Rainwater management in Flanders – preparing for the future

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Content

- Evolution legislation
- Impact rainwater management
Content

- Evolution legislation
- Impact rainwater management
Evolution legislation

1996 - 2004
Separate sewer system & Reuse

2004 - 2012
Storage with limited discharge

2012 - ...
Reuse and infiltration

Evolution focus
Evolution legislation

**Reuse**
- 5 m³ + functional reuse

**Infiltration**
- 250 m³/ha
- 4% infiltration surface

**Limited discharge**
- 250 m³/ha
- 20 l/s/ha

Current principles
Evolution legislation

- **Public terrain** – code of good practice
- **Private terrain** – regional ordinance

→ **Principles are the same**

Water assessment: legally binding check in every permit. No negative impact on the water system allowed!
Evolution legislation

- Basic legislation is important to implement fundamental principles

- Architects in Flanders
  - 93% positive about reuse (0.40% negative)
  - 59% positive about infiltration (15% negative)
Content

- Evolution legislation
- Impact rainwater management
Impact rainwater management

Peak flows

Discharge of sewer systems

Climate change

Increasing pavement
Impact rainwater management

- Model area

  - Benedenvliet
    - Discharge area 4467 ha
    - Percentage concrete 18%
    - Strong interaction river - sewer

  - Edegemsebeek
    - Discharge area 463 ha
    - Percentage concrete 35%
    - Strong interaction river - sewer

  - Mandoersebeek
    - Discharge area 905 ha
    - Percentage concrete 5%
    - Weak interaction river - sewer
Impact rainwater management

Impact flooded volumes

Sewer peak flows

Are we future proof?

Impact climate change

Dilution sewer system

Impact climate change + rainwater management

Sewer discharge volumes
Impact rainwater management

- Infiltration is important.
  - But is it always the best choice?
  - What about water quantity/safety and quality?
  - Model runs with a range of infiltration capacities.

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Impact rainwater management

- What to choose? Impact on quantity and quality.
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Impact of Ksat: 

- **Ksat > 5x10^-7 m/s**: Infiltration
- **Ksat < 1x10^-7 m/s**: Limited discharge

Only area where local characters can influence choice between infiltration or limited discharge.
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Conclusion
→ We are future proof!
→ Rainwater management/infiltration has massive impact on:
  × Sewer peak flows
  × Sewer discharge volumes
  × Flooded areas
  × Reduction in dilution
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- Conclusion
  - Threshold to choose for infiltration lower than expected
  - Infiltration also has other positive impacts
    - Heat islands
    - Groundwater recharge
    - ...

Impact rainwater management

- Rainwater management can’t solve all the problems!!

- Lower the risk by constructing in an adaptive way to prevent damage if things go wrong
Meer info

- www.vmm.be
- Direct link for the infiltration study


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