Factsheet
Whitepaper «Nature-based Infrastructure»
Integrated Open Space Design for the Targeted Delivery of Ecosystem Services in the Built Environment

What?

he whitepaper "*Nature-Based Infrastructure*" demonstrates how targeted open space design within the built environment can transform nature-based elements into effective infrastructure systems.

It describes:

- how nature-based elements deliver tangible ecosystem services
- how a shared understanding of ecosystem services can be established through impact objectives
- how planning, implementation and operation must work together
- how nature-based infrastructure can be integrated into digital processes

Why is this important?
Climate change, demographic change and population growth are placing increasing pressure on the built environment. Temperatures are rising, drought periods are becoming more frequent and extreme weather events are intensifying. Technical solutions alone are often no longer sufficient to address these challenges. Urban ecology and biodiverse design, connected through nature-based infrastructure, help to bridge these gaps. Through the delivery of ecosystem services, nature-based infrastructure cools urban areas, reduces risks, improves human health and contributes to the conservation and regeneration of resources.

Why?

Today, the potential of nature-based infrastructure remains largely underutilised:

- nature-based elements are often not recognised and treated as infrastructure components
- in many projects, nature-based solutions are implemented only selectively and in fragmented ways
- clear standards, performance indicators and processes are lacking
- buildings and open spaces are often planned sequentially rather than as an integrated system
- solutions are rarely optimised across the entire life cycle of buildings and their associated open spaces

Why is this important?
If nature-based infrastructure is not planned systematically and consistently, its benefits remain limited while resource consumption through technical systems remains high. This whitepaper demonstrates how nature-based infrastructure can be established as an integral component of the built environment and its essential infrastructure systems, how objectives ranging from

climate change mitigation to human health can be translated into concrete actions, and how projects can be coordinated more effectively to maximise ecosystem service delivery and long term value.

For Whom?

- Clients, Facility Management and Property Operations
- Planners and Designers
- Construction and Delivery Teams
- Policy Makers and Public Administration
- Professional Associations and Organisations

Use for Target Groups

Clients, Facility Management and Property Operations

Brings open spaces and buildings into focus as integrated systems across their entire life cycle, enabling the long term development and maintenance of ecosystem service performance while supporting more targeted and cost effective resource use.

Planning and Consultancy

Provides transparent guidance and facilitates collaboration across disciplines, enabling integrated solutions rather than isolated measures.

Construction and Delivery

Establishes a shared understanding of objectives and required performance outcomes and supports the integration of nature-based infrastructure into existing implementation processes.

Policy Makers and Public Administration

Provides a foundation for informed decision making and demonstrates how climate and biodiversity objectives can be translated into effective actions through regenerative and circular approaches.

Professional Associations and Organisations

Clarifies roles within digital transformation and sustainable construction and helps accelerate implementation across the sector.

What needs to be done?

Effective implementation of nature-based infrastructure is only possible when built space and open space are considered as an integrated whole from the outset and when the entire life cycle is taken into account. The following principles apply:

- define objectives for open spaces at an early stage of the project
- collaborate across disciplines throughout the entire process
- structure data consistently and standardise information requirements
- plan buildings and open spaces jointly as an integrated and interconnected system
- consider all systems equally across the entire life cycle

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Sponsoring

CBI Circular Building Innovation Booster Innosuisse

Foundation for Prevention of the Cantonal Building Insurance Institutions

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