

www.defra.gov.uk

Flood and Water Management Bill

Impact Assessment - Amendment to the Building Act to Allow Building Regulations to Require Flood Resilient Repair

Last updated: 11 January 2010

Summary: Intervention & Options

Department /Agency: Communities and Local Government	Title: Impact Assessment of an Amendment to the Building Act to Allow Building Regulations to Require Flood Resilient Repair	
Stage: Final Proposal	Version: 1	Date: 11 January 2010
Related Publications: Developing the evidence base for flood resistance and resilience: Summary Report		

Available to view or download at:

http://www.http://sciencesearch.defra.gov.uk/Document.aspx?Document=FD2607_7322_TRP.pdf

Contact for enquiries: Shayne Coulson

Telephone: 0303 444 1797

What is the problem under consideration? Why is government intervention necessary?

Flooding impacts on buildings are of growing concern in the context of adaptation to climate change. Market failure may stop cost effective adaptation being undertaken, for instance through imperfect information on the potential costs of flooding, split incentives between owner and occupier or external costs falling on communities and local authorities. This amendment would allow, subject to subsequent Impact Assessments on those amending regulations demonstrating a case for action, flood resilient/resistant repair work to be required.

What are the policy objectives and the intended effects?

Building Act powers already allow Building Regulations to be made to require flood resilience/resistance in new buildings/major alterations. This amendment would allow, subject to further analysis, provision to be made in respect of repair to existing buildings and ensure that properties would be better able to cope with future flooding. For example, if a building had previously been repaired to be flood resilient the impact of a subsequent flood would be reduced as damage would be less and it would be quicker and cheaper to repair - reducing both the financial and social costs of flooding.

What policy options have been considered? Please justify any preferred option.

1. Do Nothing.
2. Amend the Building Act to allow Building Regulations to be made to cover resilient/resistant repair. 2 is preferred as it provides flexibility if a case for regulation can be clearly demonstrated.

A better understanding of the market failure involved, and advantages/disadvantages of a regulatory approach (over, for example, raising awareness of voluntary resilient/resistant techniques) will be needed as part of the further detailed work on potential legislative requirements. This will also consider the impacts of no regulation and allowing the market failure to continue.

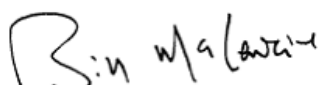
When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects?

This amendment in itself simply provides a power for regulations to be made.

Ministerial Sign-off For final proposal/implementation stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister:



Date: 11 January 2010

Summary: Analysis & Evidence

Policy Option:	Description:
-----------------------	---------------------

COSTS	ANNUAL COSTS	Description and scale of key monetised costs by 'main affected groups'
	One-off (Transition) Yrs	
	£	
	Average Annual Cost (excluding one-off)	
£	Total Cost (PV)	£
Other key non-monetised costs by 'main affected groups' There are no costs or benefits attributable directly to the amendment as it simply extends the scope of the Building Act to enable regulations to be made.		

BENEFITS	ANNUAL BENEFITS	Description and scale of key monetised benefits by 'main affected groups'
	One-off Yrs	
	£	
	Average Annual Benefit (excluding one-off)	
£	Total Benefit (PV)	£
Other key non-monetised benefits by 'main affected groups' There are no costs or benefits attributable directly to the amendment as it simply extends the scope of the Building Act to enable regulations to be made.		

Key Assumptions/Sensitivities/Risks

Price Base Year	Time Period Years	Net Benefit Range (NPV) £	NET BENEFIT (NPV Best estimate) £
--------------------	----------------------	-------------------------------------	---

What is the geographic coverage of the policy/option?			
On what date will the policy be implemented?			
Which organisation(s) will enforce the policy?			
What is the total annual cost of enforcement for these organisations?		£	
Does enforcement comply with Hampton principles?		Yes	
Will implementation go beyond minimum EU requirements?		No	
What is the value of the proposed offsetting measure per year?		£	
What is the value of changes in greenhouse gas emissions?		£	
Will the proposal have a significant impact on competition?		No	
Annual cost (£-£) per organisation (excluding one-off)	Micro	Small	Medium Large
Are any of these organisations exempt?	No	No	N/A N/A

Impact on Admin Burdens Baseline (2005 Prices)		(Increase - Decrease)	
Increase of £	Decrease of £	Net Impact	£

Key: Annual costs and benefits: (Net) Present

Introduction

The Building Act 1984 enables Building Regulations to be made for England and Wales with respect to the design and construction of buildings and the services, fittings and equipment provided in or in connection with buildings for a number of purposes. These purposes include securing the health, safety, welfare and convenience of persons in and about buildings, preventing waste, undue consumption, misuse or contamination of water, furthering the protection or enhancement of the environment, and facilitating sustainable development.

The Building Regulations 2000 are the current regulations and have been made pursuant to these powers. These regulations establish general functional requirements for buildings when constructed, and are supported by Approved Documents, which set out detailed practical guidance on compliance. The Building Regulations also set out procedures for the control of building work by local authorities.

The main requirements in relation to how buildings are constructed etc are set out in Schedule 1 of the Building Regulations 2000 (as amended). This Schedule is divided into 14 Parts covering different elements of regulation, for example, Part B covers fire safety and Part G hygiene. Currently the Building Regulations do not consider flood resilience or resistance, either for new buildings or existing ones. For the purposes of this Impact Assessment, “flood resistance” refers to measures to keep water out of a building whereas “flood resilience” refers to measures that enable buildings to better deal with a flood, for example, by reducing the time and cost of repair.

Purpose and intended effect

A recommendation of the Pitt Report on Flooding was that the Building Regulations should be revised to ensure that all new or refurbished buildings in high flood-risk areas are flood resistant or resilient. The Government response to this report indicated that we would look at how the Building Regulations might incorporate flood resilience and resistance in the way recommended. It is likely that any changes would be delivered by amendment to Parts A (Structure) and C (Site preparation and resistance to contaminants and moisture) of Schedule 1.

Work still needs to be done to better understand how market failure might currently stop cost effective resilience or resistance measures being put in place, and to develop evidence on the costs and benefits of different approaches – the where and the how - of flood resilience and resistance for new buildings and repair to existing buildings. This will be needed before appropriate intervention can be proposed and consulted on in this area. In particular, any approach to flood resilience or resistance is likely to need to consider how regulation might be targeted as an optimal intervention in terms of a cost/benefit analysis.

In advance of that, it is important to ensure that we have the power to regulate for resilient repairs in the future should a case for regulation be proved. The Building Act allows Government to make requirements for flood resilient or resistant construction, services, fittings etc in the case of new buildings or where the repairs being carried out amount to “building work” (as defined in regulation 3 of the Building Regulations 2000); typically these would be major repairs. Certain types of repair, for example renewing damaged plaster, are not currently “building work” and this is likely to be the case with most other types of repairs to flood damaged buildings.

However, as stated previously, the approach to be taken to regulation will need to be determined by further detailed work that will look at the costs and benefits of different approaches to flood resilience and resistance. A detailed Impact Assessment will accompany further proposals for regulation.

This Impact Assessment therefore seeks to give an indication of some of the potential costs and benefits associated with subsequent regulation. In advance of the further work necessary on the detailed costs

and benefits, this Impact Assessment draws principally on earlier work undertaken by the Department of Environment, Food and Rural Affairs and is contained in *Developing the Evidence Base for Flood Resilience and Resistance: Summary Report*¹ published in June 2008.

Rationale for government intervention

Market failure may stop cost effective adaptation being undertaken, for instance because occupiers do not have full information on the potential costs of future flooding, or because of split incentives between owner and occupier which may result in occupiers being unwilling to finance robust repairs on a property they do not own, whilst owners may only do what is necessary to let the property.

In the event of flooding impacting on occupants, there may be substantial external costs falling on communities and local authorities, especially if occupants need to be relocated. The financial and social costs of flooding are significant and without action are likely to get worse because of changes to our climate. Flooding of as little as 20cm above floor level causes damage of between £20,000 and £30,000 per home and far more damage to the average business. It also damages the mental and physical health of affected people and increases demands on local services such as health and social care as well as on emergency response services. These external costs can be reduced if properties in flood risk areas can be made more resilient or resistant to future flooding.

Further work will be needed on the advantages and disadvantages of regulatory intervention, rather than, for example, the promotion of a voluntary approach and raising awareness of resilient/resistant techniques. This will also consider the impacts of no regulation and allowing the market failure to continue.

There are approximately 400,000 or so houses in areas with a 'significant' chance of flooding. This is defined as a 1.3% or greater annual chance - once in 75 years or less. Initial work undertaken by Defra suggests that property-level measures can cut the damage and disruption caused by flooding by between 50% and 80%. This means that such measures would tend to be cost-beneficial once the annual chance of flooding reaches 2% (i.e. once in 50 years). However, not all measures that might make a home more flood resilient or resistant would be covered by the regulations. For example, choosing to cover floors with rugs that can be moved easily rather than with more permanent carpeting is a flood resilient measure, but not something that Government would be looking to regulate.

This amendment will allow regulations to be made that would cover both homes and non-domestic buildings. Again, further work will need to be done to understand the desirability of regulating in these two sectors. However, a particular focus is likely to remain on the domestic sector given the significant costs of flooding to this group.

Consultation

Defra have advised that their earlier consultations indicate general stakeholder support for exploring this approach.

In developing and taking forward any proposals relating to regulating for flood resilience and resistance, we will undertake the usual consultations and engagement associated with changes to the Building Regulations. This will include close work with the Building Regulations Advisory Committee (BRAC), independent statutory advisors to the Secretary of State, and its Technical Working Parties which advise on reviews of Parts of the Building Regulations, and with representatives from key stakeholders such as manufacturers and builders. When detailed proposals have been developed these will be subject to full public consultation. In addition, we will also be consulting publicly in the Spring of this year to seek initial views as to how this work is taken forward and gather further evidence on possible approaches and associated costs and benefits.

¹ http://sciencesearch.defra.gov.uk/Document.aspx?Document=FD2607_7322_TRP.pdf

Options

Option 1 – Do nothing.

Option 2 – Amend the Building Act to allow Building Regulations to be made to cover all types of flood resilient and resistant repair work.

Sectors and groups affected

The principal groups affected will be the building owners, occupiers, insurers and builders. The building owner and occupier will potentially benefit from repair measures that will reduce the damage caused by a subsequent flood thereby reducing the repairs, costs and disruption associated with future floods. Builders will be required to comply with the revised Building Regulations where previously they did not. However, the additional work may potentially be beneficial for them (at least in the short- to medium-term). How insurers choose to reflect these changes in their policy premiums and terms will also impact on the insured. Also the impact of enhanced flood protection on property prices in flood risk areas is also uncertain. Further work needs to be done to understand these issues.

Detailed costs and benefits

There are no costs or benefits attributable directly to the amendment as it simply extends the scope of the Building Act to enable regulations to be made. Nor, as stated previously, is it possible to provide a detailed estimate of the potential costs and benefits associated with any subsequent regulation because that will depend so much on the exact nature of those provisions. However, the information below is intended to give an indication of the sort of figures associated with possible regulation. It focuses mainly on the costs and benefits associated with flood resilience where there is more data to support this Impact Assessment (and also where it is more likely that regulation would be targeted given that flood resistant measures that are more likely to be cost effective are temporary measures rather than permanent ones).

However, these figures are only indicative as they include measures that would not be covered by the Building Regulations under this proposal, but are significant in both terms of costs and benefits. These can be significant elements of the total costs of flooding (perhaps the majority of the cost), for example, ensuring the kitchen fittings are flood resilient. It is not the intention of this proposal to regulate for fittings of this type or, for example, the placing of appliances in the property or what would be appropriate floor coverings. Understanding this element of the overall costs and benefits will also be a crucial part of the further work that needs to be done to understand better the costs and benefits. However, examples of potential measures that Building Regulations might cover subject to further consideration of the costs and benefits are replacing the usual gypsum plaster with a more water resistant variety, such as lime plaster, and locating replacement electrical sockets above the level of likely future floods.

Examples of the measures covered in the analysis undertaken for Defra are set out in the table below.

Example of resilient repair	Advantages
Replace damaged suspended timber floors with concrete floors	No need to replace floor in event of future floods
Replace damaged carpets with tiles	Floods less likely to damage floor coverings
Use solid wood, plastic or metal kitchen units instead of MDF units (which absorb water and therefore damage easily)	Less likely to be damaged by future floods
Install replacement white goods on raised plinths	White goods will be safer from future low-level flooding
Use water-protection (lime-based) plaster on walls	Floods less likely to necessitate re-plastering of walls
Raise electricity supply cables and sockets above floor level	Floods less likely to necessitate re-wiring

More work also needs to be done to assess the number of properties that will be affected, but this can only be done when we have determined the appropriate annual level of flood risk which would justify regulation.

It should be noted that some work undertaken by the Association of British Insurers has suggested that the costs of flood resilient repair is underestimated in the Defra work. For the purposes of this Impact Assessment, which endeavours to give only, in advance of further detailed work, an indication of potential costs and benefits, it is the Defra figures that are primarily referred to. However, when carrying out further work on this a wider range of available sources of information will be considered.

Benefits

No benefits flow directly from this amendment – only if the power it provides is subsequently used to make regulations. These would be set out in the detailed Impact Assessments accompanying both consultation proposals and the final regulations. However, the figures below give an indication of potential benefits.

Option 1: Do nothing

There are no additional benefits arising from this approach. Evidence from the Defra study found that only approximately 4% of households had taken flood resilient measures when their homes had been repaired following a flood. This is reinforced by similar anecdotal evidence following the 2007 Summer floods.

Options 2: Potentially allow for the repair of properties that have been recently flooded that are in high flood risk areas to be regulated to require flood resilience/resistance

Monetised benefits

It is estimated that flood resilience measures reduce the cost of flood damage by at least a half and reduce the time before householders can return to their properties after flooding.

However, benefits would only principally accrue where a property has been repaired to be flood resilient and is subsequently flooded. The benefit would arise from subsequent repairs being cheaper and associated costs (such as the reduced cost of alternative accommodation if subsequent repairs allow a shorter period out of the property) being lower.

Who this benefit falls to will depend on a range of factors such as property tenure, whether property occupancy/ownership changes and whether the property is covered by appropriate insurance and whether insurance terms or premiums change as a result of this measure. If there is a perfectly competitive insurance industry, then for insured properties, benefits would be shared across all premium holders in the form of lower premiums, and for uninsured properties, benefits would accrue through lower subsequent repair and associated costs for those directly affected by the flooding.

Non-monetised benefits

There are significant social costs associated with being the victim of flooding. This includes being absent from your home while it is being dried out and repaired and the associated stress. Flood resistant measures can prevent this for some. Resilience measures will reduce these impacts.

There is also a further benefit for those living in communities less likely to benefit from community level protection. Measures that make these householders less vulnerable to flood lessens this relative injustice.

We have not costed the relative costs and benefit to local authority and emergency services, and more work would be needed to see whether resilient repair can make any significant difference to these.

Costs

No costs flow directly from this amendment – only if the power it provides is subsequently used to make regulations. These would be set out in a more detailed Impact Assessment accompanying both

consultation proposals and the final regulations. However, the figures below give an indication of potential costs.

Option 1: Do nothing

There are no additional costs.

Options 2: Potentially allow for the repair of properties that have been recently flooded that are in high flood risk areas to be regulated to require flood resilience/resistance

Monetised costs

The cost of flood resilient repair is estimated to be in the region of £5,000-£10,000 above the cost of normal repair and a set of permanent protection (resistance) measures approximately £8,000 above the cost of normal repair. However, as stated previously, more work needs to be done to understand the cost of the elements of this work that could be covered by the Building Regulations. The Association of British Insurers has suggested that only around one third of the cost of flood resilient repairs would relate to work that would be covered by the Building Regulations.

Who bears this cost will depend on factors such as property tenure and on the insurance status of the person or business flooded and the terms and conditions of their policy. Where the property is insured, the additional repair cost should be shared across all premium holders and this, in turn, will be offset against the benefit of lower future claims from more flood protected buildings. For an uninsured property the cost will often be borne by those directly affected by the flooding, particularly at a time of some stress with other significant calls on their resources. However, they will also potentially benefit from flood protection and lower subsequent costs associated with future flooding.

One-off monetised costs

Previous Impact Assessments have indicated that the cost in terms of training and familiarisation with a new regime costs in the region of £1.5m for builders and other construction-related sectors and the building control bodies (local authorities and private sector Approved Inspectors). However, if flood resilience/resistance changes were made they would be part of a wider package of changes to the relevant Parts of the Building Regulations. Therefore the one-off costs directly attributable to the flood element would be significantly less.

Non-monetised costs

Some people may resist being required to carry out repairs to their homes in a particular way. For example, although it is often suggested that simply moving electrical sockets higher up a wall is a simple way to improve resilience some people may object to this on aesthetic grounds and resent this level of regulation of their actions.

Net impacts

It has not been possible, yet, to undertake a cost-benefit analysis of any potential regulatory policy. However, as indicated above this will be done in advance of any specific proposal being brought forward.

A main finding of the Defra analysis, which included work that would not be covered by the Building Regulations, was that there would be an economic case for flood resilient repair following a flood where the property was located in areas with a more than one in 50 years chance of flooding. That is, there was a greater than 2% annual chance of flood. However, each element of a resilient package of repairs has not been monetised, therefore the impacts apply to the package as a whole (which includes measures that would not be covered by Building Regulations). Table 1 below sets out the benefits-cost ratio for flood resilient repair generally and flood resilient repair that incorporates protection against groundwater flooding in the form of “tanking” or concrete floors (for approximately an additional £5,000). It also sets out the ratios for flood resistance measures for residential properties.

Table 1: Economic Benefit-Cost Ratios for Residential Properties

Annual chance of flooding	Return frequency (years)	Resistance Measures		Resilience Measures		Resilient Repair	
		Temporary	Permanent	Without resilient flooring	With resilient flooring	Without resilient flooring	With resilient flooring
20%	5	10.6	8.4	3.7	3.7	6.7	5.5
10%	10	5.8	4.3	2.1	2.0	3.9	3.0
4%	25	2.6	1.8	1.0	0.9	1.9	1.4
2%	50	1.3	0.9	0.6	0.5	1.0	0.7
1%	100	0.3	0.2	0.1	0.1	0.2	0.2

It can be seen that, for a property with a 20% risk of flooding, the benefits of a resilient repair for a residential property (without resilient flooring) is 6.7 times higher than the costs. However, for a similar property with a 1% risk of flooding the benefits are only one-fifth of the costs.

As stated above much of the focus of dealing with the consequences of flooding has related to domestic properties. However, we will also consider the case for regulation in the non-domestic sector. The challenge here though would be much greater given the significantly wider variety of property types. However, the initial work done for Defra did look at equivalent figures for High Street shops. This is set out in Table 2 below.

Table 2: Economic Benefit-Cost Ratio for a High Street Shop

Annual chance of flooding	Return frequency (years)	Resistance Measures		Resilience Measures		Resilient Repair	
		Temporary	Permanent	Without resilient flooring	With resilient flooring	Without resilient flooring	With resilient flooring
20%	5	7.2	9.0	4.2	3.9	4.7	4.5
10%	10	3.9	4.7	2.2	2.1	2.5	2.4
4%	25	1.8	2.1	1.1	1.0	1.2	1.1
2%	50	0.7	0.9	0.5	0.4	0.5	0.5
1%	100	0.2	0.2	0.1	0.1	0.1	0.1

Enforcement and Sanctions

Any subsequent changes made to the Building Regulations under this power will be enforced by building control bodies through the existing mechanisms and sanctions provided through the Building Act.

Implementation and Delivery Plan

It is intended to consult in Spring 2010, and in advance of a fuller consultation on Parts A and C of the Building Regulations, on possible approaches to flood resilience and resistance. It is currently envisaged that any fuller consultation may take place towards the end of 2011 with regulations being laid in 2012 and coming into force in 2013.

Post-Implementation Monitoring and Review

In the light of some previous concern about a seemingly ad-hoc approach to how the building control system is reviewed and amended, the department has signalled that it will move to a system whereby Parts would generally only be changed every six years. It is not envisaged, therefore, that if amended in

2013 Parts A or C would be amended again before 2019 meaning that a formal review would not start before 2016.

However, the department has an ongoing dialogue with users of the building control system and would monitor informally how any changes were working in practice.

Summary and Conclusions

Further work needs to be done to consider the detailed costs and benefits associated with flood resilient/resistant repair. However, should that work show there is a case to regulate then this amendment is necessary to ensure that the primary legislation of the Building Act 1984 is sufficiently wide to allow the scope for requiring flood resilient or resistant repair to property that has been flooded in high flood risk areas.

Specific Impact Tests: Checklist

Use the table below to demonstrate how broadly you have considered the potential impacts of your policy options.

Ensure that the results of any tests that impact on the cost-benefit analysis are contained within the main evidence base; other results may be annexed.

Type of testing undertaken	<i>Results in Evidence Base?</i>	<i>Results annexed?</i>
Competition Assessment	No	Yes
Small Firms Impact Test	No	Yes
Legal Aid	No	Yes
Sustainable Development	No	Yes
Carbon Assessment	No	Yes
Other Environment	No	Yes
Health Impact Assessment	No	Yes
Race Equality	No	Yes
Disability Equality	No	Yes
Gender Equality	No	Yes
Human Rights	No	Yes
Rural Proofing	No	Yes

Competition Assessment

The proposal will not have a significant impact on competition.

Small Firms Impact Test

The building industry is characterised by a large number of small firms. All changes to the Building Regulations undergo a thorough process of consultation and extensive stakeholder engagement with small firms and their representative bodies. Changes are always accompanied by a series of workshops around the country aimed at a wide range of bodies, not least, small firms.

Legal Aid

It is envisaged that the proposal will have no impact on legal aid.

Sustainable Development

Making properties more resilient and resistant will reduce the use of non-renewable resources and play a part in ensuring our regulatory framework considers properly climate change adaptation.

Carbon Assessment

The measure is not considered to have a significant carbon impact.

Other Environment

The aim of the amendment is to potentially allow buildings to be made more flood resilient and resistant in the future.

Health Impact Assessment

Reductions in domestic and business disruption and the earlier return of residents to their properties should reduce the mental and physical health impacts of flooding.

Race Equality

We are not aware of any disproportionate impact on any particular racial groups.

Disability Equality

In developing subsequent detailed proposals it will be important to ensure that any measures do not impact adversely on the current regime, for example, on accessibility in relation to flood resistant measures.

Gender Equality

The measures considered were not considered to have a gender specific difference in impact.

Human Rights

The measures considered were not considered to have an impact on human rights.

Rural Proofing

The current prioritisation system will tend to favour flood defence schemes in concentrated clusters of at risk homes, which are more likely to be in urban areas than in rural areas. These proposals would help redress this situation by facilitating risk mitigation measures that are more economically viable for small clusters of at risk homes, which are more likely to be in rural areas.