

Water Renovation in Ukraine  
Project no. 22320101



# Water Renovation in Ukraine

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Mendel University in Brno, Faculty of Forestry and Wood Technology, Czech Republic



*The project is co-financed by the Governments of the Czechia, Hungary, Poland and Slovakia through Visegrad Grants from International Visegrad Fund. The mission of the fund is to advance ideas for sustainable regional cooperation in Central Europe.*

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# Modern methods of rainwater and wastewater management in cities

Lubos Jurik  
SUA Nitra

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- Visegrad Fund



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- Visegrad Fund



# Settlements in the Landscape - Development

Visegrad Fund



# Settlements in the Landscape - Development

Visegrad Fund



Natural floods or highly built-up area?

• Visegrad Fund



# Natural floods or highly built-up area?

• Visegrad Fund





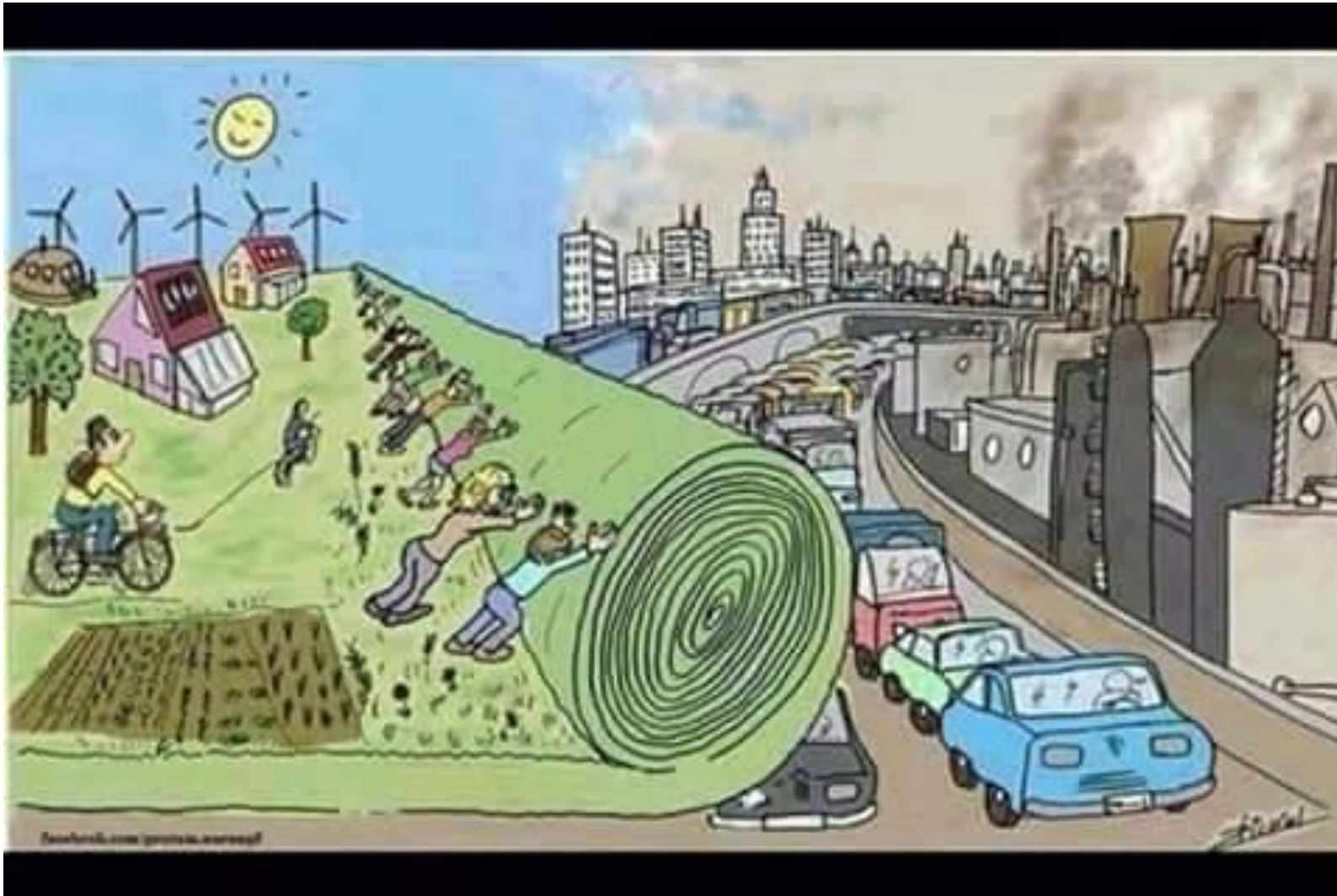
# Drought or heavily used territory?

- Visegrad Fund



# Settlements in the Landscape - Development

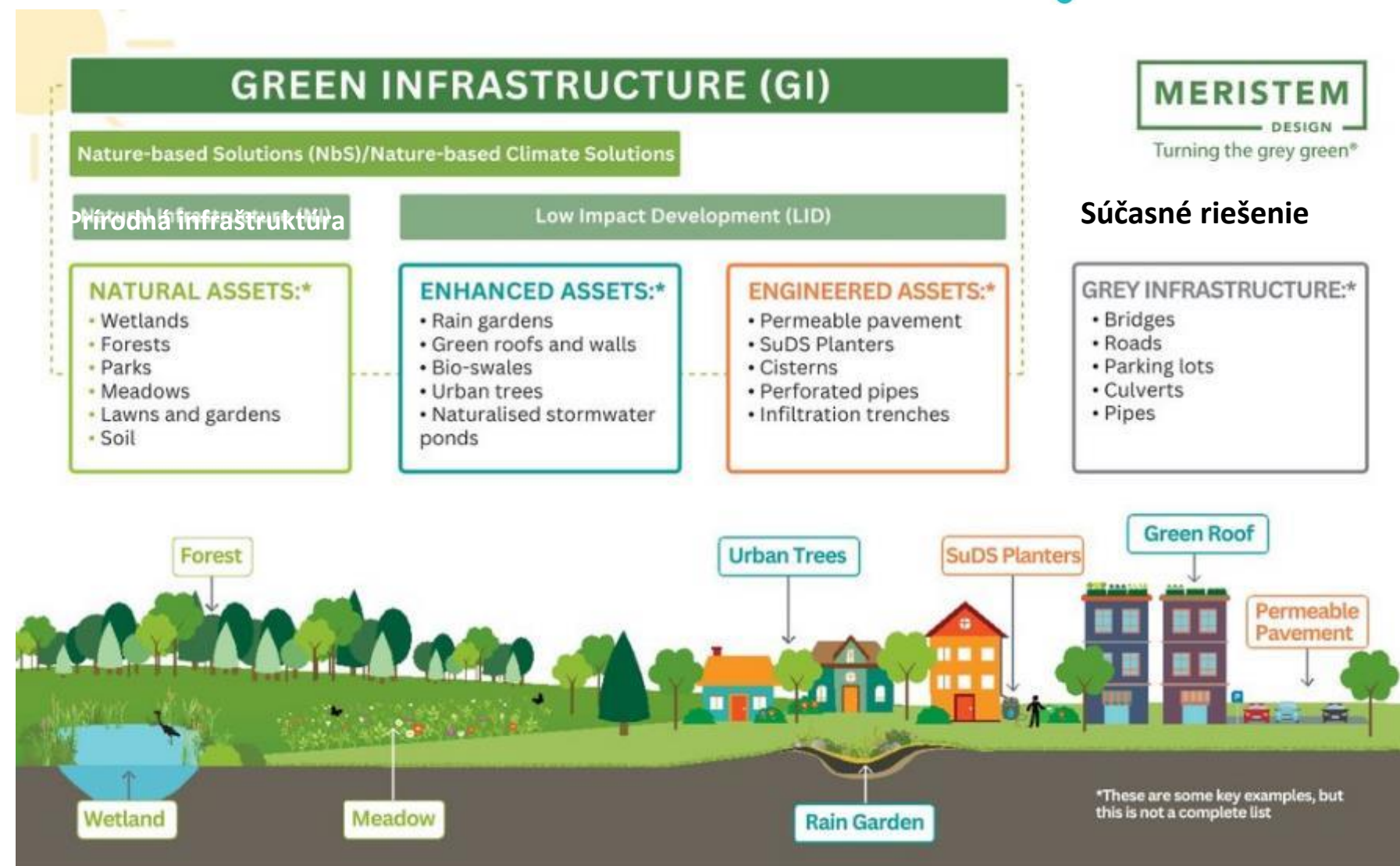
Visegrad Fund



# Settlements in the Landscape – Development new measures

• Visegrad Fund  
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Green  
Blue  
Blue-Green  
Grey and blue  
Blue and grey  
Green  
infrastructure  
Blue-green  
infrastructure

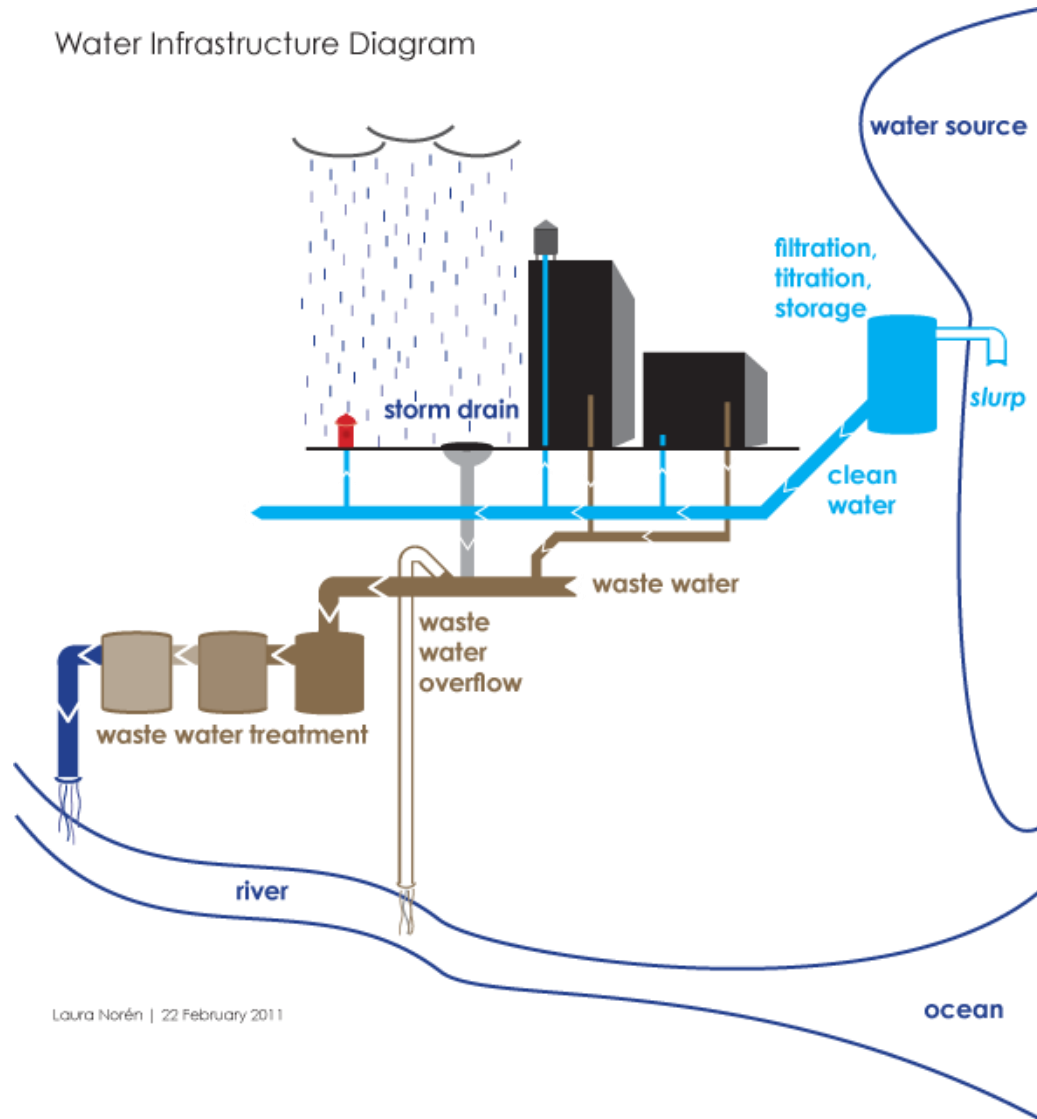


# Settlements in the Landscape – Development



# Water for Urban Areas

Water Infrastructure Diagram



Laura Norén | 22 February 2011

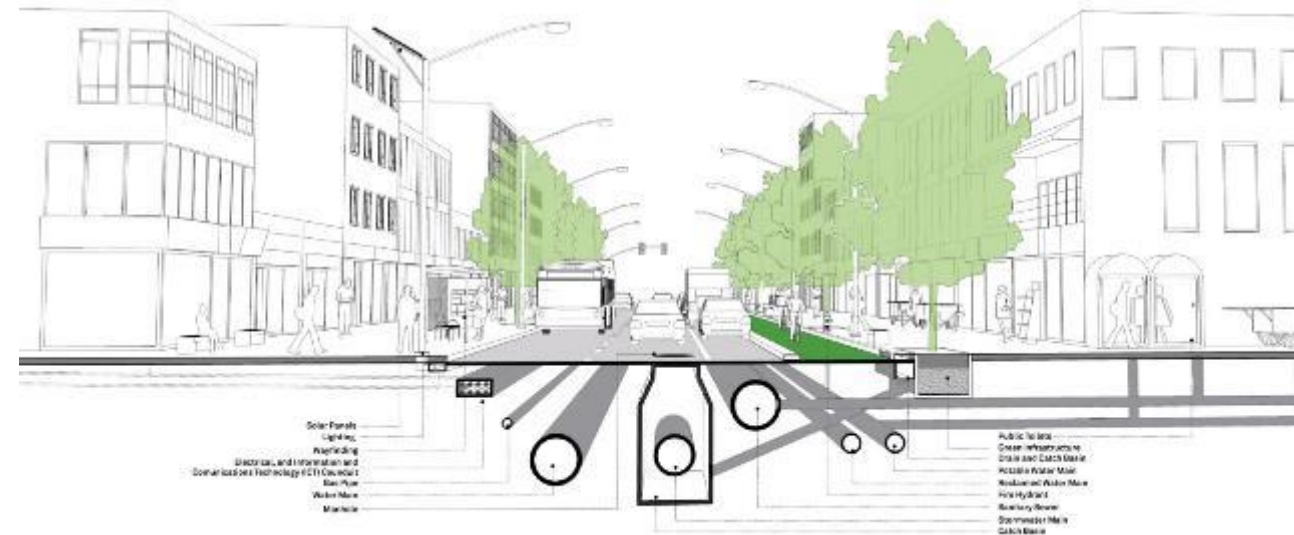
Sídla v krajine  
**Voda pre mestá**

Odpadová voda z miest a obcí

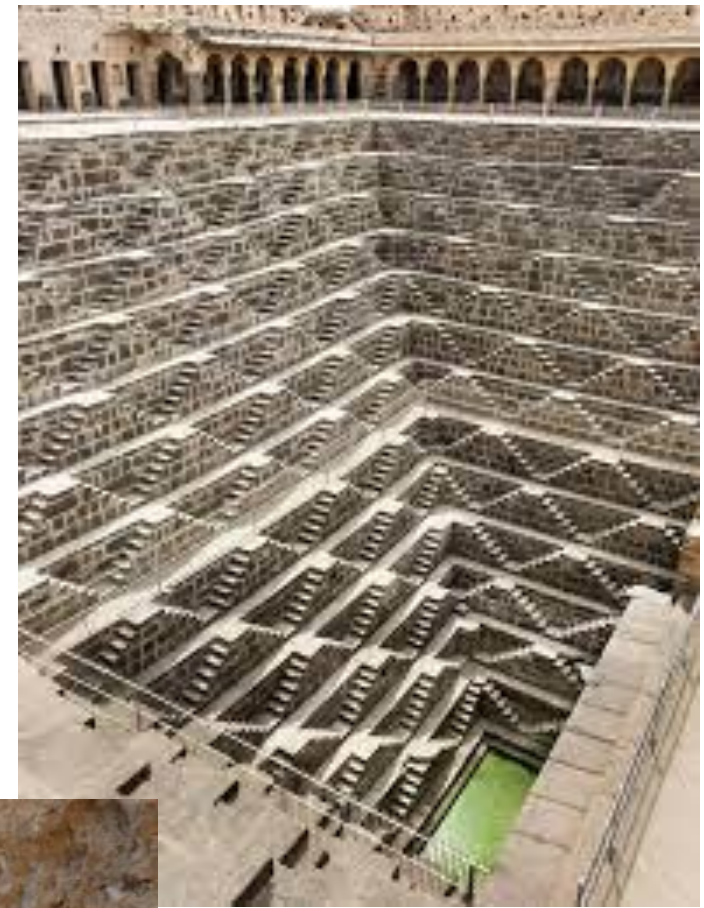
Zelené plochy v meste vs. - Zelená infraštruktúra a voda

Rieka v meste

• **Visegrad Fund**

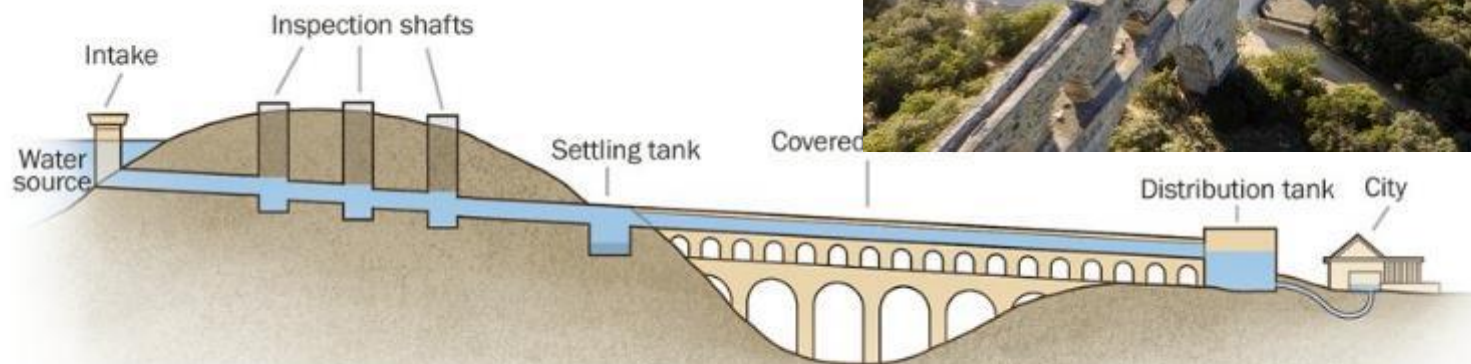


# Water for Urban Areas - history



# Water for Urban Areas - history

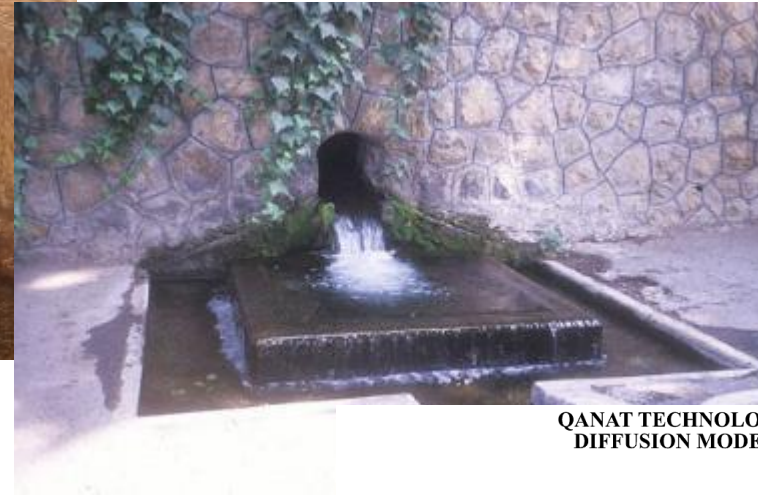
- Visegrad Fund



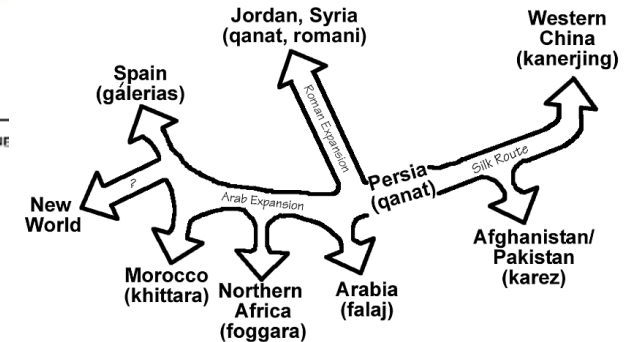
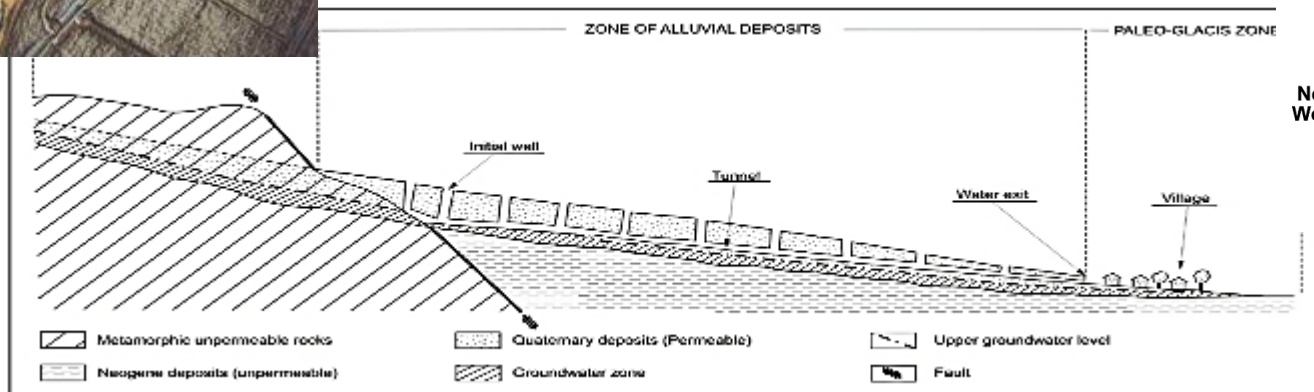
# Water for Urban Areas - history

• Visegrad Fund

Qanat Firaun (Gadara Aqueduct), [Jordan](#),



QANAT TECHNOLOGY  
DIFFUSION MODEL





# Wastewater from towns and municipalities

Sídla v krajine

Voda pre mestá

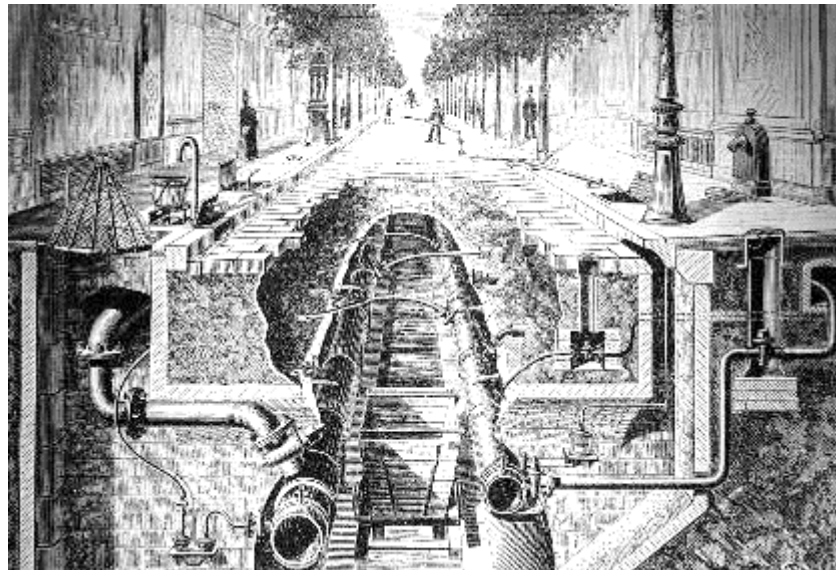
Odpadová voda z miest a obcí

Povodne a sucho v mestách a obciach

Zelené plochy v meste vs. Zelená infraštruktúra a voda

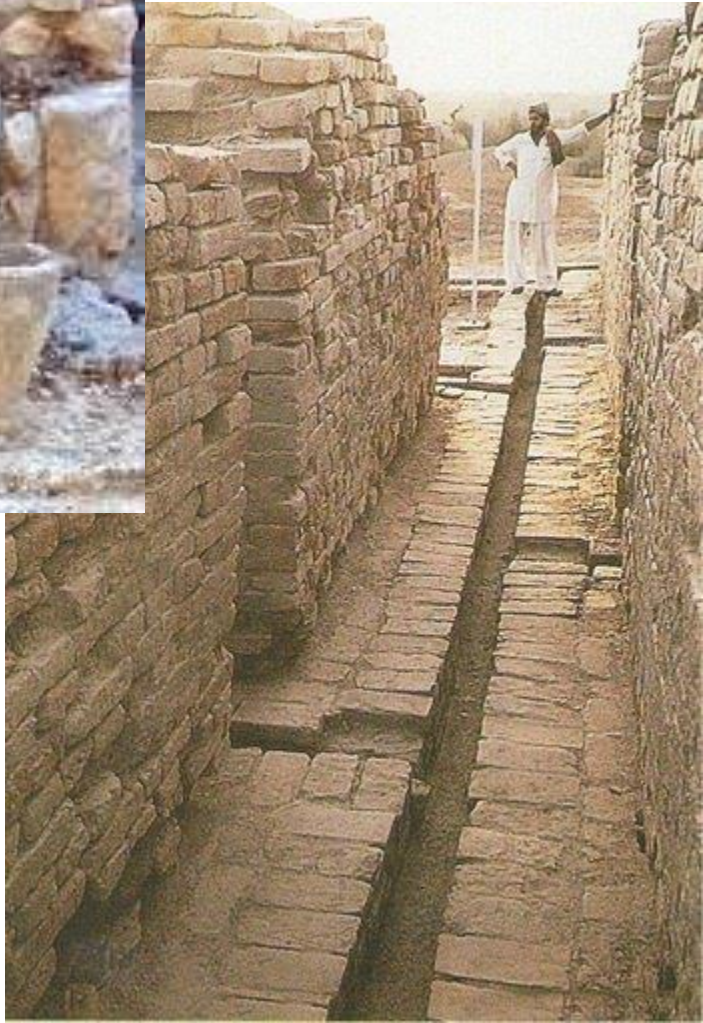
Rieka v meste

Višegrad Fund



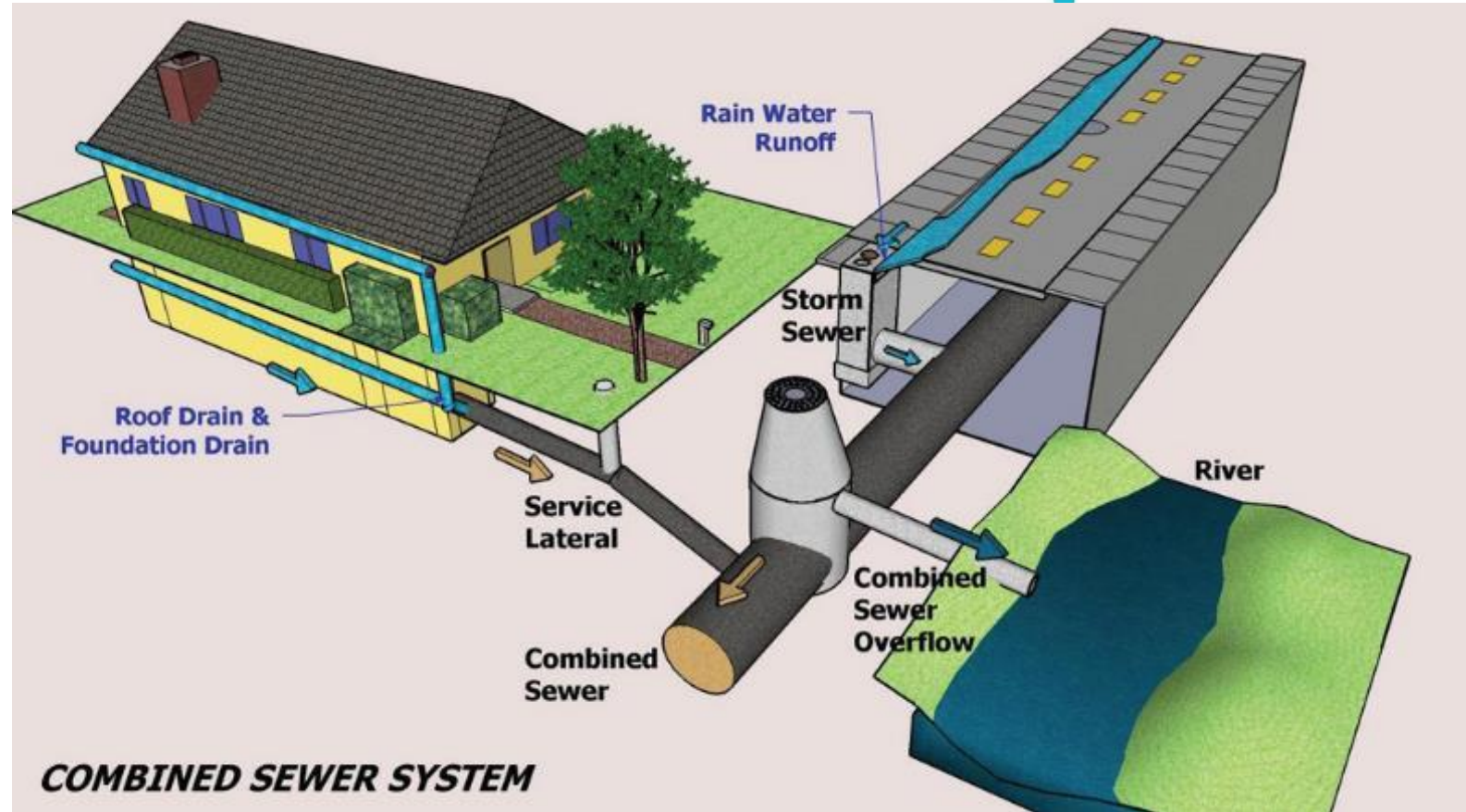
# Wastewater from towns and municipalities

- Visegrad Fund



# Wastewater from towns and municipalities

• Vesgrad Fund





Hong Kong Island Flood Relief Project

World's largest drainage tunnel opens in Mexico City



Inside London's £5bn super sewer

Chicago's Deep Tunnel:

- 
- **Visegrad Fund**



**Ostravice sewer**



**Historical Sewer under Prague**



**Brno New sewer**

# GREEN INNOVATIONS

## GREEN

Our decisions about what and how we produce and consume, what we eat and what we turn into waste, what energy we use and how we move affect tomorrow's landscape and also affect water, soil and air and climate.

This is also why the world community adopted the 2030 Agenda in 2015 and formulated and published 17 sustainable development goals. We are guided by these goals.

## Innovations

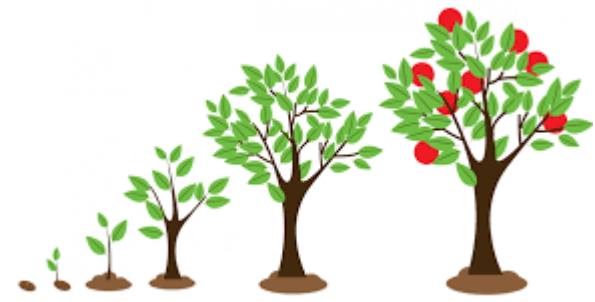
In our eyes, your sustainability intent is innovative if it represents something new (e.g. new products, processes or applications)

It promises a better solution than existing approaches

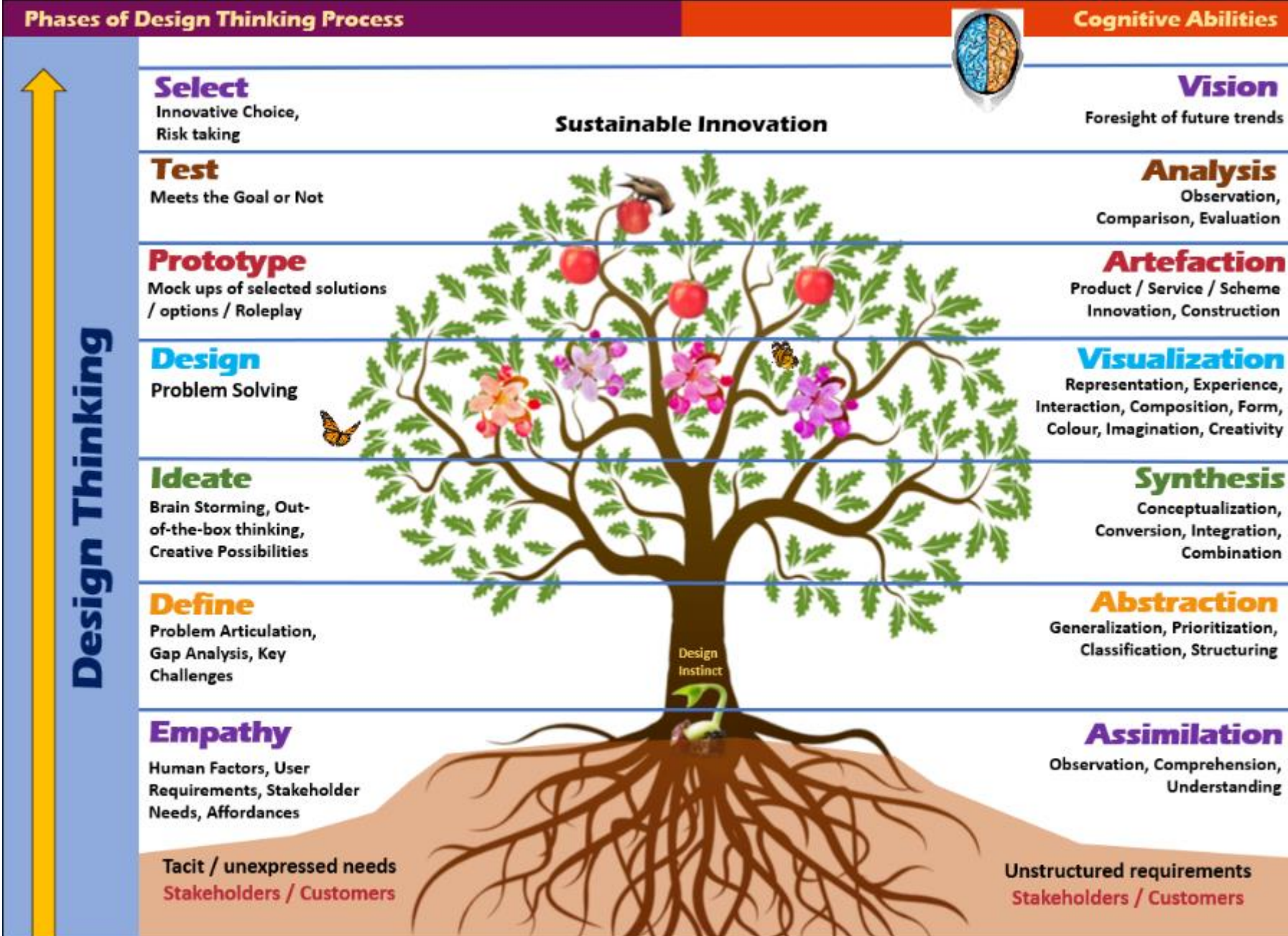
Innovation is about the application and realization of an idea

- Visegrad Fund





# GREEN Innovations over Cognitive Thinking



**Cognitive Tree Model for Design Thinking**  
Conceptualized by Dinesh Katre 2021

# BLUE GREEN infrastructure and water • Visegrad Fund

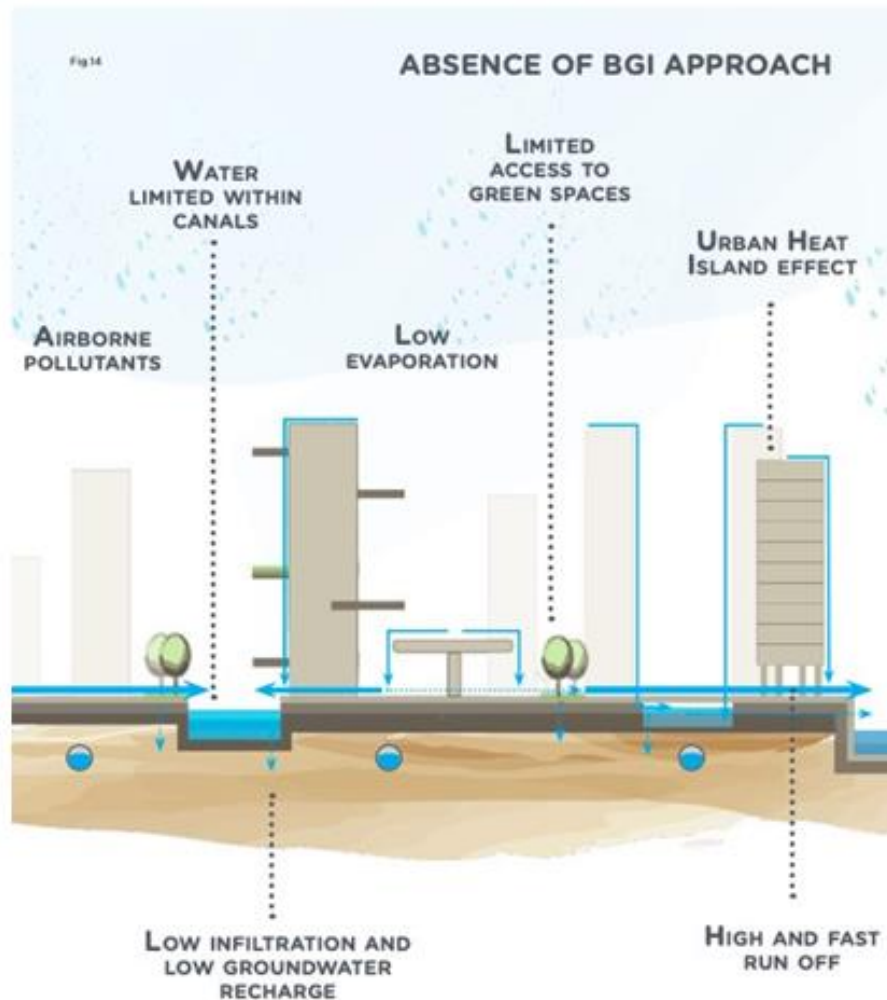
An BGI is defined by the European Commission as "a strategically planned network of natural and semi-natural areas with additional environmental features designed and managed to provide a wide range of ecosystem services".

BGI is an increasingly popular topic in research and global policy debates, as BGI not only represents important improvements in ecosystem services and biodiversity in urban and rural environments, but also represents a sustainable approach to urban living and planning.



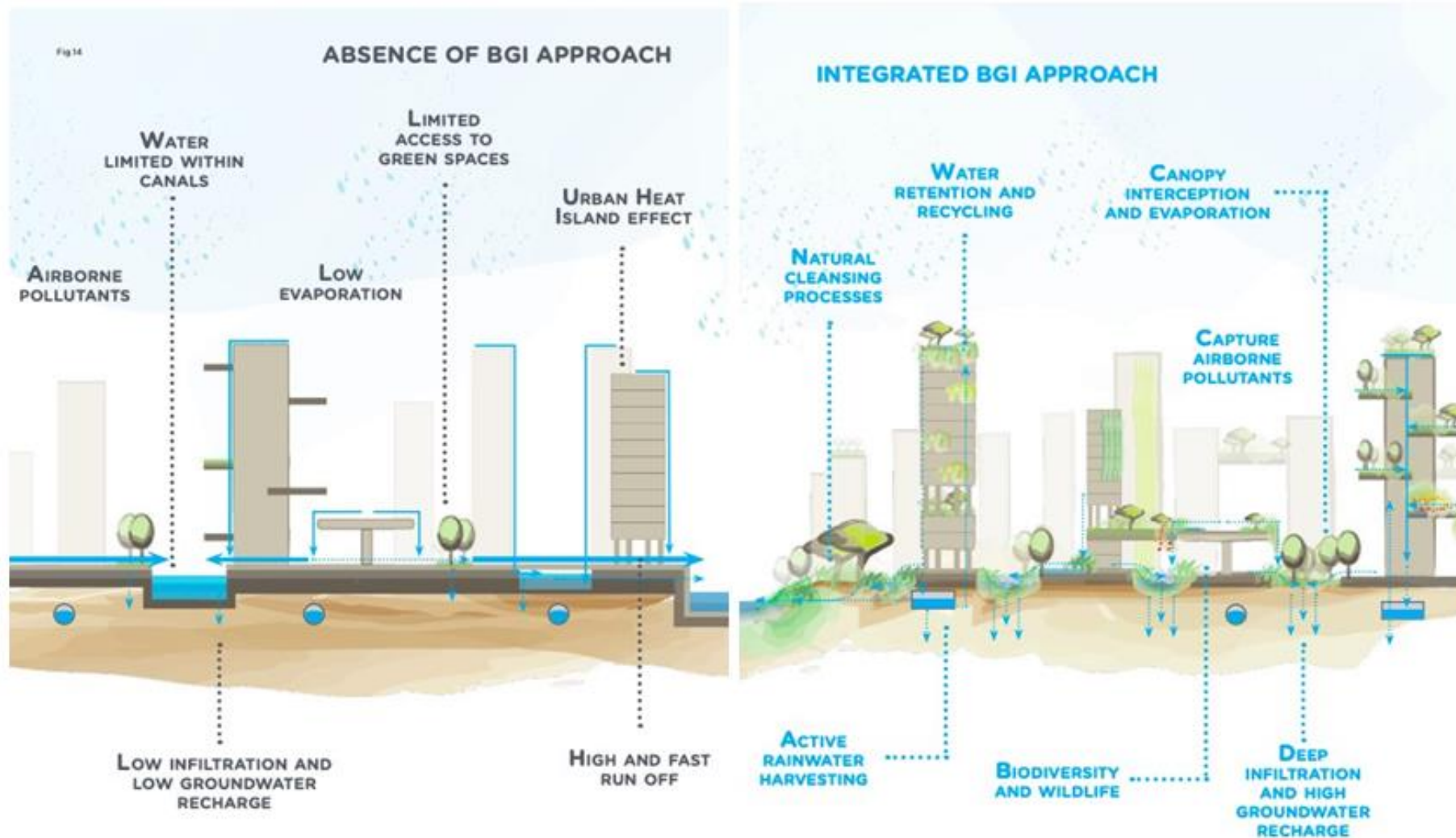
# BLUE GREEN infrastructure and water

• Visegrad Fund

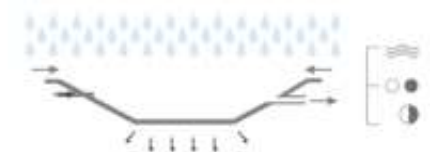
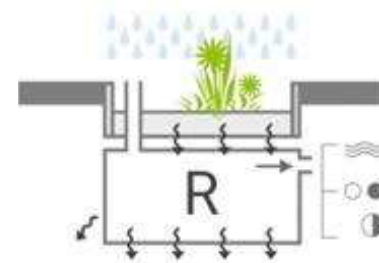
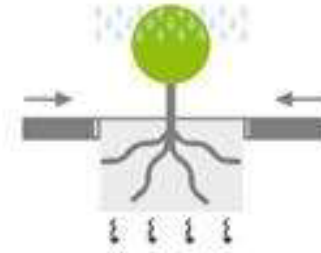
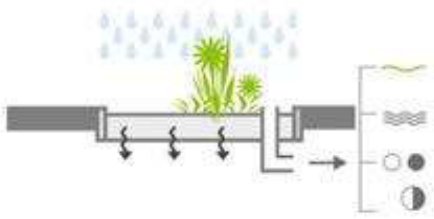
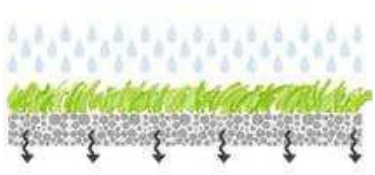


# BLUE GREEN infrastructure and water

• Visegrad Fund



# BLUE GREEN infrastructure measures



# Green ... Or BLUE??



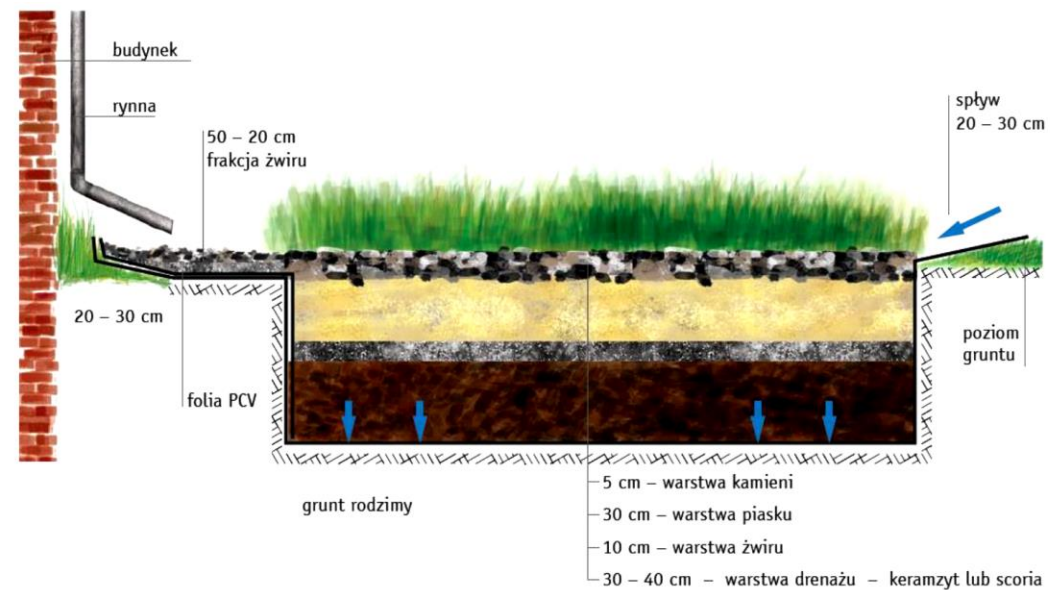
• Segrad Fund  
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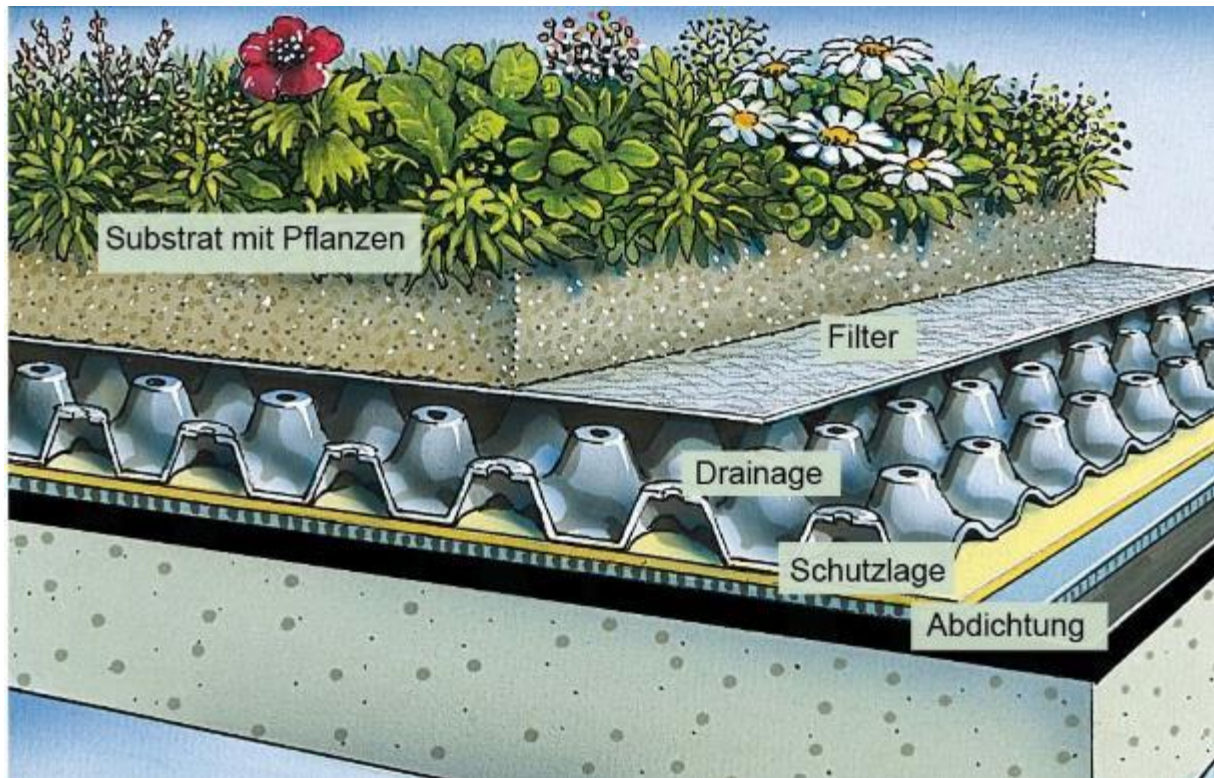
Green ...  
Or BLUE??



# Rain Garden



# Green roof





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