


Delivering the Vision for SuDS in Oxfordshire

Chris Patmore  
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UNITED BY OUR DIFFERENCE 

10/03/2014

## Delivering the Vision for SuDS in Oxfordshire




**CIRIA: Delivering SuDS not duds**  
Great Western Park, Didcot

- Introduction
- Brief overview of the Great Western Park site
- Planning Stages
- Development of the drainage strategy
- The Vision
- The Constraints / Opportunities
- The Reality
- Summary




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Chris Patmore

For the Great Western Park development I has been involved since the mid 1990's advising on drainage, flooding, infrastructure (utilities) and highways matters.





As a result I have been involved in developing the drainage design through the Local Plan process and EIA as well as providing the input into the outline and detail planning stages.




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Pipes	Modular Storage	Permeable Paving	Swales	Ponds and Wetlands	Rain Gardens
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A consortium development led by TaylorWimpey and David Wilson Homes on 160 Ha of essentially Greenfield land to the immediate west of the urban areas of Didcot.


Development features:

- 3,300 new homes
- Secondary School
- 2 No. Primary Schools
- 3 No. Mixed use centres incorporating - shops, community buildings and homes
- Informal Public Open Space
- Formal sports pitches



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### PLANNING STAGES

**Outline Planning Application**

- Covers whole site with reserved matters

**Framework Areas**

- Three areas (North, Central and South)

**Local Area Briefs**

- Covering design guidance for key areas

**Detailed Planning Applications**

- For each phase
- Key infrastructure
- Key landscaping areas

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**CONSULTEES**



OXFORDSHIRE COUNTY COUNCIL  
www.oxfordshire.gov.uk  
Working for you



Thames Water



South Oxfordshire District Council  
Listening Learning Leading



Vale of White Horse District Council




Environment Agency

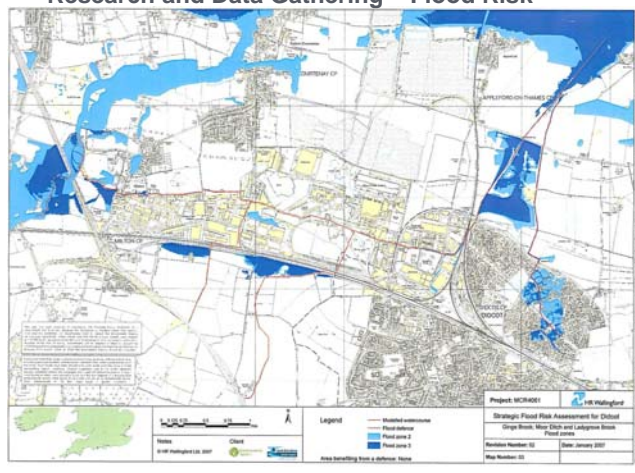




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#### Research and Data Gathering – Flood Risk





Legend

- Shaded watercourse
- Flood defence
- Flood zone 1
- Flood zone 2
- Flood zone 3


Project: MCHAGEE  
Client: WSP  
Strategic Flood Risk Assessment for Didcot  
Oxford Bank, New Didcot and Longmead Brook  
Flood zones

Revision Number: 02 Date: January 2012  
Plan Number: 00

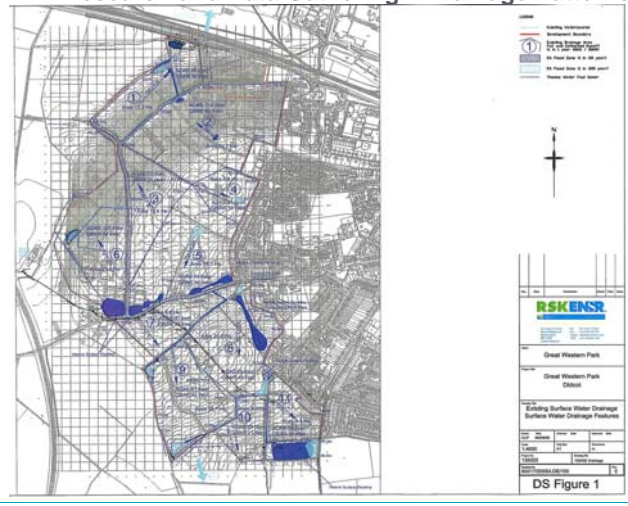





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#### Research and Data Gathering – Drainage Patterns



**DS Figure 1**



Surface water ponding north of Wantage Road



Predominantly Greenfield Site

Composite plan showing historic areas of flooding within GWP boundaries based on EA, SODC and residents records

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#### Research and Data Gathering – Geology and Hydrogeology




Ground Investigation and Groundwater Monitoring




Watercourse Identification and Flow Monitoring


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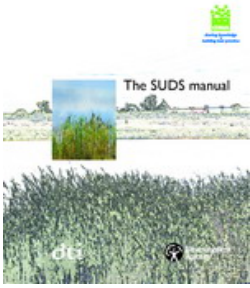
### Research and Data Gathering – Guidance



PPS25  
(Planning Policy Statement 25)




The Pitt Review  
(Learning Lessons from the 2007 floods)



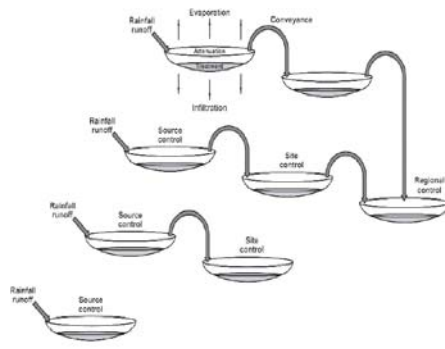
The SUDS Manual  
(CIRIA 2007)

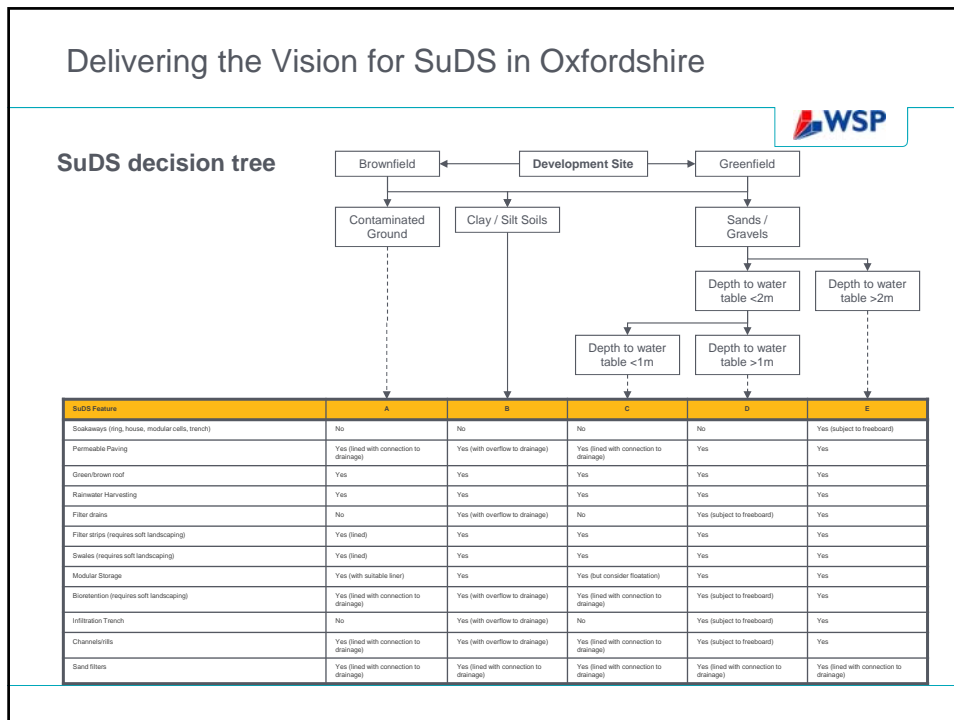
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### CIRIA C697 “The SuDS Manual”

- **Prevention** – the use of good site design and site housekeeping measures to prevent runoff and pollution (eg sweeping to remove surface dust and detritus from car parks), and rainwater reuse/harvesting. Permeable paving
- **Source control** – control of runoff at or very near its source (eg soakaways, other infiltration methods, green roofs, pervious pavements).
- **Site control** – management of water in a local area or site (eg routing water from building roofs and car parks to a large soakaway, infiltration or detention basin).
- **Regional control** – management of runoff from a site or several sites, typically in a balancing pond or wetland.





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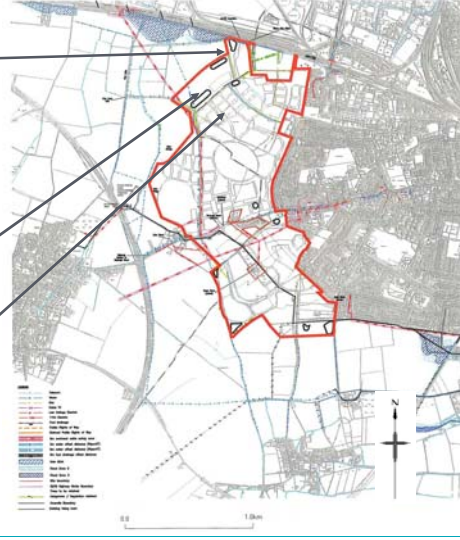

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Great Western Park, Didcot

**The Vision**


- Follow SuDS best practice (CIRIA C697)
- Incorporate Source Control
  - Permeable Paving
  - Grouped and individual soakaways
- Merge Highway and Domestic surface Water Drainage with no Thames Water SW sewers
- Use Green Infrastructure for conveyance and exceedance routing




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**Infiltration/Detention Basin Example**



**Detention Pond Example**





**Permeable Paving (OCC) Example**




0 0.5 1.0 km


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**Attenuation Pond Example**



**Permeable Paving (OCC) Example**

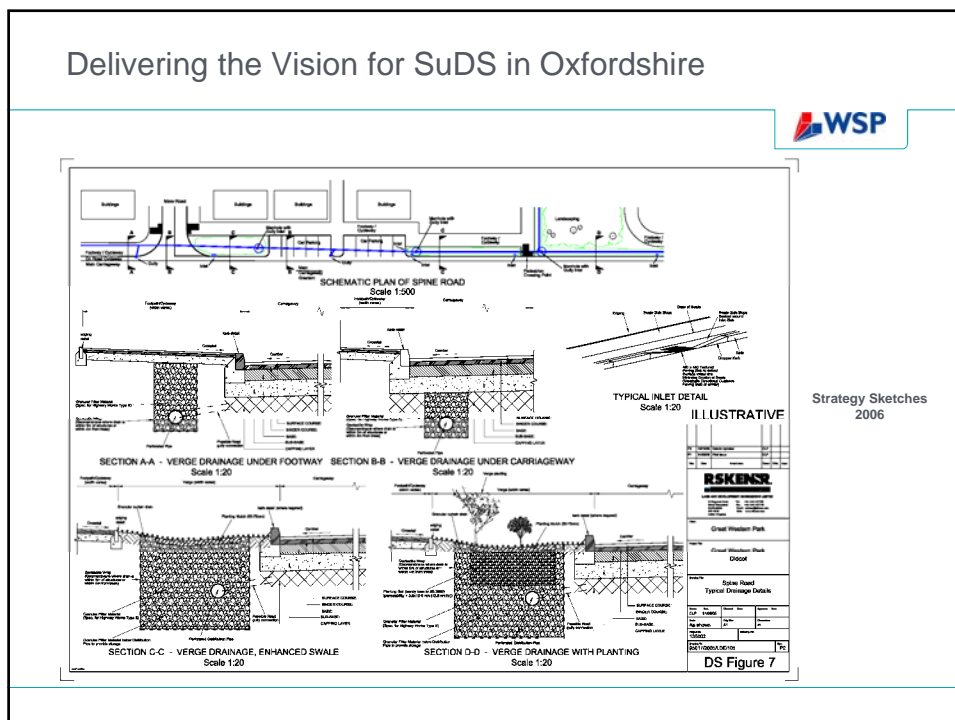
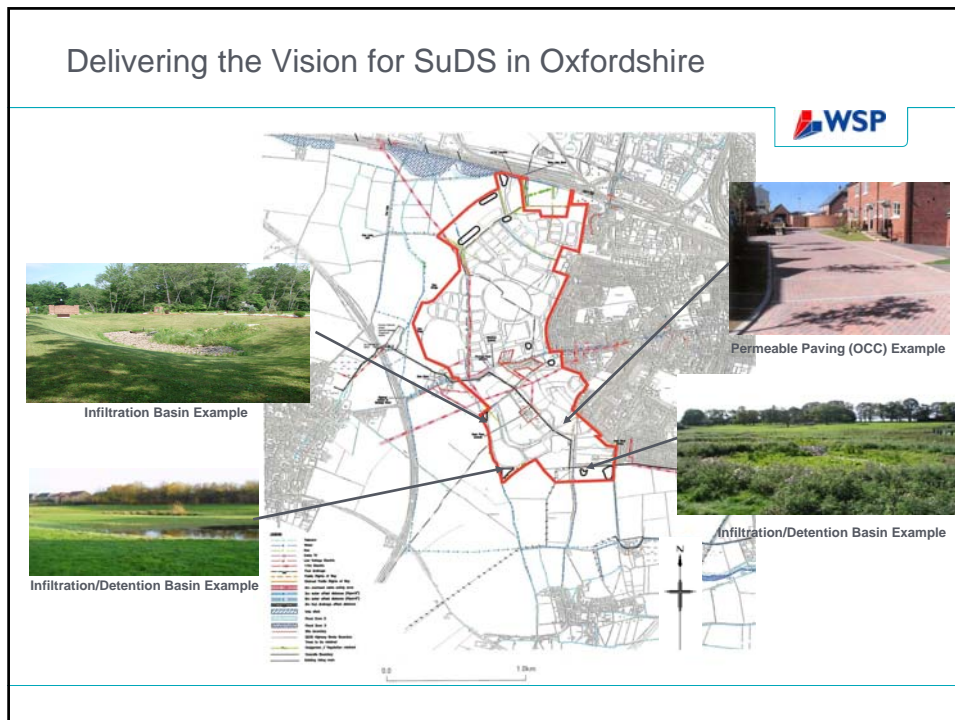


**Attenuation Pond Example**




0 0.5 1.0 km





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<p><b>Constraints</b></p> <ul style="list-style-type: none"><li>• Ground conditions (clays, Upper Greensand)</li><li>• Topography</li><li>• Groundwater levels (8m to nil)</li><li>• Infiltration Rates (low to nil)</li><li>• Land Ownerships</li><li>• Changes of Client (Consortium Structure)</li><li>• The Recession</li><li>• Flood Risk (north of site)</li><li>• Flood Risk (perceived to the south)</li><li>• Communication between agencies</li><li>• Legal frameworks (Adoption limitations)</li><li>• Experience / Examples</li></ul>	<p><b>Opportunities</b></p> <ul style="list-style-type: none"><li>• Early involvement of drainage in the masterplan</li><li>• Engagement of consultees</li><li>• Topography</li><li>• Green Infrastructure</li><li>• Open space provision</li><li>• Direct connection to watercourses</li><li>• Joined up thinking</li><li>• The Three Stage Planning Approach</li><li>• Flexibility of solutions</li><li>• Dual uses</li><li>• All surface water under one authority / agency</li></ul>
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**The Reality**

Where are we now?

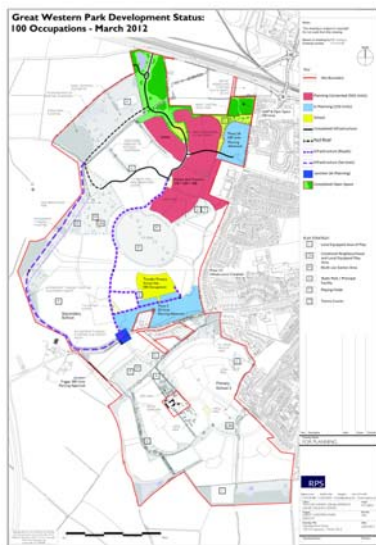


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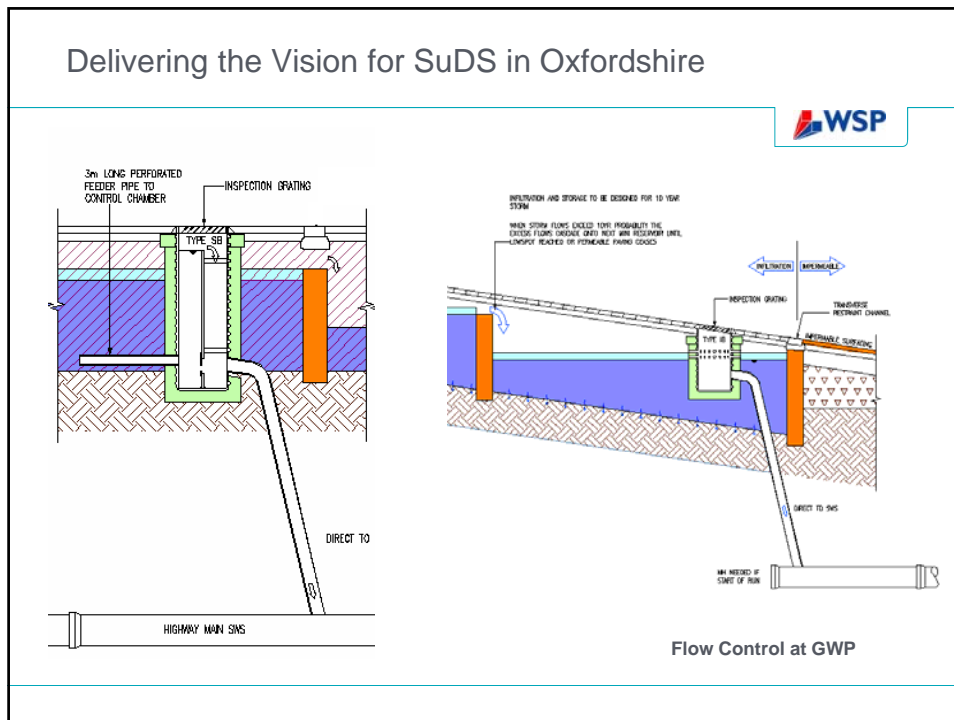
Progress  
Early 2011

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Progress Mid 2012





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**Summary**





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### CIRIA: Delivering SuDS not duds Great Western Park, Didcot

#### Lessons Learnt

- Communication
- Drainage as part of the masterplan not an afterthought
- Use the ground conditions
- Use the topography
- Establish the Adoption criteria and agencies at the on-set
- There are more than one way to achieve the same goals
- Workmanship and experience
- Maintain flexibility in layout and options
- Communication



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### Further Information

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Great Western Park

<http://www.gw-park.co.uk/>

Interpave

[http://www.paving.org.uk/commercial/case\\_studies.php](http://www.paving.org.uk/commercial/case_studies.php)

