

Members Seminar – Fire Safety

17th November 2021

Louise Archer and Brian Walshe



About us



Responsible for:

Repairs and Planned Works
Asset Management
Facilities and Services
Health and Safety
Estate Services
Cleaning Services
Neighbourhood Teams

Name: Louise Archer

Role: Executive Asset Director



Responsible for:

Fire Safety and
Compliance

Name: Brian Walshe

Role: Fire Safety Manager

Introduction and Agenda

1. How Broadland monitors compliance
2. Investing in Fire Safety
3. Jargon Buster
4. Existing legislation
5. An overview of residential building safety
6. Future legislation – how Broadland is getting prepared





Fire Safety Bill becomes Fire Safety Act 2021



Ministry of Housing,
Communities &
Local Government

Building Safety Bill

Making homes, buildings and residents safer



How Broadland monitors compliance

Canary Quay



Investing in Fire Safety

In the next 10 years Broadland has budgeted **£1.7 million** for Fire Safety works

Legal costs for access to complete required Fire Safety works



Jargon Buster

PEEP – Personal Emergency Evacuation Plan

A plan made for a person who may need assistance evacuating a building or reaching a place of safety in an emergency.

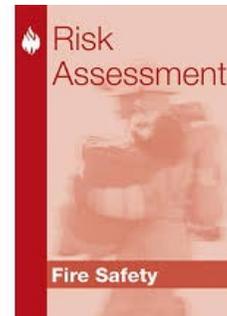


PIB – Premises Information Box
Provides the Fire Service with fast access to information in the event of a fire, such as building plans and emergency features.



AOV – Automatic Opening Vent

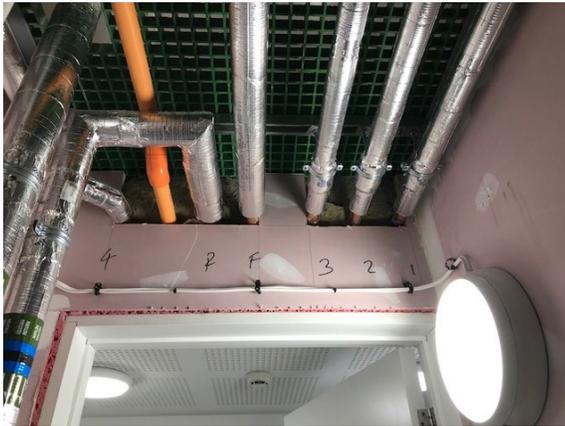
In the event of a fire an AOV will let smoke out of a building to help create a smoke free escape route.



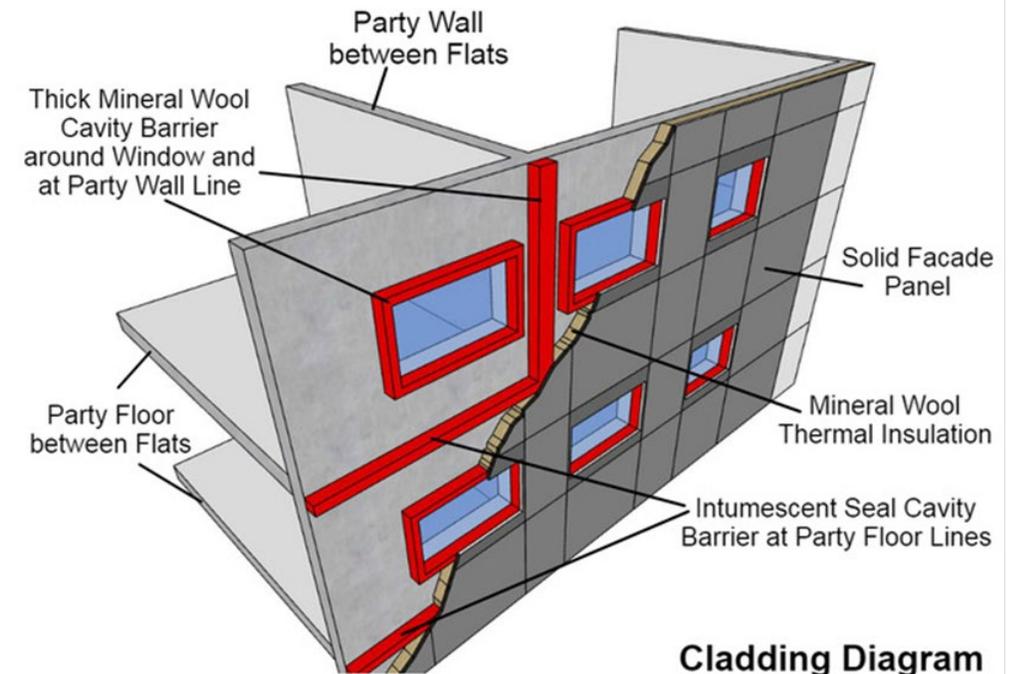
FRA – Fire Risk Assessment
Broadland is required to carry out regular FRAs to check for any fire risks and ensure fire prevention measures are in place and working.

Jargon Buster

Compartmentation



Sub-dividing a building into smaller compartments, using fire resistant materials



Existing Legislation

- The Regulatory Reform (Fire Safety) Order 2005
- Housing Act 2004
- Building Regulations



The first National Building Regulation concerning the use of combustible material

King Charles II's declaration in 1666 after the Great Fire of London

“No man whatsoever shal presume to erect any House or Building, great or smal, but of Brick or Stone, and if any man shal do the contrary, the next Magistrate shal forthwith cause it to be pulled down...all other eminent and notorious Streets, shal be of such a breadth, as may with God's blessing prevent the mischief that one side may suffer if the other be on fire”

History of Fire and Building Safety

1962 – A new British Standard Code of Practice – Stay Put Policy

- Before ***Stay Put***, most buildings would use a ***Total Evacuation Strategy*** – 2.5 minutes
- The occupancy numbers depended on availability of exits, the use and size of the building.
- Travel distance limited to 18m or 45m when an alternative route provided and building heights restricted

These principles remain in place today for buildings that are not structurally designed to support a Stay Put strategy.

Purpose built blocks of flats

Pre-20th-century blocks of flats

Solid walls, timber floors and lathe and plaster ceilings. Limited to 5 floors with single staircase

Early 20th-century blocks of flats

As above with non-combustible stairways and plaster ceilings. Provisions made for fire service rescues using ladders. Height restricted to 5 floors. Alternative escape required if above 13m

Flats built after 1962

Solid construction, concrete/brick/masonry walls and concrete floors. Designed to provide at least 1 hour of fire resistance. Design freedoms allowed multiple floors. ***Fire alarms not required in the common areas.*** Stay put policy.



Houses converted into flats

Fire Alarm System to support Total Simultaneous Evacuation

- Common throughout the whole premises where detection is provided to private and common areas interlinked
- Everybody should be capable of responding
- Assembly areas



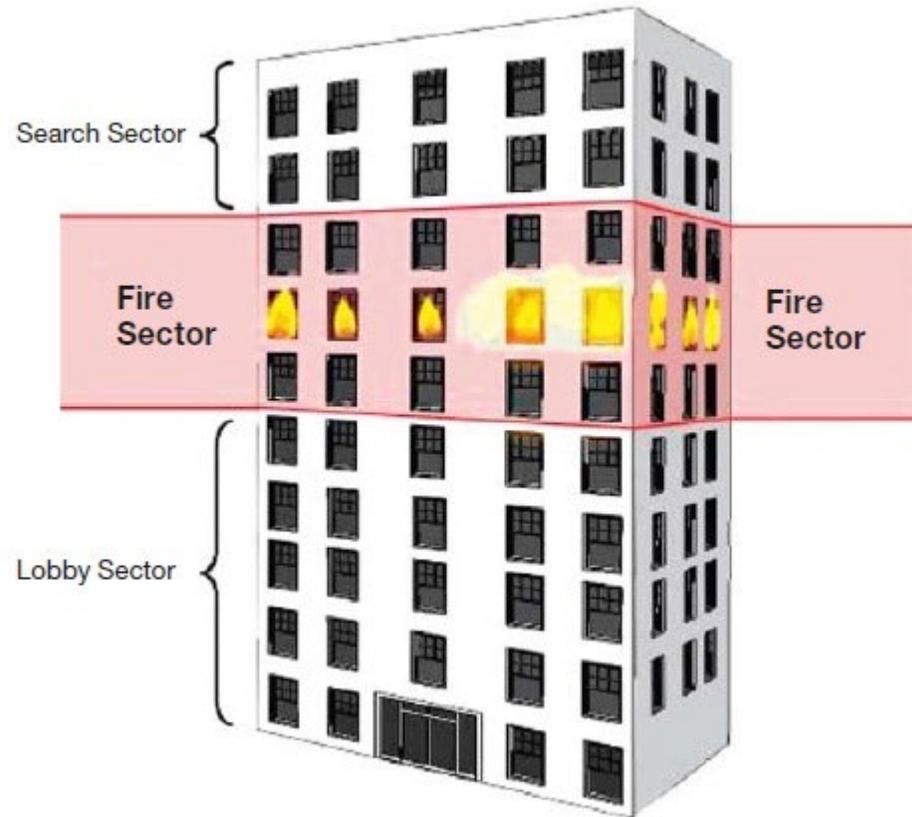
History of Fire and Building Safety

London Fire Brigade 1987
Southwark Training
Centre

BS 476
1987 Fire Test on Building
Materials



High Rise Incidents



Grenfell – How is that possible?

[GRENPELL TOWER: THE FAILINGS NO FIREFIGHTER COULD
OVERCOME - FULL BBC NEWSNIGHT REPORT - YOUTUBE](#)

[GRENPELL TOWER - FIREFIGHTER'S-EYE VIEW - YOUTUBE](#)



Grenfell – How is that possible?

Grenfell Tower:
14 June 2017, 01:30 BST



02:10 BST



03:23 BST



Grenfell – How is that possible?

03:44 BST



04:20 BST



05:16 BST



Grenfell – The fire fighter's view

"The stairwells were smoke logged & full of casualties."

FIREFIGHTER B

"There was seriously heavily smoke logged floors 3-14 early doors. We couldn't see a thing"

FIREFIGHTER A

"I stood up on 10th floor to smash a door in & instantly felt heat on my head & shoulders. When I got down and removed my tunic my shoulders were burnt"

FIREFIGHTER C

"There was total chaos beyond entry control. The fire floors we went in were helmet meltingly hot and we only went into lobbies initially. Later when we were clearing flats it was a case of a quick look & closing doors because the water pressure wasn't up to firefighting."

FIREFIGHTER B

"A firefighter from north ken brought a casualty down from the 21st floor and the guy was unconscious by the 19th. He dragged him down to the 10th then ran out of air. He took his mask off and pegged it down. He collapsed as he came out"

FIREFIGHTER A

The Building Regulations

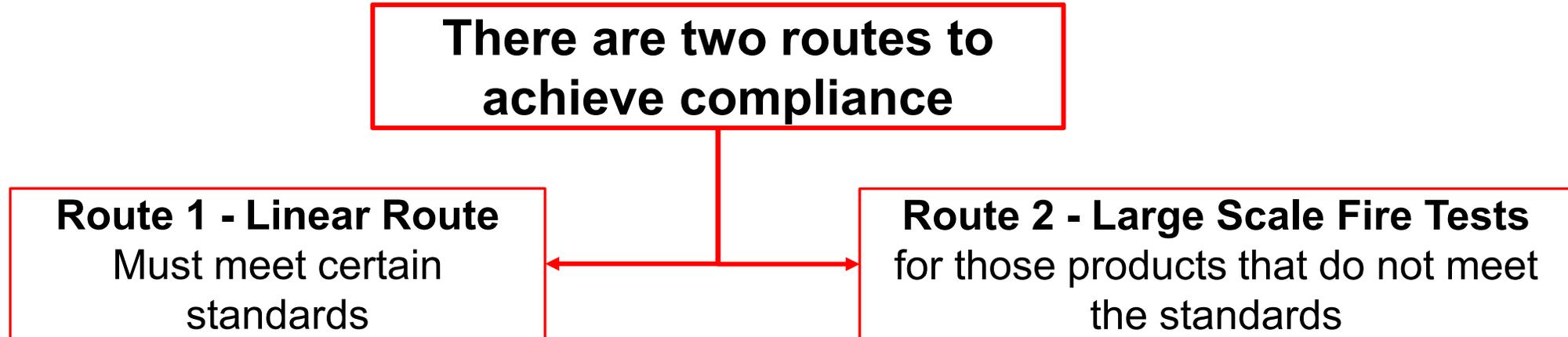
1985 – Building Act 1984 comes to force, massive deregulation of the industry. Performance based regulations contained within codes. Building Control privatised – approved inspectors, competitive market.

1990's – The use ACM (aluminium composite materials) becomes widespread

2005 – An update to Approved Document B relaxes a restriction on the use of combustible insulation on tall buildings, permitting the products for the first time if they are part of a system that passes a large-scale test. . At the same time, new environmental standards come in, requiring much higher levels of insulation on new homes.

2005 – Fire Safety Order sees responsibility for risk assessment shift from the fire service to private consultants

The Building Regulations - Achieving compliance



Buildings above 18 metres:

- **External surfaces** must be of Class 0 or Euro Class B standard
- **Insulation materials** must be limited combustibility

Class 0 and Limited Combustibility BS 476

Class 0 - Two tests: the “surface spread of flame” and “fire propagation”

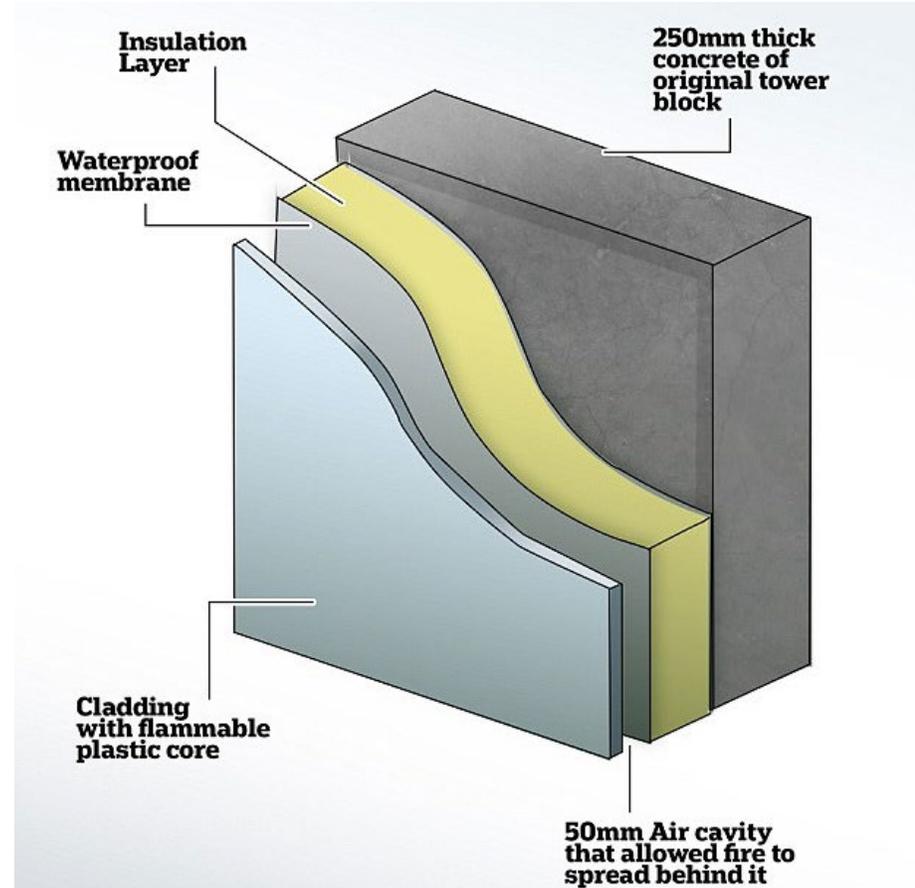
Protects the surface from the spread of flames AND limits the amount of heat released from the surface during a fire.

Sample of the material heated for ten minutes. If flames travel less than 165mm across the sample, the material passes.

Heat released measured by placing the material into a burn chamber for 20 minutes, but again it is the **surface** of the material which is exposed.

This means material with a non-flammable surface – such as aluminium – can pass, even if what sits behind it is effectively solid petrol. (Polyethylene)

ACM Cladding System



ACM Cladding Panels

Compliance Achieved through the Linear route

Consists of two 0.5mm thick aluminium sheets fixed to 6mm core of polyethylene

2008 – Multinational aluminium company Arconic obtains a certificate from the British Board of Agrément certifying its ACM cladding panels as 'Class 0' rated

Polyethylene – 1 square meter of cladding contains 3kg, the equivalent of 5 litres of petrol (Tony Enright Fire Engineer)

Insulation Materials Large Scale Fire Test - BS 8414

Celotex RS5000 made from plastic (polyisocyanurate)

The test involves building a model wall in a 'burn hall' and lighting a fire underneath it.

A test is declared a failure if flames spread to the top of the wall within 30 minutes, or if the recorded temperature level recorded exceed 600°C for 30 seconds within the first 15 minutes.

The insulation used on Grenfell, Celotex's RS5000, passed one of these tests in 2014, when combined with cement fibre cladding – a non flammable material...

Desk Top Studies

Desktop Study

Manufacturers argued that it would be impractical to test every possible combination, so desk top studies can be used.

Make a judgement using previous data.

There is no restriction on who can do these studies and neither the reports themselves nor their methodology are required to be made public

Accepted Combinations

In 2016, after the Grenfell refurbishment finished, the NHBC listed several common combinations of cladding and insulation which it believed could be signed off without the need for even a desktop study.

This included Celotex RS5000 insulation and 'Class 0' aluminium composite material cladding: the exact combination used on Grenfell.

This guidance was withdrawn after the fire. But it is evidence of the relaxed attitude of building control to the use of combustible materials in untested combinations before the disaster.



History of Fire and Building Safety

2017 Retire from the Fire Service after 30 years.

The Independent Review of Building Regulations and Fire Safety was announced by government in **July 2017** following the Grenfell Tower tragedy and was led by Dame Judith Hackitt



Future Legislation

Building Safety Bill and how this links to the Hackitt enquiry



Building a Safer Future

Independent Review of Building
Regulations and Fire Safety:
Final Report



Fire Safety Act 2021



Social Housing White paper



Building Safety Bill

(High rise buildings >18m)

Ensures that building safety is a top priority during the life cycle of the building
New Building Safety Regulator (BSR) HSE

Gateway to achieve a “golden thread”
(Right info to the right people at the right time).



Building Safety Bill – Required roles

Accountable Person (the Duty Holder) - Individual or cooperate body.

- Registers the building with the BSR
- Applies for a Building Assurance Certificate to legally Occupy
- Assesses and Revises all building safety risks
- Prepares the Building Safety Case report and keeps information up to date
- Develop systems to investigates complaints and Mandatory Occurrence Reporting
- Appoints a Building Safety Manager

Building Safety Bill – Required roles

Building Safety Manager – manages the building in accordance with the building's safety case

- Ensures the requirements of the Building Assurance Certificate are complied with
- Notifying the Accountable Person if the building safety assessment is no longer valid
- Operating the buildings complaint system
- Complying with statutory notices

Fire Safety Act 2021

In summary:

- Applies to all multi-occupied residential buildings
- Amends the Fire Safety Order 2005
- Allows the Fire Service to take enforcement action against responsible persons who fail to comply with the requirements of this Act
- Enables the government to issue risk-based guidance which can be referred to as proof that a responsible person has either complied or failed to comply with the requirements of the Act



Fire Safety Act 2021

2021 CHAPTER 24

How Broadland is getting prepared

- External Wall Surveys
- Compartmentation Surveys
- FRA's programme expanded to consider in scope premises under the Fire Safety Act
- Premise Information Boxes
- Person Centred Fire Risk Assessments and Personal Emergency Evacuation Plans
- Resident Engagement
- Sprinkler Feasibility Surveys
- Third Party Accreditation
- Enhanced fire door inspections
- The role of the BSM in discussion
- Working towards building the Safety Case
- 7 Buildings in scope

Thank you!

