The New Interpretation of 'Light, Air and Space' in Airey Blocks in Slotermeer

Yuan CHEN
CONTENT

INTRODUCTION

RESEARCH
Cultural Value
Interview
Start Point of Design

DESIGN
Apartment Scale
Block Scale
Garden Scale
Detail Scale

REFLECTION
INTRODUCTION

RE-HOUSING AIREY
Location

Airey Blocks

Central Station
Burgemeester de Vlugtlaan
History

The General Extension Plan (AUP)
Cornelis van Eesteren
Het Nieuwe Bouwen
The General Extension Plan (AUP)

- Green Network
- Road Network
- Typology
- Airey
- Light
- Air
- Space

Het Nieuwe Bouwen
RESEARCH

CULTURAL VALUE
- Age
- Historical
- Artistic
- Commemorative
- Use
- Newness
- Conflict
- Dilemma

INTERVIEW & SITE VISIT
- PROBLEM
  - Overpopulating
  - Energy
  - Green Space

OPPORTUNITIES & OBLIGATIONS

START POINT

DESIGN PROPOSAL
Within the movement 3 points stood out: space, light and air. For housing this meant the closed buildings blocks should be transformed into building strokes.
Air
The dimensions of the columns and tiles are identical for each Airey project. The tiles (625x375mm) create a rigid grid and form a strong characteristic of the Airey buildings. Also, the core to core (625mm) distance of the columns is the same for every project.

**Set Measurements**

<table>
<thead>
<tr>
<th>Dimension (mm)</th>
<th>375</th>
<th>625</th>
</tr>
</thead>
<tbody>
<tr>
<td>Module</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
INTERVIEW

Problem 1 Overpopulating
lack of living space
change of demographics

A lot of Turkish shops and restaurants

- Mosque
- Islamic School

Pie chart showing:
- 38% Turkish
- 16% Non-Western immigrants
- 12% Other Non-Western immigrants
- 7% Moroccans
- 6% Antilleans
- 4% Western immigrants
- 0% Natives
- 0% Surinamese

Legend:
- Orange: Non Western immigrants
- Blue: Western immigrants
- Light blue: Other Non-Western immigrants
- Purple: Moroccans
- Pink: Antilleans
- Green: Turkish
- Red: Surinamese
- Black: Natives
Problem 2 Green Space

looking green (Kijkgroen)
Problem 3 Energy

lack of insulation
noise
## START POINT

### Interpretation of ‘Light, Air and Space’

<table>
<thead>
<tr>
<th>Easy</th>
<th>Building Technology Interpretation</th>
<th>Architectural Interpretation</th>
<th>Historical Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reduce time in site; Easy to maintenance; No complicated components; The components are easy to transport</td>
<td>Convenient for residents to use</td>
<td>Faster construction method; Prefabrication; Unschooled labor in site</td>
</tr>
<tr>
<td>Affordable</td>
<td>Cheap materials; Cheap construction method</td>
<td>Do not greatly increase the rent</td>
<td>Cheaper construction method</td>
</tr>
<tr>
<td>Neutral (Aesthetics)</td>
<td></td>
<td>Mimic the composition; Original material texture; No exaggerated color or form</td>
<td>Original material texture; Grid (reflects its construction way: prefabrication); Division (golden ratio)</td>
</tr>
<tr>
<td>Flexible</td>
<td>Long life span; Easy to maintenance</td>
<td>Free to use (free to arrange the furniture; Could be used as different functional space)</td>
<td>Efficient floor plan</td>
</tr>
<tr>
<td>Transparent</td>
<td></td>
<td>Big opening to allow more daylight; Good view</td>
<td>Nothing to hide from society; To be visible for anyone</td>
</tr>
</tbody>
</table>
Multifunctional Extra Space

Link to Communal Garden
One big space connected to living room and kitchen

Two separated room connected to living room and kitchen

Three separated extra room

Three separated extra room
Case 1.

The existing floor plan and family:
Rent: €460 p/month
Period: 13yrs
Inhabitants: 2 pers and 4 kids
Demands: more space for kids, dining room
Extension option 1: 
Dining room + one big playroom for kids

Extension option 2: 
Small dining room + baby bedroom + extension of living room
Case 2.

The existing floor plan and family:
Rent: €550 p/month
Period: 17yrs
Inhabitants: 4 pers
Demands: more space for dining
Extension option 1:
Small dining room + storage + extension of living room

Extension option 2:
Big dining room + extension of living room
Case 3.

The existing floor plan and family:
Rent: €627 p/month
Period: 2yrs
Inhabitants: 1 pers
Demands: space connected to living room and kitchen, garden
Extension option:
One big room connected to living room and kitchen.
Block Scale

Replace windows

Fill in loose-fill material insulation

New Ceiling

New Storage & Stair

Extension
The dimensions of the columns and tiles are identical for each Airey project. The tiles (625x375mm) create a rigid grid, forming a strong characteristic of the Airey buildings. The core to core distance (625mm) of the columns is the same for every project.

### Dimension & Composition

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>625</td>
<td>Column Width</td>
</tr>
<tr>
<td>375</td>
<td>Tile Width</td>
</tr>
<tr>
<td>125</td>
<td>Column Height</td>
</tr>
<tr>
<td>13</td>
<td>Corner Tile Thickness</td>
</tr>
<tr>
<td>0.5</td>
<td>Half of the Corner Tile Thickness</td>
</tr>
<tr>
<td>1.5</td>
<td>Half of the Tile Thickness</td>
</tr>
<tr>
<td>26</td>
<td>Strip 1 Width</td>
</tr>
<tr>
<td>14</td>
<td>Strip 2 Width</td>
</tr>
</tbody>
</table>

*Note: The diagram illustrates the dimensions and composition of the Airey project.*
The material of existing Airey blocks:
- Concrete Tile
- Brick (Chimeny)
- Red steel handrail
- White steel window frame

The material of existing Airey shops:
- Concrete Tile
- Concrete
- White steel window frame

The material of Renovated part:
- EQUITONE [tectiva] Tile
- Light grey aluminum window frame
- Red steel handrail
- Wood Stair
New Entrance
Climate

Thermal Insulation

- Installing loose fill materials in between the concrete facade tile and the partition walls
- Installing optimal insulation outside the structure
- Installing new thermal insulated window frames
Natural Ventilation:
- ventilation profile installed at the top of windows or doors (Reynaers Ventalis)

Original mechanical Ventilation for Bathroom & Toilet

Sunscreen:
- the curtain combined with the windows or doors (Reynascreen)
Natural Ventilation:

- Gas Central Heating System:
  - ventilation profile installed at the top of windows or doors (Reynaers Ventalis)

- Original mechanical Ventilation for Bathroom & Toilet

Natural Ventilation:

- ventilation profile installed at the top of windows or doors (Reynaers Ventalis)

Sunlight

Winter
Connection
Entrance
Roof

Joint connect new structure and old column

Detail 1 1:5

Modified Bitumen Membrane
Waterproof
Insulation
Vapor Barrier
Gyproc Fireline 12.5mm
Structural Insulated Panel (OSB skin 15mm, EPS core)
Plastering Board 12.5mm

Glulam Timber Beam
Wood Joint
Cut wool fibers
Gypsum ceiling board
Resilient metal channels (RC-2 or DWFC mounted with Sound Clips)
Cut wool fibers
Party Wall

Detail 6 1:5

- Wood bearing (nailed to wall)
- Fiber cement tile glue on wood (EQUITONE [tectiva])
- Wood joint (nailed to concrete column)
- Gyproc Soundbloc 12.5mm
- Timber Batten
- Structural Insulated Panel (OSB 15mm, EPS core)
- Gyproc Soundbloc 12.5mm
Floor

Detail 2 1:5

Wood Floor
Rubber Floor Underlayment
Gyproc Soundbloc 12.5mm
Timber Batten
Structural Insulated Panel (OSB 15mm, EPS core)
Gyproc Soundbloc 12.5mm

Electrical Line

Electrical Chases.
The surface rout is then easily covered by drywall. This technique can work for switches as well as outlets.

- Typical switch box
- Factory provided electrical chase
- Wire pulled to outlet box from factory-routed chase
- Typical outlet box
Window & Handrail

Detail 3 1:5

Reynaers CP 130 sliding window
Reynaers Ventails ventilation profile
Reynaers Reynascreen sun screening system
Fiber cement tile glude on wood ( EQUITONE [tectiva])
Wood bearing
Waterproof
Insulation 100mm
Glulam timber beam

Handrail
Detail 5:1:5

In

Reynaers Reynascreen
sunscreening guide

Reynaers CP 130
2 rail sliding window

Wood joint
(support the handrail)

Waterproof

Steel Handrail

Fiber cement tile glue
don wood
(EQUITONE [tectiva])

Waterproof

Gyproc Fire Line

Structural Insulated
Panel (OSB skin
15mm, EPS core)

Wood bearing
Fiber cement tile glue
don wood
(EQUITONE [tectiva])

Out
REFLECTION

Residents
Increase 23m² per dwelling
Improve the noise problem
Improve the thermal insulation

Public Space
Reactivate of communal garden

Social Aspect
Efficient renovation for low-income family
THANKS