20 Years of SUDS in Scotland

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The beginning of SUDS in Scotland
What was happening in the world when we introduced SUDS in Scotland?

This was the top selling car in the UK.

This was the music we were buying.

This film had just been released.

WWC Edinburgh 2015
The SUDS that were being implemented then…..

Some good

Some not quite as good
(remember this was before technical guidance was available in Scotland!)
Scottish legislative context

- **COPA 1974**
- **National CIRIA guidance on SUDS (C521)**
- **SUDS become law to tackle water quality**
- **Sewers for Scotland (SfS2)**
- **SUDS retrofitting to address flood risk**

**Key Legislation**
- Environment Act 1995
- Control of Pollution Act 1974
- Flood Prevention and Land Drainage Act 1997
- Water Environment and Water Services (Scotland) Act 2003
- Water Industry (Scotland) Act 2002
- Building (Scotland) Regs 2004
- Flood Risk Management Scotland Act 2009

**Additional Notes**
- Scottish legislative context
- Building regs include SUDS
- SUDS for Roads guidance
SUDS surveys in Scotland

1996 Abertay University survey

A total of 119 questionnaires were sent out to a wide range of engineers, environmental consultants, local councils, water authorities, and planners, with 43 being returned.

- 72% knew that ponds can be used for flood and pollution control but only 18% thought that they could be used for flood control and not for pollution control.
- Only 2% replied that guidance was adequate and only 5% believed that adequate guidance on adoption was available.
- 79 systems were planned or built in Scotland. The most popular types of system were infiltration trenches and ponds. Swales, wetlands, and porous paving were not found to be popular options, and infiltration basins were the least popular type.

‘an American idea which will never work in Scotland’
Factors which deter the use of source control

- Deterrents for those who have used source control systems
- Deterrents for those who have not used source control systems

Deterrents to the use of SUDS in 1996

- Design standards
- Cost
- Maintenance standards
- Materials
- Safety
- Understanding
- Others
- Adoption
- None

1996 Abertay University survey
SUDS surveys in Scotland


Familiarity with the term sustainable urban drainage

97.6% Yes
2.4% No

Things were changing with the first large scale SUDS demonstration site......

The Dunfermline Eastern Expansion - DEX
SUDS surveys in Scotland

Deterrents to the use of SUDS in 2003

- None: 5.3%
- Capital Costs: 7.7%
- Maintenance Costs: 10.5%
- Safety Concerns: 11.0%
- Lack of Available Guidance: 6.8%
- Land Take: 14.1%
- Obtaining Approval from Relevant Authorities: 11.0%
- Availability of Construction Materials: 1.3%
- Time Involved: 3.1%
- Responsibility of Adoption/Maintenance: 19.8%
- Lack of Experience: 5.9%
- Other: 3.5%

WWC Edinburgh 2015
SUDS surveys in Scotland

Fast forward to 2013 - Abertay University survey, carried out on behalf of the Sustainable Urban Drainage Scottish Working Party (SUDSWP)

Key barriers

- **Guidance (35%)** – clarity needed on technical issues, functionality, terminology.
- **Governance (25%)** – fragmented inter-agency collaboration, enforcement, funding mechanisms, quality control.
- **Education (22%)** – best practice case studies for emerging techniques.
- **Responsibility (10%)** – inspection, maintenance, private ownership, H&S.
- **Financial (8%)** – land take, land use, construction costs.
SUDS surveys in Scotland

Barriers to implementing Source Control in 2013

Costs

1. Clarity: 21%
2. Education: 19%
3. Governance: 17%
4. Cost: 14%
5. Responsibility: 13%
6. Technical Guidance: 12%
7. Proprietary Use: 11%
8. Validation: 10%
9. Experience / Fear of the new: 9%
10. Planning: 8%
11. Integration: 7%
12. Enforcement: 5%
13. Incentives: 3%
14. Standards: 2%
15. Terminology - confusing: 1%

Land Availability

Maintenance
Some of the issues identified in the earlier surveys have been largely resolved, such as the absence of design guidance and standards. These have been largely addressed with:

- SUDS Guidance
- Planning Advice notes
- Sewers for Scotland V2
- Surface Water Management Planning Guidance
- SUDS Manual
- SUDS for Roads

but indications are that more guidance may still be required......
SUDS in Scotland now...

There has been significant progress in terms of the numbers of SUDS implemented

79 SUDS in 1996

3,900 SUDS in 2000

SUDS are routine business in 2015
Conclusions

- It is widely acknowledged that SUDS implementation has come a long way,...
  but there are still fundamental issues which were identified in the surveys carried out 20 years ago which have still to be addressed.
- Scotland has benefitted from a strong legislative and regulatory regime.
- We still have weak enforcement of regulatory requirements and inspection policies.
- There are fragmented funding responsibilities, which influence the ability of organisations to adopt SUDS. The FRMA goes some way to addressing this; with a more holistic and collaborative approach.
- There is still confusion regarding the use of the management train approach, in particular controlling runoff at source.
- New guidance is required on existing statutes/interpretation of existing regulatory requirements.

Thanks for your attention!