



SOMERSET PILOT DEMONSTRATION RAINGARDENS

Using Nature Based
Solutions to reduce
Surface Water Flooding
and deliver multiple
benefits

PROJECT SUMMARY

Project Funding: £10,000 funded by Wessex Water and Somerset Rivers Authority, administered by Somerset County Council

Project Delivery: May 2017 – December 2017, delivered by Westcountry Rivers Trust, construction works by B. Woods Tree Care.

Area connected: 220m² feeding into raingardens, 80m² thereof completely disconnected from drainage.

Location: Taunton, Somerset, UK



4 Raised Raingarden Planters were delivered on 2 council-owned housing sites in Taunton, Somerset. They have a combined volume of 12m³ and provide approximately 6m³ storage/attenuation for roof runoff that would otherwise have fed into a combined sewer system, reducing runoff from an area of 220 m². The Raised Planter design was chosen due to space constraints, easy maintenance and residents' needs.

Planters incorporate exotic as well as native, edible as well as decorative plants and use dementia-friendly planting criteria to ensure they are enjoyed by all residents and provide habitat for insects. Their height allows easy access and low maintenance requirements.

A 5th raingarden was planned to be delivered at Middleway, however due to budgetary and time constraints it was not possible to allow satisfactory resident engagement to deliver a raingarden that would meet their high expectations. It was decided that this would be taken on to be delivered as part of SPONGE 2020, with the Raingardens demonstration budget enabling a further round of engagement and design meetings.

Timeline

June 2017 – meeting with Taunton Deane Borough Council to discuss targeting council-owned housing sites.

These were seen as a good opportunity due to their accessibility for a demonstration project and ownership through the council. TDBC were very open to the idea and suggested a range of suitable sites.

July 2017 – Visit to 3 potential housing sites in and around Taunton. Kilkenny Court and Middleway are chosen due to:

Location – residents in Middleway have experienced issues with surface water before, and both are close to high flood risk areas. Also easy access from Taunton centre, ideal for a demonstration project.

Site Layout – both sites have green areas that are accessible to and visible by all residents in a fairly central location on site, and the flats themselves have no or only small garden areas.

Site Manager Engagement – the sites are managed by a site manager employed by the council who is responsible for resident welfare and management of the site. Both site managers welcomed the project, although they predicted low levels of resident engagement.

August 2017 – resident meetings to introduce the project and allow input.

Informal meetings were arranged as part of existing dates in the residents' social calendar (coffee morning). Posters were put up on the sites three weeks in advance along with some information about the project to encourage attendance. Additionally, SuDS experts are consulted on design ideas.

September 2017 – the planter is chosen as the most suitable design for conditions and based on what the residents have told us.

Raised planters enable even less mobile residents to partake in gardening and enjoy the plants. They are easy to maintain and do not interfere with existing maintenance schemes on site, and they allow construction even where there is little space and site conditions like slope and infiltration rate of the soil would make sunken gardens more difficult. Plants were chosen based on ideas given by the residents.

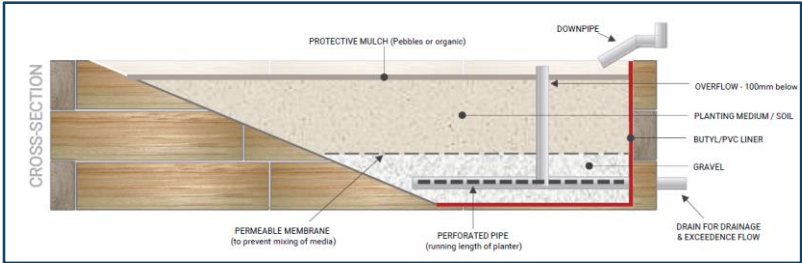
October 2017 – procurement of a contractor to build the planters and connect them to the drain system. Additional Residents Meeting with Reminiscence Learning in Kilkenny Court.



November/December 2017 – construction and connection of planters and meeting with TDBC.

DESIGN & TECHNICAL DETAILS

The design for the Raised Raingarden Planters was developed in house at WRT based on existing guidance available from a variety of sources. A number of landscape architects and SuDS experts were asked for comment and their recommendations were incorporated. Below is a schematic drawing of the cross section of the planter.



A total of 9.76 m3 of raingarden planters were constructed with a unit cost of £310 per m3 of planter constructed and planted. Materials were provided by the contractor.

| DESCRIPTION | QTY | RATE | AMOUNT |
|---|-----|-----------|-----------|
| To provide materials and install 4 raised rain garden's | | £0.00 | £0.00 |
| 10mm pea Gravel | 7 | £52.00 | £364.00 |
| Topsoil | 10 | £81.50 | £815.00 |
| 60mm perforated land drain | | £37.00 | £37.00 |
| Pipe fittings | | £70.00 | £70.00 |
| liner and geotextile membrane | | £95.00 | £95.00 |
| Timber | | £900.00 | £900.00 |
| Labour | | £1,200.00 | £1,200.00 |
| Plants | | £250.00 | £250.00 |

Kilkenny Court:

2 planters - 1m x 5m x 0.75m. Connected to ~100m2 of roof

1 planter - 1m x 3m x 0.75m. Connected to ~40m2 of roof

Middleway:

1 planter - 1m x 3m x 0.75m. Connected to ~80m2 of roof. This planter takes all water off the roof, outflow is diverted to planted greenspace.

The basic structure of each planter is the following:

Timber walls, with pond liner up to penultimate board

Gravel bed in which outflow pipe is located (connected to overflow pipe)

Permeable membrane to protect gravel bed from clogging up

Top soil with plants (mix of grasses and flowering plants, all perennial)

Plant selection: Grape hyacinth, Allium, American onion, Dutch garlic, Yarrow, Aster, Elephant's ears, Milky Bellflower, Catnip, Rosemary, Crimson flag, Lemon balm, Day lily, Moor grass, Sneezeweed, Spurge, Montbretia, Macedonian scabious, Meadow rue, Blue fescue, Japanese blood grass, Black mondo, Balkon clary, False goatsbeard, Lupin, European globe flower, Purple Moor Grass, Glaucous Sedge, Stinking Hellebore, Bugle, Ragged Robin, Meadowsweet, Water Avens, Hemp agrimony, Yellow Flag Iris, Dotted Loosestrife, Fairy Bellflower, Wood-rush

