Construction Services

Building Strategy

Water Efficiency in Buildings

Version 1.2 January 8th 2012

Environment Directorate
# Building Strategy

## Water Efficiency in Buildings

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1.0 Strategy

To increase water efficiency in Cornwall Council’s buildings.

Demand for water continues to increase whilst supplies are falling; improving water efficiency in Council buildings will play a major role in achieving sustainable supply demand. Reducing water usage is both an environmental initiative and one that will also help to save the Council money and reduce their carbon footprint.

2.0 Proposal

The following are proposals for setting construction standards for water efficiency in new and refurbishment building projects and system upgrades of existing buildings for Cornwall Council properties.

All new and refurbished building projects and plumbing infrastructure upgrades will be required to comply with the following strategy. After consultation, technical evidence is to be provided to support proposals for reducing water consumption to existing buildings and setting water consumption targets for new buildings.

Cornwall Council wants to encourage saving water and the use of products developed specifically for this purpose. These environmentally friendly products must also be robust, durable and designed to reduce long term maintenance and cleaning cost.

3.0 Sanitary fittings generally

All fittings are to be Water Regulations Advisory Scheme (WRAS) approved and comply with The Water Supply (Water Fittings) Regulations 1999.

Selecting products from the Water Technology List for approved products can contribute towards savings.

Replacement, refurbishment and installation of water efficient sanitary fittings must be considered when carrying out maintenance works.

4.0 Toilets & changing generally

Integrated Plumbing Systems (IPS) are preferred for toilets and changing rooms, with concealed pipework to avoid dirt and germ build up. They also offer the potential for effective cleaning and reduce the opportunity for vandalism.

5.0 W.C.’s

- W.C.’s should be wall hung from IPS system with concealed cisterns and pipework
• All W.C.’s to new and refurbishment works to have low flush cisterns of 4 or 4.5 litres with delayed flush, and the pan must be designed to work with this amount of water. Use e.g. delayed action inlet valve, which saves water by preventing the cistern refilling until the flush is finished.
• When refurbishing, cisterns with a capacity of over 6 litres should be replaced

6.0  Wash hand basins

• Wash trough sinks are preferred except where a single basin is required
• Wall mounted no touch water outlets (shut off automatically by IP65 rated sensor control) are preferred
• Integrated wash systems (or similar) can be considered for approval
• Water supply to the taps should be at a premixed temperature 41°

7.0  Urinals

• Urinals are to be avoided in favour of a W.C.
• If unavoidable, urinals are to replace a W.C. within a cubicle, with door remaining and electronic controlled flushing device provided, waterless urinals are to be considered.
• Trough type urinals are not to be specified

8.0  Baths

• Where specified, baths are to be carefully selected with consideration given to water efficiency and use

9.0  Showers

• Efficient showers to be specified – no touch, thermostatically controlled, timed-in, auto shut-off showers and low-flow showerheads preferred (pressure of at least one bar required)
• Refurbished showers to have flow restrictor or water saving shower heads retrofitted to restrict flow (noting water saving shower head requires a pressure of at least one bar). Water efficient outlets should take priority before specifying flow restrictors to reduce flow rates
• Water supply to the outlets should be at a premixed temperature 41°
• Maximum flow rate for shower outlets shall be 0.2 litres per second

10.0  Taps/Outlets

• If a single wash hand basin is specified taps shall be water efficient.
• Water supply to the taps should be at a premixed temperature as specified, controlled with a Thermostatic Mixing valve (TMV) within 1.5m of the outlet. The TMV shall meet the scheme standard with built
in full flow strainers, shut off valves, auto safety shut-off (should one fail), integral check valves, flow regulators and flushing kit

- All taps/outlets should be serviced/refurbished/replaced accordingly on refurbishment projects
- All new installations should have an isolation device which complies to the Water Regulation 1999 and BS 6700:1997
- Maximum flow rate for taps/outlets shall be 0.10 litres per second
- Note: use of water efficient outlets should be considered before reducing flow rates. In some cases the use of flow controller may be inappropriate i.e. kitchen/cleaners sinks

11.0 Hydrotherapy pools

- A pool cover shall be fitted to all new and refurbished hydrotherapy pools

12.0 School kitchens

- School Kitchens shall be sub metered, with automatic readings in m³ per minute transmitted to Building Management System (BMS), stored and forward transmitted to Cornwall Council database
- Water efficiency of fittings to be taken into consideration when specifying. Select fittings from the Water Technology List for approved products [www.hmrc.gov.uk/capital-allowances/fya/water.htm](http://www.hmrc.gov.uk/capital-allowances/fya/water.htm)
- Consideration must be given (and evidence provided) of how water usage in kitchens can be reduced
- Signage to be installed next to taps as a reminder of water efficiency when taps left running
- Combination ovens: top spray system for steaming preferred instead of boiling a tank to create the steam. Flow rate should be set to the agreed manufacturers requirement
- Automatic potato peelers: water supply flow rate should be set to the agreed manufacturers requirement
- Waste disposal units: consideration should be given to their need, and any alternatives that reduce water use
- Dishwashers: to be specified instead of sterilising sinks
- Bain-maries: should be dry ones
- Sinks: use of sinks to be considered when specifying size

13.0 Meters and monitoring equipment

- Meters and monitoring equipment to be considered and agreed for each individual project - i.e. flow meters and water management software will be required and linked to a building management system (BMS) stored and forward transmitted to Cornwall Council database
- A method of leak detection required on the mains incoming supply and supply to individual blocks
14.0 **Sanitary shut off valves**

- Consideration shall be given for adding a single solenoid to the pipework serving toilets and connecting it to a passive infraRed (PIR) sensor. This provision may provide an additional BREEAM point.

15.0 **White goods using water**

- Purchase of all new washing machines and dishwashers shall consider water efficiency rating.

16.0 **Outside watering**

- Provide positive shut off and control to items using water externally e.g. fountains and sprinklers.
- Planting Schemes to consider drought tolerant plants.
- Provide mulching and bark to planting areas.
- Ensure hoses have trigger nozzles to provide more control of water and accurate delivery.

17.0 **Generally**

- Recycled paper towel holders sheets are preferred for hand drying as the most hygienic and environmentally friendly method of hand drying.
- Use of alternatives (fittings and system) are to be justified and submitted for approval.

Prepared by:

**Strategic Planning and Standards**

Property Services

8th January 2012

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