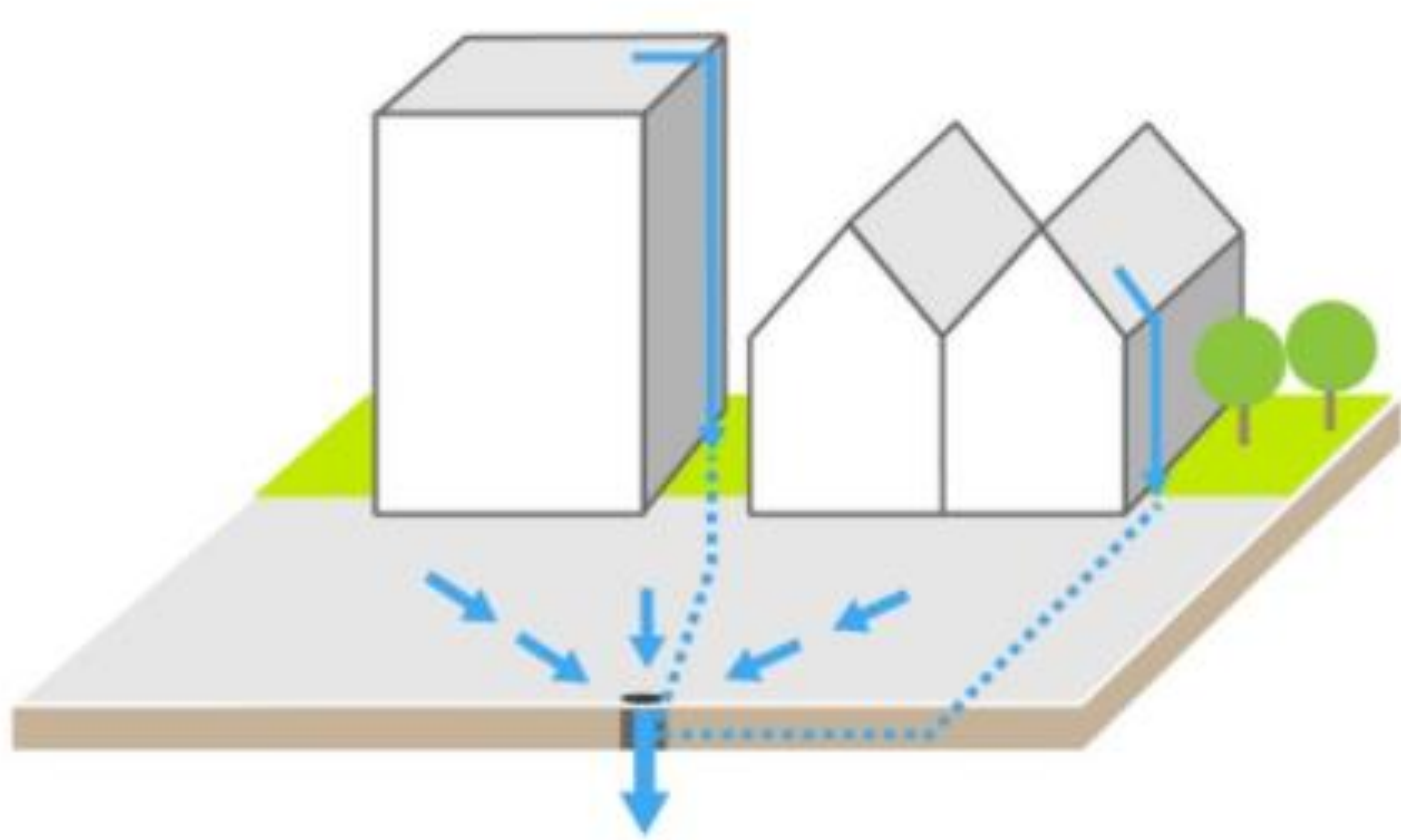


# The role of green and blue infrastructure in climate adaptation

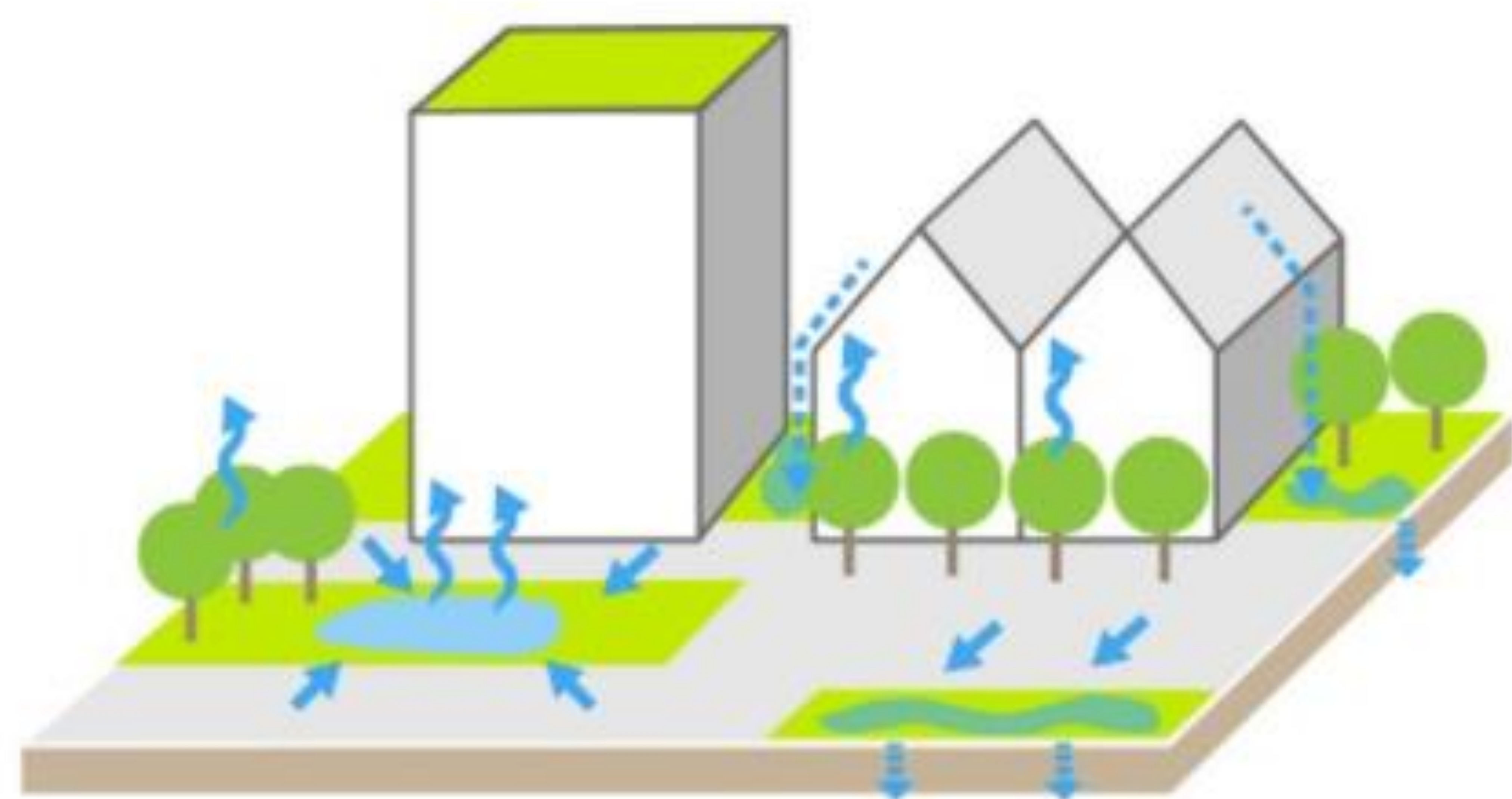
Noémi Dálnoky, Head of Unit, Deputy State Secretariat for Environment and Energy Efficiency Operational Programmes

# The essential issue

Traditional stormwater drainage



Water retention by applying green blue infrastructure



*Source: Dóra Csizmadia – Aesthetic, ecological, economical: blue-green infrastructure. A new approach to urban stormwater management I.*

# Definitions

Ecological / green infrastructure: a structured landscape network of landscape features covered with vegetation / landscape features that are unenclosed (=uncovered soil) together with spatial patterns that provide a variety of uses, including the provision of ecosystem services).\*

Green infrastructure is a strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services. It incorporates green spaces (or blue if aquatic ecosystems are concerned) and other physical features in terrestrial (including coastal) and marine areas. On land, green infrastructure is present in rural and urban settings.\*\*

\* *United Nations (Habitat, 2011)*

\*\* *EU (Green Infrastructure Strategy, 2013)*



# Functions of green and blue infrastructure

- Water retention
- Producing O<sub>2</sub>, reducing CO<sub>2</sub>
- Reducing urban heat island effect
- Preserving biodiversity
- Recreation, improving physical and mental health of urban populations



# Problems regarding GBI

## RATIO OF GREEN AREAS IN CITIES

- **<20%** in nearly 70% of the Hungarian cities, **20-29%** in the rest of other cities → far below the European average; **areas below 30%:** mainly responsible for urban heat-island effects)
- green space in Budapest: appr. **5-6 m<sup>2</sup>/person**, in inner districts even below **1 m<sup>2</sup>/person** (WHO reference value: **9 m<sup>2</sup>/person**)



## UNDERRATED URBAN GBI ELEMENTS

value not sufficiently registered, no uniform value measurement, value cadastre and municipal expert network



## LACK OF KNOWLEDGE AND STANDARDS

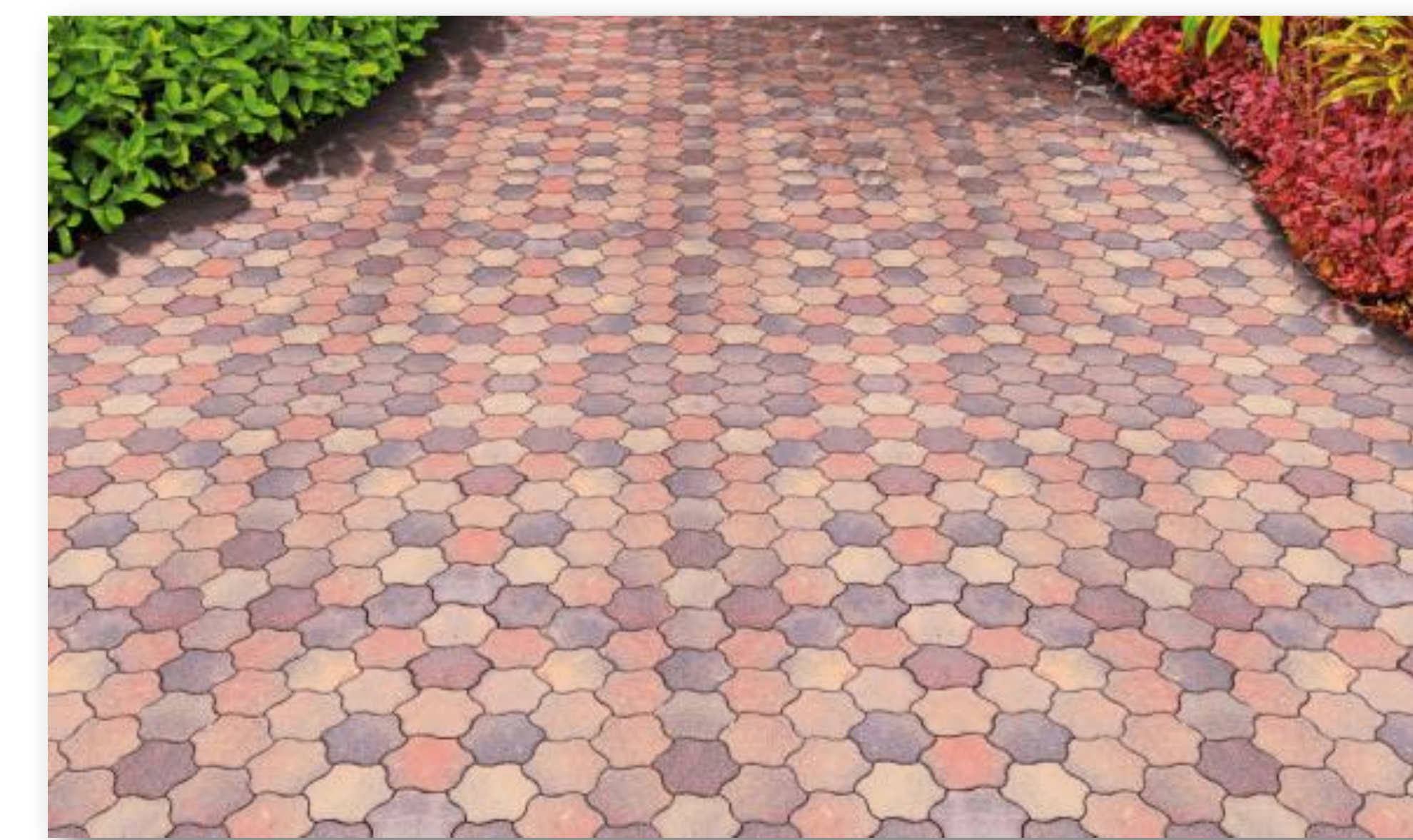
- definition and function is not known
- decision makers and investors rather choose well known and standardised grey solutions



## SOIL SEALING - GREY INFRASTRUCTURE

It causes a number of other problems like:

- rainwater overloads sewage systems and torrential discharges,
- groundwater level decreases,
- flood and run-off risk increases



# GBI in EEEOP+

## PA1 - Water Management

Enhancing **climate adaptation** by green solutions for water management



## PA2 - Circular Economic Systems and Sustainability

Solving **water utility problems** through green infrastructure (mainly urban)

Preparation and design of ancillary green infrastructure elements



## PA4 - Renewing Energy Economy

Application of green solutions during **EE developments** for buildings (green roof, green wall)



# Planned measures of dedicated GBI investment priority under PA2

## SUMMARY

- Total allocation: appr. **70 Bn HUF ~ 200 M EUR**
- Main goals:
  - Solving **water related problems with GBI** on sectoral or municipal level (e.g. water management, water utility)
  - Implementation of **GBI with high added value** prepared under other EEEOP+ projects (non-design)

## DEMARCATIION

EEEOP+ focus is on EEEOP policy fields, GBI either solves a problem of a given „sector” or is an ancillary investment (like awareness raising)

TSDOP+ focus is on the green area and precipitation (damage caused by precipitation)

## ELIGIBLE ACTIVITIES:

1. *Preparation and design of GBI linked to policy fields covered by the EEEOP+*
2. *Urban and rural GBI*
4. *Creation of new green and blue surfaces, enhancing existing water and green surfaces, endowment with additional functions*
5. *Other infrastructural interventions necessary to GBI developments (e.g. transport, energy, remediation)*
6. *Small ancillary investments (e.g. RDI, awareness raising)*

## POTENTIAL BENEFICIARIES

Municipalities, state and municipal-owned non-profit economic companies, public service companies, organizations maintaining and operating settlements, higher education institutions, scientific and non-governmental organizations, professional advocacy bodies, natural persons and consortia of the foregoing.



# Other GBI-related projects

## SRSP/TSI – Promoting green and blue municipal infrastructure

EUR 450,000 EU grant (2019)

Work to be carried out by the OECD and Hungarian experts

Aim: introducing GBI into

- spatial, municipal planning, design and construction/building legislation
- sectoral legislation
  - sectors determining the existence of GI (e.g. water utility systems, water management, transport)
  - even if no dependencies, it still might have an effect on (e.g. climate adaption, air, noise)
- local/regional guidelines
- trainings and website

## Intention: Horizon2020 – Promoting the introduction of nature-based solutions for communities in cities

Planned project

Call for proposal: Assessing the socio-politics of nature based solutions for more inclusive and resilient communities

- total indicative budget: EUR 12.00 million
- type of project: Research and Innovation Actions
- number of supported applications: 1-2
- applications can be submitted from 28 October 2021 to 15 February 2022

The aim is to put together a package of complex actions that include effective tasks and solutions for both municipalities and small, self-organizing communities, providing adaptable good practices to improve the urban environment, social difficulties and applying the available technological opportunities.





# Useful links

[https://eng2.lacity.org/techdocs/emg/docs/lariver/LA River Reader Guide.pdf](https://eng2.lacity.org/techdocs/emg/docs/lariver/LA_River_Reader_Guide.pdf)

<https://openrivers.eu/>

[https://balkanrivers.net/uploads/files/5/REVITAL Sava River.pdf](https://balkanrivers.net/uploads/files/5/REVITAL_Sava_River.pdf)

[https://balkanrivers.net/en/news/two-studies-for-the-restoration-of-the-sava-river-and-its-floodplain-published?mc\\_cid=519970fffb&mc\\_eid=84f95205b3](https://balkanrivers.net/en/news/two-studies-for-the-restoration-of-the-sava-river-and-its-floodplain-published?mc_cid=519970fffb&mc_eid=84f95205b3)

<https://academic.oup.com/bioscience/article/71/8/831/6307424>

<https://www.susdrain.org/>

<https://www.nature4cities.eu/a-projekt>

<https://naturvation.eu/>





***Thank you for your kind attention!***

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