Fire Safety in Construction Management

Regulatory issues?
2. **Fire Safety in Construction Management**
   - An overview of the Construction Design and Management Regulations
   - How do they dovetail with Building Regulations?
   - How does Fire Safety feature and what is the Client role?

**Speaker:** David Thomas, Senior Lecturer, University of Greenwich
Issues

Building Regulations
Regulatory Reform (Fire Safety) Order
Construction Design and Management Regulations 2017
Equalities Act
Competence?
Considerations

Design Phase
Construction Phase
Operational / Maintenance Phase – Tenant 1
Refurbishment
Operational / Maintenance Phase – Tenant 2
......
Demolition
People with mobility issues
How can you effect Fire Safety Management

Design
- Capital Budget (Cheaper Borrowing)?
- Reliance on Equipment not people
- Difficult and expensive to retrofit
- Maintenance Issues
- Landlord pays

Operational
- Revenue Budget
- Reliance on people not equipment
- Supports flexible workplace
- Perpetual
- Tenant Costs
Fire Strategy?

What is it?
Who writes it?
Who is involved in deciding what it covers?
Does the strategy
Can be effected by design
Building Regulations
Domestic (Dwelling Houses) and Commercial
Reference to “Interaction with other legislation”
It’s about the ‘completed building’
Communal Areas

Sheltered housing

0.24 Where a sheltered housing scheme consists of individual houses then each unit may be designed in accordance with this volume of Approved Document B. Any communal facilities that are provided within the scheme should be designed in accordance with Approved Document B Volume 2 (Buildings other than dwellinghouses).

What happens if the warden is not resident, i.e. mobile?
Communal Areas for non sheltered housing
“Use of Guidance”
Reference to “Interaction with other legislation”
It’s about the ‘completed building’
Interaction with RR (FS) Order

Although these requirements are applicable to premises whilst in operation, it would be useful for the designers of a building to carry out a preliminary fire risk assessment as part of the design process. If a preliminary risk assessment is produced, it can be used as part of the Building Regulations submission and can assist the fire safety enforcing authority in providing advice at an early stage as to what, if any, additional provisions may be necessary when the building is first occupied.
Fire Service “Sign Off”

THE BUILDING ACT 1985 - BUILDING REGULATIONS
THE BUILDING (APPROVED INSPECTORS) REGULATIONS 2006 AMENDED - REGULATION 12

CONSULTATION

APPLICATIONS REGS NO:
PLANS NO:
DATE RECEIVED:
PROMISES ADDRESS
OUR REF. (FILE NO).

Document used by supplying agent
Document used to check application

SECTION A - MATTERS COVERED BY BUILDING REGULATIONS

1. Means of Escape in Case of Fire (81)
   Satisfactory?  YES  NO  

2. Emergency Safety Lighting (34) installed according to BS5266,
   Satisfactory?  YES  NO  N/A  

3. Access and Facilities for the Fire Service (62)
   Satisfactory?  YES  NO  N/A  

4. Last Notice and Signs in accordance with Health & Safety
   (Safety signs and Signals) Regs (96)
   Satisfactory?  YES  NO  N/A  

5. Fire Alarm/Fire Detection System in accordance with
   BS5839 Pt 1 Category: M1, L1, L2, L4, L4v or L2av
   Satisfactory?  YES  NO  N/A  

BUILDING REGULATIONS OBSERVATIONS

No observations.

Assume plans for issue 1st out will follow in due course?

6. Have any variations been agreed in the plans or plans?
   YES  NO  

7. Would a joint inspection on completion be beneficial?
   YES  NO  

SECTION B – MATTERS THAT HAVE TO BE COMPLIED WITH UNDER THE REGULATORY REFORM
(FIRE SAFETY) ORDER 2005 WHEN THE BUILDING IS OCCUPIED

8. Article 9 - (1) Completion of a fire based risk assessment in accordance with the above Order
   (a) the form of risk assessment is made or reviewed, the responsible person must record the information
   prescribed by paragraph (5) (a) —
   (a) employees fire or more employees
   (b) a firebreak or an equipment in time in relation to the premises;
   (c) in an otherwise notice requiring this in force in relation to the premises.

9. Article 11 - (1) Implementation of Fire Safety Arrangements in accordance with the above Order
   (b) the responsible person must record the arrangements effective of the premises —
   (a) all employee fire or more employee;
   (b) a firebreak or an equipment in time in relation to the premises;
   (c) an otherwise notice requiring this in force in relation to the premises.

   Please note: articles 9 - (1) require that the significant findings of the risk assessment and the arrangements made under
   article 11 above are recorded where as the employer or an employee, in a time in relation to the premises;
   (c) an otherwise notice requiring this in force in relation to the premises.

SECTION C – MATTERS THAT ARE ONLY ADVISORY AND NOT ENFORCEABLE UNDER CURRENT LEGISLATION

11. Sections A, B, C of the above only relate to life safety matters and the employer should consult with
    the building insurers with regard to property protection.

12. It is the policy of Buckinghamshire & Milton Keynes Fire Authority to support the installation of automatic fire
    suppression sprinkler installations, in new developments or significant alterations of existing buildings.
    Sprinkler systems can facilitate improved safety for the occupiers of buildings, greater protection of buildings and
    contents; they can also improve the resilience profile of the "fire build environment" which can lead to a
    significant reduction on insurance premiums.
    Sprinkler systems should be designed, installed and maintained in accordance with BS 1284.

OBSERVATIONS SECTIONS B & C
Regulatory Reform (Fire Safety) Order

Replaced Fire Precautions Act 1971

The Fire Precautions (Workplace) Regulations 1997
The Fire Precautions (Workplace) (Amendment) Regulations 1999
(Introduced principle of Risk Assessment
You’re responsible for fire safety in business or other non-domestic premises if you’re:

- an employer
- the owner
- the landlord
- an occupier
Responsibilities
STATUTORY INSTRUMENTS

2005 No. 1541
REGULATORY REFORM, ENGLAND AND WALES

The Regulatory Reform (Fire Safety) Order 2005

Made 7th June 2005
Coming into force in accordance with Article 1

ARRANGEMENT OF ARTICLES

PART 1
GENERAL
1. Citation, commencement and extent
2. Interpretation
3. Meaning of “responsible person”
4. Meaning of “general fire precautions”
5. Duties under this Order
6. Application to premises
7. Disapplication of certain provisions

PART 2
FIREFIGHTING DUTIES
8. Duty to take general fire precautions
9. Risk assessment
10. Principles of prevention to be applied
11. Fire safety arrangements
12. Elimination or reduction of risks from dangerous substances
13. Fire-fighting and fire detection
14. Emergency exits and stairs
15. Procedures for serious and imminent danger and for dangerous areas
16. Additional emergency measures in respect of dangerous substances
17. Maintenance
18. Safety assistance
19. Provision of information to employees
20. Provision of information to employers and the self-employed from outside undertakings
21. Training
22. Cooperation and co-ordination
23. General duties of employers at work
24. Power to make regulations about fire precautions
Definitions

- Non-domestic premises
- Shared premises
- Alterations, extensions and new buildings
Carrying out the Assessment

- Identify the fire hazards.
- Identify people at risk.
- Evaluate, remove or reduce the risks.
- Record your findings, prepare an emergency plan and provide training.
- Review and update the fire risk assessment regularly.
Identification of Fire Hazards
Risk Considerations

Building regulations
Façade construction
Compartmentation
The ‘stay put’ principle
Evacuation Systems
Fire Alarms
Sprinklers

Tactical response
FIRE SAFETY RISK ASSESSMENT

1. Fire hazards
   - Fire starts when heat (source of ignition) comes into contact with fuel (anything that burns), and oxygen (air).
   - You need to keep sources of ignition and fuel apart.
   - How could a fire start?
     - Think about heaters, lighting, naked flames, electrical equipment, hot processes such as welding or grilling, cigarettes, matches and anything else that gets very hot or causes sparks.
     - Packaging, rubbish and tarantula could all burn, but the more obvious, things such as paper, paint, varnish and wax. Also think about wood, paper, plastic, rubber and foam. Do the walls or ceilings have hardboard, chipboard or polystyrene? Check outside too.

2. People at risk
   - Everyone is at risk. Think whether the risk is greater for some because of what they do in their work, or if they have a health problem or are elderly.
   - Children, the elderly or disabled people are especially vulnerable.

3. Evaluate, and act
   - First, think about what you have found in assess 1 and 2, and what are the risks to people in the building or on your site?
   - Remove and reduce risk:
     - Any fuel can avoid accidental fire. Could the source of heat or sparks fall, be knocked or pushed onto something that would burn?
     - How can they happen the other way round?
   - Protect:
     - Take action to protect your premises and people from fire.

4. Record, plan and train
   - Record:
     - Have you found anything that could start a fire?
     - Make a note of it.
     - Have you found anything that could burn?
     - Make a note of it.
   - Plan:
     - Do you have a plan of any fire hazards and what you have done to reduce or remove them?
     - If your premises are small a record is a good idea. If you have fire or more staff or have a licence then you must keep a record of what you have found and what you have done.
     - Have you planned what everyone will do during a fire?
     - Have you discussed the plan with all staff?
     - Have you?
       - Informed and trained people (practised a fire drill and recorded how it went)?
       - Nominated staff to put in place your fire prevention measures, and trained them?
       - Make sure everyone can tell their role?
       - Informed temporary staff?
       - Consulted others who share a building with you, and included them in your plan?

5. Review
   - Have you:
     - Made any changes to the building inside or out?
     - Added a fire or new risk?
     - Changed work practices?
     - Begun to store chemicals or dangerous substances?
     - Significantly changed your work, or stock levels?
     - Have you planned your next fire drill?

Completed the checklist?
Do you need more information?

The checklist above can help you with the Fire Risk Assessment but you may need additional information especially if you have large or complex premises.

We have produced a series of guides for different business sectors. These guides will give you more information about how to carry out a Fire Risk Assessment, with specific advice for your type of premises. These guides are free to download at www.communities.gov.uk/fire
CDM
Fire Safety
On Site
For the Future
Planning

Regulation 29 Prevention of risk from fire, flooding or asphyxiation

Regulation 32 Fire detection and fire-fighting
Enforcement

Regulation 36 Enforcement in respect of fire
# Construction Phase Plan

## Appendix 3

### Construction Phase Plan

<table>
<thead>
<tr>
<th>Client: Newport Gwent Dragons Rodney Rd Newport Gwent NP19 0UU</th>
<th>CDM Co-ordinator: Davis Langdon LLP 4 Pearhead St Cardiff CF10 4QP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal Contractor: Andrew Scott Limited The Grange Margam Port Talbot SA13 2SP</td>
<td>Architect / Contract Administrator: Davis Langdon LLP</td>
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### Revision & Approval Status

<table>
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<tr>
<th>Original Plan Drawn By: Ian James</th>
<th>Date: 5th October 2010</th>
<th>Status: Preliminary</th>
<th>Comments:</th>
</tr>
</thead>
</table>

| Revision: A | Date: 13th October 2010 | Revised by: Ian James | Status: Construction | Comments: General Amendments & Updates |
Regulation 9 Duties of designers

Designers are those, who as part of a business, prepare or modify designs for a building, product or system relating to construction work.

When preparing or modifying designs, to eliminate, reduce or control foreseeable risks that may arise during:
- construction; and
- the maintenance and use of a building once it is built.

Provide information to other members of the project team to help them fulfil their duties.

See paragraphs 72–93 for more guidance.
Evacuation
Challenges - Evacuation
Evacuation Lift

Secondary Electric Supply
Additional protection in shaft
Design in at start
Difficult to retro fit
Summary
Relationship

Regulatory Reform Fire Safety Order

Building Regulations

CDM 2017

Where we need to be working
The Tenant /Building Users

• Need to be involved as engineering may be needed
• How
Evacuation

Portsmouth student tower sprinkler plan reversed

© 15 August 2011 | Hampshire & Isle of Wight

A plan to build a 33-storey accommodation block in Portsmouth without a sprinkler system could put lives at risk, fire chiefs have said.

The Blade is being built to house 800 University of Portsmouth students, but the developers said it was not required to have sprinklers.

Hampshire's fire service said it was "extremely disappointed" by the plan.

Developers Watkin Jones insisted the design was "fully in compliance" with regulations.

Hampshire Fire and Rescue Service was told at a meeting with the developers on Tuesday that sprinklers would not be installed in the 110m (360ft) building designed for the 800 students.
Questions