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Llywodraeth Cymru
Welsh Government

Welsh Government

Building Regulations Sustainability Review – Final Impact Assessment

Incorporating aspects of the Code for Sustainable
Homes into the Building Regulations in Wales

June 2017

Building Regulations Sustainability Review

Final Impact Assessment

1. Problem under consideration

- 1.1 In July 2014 Welsh Ministers approved the amendment of national planning policy on sustainable buildings and the withdrawal of the related guidance in TAN 22: Sustainable Buildings. TAN 22 set an expectation that all new housing in Wales should achieve Code for Sustainable Homes (CfSH) Level 3 (with extra energy credits) and that all new non domestic buildings in Wales should achieve BREEAM 'Very Good' with an 'Excellent' score for energy. The policy had been introduced in 2009 to support Welsh Government sustainability in the built environment aspirations in advance of the transfer of building regulations function to Welsh ministers in 2012.
- 1.2 Changes made to Part L of Schedule 1 to the Building Regulations made in July 2014 set energy performance levels at broadly the equivalent of that expected under the TAN22 policy.
- 1.3 This consultation deals with the potential inclusion of aspects of the CfSH and BREEAM considered suitable for inclusion into building regulations. These proposals are based on the Mott MacDonald analysis of CfSH and BREEAM
<http://gov.wales/topics/planning/planningresearch/publishedresearch/planning-for-sustainable-buildings-review/?lang=en>
- 1.4 Based on the Mott McDonald analysis, the following topics relevant to current Welsh Government policies were identified:
 - Materials: sourcing, and life cycle impact;
 - Acoustic performance;
 - Information provision to the end user;
 - Water efficiency
 - Residential Security;The following were deferred to future review:
 - Energy efficiency;
 - Drying space
 - Lighting.
- 1.5 Following two rounds of technical Working Party meetings and consideration by the Building Regulations Advisory Committee for Wales (BRACW) proposals for water efficiency and residential security were developed together with advisory guidance on the information to the end user topic.

Post Consultation

- 1.6 The Welsh Government published a Building Regulations Sustainability Review public consultation from 1 March 2016 to 23 May 2016, 31 responses were received.
- 1.7 The Welsh Ministers have decided to implement the preferred options (option 2) below for Part G (Sanitation, Hot Water Safety and Water Efficiency) and a new Part Q (Residential security). There are no changes to the impact assessment published as part of the consultation.

2. Rationale for intervention

- 2.1 The Sustainable Buildings national planning policy was introduced for the purposes of supporting the Welsh Governments commitment and obligations to promote sustainable development. Using the CfSH and BREEAM it sought to encourage the incorporation of sustainability into new residential and non domestic developments at a time when control of building standards through building regulations had not been devolved.
- 2.2 In 2012 functions under the Building Act 1984 were transfer to Welsh Ministers. It was subsequently determined that the national planning policy be withdrawn and that aspects of sustainability be investigated for potential incorporation in building regulations for Wales. The first step in this work were the changes introduced for Part L (conservation of Fuel and Power) in 2014. The Housing Standards Review in England and decision by DCLG to wind down the CfSH was a consideration in the timing of this work.
- 2.3 The England & Wales Crime Survey states that 'Households where there are no home security measures were almost ten times more likely to have been victims of burglary than households where there were simple security measures such as deadlocks on doors and windows'.
- 2.4 The two most common means of unlawful entry into a dwelling are through doors or windows, where these are either left open or can be easily forced open. The level of security of any dwelling can be significantly enhanced by ensuring that all external doors and any windows or glazing in vulnerable locations are manufactured and installed to resist forced entry and also that unauthorised entry into common areas is prevented.

3. Policy objective

- 3.1 The policy objective is to set national standards for topics previously addressed under third party assessment schemes with the intention of reducing costs and duplication.

4. Proposed changes to Building Regulations requirements

Part G (Sanitation, Hot Water Safety and Water Efficiency)

Background

- 4.1 Water efficiency in new dwellings and those created by change of use was introduced in to Part G in 2010. There are no existing provisions for the regulation water efficiency of non-domestic buildings though compliance with the previous BREEAM 'Very Good ' policy a water use reduction of at least 12.5% over the BREEAM baseline was required.

Existing buildings

- 4.2 There are no proposals for buildings formed by a material change of use. The current requirements in Approved Document G (2010 edition) for dwellings of 125l/p/d will remain unchanged for dwellings formed by a material change of use. There are also no proposals in relation to regulating replacement fittings in existing buildings.

New homes

- 4.3 Two approaches are proposed to achieve broadly the same level of efficiency.

Water use limit - Building on the current standard based on the water calculator a 110 litres per person per day limit within Wales is proposed. In line with existing regulations, this will also allow for a fixed factor of 5 litres per person per day for external water usage.

A fittings based approach - a simplified alternative approach based on maximum performance levels for water consuming components that are commonly found within a dwelling. 4 options are offered to allow for higher water consumption in certain components to be offset by another highly efficient component.

- 4.4 For new dwellings an additional requirement is proposed. The installation of water butts within a garden is seen to be a relatively easy and cost-effective solution to external water use savings and a popular one when meeting the requirements under CfSH.
- 4.5 There is currently no provision for non-domestic buildings within regulations. It is being proposed to extend proposals across all non-domestic buildings and given the range of water uses across the wide range of buildings included within the term non domestic it is proposed that a fittings based approach be applied to all new non-domestic buildings (including extensions) in Wales. Unlike in domestic dwellings, it is not proposed that all water use within a property be regulated, but instead only the 'domestic scale' water consuming components which will be present across all building types, including;
- WCs;
 - Urinals;
 - Wash hand basin taps;
 - Showers.

Existing Buildings

4.6 It is not proposed that higher standards be set where an existing building is going through a material change of use (i.e. conversion from existing office building being into apartments) and where an existing fitting is being replaced. Current regulation in Wales requires change of use residential developments to achieve a maximum water use of 125 litres per person per day.

Part Q (Residential security)

Background

4.7 There are currently no requirements within the Building Regulations for Wales in relation to residential security.

4.8 Within Wales the issue of community safety is embedded within National Planning Policy. Technical Advice Note 12: Design, Planning Policy Wales, and Welsh Office Circular 16/94 'Planning out Crime' highlight the importance of community safety in the design of new development. Crime prevention is capable of being a material consideration when planning applications are considered.

4.9 Whilst there are no requirements within Welsh Building Regulations; Registered Social Landlords in Wales are required to comply with the police Secured by Design standards for all developments supported by social housing Grant. Secured by Design was a non mandatory element under the Code for Sustainable Homes.

New dwellings

4.10 The proposal is that standard of physical security apply to new dwellings based on the provisions of British Standard PAS 24, the well established industry standard which sets standards for door and window assemblies including tests and specifications for locks as well as the robustness of the doors and windows themselves.

4.11 It is proposed that the mandatory standard will apply to doors and windows in new dwellings, in particular:

- front entrance door or the primary access to a dwelling;
- secondary external access door i.e. the back or side door but not excluding sliding patio doorsets, French doors or bi-fold doors;
- door connecting a dwelling to a garage or conservatory;
- external windows located at ground floor level and easily accessible; and
- where the window is easily accessible from outside, including rooflights, such as climbing on building projections.

In relation to flats:

- communal entrances to flats;
- secondary access door (i.e. maintenance access) to communal areas within flats;
- access doors to individual flats from communal areas; and
- any glazing which forms part of the glass panel or side panel to a communal entrance door.

4.12 In addition communal entrance access systems for flats (audio/visual) and mail delivery systems associated with flats where access to a communal area is provided are also being considered.

4.13 Since the introduction of requirement Q1 in England applying the same mandatory standard in Wales would provide consistency and clarity for manufacturers, installers and house builders who operate on both sides of the border.

4.14 The Welsh Government is also proposing to introduce security lighting as a mandatory requirement for the illumination of external doors in dwellings. Security lighting is provided to protect property and there are two types of security lighting commonly used in dwellings, high wattage intruder lights that are operated via PIR sensors which only switch on for a short time, and low wattage lighting that is controlled by time switches and daylight sensors.

4.15 The proposals for security lighting include:

- external lighting at the front entrance and at secondary entrances such as rear access doors;
- external lighting for communal entrance doors into a block of flats; and
- lighting within communal areas where access is possible to individual flats.

5. Description of options (including do nothing)

Option 1 do nothing

5.1 This would represent a backward step in embedding sustainability within mandated standards and continue to rely on third party certification incurring the additional costs. This option would need adjustment as and when the CfSH is withdrawn.

5.2 This option would fail to provide the physical security provision to complement planning policy guidance on designing out crime continuing instead to rely individual judgements by developers.

Option 2 the proposed changes

5.3 Option 2 introduces aspects of sustainability to new residential and non domestic buildings which combined with the 2014 changes to Part L address the mandatory features of CfSH and BREEAM. Withdrawal of the TAN22 sustainable buildings

national planning policy reduced costs through removal of the need for third party certification

Monetised and non-monetised costs and benefits of each option

5.4 Adroit Economics has undertaken an Economic Impact Assessment (EIA) of these proposals, assessing:

- the reduced costs to the construction industry of the proposed changes, compared with the current situation (the counterfactual)
- the benefits to dwelling occupiers, where the evidence permits

Cost savings to the construction industry

5.5 Cost savings are achieved in two ways:

- reduced cost of materials and components
- reduced administrative/managerial compliance process costs

Cost savings are calculated as follows

- change in materials and component costs of proposed options compared with the current situation
- change in time (and time costs) involved in administrative/managerial compliance process costs associated with the proposed options compared with the current situation
- but taking account of the cost of transition from the current to the proposed option (time costs)

5.6 Costs are estimated for a range of different building types. The volume of new building for each building type, over a 10 year period, is then estimated. Total costs are calculated by multiplying unit building type costs with the estimated total of new builds for each type, each year, over the 10 year period. The results are present in present value terms, using the standard NPV function, with a discount rate of 3.5%.

5.7 ***The results of the EIA suggest that the proposed policy changes are likely to result in cost savings to the construction industry of between £17.5m to a £23.5m (calculated over a 10 year period (NPV @ 3.5%)).***

5.8 The EIA process is not a precise science, not least because it relies on a number of assumptions. Therefore, in accordance with Government guidance on policy appraisal, the EIA tests the implications of varying key assumptions in the analysis and provides a total of 9 sets of results, each for a different set of assumptions. These are termed EIA scenarios

5.9 The results for each of 9 EIA scenarios are shown in the tables below:

Table 1.1: Scenario analysis results – net cost reductions to industry (10 yr NPV £m)

Net cost reductions to industry (10 Year NPV (£m))			
	low build rate	central build rate	high build rate
low unit costs	£20.1	£21.8	£23.5
central unit cost	£19.8	£21.4	£23.2
high unit costs	£17.5	£19.0	£20.5

Table 21.2: Scenario analysis results –Equivalent Annual Net Cost reduction to industry (10 yr EANC £m)

Net cost reduction to industry (10 Year EANC (£m))			
	low build rate	central build rate	high build rate
low unit costs	£2.3	£2.5	£2.7
central unit cost	£2.3	£2.5	£2.7
high unit costs	£2.0	£2.2	£2.4

Benefits to building occupiers

5.10 The EIA estimates and monetises the benefits of the proposed changes to individual occupiers and to wider society where the evidence allows.

5.11 Regarding proposed changes to water standards, individual dwelling occupiers will benefit from reduced use of both hot and cold water, resulting in reduced water consumption costs (where metered) and reduced energy costs. The net savings to individual occupiers are likely to be minimal. The EIA has therefore not sought to quantify or monetise these.

5.12 Water standard changes, when aggregated across the whole community will result in reduced water extraction and processing costs, and, in reduced energy use – with implications for climate change commitments. Quantification and monetisation of these wider community benefits are not within the scope of this EIA.

5.13 Regarding proposed changes to security standards, essentially the proposals retain the key elements of current security standard (Secure by Design) and continue to apply these to new residential dwellings.

5.14 ***Based on the available evidence in the literature of the monetised benefits of reduced burglary, applied to the house building projections used in this EIA, it is estimated that the resulting reduced cost of burglaries ranges from £16.7m - £48.5m.*** Even under the low impact assumption of a 20% reduction in burglaries, the user benefits outweigh the costs of the proposed policy.

6. Specific impact tests

6.1 Biodiversity and Habitat Regulations

The policy has been assessed as having no impact on:

- disturbance or relief of disturbance to habitats or species through change of land use, light or noise;

- severance, fragmentation, isolation or change in the size of habitats;

The policy presents no opportunities to promote a positive impact on habitats or species.

The policy has been assessed as having no impacts on the protected sites listed below:

Protected sites
Special Areas of Conservation (SAC)
Candidate Special Areas of Conservation (cSAC)
Special Protection Areas (SPA)
Potential Special Protection Areas (pSPA)
Ramsar Sites⁵ (sites designated under the 1971 Ramsar Convention for the internationally important wetlands)

6.2 Sustainable development

Whilst not yet in force the policy proposals have been assessed against the well-being goals contained within the Well-being of Future Generations (Wales) Act 2015 and the principles of sustainable development. The policy review and proposals for consultation are intended to address sustainability issues previously covered by the Sustainable Buildings national planning policy and action aimed at reducing the risk of residential crime. They therefore positively support the goals of prosperity, resilience in terms of future water demands and reduced energy consumed in processes, health and community cohesiveness through the benefits of reduced exposure to crime in the home.

6.3 Climate change

Whilst not specifically assessed the consultation proposals dealing with water efficiency would reduce energy consumed in the processing and transportation and disposal of mains water.

6.4 Equality, diversity, inclusion and human rights

It is envisaged that the proposals will have no impact on human rights. There will also be no additional burdens on the justice system. It is not envisaged that the proposal will have any negative impact on equality in Wales (including equality issues concerning age, disability, faith, gender, race, sexual orientation or transgender), or a negative impact on diversity, social inclusion or human rights, including the rights of children.

6.5 Children's Rights Impact Assessment

It is envisaged that the proposals will have no impact on the rights of children.

6.6 Privacy Impact Assessment

A Privacy Impact Assessment (PIA) has not been undertaken as no personal information, related to groups or individuals, is collected, stored, protected, shared and managed as a consequence of the policy proposals.

6.7 Rural proofing

It is generally acknowledged that rural areas possess a range of attributes and constraints, which differ significantly from those in urban areas. They provide a unique landscape of high environmental quality, an historic settlement pattern and a wide range of social, economic and cultural facilities for the whole of Wales. At the same time there are issues of deprivation and market failure arising from factors such as:

- long term decline in the rural economy;
- on-going social and cultural change - including an ageing and more isolated population, and;
- relatively poor access to services - including affordable housing.

Reviewing the issues (e.g. service provision and availability, delivery costs, economies, communities etc.) where there could be a disproportionate impact in rural locations it is felt that there are no specific impacts that will impact disproportionately in rural areas in Wales.

6.8 Competition assessment

The main markets affected by proposed changes to Part G (water efficiency) and Part Q (residential security) of the Building Regulations are those for the development of new domestic and non-domestic property. The supply chains for the production of materials used in the identified markets may also be affected.

The proposed higher standards mean that building contractors will have to comply with more stringent water efficiency targets and more robust (resistance to forced entry) doors and window requirements. As a result of this, capital costs are expected to increase.

Some of this increase in costs is expected to be passed on to landowners (through reduced land values) and the eventual owners (through higher property prices). The increase in production costs is expected to affect all building contractors broadly equally and the proportion of the additional costs that cannot be passed on to landowners or the eventual purchasers is likely to represent a relatively small percentage of overall construction costs. Any potential competitive impacts on building contractors are therefore likely to be minimal. However, it is possible that smaller developers with less buying power may face proportionally higher cost increases than larger businesses. This is considered separately on the impact of the policy on small firms.

The new standards may have an impact on manufacturers and suppliers to the construction industry by increasing the demand for higher specification materials and products. Suppliers of lower cost or low quality products and materials may be adversely affected by the change in regulations. However, the change in regulations is also expected to provide opportunities for manufacturers and suppliers of efficient bathroom fittings and window and door hardware.

The competition first stage filter test indicates no significant policy impact on competition

6.9 Welsh language

It is not envisaged that the proposals will have an impact on the Welsh language.

6.10 Small firms' impact test

The proposed changes will result in a net saving to businesses as a whole. The analysis has found that savings to business will be £21.4m (at 2016 prices).

The replacement of BREAM and CfSH with specific standards for water and security are likely to have a disproportionately beneficial impact on small housebuilders that typically work on smaller sites. These small sites typically incur a larger **process cost** per dwelling than larger sites. For example, the English HDS Review found that CfSH Level 3 typically incurred a process cost of £645 per house for small schemes and only £96 per house for larger schemes.