

Rainwater Harvesting: Regulatory Aspects

A white Paper from RainWaterHarvesting.co.uk

Scope of this paper

A MARKET DESTINED TO GROW

Until three or four years ago, rainwater harvesting was barely heard of. There were a select few who could see the logic of using rainwater collected off roofs whenever mains quality water was not necessary. But now many areas of Great Britain are actually under water stress. There are three ways to save on mains water consumption: alter people's behaviour, install water efficient appliances and use rainwater. A combination of all three is the way forward and at **RainWater Harvesting Limited** we aim to make rainwater harvesting practical and attainable for both the consumer and professional.

RAINWATER HARVESTING IS A MUST NOW

Reducing mains water consumption is virtually obligatory in all new construction, and rainwater harvesting helps meet the new consumption limits. The Code for Sustainable Homes made it mandatory for the social sector, and will eventually make it mandatory for the private sector also. The change in Building Regs in April 2010 obliges the private sector as well, making a 125 litre daily consumption per person the rule. Certainly this figure is much higher than the levels set by the Code but now water consumption will have to be considered as a matter of course in all new builds.

RULES AND REGS EVOLVING RAPIDLY

Rainwater harvesting is a new industry and slowly it is becoming more regulated. **RainWater Harvesting Limited** tries to keep abreast of all these changes and keep its clients informed.

Here is a summary of the current regulations applicable to rainwater harvesting as we understand it.

This paper includes some interpretation of, and comment on, the applicable regulations. As such, it should not be taken as authoritative. Any interested party should make their own research into the source material or take professional advice. RainWaterHarvesting.co.uk and the authors cannot be held responsible for the result of applying information in this paper without checking.



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1. The UK Government and rainwater harvesting. Summary

Rainwater harvesting is being imposed and encouraged by authorities in several ways. Compared to other countries like Germany it would appear that the UK regime is more "stick" than "carrot", i.e. the incentives are sparse and not so far applicable to consumers.

Rainwater harvesting is a relatively new industry. Water Regulations are applicable in respect of cross contamination, and a new British Standard is initiating the process of imposing codes of practice for all aspects of the industry.

In this white paper we give some detail on the following:

- a) The **Code for Sustainable Homes** now puts pressure on builders to install rainwater harvesting in new-builds.
- b) **Building Regulations Part G** (April 2010) makes 125 litres the standard for mains water consumption per head per day.
- c) As of December 2007 councils give expeditious and sympathetic handling of **planning permission** to applications which include rainwater harvesting.
- d) **Flood and Water Management Bill** (April 2010) Suspension of automatic right to connect to sewers encourages rainwater harvesting to help alleviate flood threats
- e) **Flood and Water Management Bill** also gives water boards greater **hosepipe ban** powers during water shortages. Hosepipes will be banned for topping up pools, hot tubs and decorative ponds, as well as for watering gardens and outdoor cleaning.
- f) **Water Supply Regulations**. Applicable to required air gap to avoid cross-contamination between rainwater and mains water, and to clearly identifiable rainwater pipework.
- g) **BREEAM (BRE Environmental Assessment Method)** is the leading and most widely used environmental assessment method for buildings.
- h) Businesses can benefit from the **Enhanced Capital Allowance** scheme to get a tax rebate (6 below).
- i) **British Standard 8515** came out in February 2009 on rainwater harvesting.

2. UK Government : Code for Sustainable Homes and Building Regulations

The **Code for Sustainable Homes** encourages the installation of rainwater harvesting in new-builds.

Rainwater harvesting is just one of the many options being encouraged in the building industry towards a more sustainable future. The Code for Sustainable Homes (introduced in April 2007) sets a target of reducing drinking water consumption per person per day from the current average of 150 litres to an optimum 80 litres. In the public sector, Code Level 3

(maximum consumption of 103 litres a day) has been adopted as the current "Best Practice" standard and since May 2008, all social housing is required to meet level 3 as a minimum.

As of 1 May 2008, this Code is mandatory:

"A rating against the Code for Sustainable Homes, which measures nine categories of sustainable design including energy, water and waste, will be required for all new homes. Homes which exceed the sustainable standards in existing Building Regulations will be awarded up to six stars. Those homes that have not been assessed against the Code will score a nil-rating"

The Code for Sustainable Homes applies to new homes only and it is not obligatory for the private sector to follow the code. However all buyers must now be given info on the sustainability of the home.

Either the builder can have home assessed according to code and give buyer a certificate with points total for HIP. Extra points if 30% of water used is rainwater or grey water.

Or the builder applies for nil rating certificate.

However this could well change to include the private sector. It will become mandatory for the private sector to follow Code targets for the energy category in 2010, so it could become mandatory for the water category soon after.

http://www.planningportal.gov.uk/uploads/code_for_sustainable_homes_techguide.pdf page 98

The Code is only 3 years old and is already being revised. For the current latest version at any time, see www.communities.gov.uk/thecode

Please note:

"Only RW recycling systems providing water for internal use are dealt with here. RW collection for watering gardens is covered in Wat 2 – External Potable Use."

3. Change in Building Regs Part G, Regulation 17K

This is a significant change, because everyone has to meet Building Regs so all new construction will have to meet the target of 125 litres per person per day. This is not as strict as Code requirements but now the private sector has to take water consumption into consideration. This change was coming into effect in October 2009 but was postponed till April 2010.

"12. The Amendment Regulations introduce a new requirement in the Building Regulations, regulation 17K, which requires that for any new dwelling the potential wholesome water consumption by persons occupying it must not exceed 125 litres per person per day. The potential consumption must be calculated in accordance with the methodology set out in *The Water Efficiency Calculator for New Dwellings*, published by the Department.

11. Regulation 17K will apply where a new dwelling is erected or where a new dwelling is created by a material change of use where a building (or part of a building) is used as a dwelling where previously it was not or where a building (or part of a building) contains a flat where previously it did not."

For the Calculator see

http://www.planningportal.gov.uk/uploads/br/water_efficiency_calculator.pdf

Or <http://www.communities.gov.uk/publications/planningandbuilding/watercalculator>

The Building Regs change also encourages using rainwater for WCs which do represent @ 30% of mains water use in the typical home:

"New requirements on cold water supply (G1). There must be a supply of wholesome water for the purposes of drinking water and to washbasins, fixed baths, bidets and showers and any sink provided in an area where food is prepared. There must be a supply of water of a suitable quality to sanitary conveniences fitted with flushing devices."

For more details, see Circular date May 09, page 3

<http://www.communities.gov.uk/documents/planningandbuilding/pdf/1234622.pdf>

And also at:

Department for Communities and Local Government

Sustainable Buildings Division

Eland House

Bressenden Place

London SW1E 5DU

Tel: 020 7944 4400

Fax: 020 7944 5719

E-mail: enquiries.br@communities.gsi.gov.uk

4. UK Government: Planning Applications with rainwater harvesting are favoured

Local Planning authorities are adopting the Code for Sustainable Homes as a means to improve building standards regionally. It is increasingly becoming a condition of planning consent for new developments and buildings to meet a specified Code level, usually level 3.

Planning Policy Statement: Planning and Climate Change, Supplement to Planning Policy Statement 1

Published	17 December 2007
Type(s)	Legislation and policy
Site	Planning, building and the environment
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As of December 2007 councils give expeditious and sympathetic handling of **planning permission** to applications which include rainwater harvesting, as follows:

“40. An applicant for planning permission to develop a proposal that will contribute to the delivery of the key Planning Objectives set out in this PPS should expect expeditious and sympathetic handling of the planning application”.

“42. In their (i.e. planners) consideration of the environmental performance of the proposed development

- give priority to sustainable drainage systems, **paying attention to the potential contribution to be gained from water harvesting from impermeable surfaces** and encourage layouts to accommodate grey water recycling”

<http://www.communities.gov.uk/documents/planningandbuilding/pdf/ppscclimatechange.pdf>

Following severe flooding during the summer of 2007 and 2008, Point 42 above was reaffirmed on 1 October 2008 when planning regulations on hardstandings were changed:

“From 1 October 2008 the permitted development rights (see Glossary) that allow householders to pave their front garden for hardstanding without planning permission have changed. Planning permission is now required to lay traditional impermeable driveways that allow uncontrolled runoff of rainwater from front gardens onto roads, because this can contribute to flooding and pollution of watercourses.

If a new driveway or parking area is constructed using permeable surfaces such as permeable concrete block paving, porous asphalt or gravel, or if the water is otherwise able to soak into the ground you will not require

planning permission. The new rules will also apply where existing hardstandings are being replaced. The new rules apply to hard surfaces exceeding 5 square metres in area."

"What are the options? (see section 2 page 9)

Water from a paved surface can be dealt with using three main approaches:

- Soaking into ground (soakaway)
- Rainwater harvesting (see Glossary) or storage for later use
- Flowing to the drains, but this should be the last option considered and might not be permitted development

From "Guidance on the permeable surfacing of front gardens" Communities and Local Government publication :

<http://www.communities.gov.uk/documents/planningandbuilding/doc/969973.doc>

5. Flood and Water Management Bill (April 2010)

This new bill aims to encourage the uptake of sustainable drainage systems by removing the automatic right to connect to sewers and providing for unitary and county councils to adopt SUDS for new developments and redevelopments. The Bill establishes a SuDS Approving Body (the "SAB") at county or unitary local authority levels.

The SAB would have responsibility for the approval of proposed drainage systems in new developments and redevelopments, subject to exemptions and thresholds. Approval must be given before the developer can commence construction. Rainwater harvesting is seen as one method of absorbing excess rainwater.

This Flood and Water Management Bill also gives water boards greater **hosepipe ban** powers during water shortages. These include:

- (a) watering a garden using a hosepipe;
- (b) cleaning a private motor-vehicle using a hosepipe;
- (c) watering plants on domestic or other non-commercial premises using a hosepipe;
- (d) cleaning a private leisure boat using a hosepipe;
- (e) filling or maintaining a domestic swimming or paddling pool;
- (f) drawing water, using a hosepipe, for domestic recreational use;
- (g) filling or maintaining a domestic pond using a hosepipe;
- (h) filling or maintaining an ornamental fountain;
- (i) cleaning walls, or windows, of domestic premises using a hosepipe;
- (j) cleaning paths or patios using a hosepipe;
- (k) cleaning other artificial outdoor surfaces using a hosepipe.

DEFRA can make a new Drought Direction that supercedes Water Board powers, which could impose these extended hosepipe bans at any time,

and extend the ban to some commercial uses such as washing boats and public transport vehicles.

However, even under a Drought Direction, newly constructed pools could be filled up. However, there would be a time limit to prevent topping up at later stage.

See www.defra.gov.uk/news/2007/071022 for results of consultation paper

6. BREEAM: Assessment of Non-Domestic Buildings

BREEAM (BRE Environmental Assessment Method) is the leading and most widely used environmental assessment method for buildings. It sets the standard for measuring a building's sustainable performance and assesses buildings against a set criteria providing an overall score which will fall within a band providing either a PASS, GOOD, VERY GOOD, EXCELLENT or OUTSTANDING rating. There is a water category where the predicted water use - m³/person/year and % predicted water use to be provided by rainwater or greywater must be given.

BREEAM building assessments are required by various regulatory and government organisations:

English Partnerships

Office of Government Commerce (OGC).

DCSF (Department for Children, Schools and Families)

Housing Corporation

Welsh Assembly Government

Regional Development Agencies

Local Authorities

Department of Health

Information on the requirements can be found at:

<http://www.breeam.org/page.jsp?id=43>

For Assessment Manuals in each building category (eg, office, industrial, courts)

<http://www.breeam.org/>

7. UK Government: Enhanced Capital Allowance

Businesses can benefit from the **Enhanced Capital Allowance** scheme to get a tax rebate. This allows a business to write-off against tax liability the 100% cost of installing water conservation plant and machinery. Rainwater harvesting products registered on the Water Technology List qualify for this. Claims are made to the Inland Revenue.

To get a product on this **Water Technology List**, an application has to be made to DEFRA. The same product may be registered more than once by different distributors.

To find out if a product is on the **Water Technology List**, see www.eca.gov.uk Helpline 0800 585794

8. Water Supply Regulations

The most important regulations that a rainwater harvesting system has to comply with are The Water Supply (Water Fittings) Regulations 1999, Section 6. This section covers Backflow protection to protect mains water from contamination by "unwholesome water".

As rainwater is normally categorised as "Fluid 5", that is to say the worst water (water storage for agricultural purposes), this backflow protection has to be a "type AA air gap" i.e. an "air gap with unrestricted discharge which means a non-mechanical backflow prevention arrangement of water fittings where water is discharged through an air gap into a receptacle which has at all times an unrestricted spillover to the atmosphere."

So any RWH system has to conform to this wherever there is a mains top up to the RW system. A tundish (such as the one pictured right) meets the type AA reg. A tundish is supplied as standard with the System 2 Mains Water Backup kits (float switch and mains solenoid valve) from RainWaterHarvesting.co.uk.



www.defra.gov.uk/environment/water/industry/wsregs99/guide/section6

Rainwater harvesting and grey water systems definitely have to conform to EN1717: European Standard on Backflow Protection by an air gap: see page 7 on

[www.dwi.gov.uk/research/reports/DW170-2-168 Public.pdf](http://www.dwi.gov.uk/research/reports/DW170-2-168%20Public.pdf)

Draft Clarification for output on DEFRA and WRAS websites (see first point).

9. BRITISH STANDARD 8515

This was introduced in February 2009, the first of several proposed standards on water recycling, including greywater. It gives guidance on the design, installation, testing and maintenance of rainwater systems supplying non-potable water in the UK. It is a Code of Practice and not mandatory.

Further references

WRAS Guidance

For WRAS (Water Regulations Advisory Scheme) guidance notes on rainwater harvesting, look at:

http://www.wras.co.uk/PDF_Files/IGN%209-02-04%20Reclaimed.pdf

ENVIROWISE Guidance

Other information from the government advisory agency Envirowise can be found at:

<http://www.envirowise.gov.uk/uk/Our-Services/Publications/EN896-Reducing-mains-water-use-through-rainwater-harvesting.html>

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