“Which existing building characteristics influence the housing retrofitting possibilities?”

**Theory**

*Structure as influential characteristic*

<table>
<thead>
<tr>
<th>Vertical bearing elements</th>
<th>Horizontal bearing elements</th>
<th>Stability elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Columns</td>
<td>Beams, wood</td>
<td>Fixed foundation</td>
</tr>
<tr>
<td>Diaphragms</td>
<td>Beams, iron</td>
<td>Fixed connection</td>
</tr>
<tr>
<td>Monolith</td>
<td>Beams, concrete</td>
<td>Bracing, small</td>
</tr>
<tr>
<td>Beams, wood</td>
<td>Large elements</td>
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<td></td>
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</tbody>
</table>

**Spatial freedom**

- High
- Low

**Structural integration**

- Low
- High

**Building choice**

- Shape
- Access
- Monumentality
- Orientation
- Room size
- Floor height
- Structure

**Value Assessment**

- Contrast in monumentality
- Equal monumental facade
- Load bearing facade

**Design**

*Location*

- Binnengasthuis area, Amsterdam
- An enclave of late 19th century institutional buildings

*Program*

- Total ± 100 m²

*Building choice*

- Shape
- Access
- Monumentality
- Orientation
- Room size
- Floor height
- Structure

*Starting points*

- Connection with surroundings
- Canal
- Square

- Re-opening the inner court
Explore the vertical freedom

Design concepts

Floor plans 1:200

South Facade 1:100

Keeping the essence of the building

Relation with surroundings

Vertical orientation & Entrances on ground floor

Section AA' 1:100

Detail A & B 1:5

Detail C 1:5
1:20 Section and facade

Unique Lecture Hall

Sousterrain

Detail D 1:5
Klinisch Ziekenhuis
Connect and divide

Design starting points
Spatial quality of the large open hospital wards

Floor plans 1:200

Bel Etage & 1st Attic
South Facade 1:100
Attic
Section BB' 1:100

Detail E 1:5
Detail F 1:5
Conclusion

Influential characteristics

Design

- Context/Surroundings
- Facade surface/Floor surface
- Facade openings
- Size of rooms
- Floor height

Cultural Value

- Value of building(parts)
- Monumentality of the facade
- Characteristic facade elements

Technology

- Window shape
- Detailing
- Structure

The vertical freedom of wooden floor systems is not infinite. It is limited by:
- Total height of the vertical connection
- The floor space on each level
- The height difference between the levels
- Fire safety regulations
Creating the vertically orientated ground bound houses also:
- Leads to a loss of usable facade
- Changes the repetition of facade elements from vertically to horizontally

The horizontal freedom of bearing facades is limited by:
- Amount of windows
- Depth of the space