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Hywel Davies
CIBSE, hdavies@cibse.org

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What can we learn from the Grenfell Tower disaster?

Priorities for sustainable change

Dr Hywel Davies
TECHNICAL DIRECTOR, CIBSE

CHAIR OF THE EXPERT GROUP ON THE APPROVED DOCUMENTS
hdavies@cibse.org

Abstract

The catastrophic fire at Grenfell Tower on 14 June 2017 killed 72 people and shocked the world. It also changed many more lives forever. As well as the police and public inquiries, which are ongoing, it led to an independent review of Building Regulations and Fire Safety, led by Dame Judith Hackitt, a Chartered Engineer and Fellow of the Royal Academy of Engineering.

Her review, and the associated activity around building regulations in England, is the most significant review in over a generation, since the 1984 Building Act, and is widely recognised as being a once in two generations opportunity to reform building regulations in England. It will also have implications in Wales, Scotland and Northern Ireland, which are watching closely. Moreover, it will extend beyond building regulations, which apply up until a building is complete and handed over, into the operation of the building and subsequent maintenance and minor works. This review activity is being watched closely outside the UK too, with three states in the Australian Commonwealth introducing legislation related to cladding on tall buildings in October 2018.

Keywords

Grenfell, Fire Safety, Building Regulations

This paper summarises the activity associated with the review, and also considers where we are likely to see changes in practice as a result of Grenfell Tower. Many have said that the industry must change in order that we reduce, as far as is humanly possible, the prospect of any such fire occurring again.

Dame Judith was asked to focus on “High Rise Residential Buildings” (HRRBs), with a twofold purpose:

- To make recommendations that will ensure we have a sufficiently robust regulatory system for the future;
- To provide further assurance to residents that the complete system is working to ensure the buildings they live in are safe and will remain so.

Dame Judith was asked to:

- Map the current regulatory system (i.e. the regulations, guidance and processes) as it applies to new and existing buildings through planning, design, construction, maintenance, refurbishment and change management;
- Consider the competencies, duties and balance of responsibilities of key individuals within the system in ensuring that fire safety standards are adhered to;
- Assess the theoretical coherence of the current regulatory system and how it operates in practice;
- Compare this with other international regulatory systems for buildings and regulatory systems in other sectors with similar safety risks;
- Make recommendations that ensure the regulatory system is fit for purpose with a particular focus on multi-occupancy high-rise residential buildings.

The review began by calling for evidence from interested parties. As well as contributing to responses by the Construction Industry Council and Royal Academy of Engineering, CIBSE responded with a detailed contribution on façade engineering aspects of the review developed by a working group of the Society of Façade Engineers¹. Dame Judith’s interim report was published on 18 December 2017², in which she concluded that the current system of regulation of HRRBs is not fit for purpose.

Dame Judith commented on some of her observations during the initial phase of the review, saying: “I have been shocked by some of the practices I have heard about and I am convinced of the need for a new intelligent system of regulation and enforcement for high-rise and complex buildings that will encourage everyone to do the right thing, and will hold to account those who try to cut corners.

“Changes to the regulatory regime will help, but on their own will not be sufficient unless we can change the culture away from one of doing the minimum required for compliance, to one of taking ownership and responsibility for delivering a safe system throughout the life-cycle of a building.”

She gave extended evidence later that day to the Communities and Local Government Select Committee of parliament³. This underlined her concerns and set out a number of reasons for them:

- 1) Current regulations and guidance are too complex and unclear. This can lead to confusion and misinterpretation in their application to high-rise and complex buildings;
- 2) Clarity of roles and responsibilities is poor. Even where there are requirements for key activities to take place across design, construction and maintenance, it is not always clear who has responsibility for making it happen;
- 3) Despite many who demonstrate good practice, the means of assessing and ensuring the competency of key people throughout the system is inadequate. There is often no differentiation in competency requirements for those working on high-rise and complex buildings;
- 4) Compliance, enforcement and sanctions processes are too weak. What is being designed is not what is being built and there is a lack of robust change control. The lack of meaningful sanctions does not drive the right behaviours;
- 5) The route for residents to escalate concerns is unclear and inadequate;
- 6) The system of product testing, marketing and quality assurance is not clear.

In late January there was an industry summit, which was accompanied by a statement which reinforced the interim findings and set out the next steps:

- The current system for ensuring fire safety in high-rise and complex buildings is not fit for purpose;
- A culture change is required, with industry taking greater responsibility for what is built – this change needs to start now;
- This applies throughout the building life-cycle, both during construction and occupation;
- A clear, quick and effective route for residents to raise concerns, and be listened to, must be created.

The Report set out six broad areas for change:

- Ensuring that regulation and guidance is risk-based, proportionate and unambiguous;
- Clarifying roles and responsibilities for ensuring that buildings are safe;
- Improving levels of competence within the industry;
- Improving the process, compliance and enforcement of regulations;
- Creating a clear, quick and effective route for residents' voices to be heard and listened to;
- Improving testing, marketing and quality assurance of products used in construction.

The second and final phase of the Review set out to develop practical solutions that will deliver these areas of change and support the direction of travel set out in the Interim Report. Nothing short of a major overhaul of the whole system was envisaged, and Dame Judith undertook to work with all those who shared her ambition and drive

to create a new and robust regulatory framework and system that supports this. Across all sectors of the industry she called for radical thinking about the immediate actions that could be taken to lead to sustainable change.

Industry leaders at the summit committed to work to create a new system that will work effectively and coherently, with working groups formed to develop innovative solutions in the following key areas:

Design, construction and refurbishment: Establishing what industry and regulators need to do to fully embed building safety during the design and construction phase;

Occupation and maintenance: Identifying what building owners, landlords and regulators need to do differently to ensure that building safety is prioritised when a building is occupied and throughout its life-cycle;

Products: Determining how the product testing and marketing regime can be improved;

Competency: Establishing how competency requirements for key individuals involved in building and managing complex and high-risk buildings should change;

Residents' voice: Determining the best way for residents to be given a clear, quick and effective statutory route for raising concerns on fire safety;

Regulation and guidance: Resolving whether central Government ownership of technical guidance is the most appropriate model for complex and high-risk buildings.

An expert group was also formed by the Ministry of Housing, Communities and Local Government (MHCLG) to inform the government response to the recommendation to consider how the suite of Approved Documents could be structured and ordered to provide a more streamlined, holistic view, while keeping the right level of relevant technical detail. The author chaired this working group. Its recommendations were submitted in March to Dame Judith and accepted in full in her final report. In response to Grenfell, MHCLG also established a very comprehensive web-based compendium of Grenfell-related information⁴.

Dame Judith's final report was published by government on 18 May 2018⁵. In response to her remit, to "make recommendations that ensure that the regulatory system is fit for purpose with a particular focus on multi-occupancy high-rise residential buildings", the report focuses on "higher risk residential buildings", defined as residential buildings over 10 storeys. However, Dame Judith notes that a number of her recommendations should extend to multi-occupancy buildings. This has prompted considerable debate, and current thinking within the Construction Industry Council (CIC), which brings together all the professional bodies in the industry in England, is that her recommendations should apply to all multiple-occupancy residential buildings, regardless of height.

The report envisages a new regulatory system, bringing the Fire Service, Health and Safety Executive and Building Control services together in a "Joint Competent Authority" (JCA), which is proposed to oversee both construction and operation of higher-risk buildings,

and to take responsibility for the enforcement of the Building Regulations and other relevant legislation relating to HRRBs (see Chapter 1). It calls for a series of Gateways for new HRRBs and major projects on existing HRRBs, which would entail significant scrutiny and sign-off by the JCA. It also envisages a role for the JCA in overseeing a safety case system for existing HRRBs through the whole operating life of the building (see Chapters 2 & 3).

The report calls for radical change in the current Building Regulations and associated guidance (Chapter 6), and for provision of full digital models for all new higher-risk buildings, and for them to be maintained through the life of the building (Chapter 8).

However, it is Chapter 5 that sets out the (potentially) most far-reaching recommendations for CIBSE and its members, and indeed for all professionals, relating to competence. Recommendation 5.2 of the Review calls for the professions to come together to provide a new and more robust and effective system for recognising and maintaining competence. The terms used in the Report could not set a clearer challenge to the built environment professions, and merits reading in full.

Dame Judith, a past-President of the Institution of Chemical Engineers, was clear that professional bodies in the built environment and property and fire safety sectors must find a way to work together. She calls on government to supervise the process and, if we cannot deliver, to step in. The message is really clear, and the response was almost immediate, with a working group being formed.

Other key recommendations from the report that will impact building services engineers include:

- A clear model of risk ownership, with clear responsibilities for the client, designer, contractor and owner to demonstrate the delivery and maintenance of safe buildings. The project team will be held to account by the new JCA. This new body will have powers during both construction and operation of a building, and for existing buildings;
- A set of rigorous and demanding duty-holder roles and responsibilities to ensure a stronger focus on safety during a building's design, construction and refurbishment. These roles will be broadly aligned with the Construction (Design and Management) Regulations. Penalties for those "who choose to game the system and place residents at risk", as Dame Judith describes them, will also be more serious.
- Moving towards a system where ownership of technical guidance rests with the industry, with oversight by government. A clearer package of regulations and "truly outcomes-based" guidance which will be simpler to navigate while reflecting the level of complexity of building work. It acknowledges that "prescriptive regulation and guidance are not helpful in designing and building complex buildings, especially in an environment where building technology and practices continue to evolve, and will prevent those undertaking the work from taking responsibility for their actions";
- A more effective product-testing regime with clearer labelling and traceability because "the current process for testing and 'certifying' products for use in construction is disjointed, confusing,

unhelpful, and lacks any sort of transparency". Poor procurement practices to be tackled to ensure high-safety, low-risk options are prioritised and full life-cycle cost is considered when a building is procured;

- A digital record from initial design intent through to construction, including any changes that occur during occupation, is also called for, effectively producing a model similar to one created under BIM Level 2. This digital model will create "a golden thread of information" about each HRRB which is handed over to the owner. The information can then be used to demonstrate to the regulator the safety of the building throughout its life cycle;
- Clearer rights for residents are also proposed, as well as responsibilities where resident activity can create risks that may affect others.

Much of the report is eminently sensible and says a lot of things that have needed saying for some time, although there is still a lot of detail to be resolved.

It is not yet clear how the government will proceed to address the full package of recommendations, but the Secretary of State for Housing, Communities and Local Government has already set out what will happen next:

- Government has consulted on restricting the use of desktop studies as a means of assessing the fire performance of external cladding in lieu of an actual fire test. The consultation sought views on whether desktop studies should be used at all, and whether or not they are appropriate for construction products, wall systems, or for any other purpose;
- Government has consulted on clarifications to Approved Document B (Fire) over the summer and on banning the use of combustible materials in cladding systems on high-rise buildings. Legislation on this point is thought to be imminent at the time of writing. A full technical review of Part B of the Regulations, and of the Guidance, is also very likely.

The full Government response was promised for "late autumn 2018" and so may have emerged by the time you are reading this paper.

In the meantime, Grenfell is not the only high-rise fire to have occurred. In Melbourne, Australia, the Lacrosse Building suffered a significant fire to which aluminium composite panels contributed. There were no casualties, and the sprinkler system helped to control the spread of the fire. There was also a multi-storey hotel fire in Ballymun, Dublin recently. Thankfully, again there were no serious casualties but the building suffered significant damage. Following a full investigation, the State of Victoria has now introduced legislation to limit the use of such material on buildings in the State. New South Wales has also introduced new regulations. Queensland, which has an unknown number of buildings with potentially-combustible cladding, has introduced legislation requiring owners of high-rise buildings to register them with the State Building Control Commission by next March, and those that appear to be at risk of having combustible cladding will then be investigated further. It is not just England that has the problem with this cladding.

Grenfell was an awful event, and has devastated many lives. There does appear to be a resolve to change the way that we build and manage high-rise residential buildings in the UK, but we are now getting to the challenge of starting to deliver change, and not talking about it. In the meantime, it is clear that the problems we have in England are not unique, and those elsewhere are also taking a close look at the way they regulate their buildings in the light of their own experience, and also that at Grenfell.

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