



Harrestrup Å case study

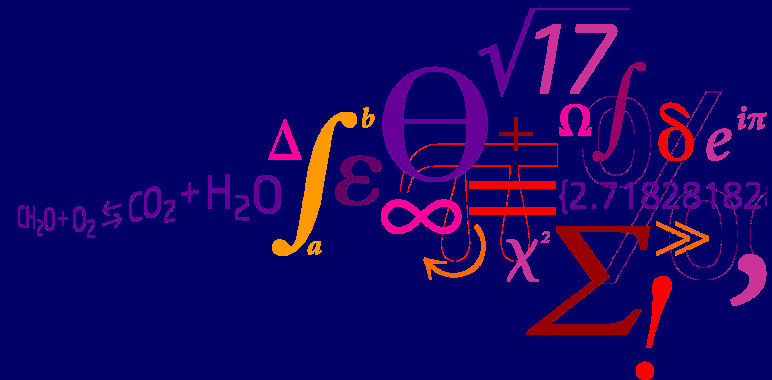
Implementation of landscape based disconnection: Actors, barriers and local involvement

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Outline



- Aims of this study
- Methodology
- Major Results
- Examples from the Netherlands and Denmark:
 - Enhancing participation on the public space
 - Enhancing participation on the private ground
- Recommendations

Aim of this study



- Identify existing barriers related to disconnection of stormwater in both public and private spaces
- Suggest possible strategies to overcome such barriers

Methodology

- Workshop in Odense with professionals involved in the municipal management in Denmark
- Interview to JBN at the municipality of Copenhagen
- 4 Interviews done by two students from the Department of Forest and Landscape of KU- Life
- 30 interviews conducted for 2 similar case studies analysed in the Netherlands (Professionals and Lay people)
- 10 Interviews conducted in Denmark within two different projects on stormwater management (only professionals)

Major Stakeholders

- Leaders of the decision making process:
 - The municipality of Copenhagen, KK (Department of Nature and Parks)
 - Copenhagen Energy, KE (water utility 100% owned by the municipality of Copenhagen)
- Local private owners:
 - Single family houses
 - Housing associations
- Interest groups in recreational use of green areas:
 - Sport associations
 - Allotment gardens (Kolonihave)
- Other relevant stakeholders
 - Department for Traffic and Roads
 - Department for Groundwater

Relevant Drivers and Barriers

- Cost effectiveness
- Municipal prestige (Recreational, aesthetics, sustainability)
- Resistance due to lack of awareness and knowledge
- Reimbursement is not convenient for single family
- Reimbursement comes only after implementation
- Football fields are always needed! ;-)
- Allotment gardens may be influenced

Increasing Awareness with Public Exhibition

Largely used in the Netherlands

Private owners to get the following information:

- How LAR structures can work on practice
- How to implement those structures in their private ground
- The practicality of disconnections
- Contact to private entrepreneurs that can make the job for them

This concept has been partly developed at Avedøre
Wastewater Centre



(W.-Torgard, 2009)

Enhancing participation on private ground

Gardens Project (Dordrecht, NL)

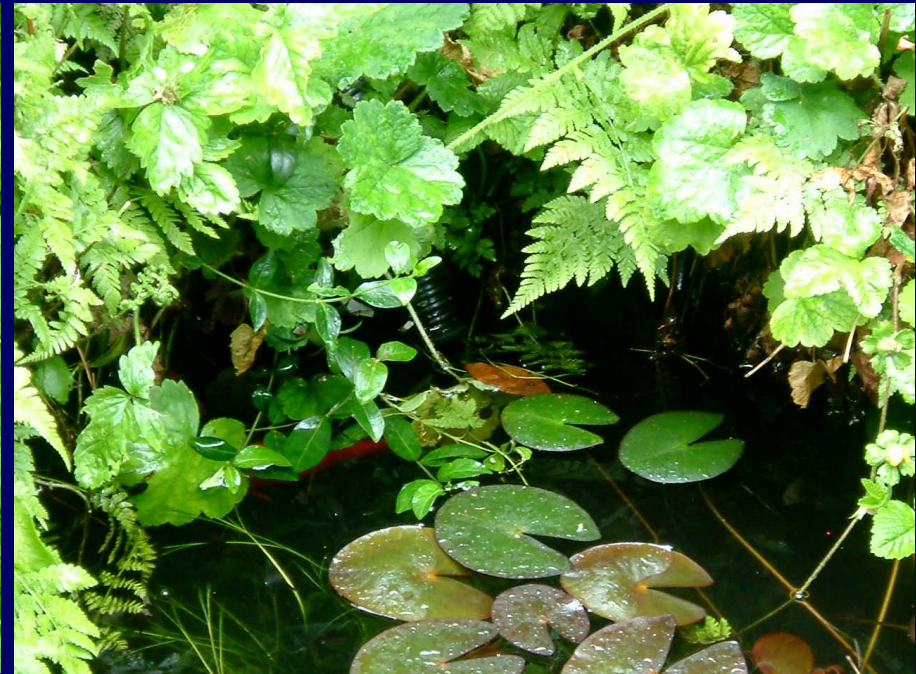
- Densely populated → Stormwater from roofs stress the combined sewage system
- Major problem → paved private gardens
- Free gardening course → more space to water within private properties
- People were advised by specialized technicians
- Awareness is increased by letting citizens managing water above surface in their private spaces

People willing to pay for the implementation



“ ...my garden looks nicer and it didn't cost a lot of money, around 300 EURO , I did everything by my own...”

...becoming more aware of water quantity variability



“...when water gets too high I just have to turn this gate and the water goes to the sewer...”

Enhancing participation on the public space

Kelder (2008), Dordrecht (NL)

- Densely built neighborhood
- The municipality needed more space to handle water
- A sole green area → people usually go with their dogs.
- Storage was needed but we couldn't use the only green area they had
- Proposed to citizens to design that storage area giving sizes of the design
- “It does not need to be blue but also green. It should just be able to get flooded only when it rains intensively”.
- People worked hand in hand with technicians and urban designers

Water Square Project (NL)



Source: [Geemente Rotterdam](#), 2008

...football field as a part of storm water management



...football field as a part of storm water management



Recommendations

- More money or different financial incentives to motivate private owner to disconnect
- The rules for reimbursement should change
- Facilitate external funding for disconnection
- Awareness need to be enhanced to avoid resistance
- Education campaign: workshop and public meetings
- Solutions need to be attractive:
 - Use of creativity is important to overcome existing barriers
 - Different professionals need to be involved (Transdisciplinarity)



Thanks for your Attention!

