BENEFIT OF THE COMMON
housing for the urban families

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Benefit of the common housing for the urban families

Set of drawings
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CONCEPT

**problem**
- families leaving Amsterdam due to the lack of suitable housing
- the lack of social interactions and community feeling
- social loneliness

**solution**
- how to provide attractive family housing?
- how to promote living in the community?

**concept**
- to create living environment for groups that both separately and together - as a community - will share various facilities on **different community thresholds**
- **common spaces** located on intersections of routings to create possibilities for interactions
- qualities of single family housing (views, green surrounding) combined with the qualities of high urban environment
TARGET GROUPS

Young couples
Young couples, expecting to enlarge the family in couple of years. Looking for their first flat, located in dynamic environment, flexible and able to be transformed in new life conditions.

Families
Families already having children. Mostly the type of the nuclear family (two parents and children), but also an exception of single parents with children.

Both groups want to live in highly urban environment

Both groups are willing to create a community
CONTEXT
Minervahaven, Amsterdam NL
CONCEPT
Building volume

Extruding the shape of perimeter block from the plot (max. height 44m)

Adding two cuts to open the patio in diagonal relations

Creating diagonal cuts in the shape

Lowering the cuts by using 6x6x6 cubes to create 6 towers

Diversifying heights: from the lowest on south, to the highest tower on the north

Removing 3x3x3m cubes for additional terraces
BUILDING PRINCIPLES
Diagrams

Views for the surrounding
Visual connections between inhabitants
Division for smaller communities
Green patio

Public amenities and common spaces in groundfloor
Flats lifted to the first floor for improved privacy
Car parking below the building
Common and private terraces
CONTEXT
Sun & shadows

21st of March
UCT +2

21st of June
UCT +2

21st of December
UCT +2
CLIMATE
Concept 1:200

- Cross ventilation within circulation and common spaces
- Mechanical ventilation
- Natural ventilation through inlets above windows
- Rain water directed outside and harvested for graywater reuse
- Valleys in the building allow for better sun access
- Voids and staircase in common spaces used for natural ventilation
- Windows sizes and integrated blinds prevent from overheating (summer) and heat losses (winter)
- Solar panels (power stations for electric cars)
- Rainwater on gardens harvested for graywater reuse:
  - Gray water collection (reuse in toilets)
- Geothermal energy from Minervahaven
- Species of trees and bushes on patio help to absorb city noise, clear air and break the wind flow
- Rain water on green patio harvested for graywater reuse
- Wooden framework horizontal
- Wooden framework vertical
- Water proof foil
- Vertical wooden mullions 200 x 36
- Rockwool
- CLT 70 mm
- 30 mm
- 30 mm
- 2 mm
- 200 mm
- 230 mm
- Floor finish wooden panels
- Floor heating
- TERRACE
- Railing
- Steel profile
- L-shape profile
- Railing construction
- External blinds
- Facade
- Ceramic tiles 250x250 mm
- PRODUCED BY AN AUTODESK STUDENT VERSION
SUSTAINABILITY
futureproof solutions

CLT construction
prefabricated elements (lower CO2 emission during production, less time spent on building site, dry mounted, easy to demount the building and reuse materials)

facade finishing:
ceramic tiles (natural materials, easy to manufacture, doesn’t require the use of caustic cleaners, recyclable)

multiple common spaces (social support, integration, fighting loneliness)

flexible arrangement of flats (durable for dynamically changing life conditions)

extensive amenities for tenants on groundfloor (common kitchens, workshop rooms, music & playroom, gym)

parking for reduced amount of cars with power (to promote car sharing, electric cars)

green patio, extensive terraces and views for environment

variety of flat typologies

reduced amount of window types (triple glazed to reduce heat loss)

facade finishing:
ceramic tiles (natural materials, easy to manufacture, doesn’t require the use of caustic cleaners, recyclable)

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MATERIALISATION

An exposed CLT structure in circulation spaces is used to create natural and warm atmosphere.

Common spaces are coated with additional layer of acoustic insulation for improved noise canceling performance.

Walls of flat are painted white and therefore lighter. The ceiling CLT structure remains open.

Blue lastrico finishing on the floor of common facilities is more suitable for increased and creates a dialog between the inside and outside.
OUTSIDE IMPRESSIONS

Impression from the low-rise street: the contrast of materials

Impression from the patio: green interior in urban environment
COMMON ROOMS

Impression of game room

Impression of music room
COMMON FACILITIES

Impression of bike storage

Impression of common kitchen
CIRCULATION SPACE

Impression of common space with activities

Impression of common space with laundry room
Impression of the flat interior
74% of the building is rentable (yellow)
### BUILDING

**Public / common / private**

<table>
<thead>
<tr>
<th>Area Description</th>
<th>Total Brutto Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public amenities</td>
<td>4,040 sqm 100%</td>
</tr>
<tr>
<td>Common space (ground floor)</td>
<td>122 sqm 3%</td>
</tr>
<tr>
<td>Common space (floors +1/+11)</td>
<td>243 sqm 6%</td>
</tr>
<tr>
<td>Common (floors +1/+11)</td>
<td>2,097 sqm 52%</td>
</tr>
<tr>
<td>Parking and storage units</td>
<td>383 sqm 9%</td>
</tr>
<tr>
<td>Other (bike storages, laundry etc.)</td>
<td>792 sqm 20%</td>
</tr>
<tr>
<td>Technical spaces</td>
<td>186 sqm 5%</td>
</tr>
<tr>
<td>Total (building)</td>
<td>30,923 sqm</td>
</tr>
</tbody>
</table>

**Private (flats)**

- Private (flats)
- 52% of total brutto area

**Common for the building**

- Common for the building
- 3% of total brutto area
- 6% of total brutto area

**Common for the "tower"**

- Common for the "tower"
- 2% of total brutto area

**Total brutto area**

- Total brutto area: 30,923 sqm
- Public: 4,040 sqm (100%)
- Common: 2,883 sqm (9%)
- Private: 22,900 sqm (72%)

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**Floor Plan Diagram**

[Diagram showing floor plan with areas color-coded as described in the table.]

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**Notes**

- The floor plan diagram provides a visual representation of the building layout, with areas color-coded to correspond with the table.
- The building's total brutto area is 30,923 sqm, divided into public, common, and private sections, with specific areas specified for amenities, spaces, and other common areas.
Tree breeds favourable for the urban environment, with dense branches that accumulate acoustic waves (and mute the noise of the city).

1. Pinus mugo
2. Laurus nobilis
3. Chamaecyparis pisifera
4. Ilex aquifolium
5. Cryptomeria japonica
6. Buxus sempervirens
7. Cotoneaster horizontalis
8. Common juniper
9. Platanus acerifolia
### FLAT TYPoloGIES

<table>
<thead>
<tr>
<th>Type</th>
<th>Quantity</th>
<th>Size</th>
<th>Bedrooms</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>x18</td>
<td>60sqm</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>x105</td>
<td>50sqm</td>
<td>1/2</td>
</tr>
<tr>
<td>3</td>
<td>x78</td>
<td>70sqm</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>x14</td>
<td>100sqm</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>x12</td>
<td>140sqm</td>
<td>3/4</td>
</tr>
</tbody>
</table>

**Plot area:** 60x120m² = 7200m²

**Demand:** 300 units/ha

**Min:** 300u/ha * 0.72ha = 216 units

**In Total:** 227 Flats
DWELLING 1:50
TYPE 2, 50 sqm

Bedroom
A: 11 m²

Kitchen
A: 6.3 m²

Living room
A: 18.9 m²

Hall
A: 8 m²

Bathroom
A: 2.2 m²

WC
A: 1.1 m²
DWELLING 1:50
TYPE 1, 60 sqm

FLOOR X

FLOOR X+1

Living room
A: 17.1 m²

Bedroom
A: 8.6 m²

Bedroom
A: 8 m²

Kitchen
A: 7 m²

Bathroom
A: 2.8 m²
CONSTRUCTION
Assembled load bearing structure

Principle of construction scheme explained on the example of one tower.

The construction of the full building to be executed accordingly.
CONSTRUCTION
Assembled load bearing structure

CONSTRUCTION ELEMENTS
1. CLT external load bearing wall 296 x 300 x 23 cm, window frame 230 x 200 cm
2. CLT external load bearing wall 296 x 300 x 23 cm, window frame 230 x 130 cm
3. CLT external load bearing wall 296 x 300 x 23 cm, window frame 150 x 130 cm
4. Internal load bearing wall 296 x 300 x 23 cm
5. CLT floor slab, 600 x 600 cm
6. Reinforced concrete slabs and walls

Types of windows used in the project.
A. Window, standard flats: 230 x 200 cm
B. Window, terraces and common facilities, flats and groundfloor: 230 x 200 cm
C. Window, standard flats: 230 x 130 cm
D. Window, frosted glass, bike storages: 230 x 130 cm
E. Window, standard flats: 150 x 130 cm
CONSTRUCTION
Fragment of the facade

FINISHING
1. Ceramic tiles 25x25cm; glazed
2. Ceramic tiles 80x14cm, matt
3. Wooden framing
CONSTRUCTION
Assembled facade

FACADE
1. CLT - prefabricated facade elements
2. Windows
3. Wooden mullions
4. Insulation (between the mullions)
5. Wind insulation / foil
6. Wooden framework for facade finish (vertical and horizontal)
7. Facade finish: shingle ceramic reflective tiles; below: vertical ceramic tiles matt
8. Window frames

BALCONY
A. Steel framework with tension rods
B. Floor finishing
C. Railing
D. Finishing panels, reflective
FRAGMENT
Facade 1:50

Markisolette
Wood finishing
Post boxes
Steel grate
FRAGMENT
Facade 1:20
FRAGMENT
Facade 1:20
Facade:
- Ceramic tiles 250x250mm: 70 mm
- Wooden framework horizontal: 30 mm
- Wooden framework vertical: 30 mm
- Waterproof foil: 2 mm
- Vertical wooden mullions 200 x 36
- Rockwool: 200 mm
- CLT: 230 mm

Floor:
- Floor finish wooden panels: 20 mm
- Wooden framework: 30 mm
- Waterproof foil: 2 mm
- Rockwool: >150 mm
- CLT: 230 mm
Facade:
- Ceramic tiles 250x250mm
- Wooden framework horizontal
- Wooden framework vertical
- Waterproof foil
- Vertical wooden mullions 200 x 36
- Rockwool
- CLT

Floor:
- Floor finish wooden panels
- Heating system / floor screed
- PE foil
- Rockwool
- Waterproof foil
- CLT

Details:
- Linear-motion bearing
- L-shape profile
- Balcony support
- Tension rod
- Markisoilette
- Wooden framing
- Ventilation inlet
Facade
CLT 230 mm
Rockwool 200 mm
Vertical wooden mullions 200 x 36 - 200 mm
Waterproof foil 2 mm
Wooden framework vertical 30 mm
Wooden framework horizontal 30 mm
Wooden finishing 300 x 30 70 mm
ENTRANCE RECESS

Floor finish wooden panels 20 mm
Heating system / floor screed 70 mm
PE foil 2 mm
Rockwool 80 mm
Waterproof foil 2 mm
CLT 230 mm
Rockwool / mullions 260 x 36 260 mm
Waterproof foil 2 mm
Wooden framework 3 mm
Wooden finishing panels 1 mm
VISUALISATION
1. Northern facade
2. Southern facade
3. View from the south, through the valleys
4. Western facade, view for the internal patio
1. Water side overview
2. View from above
3. Southern view
4. View from above
1. View through the valley towards northern part of the building
2. 3. Views through the building for terraces
4. View between towers
1. View towards the entrance in the mid-south tower
2. View on the same tower from patio
3. Closer view on the shape of the tower
1.2. Schematical approach to entrance area
3. Schematical approach to the higher floors (flats outside, circulation and common spaces inside)
4. Overview for entrance area on ground floor
MODEL 1:50
INTERIOR & LIGHT

1. Second floor, staircase
2. First floor, staircase; light from the entrance
3. Ground floor, staircase
4. Overview through the circulation. Natural lighting on different levels
1.2. Facade; view towards the entrance
3. Various geometry of windows divisions
4. View through the entrance to the corridors on ground- and first floor.