Circularity: The reuse of an office building

4th of November 2014

1st Mentor: Tjalling Homans
2nd Mentor: Engbert van der Zaag
3rd Mentor: Bob Geldermans
External: Salomé Bentinck
Vacant offices

Resource depletion - waste
Intro || Problem Statement

1. Intro
2. Analyse
3. Concept
4. Design
5. Technology

Date: 04-11-2014
“How can a vacant office building, in the Brettenzone Amsterdam, be transformed into a multifunctional building, while achieving circularity with the reuse of existing materials and additional materials?”
Analyse || Location
Analyse || Location

Intro - Analyse - Concept - Design - Technology 04-11-2014
Analyse || Location
Analyse || Location

Making better connections

All kinds of people

Whole day

Less vacancy
Analyse || Building
Analyse || Building

What do we have?

- No visible entrance
- No connection inside - outside
- Undefined open space
Analyse || Building

No visible entrance

Visible entrance

No connection inside - outside

Connection inside - outside

Undefined open space

Defined public area
Analyse || Building

Interesting area where the facade is held back

No connection with the circulation area.

Interruption in boring facade. Clear circulation area.

Clear grid
Analyse || Building

<table>
<thead>
<tr>
<th>Materiaal</th>
<th>Dikte</th>
<th>Lambda</th>
<th>R waarde</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beton</td>
<td>100</td>
<td>2,0</td>
<td>0,05</td>
</tr>
<tr>
<td>Minerale wol</td>
<td>65</td>
<td>0,035</td>
<td>1,857</td>
</tr>
<tr>
<td>Spouw</td>
<td>35</td>
<td></td>
<td>0,18</td>
</tr>
<tr>
<td>Baksteen</td>
<td>100</td>
<td>1,0</td>
<td>0,05</td>
</tr>
</tbody>
</table>

Rc = 2,19 < 5
Analyse || Building
Concept || Functions

First: Office workers & students
Stay in the area

Second: Local residents
Getting out of the house

- After talking with colleagues
  - Sport
  - Hobby
  - Workshops
  - Meet friends

- Eat & drink
Concept || Functions

Main program:

- Coffee corner
- Cooking school

\{ Kitchen garden \rightarrow Beekeeping (honey) \}

- Workshop/Exposition room
- Event rooms
- Studios / offices
- Student studios
Concept || Form finding
Concept
Concept
Finished vs. Treated
Concept
Design || Functions

Circulation

- Event rooms
- Offices
- Meeting Area
  - Coffee corner
  - Restaurant
  - Market
  - Cooking school
- Workshop/Expo
- Studenthousing

Coffee corner

Restaurant/workshop

Kitchen

Market

Cooking school
Design || Functions

<table>
<thead>
<tr>
<th>Time</th>
<th>Coffee corner</th>
<th>Cafe</th>
<th>Market</th>
<th>Cooking school</th>
<th>Kitchen</th>
<th>Restaurant</th>
<th>Workshops</th>
</tr>
</thead>
<tbody>
<tr>
<td>07:00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15:00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19:00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23:00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Intro - Analyse - Concept - Design - Technology

04-11-2014
Design || Floor plan

Context
Ground floor:
Hallway
Ground floor: Meeting Area
Design || Floor plan

Ground floor: Exposition
Design || Floor plan

Ground floor:
Conferance / workshop
Design || Floor plan

First floor: Hallway

2nd - 4th floor: Hallway

Intro - Analyse - Concept - Design - Technology 04-11-2014
Design || Floor plan

First floor: Offices

2nd - 4th floor: Offices
Design || Floor plan

First floor:
Student studios

2nd - 4th floor:
Student studios
Roof: Vegetable garden
Roof: Beekeeping
Design || Floor plan

Roof:
- Greenhouse
- Solar pergola
Technology || Climate

1st - 4th: Student studios

2nd - 4th floor: Meeting area
- Biological OR technical cycle, or separable
- Use fase: release no toxic gasses
- Reusable, demountable
- Recyclable, without losses or biodegradable
- Production fase: release no toxic gasses
Technology || Facade concept
Technology | Facades

Intro - Analyse - Concept - Design - Technology

04-11-2014
Facade | Refurbishment

Current situation | New design | Vertical detail
Facade || New building

Outside

Vertical section

Inside

Horizontal section
Facade || New building

3D element blokken
Facade || New building

Vertical section

Vertical detail
Facade || Corner

Horizontal detail
Facade || Corner

Horizontal detail
Facade || Window frame

Vertical detail

Horizontal detail
Step 1: Material inventory

Step 2: Material assessment

Step 3: Possibilities:
- Reuse at location
- Reuse elsewhere
- 100% recycling, biodegradable
- Downcycling
- Landfill > It was not meant to be
Technology || Re-use

[Diagram of architectural elements]

[Image of a modern coffee shop interior]
Technology || Re-use
“How can a vacant office building, in the Brettenzone Amsterdam, be transformed into a multifunctional building, while achieving circularity with the reuse of existing materials and additional materials?”
Design Question
Thank you for your attention!

Almost time for some coffee...
Questions?