Leicester City Council's approach to SuDS delivery

Leicester: some surprising facts
Leicester; in the top 5 principle urban areas at risk from flooding
Leicester City Council's approach to SuDS delivery

- Promote sustainable drainage (SuDS)
- Issue formal developer guidance for SuDS schemes.
- Alignment of planning policies with LFRMS and control of surface water run-off.
- Implement SuDS legislation.
- Flood risk management strategy embedded within planning and economic development activity.
Leicester City Council’s approach to SuDS delivery

Figure 3: Map showing North Hamilton, the location of SUDS and the flow of water

Hamilton Leicester

Sustainable design
Dave Singleton talking about Melton post 16 school in a swale
Talking to our flood defence manager, head of highways adoption planners
Leicester City Council's approach to SuDS delivery

Summer 2011

Winter 2011/2012

Summer 2014
What the mayor said... January 2018
Evington Brook
Spinney Hills Park
Leicester City Council's approach to SuDS delivery

Permeable paving
Tesco Braunstone Gate
Leicester City Council's approach to SuDS delivery

Warning! Sharks!
Okay, there aren’t really any sharks, but this pond is not for swimming or fishing or anything else.
It’s part of an innovative system that collects rainwater and helps to prevent flooding in the area.
Please stay safe and stay out of the water.

ASDA
Leicester City Council’s approach to SuDS delivery

DETAIL 12: SECTION 12 to 12' - 1:25 SCALE

Proposed rain garden / exposed aggregate / porphyry paving

1. Proposed In situ concrete surfacing with exposed aggregate finish to section Q21 of the specification (100mm depth)
2. Concrete foundation to section Q10 of the specification
3. Raised silver grey granite edging (75 x 200 x 450mm) to section Q10 of the specification
4. 100mm depth free draining river washed gravel to Q23 of the specification
5. Manufactured topsoil created from site won sub-soil material to Q26 of the specification
6. Geotextile Terram 1000 wrap to section D20 of the specification
7. Existing road surfacing
8. Proposed rain garden planting to section Q31 of the specification
9. Proposed ornamental tree planting to section Q31 of the specification
10. Anchoring wires to section Q31 of the specification
11. Proposed alluvion crushed free draining stone (30-60mm normal size) to section D20 of the specification
12. Irrigation system to Q31 of the specification
13. Proposed anchoring system to Q31 of the specification
14. Proposed tree / rootball see section Q31 of the specification for details
15. Root barrier where required see Q31 specification for details
16. Timber triangle 30 x 125 x 900mm softwood timber
17. 1500 drain pipe connected to existing drainage system as overflow system
18. Proposed porphyry paving (150 x 50mm x random lengths) to section Q25 of the specification
19. 40mm depth mortar bed to section Q25 of the specification
20. 60mm depth DBM binder course to section Q22 of the specification
21. Existing ground
22. Large welsh cobbles to section Q23 of the specification
Leicester City Council's approach to SuDS delivery

Before 2014

De Montfort University
Leicester City Council’s approach to SuDS delivery

21/02/2018

University of Leicester
Leicester City Council’s approach to SuDS delivery

Innovative delivery of flood alleviation through green infrastructure

Ellis Meadows

Chryse Tinsley: Landscape Architect, Leicester City Council
Jonathan Vann: Managing Director, Riverscape Environmental Consultants
Environment secretary Andrea Leadson launches new funding scheme; Natural Flood Management; from Ellis Meadows
Leicester City Council’s approach to SuDS delivery

21/02/2018

Leicester goes Italian
Leicester City Council's approach to SuDS delivery

Steve Wilkinson RTPI president  Jan 2018
Leicester City Council's approach to SuDS delivery

City centre schemes
Leicester City Council’s approach to SuDS delivery

Flexible parking – permeable
As NBS Q22/
40mm aggregate drain asphalt 10mm
60mm permeable asphalt 20mm
450mm coarse graded aggregate
on Terram 1000

Surface Type 4a
FLEXIBLE PERMEABLE CAR PARK
(New Construction)
Leicester City Council's approach to SuDS delivery

Oakley’s Road
Ashton Green is seen as the most innovative and sustainable new development in Leicester in more than 30 years and will enable substantial progress towards delivering the 20,000 new homes needed in the City over the next 20 years.
Ashton Green
The site in general slopes down to the A46 which forms the main northern boundary. Presently it is drained by a network of field boundary ditches and other water courses some of which convey water year round. Where possible these should be retained and improved by the addition of ponds and cascades into which swales can be linked. This will attenuate and treat the increase in surface water runoff from roads, parking areas and alike.
Leicester City Council's approach to SuDS delivery

Phase 1 Feb 19 2018
Leicester City Council's approach to SuDS delivery

Phase 4
Leicester City Council’s approach to SuDS delivery

New housing
Leicester City Council’s approach to SuDS delivery

St Mary’s allotments

Mitred concrete headwall - HW1, HW2, HW4, HW6, HW7, HW9 & HW10

200x100x50mm granite sets bed on 150mm wet C25/3 concrete foundation

Safety grill to be provided over outlet

Mitred concrete headwall

Swale

Swale base 150mm topsoil with grass seed

225mm outlet pipe

Indicative Section B - B Through Cross Falling Carriageway and Swale

Detention basin to be constructed in accordance with adopting authority standards and OSHA Report C709 - The SuDS Manual.

Leaves to be confirmed at detailed design stage.
Leicester City Council is working with the Environment Agency on projects along the River Soar to reduce the risk of flooding and make better use of land for development and open public space. This will include the creation of temporary water storage sites, improved access to waterside public spaces and additional places for local wildlife.

**Swan’s Nest Wetland**

This site will feature a new shallow pond to compliment the existing wetland, offer enhanced views of the weir, and see the planting of new fruit trees and a wildflower meadow. Swan’s Nest Wetland will also provide temporary flood compensation for development at the former John Ellis site, and help to improve water quality and biodiversity along Corporation Road ditch.

**Cardinal’s Meadow**

We will be opening up the frontage by removing the fencing to help access along the pathway, creating a series of ponds and wetland to store water when needed and improving areas for wildlife by planting trees and wildflowers.
Leicester City Council's approach to SuDS delivery

Technical adoption guide
Hierarchy of approaches

Design aims
- Surface water should be kept at surface as much as possible
- Design should be looking at containing and limiting run off from site
- SuDS is a preferred option

Adoption
- Method of build should be as simple as possible
- The area from the back of the footpath to and including road carriageways should all be considered highway; this applies whether the green areas are to be maintained by the city council or by a management company

Commuted sums will be dependent on whether it can be adopted by a management company and the degree of risk
Leicester City Council’s approach to SuDS delivery

Aim
to keep water close to surface
• limits excavations,
• keeps swales shallow
• limits danger
• makes maintenance easier

Culvert emerging from road; needs to discharge onto reinforced surface

Commuted sum negotiable
Leicester City Council’s approach to SuDS delivery

Trees to back of footpath/cyclepath

- Highway extent of responsibility back to footpath to back of footpath
- Management company or private owner beyond this area

The tree/soft verge takes highway run off. The highway authority have an easement to manage the water but the management of the tree and soft areas is the management company’s
Leicester City Council’s approach to SuDS delivery

Successes
• Changing attitudes
• Increasing numbers of good case studies
• Possibilities re painless adoption

Challenges
• Schools programmes
• Getting into local universities

‘Have just discovered Ellis Meadows … and wanted to say how wonderful it is. The mass of white daisies were beautiful and the large ponds lovely. I realise from the signboards that it is in essence part of a flood relief scheme along the River Soar, but it really is a lovely natural area’

.. from a local resident who wrote into the council on June 16th 2017
Leicester City Council's approach to SuDS delivery

Disconnected downpipe

Happy parks officer

Rain garden

Enthused children

be happy