

SWIG Award 2015 Domestic Building Category Entry: RainShare



What is RainShare?

RainShare Ltd is a social enterprise, led by Dr Sarah Ward, which has been set up in Devon to help different people (homeowners, businesses, those who manage community facilities) share harvested rainwater (roof-runoff) between properties. Our first pilot demonstration site is based in Exeter and 'RainShare St James' is a retrofit project between householders and nearby allotment holders who are sharing roof-runoff to water the allotments (via downpipes, storage tanks and a common access point). The allotments do not have a mains water supply, so this will help them boost their growing during the dryer months of the year.

Technically, RainShare can operate between domestic or non-domestic properties and be new build or retrofit, but at the moment we do not have a non-domestic pilot site (e.g. offices or warehouse) – perhaps you can help? There are other informal RainShare schemes out there, for example Topsham Railway Station adopters use roof-runoff to water plants on the station platforms. Do you know of an arrangement in your local community that could be badged a 'RainShare' in order to spread the word and show people there is a RainShare revolution happening?

**RainShare schemes to date:
St James Park and Topsham Station**

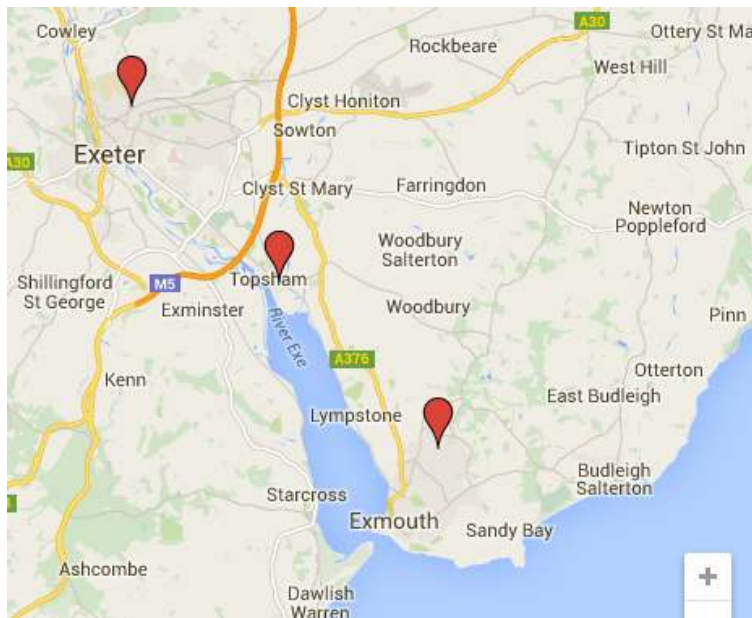


Why should we RainShare?

RainShare is a way of helping communities re-engage with and manage the water they generate and use: should high quality drinking water be used for everything (like watering plants or toilet flushing)? Switching mains water for roof-runoff helps save potable-quality water. Also, roofs generate runoff, which if not attenuated or utilised locally can enter sewers in a big peak volume. Using the runoff locally keeps water out of sewers for longer and slows the peak, helping maintain the capacity of sewers (which can be costly to expand/replace) and potentially helping alleviate localised flooding.

How can we RainShare?

RainShare has a website (www.rainshare.co.uk) where potential RainSharers can look at our map to identify RainSharers in their area. By ‘matchmaking’ Contributors (those with runoff to share) with Beneficiaries (those who need runoff), RainShare enables people to work out the social and technical aspects of their project – from who needs to be involved, to what ‘kit’ might be needed to divert runoff from downpipes to storage tanks.



So far RainShare has two projects on its map – plus our HQ in Exmouth. The initiative is ongoing and we would love to expand this to be as big as LandShare and CarShare.

What impact can RainShare bring?

A feasibility analysis for RainShare St James illustrated that an estimated annual usage of 14m^3 could easily be met using just the south-facing roof surfaces (as the north side downpipes are difficult to access) and a $1\text{-}2\text{m}^2$ storage tank. Meters and loggers are being installed in order to quantify the actual supply-demand balance to estimate potable water savings, the volume of water kept out of sewers and the payback period of the RainShare kit (estimated to be in the region of 15 years, using a mains water saved charge of $\pounds 1.11/\text{m}^3$ and a reduced sewerage charge of $\pounds 2.25/\text{m}^3$). There is no operational energy consumption, as gravity is used due to the natural head resulting from the houses being up-slope from the allotments. However, if 14m^3 of potable water consumption was displaced, that would mean an annual carbon emission saving of $4.62\text{ kgCO}_2\text{e}/\text{m}^3$ (based on $0.33\text{ kgCO}_2\text{e}/\text{m}^3$ for pumping via UK water supply; Ward et al., 2011). If more schemes took part in the initiative it would be a significant contribution to decarbonising the UK water sector. With regard to financial savings, Contributors could charge for the use of their runoff, but that would not be in the spirit of RainShare. However, by storing roof-runoff, Contributors can apply to their local water company to ask for a reduction in the surface water drainage part of their bill. By focusing on community empowerment to govern the collection and usage of water locally and not focusing on capital gains, more equitable access to non-potable water can be achieved. This could lead to a greater appreciation of the one natural resource without which we cannot survive.

Reference

Ward, S., Butler, D. and Memon, F. A. (2011) Benchmarking energy consumption and CO₂ emissions from rainwater-harvesting systems: an improved method by proxy. *Water and Environment Journal*, 26, 184–190.