fast and Epp on receiving funding from NRCan's Green Construction through Wood program for the construction of a new head office made of mass timber. Read about the project here.
- Read about fire testing of large scale GFRP reinforced concrete in this paper co-authored by MTI partner Sam Salem at Lakehead University.
- If you missed it, be sure to check out the latest (mass timber) issue from the Architect's Newspaper.

Other Updates

- FNTI releases plans for their new facility: a net-zero campus building inspired by longhouse construction as they expand their educational programming.
- Attend the Latornell Conservation Symposium virtually on May 27th, 2021. Students and professionals will present the latest research in the field of conservation.

That's all for now -- thanks for reading!

You can reach us by phone at:
416-978-0561