



Ministry of Housing,  
Communities &  
Local Government

# A reformed building safety regulatory system

Economic assessment of the benefits and costs to the  
Government response to the 'Building a Safer Future'  
consultation



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# 1. Introduction: reforming the building safety system

This economic assessment sets out estimates of the economic costs and benefits of the proposals set out in the Government response to the 'Building a Safer Future' consultation. It is an update to analysis which was annexed to the consultation document "Building a Safer Future" in June 2019.

The benefits of the proposals which can be monetised are currently estimated to total between **£190m - £380m per annum** (with a central estimate of £280m), falling between residents, government organisations, building owners and the construction industry. However, there are significant benefits to the reform of the building safety system which cannot currently be monetised. The Government will continue to develop this analysis and intends to present an update in the full Impact Assessment that will be provided with the Building Safety Bill. The benefits are described in greater detail below.

The total cost of the package of proposed measures is currently estimated to be between **£266m - £530m per annum** (with a central estimate of £391m) on average in present value terms when appraised over 10 years.<sup>1</sup> This has changed from the central estimate of £425m published alongside the consultation in June 2019, as consultation responses have been taken into account, more evidence has become available, and policy proposals have been refined. The costs are set out in detail below; many of these relate to ensuring compliance with current requirements rather than imposing new requirements on industry.

The majority of costs relate to multi-occupied residential buildings of 18 metres or more in height<sup>2</sup>, or more than six storeys (whichever is reached first). The Government will continue to assess the potential impact of these proposals and intends to provide more detail in the full Impact Assessment accompanying the Building Safety Bill. This will also take into account any change in scope of the more stringent regulatory regime, based on emerging risk evidence. Not all proposals can currently be costed, however, as we are still collating evidence and considering potential scenarios. In addition, some costs currently apportioned to the new Building Safety Regulator (BSR) may fall on other parties as options for funding are further developed.

Analysis in this annex currently applies to multi-occupied residential buildings of 18 metres or more in height, i.e. these costs and benefits do not currently account for impacts on buildings which are more than six storeys but below 18 metres in height, for which the evidence base is still being developed. We will update this analysis in the full Impact Assessment and anticipate that the net impact could be approximately 10% greater than currently estimated. The current analysis uses an estimate that there are 11,100 existing buildings in scope and assumes that between 330 and 450 new buildings in scope will be completed each year (3% of the existing stock). In addition, it is assumed that between 17 to 20 major refurbishments needing to go through the proposed Gateway process and

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<sup>1</sup> In accordance with HMT Green Book guidance, policy impacts estimated for future years are discounted at a rate of 3.5% p.a. and express as either Equivalent Annual Net Costs (EANC) or the Net Present Value (NPV) over 10 years.

<sup>2</sup> Building height is measured according to the definition currently set out in Approved Document B.

between 1,100 and 1,300 major works requiring a specific review of a building's safety case will take place within this stock of buildings each year.

Our current analysis suggests that the policies of the more stringent regulatory regime overall would have the effect of increasing the construction costs of new multi-occupied residential buildings of 18 metres or more by £120,000-£240,000 (with a central estimate of £180,000). To put this in context, it is estimated that the additional costs which result from the new regime would represent approximately 1% of the total costs of constructing such a building. The majority of costs would fall in the first instance on building developers, including Registered Providers of social housing (RP), although some of these may be passed onto landowners through reduced payments for sites. Initial analysis suggests that this could affect the viability of private building projects on less than 1% of brownfield development in the north of England and significantly less than this on greenfield sites and in other regions. As a result, the Government expects any impacts on housebuilding to be minimal. Table 1 below summarises how the total costs are broken down by policy proposal.

**Table 1: Equivalent annual total cost breakdown by policy, £ millions, 2019 prices**

	<b>Low</b>	<b>Central</b>	<b>High</b>
Building Safety Regulator	10	23	33
Gateway Points	21	40	56
Other duty-holder requirements	54	68	81
Safety case assessments <sup>3</sup>	64	109	163
Golden thread of building information	25	36	46
Resident engagement	29	39	59
Construction products proposals	48	60	72
Enforcement and sanctions	14	17	21
<b>Total</b>	<b>266</b>	<b>391</b>	<b>530</b>

Source: Adroit Economics Consortium.

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<sup>3</sup> Includes remediation work which could be required by the new regulator to accept the case that a building is safe but not work required for compliance with existing Regulations. Further details are given below.

## 2. Principles for a reformed building safety system

The proposals are expected to deliver a range of benefits. The focus of the reform of the building safety system is on reducing the risk of multi-fatality incidents so that residents are, and feel, safe in their homes. Other risks to the health of residents would also be reduced. There would be wider benefits from reducing the risk of a multi-fatality incident, such as avoiding the cost of emergency remediation work to other buildings which would be triggered in response. There would also be significant benefits in terms of housing market outcomes, due to building defects being avoided and other improvements to the existing stock. These include helping to avoid reductions in sales value, reducing vacancy risks by reassuring potential tenants of the safety of their building, and reassuring insurance and mortgage providers.

Several indirect benefits to the industry have also been identified along with these wider benefits. Our current analysis estimates benefits of **£190m-£380m per annum** for multi-occupied residential buildings of 18 metres or more and this estimate is broken down in Table 2. In addition, there are benefits that cannot currently be monetised. Further work on benefits monetisation will be undertaken for the forthcoming full Impact Assessment, and our estimate will be updated to reflect the emerging evidence on factors which are relevant to the scope of the regime.

**Table 2: Total monetised benefits, £m per annum, England 2019**

	<b>Low</b>	<b>Central</b>	<b>High</b>
Reducing the risk of casualties and multi-fatality incidents	34	56	94
Wider costs avoided by reducing risk of a multi-fatality incident	108	154	200
Indirect benefits to the construction industry	27	38	49
Wider benefits	19	27	36
<b>Total</b>	<b>190</b>	<b>280</b>	<b>380</b>

*Source: Adroit Economics Consortium.*

### Reducing the risk of casualties and multi-fatality incidents (£34m-£94m)

The proposals complement other recent policies to reduce the risk of any future multi-fatality incidents. Recent policies which also contribute to reducing this risk include the ban on combustible materials in external wall systems, the Aluminium Composite Material (ACM) remediation funds, and the review of Approved Document B.

The standard method for estimating the life and health benefits of mitigating fire risk is to use the Department of Transport's published values for prevention per casualty, including a value of preventing a statistical fatality (VPF). Fire statistics have been used to estimate the benefits from reducing casualties from small scale fire spread in multi-occupied residential buildings that are 18 metres and above.

However, there are significant additional benefits from reducing the risk of multi-fatality incidents such as the Grenfell Tower fire. These include avoiding the significant mental health impacts, the cost and disruption of rehousing of residents, and site management and demolition costs.

From this, the Government has estimated the direct impacts of avoiding a single multi-fatality incident, including both VPF and additional direct benefits, of £0.8bn-£1.1bn. In order to estimate an annual benefit from reducing this risk it is necessary to estimate the reduction in risk per year of such an incident occurring in a building in scope. Our initial high-level estimate is based on an indicative risk reduction of one fewer multi-fatality incidents on average every 10-30 years. This suggests an annual benefit of £34m-£94m.

## Wider avoided costs of a multi-fatality incident (£108m-£200m)

There are wider costs associated with weaknesses in the current regime, where construction does not meet the necessary requirements and so buildings require subsequent and urgent remediation following an incident. An example of this is the remediation of unsafe ACM cladding on multi-occupied residential buildings over 18 metres following the Grenfell Tower fire and the emergence of other concerns requiring remediation during investigation. This has involved remediation, waking watch fees, and related investigative/legal costs.

To illustrate this benefit, the Government has developed the following case study based on recent remediation experience. A typical seven-storey residential building could have a range of structural and fire safety defects including a façade with structural fixing issues, multiple fire stopping and compartmentation issues, and a timber frame without the required fire resistance. This would cost around £6m to remediate. Had the proposed regime been in place, approximately 90% of remediation costs would be saved through competency improvements, checks during design and construction and the safety case approach to building occupation.

Further work will be undertaken to carry out a more detailed investigation of these benefits, including use of emerging case studies from ongoing remediation efforts, such as the social remediation fund, and into how representative of the industry these case studies are. This will help inform the forthcoming full Impact Assessment.

An initial exploratory high-level estimate has been made of the annual benefit from avoided wider costs of a multi-fatality incident of around £108m-£200m.

## Indirect benefits to the construction industry (£27m-£49m)

A wider set of indirect benefits to the construction industry from the proposed changes have been identified. The following are a few examples of the benefits which have been monetised.

We would expect a reduction in construction rework costs, especially as a result of the Gateway process requirements during design and construction. Information requirements would help to reduce costs from future intrusive surveys and for general asset management. There would be time saving benefits from the checking of products during



design and construction, safety case preparation and establishing performance as a result of the products testing, declaration of performance and market improvements.

There would be cumulative benefits from reduced defects both during and at the end of the construction period as a result of the overall package of additional checking and information-gathering.

## Wider benefits (£19m-£36m)

A range of wider potential benefits from the proposals have also been identified and an initial indicative monetised estimate made. These are benefits which are less clearly identified than those above but are potentially significant where they can be delivered. The following are some examples of the monetised benefits:

- There is a potential increased sale value for homes in affected buildings where identified defects are corrected thus providing reassurance for potential buyers, insurers and mortgage providers;
- the affected UK industries would likely gain skills and expertise which could enhance its international competitiveness;
- engagement with residents would likely have a positive impact on mental health and well-being; and
- there would be spill-over benefits to multi-occupied residential buildings under 18 metres in height, for instance through use of safer materials and construction practices.

## Non-monetised benefits

In addition, there are a range of benefits which have not been monetised, either because they are challenging to monetise or because evidence-gathering and analysis is still underway to understand them. The non-monetised benefits of the proposed more stringent building safety regime that we have so far identified are summarised below:

- Duty-holders will have greater accountability in design and construction and in occupation. This would likely provide assurance of the effective management of risk over the lifecycle of the building. It would ensure that a competent Principal Contractor and Principal Designer are appointed. Having a consistent accountability framework for all design and construction work would provide a clear operating environment to designers and contractors who may work on a mixture of different residential, commercial and civil projects. The benefits also include better information management, as well as better management and maintenance of buildings. This would result in safer buildings and reduced long-term maintenance costs;
- safety cases would mandate a proactive approach to building safety, meaning that issues were identified early and rectified before it became more costly for the Accountable Person to do so. This proactive approach should give confidence to

residents, regulators and insurers that fire and structural safety risks have been reduced;

- improvements in the quality of UK construction products could potentially increase the domestic and non-domestic consumption of UK construction products due to the additional quality assurance provided;
- the increased usage of Building Information Modelling (BIM) may lead to efficiency gains during the design and construction process;
- the non-monetised benefits of mandatory occurrence reporting include reducing the instances of fire and structure defects, reducing time taken to rectify defects, increasing awareness and shared knowledge of building safety concerns, and providing the Building Safety Regulator with an informed intelligence picture of the safety issues within the sector;
- providing residents with information would help develop more transparent and collaborative relationships over building safety, leading to safer buildings. Residents would be better able to spot and report safety hazards ensuring they are resolved earlier, saving costs; and
- other potential benefits would include safer and more effective decision-making and increased customer satisfaction. More effective handling and escalation of complaints should mean issues are raised and resolved faster leading to increased confidence that issues raised are acted on.

For the full Impact Assessment, we intend to refine the benefits analysis above and work to develop further the analysis of non-monetised benefits. We will also work to identify and quantify further benefits such as structural improvements and reductions in carbon emissions.

### 3. A more effective regulatory framework: the Building Safety Regulator

The Government will establish a new, national Building Safety Regulator (BSR). This section describes the estimated cost of the proposed regulator. Please note that these are high-level indicative figures and will be refined for the full Impact Assessment.

There are three key pillars of the proposed BSR. Table 3 gives an indicative estimate of costs for each of them:

- Implementing a more stringent regulatory regime for buildings in scope;
- overseeing the safety and performance of all buildings; and
- promoting the competence and organisational capability of professionals, tradespeople and building control professionals working on all buildings.

**Table 3: Costs of Building Safety Regulator functions, England 2019 prices**

	<b>One-off costs</b>	<b>Annual costs (EANC)</b>	<b>Total costs (NPV)</b>
Oversight of buildings <sup>4</sup>	< £1m	£3m to £6m	£26 to £50m
Competence committee <sup>5</sup>	£0m	< £1m	c. £5m
Regulation of buildings in scope <sup>6</sup>	£6m to £22m	£24m to £50m	£211m to £454m

Source: *Adroit Economics Consortium*.

#### Oversight of the safety and performance of all buildings

The Government is committed to delivering safer, better-performing buildings everywhere, so our reforms go beyond establishing a more stringent regulatory regime for buildings in scope. That is why the BSR will also undertake several regulatory functions that will apply to all buildings:

- Working with technical experts and the construction industry to ensure that those who design, and construct buildings are able to access cutting-edge advice on best practice in delivering safe, high-performing buildings. This will include advising the Government on changes to the building regulations and Approved Documents;
- overseeing and publishing reports on the performance of Building Control Bodies (BCBs) – both local authority building control teams and Approved Inspectors – and

<sup>4</sup> Costings do not yet include BSR’s proposed functions of operating a risk-based regime, identifying new or emerging risks to building safety, or providing independent, expert advice on building safety and performance have not been costed at this stage. Legal costs that may be incurred as a result of the BSR taking enforcement action against BCBs are also excluded.

<sup>5</sup> The costs of wider competence functions is not included.

<sup>6</sup> This cost includes some regulatory functions that are costed under other proposals in this annex. It therefore will not match estimates in Table 1.

the professionals who work in those teams, with sanctions available where building control services are failing to meet standards set by the BSR; and

- advising on current and emerging risks to building safety and performance, drawing on data that BCBs may be required to share with the BSR from time to time.

Our early indicative estimate of the cost of the BSR's function of overseeing and publishing reports on the performance of all BCBs and the professionals who work in those teams and exercising its powers to intervene in cases where building control services are failing to meet standards set by the BSR, is between £3m and £6m per annum. This will remain under review as policy and plans for implementation develop. These costs include those incurred by the BSR in performing these functions, as well as costs that may be incurred by BCBs as a result of this.

While more buildings will potentially fall within the scope of the oversight functions of the BSR than its function of delivering the more stringent regulatory regime, due to the nature of these functions it is expected that the total cost of delivering the oversight functions will be lower than that of delivering the more stringent regulatory regime. Our estimates of the costs of the BSR's oversight functions include the following:

- The BSR will incur costs in collecting and analysing data from BCBs, in auditing BCBs and in taking enforcement action against those which found to be underperforming. Costings of these functions rely on several assumptions, including how many BCBs are being enforced against and audited each year, as well as the resource required for each audit and enforcement action;
- the BSR will also incur costs in carrying out and/or commissioning research aimed at informing and developing policy on other buildings, as well as in communicating its work and the impact of it;
- BCBs themselves will be likely to incur costs in providing data to the BSR (although it is understood that they are likely to already produce some of this data, so the additional costs may be minor);
- BCBs may also enhance their internal scrutiny of their performance in response to the establishment of the BSR (for example, to reduce the reputational and financial risk of enforcement action). Some of the increased cost of doing this may reflect BCBs raising their standards to the level which is currently expected; and
- BCBs will also incur costs in responding to any informal or formal action undertaken against them by the BSR. They will also incur costs accommodating audits and other such inspection activity undertaken by the BSR from time to time.

The cost of these impacts remains uncertain. The Ministry of Housing, Communities and Local Government (MHCLG) is engaging with BCBs and other organisations to build its understanding of the scale of costs in this area in time for the full Impact Assessment. It is also intended that the BSR will carry out a pilot of its data collection processes, which will provide further insight into the costs that may be imposed on BCBs.

The BSR's proposed functions of advising on current and emerging risks to building safety and performance, and of enabling access to cutting edge advice on best practice in

complying with the building regulations and delivering safe, high performing buildings have not been costed at this stage. As policy in this area develops, MHCLG will produce costings for inclusion in the full Impact Assessment. The costings set out above also do not include legal costs that may be incurred as a result of the BSR taking enforcement action against BCBs.

## Promoting competence across industry and within building control

Competence includes both industry-led elements and government/regulator functions such as building control. The industry-led Competence Steering Group (CSG), and its constituent working groups have made significant progress towards their ambition of promoting competence across industry. The CSG published its interim report in August 2019 for consultation with the built environment sector. The interim report proposed that relevant professional and trade bodies should increase competence within their own sectors through a number of key recommendations including designing sector-specific competence frameworks. It also proposed the creation of an overarching competence framework standard that will cover all professions and trades and will set out the benchmark competence requirements including the relevant core skills, knowledge, experience and behaviours, to be used to ensure consistency across the built environment sector.

The Government is planning to mandate a requirement for enhanced competence requirements for critical roles with primary responsibility for safety at each stage of a building's life, such as the Principal Designer, Principal Contractor, and Building Safety Manager.

The industry-led competence committee (to be established by the BSR) will continue the momentum of the industry work, driving improvements in the level of competence through a number of oversight and assurance functions.

We estimate that the cost of both an interim committee and setting up and operating a permanent committee over a 10-year period will be approximately £5m, including a research budget. The budget includes costs of salary of three FTE staff, travel and subsistence of the advisory committee, operational costs and a research budget. Please note the cost estimates provided here are high-level and may increase with the development of the overall regulatory function. As such this should be treated only as an indication of magnitude. Any costs to industry as a result of increasing competence have not yet been estimated.

The BSR will work with local regulators to ensure that the teams that will oversee buildings in scope are competent to perform their roles. The BSR will be responsible for oversight of the competence and performance of building control professionals and the building control bodies in which they work, taking a wider view of the professionalism and culture that needs to support building safety in all classes of work, not just for buildings in scope. The BSR will also ensure those responsible for leading the teams have the requisite skills.

This might include setting competence standards for building control inspectors and delivering or accrediting training and qualifications aligned with those standards; and promoting the competence of building control inspectors providing assurance for buildings

within the more stringent regulatory regime. The costs of raising the competence of those working on the regulation of higher-risk buildings has not yet been estimated.

## Delivery of the more stringent regulatory regime for buildings in scope

The BSR's regulatory function for buildings in scope accounts for the majority of our estimated costs. The cost to the regulator of each proposal in this document is presented in the respective section of this annex; only the operational costs of the BSR are presented here in order to avoid double counting costs.

In costing the operational delivery of this, a "hybrid" model of the regulator has been assumed. Under this model the BSR would be accountable for the effective working of, and decision-making in the higher-risk regime but draw on expertise from a team including local regulators.

A detailed operational delivery model will be developed in the future through consultations with the future regulator and the other local regulatory bodies. At this stage, the costing presented here should be treated as high-level cost ranges to represent the uncertainty of the delivery mechanism. Further work will be undertaken to develop and refine these high-level estimates, once more detailed decisions have been taken, for the full Impact Assessment.

We currently estimate that there will be a one-off set-up cost of between £6m and £22m. Once it is established, we estimate that the ongoing annual operating costs of the high-risk regulator function will be between £24m and £50m, requiring 300-750 staff over and above those needed to check current activity on buildings in scope. Further work is being conducted on options for funding this work, including potential elements of cost recovery from regulated firms.

## 4. A more rigorous approach to accountability: the system of duty-holders

The current regulatory regime with its lack of clear accountability on duty-holders enables those involved in the design and construction of multi-occupied residential buildings to create risk without being responsible for its management in occupation. To address this, Dame Judith Hackitt's Independent Review of Building Regulations and Fire Safety (the Independent Review)<sup>7</sup> recommended the creation of a system of duty-holders – individuals involved in the design, construction and management of buildings in scope, who have clear responsibilities at each stage of the building's lifecycle.

This section details the estimated costs of a clarified system of duty-holders, including their responsibilities during the refurbishment of a building in scope; and for their responsibilities at the three specific Gateway points proposed in the design and construction of all multi-occupied residential buildings of 18 metres or more in height, or more than six storeys (whichever is reached first). Gateway one will occur before planning permission is granted, Gateway two before construction begins and Gateway three before the building's occupation.

Throughout this section the annual cost of each of the Gateway points is presented. The range in costs reflect both the low and high estimates as well as the different form that the regulator could take to undertake the checking required throughout the build process.

Estimates in this section include the cost of mandatory occurrence reporting to the BSR, under which the Client (in the construction phase) and the Building Safety Manager (BSM; in the occupation phase) is responsible for establishing a system to report fire and structural safety risks.

### During design and construction

#### Gateway one costs

The developer applying for planning permission for an in scope development will need to submit a Fire Statement setting out fire safety considerations specific to the development with their planning application, including emergency fire vehicle access and adequate water supplies in the event of a fire. National guidance will be published to help developers prepare effective Fire Statements to support local planning authorities and to ensure Fire Statements are comprehensive while remaining proportionate.

As with the current planning system, the Local Planning Authority (LPA) would review the planning application. It is anticipated when assessing an application at Gateway one, the local planning authority consult their local FRS (as necessary) on a statutory basis. The current statutory deadline for responses to consultations on planning applications will

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<sup>7</sup> Building a Safer Future – Independent Review of Building Regulations and Fire Safety: Final Report, May 2018 (Cm 9607)

apply in those cases where the local FRS is consulted to avoid delays to the planning process.

We assume that the developers of 50% of new buildings in scope already produce a compliant Fire Statement.<sup>8</sup> For buildings which will now be required to produce a Fire Statement it is estimated that it will take on average 3 hours<sup>9</sup> to produce at a cost to the developer of £250 per building and 3 hours for a fire safety professional to review and comment at a cost of £100<sup>10</sup>.

The equivalent annual net cost of Gateway one is estimated to be between £0.04m and £0.1m (central estimate £0.07m).

## **Advice before making a gateways application**

Building on best practice established in the planning regime, the Government is exploring how early advice could benefit developers that are required to go through the Gateway process. One approach would be a meeting prior to Gateway two submissions. This is not currently included in our estimate of total costs (outlined above) and is expected to be voluntary, but it is assumed that it could take around 2 days of each parties' time at a cost of £1000 to the developer and £700 to the regulator<sup>11</sup>.

## **Gateway two costs**

Two options for the Gateway two process are being considered before construction can begin. It is considered that both options will be available. Under option one, where all information about the build would need to be provided at the start (Gateway two – full application) the analysis has assumed that developers will be required to submit a full set of detailed design information relating to all parts of the building regulations to the regulator at Gateway two before construction begins.

Under option two, (Gateway two – staged application) the developer will submit high-level plans before construction begins. This will include information on compliance with building regulations; in particular compliance with structure and fire requirements, the fire and emergency file, construction control plan and necessary plan details. Additional information and detail will be submitted in stages – as agreed with the BSR – throughout the build phase of the development. We expect the staged approach to be taken for very complex developments, and only with BSR approval to proceed through this process. Under the staged application, developers will only be authorised to carry out agreed work at each stage and will need to seek the regulator's agreement before proceeding to the next stage of the build.

Under the more stringent regime, if the BSR requires the duty-holder to provide a full application before any work begins on site, the analysis assumes that the full plans application will require an additional review by the Principal Designer to check compliance with building regulations.

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<sup>8</sup> The analysis assumes that major developments in London already prepare Fire Statement and therefore additional costs are only included for projects that fall outside of London.

<sup>9</sup> Assuming information on water pressure is readily available from local water suppliers.

<sup>10</sup> The analysis assumes 100% of Fire Statements will be reviewed by a fire safety professional.

<sup>11</sup> These costs are not included in the total as the meeting will not be a mandatory requirement of the policy.



This additional review and the further information required at Gateway two will take an estimated 33.5 days (full time equivalent) to prepare, at a cost of around £16,000 to the developer. This can be broken down to 2.5 days to prepare the Gateway application, 15 days for the Principal Designer to review full plans, 1 day to prepare construction control plans for both industry and regulator and 15 days to prepare fire and emergency plans. Regulator checking of the information submitted will take an estimated 2 days at a cost of £700. This check will include the regulator reviewing the full plans application to consider compliance with the building regulations and considering all the associated documents including the fire and emergency file which will demonstrate how the duty-holder intends to meet the fire and structural requirements of the building regulations and how the building will be managed in occupation.

Under this full application approach, the equivalent annual net cost of Gateway two is estimated to be between £3.8m and £8.9m (central estimate £6.4m) not including delay costs.

If the staged application approach option is taken, the analysis assumes that the information submitted at Gateway two will take an estimated 29 days (full time equivalent) to prepare at a cost of around £14,000 to the developer. This includes the time to prepare reports at each stage, time to prepare and review full plans, as well as preparing, assessing and issuing construction control plans. We assume for the purpose of analysis that the regulator will review the plans in two stages, and it is assumed this will take around 2 days at an estimated cost of around £800 to the regulator per building.

Under the staged application approach option, the equivalent annual net cost of Gateway two is estimated to be between £3.4m and £8.1m (central estimate £5.8m).

In addition to Gateway two, developers will be required to record changes throughout the build process. Critical safety management changes will need to be notified to the BSR before further work can begin on site. The analysis estimates that the policy will require an average of around 115 additional days of time, at a cost of around £25,000 to the Developer per building. We are assuming that designers will spend an additional 1 day a week undertaking site inspections in both the full plans and staged approaches on top of the 2.5 days a week of inspections they do already. It is the extra time that the designer will be spending on site which will drive these costs. The analysis also assumes 8 safety changes per building where the duty-holders will have to prepare safety change submissions and response to safety change notices. Regulator checking of these changes is estimated to take between 19 and 32 days at a cost of £8,000 - £16,000 depending on whether the regulator conducting this check will be existing local bodies or by a central organisation. The analysis assumes that this checking by the regulator will be in addition to monthly site visits being undertaken by building inspectors throughout construction.

The equivalent annual net cost of this requirement is estimated to be between £12.5m and £33.2m (central estimate £23.7m).

### **Cost estimates for the risk of delays during construction**

In discussions with stakeholders many have raised concerns about delays to construction once the Gateway point proposals are implemented. Whilst some stakeholders could factor the additional requirements into their development planning and use the time between planning application approval and the start of construction to meet them, others

have raised concerns that the approach may cause delays to the start of construction for complex builds.

It is considered that under both a full application or a staged application approach there is a risk of delays in the completion of the projects which would come at a cost to developers. However, a staged approach significantly reduces the risk of delay. We expect that delays could result in higher financing costs as well as lost rent, totalling an estimate of around £150 per flat per week. This results in a per building cost of around £10,000 per week of delay.

The introduction of a hard stop is to ensure that fire and structural safety is considered early in the development and that the approach taken to ensure safety is agreed before construction can begin. Requiring significant detailed information as part of a full application at Gateway two increases the risk of delays for complex builds, which have been estimated to be potentially between 2 and 26 weeks. An illustrative 10-week delay has been estimated to cost around £103,000 per building, in addition to the above Gateway costs.

A staged approach to complex builds will mean that the risk of delays is reduced. Because information about the build can be provided to the regulator in stages, the risk of late design changes and the associated delays are reduced. However, delays may still exist, potentially between 2 and 6 weeks. An illustrative 4-week delay is estimated to cost around £41,000 per building.

These illustrative costings remain uncertain, and it is not yet clear how many projects might experience delays. We have therefore not included an estimate for delays in our summary of total costs above, but we expect to do further analysis on this issue ahead of the full Impact Assessment.

### **Gateway three costs**

We estimate that Gateway three will require an average of 48 days to prepare the information required, resulting in a cost to developers of around £25,000. We assume the regulator will spend around 16 days reviewing this information at a cost of between £6,000 - £8,000 to the regulator. For the central option at Gateway three, the Client, the Principal Contractor and Principal Designer will be expected to produce and co-sign a final declaration confirming that the building complies with building regulations and that key safety information has been handed back to the client.

The time taken to complete this process includes the preparation of an updated construction control plan, adding enhanced record information to the as-built plans, an updated Fire and Emergency File (covering a Finalised Evacuation Strategy) and to collate and provide documentation to the regulator prior to occupation. Fire Emergency Plans, a Finalised Evacuation Strategy and information required under Regulation 38 of the building regulations are already required and so will not be an additional cost for industry. We expect that these documents would be included in the Fire and Emergency File which will form part of the golden thread of information. The equivalent annual net cost of Gateway three is estimated to be between £5.5m and £13.6m (central estimate £9.7m).

## **Other duty-holder responsibilities during design and construction**

The policy is estimated to cost around £16,000-£24,000 per new building, equating to a total cost of around £6-£9 million per annum. All these costs will be on industry, with the Client, Consultant, Principal Designer and Principal Contractor assumed to incur extra costs as a result of doing extra checking of their respective area of work and additional competency checks due to their greater accountability under the new requirements.

## **During occupation & across the lifecycle of the building**

### **Duty-holder responsibilities during occupation**

The proposals are estimated to cost around £2,000-£3,000 per building in occupation. A small proportion of this (around 10%) is a cost borne by the regulator with the remainder falling on industry. The annual average net cost is estimated to be £30 million-£44 million.

Much of this cost (around 85%) is assumed to come from additional checks on repair work done throughout the building for fire and structural safety issues. This checking is assumed to be undertaken by the Building Safety Manager (BSM; see below). The remainder of the cost is assumed to consist of time to appoint and carry out annual reviews of the BSM.

The costs associated with registering a building is also included as part of these costs. We assume it will cost between £80 - £120 per building to apply for a Building Registration Certificate (BRC) which will involve collating the required information (gathering this information is costed as part of other proposals). As above, this does not include the potential cost to the Accountable Person if the regulator charged a fee for registration. The costs to the regulator of reviewing applications are included in our estimate of operational costs above.

### **The Building Safety Manager**

Each building in scope will require a competent BSM to carry out the functions to ensure that the building is safely managed. We expect in most cases the Accountable Person – with whom the legal duty to carry out the activities below sits - will appoint an external BSM, however it is possible for the Accountable Person to fulfil the roles of the Building Safety Manager themselves. The BSM can therefore be either a legal entity or a natural person.

The proposed responsibilities of the BSM include managing the handover of the building between the construction and occupation stages, engaging with the residents on their concerns, and ultimately managing the fire and structural safety risks of each building they manage, e.g. managing and implementing the safety case.

The BSM will play a role in many of the new activities proposed within the more stringent regulatory regime. In this section, we collate estimates of the total cost of the BSM's time to the Accountable Person. To avoid double counting, the costs presented immediately below should not be combined with those in other sections of this annex, as the time required of the BSM's is already costed under each separate proposal.

We assume here that the hourly cost to the Accountable Person of employing a Building Safety Manager will be around £40 an hour, including overheads, although this rate could fall between £24 and £56 per hour depending on the skills required of the BSM and whether the role more closely resembles that of a skilled facilities manager or a qualified fire engineer.

Our analysis considers two scenarios for the functions of the BSM. The first assumes that the BSM will be responsible for duty-holder, safety case and resident engagement requirements. In practice, it is unlikely that the BSM will have the technical expertise to undertake the whole safety case.

The second scenario is considered a more likely scenario and assumes that the safety case will be carried out by fire and structural consultants with the remaining responsibilities such as resident engagement remaining with the BSM. If the BSM was to undertake all designated activities including preparing elements of the safety case report and safety case, there would be a cost per building of between £8,500 - £14,000 per annum. Based on assumptions from the individual tasks the BSM is expected to carry out, we estimate that in this scenario a BSM could manage between 5 – 8 buildings.

If the BSM was to undertake all designated activities except for the safety case, there would be a cost per building of between £6,600 - £10,400. The safety case will be undertaken by fire and structural consultants at a cost of between £2,300 - £8,100 per building per year. Under this scenario as the BSM will have limited involvement in the safety case it is estimated that they will have the capability to manage between 7 – 11 buildings, based on the assumed time take per building.

There is an additional estimated cost of £1,500 per BSM in both scenarios to account for competency checks on the BSM by the Accountable Person and BSR.

## Wider duty-holder role for all building works

In addition to the specific requirements of duty-holders during the design and construction of buildings in scope of the new regime, we also expect to legislate for additional requirements for duty-holders in all building work where building regulations are triggered. We have estimated a high-level indicative cost for this proposal of approximately £23m per annum. Predominantly, this cost will arise as a result of duty-holders making suitable arrangements and having systems in place to plan, manage and monitor their work so that their project can be delivered in accordance with building regulations. Further work is being undertaken to provide a more detailed and certain estimate for the full Impact Assessment.

## Preparing and updating safety cases

This section sets out the estimated additional costs of the proposed requirements to prepare and maintain a safety case for each building in scope. These estimates have been refined since the June 2019 publication based on stakeholder responses to the consultation, additional information from industry and ongoing trials.

We currently estimate the total cost of the proposed safety case regime to fall between £64m and £163m per annum, with a central estimate of £109m. Almost all of these costs

fall on the Accountable Person for each building in the first instance, amounting to between £61m to £157m per annum with a central estimate of £104m. We estimate the costs to the regulator per annum will be from £4m to £6m with a central estimate of £5m. There is also one-off cost to firms of familiarisation with the new regulatory regime which is estimated to total around between £3m and £4m<sup>12</sup> for the industry as a whole. The costs incurred by the BSR may be fully or partially recoverable through the fees and service charges that may be imposed to the Accountable Person when the regime is fully implemented. We will conduct further analysis on cost recovery for the full Impact Assessment.

This estimate includes the cost of remediation work required to demonstrate to the Regulator that buildings are safe to occupy. This is estimated to be between £1m and £10m per annum, with a central estimate of £5m, when profiled over our 10-year appraisal period. In addition to these costs, we expect that the new safety case requirements may identify work which would already have been required in order to meet current building regulations. The cost of this remediation work to make buildings compliant with existing legislation is excluded from our estimate of the total cost of the proposals above. We currently estimate this one-off cost to be between £67m to £201m per annum over our 10-year appraisal period, with the central estimate of £115m per annum.

### **The costs of safety case documentation, reports and reviews**

The Accountable Person will face costs for the BSM compiling the evidence (including building surveys) and documentation for the safety case and drafting an overarching document - the safety case report. The required information will broadly include a full building description, a hazard and risk assessment, a summary of mitigation measures, and the approach to risk management. Compiling this might require contracting technical experts such as structural engineers, fire engineers and health and safety experts.

In addition to the cost of preparing an initial safety case for each building, the Accountable Person or, on their behalf, the BSM will incur costs in keeping the safety case documents and Fire Risk Assessment updated, and for carrying out mandatory reviews of the safety case following critical building events.<sup>13</sup> The regulator will incur costs for reviewing safety cases when they are submitted, and for carrying out a risk-based schedule of inspections on each building in the period following registration.

### **Remediation work identified by the safety case process**

Survey and inspections of the existing stock could identify a backlog of poor workmanship, damage or lack of maintenance. These works will be required to bring existing buildings up to the standards defined in the current building regulations and to be evidenced in the safety case to comply with the duty on the Accountable Person and the BSM to manage fire and structural safety risks. We have only included the proportion of work which we assume will not take place as part of regular maintenance, planned remediation or refurbishment work in our estimate of costs.

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<sup>12</sup> We assume all the familiarisation costs fall in the first year of the policy.

<sup>13</sup> Potential scenarios for such review would be following a significant fire event at the building, a major incident at a comparable building, the emergence of new technical knowledge about safety matters or hazards, prior to commencing refurbishment or other work which could have significant impacts on hazards, and following any significant change to the safety management system

Remedial works could include work on fire stopping and compartmentation, fire doors, facades, cavity barriers, sprinklers and automatic fire detection, means of escape, smoke control, emergency lighting and power sources, signing, firefighting facilities, remediation of timber balconies, structural remediation of balustrades, and remediation of electrical safety issues that could lead to fire risks. In some rare cases work could require residents to be “decanted” (offered alternative accommodation outside of their building). These costs will be likely to fall on the Accountable Person in the first instance.

## Building Information Management: the Golden Thread

**Table 4: Costs of Building Information requirements, England, 2019 prices**

	<b>Annual Cost (EANC)</b>
Upgrading to BIM level 1, the Common Data Environment and COBie file (new buildings and refurbishments)	£2m - £7m
Completing Key dataset during construction (new buildings and refurbishments)	< £1m
Digitalising full plans (existing buildings)	£16m - £30m
Maintaining information and the key dataset (during occupation)	£6m - £9m
<b>Total</b>	<b>£25m - £46m</b>

Source: *Adroit Economics Consortium*.

This section sets out estimates of the additional cost for the duty-holders for all buildings within scope of these proposals to comply with the new technical requirements. These cover the type of information (such as building plans and the location of specific objects within the building) duty-holders will need to keep and the way it should be stored and shared based on existing industry standards. Keeping up-to-date information in a consistent format is intended to help duty-holders and the regulator to accurately assess and manage risks to building safety within specific buildings and across the entire stock of buildings in scope. We estimate the cost of these proposals will be £25m-£46m per annum, with a central estimate of £36m.

### New buildings

We assume that firms that already comply with Building Information Modelling (BIM) level 1<sup>14</sup> standards, by using a Common Data Environment (CDE) and complete COBie files<sup>15</sup>, will not incur any additional costs (due to the expectation that they already meet proposed standards). We estimate that firms that do not currently meet these standards will face additional costs for digitalising information, estimated to be £24,000 - £38,000 per affected building. This includes the cost of completing a COBie file.

We have also modelled the cost for duty-holders on all new-build projects to fill out a COBie file during construction for handover at project completion. This method will allow

<sup>14</sup> BIM levels are sets of technical criteria for compliance with a given standard for storing building information.

<sup>15</sup> Construction Operations Building Information Exchange is a spreadsheet-based open data format for building information modelling developed by the Government as part of its Building Information Modelling (BIM) Working Party Strategy, published in 2011.

duty-holders in the occupation stage to access “as built” information on their buildings using their choice of software. We estimate this will cost £4,000 - £8,000 per building, due to time taken for data entry.

## **Existing buildings**

Duty-holders for existing buildings will have to gather the information required to meet registration and safety case requirements. This information must be held digitally in order to effectively manage building safety risks.

We have assumed that buildings that currently have no plans or inaccurate plans will carry out a two-dimensional Computer Added Design (CAD) plan and evaluation drawing, costing between £10,000-£19,000 per building. While this is not the only way to create digitalised plans, and people may opt for 3D scans or other methods, a digital 2D plan is considered the least costly acceptable option. We assume there will not be an additional cost for software to use the outputs of a COBie file because duty-holders likely already own suitable spreadsheet software such as Microsoft Excel.

## **In occupation**

Building information will have to be kept up to date once the building is completed or existing buildings have produced digital plans. This will include managing the data in the COBie file and the digital record to reflect any changes in the building. We estimate this will cost £300 - £500 per building each year.

## **Major refurbishment works**

The requirements for carrying out major refurbishments are comparable to those for new buildings. We have assumed, as a minimum, BIM level 1 standards will have to be used, and documents required for Gateways two and three will have to be digitalised, including building data being in a COBie format for handover.

As with new buildings, there will not be additional costs for projects which already use a CDE and fill out a COBie file. However, projects not yet meeting this standard will incur an estimated additional cost of complying of £10,000 - £16,000. The costs differ slightly from new buildings because refurbishments are shorter projects and therefore have lower software license costs and require less data entry.

## **Key dataset**

The key dataset is a subset of information that we propose will be collected by the BSR in a consistent format from each building, allowing analysis of risks across the stock of buildings. We estimate the one-off costs of creating an up-to-date key dataset are between £600 and £1,200 per affected building. All buildings with a key dataset will be required to keep this up to date as elements of the building change. This will cost an estimated £200 - £300 per building per annum.

## 5. A stronger voice for residents: the Resident Engagement Strategy

**Table 5: Costs of Residents Voice requirements, England, 2019 prices, EANC**

	<b>Low</b>	<b>Central</b>	<b>High</b>
Residents information	£5m	£6m	£9m
Residents engagement	£15m	£21m	£31m
Residents escalation and redress	£9m	£12m	£18m
<b>Total</b>	<b>£29m</b>	<b>£39 m</b>	<b>£59m</b>

Source: *Adroit Economics Consortium*.

Under the more stringent regulatory regime, these proposals aim to empower residents with a stronger voice and better information about their building. Residents will be involved in decisions about the safety for their building and will be better equipped to hold those responsible to account.

Current practice for engagement appears to vary significantly between buildings, and some housing providers already have robust systems in place. We estimate the average annual additional cost of these proposals will be between £29m and £59m, but we will seek additional evidence for the full Impact Assessment on how much additional work duty-holders will need to do to meet the new requirements.

The Accountable Person for each building will face one-off costs in the first year of the policy for the BSM to prepare and share information with residents (including printing and publishing material), and to establish a Resident Engagement Strategy. We estimate this could cost approximately £3,000 per building. They will face a lower recurring annual cost to share information and deliver the strategy, though building owners may already be carrying out a significant proportion of this activity.

During the refurbishment of a building there will need to be additional engagement, for example, with more residential meetings. We expect the cost of engagement to the Accountable Person to rise to approximately £2,000 per year during this period.

We estimate it will take an average of around £1,000 per building for the BSM to set up an escalation process for building safety issues, and initially an additional approximately £1,000 per annum to deal with the issues raised and liaise with the BSR and other enforcement bodies if complaints are escalated. We expect a decreasing number of issues will be raised each year as legacy issues are identified and resolved, and this has been accounted for in the estimate of total costs. Where the escalation process reaches the stage of non-compliance it is assumed that the sanctions process will be triggered. This is not costed here but will be included in an estimate of the cost of the sanctions and enforcement proposals for the full Impact Assessment.

Costs expected to be incurred in the enforcement of resident responsibilities will be addressed under the sanctions and enforcement proposals for the full Impact Assessment.



The BSR, will be required to review the Resident Engagement Strategy for each building alongside the safety case and will incur costs when safety issues raised by residents are escalated. The BSR will also need to commit some staff time to analysing complaints to identify systematic issues. This might involve trend analysis and identification of duty-holders who have a disproportionately large number of escalated issues relative to the number and size of the buildings they are responsible for. This will allow the BSR to hold duty-holders to account, so problems do not persist.

## 6. Improving the safety of construction products: a new regulatory framework

**Table 6: Costs of construction products proposals, United Kingdom 2019**

	Annual cost (EANC) <sup>16</sup>
Applying unique identifiers (including redesigning labels)	£3m - £4m
Improving instructions and safety information	c. £1m
Publishing Declaration of Performance (DoP)	£10m - £15m
Demonstrating claimed performance	£10m - £15m
Meeting claimed performance standards	£25m - £37m
Expected cost of product recalls	< £1m
<b>Total</b>	<b>£48m - £72m</b>

Source: *Adroit Economics Consortium*.

In order to improve and ensure the safety, quality and performance of construction products used in buildings, the Government has proposed a series of regulatory changes governing non-harmonised construction products. These include new labelling and testing requirements, as well as establishing a new national Construction Products regulatory role to monitor compliance. We have not included an estimate of the operational costs for operating this new role in Table 6 but will develop this for the full Impact Assessment.

Unlike most other sections presented in this annex, this section accounts for the impacts of the proposed new building safety regulatory framework for **all non-harmonised construction products across the UK**.

Although our analysis estimates the impact on all UK construction products, we propose to extend regulation of construction products in a limited way initially, starting with an inventory approach that applies the new framework to products for which a statutory requirement to meet a standard in building regulation already exists.

Our analysis considers what the current levels of compliance are within the sector to identify the net economic impacts of our policies. Using evidence from a combination of surveys and responses to previous consultations, we estimate that currently approximately 80% of firms already comply with instructions and safety information requirements, 68% use unique identifiers<sup>17</sup>, and 28% already publish declarations of performance, demonstrate claimed performance, publish test and assessment information and verify constancy of performance.

<sup>16</sup> Equivalent annual costs presented in this table also include the one-off costs of meeting some proposals.

<sup>17</sup> This is a numerical identifier with 10-15 digits, including details such as the brand, part number and item number. We assume the UPI would be printed onto the product/or product packaging. The data would be stored digitally, either by the firm, or on a system managed by industry/building safety regulator.

With the exception of the proposals relating to instructions and safety information, where the current compliance rate is estimated to be the same for all firm sizes, we estimate that the level of voluntary compliance with these proposals is higher amongst larger firms.

The total additional cost for all firms to comply with the policy proposals is estimated to be around £60m per annum (in our central estimate), representing considerably less than 1% of the current market value of construction products.

It has not been possible to monetise the cost of meeting general quality requirements as the cost of redesigning a product to improve the quality will vary substantially, depending on the product and the type of defect. However, the estimated cost of additional testing that may be undertaken to demonstrate the claimed performance of a product has been included in our estimates.

## 7. Promoting competence: improving performance across industry and within building control

**Table 7: Indicative costs of sanctions and enforcement proposals, England, 2019**

	<b>Annual cost (EANC)</b>
Costs to regulator	£5m - £12m
Costs to duty-holders and contractors	£2m - £4m
Costs to Clients	£4m - £9m
<b>Total</b>	<b>£10m - £24m</b>

Source: *Adroit Economics Consortium*.

The BSR will likely have a higher appetite for enforcement work (including litigation) in order to address the current reluctance to take action, as identified in the Independent Review. As proposed in the consultation, there will be a three-stage approach to enforcement, with a view to encouraging compliance at the earliest (and least resource-intensive) point, as well as the proposed mix of enforcement notices, financial sanctions, and prosecution. As set out elsewhere in this document, those proposals were supported by the consultation responses and we intend to take them forward; this analysis considers the resource implications of doing so.

We have modelled the costs of the enforcement and sanctions regime for the regulator, duty-holders and clients. These are based on assumed proportions of non-compliance which are indicative at this stage and represent only a potential scenario. Further work is being undertaken to increase the evidence on the current state of the industry and the appropriate sanctions that will create the suitable behaviour and culture.

Costs have been modelled for verifying and enforcing work undertaken during construction, refurbishment and occupation. Three types of costs are included, covering parties carrying out building work and those managing buildings, and sanctions that are levied against duty-holders. Both duty-holders and the regulator will face time costs to check and respond to non-compliance, and legal costs to support enforcement action. When instances of non-compliance are serious enough, stop notices, civil penalties and fines can be levied, and the cost on duty-holders and clients of these is also included.

The actions of the regulator have currently been modelled on the FSO escalation structure and further work is ongoing in the department to refine how the regulator might react to different types of non-compliance.

The total cost of the enforcement and sanctions regime is currently estimated to fall between £10m and £24m per annum, with a central estimate of £17m per annum.