Mitigating Water Damage Risks in Wood-Frame Construction with the Power of AI

Wood frame is a widely popular method of construction, driven by the relatively lower cost of supplies and its sustainability.

Wood as a material is lightweight and allows for quicker construction than other materials. It is also a natural insulator, helping regulate temperatures better and reduce energy consumption. With higher interest rates and inflation, wood-frame construction is seen overall as a more efficient construction method with long-term environmental benefits in energy consumption.

However, the susceptibility of wood to water leaks significantly increases the risk of water damage to these wood-frame projects. This elevated risk results in higher insurance costs which offset some of the inherent financial benefits of wood frame.

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KEY INSIGHT
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best practices combination significantly reduces the risk of water damage on construction sites and cuts insurance costs — while also reducing the time and effort required to obtain project coverage.

This article discusses the challenges inherent to water damage in wood-frame structures and reviews the highlights and benefits of the NFP and WINT alliance.

**Water Is the New Fire**

For many years, fire was the top cause of damage and losses on construction sites and in operational buildings. Adoption of new technologies and work procedures have significantly reduced this risk. Over the past few years, water has been identified as “the new fire.” Water damage is now the leading source of damage and insurance payouts on construction sites, as well as in operational buildings. Water damage accounts for a full 30% of the insurance loss ratio on builders risk policies, making it a critical concern for insurers. It is also the third most common claim in operational buildings with over $13B total in property and casualty payouts annually. Water-leak incidents with damages in the millions are common and can often reach many tens of millions of dollars.

Wood-frame projects are significantly more sensitive to water leaks relative to other construction methods. The nature of wood makes it susceptible to challenges not encountered by other building materials. This includes wood rot, mold, termite infestation, swelling and warping, corrosion of metal connectors, electrical hazards and insulation degradation.

The consequences of water damage on wood-frame construction projects can be both immediate and long term. Water damage can lead to structural problems and costly delays. Mold poses quality of life and health issues. These risks present significant challenges to insurance markets. As a result, insurers are raising fees: builders risk policies have seen their deductibles rise from tens of thousands of dollars a few years ago to between a quarter of a million and up to a full million dollars now. And some insurers now require water mitigation to be implemented at the site as a prerequisite to providing coverage.

**Mitigating Water Damage with Artificial Intelligence**

WINT’s industry-leading water management and leak mitigation solution combines advanced data analytics with Internet of Things devices and automated shut-off valves. It uses artificial intelligence, machine learning, and pattern-matching technologies to learn normal water flow patterns and identify anomalies. When an anomaly is detected, the system alerts site personnel and can automatically shut off valves.

In addition to preventing damage, the solution’s intelligent real-time monitoring identifies sources of waste to eliminate water waste and its associated carbon emissions. **Projects using WINT cut water consumption and costs by 20% – 25% to improve their sustainability stance while protecting them from water-leak damage.**

A study comparing sites that used WINT’s technology found that WINT-protected sites incurred significantly less water damage than those who did not. Of the sites surveyed, those who used WINT technology accounted for 75% fewer insurance claims. Moreover, these sites resulted in a 90% reduction in insurance payouts, representing far fewer losses that require financial relief from water damage.

**Reduction in Claims and Financial Impact**

<table>
<thead>
<tr>
<th>Number of claims</th>
<th>Cost of damage</th>
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<tbody>
<tr>
<td>with WINT</td>
<td>75% fewer claims</td>
</tr>
<tr>
<td>without WINT</td>
<td>90% fewer claims</td>
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**Supporting Wood-Frame Projects with Technology and Broker Relations**

NFP’s C&I Technology Alliance is a group of experts that identify, investigate and evaluate risk-mitigating technology, categorizing them in specific risk categories that are pertinent to the insurance sector. Through the Technology Alliance, the goal is to revolutionize the construction and infrastructure industry by leveraging risk-mitigating technologies for clients by:
1. Enhancing client awareness of new technologies while securing exclusive distribution discounts for our clients.
2. Educating insurers and validating these solutions to secure improved insurance procurement terms and conditions.

The alliance between NFP and WINT brings a holistic water-mitigation approach to safeguarding and insuring wood-frame construction. WINT’s in-line water-management technology plays a pivotal role in protecting projects from water damage through real-time monitoring and alerts, and proactively stops water leaks as they happen. This allows NFP to leverage its broad relationship with insurance carriers to optimize rates and other improved insurance terms for wood-frame projects. Additionally, NFP offers potential incentives that further sweeten the deal for construction projects.

Impact on Developers and Investors

As construction costs continue to rise, it becomes more important to include water mitigation when setting a project budget. The conversation with developers is easier to have when budgets include the appropriate cost for enhanced water-leak mitigation, such as WINT’s technology. Understanding the long-term positive impact these solutions can have on a project, budgeting for it early on can be significantly more cost effective than trying to add it later.

The investment community continues to put a stronger focus on environmental, social and governance, making it even more important for long-term investors to see technology used that will ultimately reduce the environmental impact of construction projects. Lastly, from an insurance perspective, after the construction phase has been completed, deploying water mitigation technologies will ultimately lead to better terms, conditions and pricing on the operational property placement – providing long-term capital savings for owners and developers as the project matures.

Summary and Conclusions

Water damage is the key factor driving up insurance costs for wood-frame projects. By addressing the risk with a proven AI-based solution, the NFP and WINT alliance provides a comprehensive and inclusive water-resilience solution to alleviate this critical risk.

Water damage causes billions of dollars of losses every year. Preventing these losses benefits both insurers and contractors who realize these eliminated losses. Insurers benefit from lower loss ratios, while contractors benefit from reduced rates. Furthermore, implementing AI-based technology for mitigating water damage impact can enhance the financial profile of a building for future owners since a structure with this technology is more sustainable and technologically advanced than one without.

Fire suppression, elevators and other technologies – all innovative at their time – helped change the construction risk landscape. Water mitigation, just like its predecessor technologies, is rapidly becoming a standard feature on job sites and benefitting the industry overall by eliminating a primary pain point in today’s construction projects.

Water Mitigation Case Study

One Tier 1 contractor was, like many others in the industry, challenged by water-leak damage. This general contractor (GC) then implemented WINT on several projects in early 2021. Following initial success, the GC added WINT to its standard water management policy. Water Intelligence solutions were then deployed across all their projects as part of standard operating procedures.

Three years later, this GC has largely eliminated all water-leak damage and claims across its portfolio. There are no longer project delays due to water leaks, and the contractor is benefitting from reduced insurance costs.

As a side benefit, WINT’s solutions identified multiple water-waste issues: a faulty water tank valve resulted in the tank continuously spilling water to sewage at an annual rate of 7.5 million gallons and over $90,000 a year on one project. Leaky toilets, faulty taps and other ongoing sources of water waste have been identified, saving this GC tens of thousands of dollars.
About WINT

WINT Water Intelligence is dedicated to helping businesses reduce their environmental footprint by preventing the hazards, costs, waste and environmental impact associated with water leaks. Utilizing the power of artificial intelligence and Internet of Things technology, WINT provides a solution for commercial facilities, construction sites and industrial manufacturers looking to cut water waste, reduce carbon emissions and eliminate the impact of water leak disasters. WINT has been recognized by Fast Company and CB Insights as one of the world’s most innovative AI companies and has won multiple awards, including “Next Big Things in Tech” and the Excellence in Technology - Claims award from Insurance Times. WINT was also listed at the top 30% of Inc. 5000 among the fastest growing companies in America in 2022.

For more information about WINT, visit [www.wint.ai](http://www.wint.ai).

About NFP

NFP is a leading property and casualty broker, benefits consultant, wealth manager, and retirement plan advisor that provides solutions enabling client success globally through employee expertise, investments in innovative technologies, and enduring relationships with highly rated insurers, vendors and financial institutions.

Our expansive reach gives us access to highly rated insurers, vendors and financial institutions in the industry, while our locally based employees tailor each solution to meet our clients’ needs. We’ve become one of the largest insurance brokerage, consulting and wealth management firms by building enduring relationships with our clients and helping them realize their goals.

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