

Towards integrated approaches to planning for water

Andrew Coleman explains how two current research projects are aiming to develop ways of using landscape and green infrastructure to adapt to climate change and deliver better water management

Most planners now understand that ‘green infrastructure’ means more than single-use playing fields or allotments and that it can contribute to meeting many of the objectives of sustainable development. This article explains how two current projects are helping to identify examples of good practice and overcome some barriers that planners commonly face. The projects complement the TCPA-led PERFECT project¹ and other initiatives outlined in the October 2017 Special Issue of *Town & Country Planning* on Planning our Green Infrastructure.²

Green infrastructure is defined by the Ministry of Housing, Communities and Local Government (MHCLG) as:

‘Green infrastructure is a network of multifunctional green space, urban and rural, which is capable of delivering a wide range of environmental and quality of life benefits for local communities.

*Green infrastructure is not simply an alternative description for conventional open space. As a network it includes parks, open spaces, playing fields, woodlands, but also street trees, allotments and private gardens. It can also include streams, canals and other water bodies and features such as green roofs and walls.*³

It provides multiple ‘ecosystem services’ to us. For example, it provides space for humans to exercise and breathe (hopefully) clean air, for flora and fauna to thrive and migrate, and for water flow and be stored.⁴ As such, it contributes to our ‘natural capital’ and we can hope that the National Planning Policy Framework (NPPF) and accompanying Practice Guidance, under review at the time of writing, will be tweaked to reflect the government’s 25 Year Environment Plan commitments to produce ‘stronger new standards for green infrastructure’.⁵

Two current projects are helping to identify how green infrastructure can contribute to two important aspects of the ecosystem services – adapting to climate change and better water management.

SCAPE

SCAPE (Shaping Climate Change Adaptive PlacEs) is an EU project that brings together partners from:

- o the UK (Brighton and Hove City Council; and Kent County Council);
- o Belgium (Ostend City Council – the lead partner; Province of West-Flanders, Farys (a water services company); and the Flemish Environment Agency); and
- o the Netherlands (Municipality Middelburg; and Waterboard Scheldestromen).

The project aims to develop ‘landscape-led design’ (LLD) solutions for water management that make coastal landscapes in the Interreg 2 Seas area (the North Sea/Channel) better adapted and more resilient to climate change. Coastal landscapes are sensitive to water-related effects of climate change, especially flooding, extreme rainfall and drought. The independent Committee on Climate Change has identified flooding and water shortages as among the issues requiring ‘priority action’,⁶ and these are also among the climate challenges that the NPPF advises planners to take account of in Local Plans and planning applications.⁷

SCAPE is working with the key stakeholders to:

- o increase the cost effectiveness of water management techniques;
- o deliver pilots to test innovative tools and solutions that reduce surface flooding; and
- o provide wider community benefits.

The project brings together water managers, planners and architects from across the SCAPE partnership to jointly develop an approach that uses aspects of the local landscape to reduce flooding in rural, urban and fringe coastal areas. SCAPE is part-funded through Interreg V, an EU-funded programme that helps Europe’s regions form partnerships to work together on common projects.

The partners represent a range of different-sized cities, towns and rural areas with different environmental challenges – challenges that SCAPE is addressing. It is developing six pilot projects to develop LLD solutions to climate change. There are two rural, two fringe and two urban pilots. The rural pilots are in the Darent Valley in Kent and Zwin in Flanders. In Brighton and Hove there is an urban pilot project at two locations – both currently liable to

surface water ‘flash flooding’.⁸ There is another fringe pilot project and an urban pilot project in the coastal city of Ostend and a fringe pilot project on the edge of the small historic city of Middelburg in the Netherlands.

SCAPE methodology

The pilots are being used to test innovative LLD techniques to manage flooding, water supply and quality both now and into the future. One of the innovative approaches has been the use of ‘Climate Tests’ in pilot project locations. These are an intensive day-long event in which technical experts from the project partners and other relevant agencies and companies analyse the specific climate and other challenges facing the pilot site and start to devise potential solutions (see Box 1). The advantage of this approach is that it brings together all the experts at the same time and place, rather than relying on a series of meetings or written consultations. It encourages collaboration and innovative solutions – particularly as it involves technical experts from the international partners whose approaches may differ.

This cross-fertilisation of experiences and ideas is also encouraged by the joint partner meetings, which include events such as a visit to innovative sustainable drainage sites in Enfield **[Pic Enfield 3]** and water management seminars. **[Pic of 1) Zwin climate test; 2) Zwin seminar 3) Zwin landscape and 4) Zwin site visit (optional)]**

[Text Box]

Box 1

Example of a ‘Climate Test’ in action – Brighton and Hove, September 2017

After visiting the pilot sites, the Climate Test was held at Hove Town Hall. It was attended by representatives of Brighton and Hove City Council (planners, flood risk manager, highways and transport staff, and the parks department director), representatives of a local multi-agency project aiming to improve the quality of the underground chalk aquifer which provides the city with its drinking water, the water company, and other experts. Representatives from the Belgian and Dutch partners also contributed. **[Pic of HTH Climate Test]**

The Climate Test heard from the City Council about the pilot sites – suburban and urban locations where surface water flooding damages homes and properties, infiltrates underground sewers causing flooding further down the network, and pollutes the aquifer. This is likely to worsen as climate change results in more frequent and intense rainstorms. **[Pic of Warmdene Road flooded]** In mixed groups, the participants carried out a SWOT

(strengths-weaknesses-opportunities-threats) analysis and identified some of the potential hard and soft landscaping, sustainable (and conventional) drainage, planning and water management solutions and the opportunities and constraints in implementing them.

In the suburban location, potential locations were identified for flood storage on council-owned land in the public highway and elsewhere; planning solutions (including amending and enforcing permitted development rights) were considered and the multiple benefits of solutions identified – for example, a landscape-led solution could help revitalise a local shopping parade by providing a more attractive terrace outside existing cafes and shops, as well as reducing flash flooding and reducing the amount of polluted surface water getting into the aquifer and the foul sewer.

[End Text Box]

SCAPE next steps

SCAPE is funded until 2020. Its main outputs will be:

- o a joint strategy (and digital LLD portal) for landscape and water managers, developed in the context of SCAPE, to assess the level of climate change resilience at target sites and to determine the impact of LLD solutions on water management;
- o a method that provides LLD guidelines for partners/target groups – the Climate Test; and
- o six pilot sites chosen to validate the use of LLD in different urban, fringe and rural landscapes – the work here will include commissioning the design and build of schemes which can be used to influence the design of new development, as well as retrofitting existing landscapes.

These outputs will also be considered for inclusion in the MAGIC (Multi-Advantages of Green Infrastructure in Cities) matrix – an output of the EU PERFECT project¹ – and in the CIRIA project on better integrated water management through planning. In this way, the learning outcomes from the project will be disseminated to a wider audience.

As part of the dissemination process, specific targets for each of the programme outputs will be achieved before the end of 2020. Specific actions will be taken such as:

- o development of a digital LLD portal;
- o a ‘plain language’ version of the strategy;
- o various events across the partnership;
- o cross-border conferences; and

- o partnerships with universities and other knowledge institutes to further disseminate and present the process/solutions/results of SCAPE for a wider audience.

Furthermore, with the implementation of the pilot projects as physical investments, the partnership will ensure the durability of SCAPE beyond the project. This ‘hard’ dissemination will be used to demonstrate the added value of LLD within water management across the 2 Seas region. By exhibiting the effects of the pilots, not only professional stakeholders but also the wider public will be involved in one way or another.

CIRIA project on better integrating water management through planning

The Construction Industry Research and Information Association (CIRIA) exists to provide research and information for all parts of the construction industry. In recent years it has completed a number of projects aimed at improving resilience to current and future flooding, including the widely used benchmark standard *SuDs Manual*.⁹

CIRIA Research Project 1057, *Delivering Successful Integrated Water Management through the Planning System*,¹⁰ starts from the premise that planning is integral to the effective management of water and that integrated water management (IWM) covers the entire water cycle, including the management of all sources of local flood risk, waste water, water supply and water efficiency (and their combination), considered at development or catchment scales.

Strategic planning should make provision for catchment- and sub-catchment-scale IWM (natural flood risk management, provision of flood storage areas, blue/green corridors) and for water resources and waste water treatment facilities. The availability of these resources and their interaction will, in turn, guide the location of areas for strategic development in Local Plans. IWM interventions for individual schemes and developments can be planned within this framework to increase the sustainability of development and make communities more resilient to flood risk and climate change.

The objectives of the project are to:

- o engage with local government, the water industry, developers and other key stakeholders to understand the challenges, opportunities and requirements for guidance and resources relating to IWM;
- o review, identify and showcase good planning policies to support and deliver IWM;
- o develop a suite of case studies and associated critical success factors;

- o provide accessible and concise guidance on recommended approaches to secure the delivery of IWM in new developments and regeneration projects; and
- o develop and disseminate resources to support the delivery of IWM.

It will also provide local government with the confidence to produce their own set of policies and guidance ensuring that high-quality developments with good water management are cost effectively delivered.

CIRIA project methodology

The project is being steered by a project steering group comprising a mixture of local planning authorities (LPAs), lead local flood authorities (LLFAs), water and sewerage companies, professional planning institutions (including the TCPA), consultants, statutory consultees, and wildlife charities. An online survey has collected views from over 200 respondents across England and Wales on the challenges and opportunities in implementing better IWM through planning and has collected potential case studies. A review of current and emerging policy in England and Wales is being carried out. From the survey responses and interviews with respondents, ‘critical success factors’ are being identified to help LPAs and LLFAs to write Local Plan policies and guidance to achieve IWM.

The guidance to LPAs and LLFAs will take the form of accessible case studies of Local Plan policies and ‘on the ground’ projects and ‘model’ approaches that are applicable at various spatial scales. Dissemination activities will occur in the summer of 2019 and are likely to include webinars.

CIRIA project next steps

Project work is currently concentrating on collecting case studies of good Local Plan policies and guidance and projects on the ground (complete or in progress), and the project partners are keen to hear from LPAs, LLFAs and other agencies about potential ‘good practice’ and how barriers such as the perception that financial viability can outweigh the achievement of IWM have been overcome. The aim is to use the emerging findings of the survey to advise the Westminster and Welsh governments in their current reviews of national planning policy.

Discussion

The SCAPE and CIRIA projects recognise the value of an integrated approach to planning for water which can enhance the value of using green infrastructure to manage current and future climate and environmental risks, enhance environmental quality, and make new developments more attractive and healthy.

They will both contribute to the volume of good practice and advice that is being developed by the TCPA and its partners in the PERFECT project. The techniques and approaches developed and the examples of good practice can contribute to the implementation of the ‘natural capital’ approach being pursued by the government.

Both projects also demonstrate the value of integrating the work of different professions and countries – we need to continue to learn from each other and nimbly develop new approaches as our climate changes and the squeeze on public financial resources available for building resilience continues.

[Box 2]

Box 2

Information on the SCAPE and CIRIA projects

SCAPE

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CIRIA Research Project 1057

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www.ciria.org/Research/Projects_underway2/Delivering_successful_integrated_water_management_through_the_planning_system.aspx

[End Box 2]

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Notes

- 1 See the PERFECT project website, at www.interregeurope.eu/perfect/; and H Smith: 'Making PERFECT sense of green infrastructure'. *Town & Country Planning*, 2017, Vol. 86, Oct., 404-06
- 2 Special Issue on Planning Our Green Infrastructure. *Town & Country Planning*, 2017, Vol. 86, Oct.
- 3 'Green infrastructure'. *Planning Practice Guidance*. Ministry of Housing, Communities and Local Government. Para. 027 Ref. ID: 8-027-2160211. Revision date: 11 Feb. 2016. www.gov.uk/guidance/natural-environment#para027
- 4 T Armour and A Tempany: 'Mainstreaming green infrastructure' *Town & Country Planning*, 2017, Vol. 86, Oct., 399-403
- 5 *A Green Future: Our 25 Year Plan to Improve the Environment*. HM Government, Jan. 2018, pp.34 and 76-77. www.gov.uk/government/publications/25-year-environment-plan
- 6 *UK Climate Change Risk Assessment 2017. Synthesis Report: Priorities for the Next Five Years*. Committee on Climate Change, Jul. 2016, p.30. www.theccc.org.uk/tackling-climate-change/preparing-for-climate-change/uk-climate-change-risk-assessment-2017/synthesis-report/
- 7 *National Planning Policy Framework*. Department for Communities and Local Government, Mar. 2012, para. 94. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf; and *National Planning Policy Framework: Draft Text for Consultation*. Ministry of Housing, Communities and Local Government, Mar. 2018. para. 148. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/685289/Draft_revised_National_Planning_Policy_Framework.pdf
- 8 See the *SCAPE Partner Meeting in Kent and Brighton and Hove* video, at www.youtube.com/watch?v=Zj9vRLSbNyE
- 9 *The SuDS Manual*. C753. CIRIA, 2007 (updated Nov. 2015). www.ciria.org/Resources/Free_publications/SuDS_manual_C753.aspx?WebsiteKey=3f18c87a-d62b-4eca-8ef4-9b09309c1c91
- 10 CIRIA Research Project 1057: Delivering Successful Integrated Water Management through the Planning System.

www.ciria.org/Research/Projects_underway2/Delivering_successful_integrated_water_management_through_the_planning_system.aspx