Insurance for Mass Timber Construction: Assessing Risk and Providing Answers

As mass timber construction has proliferated across the U.S., a number of project teams have run into the same issue: insurance companies unfamiliar with these types of buildings can be reluctant to provide insurance. The challenge arises both during the course of construction (builder's risk insurance) and after construction is complete and the building is put to its intended use (permanent property insurance).

Despite the obvious challenge of wood being more susceptible than concrete or steel to damage from fire or water, mass timber structures provide certain advantages. For example, because mass timber elements possess inherent fire-resistive qualities, a building can benefit from a certain level of passive fire resistance immediately after the frame is erected. Protection doesn't rely on (or wait for installation of) materials such as spray-applied fire-resistive products, gypsum wallboard, or other means of fireproofing. The potential for faster construction can also mitigate risks. Less time under construction means less time for potential hazards such as theft of building materials and equipment, adverse weather conditions, or arson.

In addition to fire safety, property insurance for mass timber buildings requires an understanding of performance criteria related to things like moisture, durability, and building enclosure detailing. Much of the property insurance discussion is site-specific—e.g., Is the area prone to flooding or subject to earthquakes or high winds, and what is the risk of adverse conditions related to adjacent structures? There is a growing body of research demonstrating the performance of mass timber buildings under various conditions, with many of the reports available via the WoodWorks website.[1]

One of the most important recommendations for a project team is to engage with an insurer early, ideally at the concept phase. The insurance landscape for mass timber buildings is evolving rapidly and the insurer will want to understand the project and collaborate with its team to mitigate risk where possible. Ultimately, it's best to think of the insurer as another member of the team and not someone to contact in the weeks before shovel hits dirt.

This paper is intended for developers and owners seeking to procure insurance for mass timber buildings, for design/construction teams looking to make their designs and installation processes more insurable, and for insurance industry professionals looking to alleviate their concerns about safety and performance. A more in-depth discussion on this topic can be found in the Mass Timber Insurance Playbook – U.S. Edition.[2]

The Village at Mines Park
Colorado School of Mines
SAR+ Architects / Fortis Structural

Photo Kyle Chambers

Builder's Risk and Property Insurance

Builder's risk and property insurance are purchased to protect the policyholder and others with an insurable interest in the covered property from losses arising out of direct physical damage to that property. This may include lenders, equity investors, or, in the case of builder's risk insurance, contractors. Insurance companies and their investors/shareholders receive premiums in return for accepting the risk and promise to pay in accordance with policy provisions in the event of a claim. Insurance policies are mutually beneficial contracts that add certainty to business transactions for all parties.

Insurance companies employ underwriters to evaluate the applicant and property in question to assess the risks based on the type of insurance requested. Insurance underwriters apply both their individual knowledge and established company guidelines. These individuals are tasked with discerning which potential policyholders present an acceptable risk and determining policy limits, deductibles, and premiums.

Factors That Influence Premiums

Numerous factors are considered when determining insurance premium costs for buildings.

Overall insurance market conditions fluctuate as they are affected by global events, including catastrophic claims such as earthquakes, hurricanes, and wildfires. Economic factors can also have a big impact on the industry. For example, 2020 saw the COVID-19 pandemic and resulting economic upheaval, including labor and supply chain disruptions and civil unrest. In reaction to increased losses and reinsurance[3] costs, insurance companies increased premiums across the property sector, regardless of structural materials used.

The U.S. insurance industry is heavily regulated at the state level to protect policyholders against insurer insolvency. State regulators will take action against insurers perceived to charge inadequate premiums compared to the risk of loss.

Building-Specific Risk

Building-specific risk can be thought of as arising from three basic sources: the operating environment, project participants, and scope of work.

A project's operating environment is comprised of factors that are unique to the site where the building is located. Relevant factors include:

- Climate, including seasonal temperatures and weather patterns
- Soil conditions
- Exposure to earthquake
- Exposure to flood from stormwater run-off or nearby bodies of water
- Exposure to fire from adjacent structures or forests
- Statutes, regulations, and codes
- Availability and cost of materials and labor

Project participants include sources of project funding (debt and equity), the project owner and/or developer, design and construction team, suppliers and manufacturers of prefabricated mass timber components, and occupants or tenants of a completed building. Relevant factors include:

- Experience with mass timber structures
- Willingness to engage and collaborate to manage risk
- Physical and/or intellectual assets necessary to fulfill long-term commitments
- Contingency plans relative to supply chain disruptions

Finally, the scope of work is comprised of the design, means and methods, and materials that go into a project. The design, fabrication, construction, and maintenance of a building during and after construction should be planned with careful consideration to aesthetics, function, resilience, and repairability. Relevant factors include:

- Spans and open spaces
- Juxtaposition of mass timber elements with other construction materials that might fuel a fire
- Vegetative/green elements such as roofs, walls, and water features
- Accommodations for expected operations/occupancy

Roles of the Applicant, Broker, and Underwriter

When procuring commercial property insurance, it is important that applicant and broker agree on expectations, roles, and responsibilities. A broker needs to fully understand the applicant's company and insurance needs, including any requirements from lenders, equity investors, tenants, and other parties. Certain coverages may be dictated by property leases, loan agreements, or design and construction contracts. Brokers will also consider an applicant's risk tolerance. The insurance contract is one method of risk funding within a comprehensive risk management and mitigation strategy.

Once sufficient information is collected, the broker packages it according to industry standards and sends it to insurance markets. Each broker submission is tailored to meet the specific needs of the applicant, and negotiations with underwriters vary widely. It is important that the broker controlling the insurance submission is experienced with mass timber and has access to the global markets willing to underwrite such buildings. If this is not the case, it may be necessary to engage one or more additional brokers to achieve a complete marketing effort.

If multiple brokers will approach the marketplace, it is critical to strictly orchestrate which brokers will approach which insurers. Insurance companies will only review the first submission received for an applicant and some underwriters will choose not to proceed with the underwriting process if they receive multiple submissions for the same project. Even if the underwriter does proceed, failure to manage the insurance submission will influence the applicant's perceived ability to manage risk.

A successful underwriting submission will fully disclose the risks posed by the insured property and describe in detail the efforts taken to avoid and mitigate losses. Relevant factors include:

- Demonstration of sound design and construction by qualified parties
- Control of prefabricated components during manufacture, fabrication, transportation, and storage
- Inspection criteria
- Maintenance provisions
- Provisions to detect and eradicate exposure to water, including rain, condensation, and burst/leaking pipes or HVAC systems
- Relevant loss history of party participants on other projects/buildings

Photo Mike Sinclair

111 East Grand / Neumann Monson Architects / Raker Rhodes Engineering / StructureCraft

If the submission is complete, there will be no need for the underwriter to ask a great number of clarifying questions. That said, the applicant and broker should be prepared to address any questions or concerns related to the applicant and their risk management efforts, and to explore options to best meet the risk management needs of both parties. Depending on premium size and authority of the underwriter, approval may be required from several layers of management, including home office underwriters and even the Chief Underwriting Officer. Each individual reviewing the submission will have additional concerns that need to be addressed. It is a time-consuming process under the best of circumstances, underscoring the importance of the initial underwriting submission.

Insurance Companies and Mass Timber

Many insurance company home office underwriters and Chief Underwriting Officers have analyzed mass timber construction and made decisions regarding their company appetite for the associated risks. These executive-level decisions are made using information obtained from industry conferences, trade papers, and evaluations by corporate counsel. Insurers consider mass timber to be high risk because, while it has been used in Europe for decades, there is still insufficient loss data to support more favorable rates in the U.S. When evaluating a mass timber project, underwriters therefore have few reference points for comparison. Some of the unknowns include:

- The time necessary to repair damage, which influences delay in start-up and business interruption coverage
- Ability to manufacture and deliver replacement components such as panels, posts, and beams
- Owner's acceptance of the appearance of repairs

Despite the lack of relevant actuarial data, progress is being made. The growing number of successfully completed mass timber buildings (Figure 1) is helping by illustrating collections of projects in various geographical areas. A number of design and construction firms are also now specializing in mass timber and have expanding portfolios that demonstrate both their own experience and contribution to the nationwide momentum. Information on many of these projects, including their project teams, can be found on the WoodWorks Innovation Network (WIN).[4]

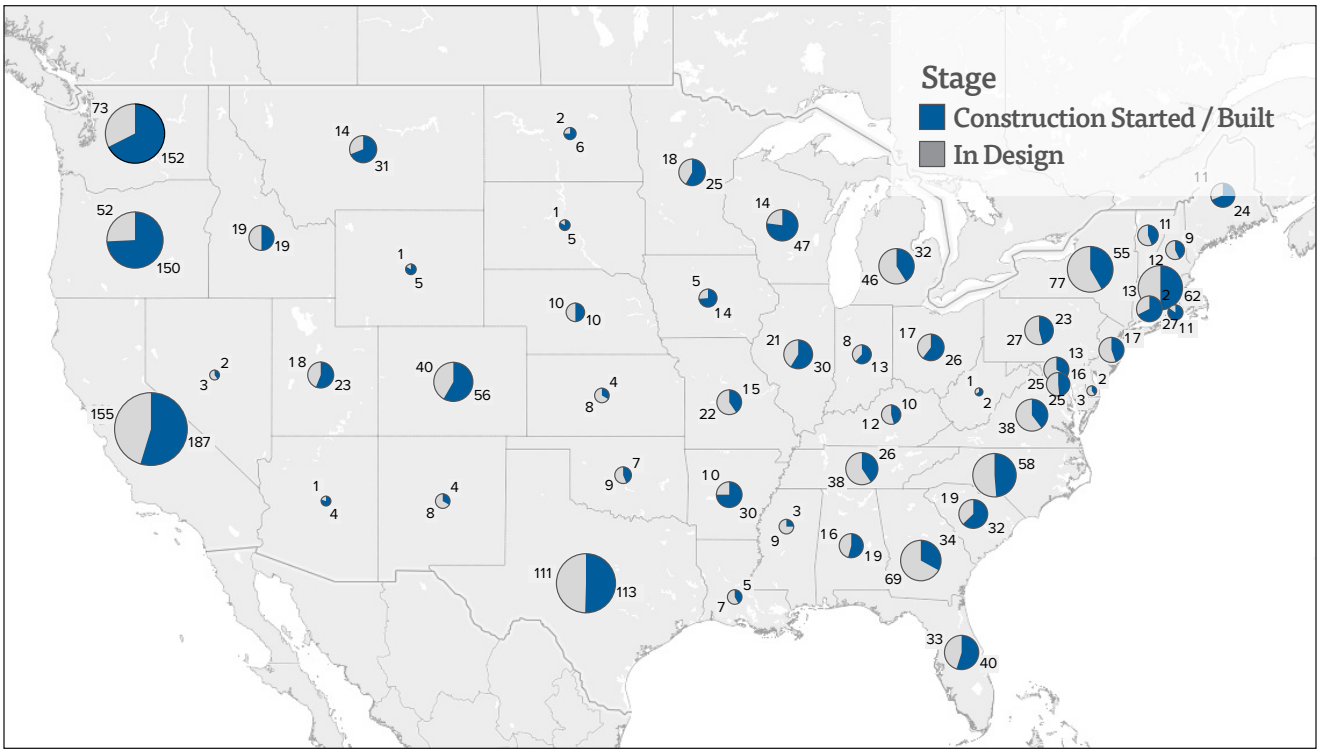


FIGURE 1: As of June 2026, there were 2,833 mass timber projects built, under construction, or in design across the U.S.

Source: WoodWorks

Photo Aranisse Smith-Njigba

Mercer Middle School / Bassetti Architects, A Design Studio of HMC Architects / Coughlin Porter Lundeen

Photo Chuck Choi

Norwell Public Library / Oudens Ello Architecture / LeMessurier

Conclusion

While mass timber is relatively new in the U.S., the number of buildings is growing significantly in most regions of the country, and the insurance markets continue to accelerate. As with any unfamiliar material or building type, insurance challenges are anticipated. There is a great deal of information available to help insurance brokers and underwriters evaluate the relative risks of mass timber construction today, and research and testing is ongoing. It is also important for developers, owners, and contractors to engage early with experienced brokers as this is key to leveraging the unique attributes of mass timber and realizing insurance premiums that reflect the benefits of this innovative wood material.

The Mass Timber Insurance Playbook – U.S. Edition (MTIP) gives developers, design/construction professionals, and insurers a comprehensive framework for working together to resolve challenges that impact the insurability of mass timber buildings, making it easier for teams to bring more of these projects to fruition.

The U.S. Edition is adapted from the original Mass Timber Insurance Playbook developed by insurance and building resilience specialists in the United Kingdom in partnership with the Alliance for Sustainable Building Products (ASBP).

The MTIP provides guidance for all parties on how to manage risk and secure adequate insurance coverage for both the construction and operation of mass timber buildings. The perspectives of the owner, lenders, architect, design team, builder, manufacturer, fabricator, and insurers are often different (and sometimes conflicting), resulting in contractual requirements, definitions, and actions that might seem unnecessary to some but must be understood and negotiated.

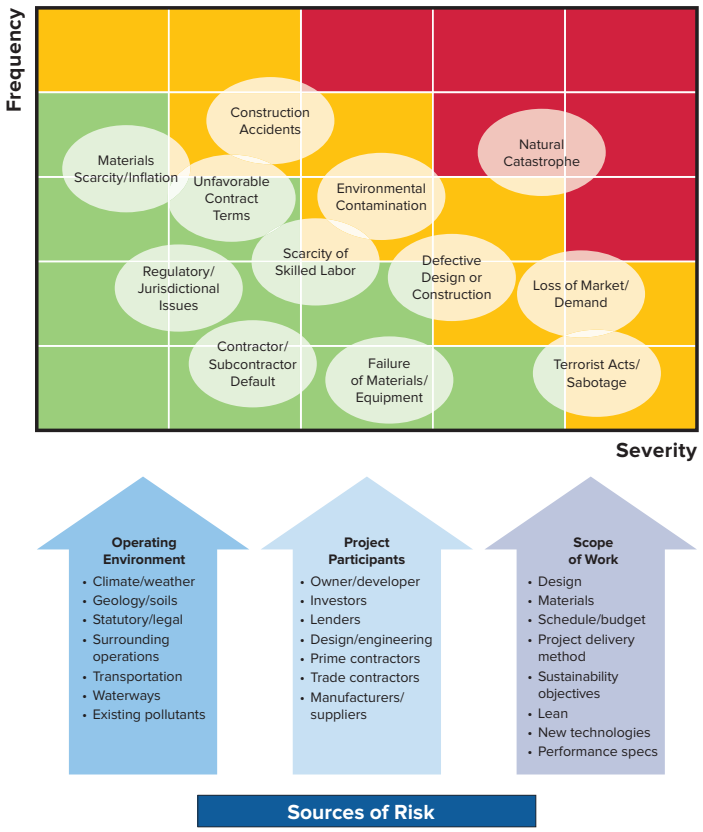
The MTIP is applicable to any building where mass timber is utilized as a significant structural element, with the exception of single-family dwellings. While example solutions to key risk issues are provided for guidance, it is deliberately non-prescriptive, leaving the design team free to resolve issues by the most appropriate means available and satisfactory to all project participants.

Use of the MTIP cannot guarantee insurability; however, improving the risk profile and engaging early with insurers will increase the opportunity for a favorable outcome. Optimal results are achieved by applying a holistic, team-based approach to risk management and insurance.

From the MTIP: Risk Identification and Mapping

In a construction risk management exercise, it is beneficial to consider the risk to all project participants. Because every project (and project team) is unique, it is helpful to consider the risk arising out of the operating environment, project participants, and scope of work. Identification, mapping and ultimate quantification of the consequences of risk will inform risk management and insurance decisions, and related negotiations among the parties.

RISK MAP



Additional WoodWorks Resources

WoodWorks offers hundreds of technical resources that can help design and construction teams make their wood projects more resilient from an insurance standpoint. Visit the resource library (woodworks.org/resource-library/) to browse materials, or see the Mass Timber Technical Reference Guide for links to essential design resources on topics such as fire resistance, moisture, and durability.

Resources specific to insurance include:

Mass Timber Insurance Playbook – U.S. Edition

Mass Timber Project Questionnaire for Builder's Risk Insurance

Mass Timber Building Insurance

Repair of Fire-Damaged Mass Timber

Learn about the projects featured in this paper, including their design and construction teams, on the WoodWorks Innovation Network (WIN).

End Notes

[1] Testing and research reports demonstrating the safety and durability of mass timber buildings are available at www.woodworks.org/learn/mass-timber-clt/mass-timber-building-insurance/.

[2] WoodWorks – Wood Products Council. (2024). Mass Timber Insurance Playbook – U.S. Edition. www.woodworks.org/resources/mass-timber-insurance-playbook/.

[3] Reinsurance is "insurance for insurance companies," where an insurer transfers a portion of its liabilities to another insurance company in exchange for a premium to share the burden of large risks.

[4] www.woodworksinnovationnetwork.org

Julia West House / Holst Architecture / KPFF

Photos Christian Columbres

Adapted from a 2018 paper written for WoodWorks by Richard McLain, PE, SE and Susan G. Brodahl, Senior Vice President, Heffernan Insurance Brokers

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