TOWER + SQUARE

Hybrid Buildings: P5 21/01/2010
Monika Sriubaitė
Relation of the Roeterseiland to the other campuses of the UvA and the HvA Amstel Campus.

In the "Strategic Plan 2007-2010" of the UvA it is foreseen to improve the connections between all these campuses.
PROBLEMS ROETERSEILAND
NEW SITUATION
DESIGN SOLUTION
PROBLEMS ROETERSEILAND
PROBLEMS ROETERSEILAND isolated void
PROBLEMS ROETERSEILAND missing functions
PROBLEMS: ROETERSEILAND poor main entrance
NEW SITUATION
NEW SITUATION
NEW SITUATION **public square**
NEW SITUATION connections
NEW SITUATION vitalizing functions
NEW SITUATION main entrance
NEW SITUATION urban centre
DESIGN SOLUTION

urban analysis
conceptual level
architectural design
building technology
DESIGN SOLUTION

urban analysis
conceptual level
architectural design
building technology
REACHING THE SITE

Sarphatistraat as a car traffic axis

Weesperstraat with the metro station Weesperplein as a pedestrian axis

Korte’s Gravesandestraat as a bicycle axis

DESIGN SOLUTION urban analysis
Main circulation axes on the site cross in the area of the previous Diamond polishing factory.

The circulation flow from the present main entrance is blocked by a building.
BUILDING DENSITY

Violet: densely built area
Purple: low density

Conclusion: there is a favourable opportunity to make most changes on the eastern part of the site.
BUILDING HISTORY

Dark: old
Light: new

Red strokes: buildings with the state of a monument

Conclusion: newest buildings are to be kept because of their good physical state. Oldest buildings (the Diamond polishing factory) are to be preserved as witness of the (industrial) history of the site.

DESIGN SOLUTION urban analysis
PROPOSED MASTERPLAN

Grey: existing buildings
Black: new buildings

Functions:
- conference
- UvA faculty
- exhibition
- performance
- restaurants
- retail shops
- student housing
- hotel
- parking

Built 26000 m²,
Demolished 5000 m²
Added 21000 m²
The main axes of circulation on the site matched with the proposed masterplan.
Traffic scheme of the site: light blue marks pedestrians, purple marks bicycles, and dark blue marks cars. Scale 1:2000

Traffic:
- Light blue: pedestrians
- Purple: bicycles
- Dark blue: cars

Design Solution: Urban analysis
UNDERGROUND PARKING SOLUTION

Red: car
Blue: bicycle

Dashed line: new underground parking area.
DESIGN SOLUTION

urban analysis
conceptual level
architectural design
building technology
TOWER:

makes a balance of mass volumes on the site: horizontal needs a vertical pulls all the attention from surroundings marks the new centre of the area
SQUARE:

adaptive outline shaped by irregular volumes in limited space

exposing valuable buildings and covering back facades

new connections and new central public space
BALANCE OF TWO OPPOSITES:

- tower
- volume
- vertical
- dynamic
- high
- visible
- study
- square
- space
- horizontal
- calm
- low
- closed
- leisure

DESIGN SOLUTION conceptual level
DESIGN SOLUTION

urban analysis
conceptual level
architectural design
building technology
DESIGN PRINCIPLES:

- dynamic plan of new buildings vs. rectangular morphology of the site
- tower getting thinner and turning in four steps: an elegant silhouette
- covering the base of the tower creates a harmonious picture
- turning tower aligned to the street and the canal
turning angle of the core responds to the new axis leading to the existing entrance on Roeterstraat
DESIGN SOLUTION architectural design
DESIGN SOLUTION architectural design
DESIGN SOLUTION architectural design

16th floor
DESIGN SOLUTION architectural design
cafe wall effect applied on facade

materials: aluminium and glass
elevation Sarphatistraat
elevation
Nieuwe Achtergracht
DESIGN SOLUTION architectural design
DESIGN SOLUTION architectural design

12th floor plan 1:50
section tower 1:100
DESIGN SOLUTION architectural design
1. parapet cover (galvanized steel)
2. parapet element (reinforced concrete) with steel anchors
3. steel anchor
4. gravel 40mm
5. waterproofing (bituminous)
6. levelling layer
7. sloping thermal insulation (extruded polystyrene foam) 100mm
8. thermal insulation (extruded polystyrene foam) 100mm
9. vapour barrier
10. reinforced concrete (cast on site) 180mm
11. reinforced concrete (prefabricated roof slab, “Breed plaat”) 70mm
12. water pipes (concrete core activation)
13. aluminium transom 50x250mm
14. thermal insulation 100mm
15. aluminium facade frame 30x700mm
16. aluminium transom 50x120mm
17. cover cap (aluminium) 10mm
18. aluminium (RAL 9011 graphite black) facade panel 117mm (insulation 100mm)
19. aluminium panel 4mm
20. steel panel 4mm
21. structural steel column 80x120mm
3 steel anchor
14 thermal insulation 100mm
15 aluminium facade frame 30x700mm
16 aluminium transom 50x120mm
17 cover cap (aluminium) 10mm
18 aluminium (RAL 9011 graphite black) facade panel 117mm (insulation 100mm)
19 aluminium panel 4mm
20 steel panel 4mm
21 structural steel column 80x120mm
22 aluminium frame 80x350mm
23 steel plate 3mm
24 steel profile 160x50mm
25 aluminium transom 50x50mm
26 separating strip
27 carpet floor 10mm
28 adhesive 1-2mm
29 screed 60mm
30 separating layer plastic foil 1mm
31 impact sound insulation (extruded polystyrene foam) 30mm
32 steel profile 50mm
33 reinforced concrete slab (cast on site) 300mm
34 thermal insulation 80mm
35 double glazing 28mm (6mm glass sheets)
1 parapet cover (galvanized steel)
37 aluminium facade frame
   30x50mm
38 water gutter
39 water down pipe DN50
DESIGN SOLUTION architectural design

36 aluminium facade frame
30x300mm
26 separating strip
35 double glazing 28mm (6mm glass sheets)
40 turning door (outside) (aluminium, RAL 9011 graphite black)
41 stone floor tiles 15mm
42 tiles adhesive
DESIGN SOLUTION architectural design

14 thermal insulation 100mm
33 reinforced concrete slab (cast on site) 300mm
34 thermal insulation 80mm
38 water gutter
39 water down pipe DN50
43 balustrade glass 20mm
44 aluminium facade frame 30x500mm
45 wooden planks 100x30mm
46 steel profile IPE 80 (80x46mm)
47 screed 60mm
48 reinforced concrete beam (cast on site) 500x300mm
49 reinforced concrete column (cast on site) ?300mm
DESIGN SOLUTION architectural design
DESIGN SOLUTION architectural design

50 aluminium facade frame
80x550mm
35  double glazing 28mm (6mm glass sheets)
40  turning door (outside)
(aluminium, RAL 9011 graphite black)
### Design Solution

**Architectural Design**

<table>
<thead>
<tr>
<th>Layer</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Waterproofing (bituminous)</td>
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<tr>
<td>6</td>
<td>Levelling layer</td>
</tr>
<tr>
<td>9</td>
<td>Vapour barrier</td>
</tr>
<tr>
<td>33</td>
<td>Reinforced concrete slab (cast on site) 300mm</td>
</tr>
<tr>
<td>51</td>
<td>Stone tiles 30mm</td>
</tr>
<tr>
<td>52</td>
<td>Fine sand 20mm</td>
</tr>
<tr>
<td>53</td>
<td>Gravel 100mm</td>
</tr>
<tr>
<td>54</td>
<td>Coarse sand 150mm</td>
</tr>
</tbody>
</table>
18 aluminium (RAL 9011 graphite black) facade panel 117mm (insulation 100mm)
21 structural steel column 80x120mm
25 aluminium transom 50x50mm
35 double glazing 28mm (6mm glass sheets)
55 aluminium facade corner frame 80x80mm
56 aluminium transom 80x50mm
57 aluminium facade irregular corner frame 120x120mm
25 aluminium transom 50x50mm
56 aluminium transom 80x50mm
57 aluminium facade irregular corner frame 120x120mm

DESIGN SOLUTION architectural design
DESIGN SOLUTION

urban analysis
conceptual level
architectural design
building technology
TWO LOAD BEARING SYSTEMS

tower: structure integrated in the facade design

lower part: columns and beams system
load bearing system in the tower:

facade
slab
core
load bearing system in the lower building part:
columns
beams
core
load bearing system in the conference hall:

columns
beams
climate design:

heating and air handling units’ distribution in the building
climate design:
heating and ventilation
section scheme
climate design:

8th floor: air handling unit
climate design:
typical floor plan heating and ventilation scheme
Dank u well! Thank you!