Construction Industry Standards –
The Future from a Fire Safety Perspective

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Technical Memoranda
TM19:1995

Relationships for smoke control calculations
Total fire safety
A system that produces safe buildings
Layers of safety (catastrophe theory)
Design Stage
1. Confusing performance
2. Inadequate coordination
3. ‘Received Wisdom’
Design Stage

- Dedicated ventilation unit
- Radiant cooling ceiling panels
- Underfloor air
- Lower floor to floor exposed ceilings
- Thermal energy stor.
- Central heat pump plant
- Elect. rm.
- Open loop wells
- Gray water system
- Blackwater treatment
- Interior or exterior space
- Daylight from two sides
- Narrow floor plate width

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Construction stage
Building Handover
Regulation 38, Building Regulations 2010:

The person carrying out the work shall give fire safety information to the responsible person.

“fire safety information” means information relating to the design and construction of the building or extension, and the services, fittings and equipment provided in or in connection with the building or extension which will assist the responsible person to operate and maintain the building or extension with reasonable safety.
Enforcement?
- How to start?
- What is next?
1. Competence
Ensuring competence at all levels. (IFE / Architects / Designers / Contractors / Approving Authorities)

3. Materials
Fitness for purpose testing needs a major overhaul (and must include ‘lifetime of service’ issues).

2. Quality
ASSURANCE in all aspects from design – to – build – to – handover – to – operation (including maintenance and inspection) – to – dismantling. (including design for testing, inspection and maintenance.)

4. Regulation
Enforcement to ensure that the needs of 1, 2 and 3 are satisfied.
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Ethics and ethical behaviour:

• Trading standards?
• Safety before cost
• Understanding the responsibility to provide multiple layers of safety
• Competence in everything we do
• Regular updates to codes and standards/advisory notes
Building Regulations
Accountability / Stage by Stage Safety Review

Gateway review process

Design
Pre Handover
Construction
Post Handover
The Arup Gateway Review Process – RIBA Plan of Work

1. Preparation & Briefing
   - Develop initial project brief and project objectives, project outcomes and budget. Undertake feasibility studies and site information.
   - Core objectives of work stage set by RIBA
   - Fire Safety Objective at each work stage

2. Concept Design
   - Prepare concept design including outline proposals, outline specifications and preliminary cost information and project strategies. Agree alterations to brief and issue final project brief.
   - Conceptual fire strategy and drawings
   - Identification of project constraints on fire safety.

3. Developed Design
   - Prepare developed design including co-ordinated and updated proposals, outline specifications, cost information and project strategies to include all design and specifications.
   - Developed Design fire strategy and drawings
   - Identification of the principle fire safety features required.

4. Technical Design
   - Technical design information such as drawings, details, specifications and schedules that achieve the fire safety performance requirements and reflects the approved fire strategy design and is co-ordinated with it.
   - Technical Design Fire Strategy Report & Drawings
   - Identification of maintenance and operational fire safety management requirements.

5. Construction
   - Construction of all elements comply with fire requirements of the fire strategy design.
   - Construction in accordance with construction programme and resolution of design queries from site as they arise.
   - Practical completion and handover certification.

6. Handover & Close Out
   - Undertake in use services in accordance with the schedule of services agreed.
   - Handover of building and conclusion of building contract.

7. In Use
   - To ensure compliance with the requirements of the Regulatory Reform (Fire Safety) Order 2005 or equivalent throughout the use of the building.
   - To ensure Building is being managed and operated safely and in line with the requirements of the Fire Safety Strategy.
   - To regularly update Fire Risk Assessments for the premises to reflect the changing environment, condition and management of the building.
   - To update the fire safety manual for the premises in line with any changes that are being made.
We are all responsible for shaping a safer world