



GREENER GRANGETOWN WERDDACH

A Partnership Approach to Sustainable Drainage

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Greener Grangetown



A True Partnership Approach

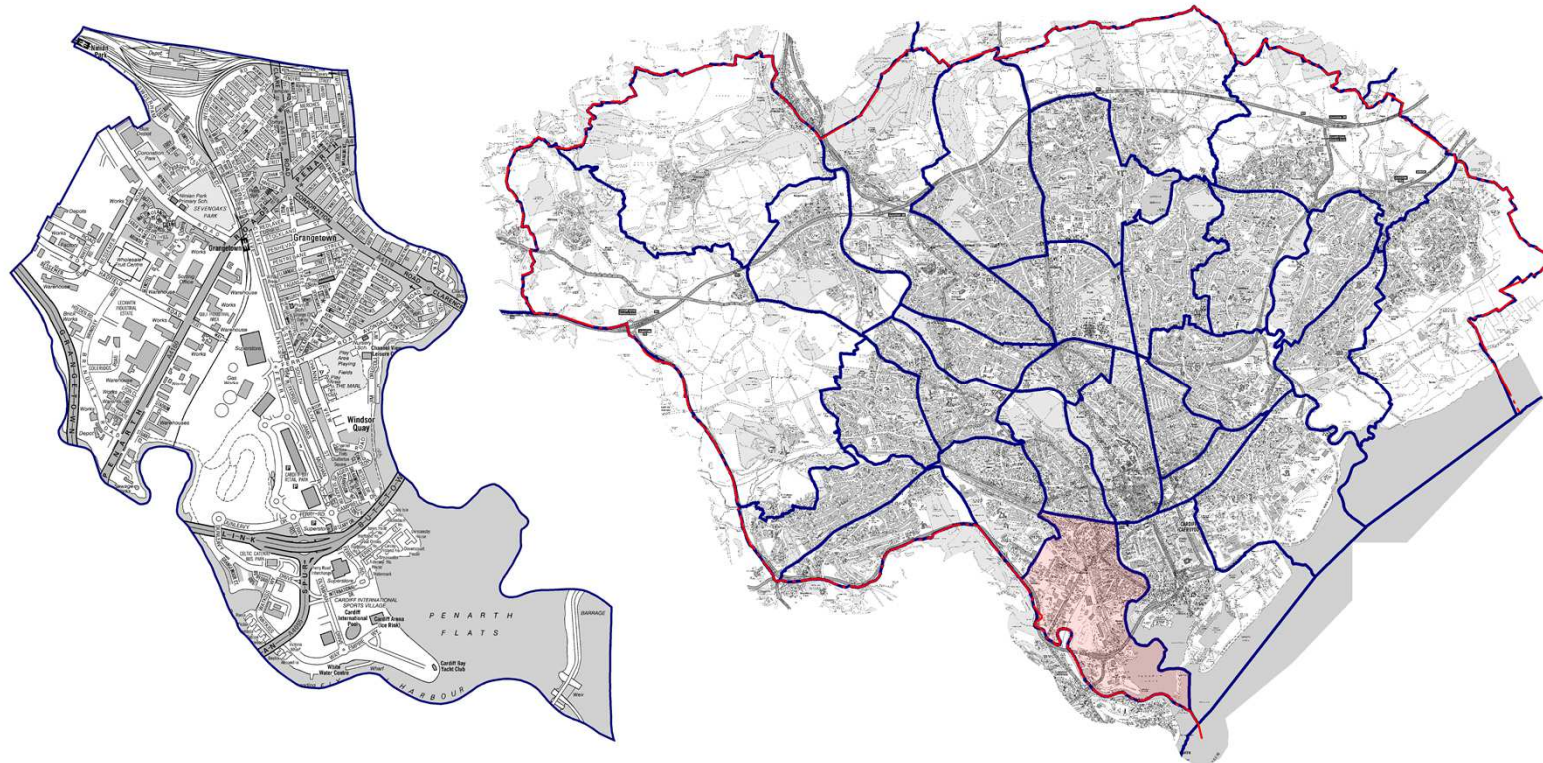


**Cyfoeth
Naturiol
Cymru
Natural
Resources
Wales**



- **A signed memorandum of agreement**
- **A project board with equal representation**
- **An equally funded design/consultation process**

Grangetown in Context



Grangetown is a thriving urban community of almost 20,000 residents, with a population density of almost twice the average of the city, and with one of the most culturally diverse communities of any Council ward in Wales.

Project Aims



**GREENER
GRANGETOWN
WERDDACH**

- **Sustainable Water Management**
- **Removal of Surface Water from Sewer Network**
- **Demonstrate Wider Benefits**
- **Toolkit for Future Projects**
- **To assess the success of partnership working**

Challenges

- Quantification of benefits
- Direct funding is from 3 different organisations with different drivers and responsibilities.
- Stakeholder engagement -Most culturally diverse council ward in Wales, with 92% of children attending the local school with English as their second language.
- Combined Sewers



Grangetown:Wide Street



Greener Grangetown



Grangetown: Narrow Street



Greener Grangetown



Grangetown: Block end



Greener Grangetown



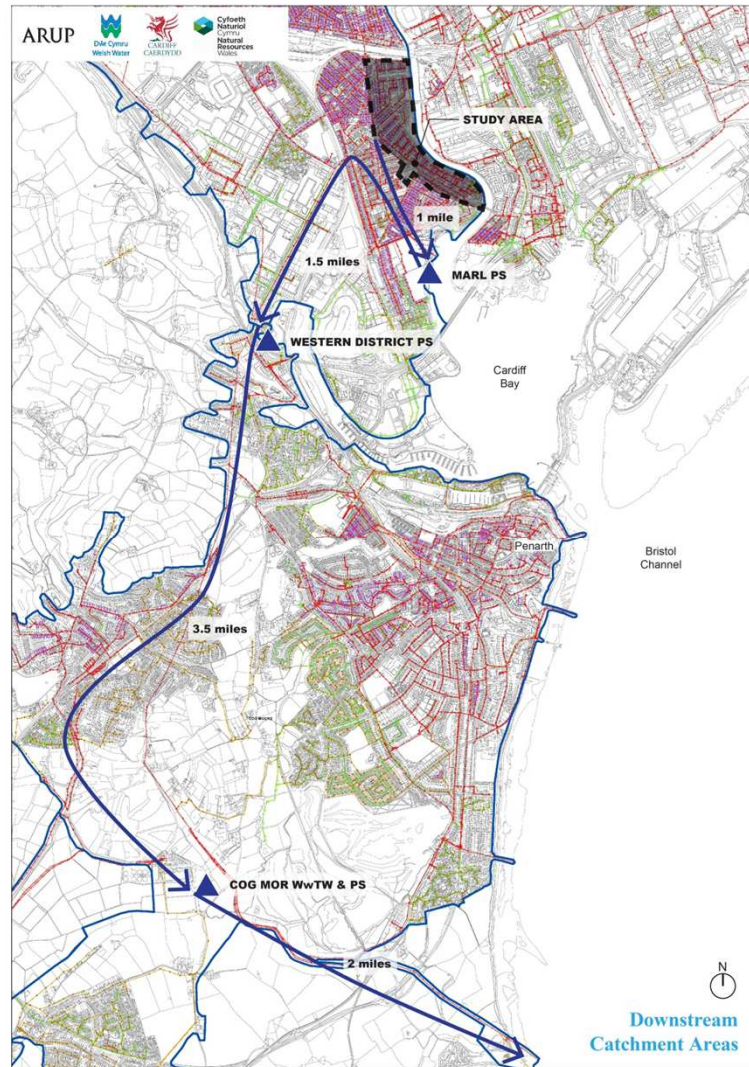
River Taff Ebankment, Taff Trail Cycle route



Greener Grangetown

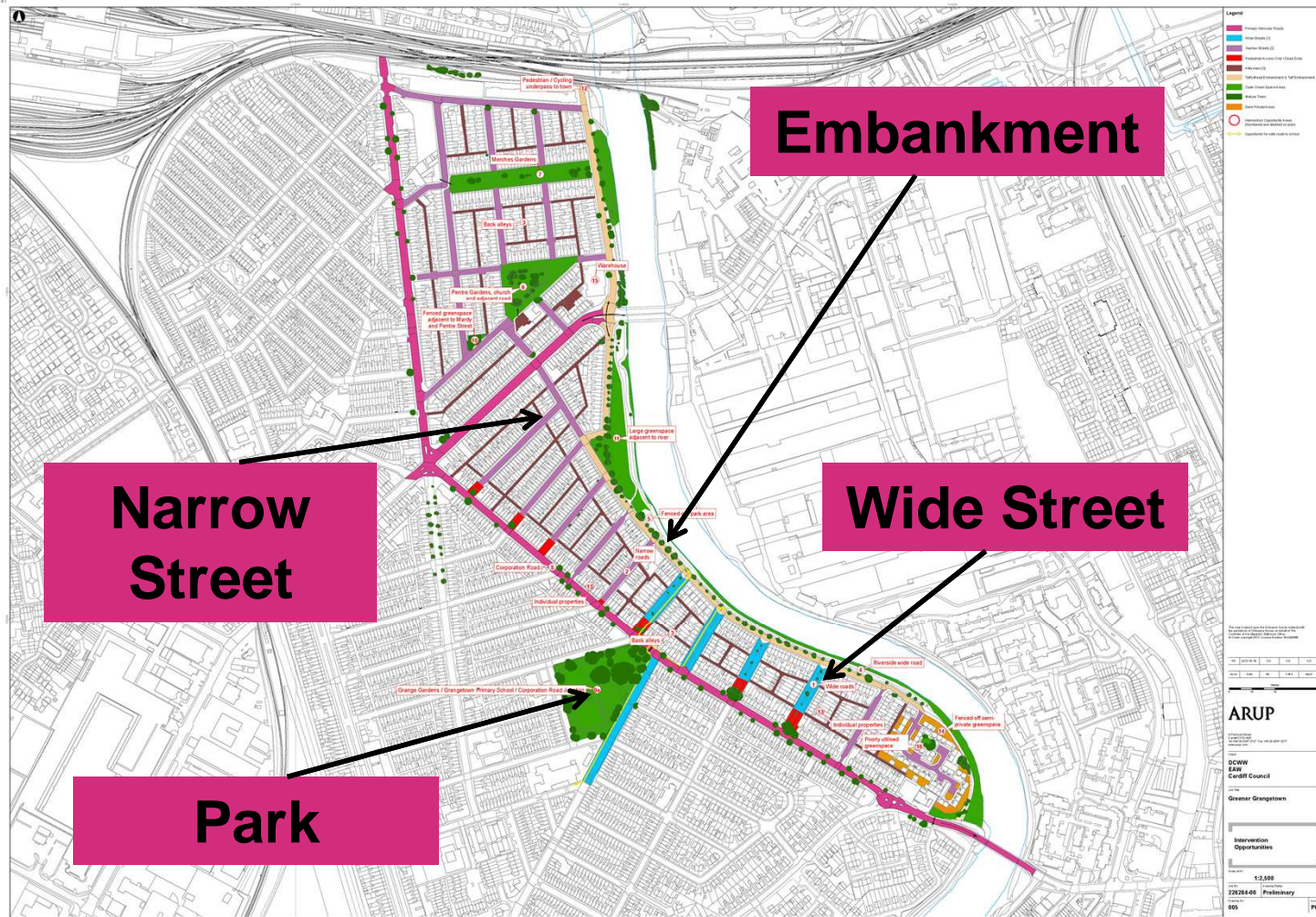


Unsustainable Drainage



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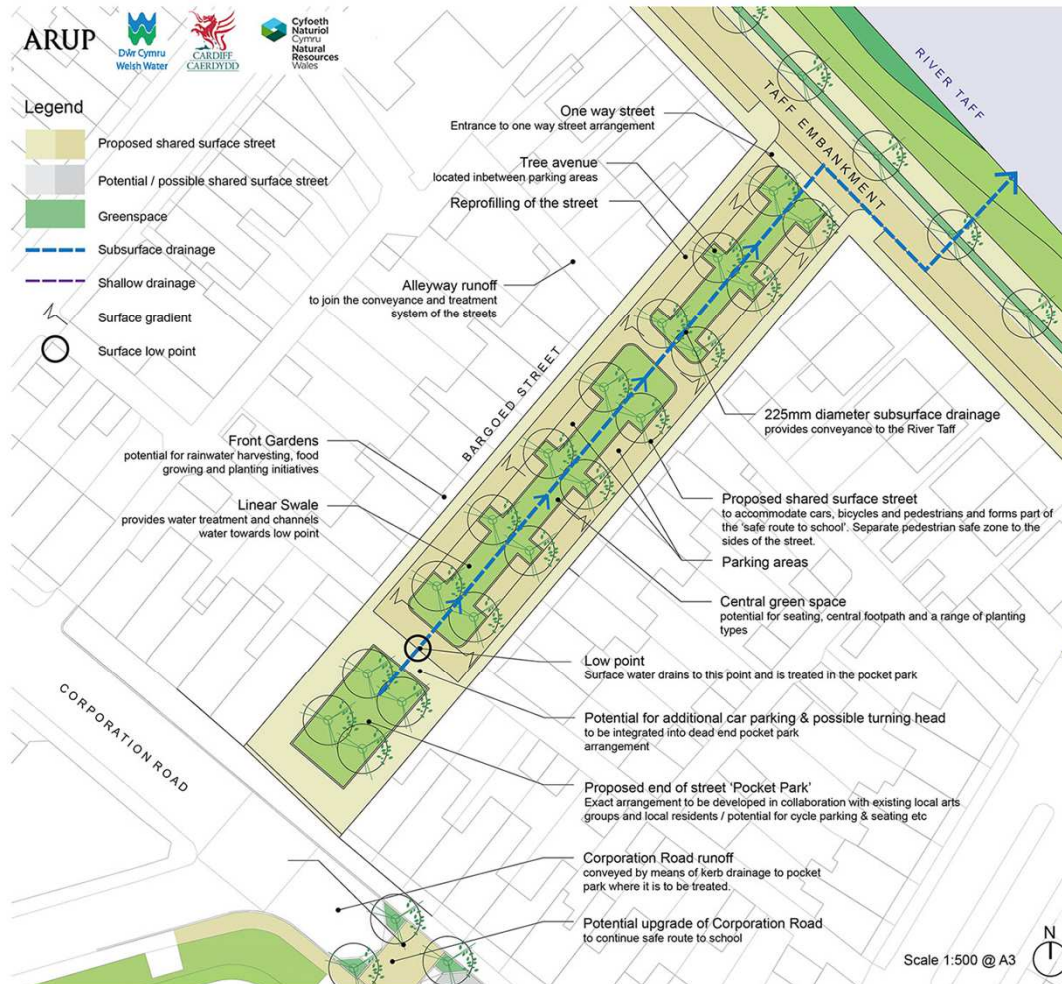
Design



Greener Grangetown



The interventions



Preliminary design subject to further development



Central greenspace
Vastra Hamnen, Malmö, Sweden



Central greenspace
Vastra Hamnen, Malmö, Sweden



Rain Garden
Vastra Hamnen, Malmö, Sweden

Wide Street - Option 1

Central Greenspace | Subsurface Drainage

Resident Consultation Drawing



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Wide Streets: Option 2

- Bargoed Street
- Ystrad Street
- Abercynon Street
- Aber Street (To remain as a through road for traffic).

Key:

P Parking:
Parking requirements to be agreed with residents

Green Spaces:
Location of proposed trees to be determined in agreement with residents and subject to underground services (Water, Gas & Electric)

Cardiff Council (CC), Dwr Cymru Welsh Water (DCWW) and Natural Resources Wales (NRW) commissioned Arup to undertake a feasibility study for Greener Grangetown. A project for surface water management with the supplementary aim of uniting this part of Cardiff with the riverine environment and providing connectivity to the bay.

This study benefits from the pioneering work under DCWW's Rainscape strategy and supplements it with water and energy efficient measures for the community within a Water Sensitive Urban Design (WSUD) framework.

It identifies solutions that meet the hydraulic and engineering requirements and which also maximise the wider benefits by integrating them into the public realm. Greener Grangetown will serve as a valuable amenity feature by providing attractive open spaces along with a variety of economic, environmental, ecological and social/socio-economic benefits.

Improved Streetscape by:

- Increasing Green Space
- Improving the Bio-diversity and Water Quality
- Optional Seating Areas
- Improving Cycling Facilities
- Installing Planters & Verges with Local Species of Plants
- Increasing the Habitat for Wildlife



Benefits:

- Economy
- Education
- Water Quality
- Natural Cycle
- Carbon
- Microclimate
- Biodiversity
- Habitat
- Amenities
- Wellbeing
- Cycling
- Walking

Example of a Rain Garden

Example of an existing Sustainable Drainage System showing mixed planting

Example Seating

For Details of this area see the Additional Rain Garden Drawing

CONSULTATION DRAWINGS WIDE STREET

In partnership with:





Before and after: Narrow Street



Greener Grangetown



Before and after – Wide Street



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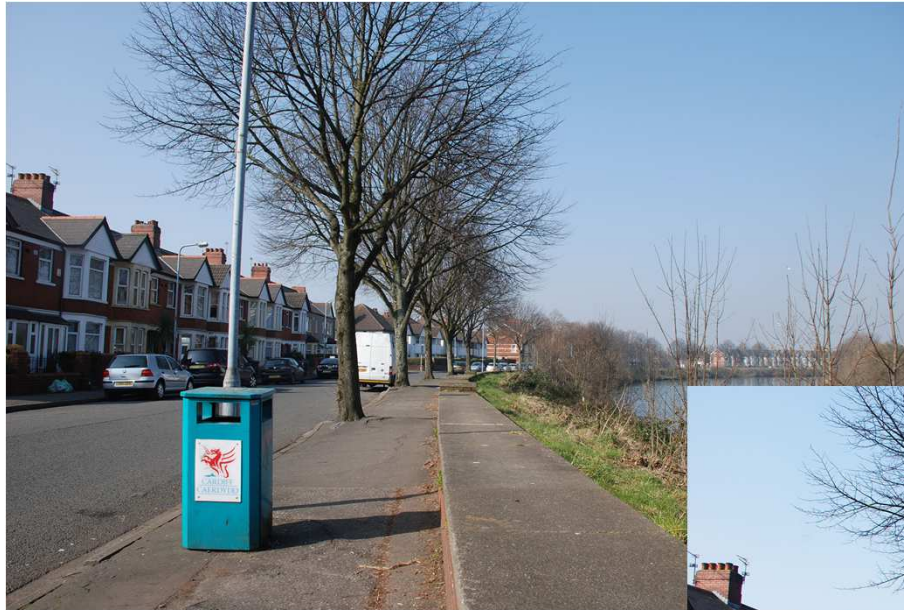
Before and after



Greener Grangetown



Before and after



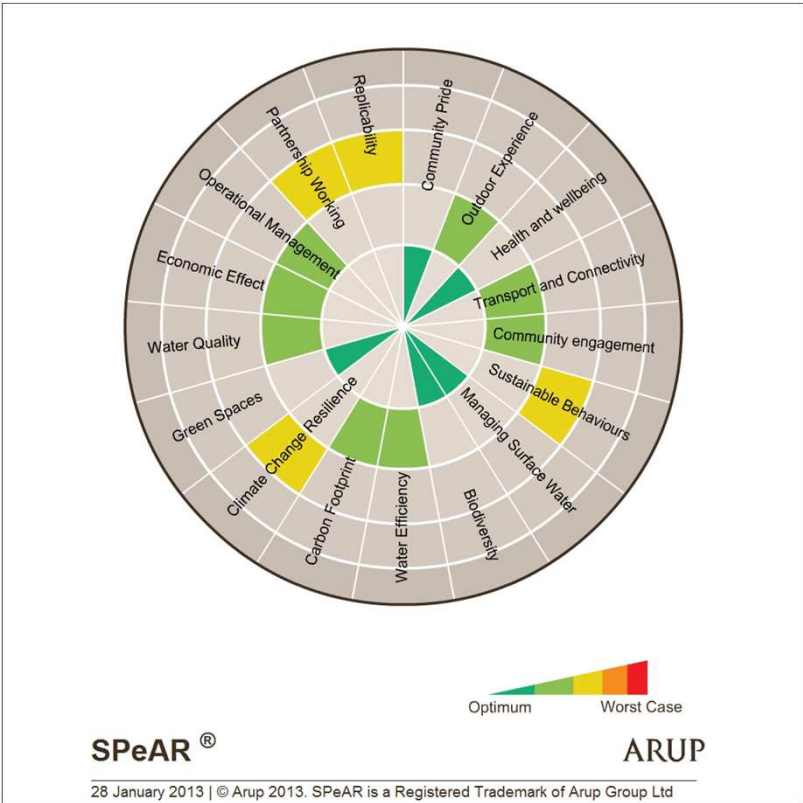
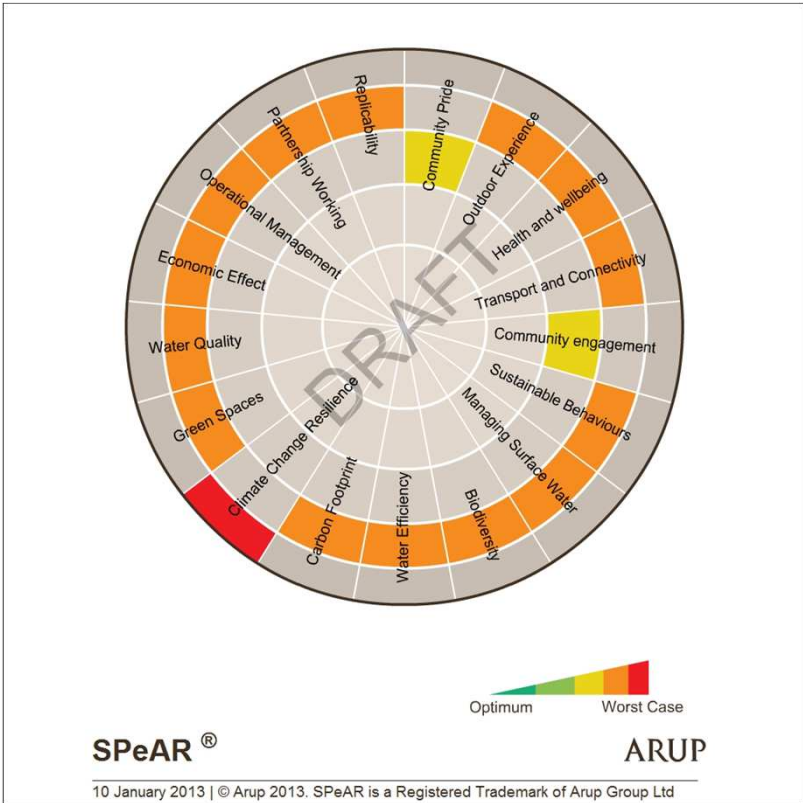
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Wider benefits

Assessment Criteria	National Flood and coastal erosion risk management strategy	A sustainable Wales – better choices for a better future	One Wales: One planet & Cardiff: One Planet City	DCWW strategic direction statement	Draft Cardiff surface water management plan	Sustainable Development (Wales) Bill	Environment (Wales) Bill	Heritage (Wales) Bill	Planning (Wales) Bill	Climate Change Strategy for Wales	Active Travel (Wales) Bill	Housing Bill	Regeneration Bill	Wales infrastructure investment plan
Community Pride			+			+		+	+			+	+	
Outdoor Experience							+	+			+			
Health and wellbeing		+	+	+		+		+		+	+			
Transport and Connectivity										+	+			+
Community engagement		+	+		+	+	+	+		+	+		+	+
Sustainable Behaviours	+				+	+	+	+	+	+	+	+		+
Managing Surface Water	+			+	+				+			+		+
Biodiversity			+	+			+	+		+				
Water Efficiency				+	+				+			+		
Carbon Footprint				+			+			+		+		
Climate Change Resilience	+		+	+	+	+	+			+				+
Green Spaces	+				+	+		+		+			+	+
Water Quality				+						+				
Economic Effect	+		+	+		+	+	+	+	+	+	+	+	+
Operational Management	+	+		+						+				
Partnership Working		+	+		+	+	+	+	+	+	+	+	+	+

The benefits



Greener Grangetown



Headline Benefits

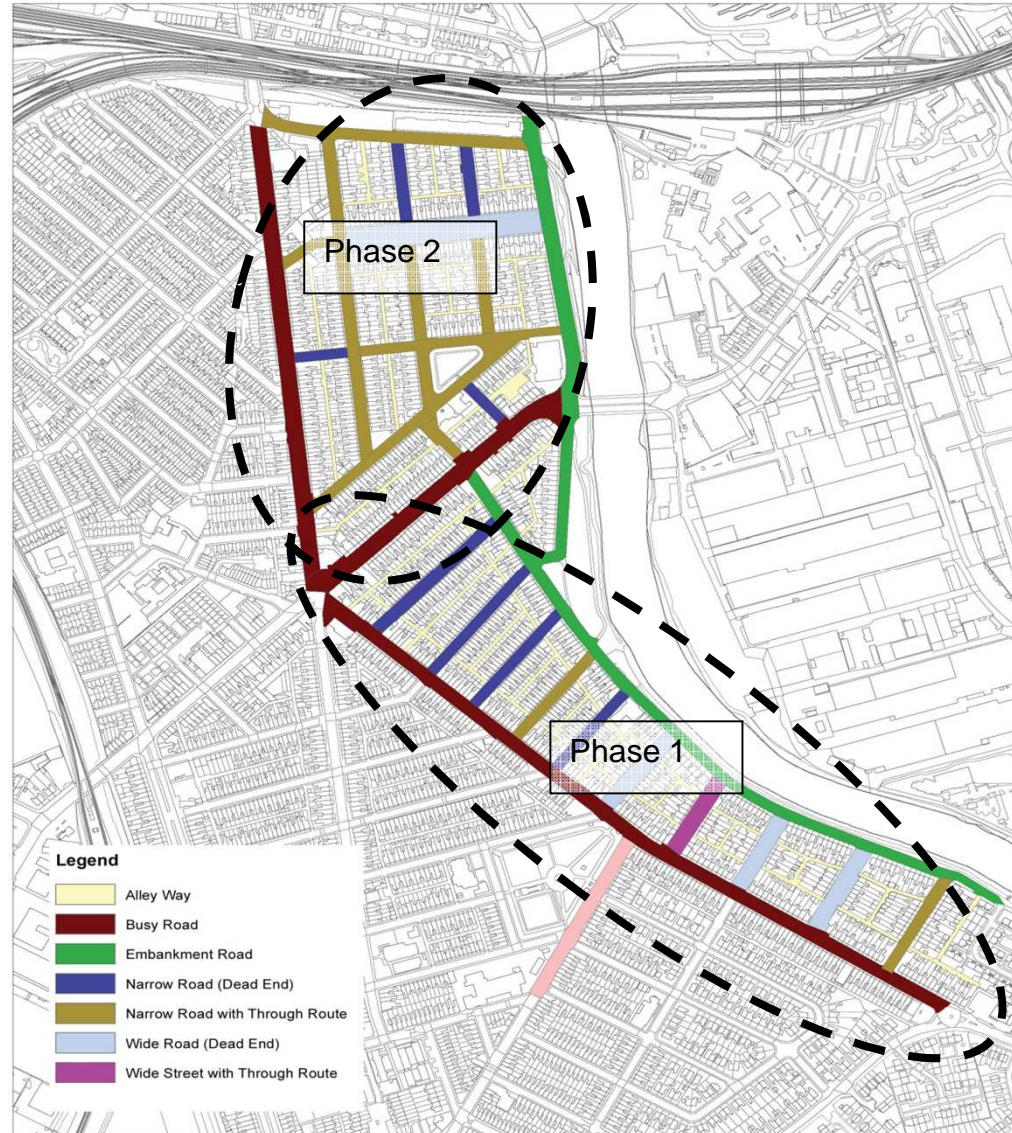
- **Removing 155,000m² of impermeable surface area**
- **Releasing capacity for between 6,000 and 12,000 new homes**
- **Realising annual monetarised benefits in the order of £250,000**
- **Payback period of 12 years**
- **16,500m² increase in green space**
- **Potentially 400 additional trees**

What next?

- **Continuing Consultation & Conversation**
- **Design**
- **Monitoring & WISDOM project**
- **March 2015 start on site**
- **Future phases in Cardiff & beyond**



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The Future ?

To make Greener Grangetown an exemplar scheme for water sensitive sustainable drainage, in Cardiff, Wales & beyond: Water Sensitive City

To encourage greater partnerships within the public, private & not-for-profit sector – combining both expertise & funding

To change people's perception of water, **as an asset**

River Taff trail towards Taff Embankment



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