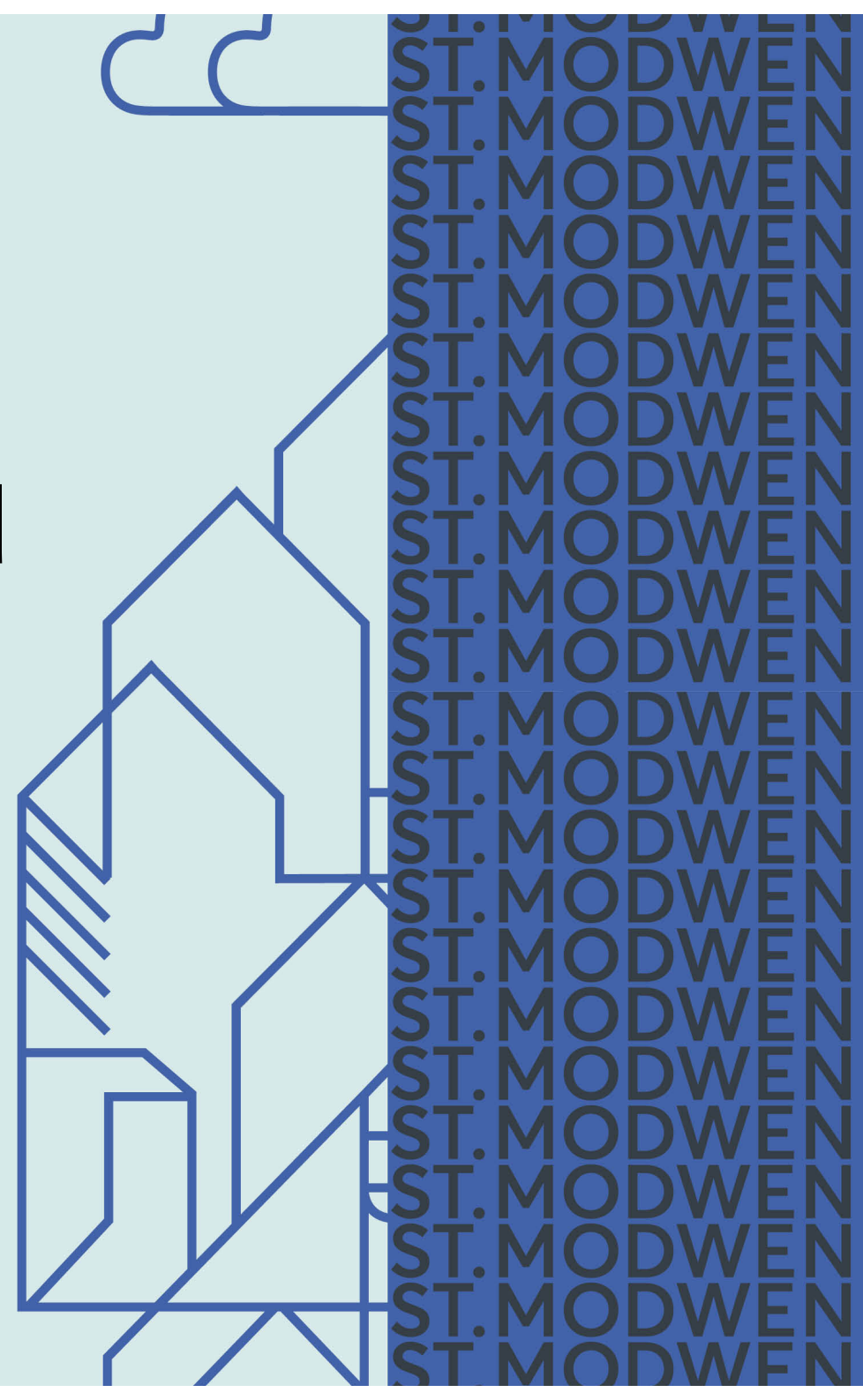




Example of SuDS and Housing

Developer Leadership to Proactively Design,
Procure and Manage Quality SuDS Solutions





Introduction

St. Modwen

Tim Jones – CEng MICE
Construction Manager, Land and Infrastructure
<https://www.stmodwen.co.uk/>



Rapleys

Jack Downing - IEng MICE
Associate - Land Development Project Management
<https://rapleys.com/>



Changing places. Creating better futures



Contents

- Overview of Millbrook Park, Barnet
- Overview of St. Andrews Park, Uxbridge
- Detail of Schemes
- Particular Successes
- Challenges and how these overcome
- Relationship with Local Authority
- Maintenance
- What would make things easier





Overview of Millbrook Park, Barnet



Overview of St. Andrew's Park, Uxbridge





Detail of the Schemes

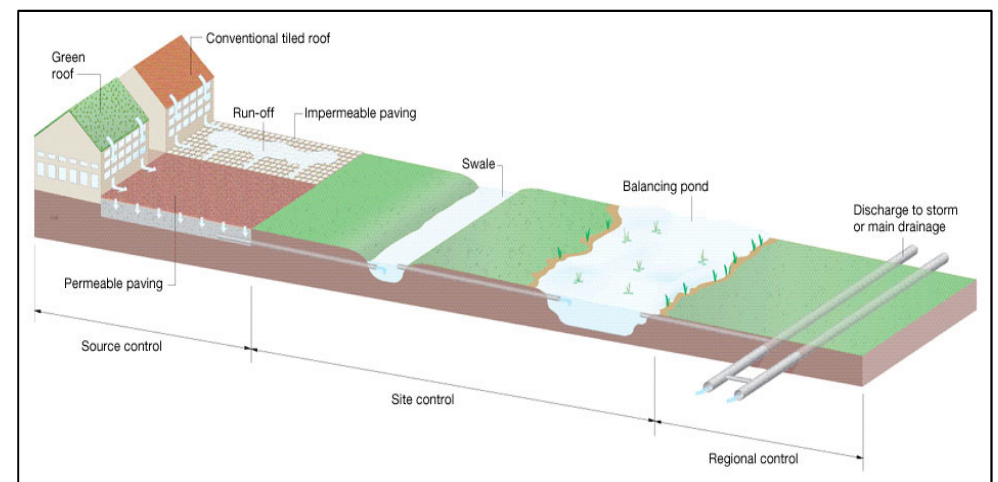
As a Land Developer and Project Managers we appreciate that SuDS can play a major part in helping deliver quality places to live, sense of community, SuDS can play a vital role. We believe integrating land to act as both 'blue and green' is key as well as striking a balance between hard and soft SuDS to maintain viability for a scheme.

Both schemes are exemplars of SuDS complex treatment trains. Combining multiple SuDS features to control water quantity, improve water quality, enhance amenity areas and encourage biodiversity.

We work closely with:

- Consultant Teams
- Planning Authorities
- Highways and Drainage Authorities
- Management companies
- Plot Developers
- Principal Designers

Example SuDS Treatment Train





Particular Successes

Urban Swale – Uxbridge



Health and Safety is at the forefront of everything we do. When designing open SuDS features we work with the design team to ensure the design can be constructed, maintained and be operated in a safe manner.

Early delivery of SuDS within enabling infrastructure to allows the planting to establish prior to occupation.

Linear Rain Garden – Millbrook





Particular Successes

Ensuring early engagement in the masterplanning phase to bring the SuDS selection & design to the forefront so their potential can be maximised to provide the greatest benefit.

Permeable Paving - Uxbridge



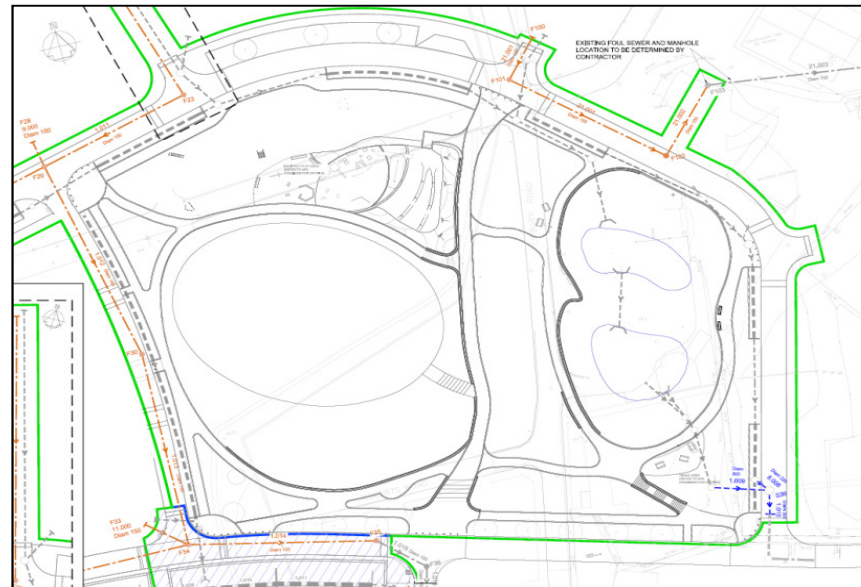
Bio-Retention Area – Millbrook Park

Challenging consultants to provide the best solutions, think outside of the box.

The examples here show how SuDS can be optimised in an urban environment. Great things can be achieved even in limited spaces.

Challenges and how these were overcome

Challenge	Solution
Steep Topography	A two tier stepped attenuation pond solution supporting by a gabion wall.
Constraints - Existing tree retention and services	Constraints establish from outset and layout was designed to respect and adopted the constraints into the final solution.
Effective Land Use	Early engagement with Civil Engineer and Landscape Architect to ensure the space is functional but also provides and attractive public open space.



Panoramic Park – Millbrook Park

Bringing Engineering, Masterplanning and Architecture together





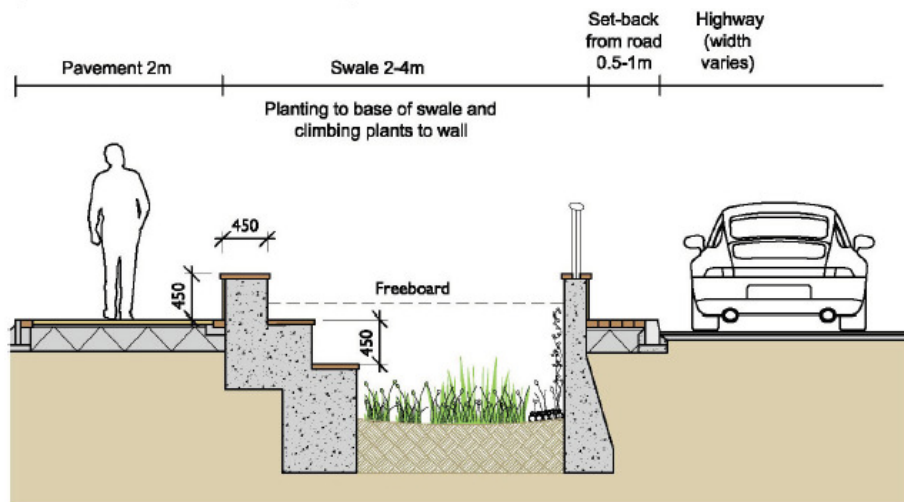
Relationship with the Local Authority

Good strategy delivers good outcomes - co-ordinated Surface Water Strategies makes it easier to deliver SuDS for both Developer and Local Authority through-out scheme.

Flexible Approach to suit developing conditions – Example; Millbrook Park working with the local authority through S73 application to find more economic and visually appealing solution.

Before - 'Urban Swale'

Figure 5.48 Indicative cross section - urban swale option 1



After - Linear rain garden





Maintenance

- What is the true cost of maintenance SuDS?
- How many of the items in the table are extra overs when comparing to a green space without SuDS?
- Is a higher frequency of inspection and maintenance required compared to traditional systems?
- How do we obtain cost certainty?
- What are the whole life costs for a SuDS component?

Operation and maintenance activity	SuDS component												
	Pond	Wetland	Detention basin	Infiltration basin	Soakaway	Infiltration trench	Filter drain	Modular storage	Pervious pavement	Swale / bio retention / trees	Filter strip	Green roofs	Propriety treatment systems
Regular maintenance													
Inspection	■	■	■	■	■	■	■	■	■	■	■	■	■
Litter and debris removal	■	■	■	■	□	■	■	□	■	■	■		□
Grass cutting	■	■	■	■	□	■	■	□	□	■	■		
Weed and invasive plant control	□	□	□	□		□	□		□		□	■	
Shrub management (including pruning)	□	□	□	□					□	□	□		
Shoreline vegetation management	■	■	□										
Aquatic vegetation management	■	■	□										
Occasional maintenance													
Sediment management	■	■	■	■	■	■	■	■	■	■	■		■
Vegetation replacement	□	□	□	□						□	□	■	
Vacuum sweeping and brushing									■				
Remedial maintenance													
Structure rehabilitation / repair	□	□	□	□	□	□	□	□	□	□	□	□	
Infiltration surface reconditioning				□	□	□	□		□	□	□		

■ Will be required

□ May be required



What would make things easier

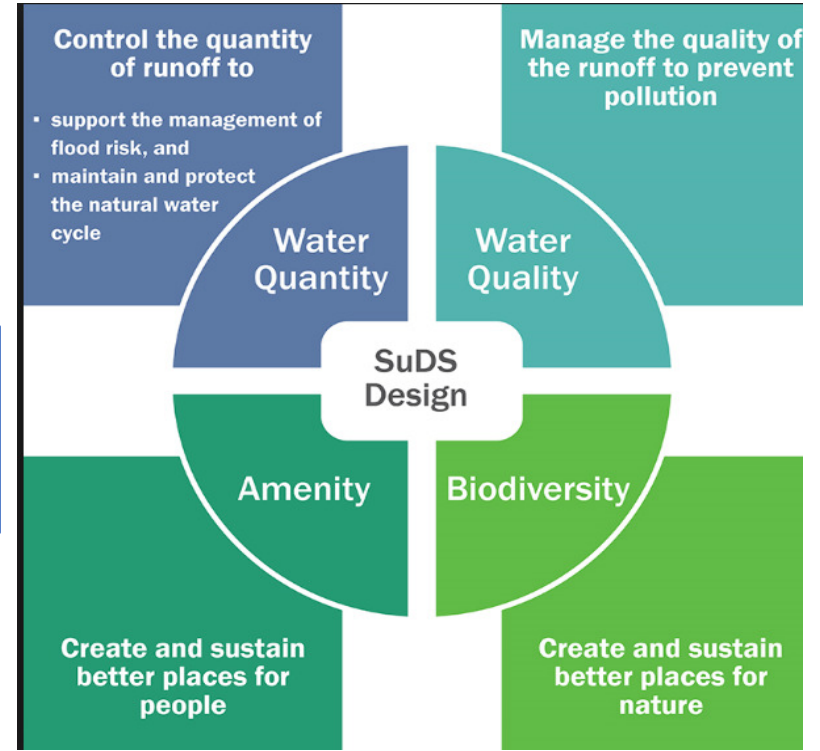
We believe that the Ciria SuDS Manual design standards are clear and concise and provide a wealth of information to provide safe, functional and visually pleasing designs.

Sewers for Adoption in England

A changed approach to surface water sewers



Getting the right organisation to adopt & manage SuDS



Option for Adoption – Sewers for Adoption 8th Edition is due this year but are the water companies ready? How will SFA8 change the adoption process?

Will Highway Authorities following SFA8's lead and start to adopt SuDS for Highway Drainage?

Any Questions

