A small scale dwelling environment within the large scale of Zuidas

minimum / maximum

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Msc 4 Architecture and Dwelling

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Architecture & Dwelling

MSc 3/4 Design studio ‘At Home in the City: Amsterdam’

(Re)search for new concepts for dwelling in the city
Location: Zuidas, Amsterdam
Location
Gershwin cluster
Mixed urban area instead of purely a business district

45% offices
45% dwelling
10% public functions

High density
Functional mix
‘24/7 urban dynamics’

Municipality of Amsterdam’s ambitions for Zuidas
Zuidas now: too much space, too little activity

dead plinths
unused open space
no urban dynamics
Zuidas now: still perceived as purely a business area
Tower + plinth development: disconnected from public space

- tower: functions do not contribute to the liveliness of public space
- plinth: few front doors, monotonous facades
- one building per block
To create an active urban area:

small scale public space
many access points to buildings
contact between inside and outside pedestrian scale

Theoretical background
Design aim

Develop an alternative to the too large scale development in Zuidas:

- Smaller scale dwelling environment
- Directer contact between dwellings and outside/public space
- More individual expression of the dwellings
Specific user group: families

to make the design aims more concrete

Why families?
Preference for own street access
Own outside space is important
Children: play outside away from traffic and among ‘known others’

Bring diversity to the area
Families are an overlooked group in inner city developments

Beginning of the design process: specific target group
‘stedelijkheid in de luwte’
(‘sheltered urbanity’)

Pedestrian oriented
Individual expression of each dwelling
Direct contact with outside space
Urban and dense
Open porches that grant access to four dwellings.

Sidewalks are appropriated as front yard by placing flowerpots.

Plants added as extra privacy buffer.

Theme research: design and use of ‘in-between spaces’
Small scale dwelling environment versus large scale of the context
Raised streets
Rokko Housing

Siedlung Halen

Groningen: programmatic hill

Housing hill
Combination: housing hill + raised streets
Relate building height and street width
Principle applied to the site
Taller buildings, using the same principle
Taller buildings: two options in section
Commercial functions: larger floor to floor height
Program set by Zuidas agency: 75.000 m²
Program in design: 73.895 m²

Plan area: 18.288 m²

FSI: 4.0
Two dwelling types

street access dwellings

apartments

Two dwelling types
Street access dwellings subtypes

strip 1 - 9,0 m
strip 2 - 9,0 m
strip 3 - 9,0 m
strip 4 - 12,6 m (not dwelling)
strip 5 - 12,6 m
strip 6 - 14,4 m
up/down split
strip 5 - 12,6 m
up/down split
strip 3 - 9,0 m
strip 2 - 9,0 m
strip 1 - 9,0 m
Apartment subtypes: minimum 52 m² / maximum 155 m²
Larger open space within the block
Larger open spaces as exceptions
Linking the raised streets to the surroundings
Responding to the context
Different grain size within
Ground floor
Ground floor - storages, bike parking
First floor - circulation
Structural design

- Prefab hollow core concrete floors: 260 + 40 mm
- Prefab concrete walls (dwellings): 300 mm
- Prefab concrete columns and beams (commercial): 400 mm
Structural design

raised streets as concrete elements spanning between the strip buildings
3.0 m: core
3.6 m: entrance unit
5.4 m: dwelling

Structural design
Static scheme
street scale
How can the central street be activated, not just a transitional space?
Setbacks: alternating wide / narrow street profile
Transitions between dwelling and street?
Dwelling streets: principle

South side: tall facade

North side: low facade
Orientation and zoning
Privacy by narrowness
Facades and orientation

NORTH
small openings

SOUTH
large openings
wide variety of window infills to give each dwelling an individual expression

EAST/WEST
combination of small windows and large loggia’s for apartments
Principle: unity on large scale, individual expression on dwelling scale (south facade)
Height difference
Two options to bridge height difference

Height difference at the facade

Height difference within the dwelling
Two options for typical dwelling
Variation in street profile: series of sections over one street
**Streets: two alternating sections**

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<tr>
<th>14.4 m</th>
<th>10.8 m</th>
<th>12.6 m</th>
<th>9.0 m</th>
<th>12.6 m</th>
<th>10.8 m</th>
<th>9.0 m</th>
<th>8.1 m</th>
<th>9.0 m</th>
<th>8.1 m</th>
<th>9.0 m</th>
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![Diagram showing streets with alternating sections](image-url)
Street lighting
Day: natural light in bike parking area
Street lighting
Night: street lighting from below
South facade infills: principle detail
South facade infills: principle detail
South facade infills: detail variations
dwelling scale
Stairs as space divider
‘**Low-tech sustainability**’
> Orientation: large windows to the south to gain passive solar energy and light, small windows to the north to minimize heat loss
> Zoning of functions: service zone north, living zone south
> Compactness: small on north side, tall on south side
> Thermal mass: thick facades, thick floors, green roof

**Ventilation**
In: fixed flow inlet vents above windows (natural ventilation).
Out: mechanical exhaustion via kitchen, toilet and bathroom, via duct shaft and outlet through the roof.

**Heating**
Passive solar heating using south facade
Floor heating

Climate design
Personalization: 3 basic options for main living floor
Street access dwelling - 125 m²
Floor plans: fixed elements
Above / below dwelling - 133 / 156 m²
Floor plans: fixed elements
Small apartments - 52 / 68 m²
Floor plan: fixed elements
conclusion
AIM
to create an alternative to the current way of developing dwellings at Zuidas...
- a smaller scale dwelling environment
- directer links between dwelling and outside / public space
- using the concept of ‘sheltered urbanity’

...but at the same time fit in, and respond to the context of Zuidas:
- high density
- react to two huge buildings, ABN AMRO and Symphony
- contribute to activating the area

DESIGN
Deals with these two scales by creating unity on a large scale (urban form, materialization) and variation / individual expression on the dwelling scale (flexible dwelling layout, front garden, south facade infills)

Smaller grain size of buildings and open spaces within the area
Dwellings with a more fluent transition to public area than is usual in Zuidas
Activated ‘main street’ instead of dead plinths
thank you