

Executive Summary

- The Building Engineering Services Association (BESA) is the UK's leading trade organisation for building engineering services contractors – representing the interests of firms active in the design, installation, commissioning, maintenance, control and management of engineering systems and services in buildings. BESA has over 1,000 members with a combined estimated turnover of £3.6 billion.
- Our members operate through the whole process from design of a building through construction, occupation, refurbishment and ultimately decommissioning and as such, BESA welcomes the opportunity to respond to this open consultation on behalf of our members. BESA supports the proposed, rigorous regulatory system for in scope buildings.
- BESA believes this is not a simple case of adhering to the rules, but that it is about a change in practices and culture. Dame Judith Hackitt correctly identified the responsibilities of the client, and that only when *they* start to “feel *that* responsibility” will behaviours will change down the supply chain. Every party involved in the design, installation, operation or maintenance of a building needs to take responsibility for their input, from the design consultant to installation contractor. Each should be able to supply evidence of competence and compliance throughout the lifecycle of a building and indeed, if asked five years after their involvement ended, should be able to provide evidence of the installation or design work they carried out. This should be the accepted culture within the industry, delivered without compulsion, without hesitation, and with complete transparency.
- BESA supports the principle of the ‘Golden Thread’ of digitally based information spanning a building’s life. BESA believes there is and must be, a concept of responsibility and liability through the entirety of the process, from start to finish. This ultimately drives accountability and a focus on safety at all stages, from the beginning of the process through the entire life cycle of a building. We are not however convinced that BIM is the solution. The L&Q case study does not outline where this has been used successfully but outlines an ambition, which has already highlighted many structural issues within their operation. There are other digital tools available that would fulfil the functions required but without the technical and commercial complexity associated with BIM.
- BESA also believes it is important to look to embed changes beyond the current scope of buildings proposed. The work of the Scottish Government provides a good demonstration of how the scope of buildings could be expanded, such as to those buildings considered high risk that may not be 18 metres in height. BESA members have reiterated the view that the Fire Safety Order cannot be restricted to residential buildings above 18 metres and the scope must be expanded to include other types of buildings.
- For key roles and responsibilities, BESA believes there must be a continued focus on the acquisition of individual professional qualifications and competencies held. This must also relate to contractors carrying out work on site, whatever the stage of the building’s life. These competencies should be third party validated and, where they currently do not exist, be developed.

- Buildings and the building services that make them function are complex systems, with many individual components often combined in unique ways that can lead to unanticipated outcomes. Steps to reduce this complexity such as in procurement, or increase certainty such as factory manufactured and certified systems are welcomed however all proposals should not simply increase the layers of bureaucracy and complexity. Competence schemes that reflect this complexity and reflect the often-cross discipline nature of modern construction need to be developed.
- BESA would like to highlight that CE marking of fire-resistant ductwork is currently limited. CE marking can only be offered where a harmonised standard exists, and the duct can be manufactured as a complete product in a factory to this standard.¹ This is a significant omission in how products used in construction are assessed. BESA believes a Third-Party Accreditation Scheme for product and installation is the best and clearest way forward.
- With 'Golden Thread' in occupation for existing buildings, paragraph 212 states that information may be more difficult to find and access. This is true and in some cases developers may be reluctant to release details of design and installation for fear of implicating themselves with a noncompliance issue. BESA believes developers should be required to provide information on the request of residents, leaseholders and freeholders for the current stock of buildings under ten years old. There would need to be a form of sanction for a failure to meet a reasonable request of disclosure in such instances.
- BESA calls on the Government to mandate automatic fire suppression systems installed in buildings covered by this consultation. Presently, the Fire Regulatory Reform Order 2005 places the onus of responsibility on the end user to assess the risk of fire. They are required to carry out certain fire safety duties that include ensuring the general fire precautions are satisfactory and conducting a fire risk assessment. Increasingly, building owners are leasing to commercial kitchens and food retailers under residential buildings to increase a building's profitability, which in turn increases the fire risk.
- This consultation has been wide-ranging and, therefore, unclear in some areas (such as the overarching competence framework) and difficult to respond to; further consultation with industry will be required. The Government should consider responses from the final Industry Response Groups report, due for release for consultation on 31 July, before decisions are made on the proposals for regulatory reform (BESA Group has participated in Working Group 2 – Installers). BESA believes that report should have preceded the Building a Safer Future consultation and ought to provide the clarity required.

¹ CE marking is not available for:

1. Ventilation ducts – (EN15871 Still in draft)
2. Kitchen Extract Ducts – (EN15871 Still in draft)
3. Smoke ducts over 1250x1000 (EXAP) (PR EN15882-EN) is still in draft.

For uninsulated multi compartment smoke control ducts (tested to BS EN1366-8), the European classification document BS EN13501-4 stipulates that only insulated ducts can be classified for 30, 60, 90 & 120 mins.

- BESA notes the focus on building safety has been dominated by design and construction however welcomes the increased attention to in-use issues, the maintenance and refurbishment of buildings and the positive input of building users to support this. Many elements of a building require modification, maintenance or replacement of small or large components or systems during the whole lifecycle of a building. The requirement to complete these works competently and adequately can lead to increased risks as often the design intent and *raison d'être* of features is lost or misunderstood over extended periods.
- BESA pioneered an industry standard maintenance programme (SFG20[®]) and we believe that this primary standard could form the core of demonstrating adequacy of a maintenance regime to third parties. We also note that many individual products have little requirement for longer term testing of efficacy and call for improved standards in this area, particularly for passive fire protection products.
- BESA's response to specific questions are outlined below.

Chapter 2: Stronger requirements for multi-occupied high-rise residential buildings

- 1.1 Yes. The ambition of the Hackitt Review was to engender a culture change in quality delivery within the industry. It is difficult to envisage a new culture developing where there are two standards of application – one for HRRBs and another for the rest. Following the work done by the Scottish Government, BESA believes the scope should be expanded beyond the scope as set out by the Hackitt Review.³ BESA is of the view the scope should include large buildings where people sleep; this would include student accommodation, residential nursing homes, hospitals and hotels. The absence of incidents does not equate to the absence of risk, measuring hospital admissions may suggest there is little risk, however the construction sector has had many past changes in regulation arising from risks that had not been fully understood such as the Summerland Fire on Isle of Man in 1973.
- 1.2 A single source of responsibility named and on public record will provide clarity in the regulatory framework. It is about ensuring digital maintenance of the 'Golden Thread' of information across the lifecycle of the building and ensuring that risk is appropriately managed all the way through.
- 1.3 No comment.
- 1.4 The same rules should apply across all buildings. Key factors might include multiple occupancy/ownership, size, complexity, unfamiliarity with layout, occupants' age or abilities, the age of the building, its construction materials, its use or a risk-assessed based view.
- 1.5 BESA believes hospitals should be considered 'higher-risk workplaces' due to the immobility of some occupants, the size of the building/s and required services.

³ See updated Scottish Building Regulations to begin 1 October 2019: <https://www.gov.scot/policies/building-standards/monitoring-improving-building-regulations/>

- 1.6 Per our answer to Question 1.5. Residential Nursing Homes already fall under this approach in Scotland where sprinkler protection is required for all new developments.
- 1.7 Per our answer to Question 1.4.
- 1.8 BESA supports an overall single named dutyholder in all cases, such as mixed-use buildings, as opposed to a shared responsibility across multiple dutyholders.

Chapter 3: A new dutyholder regime for residential buildings of 18 metres or more

- 2.1 Yes.
- 2.2 No.
- 2.3 Yes. This will be necessary if clients are to “feel” the responsibility as outlined by the Hackitt Review.
- 2.4 Yes. Provided there is adequate enforcement in place.
- 2.5 BESA agrees that fire and rescue authorities should be statutory consultees during the planning permission stage for in scope buildings. It is assumed that if involved they would have final sanction on the occupation of a building.
- 2.6 Yes. There should be a Fire Statement as part of a planning application. BESA also believes the evacuation plan should be included as part of this.
- 2.7 BESA has insufficient knowledge of fire safety in this area to comment.
- 2.8 Per our answer to 1.8.
- 2.9 The planning applicant should be given client status at gateway one. If cultural change is to be delivered it is important that Clients understand their responsibilities from the outset and in Hackitt’s words “feel that responsibility”. An early requirement will drive behaviours through the application process onto future clients and down the supply chain.
- 2.10 Early engagement on the development of the design should include all relevant parties and all aspects of the design.
- 2.11 In order to keep costs and resources manageable and not stifle development, it might be possible to grant outline planning permission but not allow commencement of works on site until all the requirements have been met. This would allow developers to secure funding on projects but crucially complete the design before construction commences. The experience of many BESA members is that clients cannot always afford the proposed building presented to planners and that the process of “value engineering” commences thereafter to make the building fit the budget. It will always be the client’s choice on how much funding needs to be speculated on developing a workable design but the priority should be a compliant design and construction.

Going forward, BESA believes the planning process appropriate to consider fire and structural risks for new build and major refurbishment. However, it will be important to note this will not provide for retrospective rectification and this could effectively be managed as Energy Performance Certificates are currently, such as on letting, sale or refurbishment.

- 2.12 The objective should be that there is sufficient detail to commence works on site in an assembly rather than construction mode. Almost two-thirds of construction projects in 2015 overran on time and budget, largely because projects start on a “build and design” basis.⁴ M&E services particularly suffer from this practice with multiple changes to design are required resulting in work being installed and later removed or a failure to meet the requirements of Building Regulations (in particular Part L and Part F). Indeed, the most important factor that inhibits the ability of practitioners to control the time duration of their projects is attributed to design change.⁵

This would be inconceivable in the aviation or car industries and leads to ineffective working practices, poor productivity and quality issues. In addition, projects that overrun impact neighbours and increase the risk to people from site-based works. If construction is to transition to a digital age, so that DFMA and offsite manufacturing works, it is essential that designs are completed before works commence on site.

- 2.13 If the client is responsible for delivering the information which duty holder provides the information is not so important. They will need to appoint suitably qualified competent people to fulfil the duties.
- 2.14 Yes. BESA believe a single named duty holder should be responsible. The nexus of any division of responsibility is the point of greatest risk.
- 2.15 Yes. The hard stop is essential to ensure that sufficient design has been completed before construction commences. The argument set out in paragraph 94 that “all the required information may not be available before construction starts” should not be easily allowed through. The lack of information maybe because negotiations on products or contractors are still underway. A change in design caused by a change in selection of products could well have structural implications, for example, more holes are cut into already “signed off” structural works.

There is no advantage to an early start on site if the end date remains the same. It is better to properly prepare and plan to ensure a safer, more robust construction delivery plan is achieved.

A staged approach in line with the RIBA plan of work would mean that fire safety design is developed at the same time and as an integral part of the other design aspects. One supports the other and without some elements the fire safety design would be inadequate.

⁴ UK Industry Performance Report (2015).

⁵ Olawale, Y., and Sun M. (2010). “Cost and time control of construction projects: Inhibiting factors and mitigating measures in practice.” *Construction Management and Economics*, 28 (5), 509 – 526.

2.16 As per our answer to 2.15.

2.17 Yes. BESA believes this is the only way to ensure compliance. A contractor should be able to demonstrate evidence of compliance without dismantling work already done. Digital project management tools will allow good records of the installation during construction. It should always be the responsibility of the installing contractor to have this evidence during the construction phase and as part of the 'Golden Thread' during operation.

2.18 Unless it can be proven that remedial works are underway, BESA believes that the building safety regulator should be able to prohibit building works from progressing.

2.19 Yes. There should be a declared timescale for responses. BESA is not able to comment on how long this should be.

2.20 No comment.

2.21 Yes.

2.22 Yes.

2.23 As it is described in paragraph 101, it is very difficult to differentiate between a major and a minor change. A building is a series of integrated systems, each system comprising a series of products installed to make the system. What would appear to be a minor change, such as the screws on a dry lining system may compromise the fire integrity of the whole system. The monitoring of these changes would be almost impossible for any one dutyholder to monitor, even with a Clerk of Works on site. The responsibility should lie with the installing contractor to demonstrate they have met the design requirement. A Clerk of Works, besides being in extremely short supply, also breeds a culture of "if they haven't spotted it I've got away with it". Responsible contractors will be able to meet this requirement and allow the Clerk of Works function to operate on a percentage audit basis.

Apparently minor changes on one system may have unforeseen implications on another system, such as electrical loadings or cooling requirements. Unless there is a central design responsibility monitoring changes these may not be noticed again causing compromises to the overall design.

2.24 Yes. But it is difficult to see what timescale should apply depending upon the nature of the proposed change. Perhaps a "proceed at risk" should be allowed, under the clear understanding that if not approved works would need to be altered.

2.25 No comment.

2.26 Yes. This will create a certified gateway point. However, each cannot certify the other person's work to ensure the design complies with the building regulations and that the construction complies with the design (and, where work is undertaken by the principal contractor, the building regulations for those areas of design).

- 2.27 Yes. But it is difficult to suggest a particular timescale. If the process operates correctly, a full commissioning programme would be developed by all the stakeholders and agreed with the building safety regulator in advance. This would clearly define what information and evidence is going to be produced and when. The gateway three submission should not therefore be a surprise to the building safety regulator.
- 2.28 No comment.
- 2.29 Yes. Transparency and accountability are at the heart of the culture change required.
- 2.30 Yes. Because the premises may be unsafe and BESA supports safety, and accountability for that, being a consideration across the life cycle of the building.
- 2.31 Once partial occupation takes place many of the commissioning functions become more difficult or compromised. Therefore, there should therefore be exceptional circumstances before partial occupation is allowed.
- 2.32 Yes, for the same reason outlined in our response to Question 2.30. Major refurbishments usually involve significant changes including design, contractor, user personnel, layout, use, and fire protection measures, during which original safety features may be jeopardised without intent. Likewise, years of inadequate record keeping mean that the design will change more frequently due to discoveries during preparation phases. This would need to be accommodated during the process.
- 2.33 Yes. Clear transition arrangements are required to avoid confusion. Whilst previous gateway consultations and the like may not have occurred some information not included in gateway 3 such as changes during construction will provide valuable information for the responsible person in the future so should be included.
- 3.1 Yes. This will ensure occupation of a building cannot commence until the building safe.
- 3.2 Yes. Additionally, BESA recommends including independent third-party verifications, and maintenance of the digital 'Golden Thread' of the building information model.
- 3.3 BESA believe that there are triggers for a new safety case as for Energy Performance, such as on sale, lease or major refurbishment. Different buildings will have a need for greater frequency based on a risk analysis; however, a five year maximum would be reasonable.
- 3.4 BESA is concerned a building sinking fund may not be adequately funded, especially in the initial stages of occupation. We believe Government should establish a central fund which is funded by a levy such as the Pension Protection Fund, or by an inhibition on the property title as used by the Scottish Government for common repair schemes 'missing share' to loan funds for critical works. We believe this will ensure critical works are not delayed due to funding concerns and will also spread the burden of significant costs.
- 3.5 Yes. BESA is of the view this should be a single person at board level.
- 3.6 Per our answer to 1.8. BESA supports an overall single dutyholder in all cases.

- 3.7 Yes. The standard of safety should be no different for new or existing buildings in scope.
- 3.8 Yes. To avoid transfer to an unsuitable person, such as a non-resident who could not be held accountable or a person who may not be easily contactable.
- 3.9-3.15 No comment.
- 3.16 The building owner.
- 3.17 Yes. BESA also believes a publicly searchable database should be available both for transparency and to enable research to inform future policy.
- 3.18 No comment.
- 3.19 Yes. This is essential because a fire in one part of the building can impact another part.
- 3.20 Yes. We also support inspection of further works.
- 3.21 The building safety certificate should be renewed on sale, lease or major refurbishment, at a period based on a risk review specific to the building, or on the availability of new information from sources such as residents/users/members of the public/manufacturers/other buildings. It should match the safety case duration and expire after five years maximum for any building.
- 3.22 Per our answer to 3.21.
- 4.1 Broadly, yes for new buildings. However, with respect to subsection (b) no, as that information may not necessarily be available retrospectively. Regarding subsection (c) no, as that information may not exist. Wherever new works are commissioned in existing buildings this shall be in a digital format and suitable for inclusion in a whole building BIM model in the future. There should be a phased transition period for existing buildings so that a full BIM model is available for all in scope buildings by 2029 (10 years) as most buildings will have had significant works undertaken over this extended period. Where the safety case requires the regulator may be able to instruct a full BIM model be available sooner than this transition end date based on a risk assessment, this may reduce the risk and therefore the need for more frequent safety case/certification.
- 4.2 No. A Common Data Environment (CDE) is already required.
- 4.3 BESA believes the key dataset should also include a record of all passive and active protection measures such as fire alarm systems, smoke control and ventilation, automatic controls for safety systems. Many products will be used in multiple places so precise locations would not form part of the key dataset however the products should be categorised based on a common standard. Inclusion of the manufacturer's name, the model number and manufacture date will allow common trends to be identified, as well as recalls or remedial actions implemented based on multiple buildings.
- 4.4 Yes.

- 4.5 Yes. This is a proportionate approach balancing transparency and security.
- 4.6 No.
- 4.7 Yes. Compatibility of information standards and software, availability in an accessible format over extended periods (typically decades), security of information of a sensitive nature and physical storage to ensure access in the case of disaster or financial distress of dutyholder/accountable persons, legal dispute between parties affecting access and updating.
- 4.8 Yes. BESA believes this should also include any post-contract work, maintenance records and operative competence information associated with this.
- 4.9 Yes.
- 4.10 Yes. Industry can support this by training staff and explaining responsibilities. Government can help this by supporting individuals and providing guidance via the legislative framework. Active enforcement of legislation will be required such as the recent introduction of GDPR and substantial corporate penalties. All Government procurement of construction services should follow this 'best practice model' not just the in scope buildings to drive a sectoral culture change. A common reporting standard and format should be used to enable data to be analysed across buildings and the sector generally to drive future policy change and identify common issues.
- 4.11 Yes.
- 4.12 No. Building systems are complex and interconnected. Limiting reporting to fire and structural safety may compromise safety by creating conditions which may lead to risk of fire, such as electrical or gas fault and behaviours of occupants (storage of combustible materials in escape stairs or barbeques on balconies).
- 4.13 In principle yes, but the first example of substandard goods being delivered to site should not be included. A robust system of quality control would identify the incorrect products and prevent them being installed. The incorrect delivery could be a simple administrative error and would represent no risk if not incorporated within the construction works. This would not represent a notifiable occurrence.
- 4.14 BESA believes there should be a category covering environment occurrences (for example: seismic events). There should be occurrences categories related to building use (for example: storage of combustible materials) and dutyholder events (for example: insolvency).
- 4.15 Yes. The mandatory reporting of design is however one not of occurrences but potential inadequacies. Problems notified at an early stage are usually much easier to rectify.
- 4.16 Yes.

- 4.17 Yes, a Partner Authority Scheme similar to PAS 2030 where a competence criterion is required to be held centrally and that the industry can all input into; the system is only as good as the competence of those who are performing key functions, for example owners and contractors. To ensure competency at all levels, dutyholders should fall under the overarching competence framework standard, and as such the enhanced competence requirements for these key roles should be developed and maintained through a PAS or building standards.
- 4.18 Yes. All occupants should have a responsibility for building safety.
- 4.19 Yes. Per our answer to 4.18.
- 4.20 BESA believes this should apply to all building work. If it does not, there may be an over-emphasis on fire and structural safety. This could manifest itself in, for example, well-sealed buildings, safe from a fire safety perspective but poorly ventilated as the ventilation systems were not included within the dutyholder's roles. This could result in residents developing health problems over a period of time.

Chapter 4: Residents at the heart of a new regulatory system

- 5.1 Yes. The information should be provided in a number of formats including a publicly accessible website and appropriate media for each resident. It must be recognised that households frequently contain more than one person and can change frequently.
- 5.2 Yes.
- 5.3 Yes. All in (a) to (d).
- 5.4 No comment.
- 5.5 No comment.
- 5.6 Yes. Where the leaseholder is the resident the responsibility should be theirs. Where the leaseholder is not the resident, both parties should bear responsibility.
- 5.7 Access should be allowed with reasonable notice to maintain services and inspect systems. Residents should abide by the fire safety requirements set out by the Building Safety Manager.
- 5.8 Yes. But this is not BESA's area of expertise.
- 5.9-5.11 No comment.

Chapter 5: A more effective regulatory and accountability framework for buildings

- 6.1 BESA would support a review of the regulatory system every five years. However, we would need to understand how this would operate in practice. BESA recommends industry consultation be a key part of any review, especially through trade associations.

6.2 Yes.

6.3 No. Without legislation BESA believes it would be difficult to put this in place effectively.

7.1 BESA supports this proposal as it will make responsibilities clear. A single competency standard by PAS will allow the relevant National Occupational Standards, Apprenticeship Frameworks and Apprenticeship Standards to be referred or recognised in addition to specific issues that arise from review to review.

It is important that these standards be set against a PAS or building standards to ensure consistency of application across the different disciplines and sectors. Working Group 0 recommend the relevant professional and trade bodies should work together to agree on the framework. BESA believes this is essential and more detail is required on how this will be facilitated.

7.2 Yes. As it would have the required experience. BESA believes that industry-led committees which understand the complexities of their disciplines should have a role in establishing the development of competencies and compliance for sector-specific occupations.

BESA runs an impartial and independent industry-led body, Skills Partnership, to develop and maintain standards. Skills Partnership is recognised as the industry representative organisation by CSCS and is delivering upskilling of trade disciplines in line with the Construction Leadership Council's 2025 Industry Strategy. A similar approach would be required to enable all perspectives to be built into the standard.

7.3 Yes. BESA believes it is a reasonable approach in the interim until the Committee establishes itself and may then suggest other requirements and functions; these could then be finalised post-interim Committee, prior to setting functions for the 'permanent' Committee.

We believe the vision of the Committee is a good approach. It will be essential that its composition is balanced, in terms representation, so that no one body or group dominates it. Equally, the Committee must also not be too large for the objectives of the group to be met. It is disappointing that the consolidated final report from the working groups was not published with or prior to this consultation. BESA believes the detail contained within that report would assist in providing a more comprehensive response.

7.4 Yes. In the short-term BESA believes BEIS should establish that Committee as the responsibilities and priorities align with the recommendations.

8.1 Yes. It will help clearly identify products for life safety.

8.2 Yes. It will be easier and quicker to assemble for the basis of the list.

8.3 No comment.

8.4 Yes. All products should meet a minimum standard. Clear supply chain custody records are yet common and verifiable in the sector however, BESA supports the development of technology led solutions.

8.5 Yes. BESA believes CE marking should be available for fire resistant ducts. At paragraph 74 of the Annex, an incorrect statement has been made.

Currently only smoke control duct sections up to 1250mm x 1000mm or 1000mm diameter could be CE marked provided the insulation is fixed to the duct section before leaving the factory; and hence the duct and insulation is covered under the Factory Production Control Certificate (FPC). However, all, if not most, companies install the insulation on site; therefore, the insulation is not covered under the FPC. As a consequence, these companies will not be able to affix a CE label.

While the cost of a single fire test may exceed £23,000, more than seven tests may be required to be able to achieve a classification for each type of system and level of resistance offered.

CE Testing only applies to products that are installed in an identical manner to the test piece. This does not reflect current practice. For instance, fire dampers are rarely installed as the test piece due to space constraints in risers and ceiling voids. It is not possible or feasible to test each permutation of installation so systems, competencies and the like need to be developed which can provide equivalent assurance.

8.6 Yes. To maintain and enforce the quality of construction products. Additionally, it should maintain an independent national register of tested products, alongside testing reports and a product reporting line similar to the MHRA for medical devices.

8.7 No. This should be done by another body.

8.8 Yes. BESA believes there may be scope for the Health and Safety Executive to play a role or existing certification schemes should be modified to include requirements of the construction product regulators.

8.9 Yes, to ensure compliance.

8.10 No. BESA does not believe products should have to be retested at random. The original test should demonstrate compliance provided the product or installation method has not changed. We support the other minimum requirements.

8.11 No comment.

8.12 Yes. So that these schemes have to be employed across the country.

8.13 Yes. To ensure quality and confidence.

8.14 Yes. To ensure quality and confidence and to ensure a certain level is maintained across the industry.

- 8.15 Yes. It is not clear who would regulate these third-party schemes. A market led approach is not acceptable in this instance.

Chapter 6: Enforcement, compliance and sanctions

- 9.1 Yes.
- 9.2 Yes.
- 9.3 No comment.
- 9.4 Yes.
- 9.5 No comment.
- 9.6 Yes. BESA believes the limits in the Building Act should align with the current typical maximum of 12 years for latent defect rectification.

