DCLG Water Efficiency Standards Review – BRE's Water 'Calculator' v AECB's Water Standards

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Cath Hassell

cath.hassell@ech2o.co.uk

Who are ech$_2$o and what do we do?

- We are environmental consultants specialising in sustainable water strategies and low carbon or renewable technologies
- We work in new build or existing buildings
- We work with occupants of the building to change their behaviour as well as identifying the best technological solutions
- Our clients include local authorities, housing associations, schools and colleges, water companies, architects, community groups, and householders

Why the Review?

- One of a series of reviews as part of the Govt's 'get rid of red tape' initiative to enable volume housebuilders to build more
- To provide certainty for housebuilders and a level playing field
- Because "the Code is dead" (Though maybe it isn't now)
- And also?... Water stress in certain areas of the UK? Govt recognition that water consumption needs to be managed better? Carbon load of supplying mains water and treating sewage? Carbon load of heating water?

Why a fittings based standard?

- Transparent - Ensures no water wasting fixtures and fittings will be installed
- Allows consumer/architect/housebuilder choice
- Differentiates between hot water and cold water appliances
- Provides a level playing field between, and for all, dwellings
- Means we know what has been fitted if a house meets a particular standard
- Allows for market place innovation

Also addresses the fact that people who use more than the average amount of water, use far more for personal washing and bathing

Breakdown of average domestic water usage in the UK

Wash basin	8%
Toilet	35%
Dishwasher	4%
Washing machine	12%
Shower	5%
Bath	15%
Kitchen sink	15%
Outside use	6%

Source: Environment Agency 2001

Why not calculator based?

- User cannot see why a certain appliance has a large or small change on the overall result
- Too easy to specify high water using appliances in a house with multiple bathrooms.
- Considers hot water and cold water use as equal
- Stating to the nearest litre the “average” water use of a person in a property is based on too many variables to give a useful indicator of consumption.
- Doesn't take a figure and divide it by 0.91 to make it fit!

The average user…

- Stays under the shower for a certain length of time, not dependent on flow rated dependent on what doing in shower. If shaving, washing hair then stay under longer. Therefore any reduction in flow rate saves water.
- Fills bath to a certain depth. Therefore smaller volumetric bath means they use less water.
- One-off examples such as “my uncle bob who spends 5 minutes longer in a shower with a low flow rate to wash his hair” are irrelevant.

The elephants in the room

- Swimming pools, spas, hot tubs, pop up sprinkler systems…… all classed as 5 litres/person/day
- Could be easily addressed under a fittings based standard
- Though everyone (including the AECB standards) runs shy of doing so

AECB Good Practice Standard - Domestic

AECB Good Practice Standard	
Appliance	**Maximum flow rate or flush volume in litres**
WCs	6/4 litres dual flush or 4 .5 litres single flush
Showers	8-10 litres/min
Baths	180 litres max
Basin and bidet taps	4-6 litres/min
Sink taps	6-8 litres/min
Dead legs	< 1.5 litres
Dead legs off secondary circulation	< 0.5 litres
3.5 bar max pressure controlled by PRV. Leak detection shut off device	A water meter inside the building Outdoor taps to be sub metered
Appropriate number of water butts relative to garden size and layout	

A Fittings Standard – Base Level

Proposed Base Level of Fittings Standard		
Appliance	**Maximum flow rate or flush volume in litres**	**WPL colour**
WCs	6/4 litres dual flush or 4 .5 litres single flush	light green
Showers	10	light green
Baths	185	yellow
Basin and bidet taps	6	dark green
Sink taps	8	light green

A Fittings Standard – Higher Level

Proposed Higher Level of Fittings Standard		
Appliance	**Maximum flow rate or flush volume in litres**	**WPL colour**
WCs	**4/2.6 litres dual flush**	**dark green**
Showers	**8**	**light green**
Baths	**170**	**light green**
Basin and bidet taps	**5**	**dark green**
Sink taps	**6**	**dark green**
Basin and bidet taps could be 4 but there are lots of basin taps that are 5 litres/min on the WPL list Baths could stay at 185 but there are a lot on the list that are 170 litres or less		

So what happened 1?

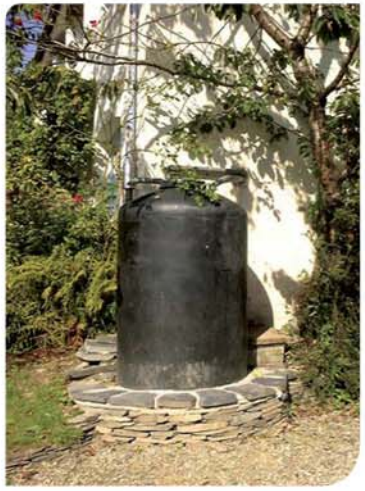
- In a perfect storm of fudge the following was to go to public consultation in March 2013. (Currently delayed)
- The base level fittings standard would be deemed to satisfy Part G of the Building Regulations (120 litres/person/day)
- The higher level fittings standard would be deemed to satisfy levels 3 and 4 of the Code (105 litres/person/day)
- If housebuilders want to continue to use the water calculator they can
- Rainwater harvesting and greywater recycling would be incentivised in another way probably through planning

Solutions from ech$_2$o - water

- Identification of best water efficiency solutions and CSH solutions.
- Feasibility studies and design guidance for rainwater or greywater (new build or retrofit).
- Identification of most effective SUDS solutions for existing buildings including green roofs.
- Water audits of existing buildings – residential, commercial, educational and public.
- Work with stakeholders to change behaviour around water use.

ech2o

ech2o consultants ltd work with a range of stakeholders to successfully incorporate sustainable water and low carbon solutions into the built environment.



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