Building standards update

..... how regulations can encourage innovation

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Scottish Government
Grenfell Tower Fire, 14 June 2017

Inquiry (started 2018)
Chairman: Sir Martin Moore-Bick
Phase 1 focussed on the factual narrative of the events of the night of 14 June 2017
Phase 2 the design and execution of the building project

Edinburgh Schools Report, February 2017

Failure of compliance with building regulations
Failure of quality, supervision and training
Ministerial Working Group in Scotland

Set up to oversee a review of building and fire safety regulatory frameworks, and any other relevant matters, in order to help ensure that people are safe in Scotland's buildings, and make any recommendations for improvement

..... To make buildings even safer .........................
Ministerial Working Group

**Review Panels**
Compliance and Enforcement
Fire Safety Standards
Fire Safety Regime

**Other work**
High rise housing data
External wall insulation
LPS buildings

**Consultations** – 2018
Fire Safety Standards (Section 2 - Fire): proposed 2019 changes

**Cladding and cavity insulation**

Domestic

Reduce from 18m to 11m height:

- use of A1 / A2 materials, or
- system passing a full scale fire test (BS8414, BR135)
Means of escape proposed 2019 changes

Evacuation sounders

Escape stair provision
Automatic fire suppression systems
From April 2021

All new build social housing
All new flats (all tenures)
HMOs (24/7 care, 10+ occupants)
Compliance and enforcement

High risk
- Focus on higher risk and value projects
- Public
- Complex
- Sleeping accommodation
- High rise

What aspects
- Roles and responsibilities
- Verification Standards
- Site inspection ... sharing of electronic site information
- Compliance Plan
- National guidance
- Increase of penalties ..... serious failures in compliance
Building Standards - Energy

Electrical Vehicle Charging Points

Energy Standards Review
Innovation - spectrum

Incremental Innovation

Seminal / Radical / Breakthrough
Building Standards and Innovation

• System is based on functional standards

For the majority of new buildings, Standard 6.1 has the greatest influence on design for energy performance. Standards 6.2 to 6.6 and 6.10, in the main, recommend benchmark and backstop levels to be achieved for individual elements or systems. To achieve compliance with Standard 6.1, it will be necessary to improve upon some or all of these backstop levels, or incorporate additional energy performance measures, such as low carbon equipment.

Standard 6.1
Every building must be designed and constructed in such a way that:

a. the energy performance is estimated in accordance with a methodology of calculation approved under regulation 7(a) of the Energy Performance of Buildings (Scotland) Regulations 2008, and

b. the energy performance of the building is capable of reducing carbon dioxide emissions.
Building Standards and Innovation

- Procedural Guidance advises not to (unnecessarily) prevent innovation in design, construction, products....
Building Standards and Innovation

- Review and improvement in standards and guidance ...... means reviewing and improving solutions and performance
Building Standards and Innovation

• Help to define an envelope within which innovation can occur
Building Standards - Innovation

- Minimum standards can also straitjacket thinking

- Designing to comply with standards rather than designing to deliver a good building

- Compliance model versus known operational model of a building
Building Standards - Innovation

• Frame standards against what is needed, achievable and ‘cost-effective’ which means Building Standards rely upon the solutions already being available

• Does that make Building Standards a second-order driver?
Building Standards - Innovation

• Example - combined smoke and carbon monoxide alarm
• Both requirements of Building Standards

• What would you look for?
Building Standards Innovation - digital

- BIM
- Software
- Hardware
- Data
- IoT
- ‘Knowledge’ workforce
Building Standards – Innovation Needs

• Site inspection and the limited time that verifiers can spend on site
• Target critical aspects of construction
Building Standards – Innovation Needs

- Verification of construction products
Building Standards – Innovation Needs

- Site testing

- Role in compliance checking?
  - What do results tell us
  - How do we use the information

- Do we have good standards for each type of test
Key messages

• Regulation should not be seen as a barrier to innovation, rather an opportunity
• Innovation in design, construction and finished product will all be delivered by industry
• Innovation in the Building Standards system will be made possible by government – digital transformation, efficiency, extent of compliance ...... industry and academics can provide the tools