



Interpave
THE PERMEABLE CONCRETE PAVING
AND KERB ASSOCIATION

Robert Bray Associates
Landscape Architects

Taking control of SuDS - with permeable paving

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supported by the trade association Interpave

Innovative SuDS Exemplars using Permeable Surfaces



Australia Road London – urban regeneration through SuDS

Bromsgrove – Parkside School civic re-development

Riverside Court – high density housing in Stamford

Hazeley Academy – new build development in Milton Keynes

to create urban space by managing rainwater with SuDS

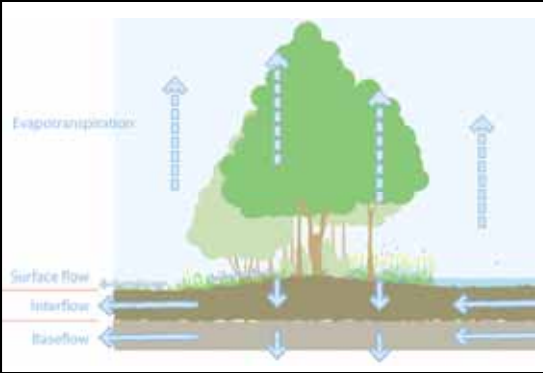
The nature of SuDS

Basin in a natural landscape Basin in an urban landscape



SuDS mimic nature

Rainfall in nature...and also in SuDS

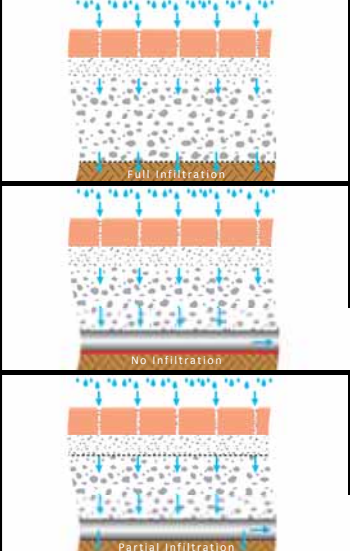


- evaporates
- infiltrates
- attenuates

In this presentation we focus on permeable surfaces

slow response time, natural losses and slow flows through the landscape

Concrete block permeable paving



- Collects rain at the surface
- Provides source control where rain falls
- Cleans and stores within the construction
- Delivers a controlled flow of clean water
- Safe easily maintained well-drained surface

and its importance for SuDS

Australia Road - the SuDS paradigm

Collect – spiral channels



Clean, store & convey – permeable pavement

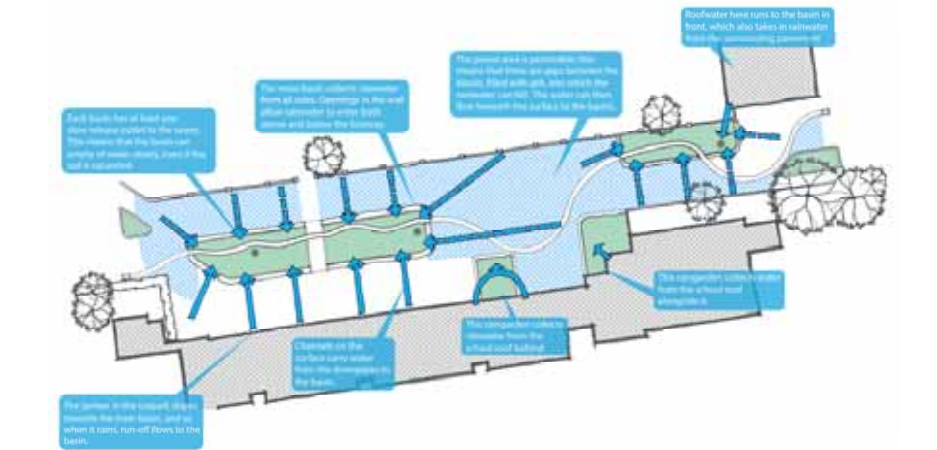


Clean, store & release – basins



'a controlled flow of clean water' for amenity and biodiversity

Australia Road - how it works



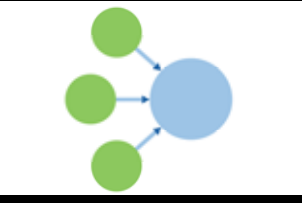
The diagram illustrates a road drainage system with several key components and their functions:

- Each basin has at least one flow control orifice in the event of a storm:** This means that the basin can accept a large volume of water, even if the road is saturated.
- Permeable pavement:** This allows water to infiltrate the ground, reducing runoff.
- The permeable pavement is made of porous concrete or asphalt:** This allows water to pass through the surface and into the ground.
- Flow control orifices:** These are small openings in the pavement that allow water to flow into the basin.
- Rainwater basins:** These are designed to collect rainwater from the surrounding pavement.
- Flow control orifices:** These are designed to control the flow of water into the basin.
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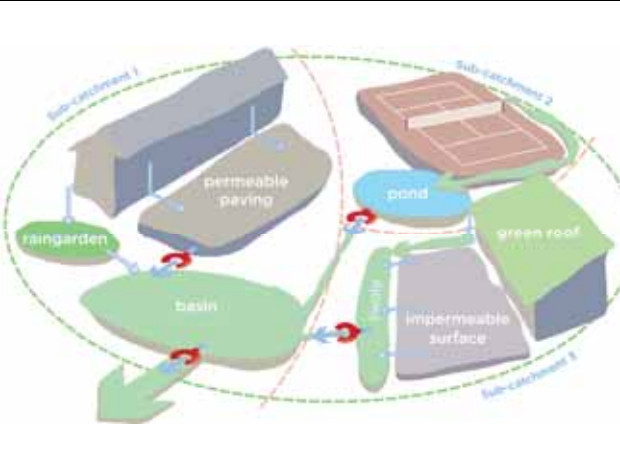
A controlled flow of clean water - 1 litre per second through 2 x 30mm orifices

The importance of flow control

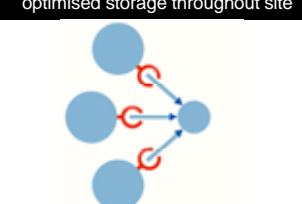
conventional drainage – single large storage volume



interconnected sub-catchments add flexibility and multi-functionality




SuDS with flow controls – optimised storage throughout site



enhancing storage capacity and creating sub-catchments

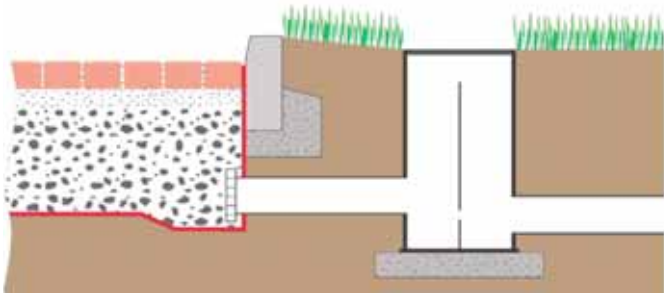
Controlling the Flow



- Protected orifice flow controls
- Passive operation and low maintenance
- Shallow and accessible
- Facilitates management of sub-catchments
- Demonstrates compliance with LLFA requirements

making SuDS work affordably

Controlling the Flow



simple orifice controls: making SuDS work affordably


Bromsgrove – Parkside Redevelopment

Parking area with lined permeable paving Central courtyard for infiltration Roof water used for amenity



managing rainfall on site with flow controls

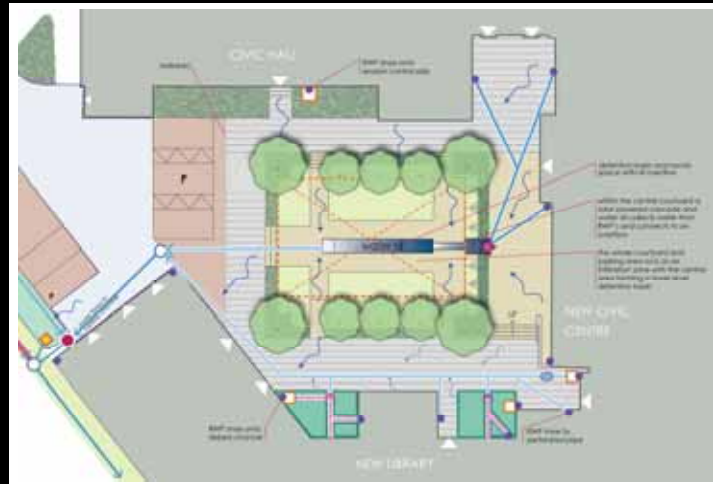
Parkside – how it works



- o Making the most of storage
- o Ensuring full infiltration
- o Defining sub-catchments

flow control and its importance for SuDS

Parkside – how it works



flow control and its importance for SuDS

Bromsgrove – Parkside Redevelopment



Flag paving with spacers and grit joints. Concrete block permeable paving. Grass and permeable planters.



creating an infiltration blanket with permeable surfaces

Riverside Court, Stamford


Water from roofs and other paving runs into permeable paving Permeable paving plays a key role in high density developments Planted rills and canals then outflow to the river



SuDS in urban areas through permeable paving

Riverside Court, Stamford

Following infiltration and interception losses, remaining treated water gradually discharges to the River Welland.



SuDS in urban areas through permeable paving

Riverside Court – How it works



SuDS in urban areas through permeable paving

Hazeley Academy Milton Keynes



Water is treated in permeable paving ...

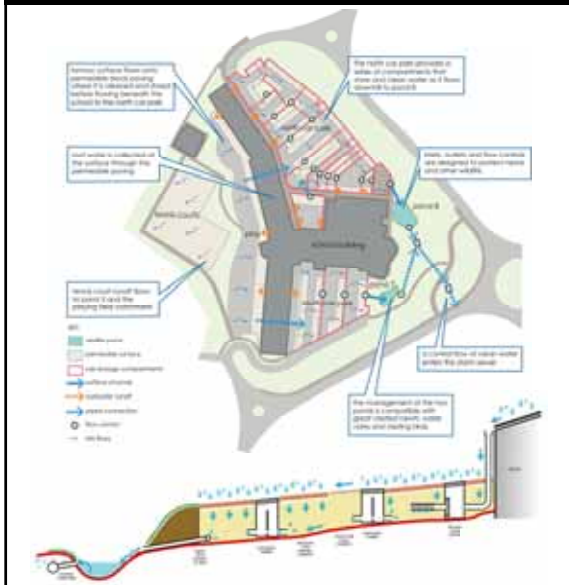
... before passing into wildlife ponds

Permeable paving provides safe, level play areas



permeable paving creates a safe & clean environment for wildlife

Hazeley Academy – how it works



- o a series of small sub-catchments maximises storage potential
- o Terraced permeable paving with flow controls down the sloping site
- o a controlled flow of clean water enters 'sensitive' habitat
- o SuDS is cost effective and good for wildlife

Hazeley Academy Milton Keynes



Wildlife ponds fed by permeable paving have an increased Great Crested Newt population

Concrete block permeable paving continues to provide well-drained surfaces



a decade later, following simple and cost effective maintenance

Creating an urban landscape to manage and celebrate water



design opportunities with SuDS, permeable paving and flow controls



Thank you

Case studies & further discussion:
Interpave Stand



www.paving.org.uk

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www.sustainable drainage.com