

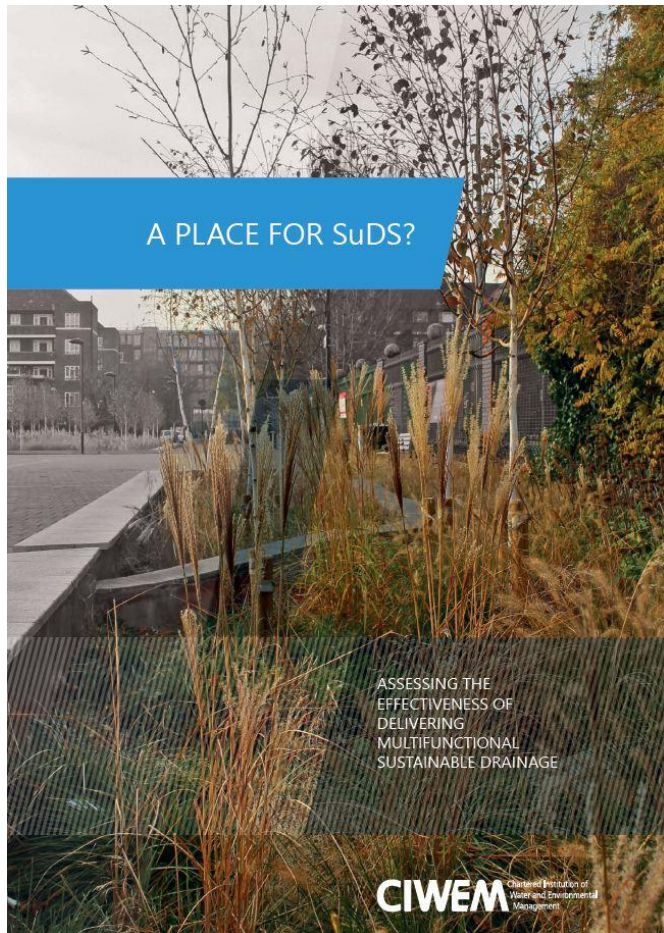
IMPLEMENTING SUDS AND DELIVERING BENEFITS

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A Place For SuDS?

CIWEM key findings to inform future SuDS Implementation



- Costs and benefits (in particular) are not fully assessed
- Physical site constraints is a common excuse
- Planning authorities and LLFAs have limited capacity and skills
- Often missing out delivering multiple benefits (i.e. following very narrow optional non-statutory standards)
- SuDS adoption and future maintenance is the greatest barrier

Commonly Cited Barriers

What is the reality?

WHAT ARE THE REASONS CITED IN PLANNING APPLICATIONS FOR NOT IMPLEMENTING SUDS? PLEASE TICK ALL THAT APPLY

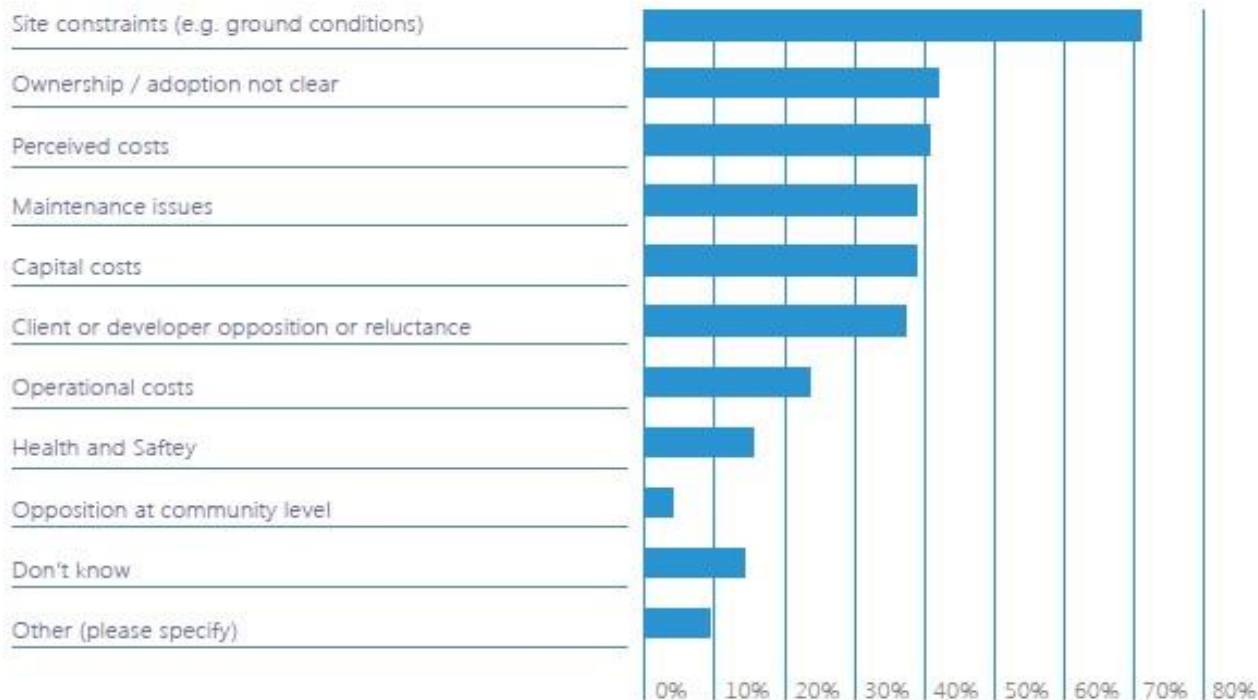


Figure 2. Big SuDS Survey question 15 "What are the reasons cited in planning applications for not implementing SuDS? Please tick all that apply"

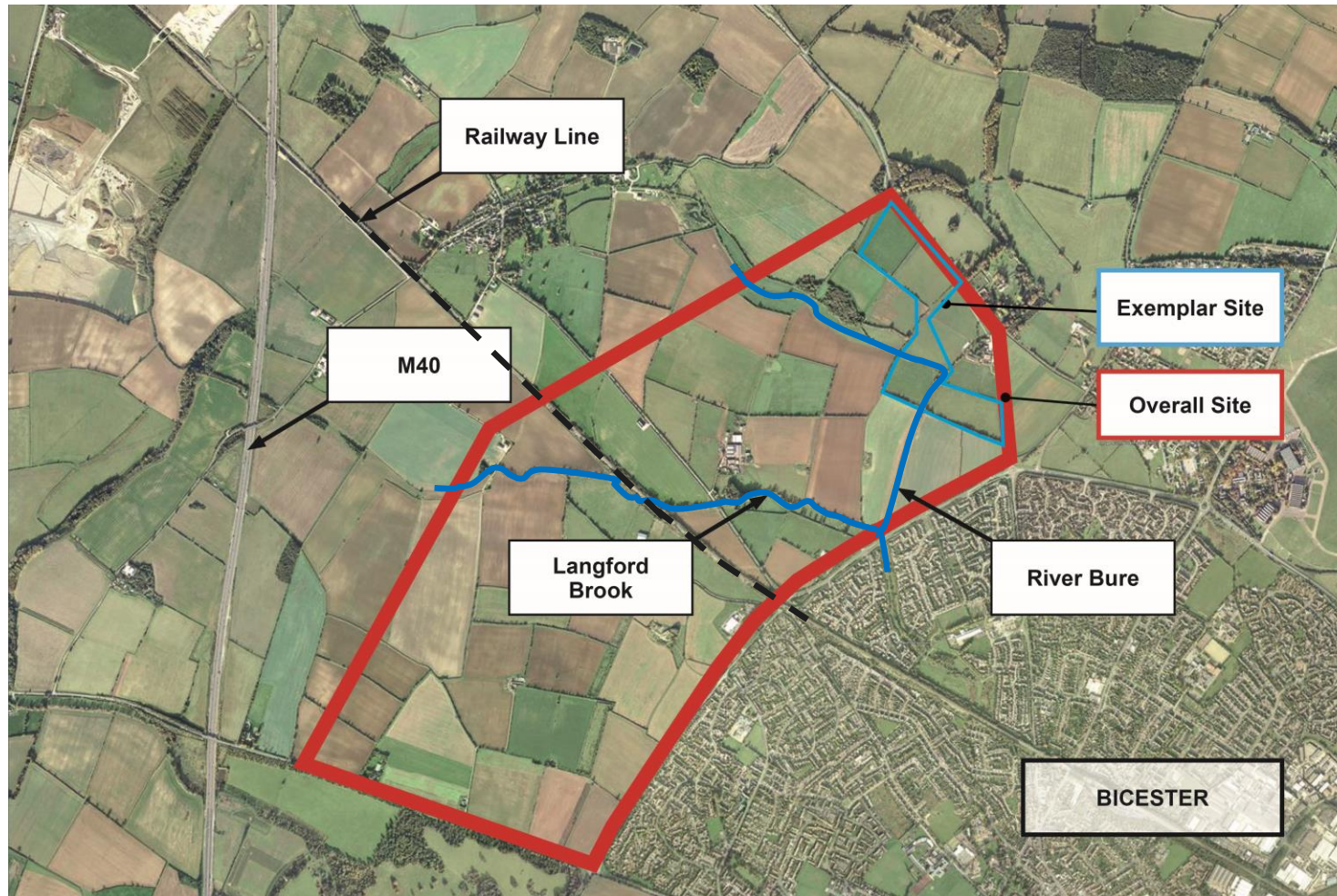
Source: A Place for SuDS? CIWEM (2017)

- Other reasons/ perceived barriers:
 - Planning policy, guidance and advice
 - SuDS Standards
 - Delays to planning??
- CIWEM Report also concluded that these barriers are mainly political and institutional rather than technical and financial

CASE STUDY – NW BICESTER

Scene Setting

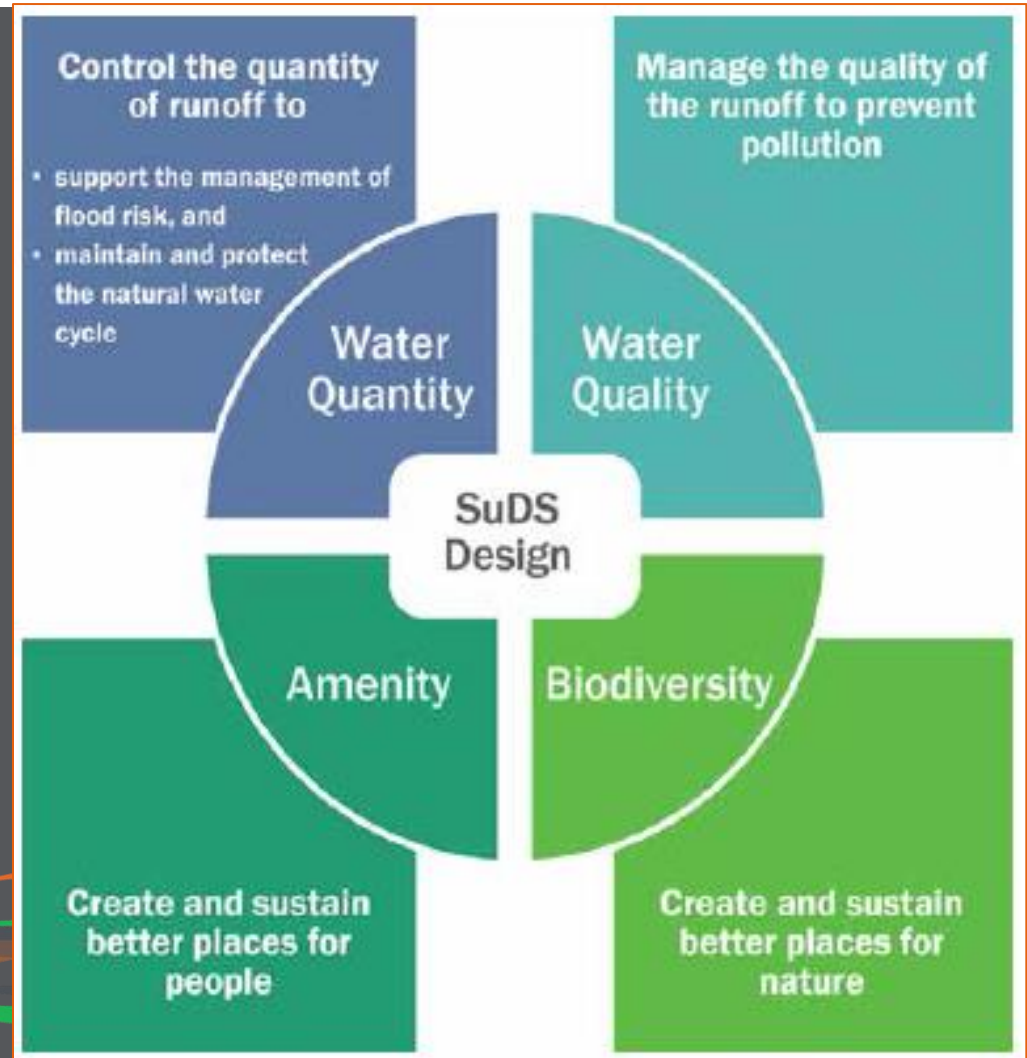
Exemplar Site and Masterplan Site Location



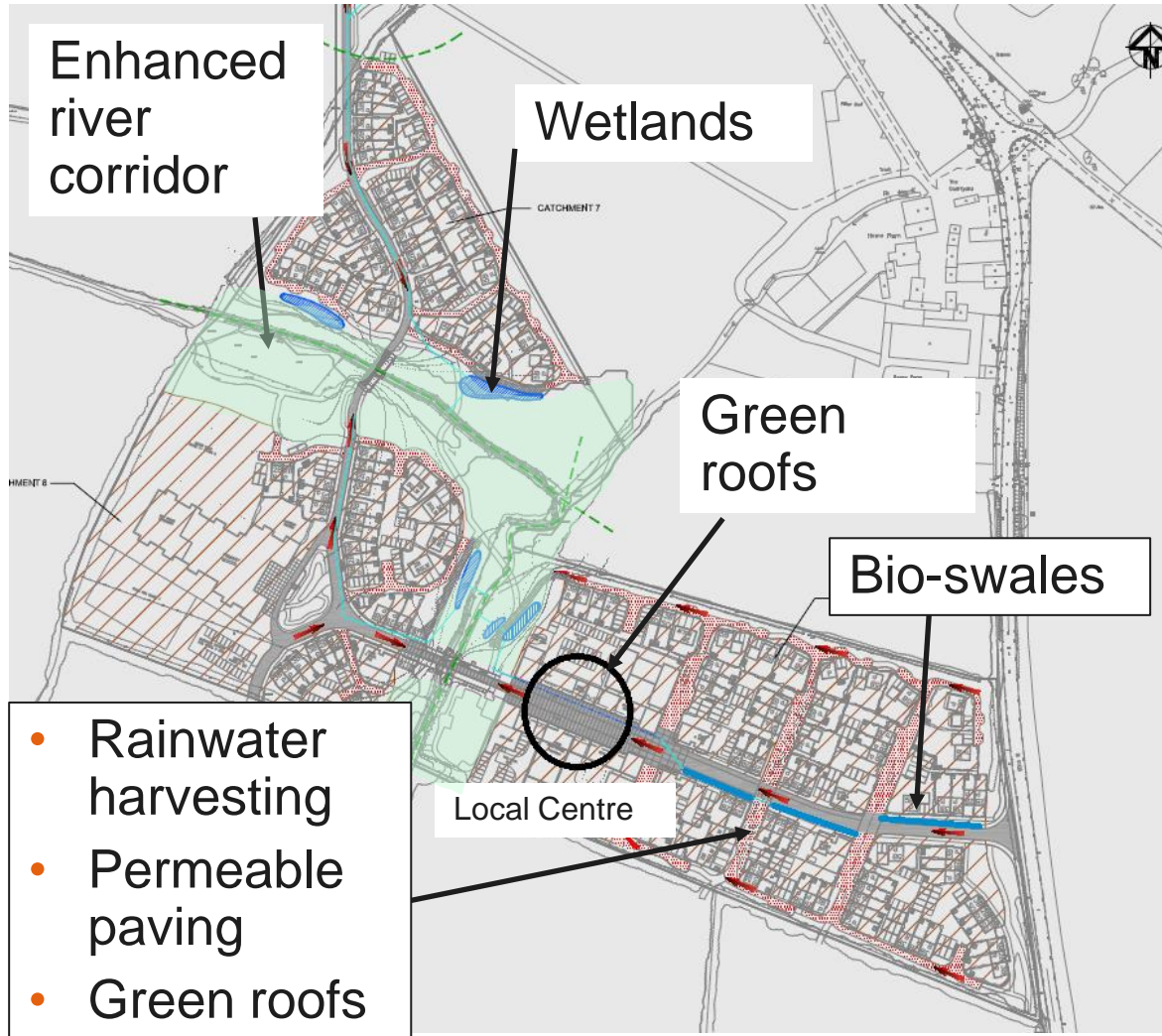
- 400 Ha, 6000 new homes
- **40% Green Space** (at least half of this publically accessible)

Key Concepts

- Enhance **natural drainage, water quality and flood risk reduction**
- Use water as a **resource**
- Maximise **sustainability, water saving benefits**
- Ability to cope with **climate change and urban creep**
- Promote **exemplar design and best practice**



Exemplar Site SuDS

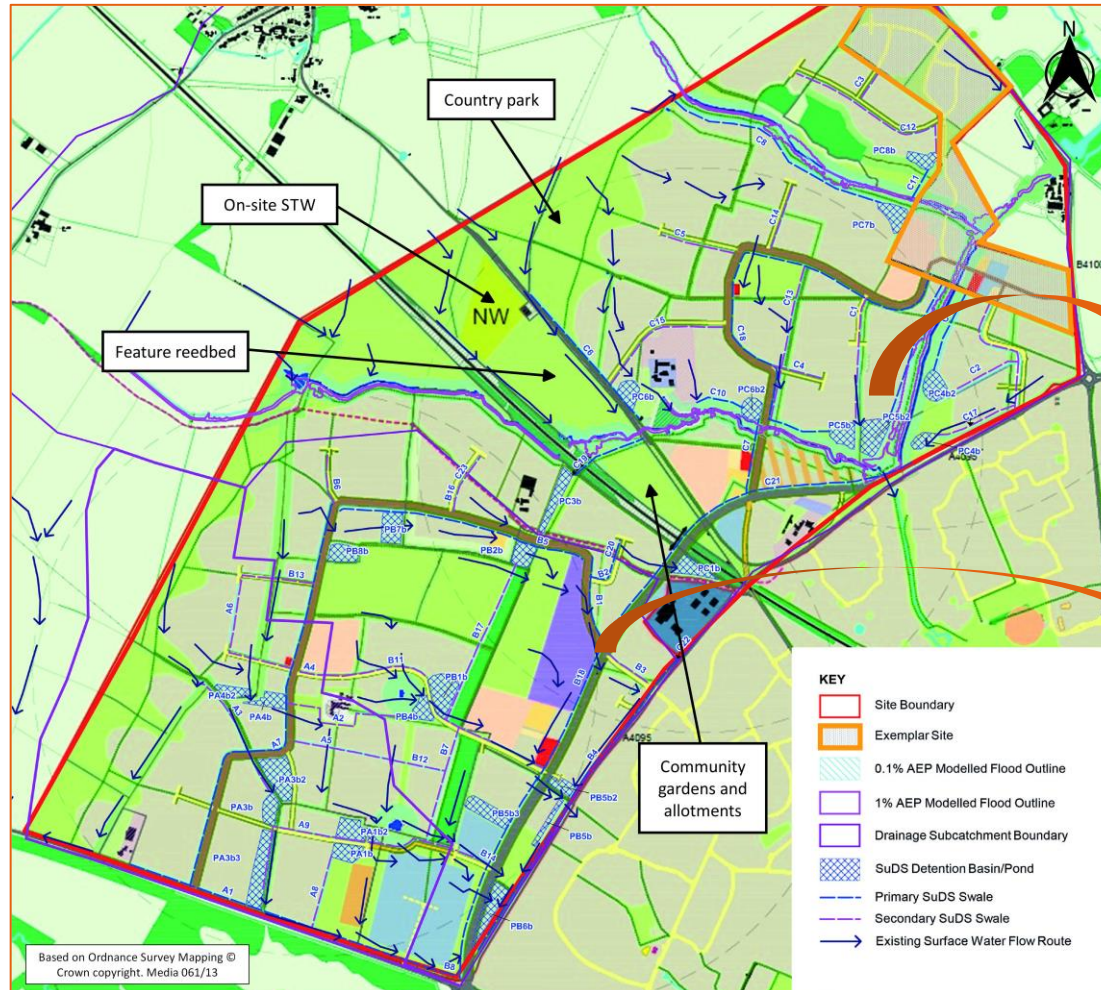


Exemplar Site SuDS Adoption

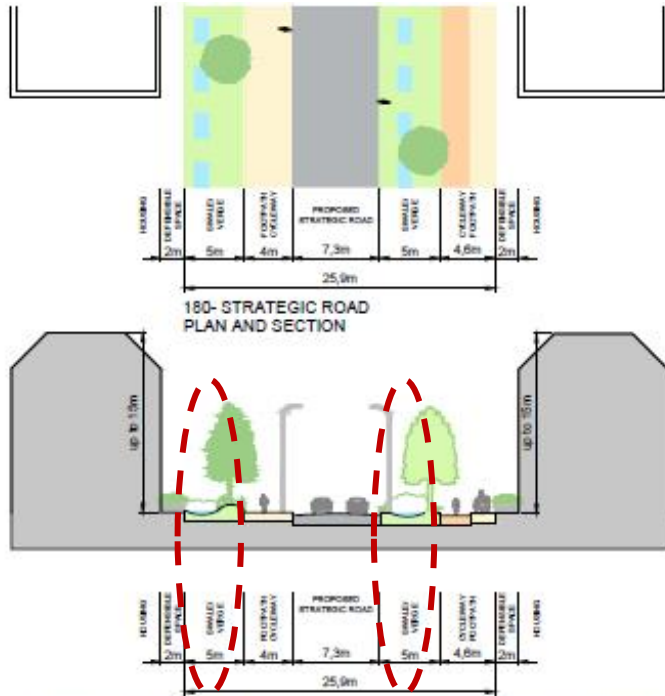
Adoption Body	Adopted SuDS Measures
Oxfordshire County Council	<p>SuDS within adopted highway boundary (e.g. swales, rills, filter drains, pipes)</p>
Private Management Company (PMC)	<p>SuDS outside the adopted highway boundary except those within the individual property boundaries (e.g. green roofs and rainwater recycling tanks which will be maintained by property owners. The revenue gained from the service charges, which includes maintenance costs of landscaping features and SuDS, is used for funding the PMC.</p>

Masterplan Site SuDS

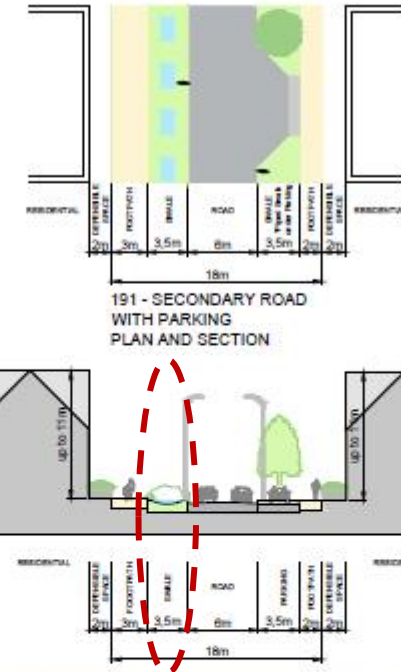
Capturing knowledge & Lessons Learned from Exemplar Phase



Roadside SuDS



**Primary
Road**



**Secondary
Road**



ECONOMIC BENEFITS OF SUDS

Exemplar Site (17.5ha) Example

1. Identify SuDS solutions

2. Determine natural capital values of SuDS (Qualify)

3. Measure changes in the state of natural capital (Quantify)

4. Monetise natural capital value of SuDS

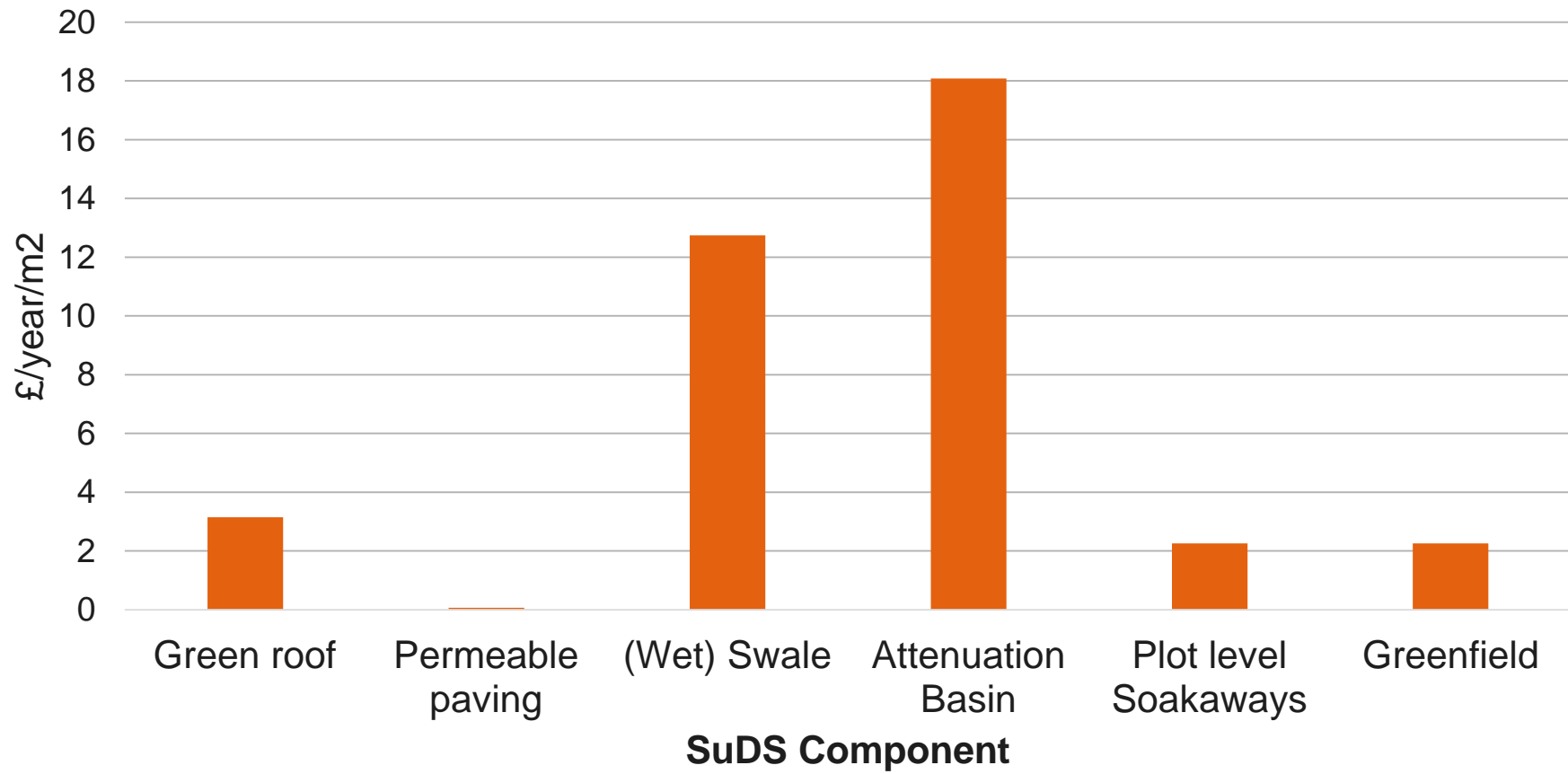
SuDS features	Size (m ²)
Intensive Green Roof	3,490
Permeable paving	12,470
Swale	39,030
Attenuation Basin	20,000
Soakaways	36,000
Greenfield*	64,010
Total Catchment area	175,000

SuDS Benefits Summary

Further benefits were also qualified but not monetised

Natural Capital benefits	Qualifiable	Quantifiable	Monetised	Total benefits (£/year)
Reduction in flooding	X	X		
Reduction of water treatment needs	X	X	X	6,340
Improvement in water quality	X			
Increase in groundwater recharge	X	X		
Reduction in noise pollution	X			
Improvement in air quality	X	X	X	2,900
Reduction in energy use	X	X	X	15,930
Reduction in GHG emissions	X	X	X	3,770
Carbon sequestration	X	X	X	2,260
Reduction in urban heat island	X			
Health and wellbeing	X			
Improvement in aesthetics/amenity	X	X	X	203,170
Increase in recreational opportunities	X	X	X	55,860
Provision of educational opportunities	X			
Improvement in habitat (biodiversity)	X	X	X	17,320
			Grand Total	307,550

Annual Benefits per SuDS Feature



FINAL THOUGHTS

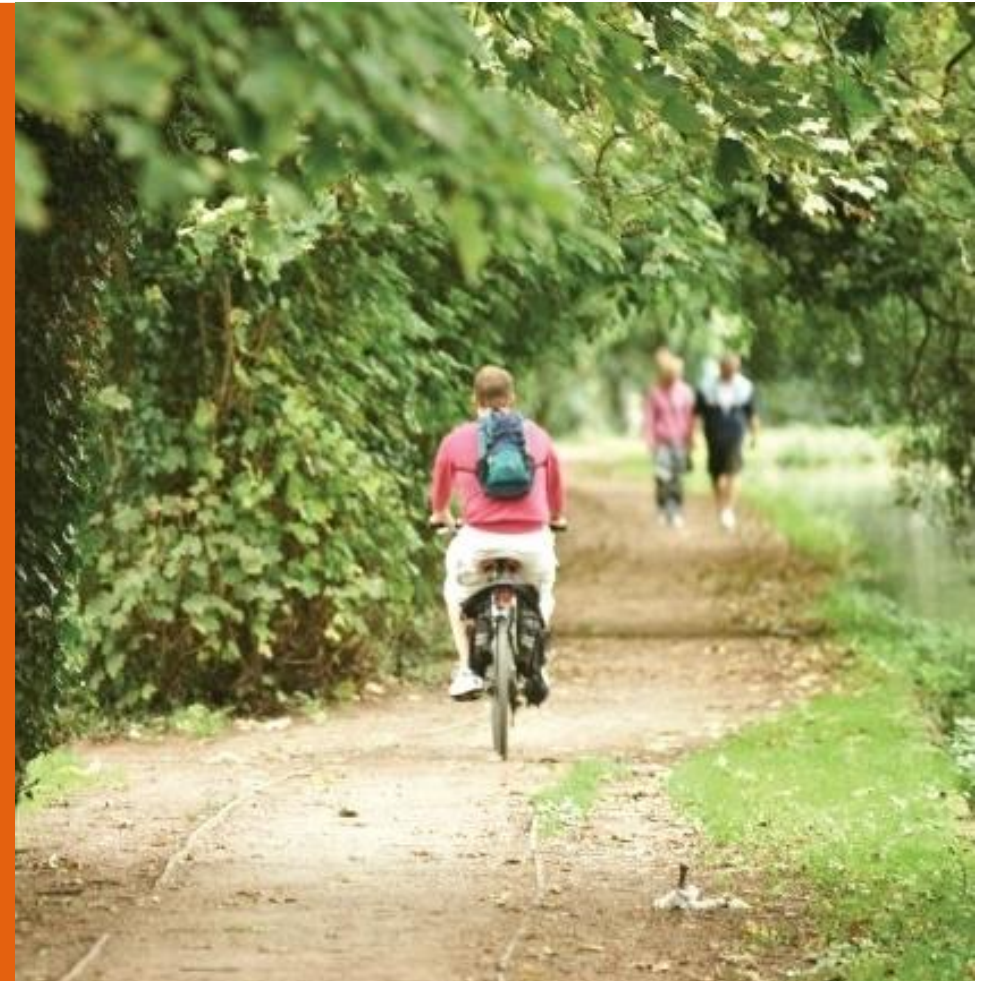
NW Bicester is a pioneering example
– close collaboration and early SuDS
consideration is key

SuDS provides notable
environmental & economic benefits

Addresses key barriers and inform
future SuDS policy

Tackles resiliency, efficiency and
quality priorities.

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- Masterplanner - Farrells
- Wider project team – see website

<http://nwbicester.co.uk/>

Arcadis.

Improving quality of life.

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