ADAPTIVE REUSE OF UNDERGROUND CAR PARKS

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PRESENTATION

1. ANALYSIS
   _MORPHOLOGY
   _(HYDRO)GEOLOGY

2. ADAPTIVE REUSE
   _(TACTICAL) CASCO
   _ARCHITECTURAL
   _SYSTEMIC

3. REFLECTIONS

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UNDERGROUND CAR PARKS | THE CAVE

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LIMITATIONS & RAW POTENTIAL

- Limited dialogue with the urban scenery above (monofunctional)
- Limited heights (approx. 2.10m) & daylight entrance: (un)safety perception
- Limited load capacity intermediate floors: $2 \text{kN/m}^2$ (e.g. $10 \text{kN/m}^2$, supermarket)

- Potential: ‘bunker’ characteristics (buffer sounds/goods/temperatures/...) & underground topography (city metabolism: in relation to water management, geothermal, V2G energy networks)
REMARQUE: HYDROGEOLOGICAL CONDITIONS

Study area (Flanders & the Netherlands):
- high groundwater tables

⇒ multilevel underground car parks:

⇒ In practice: continuous drainage & pumping
  - repercussions for potential future underground residential uses
  - adjacent ecological & stability imbalance (cf. constructions, watering trees)

Cf. ‘Metodo Milano’, 1950s technique (i.e. creating a dry basin by semi-watertight ‘slurry walls’ reaching deeper clay layers + additional pumping)
“WHAT CAN BE DONE WITH URBAN UNDERGROUND CAR PARKS?”

0. PARKING / BUSINESS AS USUAL

1. CASCO / TACTICAL

2. ADAPTIVE REUSE
   (TACTICAL) CASCO
   ARCHITECTURAL
   SYSTEMIC

3. REFLECTIONS

“WHAT CAN BE DONE WITH URBAN UNDERGROUND CAR PARKS?”

University of Antwerp
Research Group for Urban Development

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1. LIGHT INTERVENTIONS | (BEST) PRACTICES

1. ANALYSIS
   _MORPHOLOGY
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Running track: Integrated infrastructure at A4 Schiedam, The Netherlands
Agricultural programme: La Caverne, Paris
Commercial showroom: Hafele, Shanghai (AIM architects, 2015)
Temporary cultural activities: Bold Tendencies, Peckham London

photo © raf ilsbroekx
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photo © unknown
1. LIGHT INTERVENTIONS | INSPIRATION

PRESENTATION

1. ANALYSIS
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Bicycle parking: Kleine-Gartmanplantsoen/Leidseplein Amsterdam (Zwarts & Jansma, 2017-2021)
Underground nordic ski facilities: Planica Nordic Center, Slovenia (StVAR, 2015)
‘Box in box’: Lhoas & Lhoas, 2005 (Erna Hecey Gallery, Brussel) & Daniel Buren, 2016

photos © unknown
Underground urban distribution hub: ‘Vlieten revisited’, incl. cargo bike distribution (student work UA)
Mixed mobility Concept: Shared Mobility + Mobility As A Service + Vehicle to Grid (student work UA)
Vehicle to Grid: 3MegaWatt at Johan Cruijff Arena, Amsterdam
2. LARGE INTERVENTIONS | INSPIRATION ‘LIGHT ENTRANCE’

1. ANALYSIS
    - MORPHOLOGY
    - (HYDRO)GEOLOGY

2. ADAPTIVE REUSE
    - (TACTICAL) CASCO
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3. REFLECTIONS

Tirpitz Museum, Blavand Danmark (BIG, Bjarke Ingels 2017)

Joanneum Museum extension, Graz (Nieto Sobejano arquitectos/eep architekten, 2012)
2. LARGE INTERVENTIONS | INSPIRATION ‘FOLDED LANDSCAPES’

1. ANALYSIS
   - MORPHOLOGY
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3. REFLECTIONS

Sloping landscape design at Hellerup Gymnasium, BIG 2013 © BIG
‘Dog-eared’ entrance car park/supermarket, *Museumplein* Amsterdam (Sven-Ingvar Andersson, 1999)
Patio landscape at Moesgaard Museum, Højbjerg (Henning Larsen, 2014)
Gare Châtelet-Les Halles: 750,000 daily passengers!
+ Commercial programme Les Halles
Urban dialogue: Le Volcan (by Oscar Niemeyer, 1982) vs. Post-war city renewal (by Auguste Perret, 1945-1964)
Integrated underground construction since 1957-1958
2. LARGE INTERVENTIONS | P ALBERTINA -> SQUARE MEETING CENTRE

1. ANALYSIS
   _MORPHOLOGY
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2. ADAPTIVE REUSE
   _(TACTICAL) CASCO
   _ARCHITECTURAL
   _SYSTEMIC

3. REFLECTIONS


Removal of intermediate floor plates (cf. limited load capacity & asbestos)
Reflection: Private Partners vs. Management Public Space?
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2. LARGE INTERVENTIONS | P ALBERTINA -> SQUARE MEETING CENTRE

PRESENTATION

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3. REFLECTIONS

1962

2007

TODAY

Integrated underground construction since 1957-1958
(Including an underground theatre)
Transformation underground car park -> offices for city’s cleaning services
(incl. parking space for 13 trucks)

Center for Renhold, Hauser Plads, Copenhagen
(Polyform, Karres & Brands, 2013)
Underground Car Park *Kathedraal* -> Columbarium and memorial spaces
(student work Master Architecture)
Paris, *Réservoirs de Passy* (19th century, Eugène Belgrand), urban water networks
Neighbourhood scale: climate adaptation & recreation, *Bentemplein* Rotterdam (De Urbanisten)
*Museumparkgarage*, Rotterdam
‘Metropolitan Area Outer Underground Discharge Channel’, Tokyo, 1992-2006
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3. CITY METABOLISM
   - INSPIRATION
   - DISMANTLING & ‘RENATURING’

Les Nefs, Nantes

Parking, Alken

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Synergy of urban water management, all season public space, cooled data centres and an urban heat network (student work Master Architecture)
### 3. CITY METABOLISM CASE MECHelen | RESEARCH BY DESIGN

**PRESENTATION**

1. **ANALYSIS**
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3. **REFLECTIONS**

Deepened Urban Park: Tackling climate change and loss of biodiversity

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Through a **Public Space** lens (Benn & Gaus, 1983)

Underground Car Parks = Strategic locations in Public Space

=> (i) Interest: Who benefits?
=> (ii) Access: To Whom available?
=> (iii) Agency: Who manages?

• Today:
  • Monofunctional use (cf. interest & access)
  • Concessions up to 50 years (privatized management)

• Future pressures: neoliberal discourse?
  • (Semi-)privatization of public space vs. genuine public space?
  • Speculation on ‘sub-estate’ (cf. strategic locations)
  • Commodification of public space?
"WHAT CAN SHOULD BE DONE WITH URBAN UNDERGROUND CAR PARKS?"

0_PARKING / BUSINESS AS USUAL

1_CASCO / TACTICAL

2_RESIDENTIAL / ARCHITECTURAL

3_METABOLISM / SYSTEMIC

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