Marsh

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How the insurance market views Cross Laminated Timber

Cross-laminated timber (CLT) has been used extensively across Europe for many years, but it remains a relatively less recognised construction method within the UK. Consequently, the insurance market's exposure to such risks is limited — both in terms of construction projects and the built asset.

The volume of loss history to accurately assess claims performance, is simply not available in the same way as concrete floored buildings, for instance. Having said that, CLT hybrid structures have formed a sizeable proportion of builds within the UK for several decades, but will have fallen under annual "contractors all risks" (CAR) policies, due to builds being lower in value, and therefore, not been individually rated by underwriters.

As more buildings are constructed using CLT, the insurance market's knowledge of claims performance and risk factors will inevitably increase. However, in the meantime, in the current transitioning market conditions, insurers within the UK are taking an extremely conservative view of CLT and seeking to limit their exposure (as they are with any risk outside of their core business).

This cautious outlook has manifested itself in a number of ways. Where insurers are limited on project capacity, a CLT-related insurance placement will typically involve a larger panel of insurers (several layers to achieve the required limit), alongside associated increases in premiums, higher deductibles, and more limited policy coverage. Clients should expect a longer and more complex placement process — gathering and reviewing any information submitted takes time whilst many insurers will only consider a CLT risk if there is an existing client relationship. Insurers' appetites may also be influenced by the extent of CLT within the building structure.

In addition, it is important to consider that the real estate sector has unfortunately experienced a number of large fire losses in the UK, most recently a fire that significantly damaged a CLT structure in London during construction. These losses have reinforced a conservative underwriting approach when assessing newer materials like CLT.

While there are several factors to consider in relation to CLT, challenges are not unsurmountable and some new entrants to this market have increased capacity. However, careful consideration will need to continue to be applied and documented in relation to supply chain, design, and execution of the build, ahead of engaging the insurance market, in order to secure the optimum terms. In our view, projects involving significant proportions of CLT may attract considerable uplifts in premium for some time to come. Having said this, our recent experience of placing projects has been positive, despite the many market challenges.

Marsh plays an active role within the Mass Timber Office Forum (MASTIF) Working Group, helping to define a code of practice among other things. The considerations discussed include fire precautions; preventing and dealing with water ingress; health and safety; project insurance; and working with mass timber in practice. This also enables Marsh to gain an informed view of the development challenges faced across the whole stakeholder spectrum.

What information will insurers likely request?

As insurers currently lack significant loss history, a considerably more detailed submission is likely to be required. Significant planning needs to be documented ahead of engaging any potential insurer(s). Moreover, as the completed asset enters its operational phase with any potential tenant, landlord, or owner, there will need to be careful consideration as to which insurer(s) would be comfortable offering the required property insurance. Below are the typical questions and concerns insurers will likely raise ahead of offering any terms:

CONSTRUCTION PHASE

- A detailed summary of how CLT or glulam will be used in the project.
- Is the CLT or glulam a structural system and/or do panels provide structural support?
- Experience of supply chain, including main contractor, architect, structural engineers, fire engineers and MEP engineers.
- Who will be manufacturing the CLT and how and where will it be manufactured?
- Will the manufacturer be constructing the buildings?
- Where on site will the CLT be stored and how will it be protected from the elements?
- What measures will protect the timber from water and moisture pre-delivery and during delivery to the site?
- What systems and management controls will be in place to limit damage from each of these sources, including flood and escape of water?
- What specific provisions are in place to suppress any fire, such as fire protection system design? How will the potential for fire spread in timber voids be managed? Does suppression extend to the protection of all hidden timber voids?
- Confirmation of all security in place; will it be covered by CCTV and/or guarded 24/7?
- Fire marshals will typically be required on-site 24/7.
- What in-built design elements seek to limit the extent of possible damage to the timber structure from these sources (for example, fail to safe design, fail to safe plumbing fittings, waterproof coverings and encapsulations)?

OPERATIONAL PHASE

- Provide the project specific data that is being used to justify the fire resistance of the CLT, glulam or similar material used.
- How will the management of the CLT, glulam, or similar material be monitored?
- In the event of damage to the CLT, glulam, or similar material, how will the repairs and replacements be managed?
- Has a fire consultant undertaken an exercise to ensure the proposals conform to current fire regulations as detailed in building regulations and standards?
- Is the building to be sprinklered? If so, what type of system will be used and to what extent?
- To what level will the fire detection be installed? What type of system?
- Will the fire-fighting equipment (including wet riser, sprinkler riser, and fire alarm cabling) be located within a non-combustible core area?
- Has consideration been given to the fire behaviour with regard to delamination of CLT, glulam, or similar material during a fire? Is test data available to support this stance?
- Has the calculation been undertaken to prove that building services hanging from the CLT, glulam, or similar materials will not affect its strength or integrity?
- If applicable, is the steelwork fire rated, and if so, what is the rating? Is the steelwork encased in concrete plaster-board?

CLT – A SUSTAINABLE INSURABLE CONSTRUCTION MATERIAL FOR THE FUTURE?

The built environment is responsible for around 40% of the UK's carbon footprint, and with countries across the globe firmly committed to tackling the climate crisis, reducing buildings' carbon emissions will inevitably lead to considering an alternative material where possible to reduce our carbon footprint.

Appetite to use CLT either in its pure form or a hybrid approach is increasing across all sectors, most recently, a large technology company embracing its use in their new London headquarters.

Utilisation of sustainable materials is only set to increase as countries and indeed businesses across the globe, further embrace the need to reduce their environmental footprint and ensure that environmental, social, and governance measures and targets are met. Perhaps then, the question is, which is most appropriate to the project in question: Pure CLT or a Hybrid Build - a mix of CLT and steel or concrete.

CLT - a growing market...

CLT was originally developed out of academic and industrial efforts within Germany and Austria during the 1990's; it used nails to secure the wood in place, and is accepted as the precursor to CLT. By the 2000's, CLT had become widely adopted across Europe and was utilised in various building systems, including single-family and multi-storey housing. The timber is stacked in a cross pattern, priding itself on additional structural strength.

To date, there is no record of CLT being manufactured within the UK; however, sources indicate that the estimated global annual output of the CLT industry has significantly increased, from around 1.6 million-1.8 million m3 in 2019 to 2.0 million-2.5 million m3 in 2020. Indeed, data is still being collated on how far COVID has affected actual production.

Currently the majority of CLT utilised within Europe is manufactured in Austria, with European production estimated to be circa 610,000-m3 annually, a figure which is growing year-on-year as businesses embrace its green related credentials, speed of construction and reduced costs versus the more traditional alternatives.

AN OPPORTUNITY TO DRIVE POSITIVE CHANGE IN THE RACE TO NET ZERO WHILE ATTRACTING FUTURE INVESTMENT?

Climate related demands for UK Construction companies and organisations are accelerating, changing the shape of reporting and risk management. In fact, the UK Government was among the first of the G20 to publish its proposed timeline for mandatory reporting. Although this is yet to be written into law and subject to further consultation, a recent HM Treasury report outlines the forthcoming Task Force on Climate-Related Financial Disclosures (TCFD) process and key milestones.

The UK Government's appetite to drive positive environmental change was further cemented following the announcement that from 30 September 2021, contractors wishing to bid for public works projects exceeding £5 million per year, would need to publish clear and credible carbon reduction plans before being invited to bid.

Furthermore, attracting investment from banks, asset managers, insurance companies and institutional investors is also set to become more challenging. Construction companies will need to provide a credible carbon reduction plan and accompanying "green" credentials as almost any investment will now play an instrumental part in their own TCFD and environmental, social and governance (ESG) reporting.

The environmental credentials of CLT is also of key relevance to the insurance industry.

According to Amy Barnes, Marsh's Head of Climate and Sustainability Strategy:

> **"To date, the insurance industry has mainly demonstrated its commitment to decarbonisation by aligning its investment activity with decarbonisation goals."**

To add to this, the need to incentivise projects with strong ESG credentials, particularly where decarbonisation is at the heart, is currently being recognised by the insurance industry.

TCFD disclosure explained

The TCFD framework incorporates 11 recommended disclosure areas for companies across four pillars: Governance, Strategy, Risk Management, and Metrics and Targets. Each pillar has its own recommended disclosures; the Risk Management component of TCFD incorporates the following:

1. The organisation's processes for **identifying and assessing** climate-related risks.
2. The organisation's processes for **managing** climate-related risks.
3. The processes for **integrating** the identification, assessment, and management of climate-related risks into the organisation's overall risk management.

To report effectively, TCFD will require underlying risk management procedures to address emerging **physical** climate risks, (such as risks related to the impact on physical assets) and **transition** climate risks, (including risks related to the transition to a lower-carbon economy encompassing both a company and its **supply chain**).

CONCLUSION

With respect to driving out cost and increasing efficiency, CLT has a shorter construction time versus more traditional methods. Many estimations claim it is up to six times faster than a traditional build owing to panel construction and the ease of any subsequent fixing and remediation work. Building in timber is a good way to attract attention from financial institutions as they too look favourably on funding projects that have a reduced environmental impact due to their own respective ESG strategies.

CLT certainly appears to be one of the front-runners in the race to reducing our carbon footprint within construction, however when considering the end-of-life stages and what to do with that timber, the jury remains out. If it goes to landfill, the wood would rot and release methane, while incineration would seem to be somewhat counterproductive releasing carbon into the atmosphere as a consequence. In a perfect world, the buildings would be salvaged and panels repurposed, but achieving this in practice would present an altogether different challenge, as the panels would almost certainly be bespoke and therefore not easily transferred to another build.

From an insurability perspective, it is hoped that insurers become more at ease with the application of CLT-based builds as their experience and individual "Books" grow within this space. Likewise, insurance brokers will continue to share their understanding while helping their clients mitigate the associated risks in the application of CLT in advance of engaging the market.

Whatever method of construction your business chooses to pursue, one factor remains absolutely key. It is essential to engage with the appropriate broker who intrinsically understands the market and accompanying challenges of CLT and related modern methods of construction. Doing this as early as possible will not only enable your project to be marketed effectively, but also allow time for any potential insurer to gather the required information, fully understand the project, and in conjunction with your chosen broker, help mitigate the risks.

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