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Bristol Harbourside, Grant Associates

The New SuDS Manual

Guidance for all, now and into the future

12 November 2015

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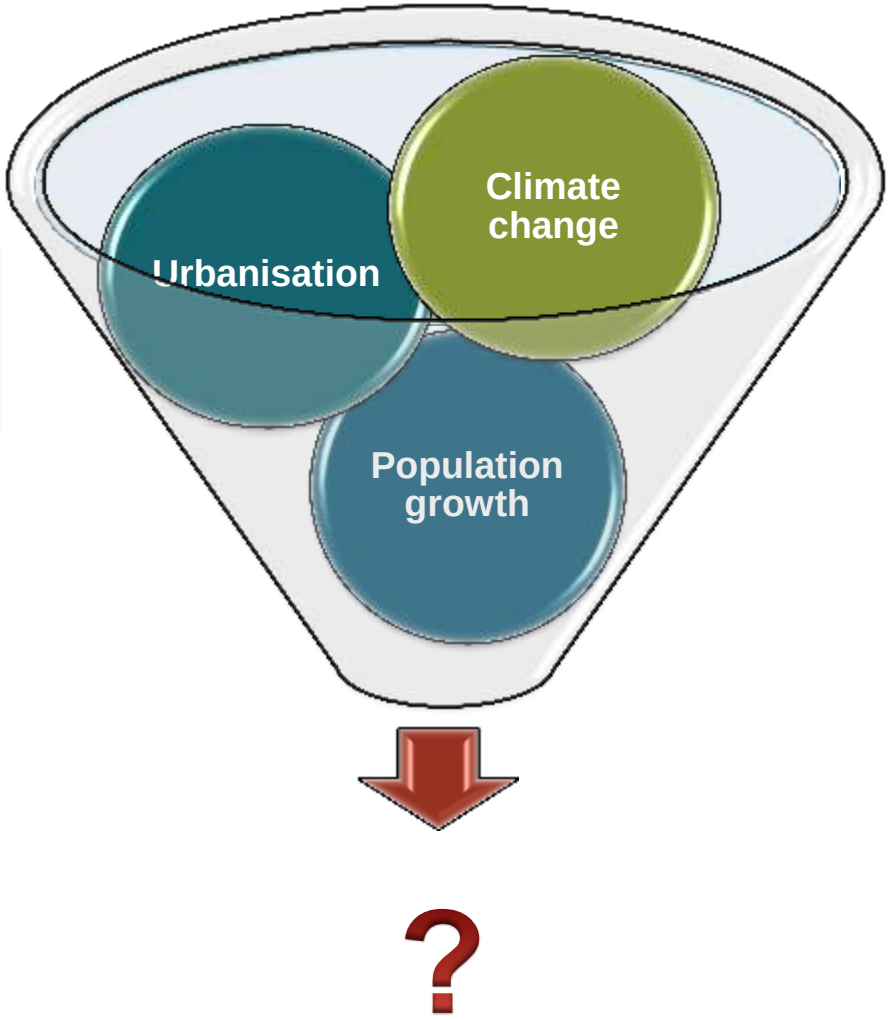
Why SuDS?

Urbanisation

- Reduced land permeability
- Reduced vegetation and habitat fragmentation
- Increased population densities



Climate change

- More intense rainfall
- Higher temperatures
- Stressed habitats

Population growth

- Increased water demand

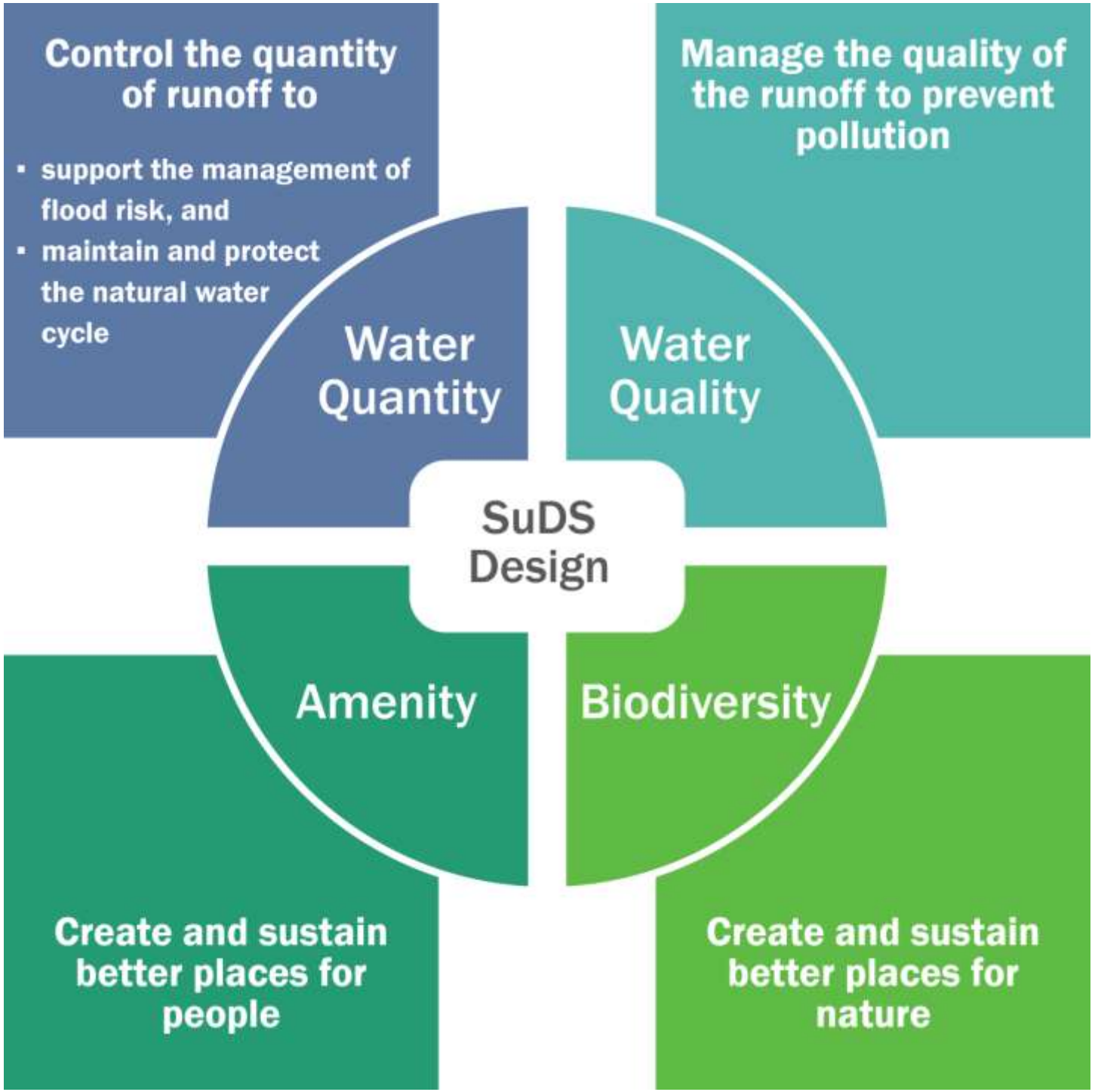
Why SuDS?

Flooding & erosion
Pollution
Urban heat stress

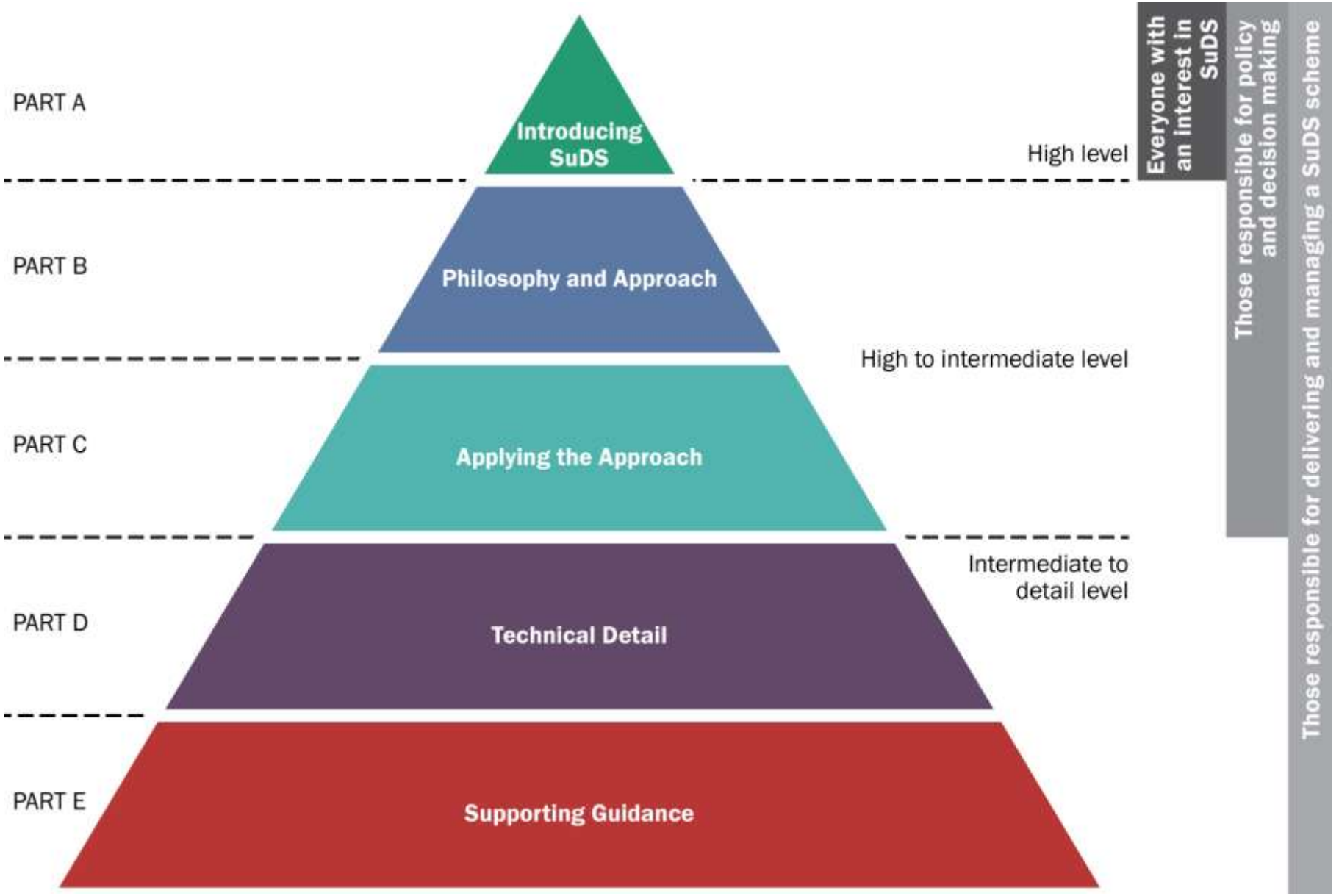
Water availability
Urban heath & wellbeing
Biodiversity & green space
Liveability

The principle of SuDS design

Surface water runoff should be managed for maximum benefit



Structure of the new manual



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Everyone with an interest in SuDS

Those responsible for policy or decision making

Those responsible for delivering and managing SuDS schemes

Part A : Introduction to the SuDS Manual

A high-level introduction to the concept of SuDS, what they are and why we need them.

Part B : Philosophy and approach

The philosophy of SuDS and their role in managing water quantity and water quality, whilst maximising the benefits for amenity and biodiversity.

How to design SuDS to deliver these objectives by following design criteria and standards.

Part C : Applying the approach

The design process and how to apply the design criteria and standards presented in Part B to different types of development.

Part D : Technical detail

Detailed descriptions of different types of SuDS components, with guidance on design, construction, operation and maintenance.

Part E : Supporting guidance

Additional guidance to support the planning, design and implementation of SuDS.

Appendices

Chapter 05

Designing for amenity

This chapter explains the objective of designing for amenity, and the design criteria that should be followed to deliver this objective.

- *This chapter should be read alongside Chapters 3, 4 and 6 to understand how the different SuDS design criteria relate to each other, and Chapter 7 to understand when and how to apply these criteria.*
- *Further discussion on designing for amenity specifically within the urban context can be found in Chapter 10.*

5.1 AMENITY DESIGN OBJECTIVE

Create and sustain better places for people

Good urban design aims to deliver attractive, pleasant, useful and above all "liveable" urban environments that support and enhance local communities (Box 5.1). Water is a valuable natural resource, and the management of rainfall and runoff can form a key part of an urban vision. Designs using surface water management systems to help structure the urban landscape can enrich its aesthetic and recreational value, promoting health and well-being and supporting green infrastructure. Water managed on the surface, rather than underground, can help to reduce summer temperatures, provide habitat for flora and fauna, act as a resource for local environmental education programmes and working groups and directly influence the sense of community and prosperity of an area. SuDS can provide opportunities for water to be visible and audible as it travels through the landscape – the places where water flows, stills, trickles or splashes are often where it is experienced and valued the most.

BOX 5.1 Amenity, place-making and liveability

Amenity may be defined as "a useful or pleasant facility or service", which includes the tangible (something that can be measured in terms of use), and the less tangible (something that can be experienced as pleasure or aesthetic appreciation).

This definition is particularly relevant for describing the multi-functional opportunities associated with SuDS designs, and it provides a link to the concept of **place-making**, now commonly used in describing the quality of a space in urban design.

Amenity also covers **liveability**, which is associated with factors that improve the quality of life for inhabitants. Liveability encompasses the well-being of a community and of individuals and comprises the many characteristics that make a location a place where people want to live and work.

There are many amenity benefits that are intrinsic to SuDS – good SuDS design often provides amenity benefits while delivering water quantity, water quality and biodiversity benefits.

Where the concept of "creating and sustaining better places for people" is embedded in the design process, these benefits can be maximised. Table 5.1 provides a summary of how SuDS can add amenity value. Further information on amenity benefits of SuDS can be found in Digman *et al* (2015).

CASE STUDY 5.1 The Triangle, Swindon

Figure 5.1 The green

The Triangle is an award-winning development of 43 low-cost properties (2, 3 and 4 bedrooms) for social housing in Swindon. The design looked to conserve 50% of the area for contiguous open space as a multi-functional landsape. The integrated plan combined social requirements with water attenuation and storage, biodiversity and edible streets and gardens.

All roof water is harvested and stored in underground tanks located in two kitchen gardens, accessed by hand pumps to irrigate vegetables and fruits. Surface water is attenuated in porous paving on all car park spaces, and the home zone street water is conveyed by a wide dished granite sett channel that clearly shows water moving towards a bioswale on two sides of the central triangular green. The base of the swale is planted with white willows and damp meadow species for biodiversity, water treatment, air improvement, urban thermal regulation and aesthetic amenity, making reference to the landscape signature of this clay lowland. It is a place for playing in, with stepping and balancing logs and bridges, and it forms a barrier for cars that might be tempted to park on the green.

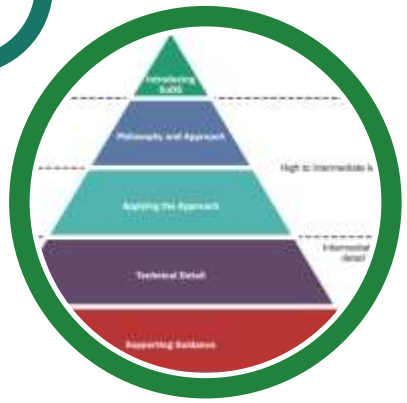
Water filtered by vegetation is conveyed to a geocellular storage tank under the green, and a hand pump linked to a rill carved in a tree trunk allows kids to play with water. Finally, any excess water from the storage tank can be stored in oversized storm drains under the road, a requirement of Thames Water.

Figure 5.2 Play pump (a) and hand pump (b) in the kitchen garden (b) (courtesy Studio Engleback)

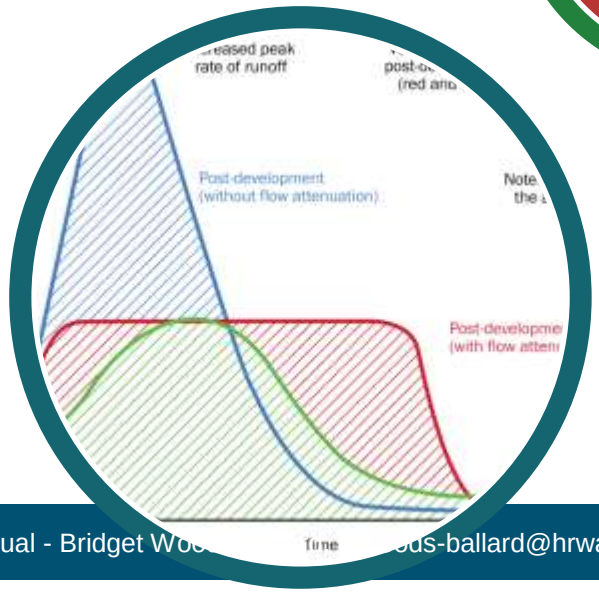
Technical Leadership

Collaborative work of over 70 people

Built upon latest evidence, research and guidance

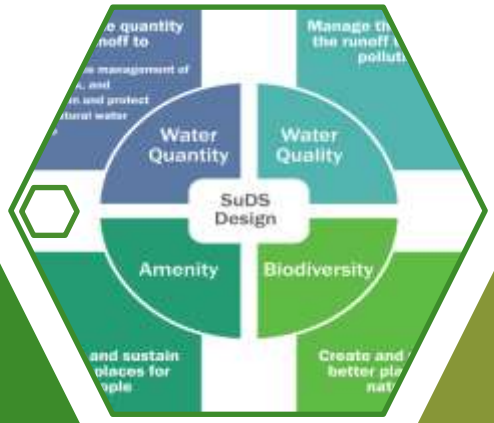


Guidance for now and into the future



Internationally recognised and used

Motivational



Guidance on maximising the benefits

Guidance on collaborator engagement and incentives

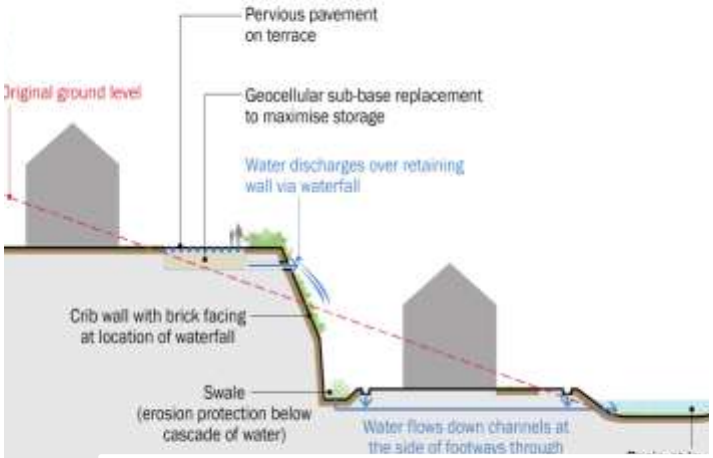
Opportunities and design approaches for all sites

Clear drivers and evidence to promote a shift in approach

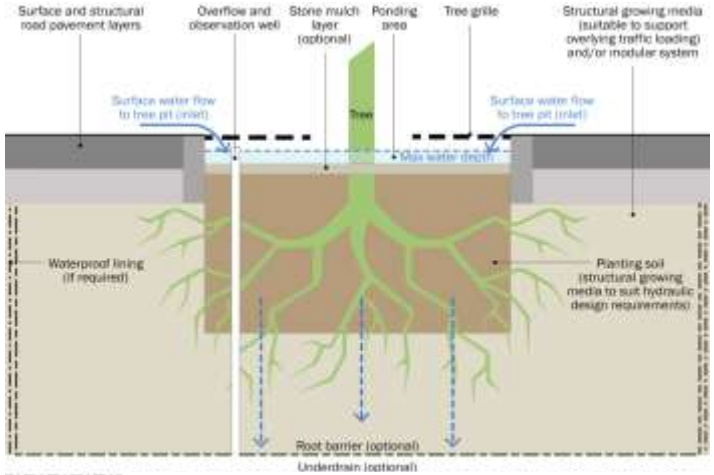
Supportive

Comprehensive design example

Checklists for designers, approvers, adopters and maintainers



Guidance on SuDS delivery for challenging sites



Clear, consistent landscaped illustrations

Inter-disciplinary

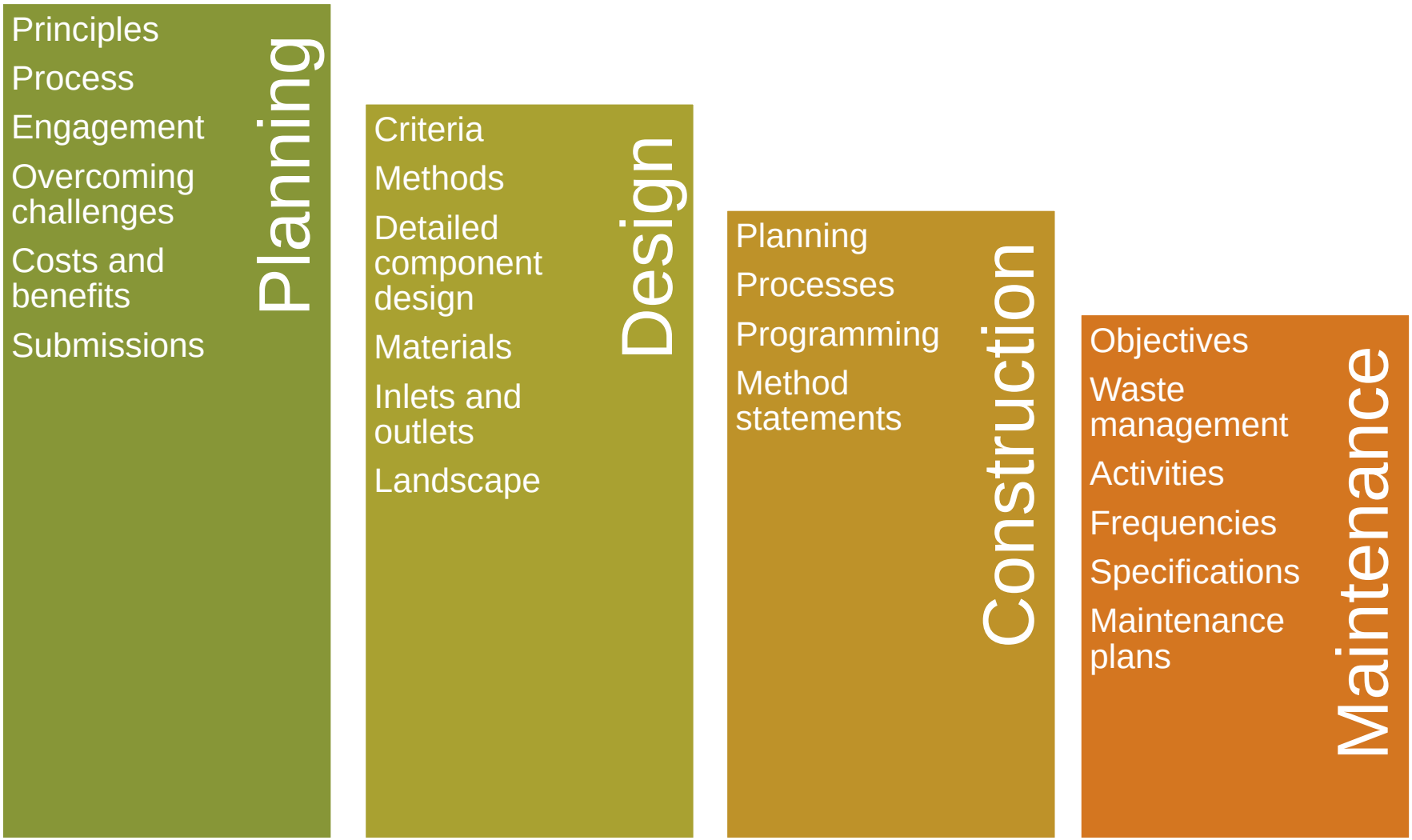
Consideration of amenity and biodiversity

Updated guidance on stakeholder engagement through planning

Manual redesigned to speak to architects, landscape architects, planners and urban designers

More detail on the full range of SuDS components

Comprehensive



Inspirational

PERVIOUS SURFACES



SWALES AND LINEAR WETLANDS



KERB DRAINAGE, RILLS AND CHANNELS



GREEN ROOFS, GREEN WALLS AND PODIUM DECKING



PLANTED CHANNELS



PUBLIC SPACES



BIORETENTION SYSTEMS AND RAIN GARDENS



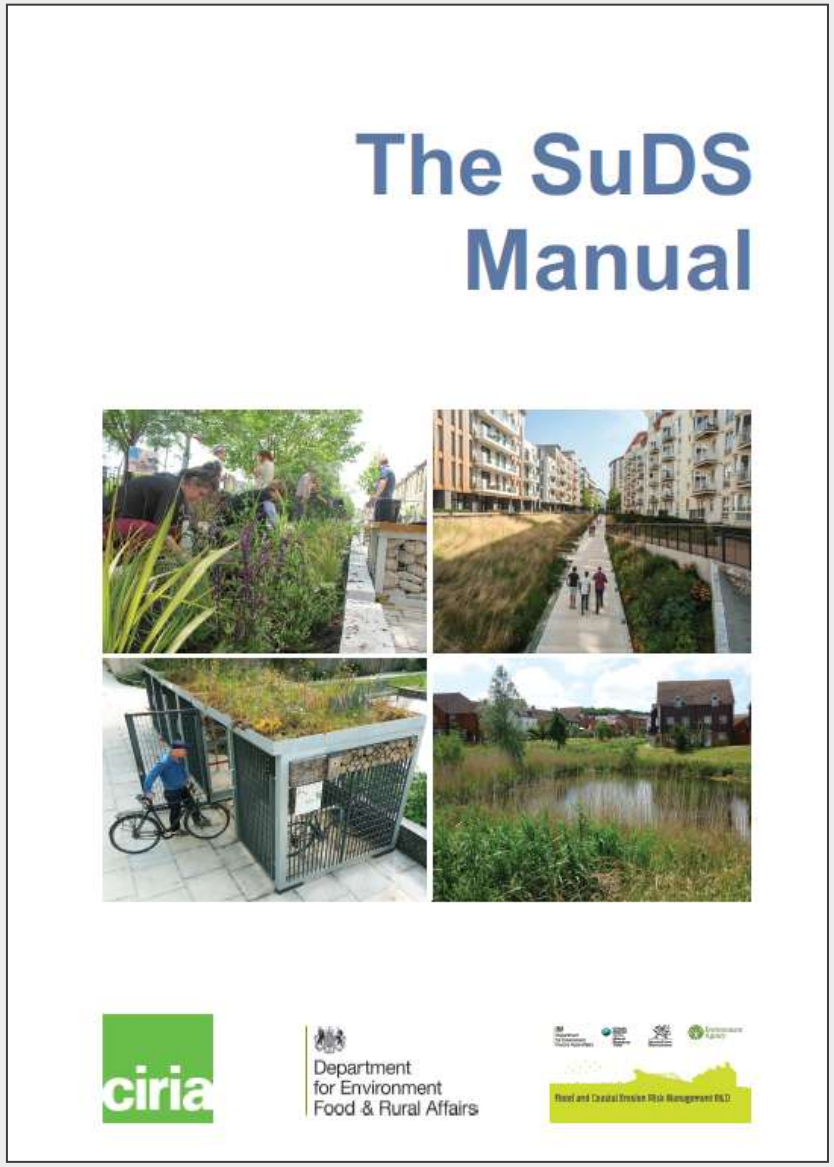
PLAY AND EDUCATION



Moving forwards with SuDS…

- **We need visionary housebuilders**
- **We need forward thinking planners**
- **We need supportive local government and regulator policy**
- **We need more high quality SuDS in the ground**
- **We need to collate and share examples and good practice (www.susdrain.org)**

The new SuDS Manual



THE PROJECT TEAM

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FUNDERS

Defra
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SEPA
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LODEG
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