

Workshop 1A

# Fire Safety: Driving Timber Frame Remediations with Commercial Partners

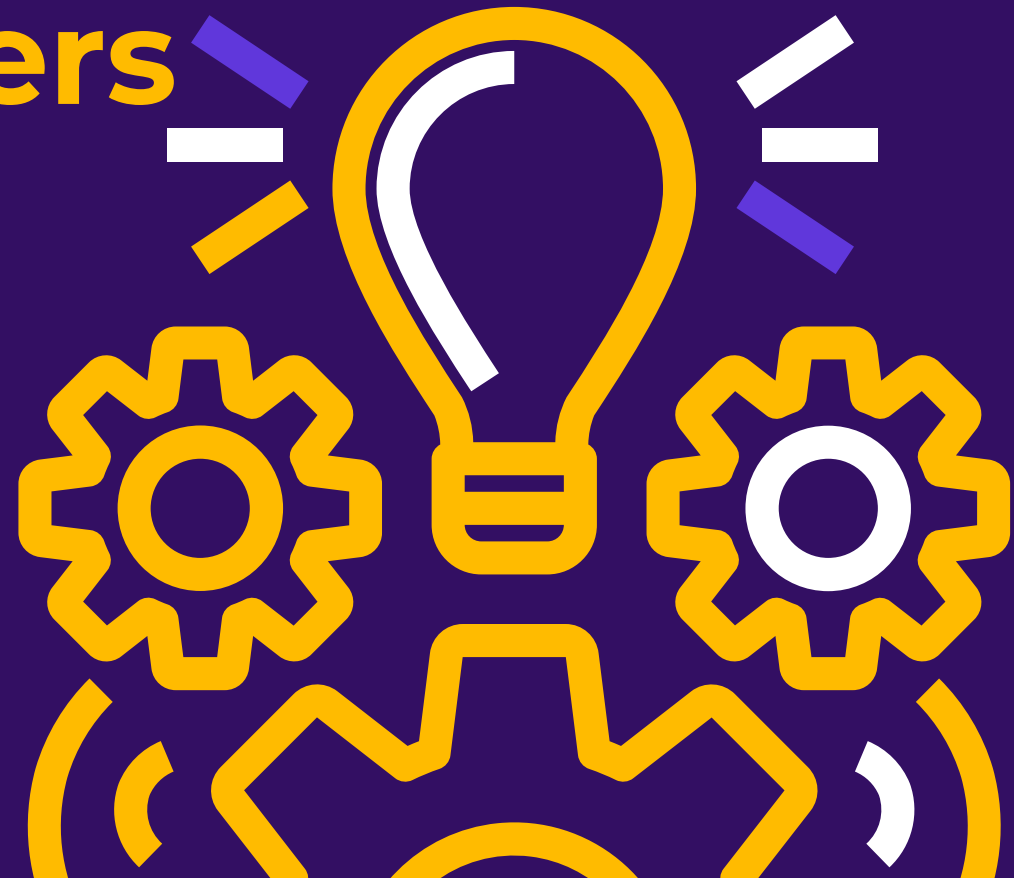
**Speaker:** Mark Sayer, Abri Group

**Chaired by:** Stephanie Lloyd-Foxe

**Room:** A



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# Homes for the South West Fire Safety Working Group

Homes for the South West is a group of Chief Executives from 11 large housing associations in South West of England.



Bromford.



SOVEREIGN



The Fire Safety Working Group is a sub-group of the CEO's forum, in which Fire Safety and Compliance professionals meet to ensure a unified approach to driving remediations across our timber frame stock.



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# Timber Frame Fire

## April 2018

When a timber-framed home in Exeter caught fire in April 2018, it triggered an inquiry that exposed an industry-wide problem.



Investigators established that the fire at the property, which was developed by Persimmon and owned by LiveWest, had begun when a cigarette butt ignited rubbish in a void formed by a subfloor vent below ground level.

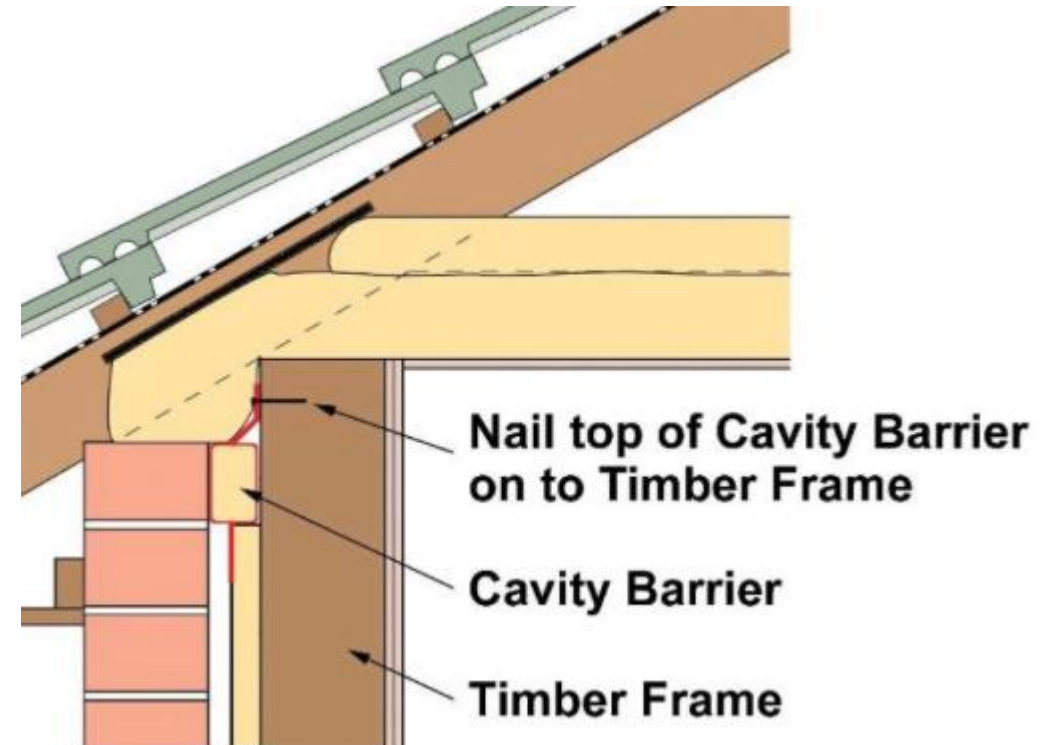
# Timber Frame Fire Safety Investigations

Intrusive tests across the rest of the estate in Exeter were carried out.

The inspection results triggered surveys of a wider group of homes.

Failings found in 60-70% of the homes examined.

Potentially affecting thousands of properties constructed by many developers across the UK and not just those developed by Persimmon.



# Timber Frame Fire Safety

## The Problems

Quality control failings have occurred for a variety of reasons. They include:

- sub-contractors rushing works to meet demanding house builder completion dates;
- piece work promoting a culture of fast rather than quality working;
- insufficient supervision at site level;
- limited time on site by building control and warranty inspectors.



# Timber Frame Fire Safety Remediation Through Partnership

In 2018, LiveWest commissioned Taylor Lewis to inspect their timber-framed stock, beginning with two of their Persimmon-built estates. As it became clear that a more comprehensive testing regime was going to be needed, other housing associations began working with the consultancy too.



The CEO's at H4SW agreed to set up a joint fire safety working group to coordinate their approach to the inspection and remediation work on missing cavity barriers and other passive fire prevention measures.



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# Timber Frame Fire Safety Remediation Through Partnership

With more than 5,000 Persimmon homes between them, H4SW knew they would need significant engagement with the company.

In the meantime, Persimmon, which delivers more than 13,500 homes each year nationally, had independently taken the decision to check all the properties it has developed in the UK since 2006. By 2019, it had published a QC-led review of its approach to customer care and workmanship, with strong recommendations for change that have since been adopted by the company's board.



# Timber Frame Fire Safety Remediation Through Partnership

H4SW contacted Persimmon and found them willing to engage and take responsibility for fixing, and paying for, past construction failings, as well as contributing towards the additional costs of surveying and identifying the remediations required.



This has made possible a highly productive three-way partnership between H4SW, Taylor Lewis and Persimmon. It is this level of collaboration that H4SW aims to see recreated with every developer whose homes could have been constructed with similar defects.

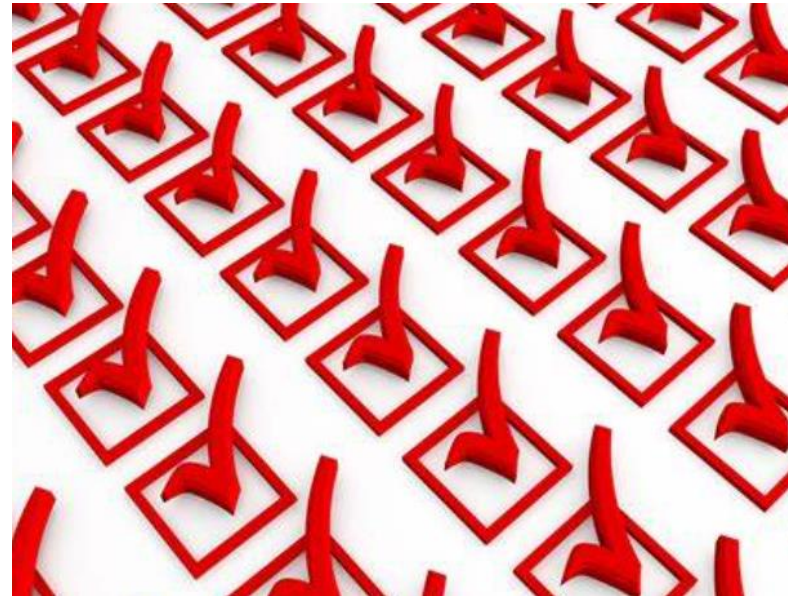


# Timber Frame Remediations

## The Process

The partnership has created an effective inspection and remediation process;

- Stock List
- Resident Contact
- Taylor Lewis Inspections
- Immediate Remediation
- Larger-scale Remediation,



# Timber Frame Remediations Progress

Following the process, H4SW and Taylor Lewis have identified failings in homes built by 55 developers across the region.

A number of these developers, including Taylor Wimpey, Barratt Homes and Lovell Homes are now, like Persimmon, working with the partnership to remediate customer's homes.

**Taylor  
Wimpey**



**LOVELL  
HOMES**

However, not all developers have been as responsive.



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# Timber Frame Remediations Innovation

The process of investigating missing cavity barriers, spandrel panel joints and fire stopping has led Taylor Lewis to develop an innovative and cost-effective remediation method completed from within the roof-space.

This avoids the need and cost for access solutions, roof working and customer disruption.

Matt Steggles of Taylor Lewis will talk us through this.....



Plenary # / Workshop # - LEAVE BLANK

# Timber frame cavity barrier remedials

**Speaker:** Matt Steggles AssocRICS Fsi Dip

**Chaired by:** XX (leave blank)

**Room:** XX (leave blank)



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6. Remedial Works
7. New Methods
8. The future



# The Requirements and the Approved Documents

## The Building Regulations Requirement

### Requirement

#### *Requirement*

#### **Internal fire spread (structure)**

- B3.** (1) The building shall be designed and constructed so that, in the event of fire, its stability will be maintained for a reasonable period
- (2) A wall common to two or more buildings shall be designed and constructed so that it adequately resists the spread of fire between those buildings. For the purposes of this sub-paragraph a house in a terrace and a semi-detached house are each to be treated as a separate building.
- (3) Where reasonably necessary to inhibit the spread of fire within the building, measures shall be taken, to an extent appropriate to the size and intended use of the building, comprising either or both of the following—
- (a) sub-division of the building with fire-resisting construction;
  - (b) installation of suitable automatic fire suppression systems.
- (4) The building shall be designed and constructed so that the unseen spread of fire and smoke within concealed spaces in its structure and fabric is inhibited.

#### *Limits on application*

Requirement B3(3) does not apply to material alterations to any prison provided under section 33 of the Prison Act 1952.

# The Requirements and the Approved Documents

## Example from Approved Document B

### Provision of cavity barriers

**5.17** To reduce the potential for fire spread, **cavity barriers** should be provided for both of the following.

- a. To divide **cavities**.
- b. To close the edges of **cavities**.

**Cavity barriers** should not be confused with **fire-stopping** details (Section 9).

**5.18** **Cavity barriers** should be provided at all of the following locations.

- a. At the edges of **cavities**, including around openings (such as windows, doors and exit/entry points for services).
- b. At the junction between an external cavity wall and every **compartment floor** and **compartment wall**.
- c. At the junction between an internal cavity wall and every **compartment floor**, **compartment wall** or other wall or door assembly forming a **fire resisting** barrier.

This does not apply where a wall meets the conditions of Diagram 5.3.

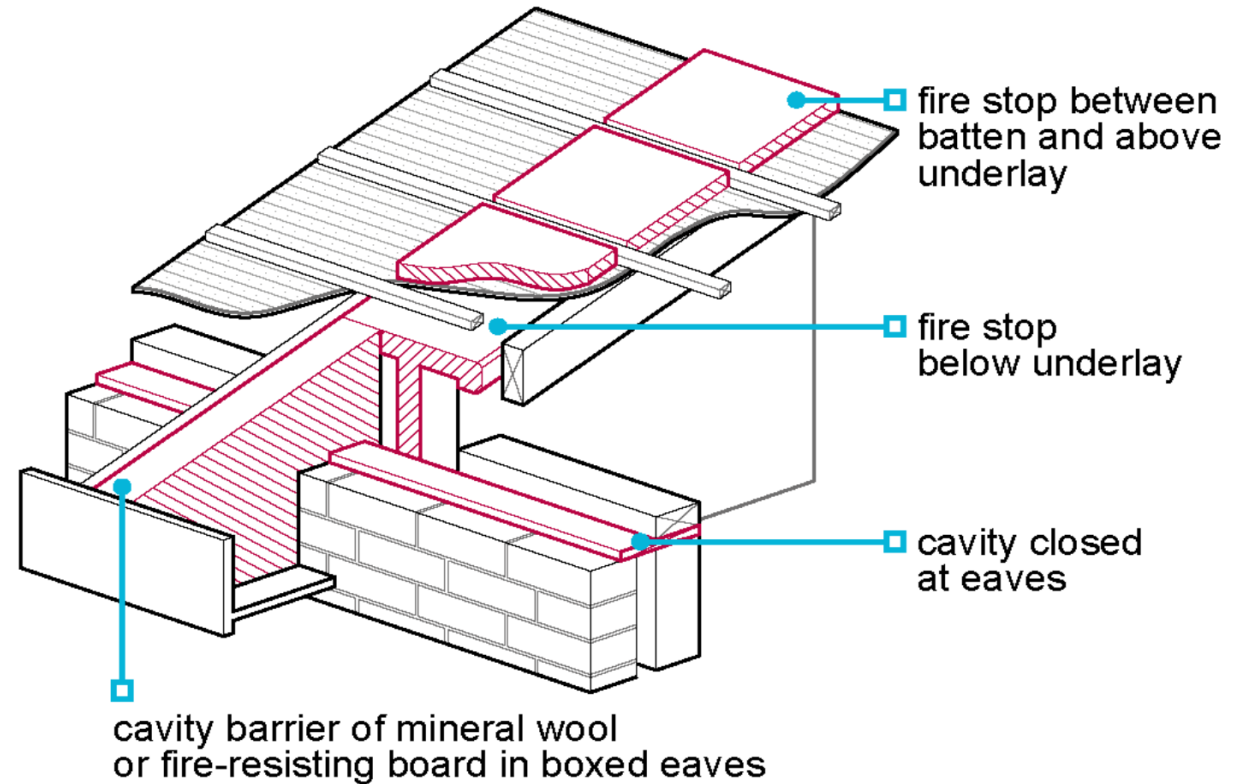
# Key areas of failure – What to look for?

## Cavity Barriers:

- Gable walls
- Party walls
- Eaves (head of cavity)
- Spandrel panel

## Fire Stopping:

- between the head of the spandrel panel and the sarking felt
- above the sarking felt between roofing battens





# Inspection method

## Spandrels and Gables

- Inspected with a Borescope by drilling a hole and looking up or down the cavity
- Check for plaster board fixings including assessing any cover strips on the panel joints



Check for fire stopping tightly fitted to head of spandrel. NOT like this!

Check to make sure that there is no damage or penetrations through the fire compartment wall. Also note protective polythene has not been removed



# Inspection method

**Eaves** - Inspected with a Borescope by reaching over and getting a side view down into the cavity



What we should see is a uniform, tightly butted sock in compression.



What we often see is a sock that doesn't fit, has gaps or in some cases isn't even in the cavity!

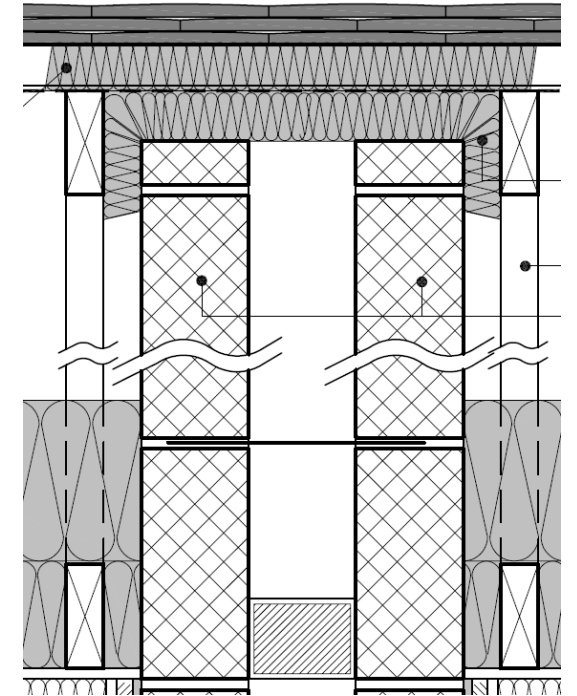
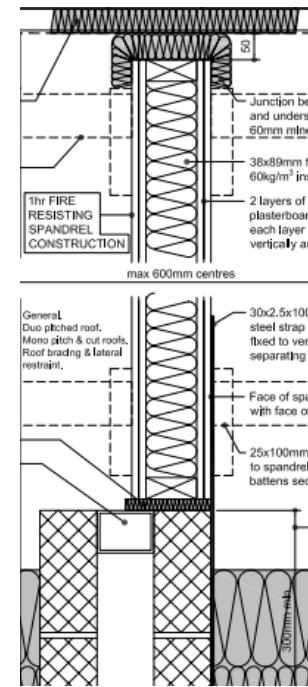


# Inspection method

## Over Felt Fire stopping



Inspected with a Borescope by cutting a hole in the felt and looking sideways.  
Should see a full pad of insulation filling the void between the tiles and the felt



# H4SW & Taylor Lewis

Taylor Lewis works with all members of the H4SW

Carry out inspections on properties to ensure compliance with the requirements of the approved document

Liaise with developers to develop a uniform approach to remedials

Provide regular updates on all aspects of the program

Liaise with residents to book appointments, answer questions etc

Work with clients to assess the suitability of remedials that fall outside the standard methodology



# Failure rates

Currently working with 15 RP's across the South West and beyond

Taylor Lewis have completed 6494 inspections to date

Average failure rate across the developers Taylor Lewis work with is 75%

This means 75% of properties inspected had at least 1 item fail.

Failure rates for over felts is 90% Plus



# Remedial Works

- Taylor Lewis to oversee remedial works with the Developer carrying out the works
- Project Administrators book timeslot with resident
- Inspector oversees all works except for over felt work carried out from scaffold
- Remedials can include:



# New methods – over felts

'Traditional' method involves removing slates externally and inserting material between the battens

## Pros:

- No need to access the property
- Easy to see that the material is where it should be
- Quick to install (once the scaffold is up)

## Cons:

- Scaffold required
- Weather dependent
- Requires another 'visit'
- H&S Risks
- Scaffold issues
- Expensive



# New methods – over felts

Internal over felt remedials can be combined with other remedials

Process involves cutting the roofing membrane to access the tile battens.

As the tiles remain in place, material can be packed in tightly from both sides ensuring a compliant fit.





# New methods – over felts

The membrane is repaired with proprietary tape.

An additional layer of membrane is fixed with batten to ensure water tightness should the tape fail in the long term.

The remedial can be carried out alongside other remedials reducing visits to the property.

speeds up the remedial program.

Significantly less expensive to complete.



# What can we do about it?

## Changes to Contract to require

- Enhanced checking
- Detailed evidence of Compliance
- Opening up provisions



## Clients Representative Checking Regime

- Knowledge of the issues
- Structured approach to recording compliance
- Risk based approach to opening up

## New legislation

- Building Safety Act 2022
- Golden thread requirement

### Building a Safer Future

Independent Review of Building  
Regulations and Fire Safety:  
Final Report

# What are the issues?

Workmanship/Competence

Design

## Issues that lead to poor installation

- **Design and Build (Poor Design/Late design)**
- No bar to entry for PFP installers
- **Not enough inspection or enforcement for products that are invisible when installed**
- Fixation on price not quality
- **Breaking of spec (Or similar)**
- Multiple sub contracting
- **Poor sequencing of works**
- Actions by follow on trades



# Golden thread

The Act introduces the concept of a 'Golden Thread' of record keeping which will be available to relevant parties – residents, emergency services and potential purchasers. So, the complete and relevant records are available to everyone no matter at what stage they enter the building's history. The information not only comes from those who have constructed it, but also those who manufactured the components used.

**The Golden Thread should contain the information needed to demonstrate compliance with specified building regulations (required through the Gateways or refurbishment process).**

- *This is particularly relevant for Passive Fire Protection*
- *Allows opportunity to address issues early*
- *Provides a mechanism that prevents the mistakes of the past*
- *How will the additional checks be carried out?*
- *How will the results be monitored?*

# Thank you.

Matt Steggles. AssocRICS FsiDip

See you at the  
**next conference!**



Mark Sayer. CFIOSH, FIIRSM.

