

Utility tunnel Mahlerlaan

Auteur: Frans Taselaar
Datum: 28 januari 2008

Utility tunnel Mahlerlaan, this presentation:

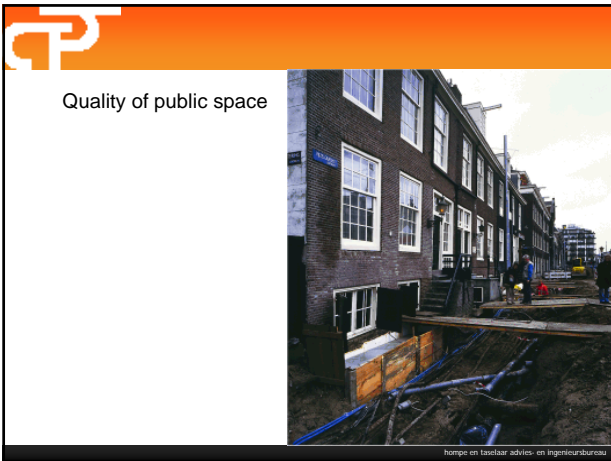
- Local setting: Zuidas Amsterdam
- Why a utility tunnel
- Design process
- Technical aspects
- Risk assessment

Zuidas Amsterdam



Why a utility tunnel?





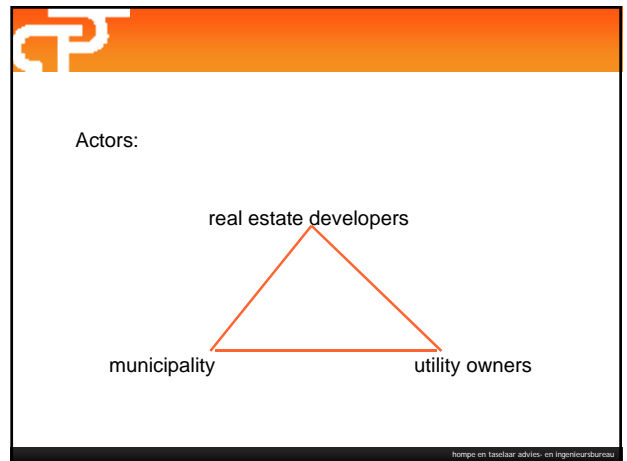
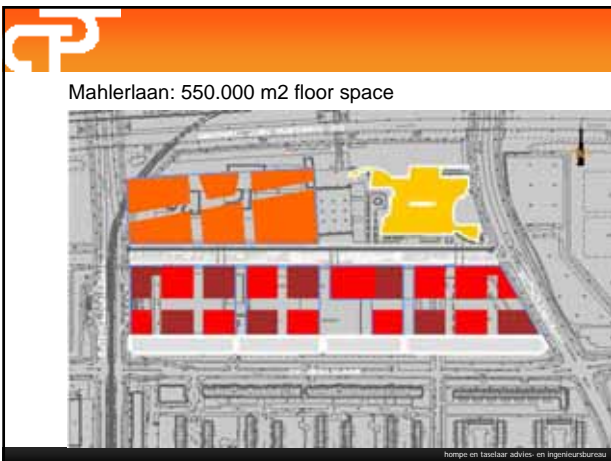
What is it about:

- Underground space
- Quality of the urban area
- Accessibility of the city

In times where we see:

- Densification of the cities
- Increase in utility networks

homp en taselaar advies- en ingenieursbureau





4 dossiers for decision-making:

- Technical dossier
- Risk and Safety dossier
- Legal, Finance and Contracts dossier
- Maintenance Dossier

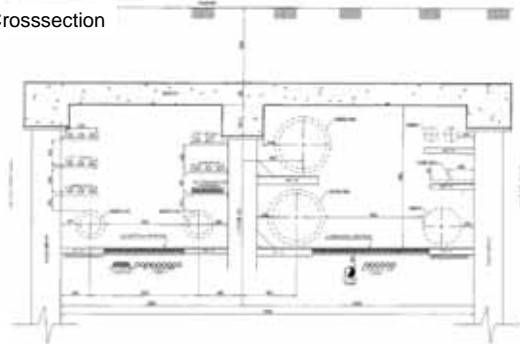


Utilities in the tunnel:

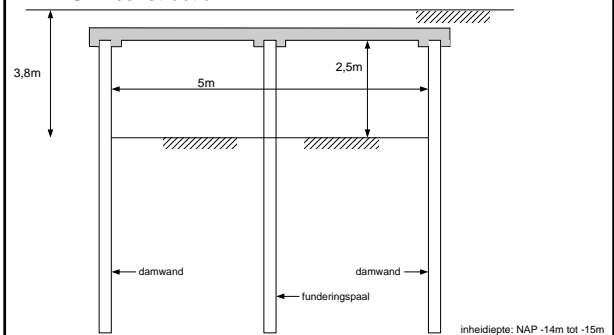
- Gas 1 bar, 100 mbar
- Water DN 150
- Electricity 14 x 10 kV
- City heating 2 x DN 350
- District cooling 2 x DN 900
- Telecom 168 tubes
- Sewage transport DN 300
- Rainwater sewage DN 500



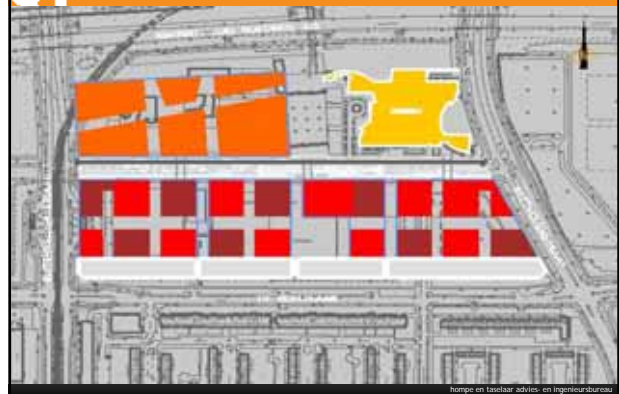
Crosssection



Civil construction



Streetprofile





Technical aspect for utilities tunnels:

- Accessibility
- House connections
- Connection to the traditional utility networks
- Technical installation of the tunnel itself
- Combination with sewage pumping station
- Integration of an energy storage well



Risk assessment:

- Building phase
- Exploitation phase

- Qualitative assessment
- Quantitative data where not available

- Experience elsewhere



Risks:

- Explosion risk
- Fire risk
- Temperature increase
- Molest
- Utility performance interruption
- Personnel and working conditions



Technical installations:

- Ventilation
- Air-conditioning
- Pumps
- Fire alarm
- Gas alarm
- Water alarm
- Motion detection
- Entrance detection
- CCTV
- UPS/powerpack





Conclusion:

- New solutions require creativity and courage of all parties;
- Mutual trust is essential;
- Existing rules, regulations and procedures hinder innovative developments.