Technical and legal implications of defective construction in the fire industry

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Discovering defects post-fire

Opportunities for recovery in cases of disproportionate damage

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Residential block of flats

- Timber frame block of flats
- Fire started by hot work (extension of exterior section of overflow pipe, heat transfer along pipe)
    - Detected 1-2 hours after completion
- Spread through timber construction and vapour membranes
- Construction detail (combination of materials) allowed smouldering fires to readily propagate and develop

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Wall details

- Cavity barriers ineffective
- Sequence of build drawn into question
    1. Build timber frame
    2. Fix cavity barriers onto frame
    3. Build brick façade
        - Bricks pushed out of alignment by cavity barrier
        - Cavity barriers torn out and/or crushed so that not exerting force onto bricks on wet mortar

    this realistically buildable?

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Roof details

- Insufficient fire stopping to underside of roof covering
- Rapid fire spread thoughout roof
- Fire then spreads back down into all to floor dwellings
- Demolition required six days after fire breakout in order to ascertain extinguishment
- Brigade forced to commit resources to this incident for 6 days
- Residents unable to re-enter building to collect belongings

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Recovery against Third Parties

- Having indemnified the owner, the Insurers will look to pursue recoveries against any third party liable for the defects. Typically these include:
    - Original architect or engineers
    - Main contractor
    - Specialist sub-contractors – eg timber framers or fire-stopping sub-contractor
    - The developer
    - Manufacturers/suppliers of materials – if they were defective

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Recovery against Third Parties

- Basis of claim will include:
  - Direct contractual claim if Insured is original purchaser
  - Claim under collateral warranties
  - Claim in negligence against the architect/engineer
  - Claim under the Defective Premises Act (DPA) if residential
- Limitation is often a problem:
  - 6 years from date of breach for contractual claim
  - 6 years from completion for DPA claim
  - 12 years for collateral warranties IF executed as a deed
  - 6 years from damage for negligence claim but can be extended under Latent Damage Act to 15 years from the negligent act/omission provided claim brought within 3 years of discovery

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Discharging the Burden of Proof

- Clear evidence of breach required:
  - Prompt fire scene investigation essential to capture evidence of defective construction from undamaged parts, if any
  - Expert analysis of fire scene evidence and design documents to prove design or construction was in breach of applicable standards/negligent
- Proving causation and extent of damage:
  - The defects did not *cause* the fire but they failed to arrest its spread
  - Need to show the hypothetical extent of damage had the property been built to the required standard.
  - Not just technical fire spread analysis, but sequencing this with the fire fighting operation.

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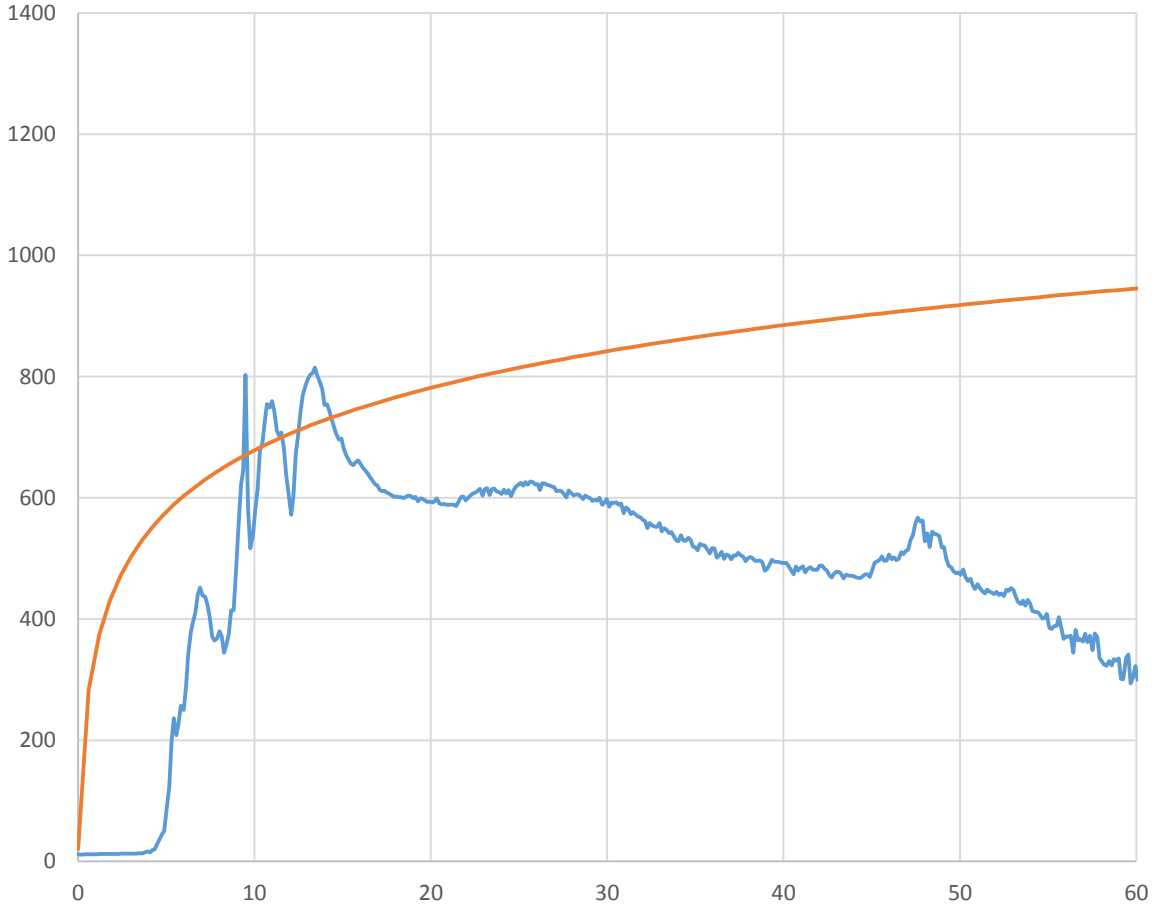
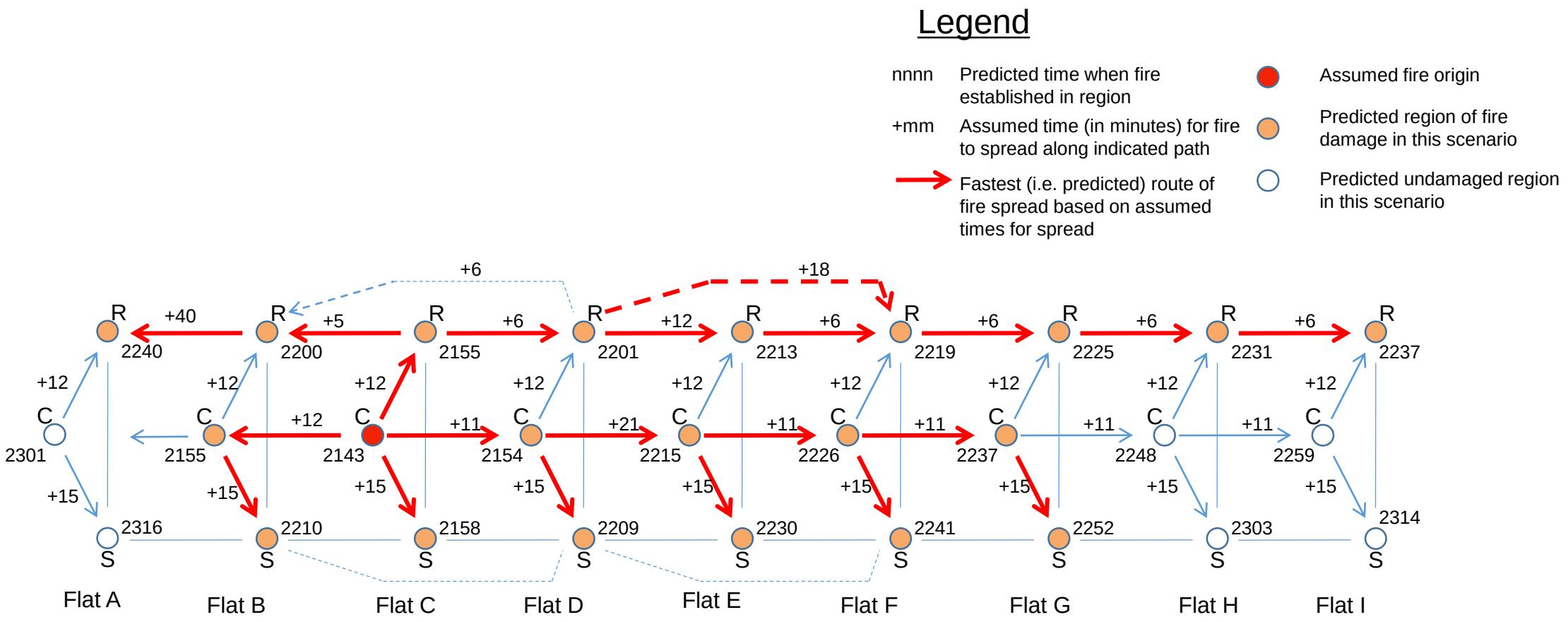
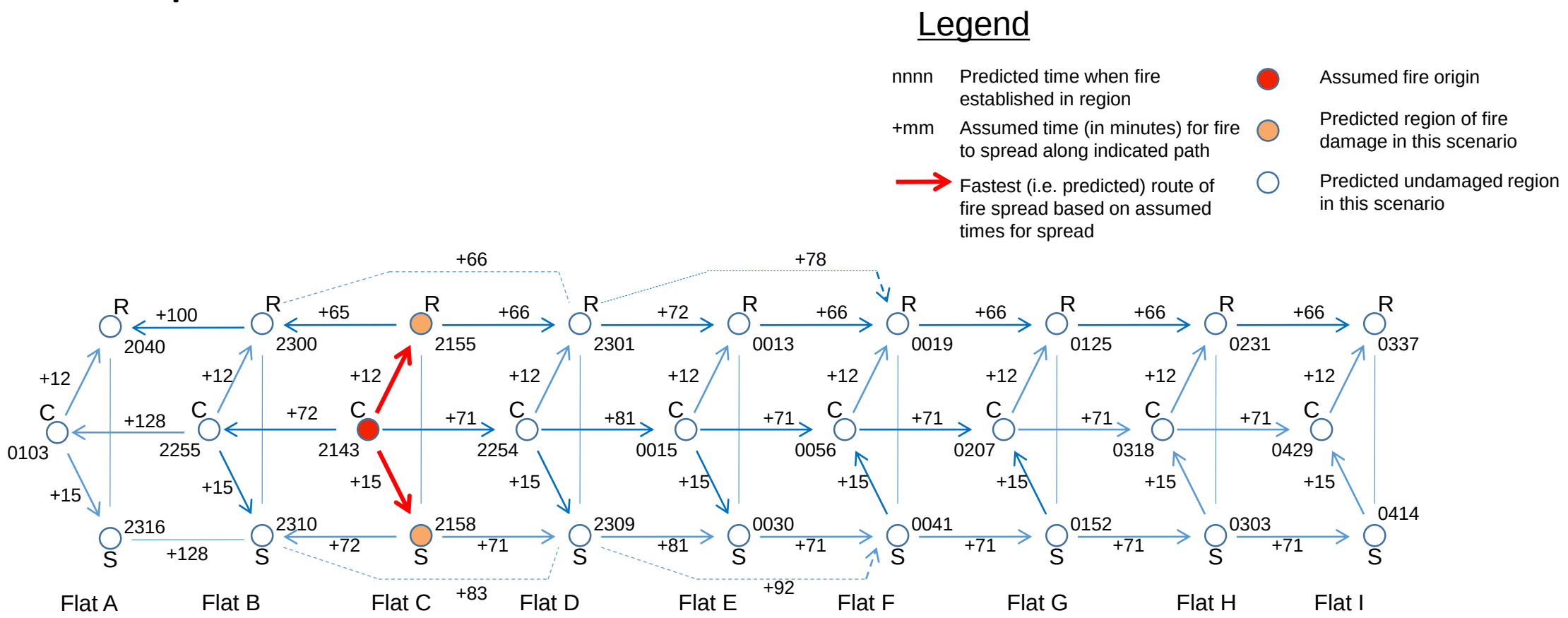
Analysis



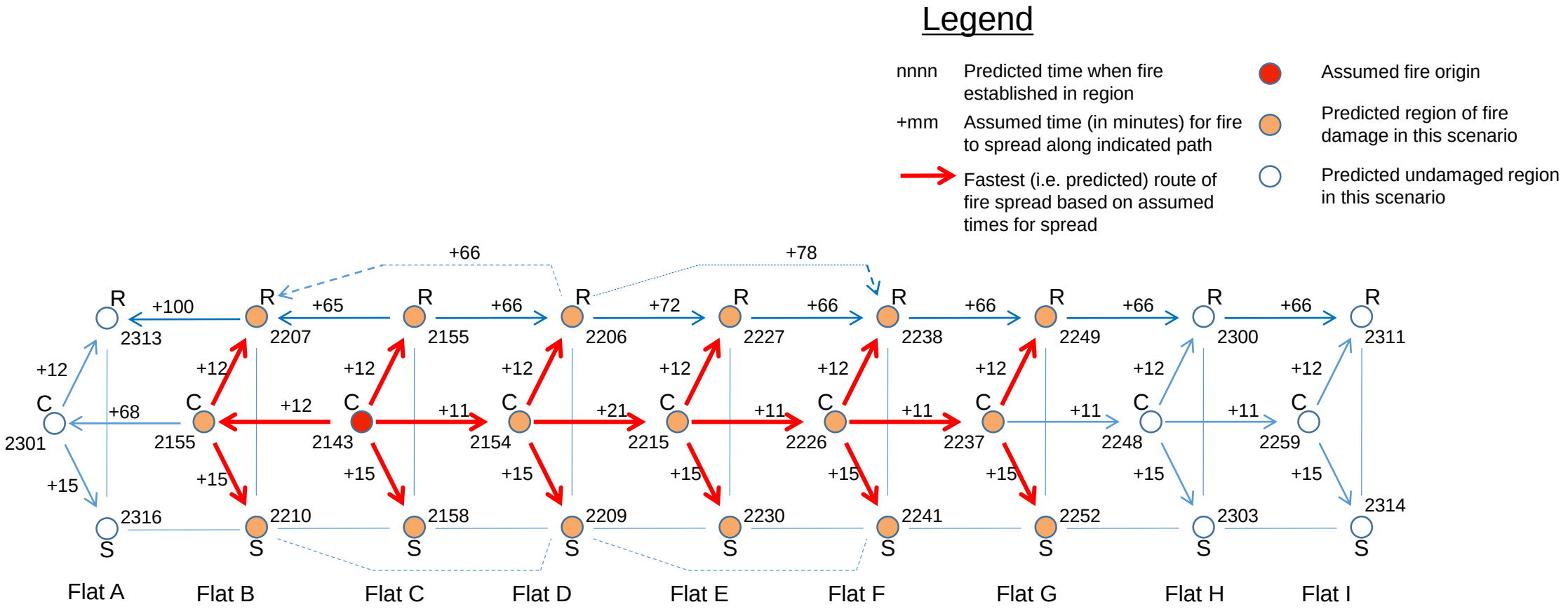
Actual incident



Alternative scenario A – Compliant with AD B



Alternative scenario B – AD B + poor workmanship



Conclusions

- Identify and quantify the stages within an incident
  - Greater understanding of the whole event
  - Enables use of alternative ‘what-if’ scenarios
  - Assess what might have occurred under different conditions
    - Compliance with Building Regulations?
    - Compliance with Policy?

- Basis for analysis can be
  - existing information
  - expert judgement
  - data from laboratory work

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Typical defects cases

Finding the skeleton(s) in the closet

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The current situation

Boom and bust

- Buildings built 2000-2008
  - Loads of construction during “the good times”
  - Buildings “thrown up” as quickly as possible to meet demands of clients
- Buildings built since 2008
  - Severe cutbacks in construction
  - Shoestring budgets leading to corners being cut
- Both scenarios given rise to defective construction

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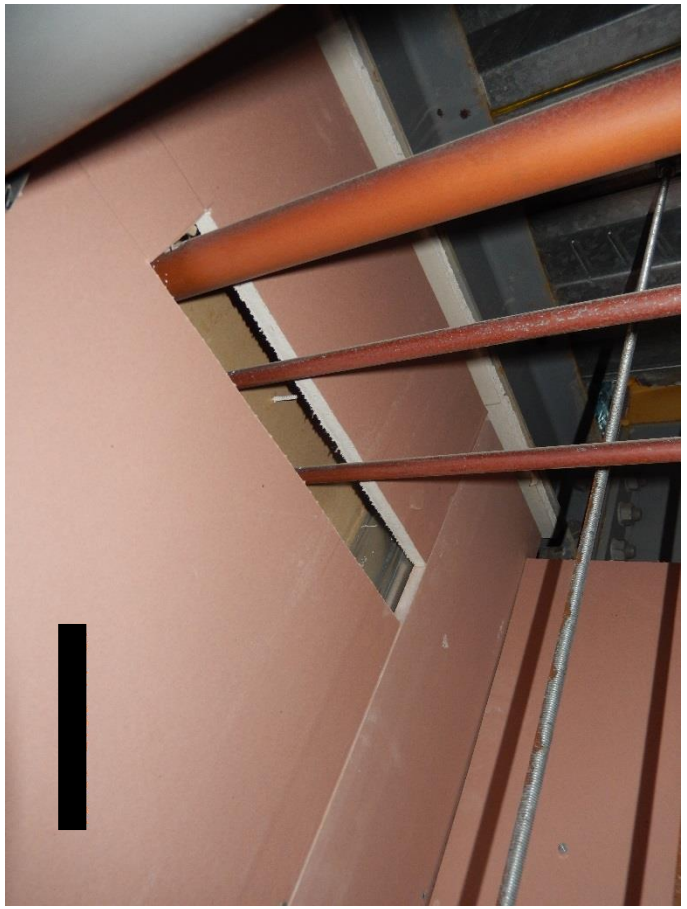
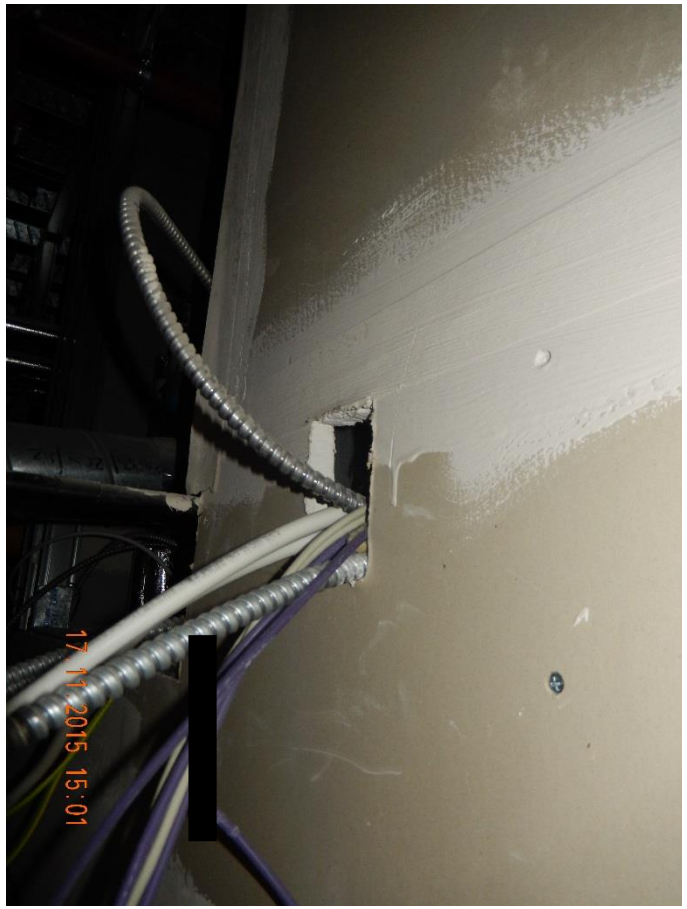
The technical fire safety issues

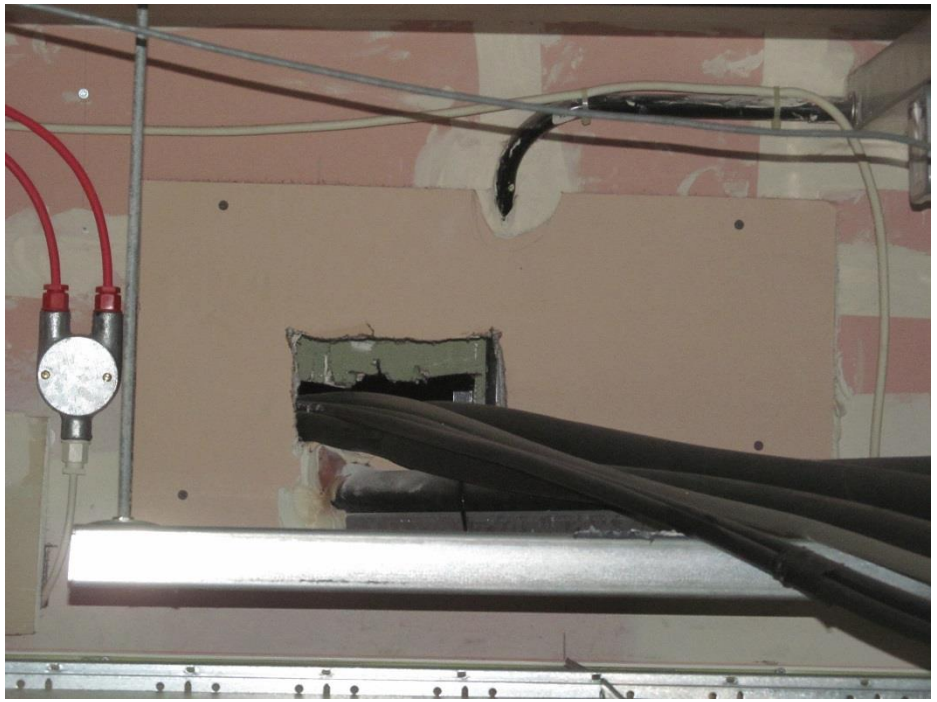
1. Poor workmanship
2. Lack of awareness of design intent
3. Poor workmanship
4. Poor communication
5. Poor workmanship
6. Design errors / buildability
7. Poor workmanship
8. Poor workmanship

Pipes…

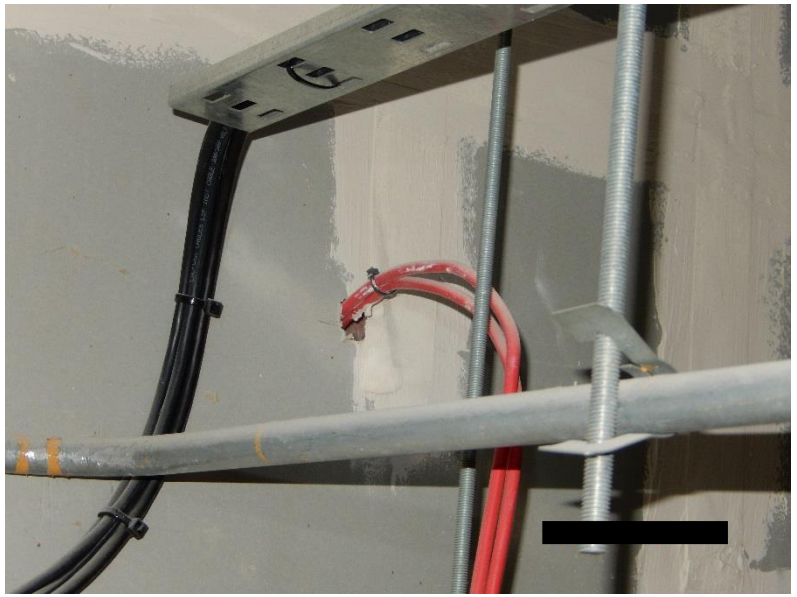


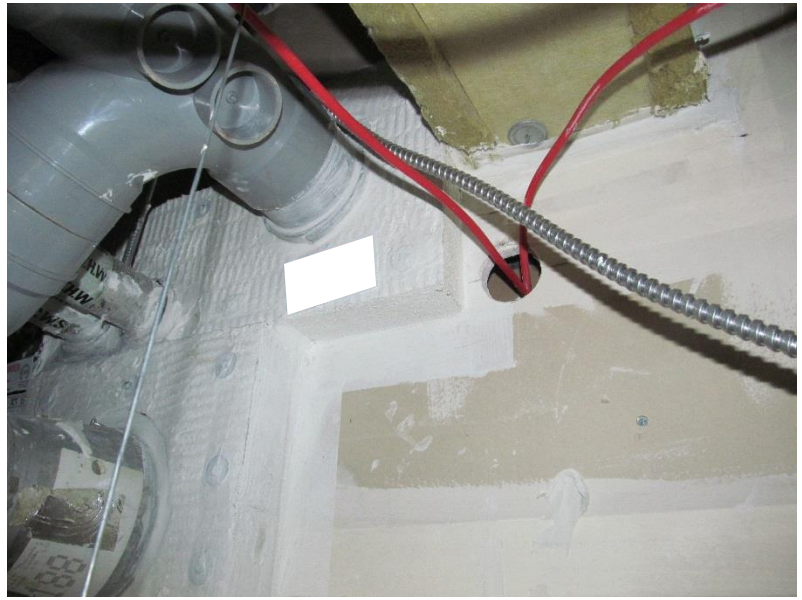
Cables…



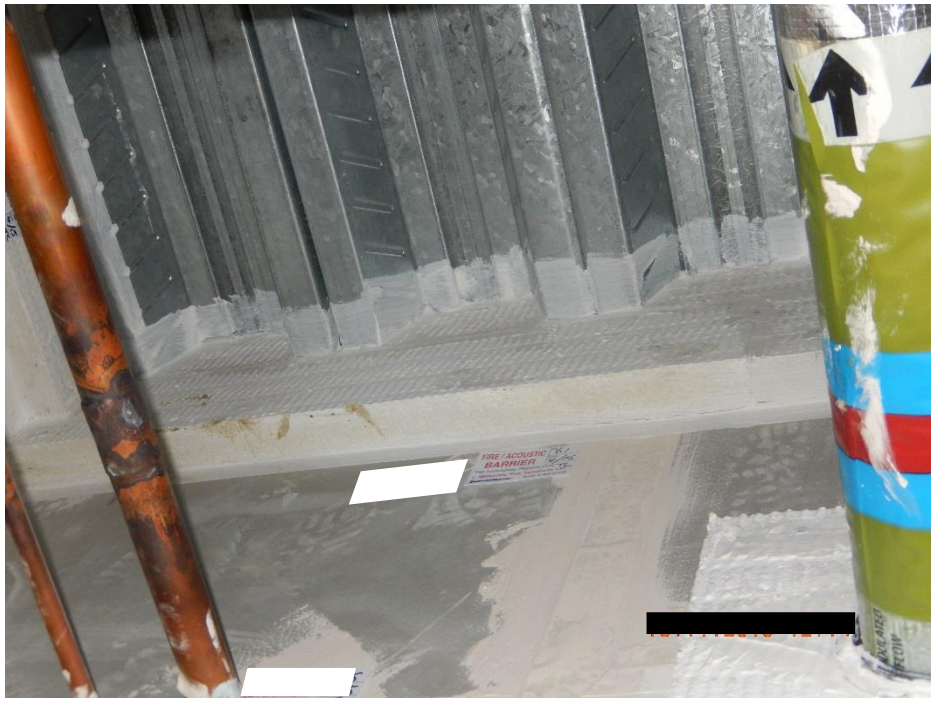


Fire alarm cables!





Tops of walls…



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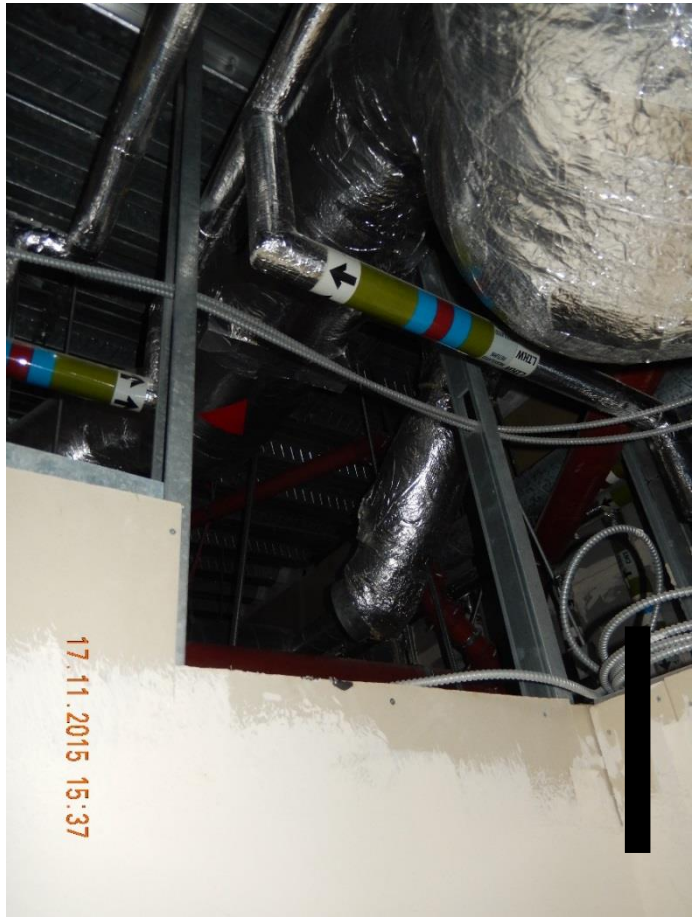
Missing sections of walls…



And not just above the ceilings…

Active systems

- Poor design
- Lack of maintenance
- Insufficient staff training
- Access by inappropriate people

- Managing agents
- Responsible person

Risk assessing defects

- Why are these important?
- Differentiation between a “contract defect” and “regulatory defect”
- Consider:
  - Where is the defect?
  - How big/significant is the defect?
  - Foreseeable consequences?

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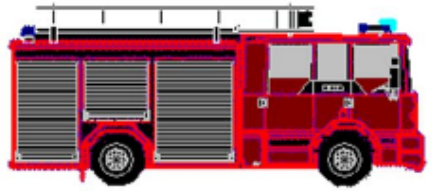
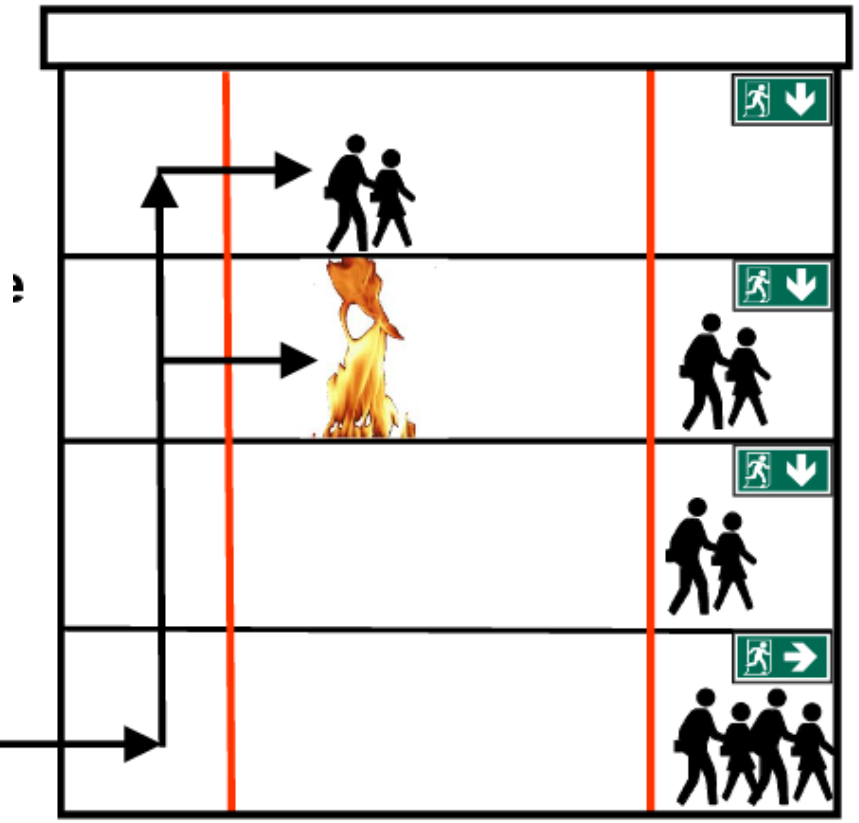
Escape & Rescue

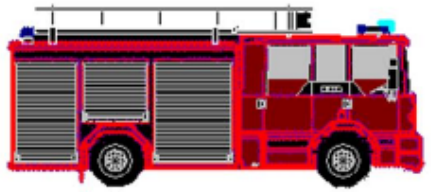
- B1 – Means of Warning and Escape
  - Fire detection & alarm
  - Escape routes
- B5 – Access and Facilities for the Fire and Rescue Service
  - Vehicle access
  - Personnel access
  - Fire mains

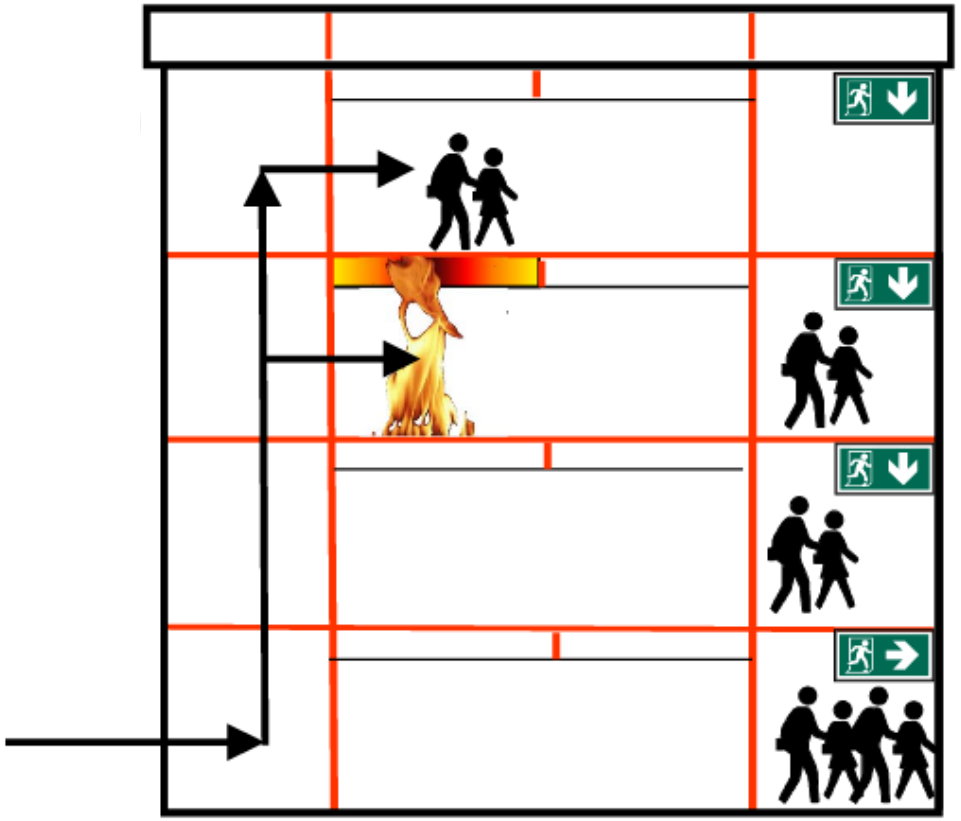




Limiting fire spread

- B2 – Internal Fire Spread (Linings)
- B3 – Internal Fire Spread (Structure)
  - Compartmentation
  - Loadbearing elements
  - Cavity barriers
  - Fire Suppression
- B4 – External Fire Spread





Insurance Issues – Building Owner's Policy

- Insurers will not penalise an Insured whose building was defectively designed or constructed *provided they had no knowledge or this.*
- Property policies will contain clauses obliging the Insured to take reasonable care to avoid damage to the property and to comply with all statutory obligations.
- Construed by the courts to require **deliberate** or **reckless** conduct.
- This will clearly include carrying out a Fire Safety Risk Assessment in accordance with the 2005 Regulatory Reform (Fire Safety) Order.

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Insurance Issues – Building Owner's Policy

- For timber frame buildings, the risks of defective construction are well-publicised.
- Managing agents will be taken to be aware of the DCLG guidance note on fire safety in purpose built flats. This may mean in certain circumstances an intrusive/destructive investigation is required – if there is specific evidence of defects.
- Insurers are likely to pay more attention in future to compliance, especially for large portfolios of residential blocks.

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Insurance Issues – Premium costs and Risk Surveys

- Insurers have already ramped up premiums for building methods seen as high risk – *ie* timber frame, old-fashioned composite panels
- After a fire which reveals construction defects, insurers will want all undamaged buildings in a development surveyed to reveal if defects are pervasive. Rectification may then be required as a condition of cover.
- Anecdotal evidence is that the cost of insuring new timber frame buildings is putting developers off this construction method.
- Why do the timber frame companies not work with insurers to develop quality assurance standards?

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Defects – Recovering costs of Rectification

- Will not be covered under a standard property Policy – specific exclusions for defective design, workmanship or materials
- May be covered under other types of policy:
  - NHBC or Commercial Latent Defects policy
  - CAR policy – if damage manifests during Defects Liability Period cover, cost of correcting defects can sometimes be covered depending on wording (LEG 3 or DE5)
- Failing which, owner will have to bring claim legal claim against architect, engineers, contractors or developer – same position as with claim for damage caused by defects. So limitation a frequent obstacle.

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Thank you – Questions?

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