

Evaluating the benefits of SuDS

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A city that acts as a sponge

Characteristics of a sponge in order to deal with “too much water”:

- Absorb floodwater
- Bounce back after a flood

Characteristics of a sponge in order to deal with “not enough water”:

- Capture water for reuse
- Slowly release that water

If I think about a typical sponge though, it is not too exciting ...

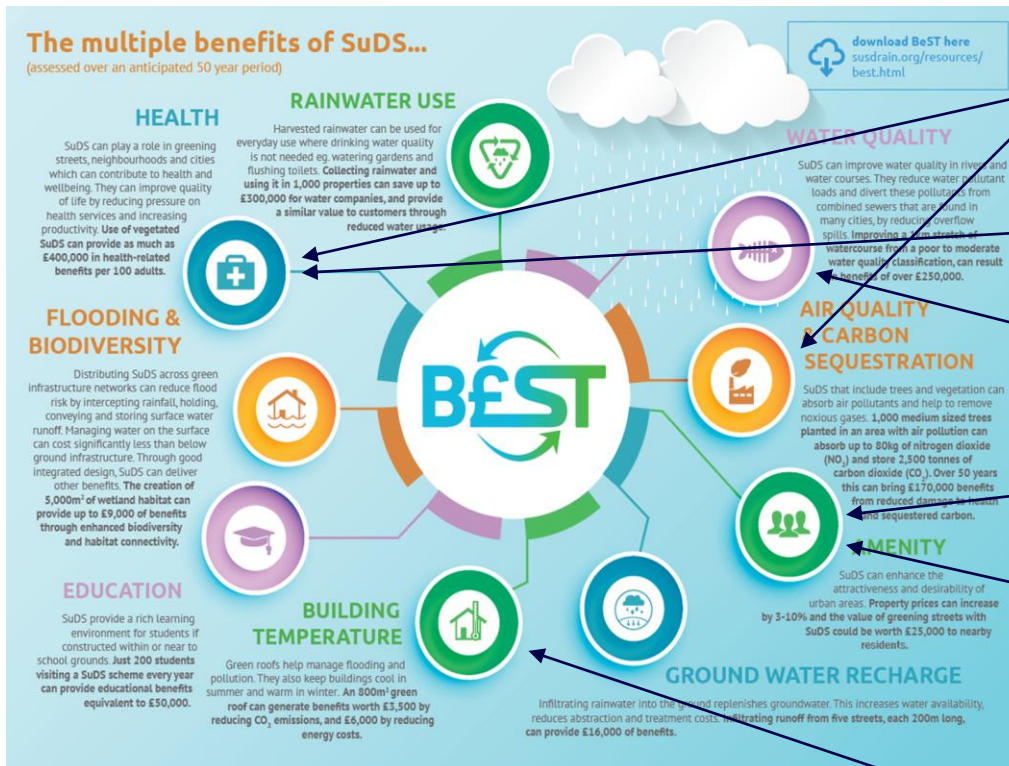


What about: the magic-multifunction-silicon-sponge!



- Food grade silicone, easy for washing, prevent breeding of bacteria
- Will not hurt your hands and does no damage to the dish
- Effectively removes dirt and oil stains
- With a hanging hole, it is easy to store, saving space
- Color: green, blue, pink
- Multiple functions: you can use this sponge for dishwashing, scrubbing pot or pan, washing fruit and vegetable, also it can use as a heat insulation mat

Translated to sustainable drainage systems (SuDS)



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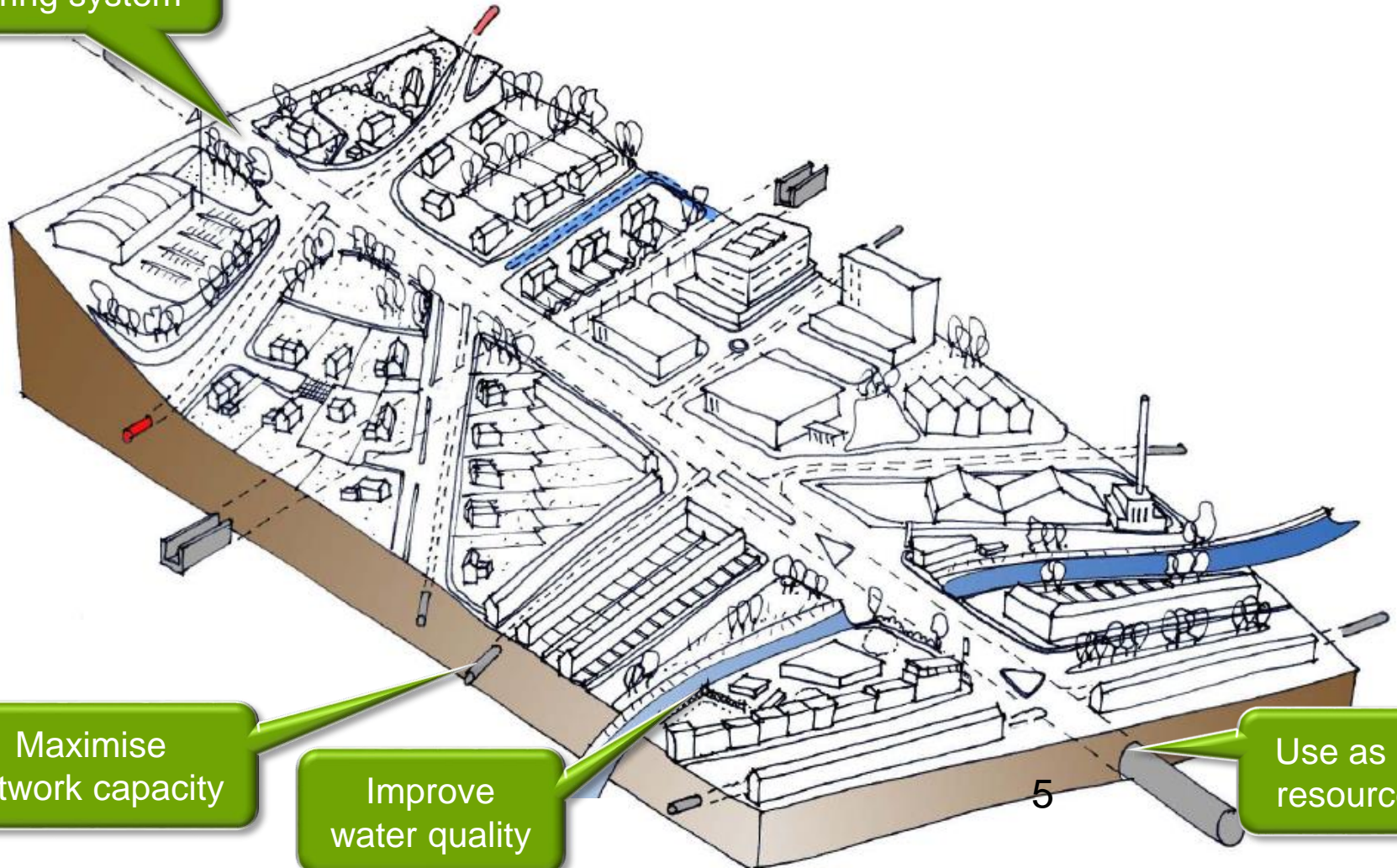
Imagine what is possible, when going from a Sponge city ...

Limit flows entering system

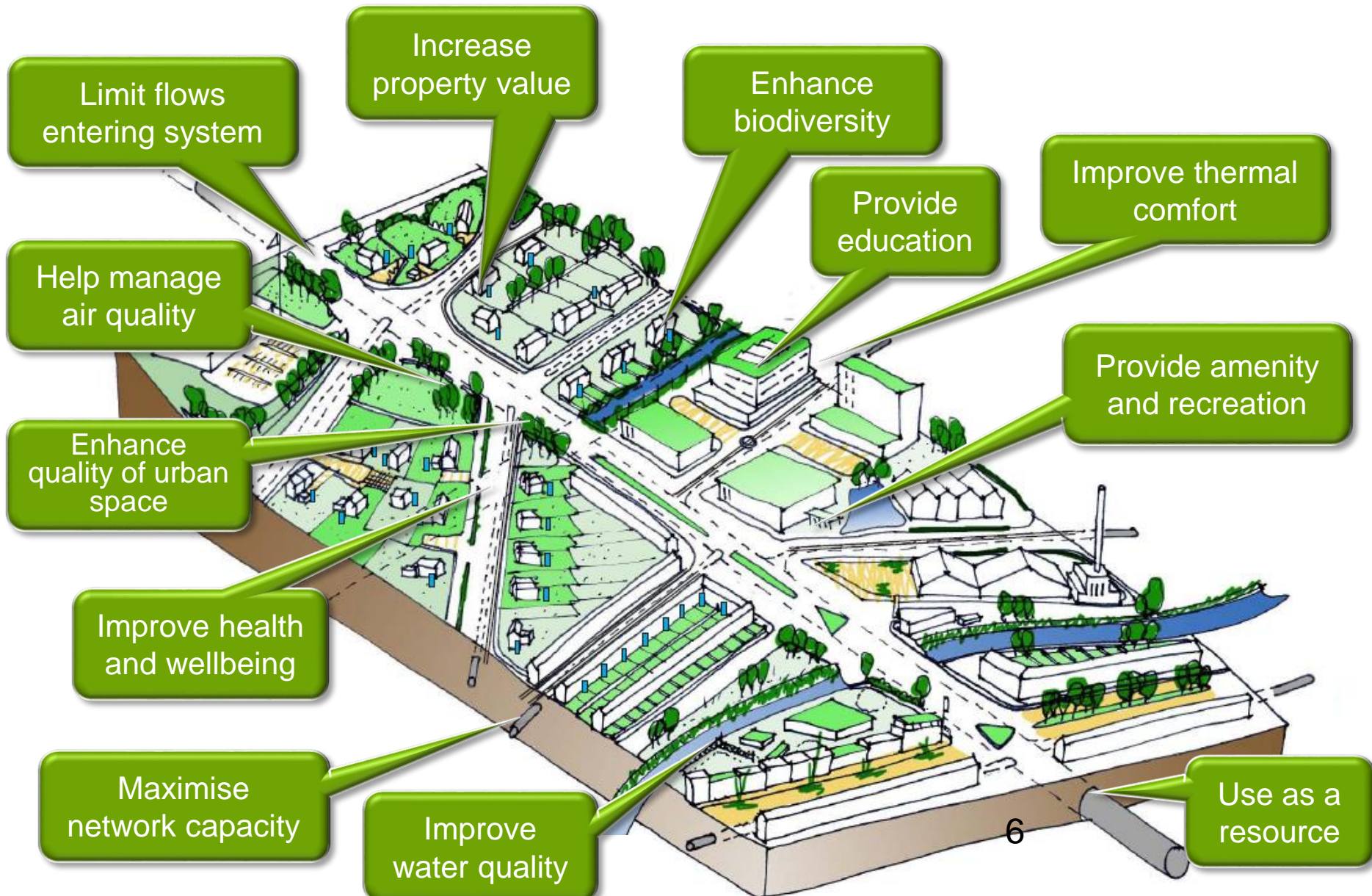
Maximise network capacity

Improve water quality

Use as a resource



... to a Multifunction-sponge city?



There is a BUT ...

The benefits of SuDS or GSI are not fully taken into account in the decision making about the spatial layout and design of cities.

This is because it is difficult to:

- Identify & link benefits to quantifiable outcomes
- Value quantified benefits (reliance on transfers)
- Aggregate (benefits, populations, time)
- Uncertainty
- Takes time and resources
- Moral concerns

Evaluating the benefits unlocks potential for ...

- Fairer comparisons
- Better decision making
- Meeting funding requirements
- Enabling conversations
- Delivering SuDS



Evaluating the benefits of Sustainable Drainage (SuDS)



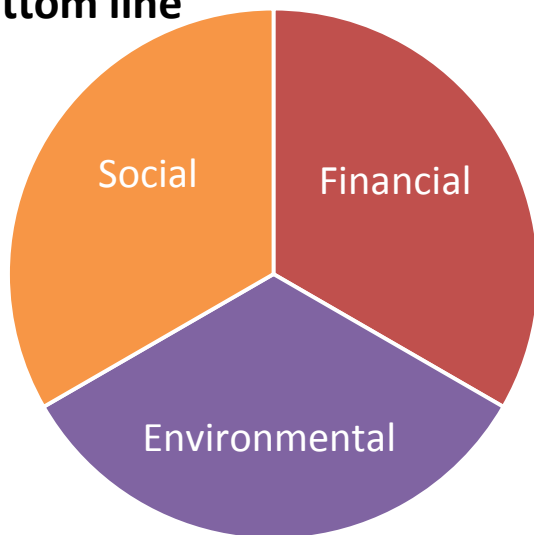
BEST
Benefits of SuDS Tool

The ciria logo consists of the word "ciria" in a white, lowercase, sans-serif font, set against a solid green square background. The logo is positioned in the bottom right corner of the slide, overlaid on a background illustration of a residential area with houses, trees, and a road.

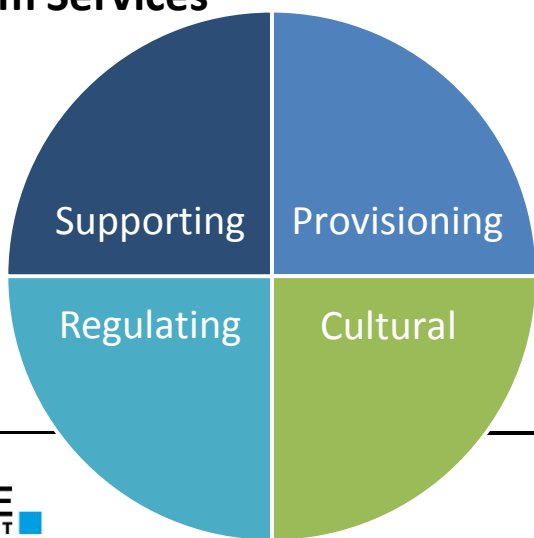
ciria

Wide range of benefits

Triple bottom line

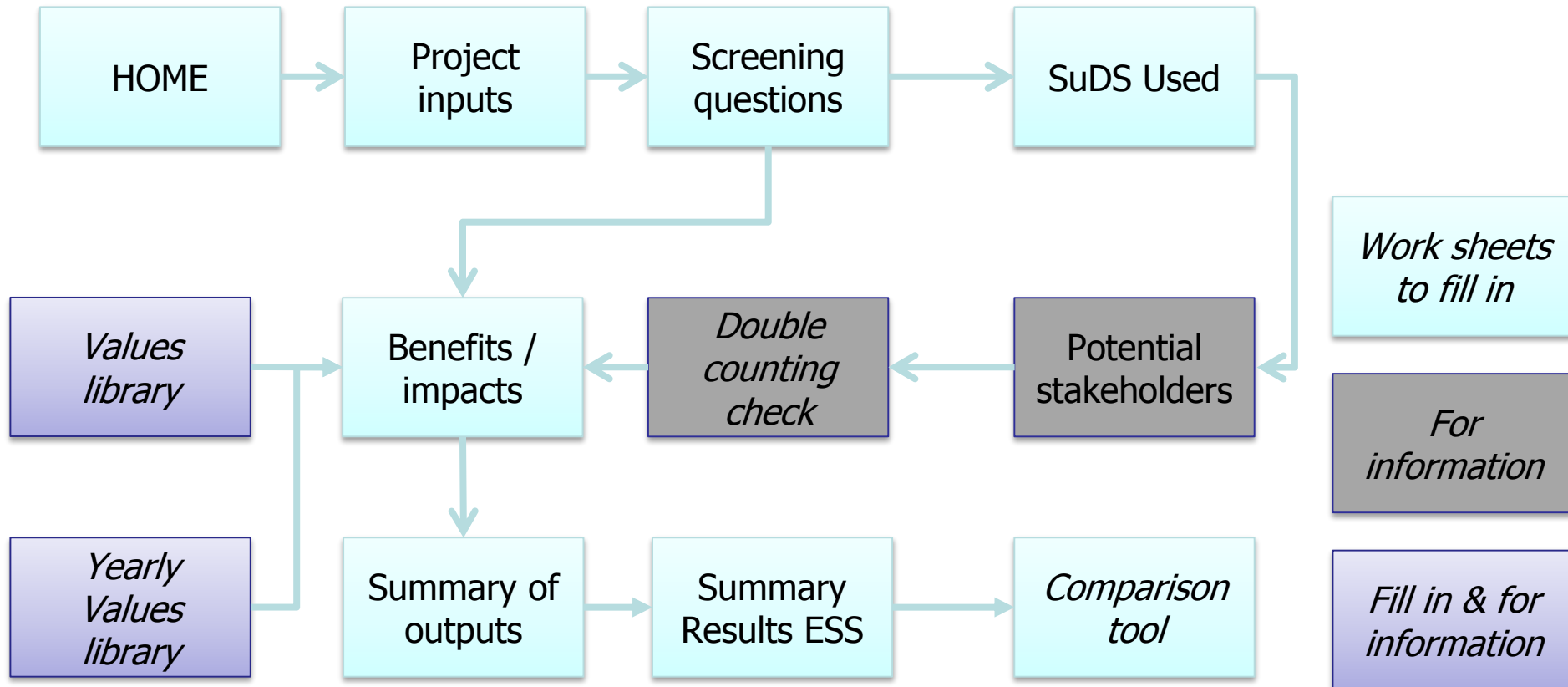


Ecosystem Services



Benefit category	Monetised?
Air quality	✓
Amenity	✓
Biodiversity and ecology	✓
Building temperature	✓
Carbon reduction & sequestration	✓
Crime	✗
Economic growth	✗
Education	✗
Enabling development	✓
Flexible infrastructure	tbc
Flooding	✓
Groundwater recharge	✓
Health	✓
Pumping wastewater	✓
Rainwater harvesting	✓
Recreation	✓
Tourism	✗
Traffic calming	✗
Treating wastewater	✓
Water quality	✓

Methodical approach to evaluating benefits



Applying BeST – Retrofit Case Study



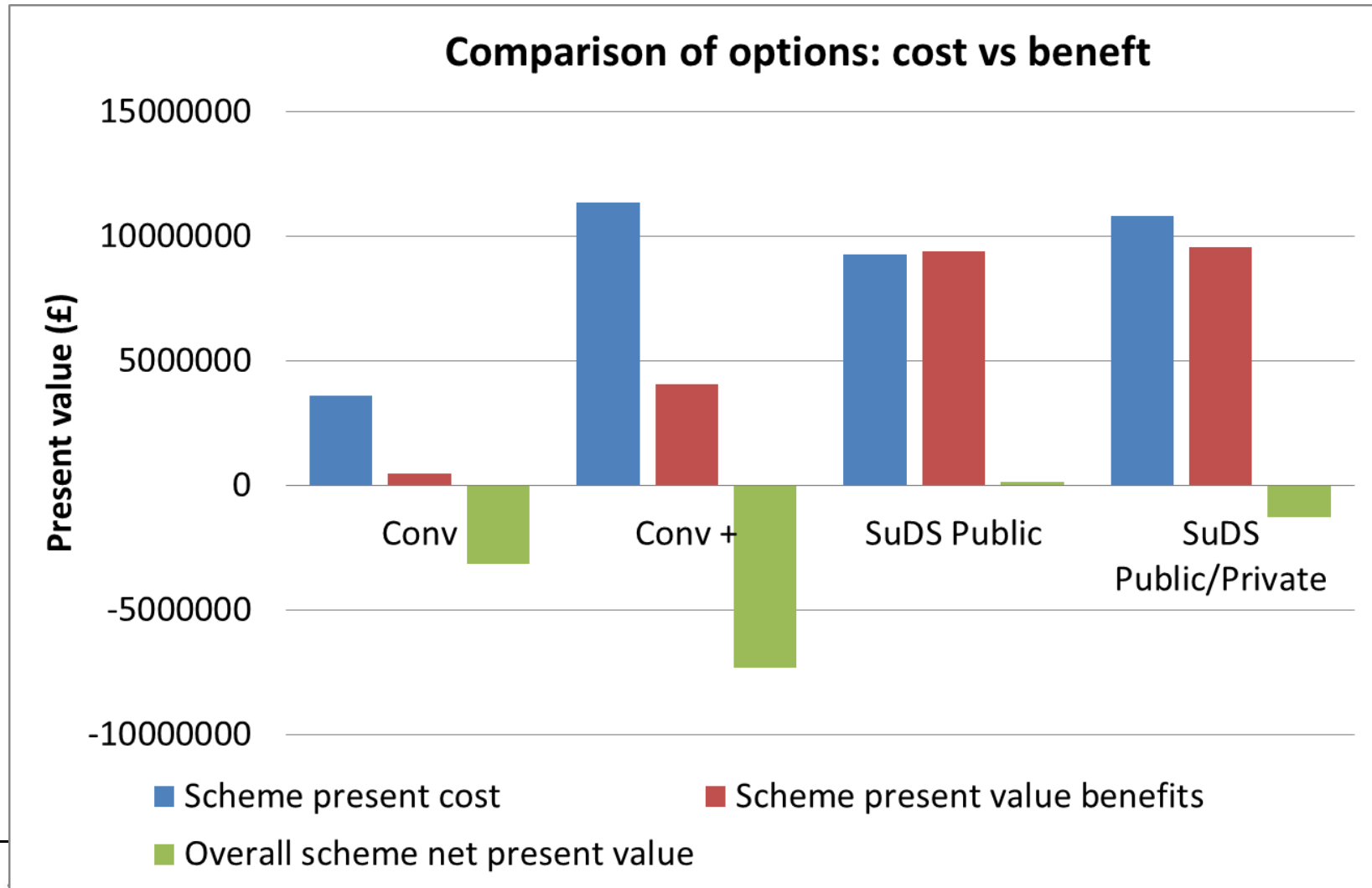
Applying BeST – Retrofit Case Study



Applying BeST – Retrofit Case Study

Option summary	Ecosystem service type							
	Cultural		Regulating				Provisioning	Supporting
	Recreation	Amenity	Flooding and climate resilience	Carbon reduction	Water quality	Flooding	Treating wastewater	Biodiversity and ecology
Option 1: Conventional	-	-	x	x	✓	-	x	-
Option 2: Conventional+	-	-	x	x	✓	✓	x	-
Option 3: Public SuDS	✓	✓	✓	✓	✓	✓	✓	✓
Option 4: Public-Private SuDS	✓	✓	✓	✓	✓	✓	✓	✓

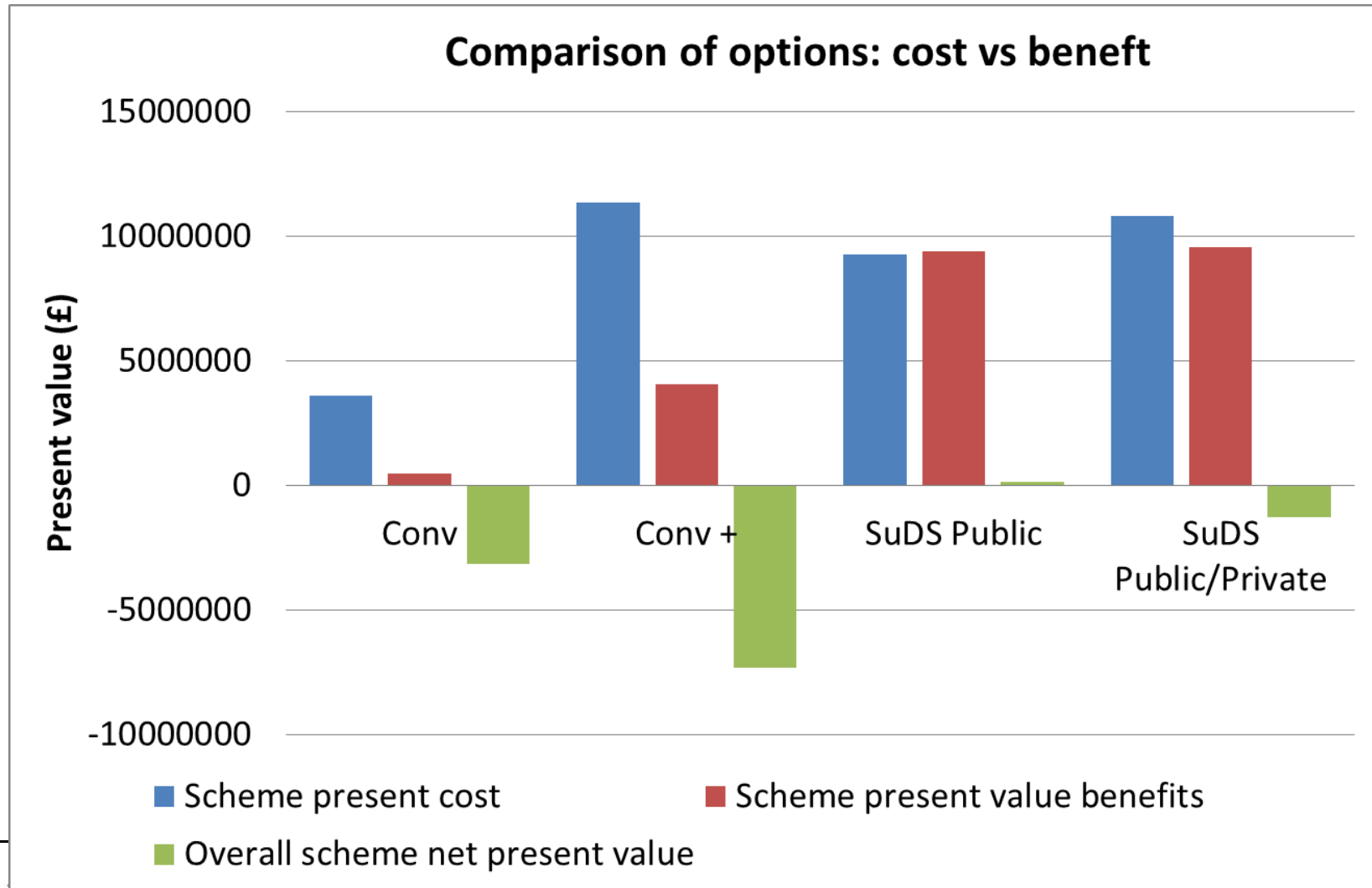
Comparison of costs and benefits



Which sponge will you buy?



Comparison of costs and benefits



In summary when looking to use the results

- £ does not equal a £ - its an indication
- Help identify the wider benefits
- Demonstrate the potential level of benefits
- Understand who might benefit
- Support conversations, look at wider funding opportunities (incl. private sector)
- Understand benefits to investigate further

