

Loss Prevention Standards – Asset Classes

# Mass Timber - Handover and Use (RIBA 6-7)

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**This Loss Prevention Standard relates to Stages 6 to 7 of the Royal Institute of British Architects (RIBA) Plan of Work - Handover and Operational Use and provides guidance and support on the key hazards and areas for consideration during the handover and use of a completed Mass/Engineered Timber Building**



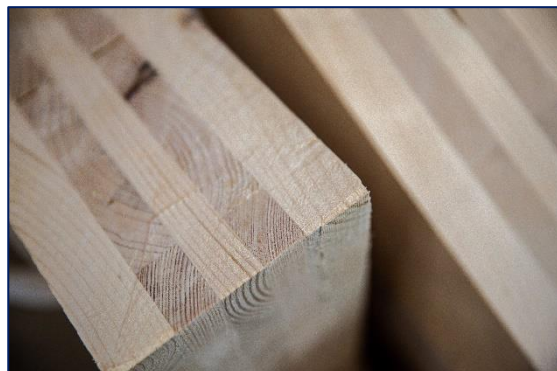
# Mass Timber – Handover and Use (RIBA 6-7)



## Introduction

It is imperative that as the building moves from Construction to Handover and Operational Use, all of the Risk Management strategies from the Construction Phase are maintained. Even a small fire within, or external to the building, or a slight water leak or minor weather ingress, have the potential to create a large loss event with this type of construction.

In relation to water, the impact of this damage may not be immediately apparent and may manifest sometime later with rot. This requires careful monitoring and strict controls.



## Ignition Source Management

The management of ignition sources is critical throughout the life cycle of such a building.

- **Hot Work.** Hot work should be the last resort internally and within 10m of mass timber buildings. The Aviva Loss Prevention Standard – Hot Work Operations should be followed where hot works are unavoidable and thermographic cameras used throughout the process and during fire watches.
- **Smoking.** Smoking should not be permitted within the structure, there should be no cigarette waste receptacles fixed to the outside of the building, and smoking facilities not provided within 10m of the structure.
- **Electrical inspection and Condition Reporting.** Completed in accordance with the appropriate regulations, but initially at a frequency of no greater than of every 12-months.
  - ✓ If no significant issues are identified, the frequency can be extended in line with guidance in the regulations.
  - ✓ The electrical systems should be inspected with a thermographic camera at least annually.
- **Portable Appliance Testing.** Should be completed at least annually of all items being used on site whether new or old. All new items should be PAT tested, and any untested items removed immediately.
- **Arson.** Ensure the premises are appropriately secured and well lit. Remove combustible items at least 10 metres from buildings, and secure waste receptacles in robust compounds or stores.
- **Cooking Equipment.** Ensure arrangements are in place for servicing and maintenance including extraction filters and ducting.
  - ✓ Any grease producing cooking appliances, hoods, filters, and cooking extraction systems should be protected by a fixed, automatic fire suppression/extinguishing system, tested to a recognised standard.
  - ✓ Ensure relevant persons receive appropriate training on the suppression/extinguishing system.
- **Photovoltaic (PV)/Solar.** Ensure a post-energising visit has been completed by the installer, or a third party to verify the quality and functioning of the installation and provide appropriate certification.
  - ✓ Monthly self-inspection checks should be undertaken of the whole installation by a competent person at the site to check for damage, movement, structural distress, nesting birds, accumulating leaf matter/ other detritus, loose cables, water ingress, inverter logs and overall performance data for anomalies.
  - ✓ Conduct thermographic inspections of the panels and inverters at least six monthly to help identify hot spots, faults, and panel soiling.
  - ✓ A formal inspection, test, and maintenance regime of the whole installation, including roof-based panels and components should be established and visits undertaken at least annually.
    - i. All such work should be carried out by an experienced and competent contractor. In the UK they should be certified under the Microgeneration Certification Scheme (MCS) by an appropriate UKAS nationally accredited body.

- **Electric Charging.** Prohibit chargers from being fixed to, or within five metres of any engineered timber building.
  - ✓ Charging of electric vehicles, E-Bikes, E-Scooters etc., should be prohibited internally or within underground car parking, if present.
- **Battery Energy Storage Systems (BESS).** Should only be permitted externally and sited at least ten metres from any engineered timber building.

## Fire Propagation

- **Claddings and Linings.** Promptly repair or replace any damaged cladding or lining materials with approved products, to the same fire resistance rating/standard.
- **Penetrations.** All penetrations to the building structure and internal linings or subdivision walls should be risk assessed at handover stage and reviewed annually.
  - ✓ Any penetrations should be fire stopped in line with the compartment fire resistance rating.
  - ✓ Redundant cabling should be removed as part of any replacement works.
- **Passive Protections.** Fire door assemblies, fire shutters, fire walls or barriers should be fully operational. Promptly repair/replace any defects as necessary.
- **Fire Load.** Plant rooms, server rooms, UPS rooms, service ducts etc., should be adequately secured.
  - ✓ Ensure combustible goods are not stored internally and are maintained clear and sterile.
- **Grounds.** Around the building:
  - ✓ Vegetation around the buildings should be short/well maintained.
  - ✓ All litter and waste should be collected and housed within appropriate bins.
  - ✓ Maintain fuel within generator enclosures in proximity to the building, to the least volume necessary.
- **Green Roofing and Walls.** Ensure installation certification is obtained, and maintenance manuals provided.
  - ✓ Arrange monthly visual inspections for signs of damage or distress.
  - ✓ Green walls and roofing should be maintained as per OEM guidance, and regularly watered to avoid drying, particularly during sustained periods of hot weather.
  - ✓ Green elements below PV panels should be maintained short.

## Fire Detection and Protections

- **Automatic Fire Detection and Fire Protections.** All areas of the building should be covered by the automatic fire detection system, and sprinkler system where installed.
- In respect of all fire detection and protection systems:
  - ✓ Weekly inspections and testing should be undertaken by competent persons.
  - ✓ Formal servicing and maintenance arrangements with accredited companies, in line with recognised sprinkler standards, e.g. the LPC Sprinkler Rules, should be in place.
  - ✓ Any protective covers/caps still present should be removed.
  - ✓ Related plant rooms and equipment e.g. sprinkler valves should be appropriately secured.
  - ✓ Handover meetings with protection/detection system installers should be arranged and handover documentation, including certificates of conformity, provided.
  - ✓ Power, fuel, and any other interlocks should have been confirmed and tested.
  - ✓ Ensure appropriate systems and emergency response training is provided to responsible persons.
  - ✓ Arrangements should be in place to inspect work areas following completion of maintenance, repairs to ensure detection devices are reinstated.
- **Dry or Wet Risers.** Riser installation should be certificated, cabinets secured and be subject to six monthly site checks and an annual maintenance arrangement with an accredited company.

- **Manual Firefighting.** Ensure appropriate access for the Fire and Rescue Services is provided.
  - ✓ Water hydrants should be conformity tested to ensure the system is operational and appropriate water supplies and pressures are available.
  - ✓ Routine checks should be undertaken by competent persons, and formal Maintenance arrangements should be in place with a competent company.
  - ✓ The location and number of fire hydrants in the proximity of the premises should be documented in an emergency response plan and shown on appropriate drawings.
  - ✓ Invite the local Fire and Rescue Service to inspect the premises to evaluate fire risk exposures, plan for emergency events, and offer guidance.

## Escape of Water.

This is critical to prevent mould, rot, and structural damage.

- **Documentation.** Provide/obtain accurate and formal drawings of the wet systems; the associated risk assessments; water management plan including the location of isolation valves (stop cock valves); any wet water permits; certificates of conformity for any leak detection or automatic shut off devices.
- **Active Devices.** Ensure any escape of water leak detection systems devices and/or automatic shut off devices are operational and certificated.
  - ✓ Appropriate operational instructions and manuals should be provided.
  - ✓ Active escape of water devices should be subject to a formal maintenance arrangement with a competent company.
- **Emergency Response and Escalation Plans.** Ensure appropriate emergency response arrangements are in place, and relevant persons trained on the location and operation of isolation devices and escalation protocols.

Refer to Aviva's [escape of water](#) website resources for more guidance

## Weather Exposure/Natural Hazards

- **Water Ingress and Moisture Control.** It is critical throughout all stages of the project, that all timber elements are appropriately liquid, and weather protected to help prevent vulnerable wooden components being exposed to moisture and increased humidity. Moisture damage will impact aesthetics, cause mould, and potentially lead to rot and/or structural damage. This is a significant exposure and if occurs requires wholesale removal and replacement of affected areas.
- **Lightning Protection.** Systems should be fully functional, certificated by the installer and subject to a formal maintenance arrangement.
- **Membrane Roofing Systems.** Should be inspected prior to handover for signs of damage or installation defects. Lightning systems should not be in contact with any combustible roof insulation or membrane materials.
- **Flood.** Provide/obtain details of any fluvial or pluvial flood mitigations; reports; risk assessments; management plans should be provided/obtained.

## Security.

It is critical with such buildings to consider the exposure to arson.

- **Physical Security.** All openings should be adequately secured. Keys and codes should be provided.
- **Electronic Security.** All systems should be operational and instruction manuals and security codes provided.
  - ✓ Handover meetings with security system providers should be considered.
- **Security Guarding.** Ensure any guarding companies/guards are fully trained in the site emergency response arrangements and aware of power and water isolation devices.

## Management

- **Risk Assessments.** The premises Fire Risk Assessment should be reviewed prior to and upon occupancy of the building, by a suitably competent person, to ensure fire safety arrangements are remain adequate. Any actions generated should be addressed promptly.
- **Management of Change.** Any alterations and fitting out of the building by the new occupiers should be detailed in a management of change programme. This can help ensure changes are managed in alignment with the increased risks associated with mass timber buildings.
- **Impairments.** Ensure any impairments relating to all detection and protection systems are reported to your Property Insurer and Insurance Broker.
  - ✓ Temporary changes may be necessary to some arrangements whilst impairments are ongoing.

## Specialist Partner Solutions

Aviva Risk Management Solutions can offer access to a wide range of risk management products and services at preferential rates via our network of Specialist Partners.

For more information please visit: [Aviva Risk Management Solutions – Specialist Partners](#).

## Sources and Useful Links

- [The Construction Insurance Risk Engineers Group \(CIREG\)](#).
- [The Fire Protection Association](#).

## Additional Information

Relevant Loss Prevention Standards include:

- Mass Timber – Planning and Design.
- Mass Timber – Construction.
- Timber Framed Buildings.
- Hot Work Operations.
- Escape of Water and Fluid Leakage.
- Fire Compartmentation.
- Commercial Kitchens – Extract Systems and Cooking Ranges.
- Control and Management of Combustible Waste Materials.
- External and Internal Third-Party Exposures – Property Protection.
- Fire Safety Inspections.
- Fire Safety Legislation.
- Arson
- Smoking and the Workplace.
- Electrical Installation – Inspection and Testing.
- Thermographic Surveys.

To find out more, please visit [Aviva Risk Management Solutions](#) or speak to one of our advisors.

**Email us at [riskadvice@aviva.com](mailto:riskadvice@aviva.com) or call 0345 366 6666\***

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## LOSS PREVENTION STANDARDS