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Building Standards in the UK

What is the future for Building Regulations?

AJ The Architects' Journal
the home of British architecture

Geoff Wilkinson
MBEng MIFireE MRICS FRSA

What is Regulation ?

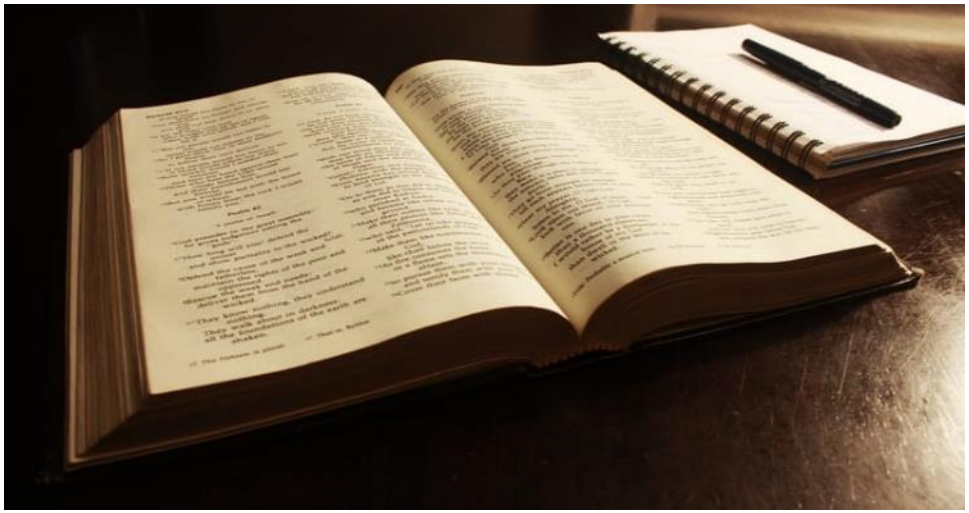
Regulation seeks to make such improvement by changing individual or organisational behaviour in ways that generate positive impacts in terms of solving societal and economic problems.

At its most basic level, regulation is designed to work according to three main steps:

1. *Regulation* is implemented, which leads to changes in

2. *The behaviour* of individuals or entities targeted or affected by regulation, which ultimately leads to changes in

3. *Outcomes*, such as amelioration in an underlying problem or other (hopefully positive) changes in conditions in the world.



Deuteronomy 22:8

New Living Translation

"When you build a new house, you must build a railing around the edge of its flat roof. That way you will not be considered guilty of murder if someone falls from the roof.

Deuteronomy was composed in Jerusalem in the 7th century BC in the context of religious reforms advanced by King Josiah (reigned 641–609 BC).

The Great Fire of London spread quickly – a combination of a strong wind, closely built properties and a warm summer which had dried out the wood and thatch used to construct many of the buildings. An area of a mile and a half along the River Thames was almost completely destroyed.

A royal proclamation tried to put a stop to rebuilding the city until new regulations were in place, beginning with the 1667 Rebuilding Act aimed at eradicating some of the risks that had made the fire so catastrophic. The new Building Regulations meant that:

- upper floors of houses were no longer permitted to jut out over the floor below.
- hanging signs were banned.
- all houses or buildings, whether great or small, were to be built only in brick or stone – if new houses were built of other materials they would be pulled down, meaning no more building with wood and thatch*.
- new Fire Prevention Regulations included easy access to water and the beginnings of a fire hydrant system for the city.

STATUTORY INSTRUMENTS

2010 No. 2214

BUILDING AND BUILDINGS, ENGLAND AND WALES

The Building Regulations 2010

Made - - - - 6th September 2010
Laid before Parliament 9th September 2010
Coming into force - - 1st October 2010

CONTENTS

The two types of Building Control Service

We need to be clear with customers that the building control service will:

• provide a checking service to help achieve compliance with building standards

• support and advise customers on how to end up with the result they want, but will not be a substitute for professional design and construction advice

• help with aspects of quality (workmanship and materials) where these affect compliance with building standards, but not where they do not affect compliance

• ensure that all building standards which are set in the interests of the wider public good have been complied with at completion.

We need to be clear with customers that the building control service will not:

• be responsible for compliance – *that is the duty of the person carrying out the work.* If work is found not to comply with building standards the person responsible could be prosecuted and the owner of the building may be required to put the work right

• manage every stage of the construction process on-site – that is a matter for the contracts and arrangements between the client and builder

• address issues such as the finish and aesthetics of the final project where these are not relevant to compliance with building standards – these are a matter for designers, developers, builders and, to some extent, new home warranty providers

• deal with contractual problems between client and builder – this is a matter of contract law

The Approved Documents are intended to provide guidance for some of the more common building situations. However, there may well be alternative ways of achieving compliance with the requirements.

Thus there is no obligation to adopt any particular solution contained in an Approved Document if you prefer to meet the relevant requirement in some other way.

Using the Approved Documents

3.3 The guidance in the Approved Documents does not constitute a set of statutory requirements and does not have to be followed if you wish to design and construct your building work in some other way which nevertheless can still be shown to comply with the applicable requirements of the Building Regulations. This guidance will be taken into account when a local authority or an approved inspector (as the building control body) is considering whether your plans of proposed work, or work in progress, complies with particular requirements. In addition, there is a legal presumption that following the guidance is evidence tending to support compliance with the Building Regulations. However, it is the building control body's duty to consider whether your plans comply with the functional requirements in the Building Regulations - not whether your plans necessarily accord with the general guidance or a specific example in an Approved Document.

3.4 If you choose not to follow the guidance you could, if necessary, be asked to demonstrate by other means that you have satisfied the requirements. You should bear in mind that in relation to Parts A to K and N (except for paragraphs H2 and J6), nothing needs to be done beyond what is necessary to secure reasonable standards of health and safety (Regulation 8). H 2 and J6 excluded as they contain requirements related to preventing the contamination of groundwater.

3.5 Approved Documents may give guidance in more than one form. They may describe particular methods of construction (Technical Solutions), give references to other publications (Alternative Approaches) or give acceptable levels of performance.

Technical solutions

3.6 Technical Solutions describe some of the more widely used forms of construction which achieve an acceptable level of performance. Although they generally give detailed guidance, in some cases they are written to give you sufficient flexibility to adapt them to suit a method of construction which you prefer.

Alternative approaches

3.7 If there is no Technical Solution that you wish to use or adapt, you should see if there is an alternative approach. This is usually based on the relevant recommendations of a named standard (see also paragraph 3.10) and may give you an opportunity to use a more complex procedure to 'fine tune' your solution.

Acceptable levels of performance

3.8 Some Approved Documents also contain an acceptable level of performance. This may be a useful guide if neither of the other two approaches is suitable for your proposals. The acceptable level should not be seen as a minimum standard, there may be circumstances where something less may satisfy the requirements of Schedule 1.

Other guidance

Manufacturer's data sheets and manuals contain detailed information on specification and installation of cavity barriers for specific systems.

There is little generic information available, possibly reflecting the diversity of the potential design solutions to cavity fire protection.

The Structural Timber Association (STA) (formerly the UKTFA) has produced generic guidance on the installation of cavity barriers in timber-frame construction[15].

Guidance on installation and specification of cavity barriers is available through the published output from the NHBC Foundation/BRE Trust research project[16].

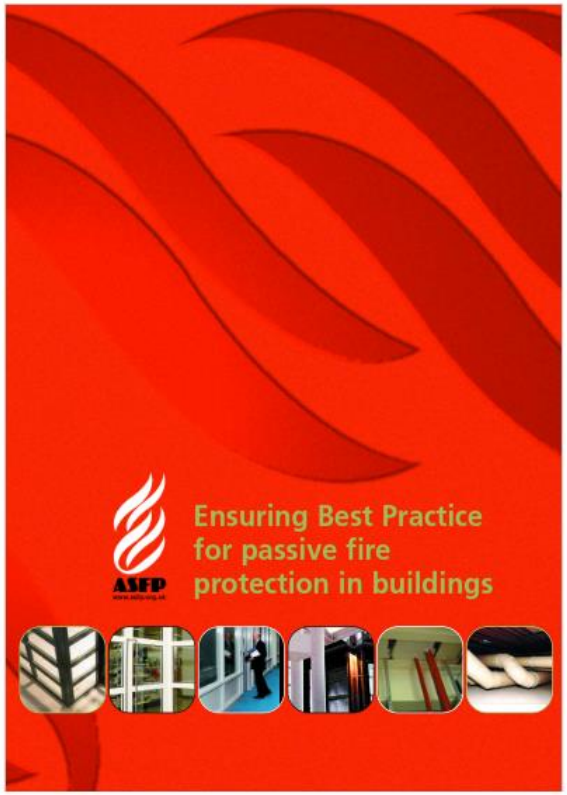
Recent guidance from the ASFP[17] on fire stopping systems includes some limited information on small cavity barriers including some useful practical guidance notes in Appendix D of that document which highlights the need to verify that the in service dimensions of the system being installed are correct and that any splices/joints are correctly installed in accordance with manufacturers' instructions and at the correct centres.

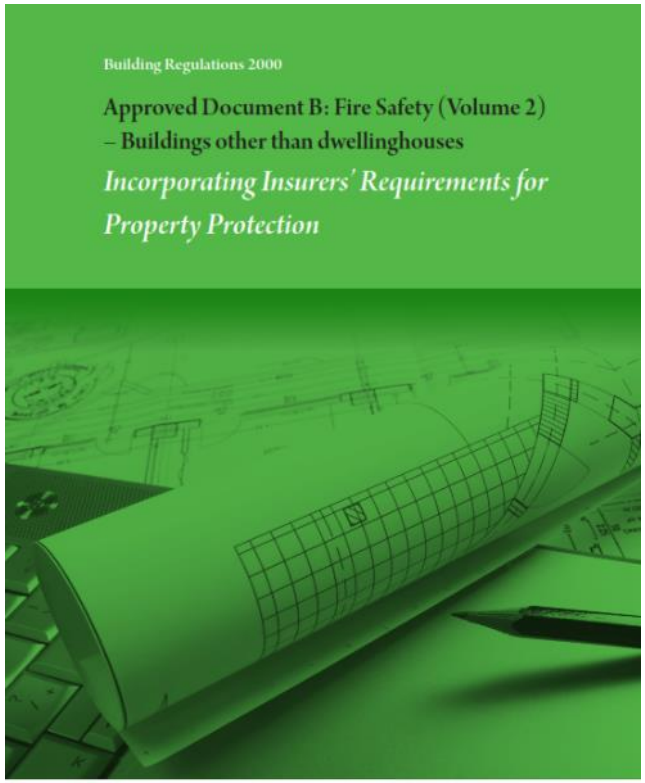
The issue of where, when and how to provide cavity barriers within buildings was covered in some detail in BRE Digests 214[11] and 215[12] published in 1978. Much of this information is still relevant although specific materials such as asbestos insulation board are no longer applicable.

Although general guidance is available from the passive fire protection industry through the Association of Specialist Fire Protection (ASFP) on the installation of cavity barriers, there is no dedicated publication covering this important area of fire protection.

BS 9999[13] is the fire safety code of practice for building design, management and use. The standard outlines ways to meet fire safety legislation through a more flexible approach to design.

Concealed spaces are discussed in Section 34, and includes guidance on cavity barriers (Section 34.2) and extensive cavities (Section 34.3). Fire stopping is discussed in Section 33.5.





RIBA Publishing RISCAuthority FPA Fire Protection Association

B3

Section 8: Compartmentation

Introduction

8.1 The spread of fire within a building can be restricted by sub-dividing it into compartments separated from one another by walls and/or floors of fire-resisting construction. The object is twofold:

a. to prevent rapid fire spread which could trap occupants of the building; and

b. to reduce the chance of fires becoming large, on the basis that large fires are more dangerous, not only to occupants and fire and rescue service personnel, but also to people in the vicinity of the building.

c. To contain the fire as far as possible to one compartment for the duration of the fire, thus minimising the damage to the property and as far as is practical minimising business interruption. For the purpose of property protection and business resilience, this may be achieved by a combination of higher fire resistance, smaller compartment areas or requiring the installation of an automatic sprinkler system.

From a property protection perspective, compartmentation is seen as vital to limit the spread of fire in order to:

- *prevent excessive damage caused by fire and smoke and thus limit the financial exposure. Fire and smoke spread outside the room or compartment of origin is to be minimised for the full duration of a fire;*
- *protect valuable materials, equipment and processes. These can represent a significant financial risk both from direct loss and also subsequent business interruption; and*
- *limit the area of damage from a fire in order to minimise business interruption and consequent financial exposure. Many businesses that suffer a fire may not survive because of loss of customers during the time taken to refurbish and replenish stock.*

Compartmentation is complementary to provisions made in Sections 2 to 5 for the protection of escape routes and to provisions made in Sections 12 to 14 against the spread of fire between buildings.

8.2 The appropriate degree of sub-division depends on:

a. the use of and fire load in the building, which affects the potential for fires and the severity of fires, as well as the ease of evacuation;

b. the height to the floor of the top storey in the building, which is an indication of the ease of evacuation and the ability of the fire and rescue service to intervene effectively; and

c. the availability of a sprinkler system which affects the growth rate of the fire and may suppress it altogether.

8.3 Sub-division is achieved using compartment walls and compartment floors. The circumstances in which they are needed are given in paragraphs 8.9 to 8.19.

8.4 Provisions for the construction of compartment walls and compartment floors are given in paragraphs 8.20 onwards. These construction provisions vary according to the function of the wall or floor.

Special forms of compartmentation

8.5 Special forms of compartmentation to which particular construction provisions apply, are:

a. walls common to two or more buildings, see paragraph 8.10;

b. walls dividing buildings into separated parts, see paragraph 8.11; and

c. construction enclosing places of special fire hazard, see paragraph 8.12.

Junctions

8.6 For compartmentation to be effective, there should be continuity at the junctions of the fire-resisting elements enclosing a compartment and any openings from one compartment to another should not present a weakness.

Fire resistance can be significantly reduced by any weakness at junctions of fire-resisting compartments and openings.

Protected shafts

8.7 Spaces that connect compartments, such as stairways and service shafts, need to be protected to restrict fire spread between the compartments and they are termed protected shafts. Any walls or floors bounding a protected shaft are considered to be compartment walls or floors for the purpose of this Approved Document.

Could the government have done more?

Over the past few decades, successive governments have made changes to fire regulations for residential premises, to try to reduce deaths. Modern high-rise buildings in England, Scotland and Wales must be fitted with sprinklers, but calls for more to be done to improve safety in older tower blocks increased following major fires in south London in 2009 and in Southampton in 2010.

Following the disastrous fire at Grenfell Tower in west London this week, which quickly engulfed the 24-storey block, the government has been accused of failing to ensure sprinklers were fitted to older blocks and of failing to update building regulations.

Ministers have stressed that at this stage, the exact cause of the Grenfell Tower fire is not known, but Communities Secretary Sajid Javid told the BBC that following such a high number of deaths: "Clearly something has gone disastrously wrong ... something needs to change".

The former Conservative housing minister Mark Prisk told BBC Radio 5live that clearly not enough time had been spent reviewing fire safety in recent years and ministers "need to do more".

AJ

Cameron claims victory in bonfire of the Building Regulations

6 Nov 2015

3 comments

Call for update on fire safety regs after Lakanal recommendations ignored

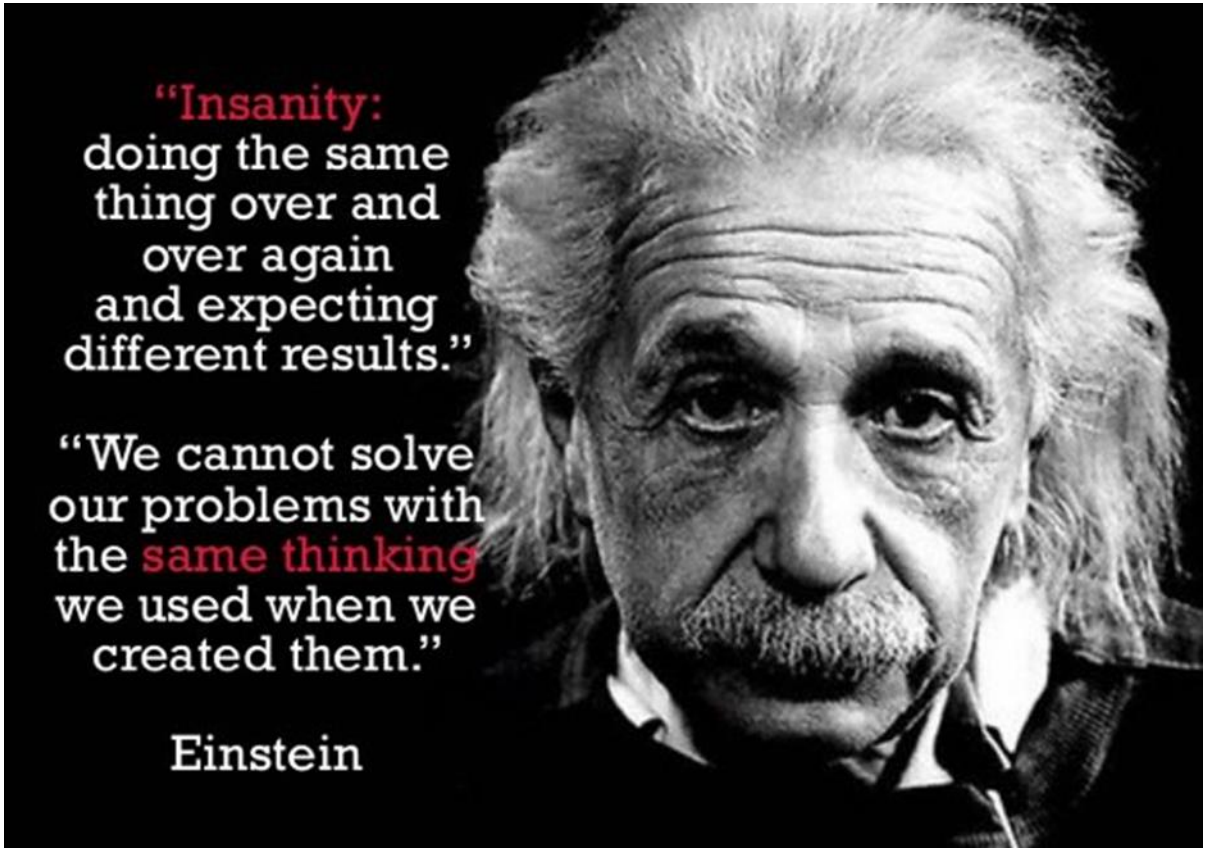
Building Regulations and Approved Document B

During these inquests we examined Approved Document B (2000 edition incorporating 2000 and 2002 amendments) ("AD B"). I am aware that AD B has subsequently been amended, and believe that a further amendment is due to be published soon. The introduction to AD B states that it is " … intended to provide guidance for some of the more common building situations". However, AD B is a most difficult document to use. Further, it is necessary to refer to additional documents in order to find an answer to relatively straightforward questions concerning the fire protection properties of materials to be incorporated into the fabric of a building.

It is recommended that your Department review AD B to ensure that it

- provides clear guidance in relation to Regulation B4 of the Building Regulations, with particular regard to the spread of fire over the external envelope of the building and the circumstances in which attention should be paid to whether proposed work might reduce existing fire protection
- is expressed in words and adopts a format which are intelligible to the wide range of people and bodies engaged in construction, maintenance and refurbishment of buildings, and not just to professionals who may already have a depth of knowledge of building regulations and building control matters
- provides guidance which is of assistance to those involved in maintenance or refurbishment of older housing stock, and not only those engaged in design and construction of new buildings.

87 discoveries of human remains found in Grenfell Tower after horrific fire


"Insanity:
doing the same thing over and over again and expecting different results."
"We cannot solve our problems with the same thinking we used when we created them."
Einstein

Building a Safer Future

Independent Review of Building Regulations and Fire Safety: **Final Report**

As the review has progressed, it has become clear that the whole system of regulation, covering what is written down and the way in which it is enacted in practice, is not fit for purpose, leaving room for those who want to take shortcuts to do so.

May 2018

Dame Judith Hackitt DBE FREng

Cm 9607

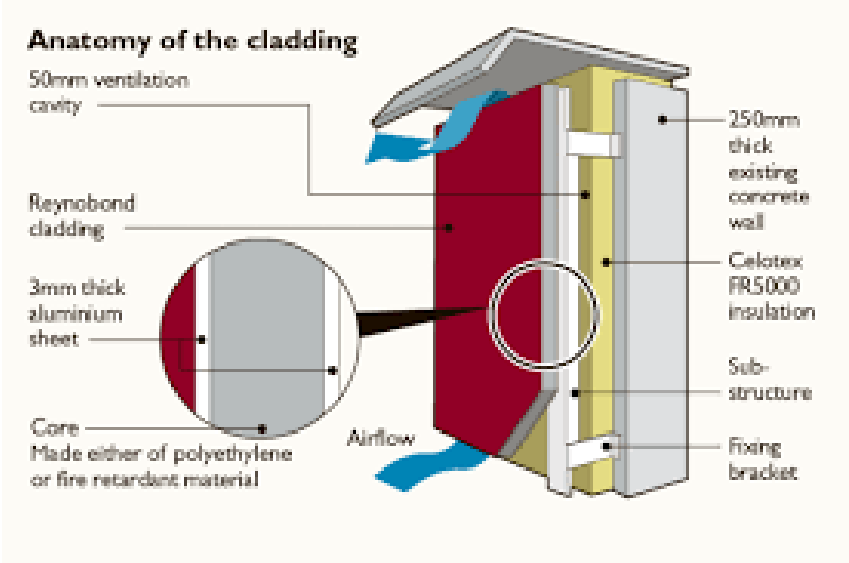
I have set out to look at the whole system, including the people working within it, and how the various parts interact to deliver outcomes on the ground. This includes the roles and responsibilities of people designing, planning and constructing buildings; the roles and responsibilities of different enforcing bodies and those who set standards; and the roles and responsibilities of all those who interact with the system during the use of a building, which often involves highly complex ownership models. The regulatory system comprises all of these elements, not just what is written in statute.

Change control and quality assurance are poor throughout the process. What is initially designed is not what is being built, and quality assurance of materials and people is seriously lacking.

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.

The above issues have helped to create a cultural issue across the sector, which can be described as a 'race to the bottom' caused either through ignorance, indifference, or because the system does not facilitate good practice. There is insufficient focus on delivering the best quality building possible, in order to ensure that residents are safe, and feel safe.

A systemic review of the regulations by a non-expert in construction was never going to recommend detailed changes to the technical requirements – this is beyond my area of competence. Any attempt to modify details of the regulation without addressing the clear systemic failings would be akin to adding a paint job and decorations to a fundamentally non-roadworthy vehicle. My goal is to ensure that we create, within a much more robust overall system, a process that ensures there is effective oversight of materials, people and installation.



The Requirement

This Approved Document deals with the following Requirement from Part B of Schedule 1 to the Building Regulations 2010.

Requirement	*Limits on application*
External fire spread	
B4. (1) The external walls of the building shall adequately resist the spread of fire over the walls and from one building to another, having regard to the height, use and position of the building.	
(2) The roof of the building shall adequately resist the spread of fire over the roof and from one building to another, having regard to the use and position of the building.	

Regulation

Materials and workmanship

7. (1) Building work shall be carried out—
   (a) with adequate and proper materials which—
      (i) are appropriate for the circumstances in which they are used,
      (ii) are adequately mixed or prepared, and
      (iii) are applied, used or fixed so as adequately to perform the functions for which they are designed; and
   (b) in a workmanlike manner.

(2) Subject to paragraph (3), building work shall be carried out so that materials which become part of an external wall, or specified attachment, of a relevant building are of European Classification A2-s1, d0 or Class A1, classified in accordance with BS EN 13501-1:2007+A1:2009 entitled "Fire classification of construction products and building elements. Classification using test data from reaction to fire tests" (ISBN 978 0 580 59861 6) published by the British Standards Institution on 30th March 2007 and amended in November 2009.

(3) Paragraph (2) does not apply to—
   (a) cavity trays when used between two leaves of masonry;
   (b) any part of a roof (other than any part of a roof which falls within paragraph (iv) of regulation 2(6)) if that part is connected to an external wall;
   (c) door frames and doors;
   (d) electrical installations;
   (e) insulation and water proofing materials used below ground level;
   (f) intumescent and fire stopping materials where the inclusion of the materials is necessary to meet the requirements of Part B of Schedule 1;
   (g) membranes;
   (h) seals, gaskets, fixings, sealants and backer rods;
   (i) thermal break materials where the inclusion of the materials is necessary to meet the ther requirements of Part L of Schedule 1; or
   (j) window frames and glass.

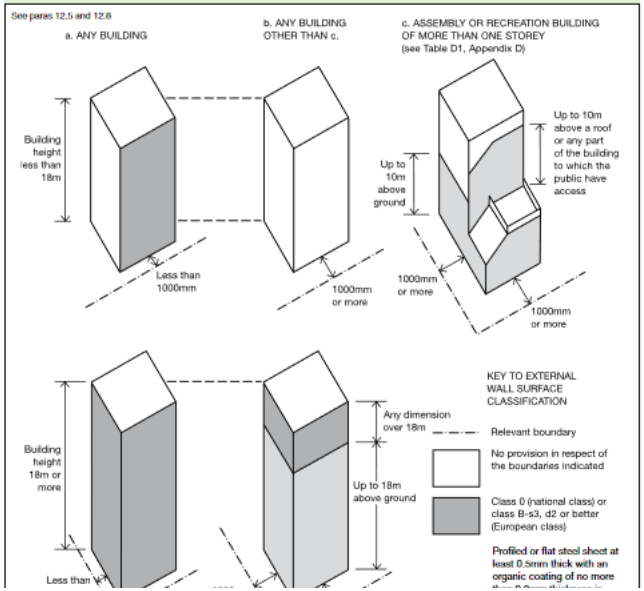
(4) In this regulation—
   (a) a "relevant building" means a building with a storey (not including roof-top plant areas consisting exclusively of plant rooms) at least 18 metres above ground level and which—
      (i) contains one or more dwellings;
      (ii) contains an institution; or
      (iii) contains a room for residential purposes (excluding any room in a hostel, hotel house); and
   (b) "above ground level" in relation to a storey means above ground level when measured fro ground level adjoining the outside of a building to the top of the floor surface of the sto

Cavities and cavity barriers

12.7 Cavity barriers should be provided in accordance with Section 9.

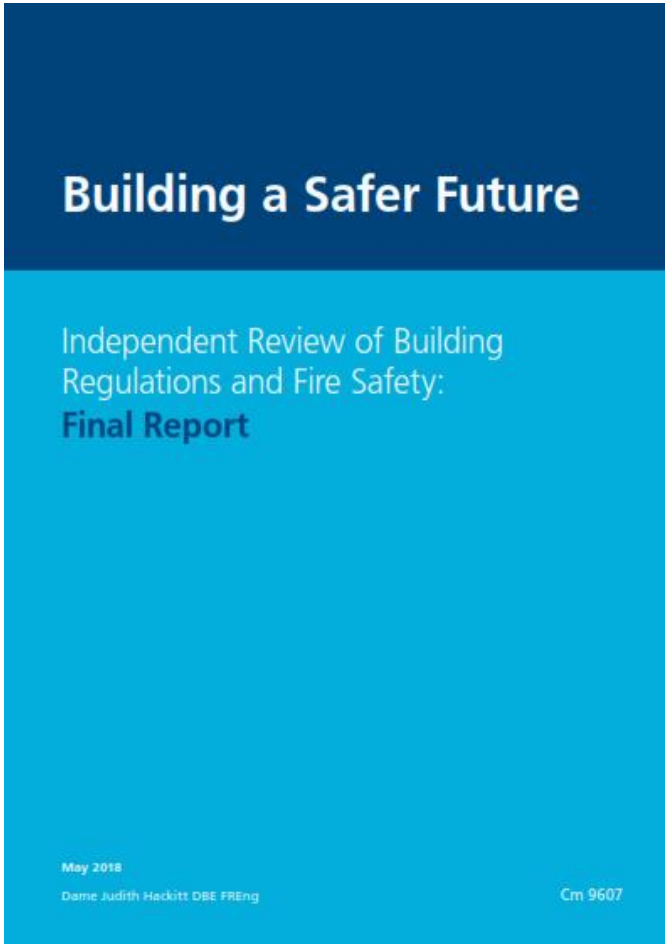
12.8 In the case of an external wall construction, of a building which, by virtue of paragraph 9.10d (external cladding system with a masonry or concrete inner leaf), is not subject to the provisions of Table 13 *Maximum dimensions of cavities in non-domestic buildings*, the surfaces which face into cavities should also meet the provisions of Diagram 40, and

Diagram 40 **Provisions for external surfaces or walls**



Notes:

1. The national classifications do not automatically equate with the equivalent European classifications, therefore, products cannot typically assume a European class unless they have been tested accordingly.
2. When a classification includes "s3, d2", this means that there is no limit set for smoke production and/or flaming droplets/particles.
3. Where a mixed-use building includes Assembly and Recreation Purpose Group(s) accommodation, the external surfaces of walls should meet the provisions in Diagram 40c.
4. Where Regulation 7(2) applies, it prevails over the provisions in this diagram.



Recommendation 1.1

The new regulatory framework should apply to residential properties which are 10 or more storeys high in the first instance. New HRRBs should be identified by the Local Planning Authority and notified to the regulator. Existing buildings in scope should be identified through other means, learning from the MHCLG Building Safety Programme experience.

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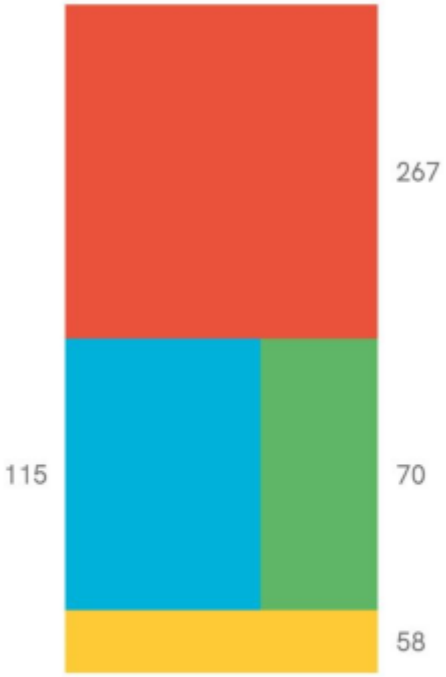
Building Standards in the UK

Estimates of the numbers of HRRBs

It is estimated that there are between 2,000 and 3,000 HRRBs in England. This range is based on analysis of a dataset provided by Homes England.

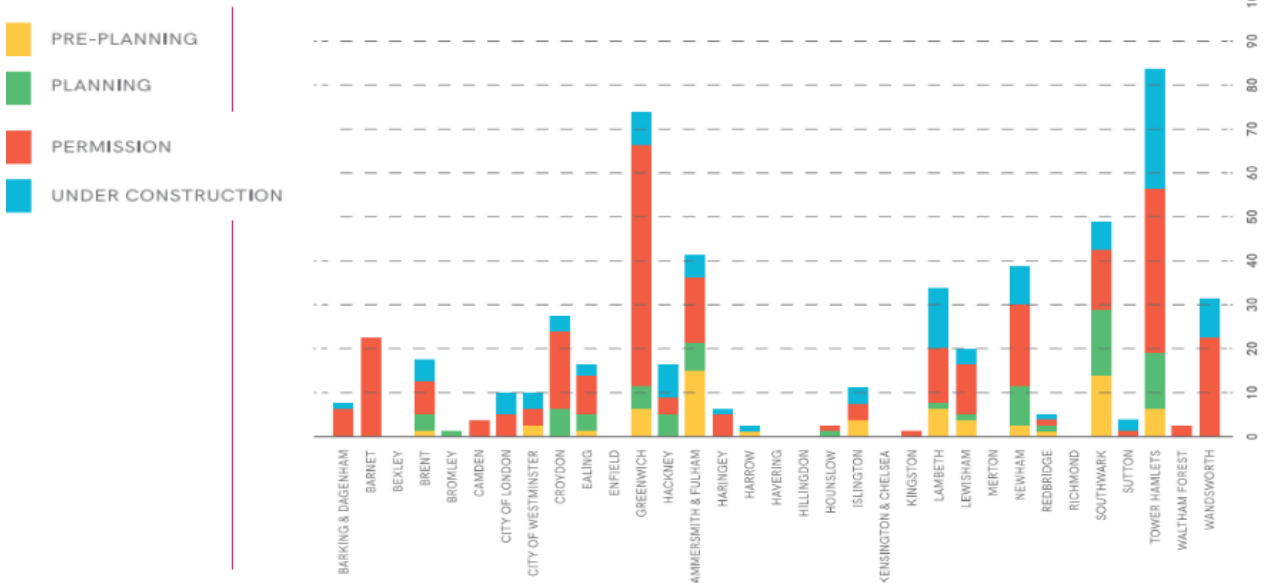
Tall Buildings Survey 2018 - Analysis

Stuart Baillie - GL Hearn,
Head of London Planning



Tall Buildings in Pipeline by Borough

GL Hearn
Part of Capita plc




Summerland

Recommendation 1.2

The government should set up a 'Joint Competent Authority'. This should comprise Local Authority Building Standards, fire and rescue authorities and the Health and Safety Executive, working together to maximise the focus on building safety within HRRBs across their entire life cycle. The optimum model for ensuring effective joint working should be discussed with all relevant parties, but should draw on the model set out above. The JCA should design and operate a full cost recovery model.

The new JCA in action

The key responsibilities of the JCA (see later chapters for more details) should include:

a. Creating and maintaining a database of all HRRBs and key dutyholders for those buildings – whether they are in construction or are already being occupied.

b. Ensuring dutyholders focus on mitigating building safety risks during the design and construction phase, through:
   - undertaking a series of Gateway Point interventions where the JCA would undertake a thorough assessment of dutyholders' understanding and management of the risks they are creating (in order for dutyholders to gain permission for work to proceed or occupation to commence);
   - undertaking an assessment of dutyholders' oversight of the construction process by ensuring that key duties are understood, key 'golden thread' information products produced and proper change control processes in place.

c. Ensuring key dutyholders' focus on reducing ongoing building safety risks during the occupation and maintenance phase, through:
   - requiring dutyholders to provide periodic safety case reviews to demonstrate that building safety is being maintained and that residents are properly engaged (may also be triggered if a significant refurbishment is planned);
   - requiring dutyholders to make building improvements where necessary to reduce building risks so far as is reasonably practicable.

d. Handling and assessing immediate ad-hoc building safety concerns made about specific HRRBs by others, namely:
   - through the mandatory reporting of safety concerns by dutyholders;
   - through referrals made by Environmental Health Officers (EHOs);
   - through escalated referrals made by residents of HRRBs to a new independent body.

e. Requesting testing of construction products that are critical to HRRB building safety on a reactive basis when concerns arise, including information exchanges with all HRRB dutyholders in exceptional circumstances.

f. Requesting annual reports from product testing houses providing summary details of the types of tests carried out and the numbers of passes and fails reported.

g. Helping the proposed new government body to validate and assure the guidance produced by industry to meet the outcomes-based goals of the Building Regulations.

https://www.nydailynews.com › nyc-crime

Fourteen people charged with bribing inspectors to speed up Brooklyn ...

25 Oct 2017 · With new buildings popping up across Brooklyn, some corrupt property owners paid off a pair of city inspectors to ...

www.chicagotribune.com

Ex-city building inspector gets probation, home detention for seeking bribe

28 Mar 2017 · A former city building inspector was sentenced to two years of probation and six months of home confinement ...

https://www.sfchronicle.com › article › O...

Oakland inspector took bribes from building owners, ethics probe finds - SFChronicle ...

26 Oct 2018 · Investigators with Oakland's Public Ethics Commission said they found evidence that a former building inspector ...

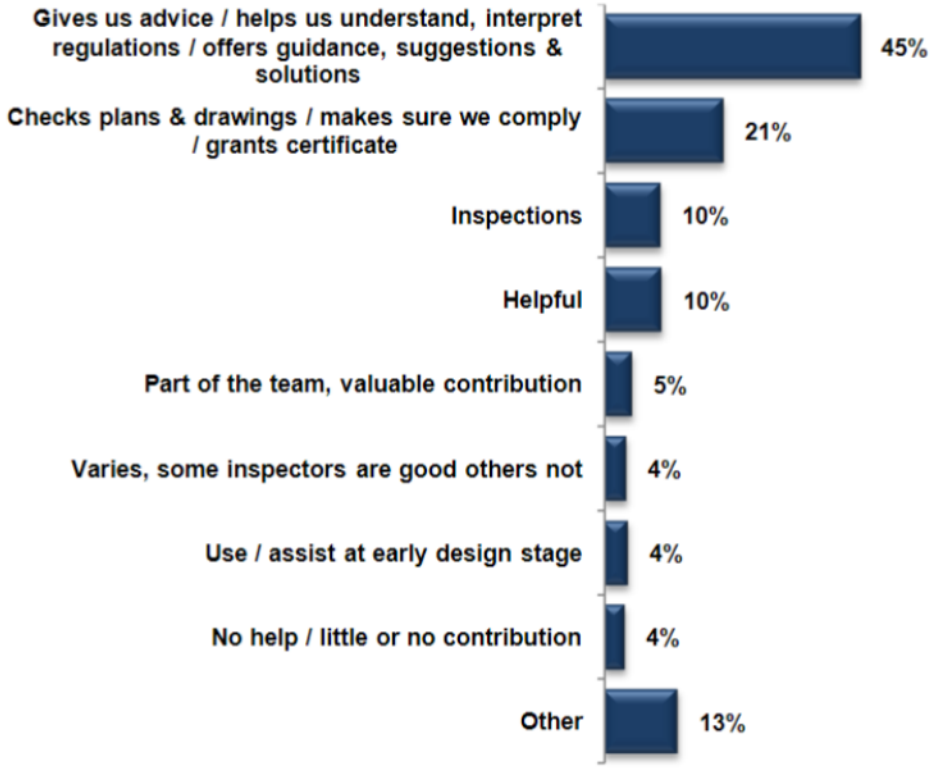
nypost.com

Building inspectors took bribes to ignore code violations: DA

10 Feb 2015 · Greedy city building inspectors and their bosses took bribes and lavish gifts – including a pair of SUVs and a cruise ...

In what way does the Building Control Surveyor contribute towards your projects and compliance with Building Regulations? Unprompted

All



Base 524 (excludes Developers and other Clients who leave Building Control to their external teams)
Other includes: good relationship, gives us and customer peace of mind, proactive, easily contactable, necessary ,

Recommendation 1.3

The regulatory framework should treat the building as a single entity (a system encompassing sub-systems) and a new over-arching Approved Document should be published describing the system and the holistic analyses that must be completed when undertaking building work. This should define the requirement to understand the interactions of the system and its comprising subsystems in both normal operation and outside normal conditions.

Recommendation 1.4

a. A system of mandatory occurrence reporting to the JCA similar to that employed by the Civil Aviation Authority should be set up for HRRBs. The requirement to report should be for key identified dutyholders on a no-blame basis. The outputs of these reports (and statistical analysis of this data) should be publicly available. Non-reporting should be regarded as non-compliance and sanctions applied appropriately.

b. It would be appropriate for the JCA to be a prescribed person under PIDA.

c. For all other buildings the current CROSS scheme should be extended and strengthened to cover all engineering safety concerns and should be subject to formal review and reporting at least annually.

Gateway Points

Gateway Points

Gateway Point	The relevant dutyholder must …	In order to …
1	Satisfy the JCA that the planned building will be sufficiently accessible by the fire service, in order for the Local Planning Authority to determine the planning application	Get permission to use the land for the intended purpose
2	Satisfy the JCA (who will conduct a review of the safety features of the proposed design) that their Full Plans show that key building safety risks are understood and will be managed, that robust processes are being put in place and that the design will meet all Building Regulations requirements	Start building work
3	Satisfy the JCA that the signed-off design has been followed (or that any changes since that point are properly verified and acceptable) and that the completed building has met all key building safety (and other Building Regulations) requirements, that all key documents have been handed over, and a resident engagement strategy is in place.	Start occupation

Recommendation 2.5

The LPA should be required in law to undertake a consultation with the JCA where it identifies that a building is a HRRB. This process should also apply where planning permission for another building in the near vicinity is sought (where such a building might impact on fire service access to a HRRB).

This is the first Gateway Point.

Gateway Point 1 – Planning Permission

2.27 The planning system clearly needs to focus on swift throughput of all planning applications received. This is essential if the government wishes to meet the housing supply needs of a growing population. Nonetheless, there are some minimum requirements around fire safety that will need to be addressed when local planning authorities are determining planning applications and will require input from those with the relevant expertise. In particular, there is a need for upfront consideration of fire service access to HRRBs to ensure that, in the event of a fire, the building is sufficiently accessible.

2.28 This applies both to new HRRBs and also to any other new buildings which fall within a particular radius of a HRRB where that could impact on fire service accessibility. At present, some individual Local Planning Authorities (LPAs) consult with fire and rescue authorities on accessibility, but mainly on an informal basis. To address the risk for all HRRBs, LPAs should statutorily consult with the JCA so that the fire and rescue authorities can advise on fire service accessibility issues at that point. To ensure clarity of approach, it will be important to be clear in guidance what issues should be considered by the JCA at the planning stage with a clear focus on issues such as provision for emergency vehicle access to the building. This should not have any significant impact on LPA application throughput and need not require LPAs to develop significant need capabilities to make complex technical assessments.

Recommendation 2.6

Government should ensure that there is thorough assessment by the JCA of detailed design plans for HRRBs and sufficient assurance that dutyholders are in place and relevant responsibilities are being met in order to give permission for building work to legally commence. This should be in line with paragraphs 2.29-2.32.

This 'Full Plans Approval' is the second Gateway Point.

Local Authority Building Control prevents at least 476,000 things going wrong on site every year before construction even begins.

LABC has released independent research on issues that were found during the routine plan assessments done by local authority building control teams. The research, carried out by Lychgate Projects Ltd, involved a sample of 42 local councils over a 3- week period where a massive 3,973 'interventions' (things wrong) were found on plans, of these, 40% represented a "high risk of failure".

Local authorities have to do these formal plan assessments on full plans building regulations applications. This research has proved that they're a major contributor in making sure work complies before work begins on site and materials are even bought. This means that plan assessments prevent the wasted time and financial costs of correcting faults that would otherwise happen.

Recommendation 2.7

Government should ensure that:

a. the JCA undertakes a thorough test of the dutyholders' as-built construction of HRRBs, supported by clear documentary evidence from the Principal Contractor that the design intent has been delivered as proposed (and any changes are documented and justifiable) and that handover of key golden thread information has occurred. This should be as set out in paragraphs 2.33-2.35 above; and

b. the building owner must have completed a pre-occupation Fire Risk Assessment and resident engagement strategy. All of this must be signed off by the JCA (and a safety case review cycle established) to enable occupation to commence.

This 'Completion Certificate' process is the third Gateway Point.

Gateway Point 3 – Completion stage

2.33 The Completion stage (i.e. completion of building work) should be the third Gateway Point. It should be radically strengthened to become a more thorough test of as-built construction work which must be assessed by the JCA and permission granted to enable occupation to commence. As such the Principal Designer and Principal Contractor should be required to present the JCA with sufficient records of the final buildings in the right form to enable a full assessment of building safety (and all other relevant requirements). The client will also need to confirm that relevant Building Regulations requirements are met and the building is therefore safe. Dutyholders will also need to present proper records and a justification for all changes made since Full Plans sign-off.

2.34 This approach will better embed building safety as the transition into occupation occurs. It will ensure that the JCA can fully assess the final building and hold dutyholders to account to ensure they fully demonstrate that they understand the risks created and how they have managed those risks, in particular, since they were given approval to proceed to the construction phase (at Gateway Point 2).

2.35 This Gateway Point will also ensure that the future building owner receives the key golden thread information products, linking the design and construction and the occupation and maintenance phases together. To facilitate this, the future building owner will need to be identified at this point as part of the golden thread process and will need to complete a pre-occupation Fire Risk Assessment based on the Fire and Emergency File that is ready for occupation as well as a resident engagement strategy to support the principles of transparency of information and partnership with residents (see Chapter 4 for more details).

Recommendation 2.9

a. there should be a clearer, statutory change control process that places requirements on the relevant dutyholder to notify the regulators of significant changes post-Full Plans sign-off. Within that context, two types of changes should be defined – 'major' and 'minor'.
   - 'Major' changes would be a limited list of significant changes for example (a) changes in use, changes in number of storeys, changes in number of units or (b) changes which could impact on previously signed-off building safety plans. Major changes would require an update from the dutyholder to the JCA (for reconsideration) before such work is commenced.
   - 'Minor' changes (i.e. all other changes) would need to be recorded and identifiable at the completion of the work for dutyholders to demonstrate that Building Regulations are still satisfied.

b. Government should consider also applying this change control process to other multi-occupancy residential buildings and to institutional residential buildings.

Recommendation 2.10

In HRRBs, building work that is carried out by 'persons in a competent person's scheme' should be subject to full oversight by the JCA to enable it to fully discharge its duties in line with paragraph 2.38-2.39 above.

Recommendation 2.13

The sanctions and enforcement regime should be reinforced so that penalties are an effective deterrent against non-compliance. These stronger enforcement tools should generally look to replicate and align with the approach in the Health and Safety at Work Act. More specifically:

a. the JCA/Local Authority Building Standards should have additional powers to issue formal Improvement and Prohibition (or 'Stop') Notices to dutyholders where there is a sufficient concern about, for example, the degree of oversight of the work; accurate record-keeping; or the likelihood of meeting Building Regulations requirements;

b. the JCA/Local Authority Building Standards should have the clear power to require changes to work that fail to meet the Building Regulations requirements alongside any broader penalties sought;

c. time limits for bringing prosecutions against dutyholders should be increased to five or six years for 'major' deficiencies in building requirements identified at a later date;

d. the JCA cost recovery model should be weighed appropriately to create a fund for enforcement action to be taken where needed; and

e. the new powers should be available, wherever appropriate, to support either the JCA or Local Authority Building Standards in respect of all non-compliant building work.

Recommendation 6.1

a. Government should work towards a long term aim that guidance on how to meet the building regulations is to be owned by industry, while government sets out regulatory requirements and provides oversight of the regulatory system.

b. Government should reserve the right to create guidance if industry has not proven that it is able or is deemed unable to produce suitable guidance.

Recommendation 6.2

a. The government should create a new structure to validate and assure guidance, oversee the performance of the built environment sector and provide expert advice.

b. There should be a periodic review (at least every five years) of the effectiveness of the overall system of building regulation including accountabilities, responsibilities, guidance, and the effectiveness of the regulator.

Building Control Alliance

Recommendation 7.1

a. A clearer, more transparent and more effective specification and testing regime of construction products must be developed. This should include products as they are put together as part of a system.

b. Clear statements on what systems products can and cannot be used for should be developed and their use made essential. This should ensure significantly reduced scope for substitution of any products used in a system without further full testing. Until such time, manufacturers should ensure that they adhere to the current limitations set out in classification reports in the current regime.

c. The scope of testing, the application of products in systems, and the resulting implications must be more clearly communicated in plain, consistent, non-technical language.

Recommendation 7.2

a. Manufacturers must retest products that are critical to the safety of HRRBs at least every three years. Manufacturers should consider the need to test more frequently, focusing especially on the testing of products as they operate in systems rather than individual elements.

b. The testing of products that are critical to the safety of HRRBs should be subject to independent third party certification.

c. The introduction of the JCA should drive the introduction of reactive testing when particular issues of concern arise regarding products installed that are critical to the safety of HRRBs.

d. Additional test houses should be established and certified.

e. All test houses should produce an annual report providing summary details of tests carried out and the number of passes and failures reported.

Recommendation 7.5

a. The construction products industry should work together to develop and agree a consistent labelling and traceability system, making use of the digital technologies that are already available and learning from other sectors.

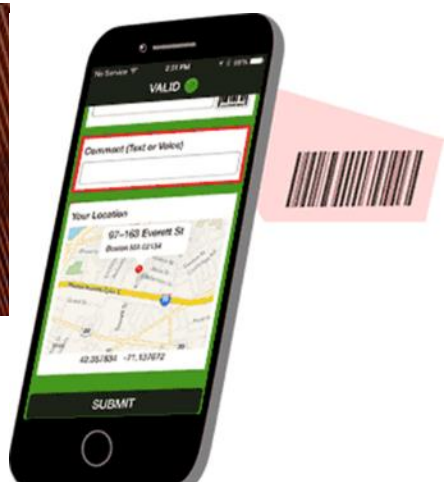
b. The dutyholder for any given HRRB should ensure that the documentation that supports the performance claims for products and systems incorporated within the HRRB should be maintained throughout the life cycle of a building through the golden thread of building information (see Chapter 8).

Recommendation 7.6

a. Government should ensure that there is a more effective enforcement, complaint investigation and market surveillance regime with national oversight to cover construction product safety.

b. Government should consider whether this could be achieved by extending the remit of the Office for Product Safety and Standards.

c. The introduction of national level market surveillance should drive the introduction of risk-based testing of products that are critical to the safety of HRRBs.



Recommendation 8.1

a. Government should mandate a digital (by default) standard of record-keeping for the design, construction and during the occupation of new HRRBs. This is to include any subsequent refurbishments within those buildings.

b. Digital records are to be in a format which is appropriately open and non-proprietary with proportionate security controls.

8.28 A non-exhaustive list of the types of information that should be recorded, available and maintained for existing buildings are:

- size and height of the building;
- structure;
- fabric;
- escape and fire compartmentation information;
- systems in operation; and
- permanent fixtures and fittings.

8.29 To avoid placing unreasonable requirements on existing building owners where information has not been handed over from the construction phase or from a previous owner, the JCA may require less information than is required for new buildings. Intrusive surveys may be required for some buildings in order to build an accurate record as evidence to support the safety case. This work would be part of the phased introduction of a new regulatory framework for existing HRRBs.

Recommendation 8.3

a. Government should work with industry to agree the type of information to be collected and maintained digitally (by default) to enable the safe building management of existing HRRBs.

b. Dutyholders must identify and record where gaps in the above information exist and the strategy for updating that relevant information.

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A drain on the public talent pool?

Many roles once firmly within the public services domain are now shared by the private sector, which is creating new ways of working in partnership

David Batty
The Guardian, Wednesday 27 September 2006 00.00 BST
Article history

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Society

For many years if you wanted to work in certain professions the only way to really develop your career was to join the public services. Local government enjoyed a near monopoly of fields such as planning, building inspection and environmental health.

However, the past two decades has seen more of this work being taken on by the private sector. In the 1980s the market in building control was opened up to competition, with both the public and private sectors bidding for certain kinds of work. This trend has gathered pace under New Labour's public-sector reform programme. Local authorities are now increasingly moving towards a more strategic commissioning role, outsourcing service delivery to the private sector and public-private partnerships.

This change has aggravated recruitment and retention problems within public services. Analysis of England's local authority workforce by the local government Employers Organisation shows that environmental health is the division with the third highest skills shortage. The latest figures, from 2001-02, found the vacancy rate was 5%, while the annual staff turnover was 11%. Last year, more than two-thirds (67%) of English councils reported recruitment difficulties in environmental health, while 46% reported retention problems.

Planning, which suffers the fifth worst skills shortage, is little better. In 2002-03, England's local authorities reported an 8% vacancy rate and a 12% turnover rate. Last year recruitment problems were reported by 60% of councils, while 47% had retention difficulties.

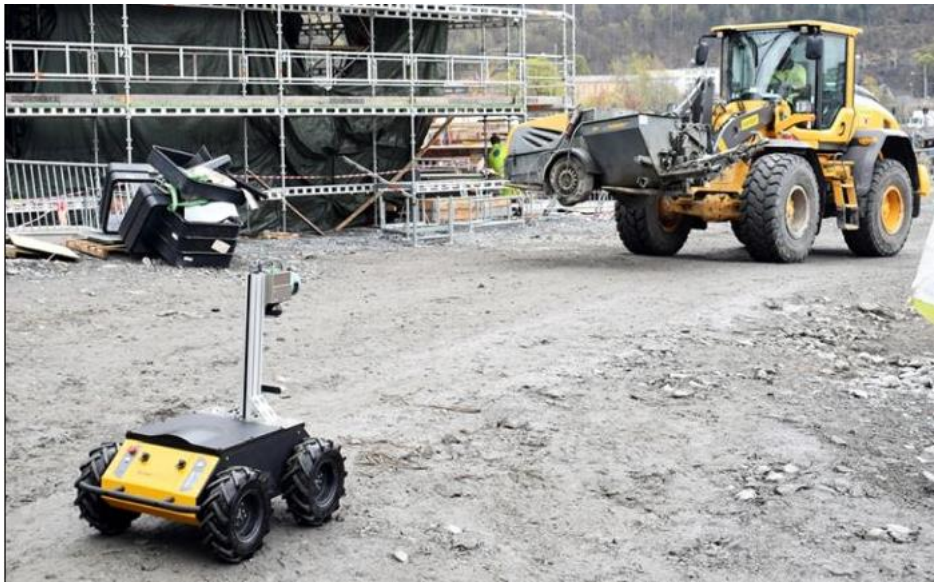
Meanwhile, building control, which has the sixth worse skills shortage, had a national vacancy rate of 6% and a turnover of 9% in 2001-02. Across England in 2005, 59% of local authorities reported recruitment difficulties, and 41% had retention problems.

A start, but not much more?

"[Public services are] a great starting ground for people in these professions, but getting them to come back can be tricky," says Julie Tolcher, chief executive of recruitment company Tribal Resourcing. "It's quite possible for them to return - it's not as much an issue of culture, but more about potential earnings and career mobility."

This is a view shared by professional associations. Tony Lewis, principle education officer for the Chartered Institute of Environmental Health, says: "In public services you're tied into pay structures with a salary ceiling of £30,000-£35,000 - even with considerable experience and postgraduate training. Whereas a private consultant in environmental health in London could earn £50,000-£60,000."

While public services are still the predominant employer of environmental health officers, Lewis says that will shift over the next five to six years. He says: "Currently 35% of our members are in the private sector, but the gap is closing. In three to five years it will be 50-50."



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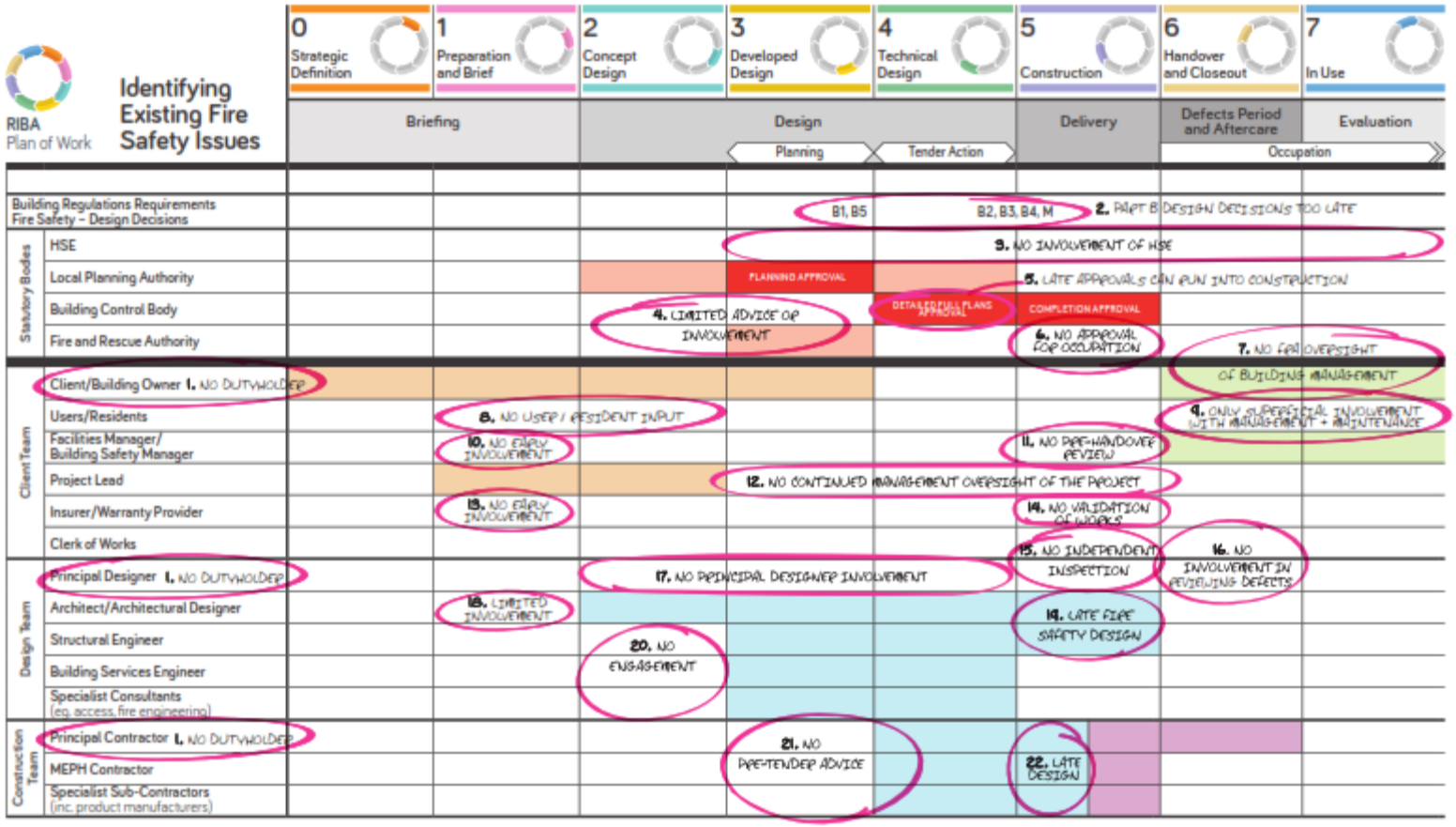
Building Standards in the UK



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RIBA Plan of Work for Fire Safety

RIBA Plan of Work

		0 Strategic Definition	1 Preparation and Brief	2 Concept Design	3 Developed Design	4 Technical Design	5 Construction	6 Handover and Closeout	7 In Use
		Briefing			Design: Planning	Design: Tender Action	Delivery	Defects Period and Aftercare	Evaluation
								Occupation	
	Statutory Gateways				Gateway 1	Gateway 2	Gateway 3		
	Building Regulations Requirements Fire Safety – Design Decisions			B1, B5	A, B4, M	B2, B3, 7			
Statutory Bodies	HSE				HSE3	HSE4	HSE5	HSE6	HSE7
Statutory Bodies	Local Planning Authority			LPA2	PLANNING APPROVAL LPA3	LPA4			
Statutory Bodies	Building Control Body			BCB2	BCB3	DETAILED FULL PLANS APPROVAL BCB4	COMPLETION APPROVAL BCB5		
Statutory Bodies	Fire and Rescue Authority			FRA2	FRA3	FRA4	OCCUPATION APPROVAL FRA5	SAFETY CASE REVIEW FRA6	SAFETY CASE REVIEW FRA7
Client Team	Client/Building Owner (DUTYHOLDER)	KEY REQUIREMENTS CBO0	BRIEF CBO1	FINAL BRIEF CBO2	CBO3	CBO4	PRE-OCCUPATION ASSESSMENT CBO5	DIGITAL RECORD FEP CBO6	DIGITAL RECORD FEP CBO7
Client Team	Users/Residents		U1	U2				U6	U7
Client Team	Facilities Manager/ Building Safety Manager		FM1				FM5	FM6	FM7
Client Team	Project Lead		PL1	PL2	PL3	PL4	PL5		
Client Team	Insurer/Warranty Provider		IN1			IN4	IN5		
Client Team	Clerk of Works					CW4	CW5	CW6	
Design Team	Principal Designer (DUTYHOLDER)			FIRE SAFETY STRATEGY FD2	FIRE SAFETY COORDINATION FD3	FIRE SAFETY SPECIFICATION FD4	INSPECTION REPORTS DIGITAL RECORD & FEP FD5	FD6	
Design Team	Architect/Architectural Designer		A1	A2	A3	A4	A5		
Design Team	Structural Engineer			SE2	SE3	SE4	SE5		
Design Team	Building Services Engineer			BS2	BS3	BS4			
Design Team	Specialist Consultants (eg. access, fire engineering)			SC2	SC3	SC4			
Construction Team	Principal Contractor (DUTYHOLDER)				PC3	PC4	PROGRESS REPORTS DIGITAL RECORD & FEP PC5	PC6	
Construction Team	MEPH Contractor				MEPC3	MEPC4	MEPC5		
Construction Team	Specialist Sub-Contractors (inc. product manufacturers)				SUBC3	SUBC4	SUBC5		

KEY

The RIBA Plan of Work for Fire Safety maps roles, responsibilities and deliverables for Fire Safety of project team members and statutory bodies on building projects across the eight stages of the RIBA Plan of Work.

The roles of the statutory bodies, clearly defined by three strategic gateways and associated safety case reviews under occupation, and the designation of CDM 2015 dutyholders, follows the recommendations of the final report by Dame Judith Hackitt DBE FREng, 'Building a Safer Future, Independent Review of Building Regulations and Fire Safety', May 2018. The RIBA proposes that this framework can be applied to a wider range of building types and scales.

The RIBA Plan of Work for Fire Safety provides a simple, effective and clear structure, setting out Hackitt's golden thread of information, identifying when built environment professionals, legislators and those invested in building projects are required to review their deliverables against the current fire safety information, and when dutyholders are required to sign-off the information as conforming to the regulatory requirements and approved plans.

- Statutory oversight
- Briefing and consultation
- Fire safety design
- Construction
- Inspection
- Occupation and management

Dutyholder information approval
Contribution or advice
Documented output: see deliverables list
Pre-construction services agreement
FIRE SAFETY COORDINATION FD3
A3
SE3
PC3
Golden thread of information: Sign off
Golden thread of information: Review
Coordination
Early engagement when necessary

Statutory approval gateway
Occupation commencement

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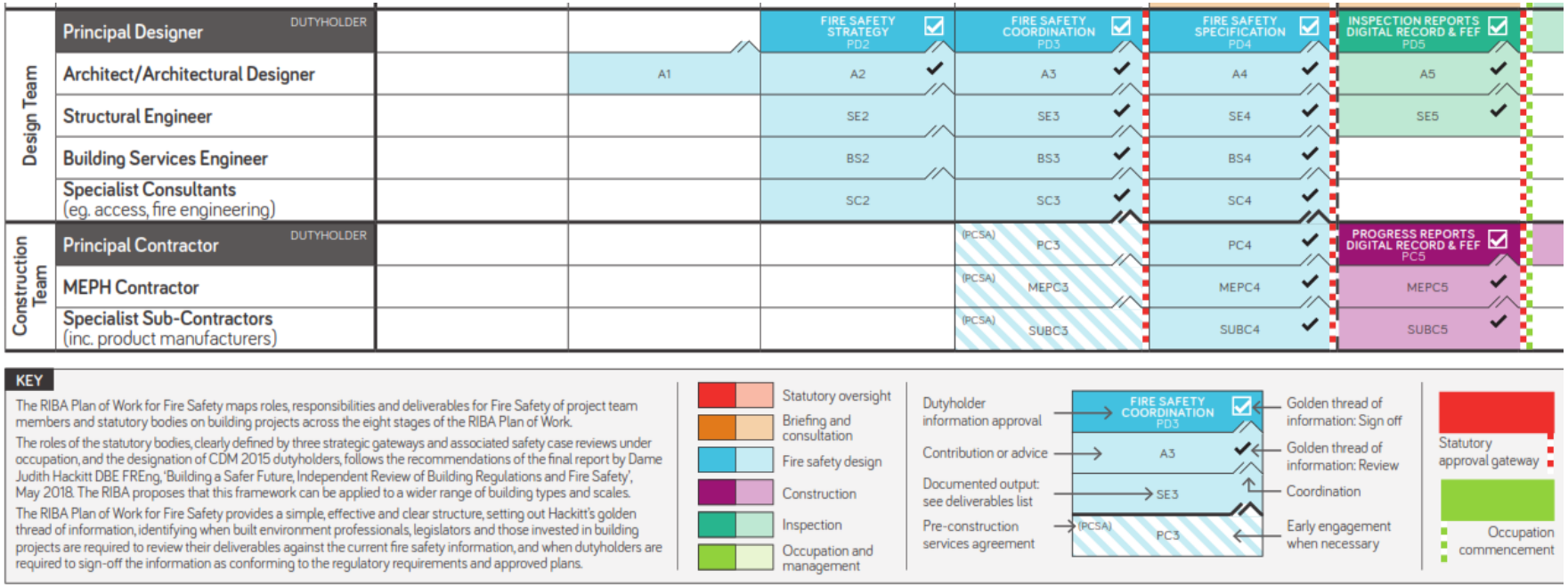

2	Part B design decisions too late	Part B design decisions agreed early
	Building Regulations 2010, Part B1 to B5 and part M, are considered too late in the design and construction process, resulting in inadequate or incomplete designs and subsequently late changes.	Earlier consideration of the Building Regulations Requirements, Part A, Part B, Part M and 7 within the design stages will ensure that these can be considered in a timely manner and reviewed and assessed accordingly with the design team. Agreeing these upfront and earlier from Stage 2 through to Stage 4, ensures that fire safety design is complete and can be signed off by the statutory authorities, prior to Stage 5 construction.

5	Late approvals can run into construction	Approvals issued prior to construction (Statutory Gateway 2)
	Building Regulations Plans Approval, such as Conditional Approvals, can enable construction works to begin on site following a notice of intent to Building Control. Without all necessary changes to the plans having been made an approved, fire safety requirements can be left out of the project.	A detailed Full Plans Approval at Stage 4 (Statutory Gateway 2), must adequately address key building safety risks, including approval of Regulatory Requirement A (Structure), B (Fire Safety), M (Access to and use of buildings) and 7 (Construction Materials and workmanship), prior to construction works commencing in Stage 5.

Want to know more

Contact

Geoff Wilkinson

MBEng MIFireE MRICS

Wilkinson Construction Consultants
16th Floor
Portland House
Bressenden Place
London SW1E 5RS

Tel: 0208 282 6020
Mob: (07816) 610 835
www.thebuildinginspector.org