

AECB response to Department for Communities and Local Government's (DCLG) proposals for housing water standards

A Consultation Response for the AECB by Cath Hassell Editor: Kate de Selincourt

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The Housing Standards Review (the government's plan to 'remove red tape and get more houses built') is now out for public consultation, and can be downloaded <u>here</u>. The AECB (by virtue of the AECB Water Standards) was asked to be on the Water Efficiency Review Board (one of five sub groups of the Housing Review) and the AECB Water Standards have been used as the blueprint for a proposed water fittings standard – a massive coup for us. We therefore thought it would be good to provide a bit of background information as to how this happened and our responses to the water section in the consultation.

The Water Efficiency Review Board

The Water Efficiency Review Board was an assortment of different interest groups, all deemed to be important in shaping water efficiency in new homes. The board met three times with a lot of strategy meetings in between! The core question we were asked to consider was whether the water calculator (as used to show compliance for Part G and the Code for Sustainable Homes (the Code) was the best way to ensure water efficient new homes, and what levels of water efficiency should be set. I have written extensively in the past about the failings of the water calculator so won't elaborate here. But, in a nutshell, and ignoring the anomalous nature of how the calculator works, it allows rainwater harvesting or greywater recycling systems to offset high flow rates at showers, and treats all water as equal, rather than recognising that a reduction in hot water use reduces energy use, CO₂ emissions and energy bills (all Government aims) as well as water use.

Therefore the AECB and the EST worked in tandem within the review board to highlight the calculator's failings and get a fittings standard introduced. The main dissenters for such a standard were the large housing developers, BRE (who designed the calculator) and the Bathroom Manufacturers Association. Ultimately we were partially successful, in that there is now a proposed fittings standard that is classed as deemed to satisfy the Building Regulations. But the calculator with all its flaws will still remain. Observant members will notice that the suggested base standard is less stringent than the AECB standard with regard to shower flow rate and bath volume. That's politics for you! It was designed to be acceptable to the many voices around the table who think that any shower less than twelve litres a minute equates to a dribble of water and a denial of a basic human right...



The consultation documents

There are three relevant documents for the Housing Standard Review. They are: the Consultation, the Challenge Panel Report and the Impact Analysis, and I have extracted the most relevant points from them in my overview below.

There are a series of core questions that the consultation asks. They are:

- Do we need water efficiency standards?
- Which methodology should be used?
- What level should water efficiency standards be set at?
- Should there be additional local levels?
- Should there be a single, tighter national baseline rather than the proposed national limit plus local variation

The consultation also asks whether the government's estimation of costs incurred are correct, whether their assumption of the number of homes that are built to a higher water efficiency standard are correct and what extra planning requirements with regard to water use are currently used.

I have set given some background to each of the core questions followed by the AECB response to the consultation. You are welcome to copy and paste our responses directly or use them as a template to write your own.

Do we need water efficiency standards? - Some background

Households use about 50% of the water put into the public supply. Minimum water efficiency standards were introduced into the Building Regulations in 2010, but only for housing - and as the Housing Standards Review only addresses housing, there are still no water efficiency requirements for non-domestic buildings. Water efficiency in those buildings are basically met by adhering to the Water Regulations (statutory) and BREEAM (where required).

The 2010 regulations require that all new homes are designed so that their *calculated* water use is no more than 125 litres per person per day. Despite the Government's statement that: "*the provision promotes the fitting in new homes of more water efficient baths, taps and showers*"; this isn't actually true as developers can install showers with a flow rate 12 litres/minute and conform to Part G. Despite this, the Government position is that *'there is a strong case for a minimum level of water efficiency in new homes, and the baseline should be set out through a legislative requirement in Part G of the Building Regulations*'.

Standards on water efficiency over and above Building Regulations can currently be required for new homes through the planning system, usually by requiring homes to be built to a specific level of the Code for Sustainable Homes.



Code Level	Water Efficiency Standard (litres/person/day)
1 and 2	120
3 and 4	105
5 and 6	80

It is Government policy that this will no longer be possible as a requirement for a particular Code will no longer be allowed. (The Code will become a voluntary standard only.)

Do we need water efficiency standards? - AECB response

Q 40. Do you agree a national water efficiency standard for all new homes should continue to be set out in the Building Regulations?

Yes. A water efficiency standard for all new homes should be a priority. It is important that we futureproof water supplies and reduce the amount of water we use, both now and in the future. Whilst some areas of England and Wales have sufficient supply, there is still a carbon load to producing potable water, cleaning used water, and water heating. A water efficiency standard for all new homes ensures that a wide range of water efficient fittings are available on the UK market, thus also enabling ease of retrofitting for water efficiency.

In view of the significant impact of water system design on the energy demand of water systems (as well as their contribution to the risk of overheating). AECB urges DCLG to incorporate calculation of the heat loss from hot water circulation (length and bore of pipe runs, water temperature and pipe and tank insulation) into the procedure for assessing energy use and emissions (SAP).

Which methodology should be used? - Some background

This is the point where we want to make the case for a fitting standard in the strongest possible terms. I am fairly confident that the Government want to have a fittings standard as an option to the water calculator as the following statement shows: *'The inherent flexibility* (of the water calculator) *allows less efficient hot water using fittings to be offset by more efficient other fittings. In particular, more water efficient cold water fittings such as WCs are often specified to allow higher flow showers to be installed which has a consequent impact on energy use and ultimately household bills.'* They summarise that: *'... meeting minimum specification standards* (i.e. a fittings standard) would be deemed to comply with the water efficiency requirement. It is proposed that guidance in Approved Document G would be amended to reflect this approach and similarly any additional standard would be set in terms of a whole-house approach with fittings standards provided as an alternative way of demonstrating compliance.'

But nothing is set in stone until it happens, and there will be a lot of high level politicking which we will not have access to once the public consultation ends. Therefore, the more support for a fittings standard at this point the better.



Which methodology should be used? – AECB response

Q 41. Do you agree that standards should be set in terms of both the whole-house and fittings-based approaches?

No. The AECB considers that the Water Calculator approach is fundamentally flawed and is not fit for purpose. It does not ensure water efficient homes, nor provide a way by which the fittings installed in new homes can be easily calculated. A fittings based approach ensures that all the water fittings are efficient as there is no ability to offset an efficient fitting against an inefficient one. We welcome the fact that a fittings standard is being recommended as deemed to satisfy. We would like to see a fittings standard as the <u>only</u> option to demonstrate a water efficient dwelling.

What level should water efficiency standards be set at? –Some background

The Government's position is that: 'the existing Part G sets a reasonable level of water efficiency and should remain as the regulated, national baseline'.

The Housing Standards Review Challenge Panel was very critical of this stance stating that: 'The 120 litres per person per day (I/p/d) performance target for water usage in new homes has been set too low as the 'lowest common denominator' level and is simply reflective of the current requirement in Part G of the Building Regulations. A higher target of 105l/p/d is achievable without compromising quality or functionality of potable water utility and should be applied as a national standard to all homes with no differentiation between different parts of the country.'

We completely agree with the Challenge Panel's position, but getting a single lower level agreed by the review board as it was constituted, was never going to succeed. So our strategy at the time was to suggest two levels of water efficiency, with the expectation that most Local Authorities would require the higher level. The important thing was to get a water fittings standard in place.

The table below -- as proposed by the AECB and the EST, and now incorporated in the DCLG proposals -- shows the maximum flow rates/volumes of all fittings to demonstrate that the overall baseline efficiency standard has been met.¹ If any of the fittings exceed the value in the table, the Water Calculator must be used to demonstrate compliance. Similarly, where waste disposal units, water softeners or water re-use is specified the Water Calculator must be completed.

Water Fitting	National Base Level
WC	6/4 litres dual flush or 4.5 litres single flush
Shower	10 l/min

¹ The reference to dishwashers and washing machines is irrelevant, and confuses the issue. They are the default settings used in the calculator if a washing machine or dishwasher is not installed during the build but will be fitted by the householder later.



Bath	185 litres
Basin Taps	6 l/min
Sink taps	8 l/min
Dishwasher	1.25 l/place setting
Washing Machine	8.17 l/kilogram

The AECB water standard sets a maximum shower flow rate of 8 litres/minute. It was always going to be difficult to get, in effect, a 50% cut into the shower performance (down from the current default choice of developers for 12 litres/minute flow rate at showers), and as this is a base standard we eventually agreed with the EST that we wouldn't push for 8 litres a minute and would support a 10 litres/minute flow rate at the base level.

What level should water efficiency standards be set at? – AECB response

Q42: Do you agree that the national minimum standard set in the Building Regulations should remain at the current Part G level? (see also Question 43)

No. We consider that the water efficiency of new dwellings would be better served by a requirement to meet the higher 'additional local level' targets in all areas of England and Wales to show a movement forward from the 2010 Regulations, and a recognition that reducing water use (especially hot water use) leads to a reduction in CO_2 emissions.

Should there be additional local levels? - Some background

The water demand/supply balance varies significantly between different parts of the country. The working group was clear that where there is a need local planning authorities should be able to require a local water efficiency standard. It was agreed to be the following.

Water Fitting	Additional Local Level
WC	4/2.6 litres dual flush
Shower	8 l/min
Bath	170 litres
Basin Taps	5 l/min
Sink taps	6 l/min
Dishwasher	1.25 l/place setting
Washing Machine	8.17 l/kilogram



Should there be additional local levels? – AECB response

Q43. Do you agree that there should be an additional local standard set at the proposed level?

Our view on this depends on whether or not it is straightforward for planning to require this additional local standard, based only on the local sustainable development plan and/or a simple demonstration of local water stress without the need for third party agreement. If the "additional local standard" is going to be subject to the various conditions as set out in the Review (e.g. needs and viability testing, consultation with developers etc) before it can be applied, then the base level standard should be tightened to ensure that the necessary water and carbon savings are realised nationwide (see answers to 45 & 46)

Should there be a single, tighter national baseline rather than the proposed national limit – Some background

During the review board there was a very strong view that there should be tighter regulations in areas of England and Wales which are considered to be under water stress. Between the end of that process and the consultation coming out, the government has changed the goalposts quite dramatically. Now, the 'requirement for a higher water efficiency standard within a local plan will only be able to be made after consultation with the local water supplier, developers and the Environment Agency and is consistent with a wider approach to water efficiency as set out in the local water undertaker's water resources management plan. Whilst this makes sense in some ways, it basically means that it is very unlikely that the higher level will be implemented, especially with the involvement of developers!

Should there be a single, tighter national baseline rather than the proposed national limit – AECB responses

Q45: Would you prefer a single, tighter national baseline rather than the proposed national limit plus local variation?

Yes. The AECB agrees with The Challenge Review panel who state: 'A single national standard for all homes is an appropriate and better alternative to the two tier system proposed.' It is important that we have water efficient homes throughout England and Wales. The current baseline (unimproved from current Part G) is set too high, and the tighter local standard should be implemented nationally via Part G.

Q46 Do you agree that local water efficiency standards should only be required to meet a clear need, following consultation as set out above and where it is part of a wider approach consistent with the local water undertaker's water resources management plan?

No. We are concerned that the requirement for local planning authorities to consult with developers, the Environment Agency and local water suppliers to implement the tighter standard will prove too costly and time consuming such that the lower default standard will consistently be used, and the necessary carbon and water savings will not be made.



Q47 Should there be any additional further restrictions/conditions?

Yes. If a tighter base standard is not implemented then there should be tighter local standards available – and these must be straightforward to implement (see answer to Qs 43, 46 & 49).

Costs

In the Impact Assessment costs are divided into 'do nothing' or 'Option 2'. Under the Option 2 alternative to rationalise the amount of housing standards, costs are considered to be £43 for a flat and £68 for a house. The Government also considers there is a cost to filling out the water calculator.

Q 48 Do you agree with the unit costs as set out in the accompanying Impact Assessment for the "do nothing" and "option 2" alternatives? If you do not agree, please provide the evidence to support your alternative figures

No. We consider that unit costs for ensuring water efficient homes under both the proposed base fittings standard and tighter fittings standard need be no greater than for water inefficient homes. Most of the costs of water fixtures and fittings are a function of branding and/or design and not of water efficiency. In addition, following the fittings based standard is simple and straightforward and saves on the costs of having to fill out the water calculator to prove compliance.

Planning

Q 49 Do you agree with the number of homes which we estimate will incorporate the proposed tighter water standard in the accompanying Impact Assessment? If you do not agree, please provide the evidence to support your alternative figures

No. An assumption is made in the Impacts Review that approximately 39% of new homes will incorporate the proposed higher water standard. That figure is based on the number of homes which currently incorporate the Code for Sustainable Homes. We would hope that a greater percentage of homes would be built to the tighter water standard. Most new homes are being built in the south east where water stress is high, and many Local Authorities are keen to ensure that homes built in their areas are water efficient. However, we consider that the new stringent requirements to enable a higher level to be adopted will rule it out in virtually all areas, and that the number of new homes that will incorporate the tighter water standard will be far lower than 39%.



Question 50 is for Local Planning Authorities. This is to try to understand the level of requirement currently for a higher standard of water efficiency than the national baseline, and if they are likely to implement it in the absence of the Code.

Q 50. Do you currently require through planning that new homes are built to a higher standard of water efficiency than required by the Building Regulations through:

a) a more general requirement to build to Code Level 3 or above? Or

b) a water-specific planning requirement? And

c) are you likely to introduce or continue with a water-specific water efficiency standard (beyond the Building Regulations) in the future?

N/A for AECB.

(Of course, if you are a Planning member of the AECB then please fill this in based on information from your local area.)

QA4.1 Are the proposed performance requirements for the higher level of the water standard pitched at the right level? Please indicate which of the options below you agree with.

a) it goes too far, and should be reducedb) it is about rightc) it doesn't go far enough

B – We consider that the proposed tighter level is 'about right'.

The performance spec for the tighter level of the fittings standard was chosen with careful attention to what is currently being installed in new homes, what is available on the UK market, how efficient the appliance is - as rated on the Water Product List (WPL) and whether householders will be satisfied with the result.

The WC flush volumes at dual flush 4/2.6 are the most efficient on the market. Well designed WC pans flush effectively at these volumes. Large developers are commonly installing WCs flushing at these low volumes to meet Level 3 of the Code for Sustainable Homes. (This is because if they do this the water calculator allows them to install showers with a flow rate of 12 litres/minute.). These WCs are classified as dark green under the WPL.

A shower with a flow rate of 8 litres/minute is twice as high as the best performing electric shower, and is higher than the flow rate in many hotels (even 4 star hotels) unless multi nozzle showers are installed. This flow rate is classified as light green under the WPL. There are many showers on the UK market available at this flow rate.



A bath with a volume of 170 litres is rated light green under the WPL. There are many baths of this volume available on the UK market. A bath of this volume will still be the standard length of 1700 mm, allowing users to lie down comfortable in the bath for relaxation purposes. A bath at this volume will be the standard depth of 400mm from the top of bath to base of bath (excluding bath legs) ensuring that baths are easy to get out of and to lower oneself into, thus meeting the required standard for lifetime homes.

A flow rate of six litres a minute from kitchen sinks is classified as dark green under the WPL. It will ensure fast fill of kettles and saucepans, (5 to 10 seconds) fast fill of bowls (20-30 seconds) and relatively fast fill of buckets (45-60 seconds). The AECB considers that a flow rate of 5 litres/minute from basins and bidets could easily be reduced to 4 litres/minute, but we suggested that flow rate since 5 litres/minute is classified as dark green under the WPL. There are many kitchen taps and basin and bidet taps available on the UK markets that will meet these flow rates.

Going lower than the proposed levels under the fittings standard risks dissatisfaction from users about flow rates or bath volume. Going higher means that the "tighter standard" will not be tight enough to have a meaningful effect on water efficiency.



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