

Norfolk County Council LLFA: Case Study

Site name: Suters Drive and Badgers Brook, Taverham, Norwich	District: Broadland District Council
Site Description: Retrofit of SuDS to assist flooding problems on traditional sewer drainage network.	Scheme Developer: Anglian Water
Local Flood Risk: Flooding occurred internally to properties previously. Properties built prior to the updated Environment Agency risk of surface water flooding map published. Roads and open space at risk at 3.33%AEP, properties shown to be at risk at 1% AEP.	Greenfield or Brownfield Development: Brownfield, improvement to the capacity of the drainage scheme from 10%AEP to 3.33%AEP
Summary of Design Constraints: Existing housing development with piped sewer network in road network. Public engagement was key to explain the reason for the works and potential improvements. Temporary works and disruption to local traffic.	Summary of Surface Water Drainage: SuDS retrofitted into existing landscape, rills/channels to rain gardens/ attenuation basins maintaining overflows back to piped network. Final discharge to pond and watercourse. SuDS quantity benefit: included / not included SuDS quality benefit: included / not included SuDS amenity benefit: included / not included SuDS biodiversity benefit: included / not included

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£200,000 'thirsty' plant scheme to stop flooding in Taverham

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The new project could take up to 21 million litres of water - more than eight Olympic sized swimming pools - out of the sewers every year, considerably reducing the risk of flooding to nearby homes in Suters Drive, which have been affected in the past.

Jonathan Glerum, Anglian Water's flood risk manager, said: "SuDS are becoming more common on new housing developments as a more sustainable way of preventing flooding to homes, but what's special about this scheme is that

as well as being the biggest in the east of the country, we're retrofitting it to protect existing homes. We hope this scheme will demonstrate the potential of SuDS and encourage more schemes right across the country."

John Fisher, Broadland District Council's portfolio holder for environmental excellence said: "This project tackles one of our district's greatest environmental issues – flooding – but is also sustainable, helps wildlife and is one of the cheaper flood prevention measures available."

WHAT ARE WE PROPOSING?

BADGERS BROOK OPEN SPACE

SWALES

Shallow swales connect basins - carrying water from one to the next



grass swale

BASIN IMAGES



flat open basin



playful basin



natural planting

RAINGARDEN

This raingarden is located on the flat area where play equipment used to be. A small bank would turn it into a basin to hold water and it could be planted with flowering shrubs and trees to make it into an attractive Raingarden.



decorative Raingarden



basin planting

Shallow sided basins within the green-space and roundabout store rainwater running off the roads near-by. They can be planted with wildflower seed, bulbs and trees making them attractive places to be.

dry and wet weather with gentle slopes to help water seep in to the soil and make it easy to get out again



water filters through the soil and recharges groundwater

BASINS

basins sit up to a maximum depth of around 40-50cm

water runs into basin

Photos



a) 2018 – raingarden with overflow back to sewer system



b) rill / channel from road to rain garden / attenuation



c) Badgers brook roundabout with dropped kerbs and storage created in the centre, overflow installed back to sewer system



d) 2014 During construction – badgers brook roundabout and one of the shallow attenuation basins. The site flooded during construction and SuDS needed remedial action and additional community engagement to resolve concerns over the performance of the works. The parties, including the LLFA, learnt that any scheme may need construction plans and potential temporary measures during construction to prevent adverse impacts.