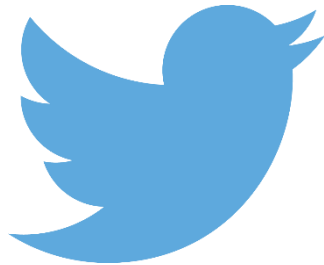


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# Blue and green infrastructure Delivering the 3 E's (Environment, Economic and everything else!)



# Definitions

The term green infrastructure was coined in Florida, in 1994, and in the context of an urbanised environment, green and blue infrastructure can be understood as a ***“network of natural places and systems in, around and beyond urban areas. It includes trees, parks, gardens, allotments, cemeteries, woodlands, green corridors, rivers and wetlands.”***

- Examples of **green** landscape elements are hedgerows, copses, bushes, orchards, woodlands, natural grasslands, cemeteries, allotments and parks.
- **Blue** landscape elements are linked to water such as pools, ponds, canals, rivers basins.
- Together they form the green-blue infrastructure.



# Why the interest in blue and green infrastructure?

Increasing number of ecological and social challenges faced by today's urbanised societies:

- Increasing temperatures due to climate change/grey infrastructure
- Extreme weather occurrences, particularly flooding
- Pressure for housing threatening green spaces and biodiversity levels
- Negative impacts on clean water and air quality
- Noise levels
- Inability to produce food locally
- Accessibility of greenspace for recreation
- Obesity, social isolation, poor levels of health and well-being



# Is developing BGI really worth it?

## **Environmental Benefits**

Reduces impact of flooding by allowing higher levels of water absorption through natural drainage which can help refill aquifers and improve water quality.

Reduces impacts of heat island effect through provision of shade via trees and reflecting heat as well as reducing noise.

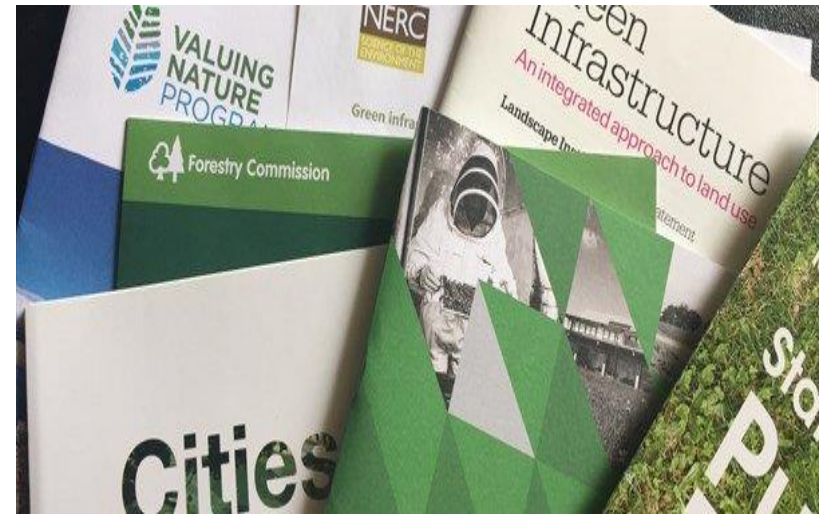
Increases levels of biodiversity through better quality water and increased availability of vegetation

## **Societal and Economic benefits**

The combination of water and vegetation makes cities more vibrant, lively and attractive for regular exercise and community life. And this in turn helps people avoid depression, burnout and diseases like diabetes. Blue-Green cities have a higher reputation, attract young families and give companies strong arguments to locate their headquarters there.

# The role of blue and green infrastructure

- A Blue- Green Infrastructure (BGI) connects urban hydrological functions (blue infrastructure) with vegetation systems (green infrastructure).
- Seen as a comprehensive interconnected system where the combined benefits are greater than the individual components.
- In an urbanised environment this needs to be carefully planned.
- A **BGI strategy** will aim to combine the demand for sustainable water and stormwater management with the demands of adaptive urban life and sustainable planning.
- Many UK local authorities now developing BGI strategies



# BGI and Health and Well-being

- **Environmental and financial benefits** can often be easier to see and measure than health and well-being benefits.
- Growing evidence is being gathered to prove the mental health and well-being benefits of BGI
- Studies show health benefits are recordable and studies show a number of factors improve health and wellbeing in relation to:
  - Time spent in the natural environment
  - Proximity to nature
  - Living with views of a natural environment
  - Level of community involvement/social interaction
  - Design of greenspaces to promote recreational opportunities
  - Support of local authorities and key stakeholders (e.g. NHS) to use BGI.

# Headline figures

**£34.2 billion** well-being value associated with frequent use of parks and greenspaces to entire UK population

**£2.1 billion** savings to NHS in health benefits both physical and mental

**£111 million** savings to NHS in reduced visits to doctors surgeries alone

(Fields In Trust , *Revaluating Parks and Greenspaces* (2018))

Sheffield City Parks are estimated to **return £34-£36 in benefits for every £1 invested.**

(Sheffield City Council/National Trust/ Vivid Economics).





# The Way Forward

Government has recognised the importance of BGI to health and well-being and reducing the effects of climate change in their national strategies and policies:

- *A Green Future: Our 25 Year Plan to Improve the Environment* -making *biodiversity net gain* mandatory for development that requires planning permission (but general consensus is that progress is poor)
- *Climate Change Act (2008)*
- *Green Infrastructure Guidance* –Natural England (since archived).
- Austerity measures and Brexit also slowing progress.
- Mixed approach to recognising the importance of BGI
- Local authorities are recognising the importance of BGI by developing strategies to build it into future developments (but not all, as still not a mandatory requirement)
- Need for greater degree of co-ordinated long-term planning and recognition of natural capital cross-cutting value to an area.
- Need for greater involvement of stakeholder beneficiaries in the place making process.
- Growing recognition of importance and opportunities offered by a well-managed BGI

# **NEW MUNICIPALISM**

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