

# Sustainable Drainage News



The bi-annual bulletin of news and development in sustainable drainage systems

Issue 10 – August 2007

This is the tenth newsletter on sustainable drainage systems (SUDS). The newsletters aim to communicate the latest innovations in sustainable drainage and encourage their widespread implementation in developments.

## Upton development and green streets

The Upton development has been brought forward by English Partnerships, the land owner, for the development of an exemplar sustainable community that forms the first part of a major urban extension to Northampton. Upton is incorporating innovative solutions that aspire to meet all principles of sustainable development. The area is increasingly regarded as an example of best practice for the UK, in terms of community planning, urban design, conserving and enhancing natural resources, constructing eco-homes and the installation of extensive roof to river sustainable drainage systems (SUDS).

Northampton has a long history of flooding, most recently in 1998. English Partnerships, in partnership with Northampton Borough Council and the Princes Foundation held a four day Enquiry by Design master planning event involving all local residents, businesses and local and statutory stakeholders including the Environment Agency, in 2001. This event highlighted how sensitive local people were on plans to develop at Upton, particularly with regard to the flood risk issues. As a result, the management of urban stormwater runoff was identified as a high priority. The SUDS at Upton was designed by engineers Pell Frischmann, as one part of a collaborative approach to planning. The SUDS scheme accommodates spatial constraints and is an integral hydrological element of this development. Grassy swales have become green street features and the Upton Design Code ensures that surface water drainage from all sites within the development is controlled and integrates with other infrastructure and the urban design. Developers are supplied with design details and specifications for the installation of SUDS elements and given clear advice on requirements for individual development site surface water drainage, promoting the use of permeable paving where appropriate.

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A swale located within the Upton Housing development

The SUDS components are designed to capture roof and road rainwater runoff and convey this runoff into a series of retention ponds. The ponds are located in a new area of parkland which links into a major element of the local green infrastructure; the River Nene Country Park.



Part of the pond retention systems within the Country Park at Upton.

Staff and students at the University of Northampton have been monitoring the ex-arable site since 2003. Experts from the Schools of Applied Science, Social Science and Health are collaborating and using an interdisciplinary approach to researching many aspects of the development. Undergraduate and Postgraduate students have also been actively engaged with research projects examining: sediment transport, water quality, hydrology, local perceptions and biodiversity.



Environmental management students: undergraduate and postgraduate students performing field studies at Upton

Still in the construction phase, the SUDS has been rapidly colonised by a range of aquatic and wetland species with a variety of invertebrates, amphibians, birds (eg UK Biodiversity Action Plan species the Reed Bunting) and plants. Bats have also been recorded feeding in and around the SUDS. Dr Janet Jackson was awarded an HIRF East Midlands Regional Fellowship in 2006 to capture the experiences of those involved with the planning and design of the site. She has presented a paper at an international conference on Whole Life Sustainability and its Assessment in June 2007. The research team is developing further funding bids and seeking sponsorship to strengthen their evidence-based research programme.

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#### ODDS & SUDS

The Local Authority Network on Drainage and Flood Risk Management web portal is now live. Please visit [www.ciria.org/landform](http://www.ciria.org/landform) to register and share your thoughts and knowledge with other local authorities.

## Getting the best from planning

**What's new in the PPS25?** PPS25 *Development and flood risk* was published in December 2006 by the Department of Communities and Local Government. The aim of the new PPS25 is to avoid inappropriate development in areas at risk of flooding and to direct development away from areas at high risk. By correctly implementing PPS25, flood risk is considered at all stages of the planning process in an integrated way and unlocks other strategic opportunities.



Planning shapes the places where people live and work and the country we live in. It plays a key role in supporting the Government's wider economic, social and environmental objectives and for sustainable communities.



The PPS also looks to manage risk over a wider area, by promoting appraising and managing risk as well as designing developments to combine more sustainable drainage, providing opportunities for green amenity space. In addition, the statement emphasises the importance of taking into account the impacts of climate change in planning decisions and should be addressed as part of a flood risk assessment.

**The Practice Guide** – A “Living Draft” Practice Guide Companion to PPS25 has recently been produced to provide advice on practical implementation of PPS25 policy. The document reflects extensive discussion with stakeholders and advice of the PPS25 Practice Guide Advisory Group.

Guidance on surface water management within the practice guide includes the following statements:

- 1 Regional Planning Bodies (RPBs) and Local Planning Authorities should promote SUDS. To comply with the requirements of PPS25, Regional Spatial Strategies (RSSs) should include specific policies to encourage sustainable drainage practices.
- 2 A sustainable drainage approach should be possible on **any** site.
- 3 Priority should be given to infiltration techniques not discharging and if discharge is unavoidable priority is given to discharge into watercourses not sewers.
- 4 Runoff from previously developed sites should be compared with existing rates, not Greenfield rates. Although developers are encouraged to reduce the volume of runoff as much as is practical.

The guide also includes a note on the associated benefits of SUDS and includes a specific mention of how, when fully integrated into the design and landscaping of a development, SUDS can significantly improve environmental quality. It suggests the design team and stakeholders should take every opportunity for early discussion about SUDS (at feasibility stage) to ensure that these wider opportunities are not missed.

Part of the practice guidance also makes reference to the issues associated with adoption of SUDS and specifically with maintenance responsibilities. It draws attention to the Interim Code of Practice for SUDS produced by the National SUDS Working Group (NSWG), which includes model agreements.

There is currently an ongoing consultation process aimed at adding new material to the final version of the Practice Guide. If you would like to read the full live guide and follow the instructions to contribute/comment (deadline is 20 August 2007) please visit the DCLG website: [www.communities.gov.uk/index.asp?id=1506265](http://www.communities.gov.uk/index.asp?id=1506265)

Simon Vilarasau, CIRIA

## ODDS & SUDS

The SUDS promoting good practice website [www.ciria.org/suds](http://www.ciria.org/suds) is always looking for projects that demonstrate good practice initiatives or methods of working. If you are interested in having a case study published or have any relevant events you would like to advertise please contact: [simon.vilarasau@ciria.org](mailto:simon.vilarasau@ciria.org)

## Now we're “a long way from Kansas, Toto”

Kansas City, USA is plagued by the same sewer and stormwater problems as many other cities having older systems, and facing the same staggering rebuilding costs in its efforts to comply with Environmental Protection Agency regulations. The city has set out to mitigate problems by mobilising the entire community through the “10 000 Rain Gardens” in a voluntary initiative to manage water pollution at its source.

A rain garden is a shallow basin or depression planted with native plants that facilitates infiltration and evapotranspiration that can help manage surface water. The native plants have deep roots that allow water to infiltrate into the soil. They present a green solution to an escalating environmental problem: flooding and stormwater runoff that carries surface pollutants and contaminants into storm sewers, streams and waterways. According to recent research, properly designed rain gardens can effectively trap and retain up to 99 per cent of common pollutants in urban storm runoff, potentially improving water quality and promoting the conversion of some pollutants into less harmful compounds.

The five-year goal of “10 000 Rain Gardens” is the development of 10 000 rain gardens in back yards and on any other public and private property. Black & Veatch is the prime contractor for Kansas City's Comprehensive City-Wide Stormwater Management Plan, called KC-One and was the sponsor of the first corporate rain garden.

Efforts were made to publicise this project through the media and a survey of residents following the six-week kick-off campaign found that 43 per cent of citizens correctly identified stormwater as the number one source of non-point source pollution of area streams and rivers. This was a double-digit increase in awareness of the problem compared to results six months earlier.

Training for professionals has been another successful component of the initiative. Three full-day sessions (\$US50 per participant) sold out and became standing-room-only events for 200 landscapers, municipal employees, retailers, and others.



Peter Martin from B&V in Redhill, UK, has visited the project and considers it to be an “excellent example of what can be achieved through raising public awareness and by promoting community participation to help overcome a drainage problem in a local and sustainable manner”.

He goes on to add: “The overall space available on a typical US backyard is different to the UK, but the actual size of the rain garden itself can be fairly modest and would fit on many UK plots. In the past, community participation in the UK would have seemed a major hurdle, but increasing public awareness of environmental issues and willingness to act (as witnessed by the response to last year’s drought) provides a sign of hope. The big question is: What will our native species be in 20 years time?”

To find out more on the 10 000 Rain Gardens initiative you can visit [www.bvraingardens.com](http://www.bvraingardens.com)

#### ODDS & SUDS

Want to talk odds and SUDS? Why not visit CIRIA’s online SUDS forum at [www.ciria.org/suds/eforum.htm](http://www.ciria.org/suds/eforum.htm)

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