“SNUG AS A BUG IN AN INSTITUTE”

Building characteristics influencing transformation possibilities
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Binnengasthuis area
LOCATION

A hospital complex with medieval monastic roots

Large scale renewal in the late 19th century

CURRENT SITUATION

The late 19th century institutional buildings still define the area
PROBLEM STATEMENT

Vacancy of these institutional buildings

≠

Family housing need in the city centre

UvA - 50%  
Paleis van Justitie
INTRODUCTION

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

- Family housing
- Late 19th and early 20th century institutional buildings
- Amsterdam city centre
INTRODUCTION

Part 1 Theory
Focus on **structure** as influential characteristic

Part 2 Design
Compare design solutions for buildings with very different characteristics
&
Put theory conclusions to the test

**Influential building characteristics**
THEORY
Structure is the least prone to change

Image by Brand (1994), How buildings learn
STRUCTURAL TYPOLOGIES
STRUCTURAL TYPOLOGIES

Vertical bearing elements
- Columns
- Diaphragms

Horizontal bearing elements
- Beams, wood
- Beams, iron
- Beams, concrete
- Large elements

Stability elements
- Fixed foundation
- Fixed connection
- Bracing, small
- Bracing, big
- Stability wall

Spatial freedom
- Low
- High

Structural integration
- Low
- High

THEORY
DESIGN
• Late 19th century early 20th century
• Originally intended and designed for institutional use
• Located in the Amsterdam city centre
BUILDING CHOICE

Aspects

Buildings

Koninklijk Instituut voor de Tropen
- Collage: Inner corridor, Corner staircase
- Facades & interior: Single sided
- Room size: 28 m²
- Floor height: 4.4 m to 3 m
- Structure: Brick monolith & Concrete monolith

Klinisch Ziekenhuis
- Wings: Facades
- Double: 72 m²
- 4.7 m to 4.6 m
- Brick diaphragm & Iron beam

Vrouwenverband
- Block: Corridor, Central staircase
- Facades: Single & triple sided
- 31 m²
- 5.1 m to 4.6 m
- Brick monolith & Wooden beam
PROGRAM

- Living room 20 m²
- Kitchen and dining 20 m²
- Study/office 4 m²
- Storage 12 m²
- Master bedroom 16 m²
- Child bedroom 8 m²
- Child bedroom 8 m²
- Bathroom/toilet 8-10 m²

Total ± 100 m²

Outdoor space >4 m²

Circulation
STARTING POINTS

Not too much change...
Monumentality
Value assessment

Starting points

Connection with the canal

Connection with the square

Explore the vertical freedom

Monumental = Little changes possible
Informal = Possibility to change
CONTEXT

Canal House

Introvert House

Attic House

Square House
CANAL HOUSE
INTROVERT HOUSE

Focus on an internal vide to strengthen the internal quality of the house, resulting in a very introvert house. The vide can visually connect the several rooms while the stay acoustically separated by internal windows.
Focus on the connection with the square

Renovation of the square into a high-quality inner court

New square with the historic "monastic" court feeling. But in a child-friendly way

Placing a part of the living area on street level strengthens the connection between the house and the square.
FACADE
DETAILING
Value assessment

Starting points
The wings are free of bounding supporting walls and can thus be filled in freely. The large facade length compared to the enclosed volume give the opportunity to form ground bound houses in the wings. However due to the high floor to floor height the stairs in each house take between 10 and 13% of the total m² (only the stairs, corridors etc are not included). This "lost" amount of square meters is expensive!
FACADE
BALCONIES
DETAILING
CHARACTERISTICS
CHARACTERISTICS

- Structure
- Value of building (parts)
- Context/surroundings
- Monumentality of facade
- Floor height
- Facade surface/floor surface
- Tension demands and aesthetics
- Window shape
- Size of rooms
- Facade openings
- Characteristic facade elements
- Deatiling
FACADE SURFACE/
FLOOR SURFACE
SIZE OF ROOMS
TENSION BETWEEN DEMANDS AND AESTHETICS
FACADE OPENINGS
FLOOR HEIGHT
VALUE OF BUILDING (PARTS)
CHARACTERISTIC FACADE ELEMENTS
MONUMENTALITY OF THE FACADE
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
CONCLUSION
CONCLUSION

- 12 Influential characteristics
- Ranging from urban- to detail scale
- In all fields of Heritage and Architecture
RECOMMENDATIONS

• Research the influence of the access routes of the building

• Broaden the research field with other types of historic buildings

• Create an inventory of examples of the characteristics and design solutions
REFLECTION

Influence on the intervention strategy

Vrouwenverband
Intertwined
Improved-self

VS

Klinisch ziekenhuis
Parallel
Modern interpretation

Building or Architect?