



Localism and delivering SuDS



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Design – it’s not only about numbers

- Making places not delivering SuDS
- Design is both ‘function’ and ‘appearance’
- Visible elements need consideration of appearance



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Flood and Water Management Act
2010

National SuDS Standards Principles

- **Surface runoff is managed at its source** where it is reasonably practicable to do so;
- **Surface runoff is managed on the surface** where it is reasonably practicable to do so;
- **Public space is used and integrated with the drainage system**, where it serves more than one property and it is reasonably practicable to do so;
- **Design is cost-effective to operate and maintain** over the design life of the development, in order to reduce the risk of the drainage system not functioning;



Best practice in SuDS design

Reference material

- Planning for SuDS – making it happen (CIRIA C687)
- The SuDS Manual (CIRIA C697)
- Local Standards - Cambridge Design and Adoption Guide



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Work with the site

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- What is the density and mix of the development?
- What is being sought in terms of character, style and quality?
- Likely mix of impermeable and permeable surfaces?
- LPA requirements?
- Can the buildings be used to assist, improve and be a part of addressing water in a sustainable way?
- How can SuDS shape the development?
- How can the design of the landscape and external areas integrate water in a sustainable way?
- How can SuDS enhance biodiversity on site?
- How will land use on site create pollution of runoff and influence treatment requirements for SuDS?
- How will long term maintenance and management of SuDS be ensured?
- Are overland flow routes incorporated in the master plan?



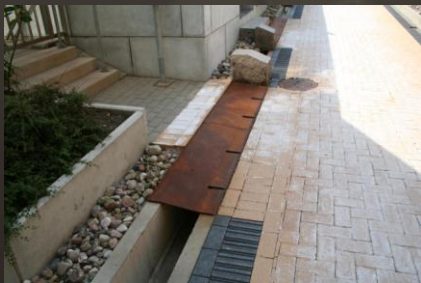
Master planning

- Set out the relationship between buildings, infrastructure and public open spaces
- Develop a sustainable drainage approach
- Explore the connections with the type of architecture, what it is and how it is placed, where it is placed on site and how much of the site it occupies
- Explore the relationship between the open space, public realm, green infrastructure and blue/green corridor links
- Test the land use and density arrangements on water treatment and storage requirements
- Develop ecological connectivity and biodiversity strategies

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Landscape design integration

- SuDS should be attractive and integrated in with other design features
- This is vital to their acceptance, performance and longevity



Places for people

SuDS should:

- Be safe varied and attractive
- Be creatively designed and integrated to add character and a sense of place
- Provide the opportunity for education, play and recreation





Enrich the existing

- SuDS should be used as a positive design tool
- They should enrich the quality of the existing urban design
- Their design and scale should respond to the scale and setting of the development

Work with the landscape

SuDS design should:

- Use the site’s intrinsic resources – climate, landform, landscape and ecology
- Respond to local topography and landscape character and incorporate local biodiversity needs
- Consider sun, shade and exposure in their placement and the effect on plant species and material selection



Design for change

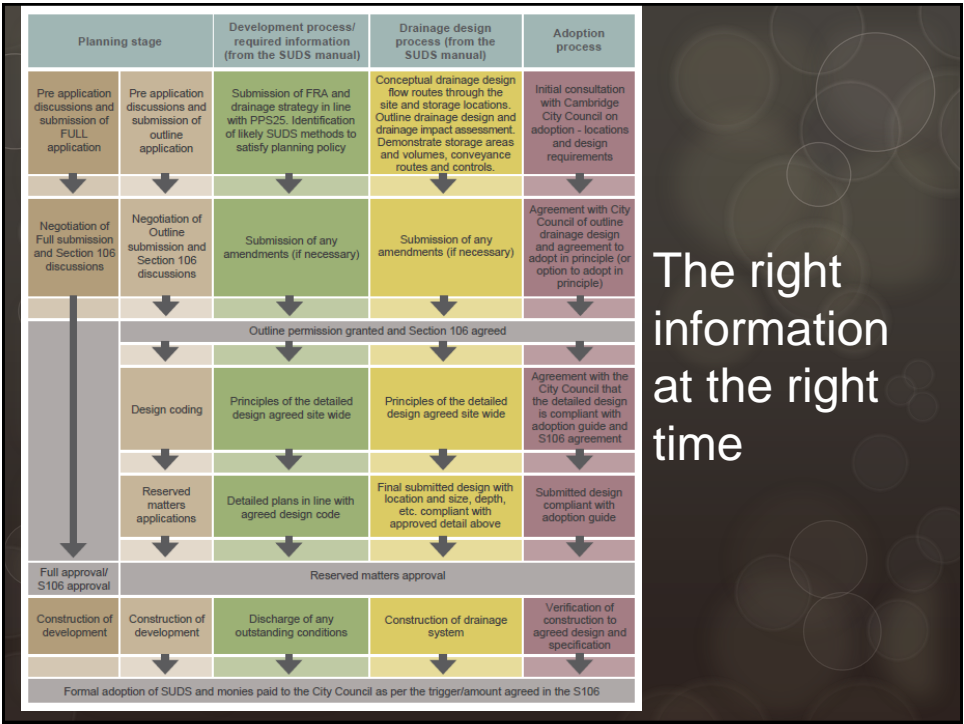
- SuDS should be flexible enough to respond to changes in climate, urban character and land-use
- Consideration should be given to future uses of surrounding areas
- Vegetated and permeable SuDS will assist in the mitigation of the urban heat island effect



Design codes and large sites

- Design priorities can be communicated and enforced
- Should outline possible suitable types of SuDS
- Restrictions on flow and volume rates leaving parcels before discharging into regional features
- SuDS design standards





Evaluating a submission

Evaluation check list

- Does it deliver the design criteria?
 - Management of flood risk
 - Management of water quality
 - Provision of bio-diversity/amenity
- Has the SuDS management train been delivered?
- Does it provide source control?
- Where possible is water managed on the surface?
- Have all the opportunities of the site been exploited (location, site topography, views)?
- Has existing flood routes and drainage exceedance been considered?
- Has health and safety been considered (gradients, inlets, outlets etc.)?
- Has maintenance and access been considered?
- Is there a maintenance plan?
- Has adoption been resolved?

The practicalities of adoption

- Photographs of excavations, confirmation of soil conditions, confirmation of levels, profiles and general earthworks.
- Photographs and full manufacturer’s details (if appropriate) of inlets, outlets and any control structures associated with any feature to be adopted.
- Confirmation of topsoil sources with appropriate certificates
- Full planting list and confirmation of plant sources, planting method statement and initial maintenance regime.
- Confirmation of subsoil and topsoil depths.
- Confirmation of gravel fill specification and sources, installation method statement of filter drains.
- Confirmation of source and test certificates for membrane liners if used. Membranes shall have welded joints and shall be inspected and the joints tested after installation. Records of the tests shall be provided.
- Photographs of the feature before and after planting.
- Full as constructed drawings and a topographical survey of the ‘as constructed’ feature.
- Confirmation of initial maintenance regimes.

Maintenance

- Silt - it’s a fact of life.....
- Little and often
- Multi-functional = multi-functional maintenance
- Monitor, don’t assume





Final thoughts....

- Adequate demonstration that the proposed scheme is the best that can be practicably and viably achieved on the site
- Work closely with other disciplines and bodies
- Maintenance is generally easier and less than you think