

# Sense and Sanitation

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# Outline

- Introduction
- Paradigmatic Changes in Infrastructures of Consumption
- Why and how to make urban infrastructures systems visible, tangible?
- Problems with Sense and sanitation
- Environmental innovation in water and sanitation and role of the senses
- Conclusions and way forward



# Introduction

- Infrastructures of Consumption (electricity, gas, drinking water, sanitation, waste services) have become *abstract* systems:
  - largely invisible, and managed by experts far away from consumer life worlds
- Recent shifts in infrastructural service provision lead to *making the invisible visible again = re-sensitization*
- Does this count for sanitation as well, and if so, why and how?



# Paradigmatic changes in urban infrastructures

From private provision / small networks (19<sup>th</sup> century)...

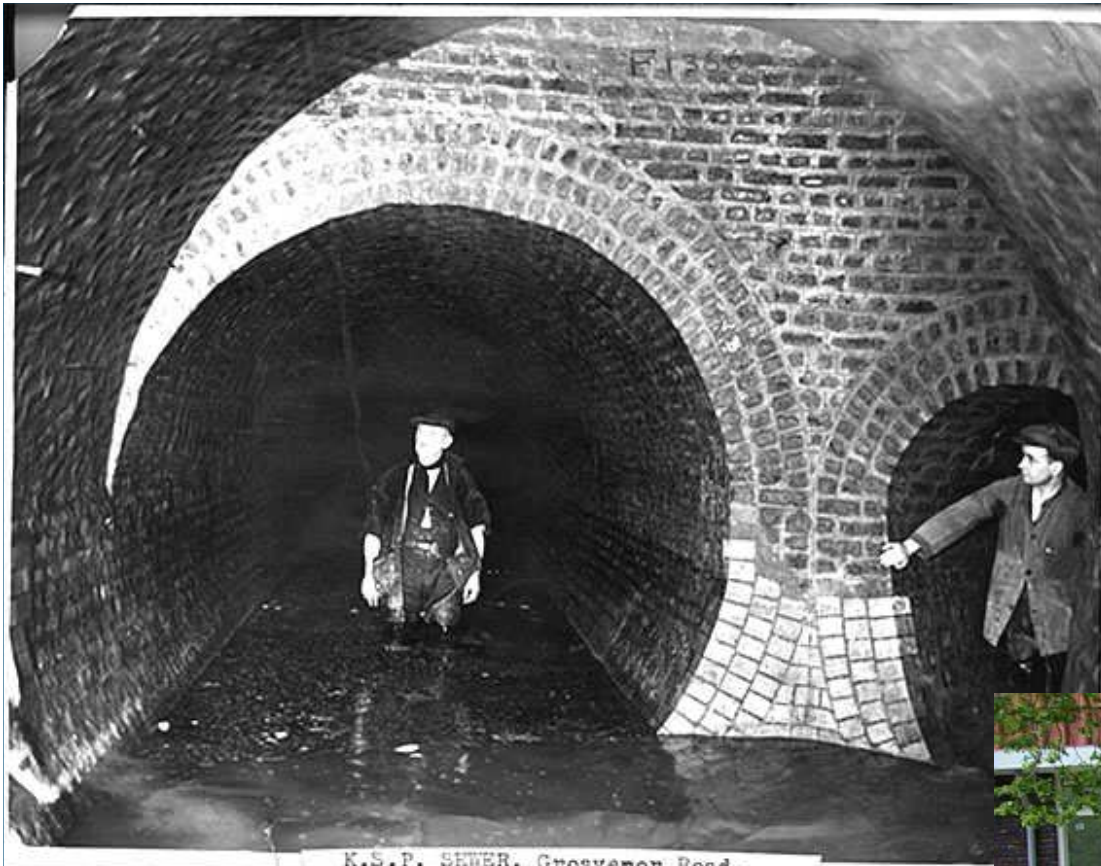
To public provision / rolling out of huge municipal, regional and (trans) national networks (20<sup>th</sup> century)...

- Supply driven logic, hierarchic organization (picture next slide)
- Captive consumers, mostly called 'connections'
- Abstract providers, who do not have a clue about consumer practices
- Increasing invisibility (picture next slide)

To privatised, splintered, and glocalized networks (end 20<sup>th</sup> century)

- Demand side management,
- Liberalization, private participation
- Re-localized, decentralised production while being connected to global networks
- AND: the invisible being made visible again!





K.S.P. SEWER. Grosvenor Road.



# Making water and energy systems visible...



Wadi in Leidsche Rijn, Utrecht



Solar panels CCI center UK



# Tangible...



Water play ground



Solar energy children's game at Kleine Aarde Boxtel



# Why bringing back the senses in infra provision?

- **Eco-rationalization** through feedback
  - Metering, monitoring, data-logging resource use: assumption that knowledge leads to savings
- To play the **symbolic game of sustainable consumption**
  - Individual consumers showing off their solar panels / rainwater devices / green electricity certificates
- **Demonstrating** organized **commitment** for sustainable provision
  - Companies, neighborhoods demonstrating their 'eco-mindedness' in demonstration projects





# How to bring back the senses in infra provision?

- Visualising **Flows**
  - Directly by opening tubes or bringing so far hidden flows above the ground
  - Indirectly by monitoring, metering and billing devices
- Visualising **Infrastructures**
  - Decentralised generation units (solar panels, rain water tubbs)
  - Coloured pipes and cables (Centre Pompidou next slide)
- Visualising **Practices of consumption**
  - Displaying (extensive) water or electricity consumption or greener choices in infra-related consumption practices (jacuzzi next slide)





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# Sanitation is special in terms of sensitization

Nonolet Groningen



Local Water treatment in Berlin



Compost toilet Utrecht

NONOLET



Flving toilets in Kibera, Nairobi



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# Sense and sanitation

- Nineteenth century: the nose was the best instrument to assess environmental risks.
- The greatest risks for humans were those risks that could be smelled, in particular the risks posed by decaying organic matter.



# Sanitation to avoid sensory experiences

- Sewer systems installed to get the smell and sight of human wastes (by covering, hiding and transporting away from cities) *out of town* to landfills and open waters.
- Treatment of waste and waste water was not an issue when these infrastructures were being rolled out.
- Avoiding sensory experiences came first; environment (water treatment) only half a century later, if ever.



# Environmental innovation studied in water and sanitation infrastructures

- Neighborhood on-site vacuum toilets and anaerobic digestion system
  - Case of Wageningen
- Composting Toilets and Non-Oilet
  - Various cases
- Household water projects
  - Various experiments in the Netherlands
- Grey Water treatment through reed-bed filters.
  - Various sites



# What is being sensitized and why?

Reasons Methods	Rational Resource Use	Cultural Display of Consumption	Demonstrating sustainability to society
Sensitizing Infrastructures	Household water	Reed Bed filters, Household water	Reed Bed filters Household water Vacuum toilets
Sensitizing flows	Composting Toilets, Household water	Composting Toilets, Non-olet	Composting Toilets, Non-olet, Household water, Reed Bed filters, Vacuum toilets
Sensitizing Practices	Household water	Composting Toilets, Non-olet	Composting Toilets, Non-olet



# Conclusions

- Recent paradigm changes in infrastructures of consumption brought back the senses into provision and consumption of services
- Also in Sanitation infrastructures this seems to be the case, but reasons behind and what exactly is sensitized differ:
  - Display of infra and flows dominate over that of practices
  - Visualization mainly done to demonstrate sustainability efforts to the outside world and not for cultural display or rational recourse use.





# Implications for diffusion of sanitation innovations

## Do Not:

- Deny sensory experiences
  - 'it will not smell, if you follow the instructions' (Nonolet, vacuum toilets)
- Be moralistic
  - 'it may smell, but the environment is better off' (Reed bed filters, green bins), or: 'see dirt differently' (next slide: Unilever Campaign SA)

## But Do:

- Enumerate sensory experiences, and find ways of coping with them together with users
  - Reflective users and providers, Social Niche Management





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# Thank you

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