Process

Capacities of Zuidas

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Dwelling Studio MSc 3 - MSc 4

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SITE VISIT ZUID AMSTERDAM 2010
16 SEPTEMBER 1/2010
NOISE FROM AVO ALTEC LANCINGER

IS GROEN SITE AS WELL?

A LOT OF TEXTURES
FROM AMSTERDAM SOUTH

VERY GOOD MOBILITY HOPPERS
VERY NEAR TUBE STATION

FROM 7 ST TO 8 ST
NO SWINGING IN BOTH

RUST RESIDENCE BANK
CRAWFORD 12 ST

SITE

9 ST 8 ST

TERA003

STATION
Possibilities of the site
what is the actual capacity of the site? how much can it contain?
Possibilities of the site
scenario 1 - Using the full capacity of the site: 80 meter high
Possibilities of the site
From top clockwise:
- full volume
- voids
- access and light
- view consideration
- resulting volume
Possibilities of the site

From top clockwise:
- commercial program
- cultural program
- residential program
- levels
- notes and tutor recommendations
How would such a large volume affect the solar gain of the context?
What other options are there?
Evaluation of Solar impact of Scenario 1

summer
21 June
autumn
21 september

20 m

20 + 20 m

20 + 30 m

20 + 40 m

20 + 50 m

20 + 60 m MAX
Evaluation of Solar impact of Scenario 1

winter
21 December

20 m

20 + 20 m

20 + 30 m

20 + 40 m

20 + 50 m

20 + 60 m

MAX
Scenario 2 - Perimeter living approach with height responding to Zuidas plynthsnot the highrise
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capacities for zuidas plot infill
Scenario 2 - Perimeter living approach with height responding to Zuidas plynthsnot the highrise
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P1 Stage
Scenario 3 - The comparative analysis shows the large dimension of the site; able to accommodate city squares and plazas of different urban fabrics. These revealed the need to fragment the site into a cluster that defined the desired collective area.
Pre P2 Stage
Perimeter architecture defining collectivity
integration of library to cluster and introduction of live/work spaces that encourage activity to occur and be more permanent.
Master Plan 1:500

- Capacities for Zuidas program
- Cultural program
  - Library
  - Mediatheque
  - Artist atelier

- Commercial program
  - Grocery shop
  - Bike workshop
  - Daycare
  - Cafe
  - Bar
  - Fruit/vegetable shop

- Residential program
  - Apartments
  - Artist live/work studios

- Capacities for Zuidas program
  - 30 meter high cluster
P2 Stage. Developed Building 1:200

P2 stage- dwelling typologies within the developed volume. Typologies include single and double level apartments that take advantage of high ceilings where the volume slopes.
volume slope sketches.
P2 Stage.
Developed Building 1:200

initial facade impression.
boxed type
dwellings: ~ 19
61m² / ea

type: Boxed
P2 Stage.
Developed Dwelling typologies 1:50

L type
dwellings : 9
70 - 204m²
Programme scheme

Building 1
8 Dwelling levels
8303m2
1 Commercial level
1728m2
Zuidas density to area requirement - 50 dwellings
Building accomodates 52 40-220m2 dwellings.
Parking required - 62 parking bays.

Building 2
8 Dwelling levels
5076m2
1.5 Commercial level
1734m2
Zuidas density to area requirement - 30 dwellings
Parking required - 40 parking bays.

Building 3
6 Dwelling levels
4400m2
2.5 levels of Multipurpose spaces
1764m2
Zuidas density to area requirement - 28 dwellings
Parking required - 35 parking bays.

Building 4
5 Levels Library / Multipurpose spaces
7756m2
Zuidas density to area requirement - 28 dwellings
Parking required 1/100m2- 78 parking bays.
P3 Stage.
Masterplan development 1:500
site heights
P3 Stage.
Master Plan 1:500

site cross sections
P3 Stage.  
Master Plan 1:500
P3 Stage.
Developed Building 1:200
Structural system - combination of precasted loadbearing concrete walls and columns.

External stairs connecting viewing platforms and corners of building.

On level circulation and connection to vertical cores.

Combined system - load bearing and secondary partitions.

Building Supply through vertical cores.

Level Supply in floor system through hallways.

Combined system - example of load bearing and secondary partitions on level.

Load bearing column.

Load bearing partition.

Non-load bearing partitions.

Load bearing vertical core.

Building Supply through vertical core.

Level Supply in floor system through hallways.

Supply to individual dwelling through floor below non-structural partitions.

Water sewage from individual dwellings on stack.

Load bearing partition.

Load bearing vertical core.
P3 Stage.
Developed Building 1:200

7th level

6th level

5th level

3rd level

1st level

Ground level

plan development
P3 Stage.
Developed Dwelling typologies 1:50

type: duplex terraced. At this stage the duplex uses the slope of the rood to incorporate a second level terrace.
P3 Stage.
Dwelling Typologies 1:50

section a
masterplan development—Integration of lobby connecting buildings 1 and 2. Light wells have been added to the main plaza bringing light into the parking level below— their morphology is based on pedestrian flow and businesses frontage space.
plaza development - addition of extrusion elements and darker materiality to base level to create a base effect at public level. Experimentation of louvers as dialogue to plaza materiality.
Pre P4 Stage.
Developed Building 1:200

ecotect analysis on sun radiation through the year.
development of climatic facade. Vertical louvers as sun protection and as unifying element for the outer envelope. Initial consideration was given to the louvers as possible color addition to the project.
Pre P4 Stage.
Developed Building 1:200

climatic facade within context
cross section through building. Development of interior courtyard.
P4 Stage.
Master Plan 1:500

1 Commercial
2 Multipurpose | rentable space
3 Work | Live Duplex
4 Auditorium | Mediateque
5 Library
6 Dwelling Lobby | access to parking
7 Temporary parking | Deliveries
Parking spaces and vehicular flow has been developed to conform to parking design standards. Storage spaces have been added as well as light wells helping vehicular movement.
P4 Stage.
Master Plan 1:500
P4 Stage.
Master Plan 1:500

decision - sunset on DeBoelelaan
plaza / functionality of light wells at underground level.
Vertical louvers have been replaced by a horizontal system, as studies showed that they were more effective as a shading device that could unify outer envelope. They are also less deep, therefore less intrusive from the dwelling interior experience. Roof gardens were added taking advantage of the solar impact of the project, also provides a better dialogue with the surrounding highrisess.
level 2 - SE terrace
level 1 - Typologies and courtyard
level 0 - Commercial and access to temporary parking.
P4 Stage.
Developed Building 1:200

structural load transfer diagram.
precast slabs
300mm square columns
structural load transfer diagram
loadbearing walls

slab direction diagram

precast concrete beams
P4 Stage.
Developed Building 1:200

building sections
P4 Stage.
Developed Building 1:200
1. infra+ flooring  
2. Floortech 50mm insulation  
3. Knauf stabilizing foam  
4. Aluminium diffusion plate  
5. PEX floor heating piping  
6. Floor finishing.

HRU piping with exhausts and intake taking advantage of the structural bay distances.

Geothermal energy as heating source of dwelling heating system.
cross ventilation through open corridors.

radiant floor heating decreases interior temperature variations.
Layering Legend

1. 700mm steel reinforcement precast concrete edge beam.
2. 300mm precast concrete minislab.
3. Werzallit aluminium cladding panel
4. Cladding support
5. Velux Intergra electronic roof window white frame
6. 100mm Pavatherm insulation
7. Interior Finish
8. 300mm Precast Ribcassette slab
9. Plastic stabilizers
10. Protecting cover
11. HRU piping
12. Soil
13. Root barriet
14. Drainage
15. Membrane Protection
16. Membrane
17. Textured screed
18. Steel ceiling suspender
19. Drop ceiling panel wood finish
20. Linea Light fixture
21. Isokorb CV thermal break for supported slabs
22. Reinforced beam
23. Infra+ floorsystem
24. Floortec 50mm insulation
25. Knauf Polyfoam stabilizer 30mm
26. 17mm dia. PEX A floor heating piping
27. 0.6mm aluminium heat diffusion plate
28. Floor finish
29. Aluminium cladding graphite color finish
30. Grate dark grey pavers
31. Sand layer
32. Aluminium louvers 200mm depth 50mm wide
33. 400mm project aluminium flange window frame Graphite
34. 400mm sloped aluminium sill
35. Double glazing on aluminium frame
36. 500mm reinforced concrete slab
the 400mm deep aluminium frames shades the window during the summer, but allows for light gain during the winter.
P4 Stage.
Developed Dwelling typologies 1:50

area: 155m²
4 Bedrooms
2 Bathrooms

orientation:
NW interior courtyard, SE - Northern access to main plaza

axonometric level 2/ building level 3
axonometric level 1/ building level 2
P4 Stage.
Developed Dwelling typologies 1:50

type: duplex terraced

plan level 2/ building level 3

plan level 1/ building level 2
P4 Stage.
Developed Dwelling typologies 1:50

area: 105m²
2 Bedrooms
2 Bathrooms
orientation:
S. towards main plaza.

axonometric: building level 4

type: penthouse plaza L
P4 Stage.
Developed Dwelling typologies 1:50

cross section