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Research and design
Binnengasthuisterrein

Graduation report

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This report is written as part of my graduation project in the studio Heritage and Architecture. Within this studio the emphasis is on the theme of Heritage and Housing. The focus of research and design is mainly on the city of Amsterdam. However, some of the ideas and results can be generalized to comparable big historic cities and architectural typologies.

On the one hand I’m interested in adaptive reuse and transformations of (historic) buildings. The stock of monumental architecture in cities like Amsterdam and Rotterdam is enormous. Because of technological improvements or other developments, some functions of buildings simply disappear. Other functions like hospitals, libraries and big offices move to the edges of the city and the buildings become vacant. This is an opportunity for adaptive reuse and transformations of the buildings.

On the other hand, I’m interested in housing and liveability in (historic) inner cities. The city centre of Amsterdam becomes more and more a place for offices, shops, hotels and tourists. There is less and less space for residents and the prices of houses are high. For young people, single households and families it’s getting very difficult to live in a city like Amsterdam. I think this is a pity.

New tendencies of sharing can be recognized in daily life. Services like Car2go, Airbnb, Snappcar, Peerby, CitizenM and Thuisafgehaald are very popular in cities. I’m curious whether these concepts of sharing can be translated to housing and architecture and be combined with adaptive reuse. Probably shared facilities and a form of cohousing or shared living can be a solution to reduce the price for a dwelling and make it possible for more target groups to live in big cities.

Within this graduation project I’ll try to combine these two interests and tendencies. The first part of this project consists of two themes of literature research. One theme is about transformations in general and intervention styles and one theme is about Cohousing or shared living. Besides the literature research also an analysis about the Binnengasthuis is carried out. Hopefully these two themes together will give sufficient input for the design, which is the next step. The design will be a transformation of an institutional monumental building into a residential cohousing complex.
1.0 | Introduction

The assignment within the studio of Heritage and Housing is about a design or approach or concept for the transformation of the Binnengasthuisterrein in the city centre of Amsterdam. Within this topic of Heritage and Housing, the focus of this research will be on renovated, transformed and reused buildings in general and of the Binnengasthuisterrein on the one hand. And on the other hand it will be on Cohousing and forms of shared living. This two research themes together are the starting position for a design. The interference can or will be on an urban scale as well as on the scale of the building and the detail.

The Binnengasthuisterrein is a heritage site of a former hospital that is located in the bufferzone of the canal district in the centre of Amsterdam (Image 1 & 2). In June 1981, the hospital moved from the Binnengasthuisterrein to a new build hospital on the edge of the city, the AMC in Buiksloter Holendrecht. The area was already property of the University of Amsterdam. The function of the area changed from hospital to educational and staff. Nowadays, most of the buildings in the area are still used by the University of Amsterdam for educational purposes and some of the buildings are social housing.

Within this research and design project, the Binnengasthuisterrein is used as a case for a bigger problem or tendency that is going on. Based on technological improvements or other developments some functions simply disappear. For instance the secularization of the Netherlands causes that more and more churches become vacant. Technological improvements and new ways of transporting goods causes that factories and warehouses are no longer necessary or placed in new buildings. The former firestation on the Weesperplein or the diamond polishing factory in Amsterdam are good recent examples (Image 4 & 6). Besides the disappearance of functions there’s also the exodus of functions like hospitals, libraries, courts, big offices and cetera from their location to new buildings on the edges of the city. Recent examples in Amsterdam of this tendency are the former palace of justice which moved to the new build Lübeck near the IJ and the Hospital on the Prinsengracht (still searching) (Image 3 & 5). The buildings become vacant and can be reused and transformed. Probably they need to be transformed for new functions because the former function is not interested in the typology or structure or location anymore. So it’s hard to find a new user with the same function. However, the buildings are made with a purpose and dimensions that fit these purposes. The question is if these dimensions also fit the new purposes.

Amsterdam is extending more and more. The vision of the municipality of Amsterdam is to add 70.000 dwellings to the city within the next 30 years to be able to keep up with the demand for it. To addition of dwellings is not only planned with new build houses but also with existing buildings. Denotation is one of the pillars of the vision of the municipality At the same time they want to keep the city a liveable area for different target groups. The inner city is monumental and very expensive for dwelling purposes. The rest of the city is a bit less, but also very expensive. The above described monumental buildings can provide a part of the solution of the growing amount of inhabitants in Amsterdam. The buildings can be transformed for residential purposes.

The problem however of this adaptive reuse is that the dimensions of spaces and structure of the institutional monumental buildings differ from the dimensions of residential architecture. Besides this tangible and functional problem, there’s also a more intangible aspect about the transformations of these buildings to residential architecture: the character of the building and/or cultural historical value. It is important with adaptive reuse to keep this in mind. There will always be a way to deal with the problem of the dimensions, however the question is if it’s also possible and to what extent it is possible to transform without losing the original character and cultural historical value of the building.
1.0 Introduction

So to get a better understanding of the previous described problem and the possible solutions, the first part of this report focuses on literature about adaptive reuse and transformations and intervention styles. The aim is to get more insight in the theoretical background of transformations and intervention styles. This theoretical background will provide a framework for analysis and reflection that can be used for several casestudies of transformations from institutional monumental architecture to residential architecture.

Based on this framework three casestudies are done to discover more about the transformations of some institutional monumental buildings to residential architecture. It is expected that the dimensions of the institutional buildings causes a problem for residential architecture. The aim of the casestudies is to discover what the reasons are for the intervention, the way the intervention is carried out, how is dealt with the dimensions of the monumental building and how is dealt with the characteristics of the building or cultural historical value. This last aspect is not the judge or value the way it is done, but an attempt to discover possibilities. The bigger question behind the first part of the research is:

How are the interventions carried out and what aspects of the lessons learned are usefull for the transformation of the Binnengasthuisterrein?

What are the ideas behind the intervention?
How is dealt with the facade?
How is dealt with the structure?
How is dealt with the entrance?
What is the new distribution of the program?

The second part of the research is an analysis of the Binnengasthuisterrein. More or less the same framework of the casestudies is used to do this analysis. However not every aspect will be that interesting for this analysis because the approach is a bit different. The aim of the analysis of the Binnengasthuisterrein is to discover the cultural historical value of the area and of some of the buildings. The analysis is also used to get more insight in the facades, structures and dimensions of the buildings and the transformations. These two different goals should eventually give an overview of the possibilities and opportunities for transformation to residential architecture.

To get more into depth on the content of residential architecture, in the third part of this report research is done about Cohousing or some forms of shared living. The aim is to discover what Cohousing exactly is, what the ideas are behind this type of living and for what target groups it can be used. Hopefully this will result in some recommendations in general about Cohousing and some suggestions how this type of living can be a usefull program for the transformation of the buildings on the Binnengasthuisterrein.

These three research parts or analysis together will give hopefully enough and sufficient input for a design proposal for the Binnengasthuisterrein.
This literature review is about intervention styles, adaptive reuse and transformations in general. The chapter is split into six smaller paragraphs. The first two paragraphs are about the historical perspective on transformations and a category of building typologies. The next three paragraphs are about intervention styles. In the last paragraph aspects for the analysis of the case studies are defined.

The aim of the first part of this literature review is to get a wider view on the topic of renovated, transformed and reused buildings. At the same time it is used to demarcate the research and bring it in line with the graduation project and the buildings on the Binnengasthuissteilren.

The second part of this review is used to get more insight in the theoretical background of intervention styles. The idea is not that the intervention styles can be used as a tool for design or something. It will provide a framework for analysis and reflection that is used for several case studies of transformations from institutional monumental architecture to residential architecture.

+ Historical perspective on transformations
+ Six sectors of building typologies
+ An introduction to intervention styles
+ Inventory of terms
+ A closer look on one intervention style
+ Aspects for analysis
2.1 Historical perspective on reuse and transformations

Vacant buildings, reuse and transformation are of all times. Since the golden age, not many of the buildings in a city like Amsterdam have the same function anymore. New buildings and transformations of buildings often comes with the economic growth of the city. In the Netherlands four important periods can be distinguished.

The first period is the golden age or seventeenth century. The former houses, offices and warehouses of the merchants of the seventeenth century are now offices for banks, lawyers and luxury apartments. The former arsenal of the VOC is a nice example of a transformed building from this time period. Nowadays the building is used as a museum for shipping. With the recent addition of a roof over the inner courtyard it’s also used for cultural events. Despite the new functions, the appearance of the building is still more or less the same. With the new function of the building that refers to the old use, some cultural historical value is preserved [Image 1 & 2].

The second time period is the nineteenth century. Because of the industrial revolution, there’s a strong growth of inhabitants and buildings in Amsterdam. New buildings arose like warehouses, barracks, schools, firestations, hotels, hospitals and shipyards. These buildings are on the former edges of the city and in the middle of residential areas. It was pretty common in that time to build the factories, churches and warehouses close to the houses of the workers [3]. The former office for shipping companies is such an example. Nowadays it is used as a luxury hotel. The function changed from office to hotel but the appearance of the building is more or less like it once was [Image 3 & 4].

The third period is the pre war period between 1900 and 1940. Because of the enormous growth of Amsterdam a lot of bathhouses, schools, churches and shipyards have been built in and around residential areas. Some of these functions do not exist anymore. Because of the typology of the buildings it’s not easy to transform them to for instance residential architecture. Most of these buildings got a cultural function [4]. The former school for silversmith is such an example. The building is renovated and the courtyard is closed with a roof. Nowadays it’s used as a cultural centre, restaurant and little offices [Image 5 & 6].

The fourth period is the after war period. The offices and industry buildings from that time period are a bit of a problem. It depends on the area were the buildings are and also on the economical influence on the value of the building when it is transformed [5].

Because of the further extensions of Amsterdam a lot of the above mentioned buildings are nowadays inside or around the city ring and thus very well located. The typologies and characteristics of some of the buildings are very different but of some others are quite similar. Already carried out transformations of these buildings to residential architecture can be used as a case study for the Binnenenhuisterrrein. The buildings are first categorized a bit more to be able to demarcate the research.

2.2 Influences on reuse and transformations

Influences on the reuse and transformation of buildings are for instance the spatial planning, environmental and cultural value. In this research the focus of both the reuse and the transformation is on the cultural historical value. Generally it can be said that the reuse and transformation can be influenced by several stakeholders. With the economic growth of the city and the demand for more living space, the buildings are often demolished and replaced by new buildings. The result is that the cultural historical value of the old buildings is lost.

Values of influence on reuse and transformations

- Aesthetic value
- Emotional value
- Cultural historical value
- Architectonic value
- Economic value
- Ecological value
- User value
- Societal value

Focus of this research

Historical perspective on transformations

Golden age 17th century
Pre war 1900 - 1940
After war 1950 - now

4: Kalk, E. 2010. pp.16-18
5: Kalk, E. 2010. pp.19-21
2.0 Literature review

2.2 Six sectors of building typologies

Vacant buildings, option for reuse and types of transformations differ considerably per typology of buildings. Buildings can be more or less divided into six categories. For some of the categories it’s very difficult to transform and reuse the building, whereas other categories are more suitable for a transformation. Not all the categories are useful for this research for transformations to dwellings. The categories are used to demarcate the research.

Churches

Because of the secularization more and more churches become vacant. In the sixties and seventies a lot of churches are demolished, but nowadays it’s tried to save them. It’s very difficult to reuse them especially if the character of the building needs to be preserved. The dimensions are very typical. Although there are some examples of transformations to dwellings, a church is not really suitable for this use.

Industrial heritage

The amount of industrial heritage is enormous in Amsterdam. There are already some good examples of transformations. The Westergasterrein is transformed from an industrial area to a cultural area. The harbor in the east of Amsterdam is used for residential purposes. Some of the old buildings on the GWL area are used as a restaurant and little offices. Although the industrial areas can be used for residential purposes, for the buildings itself it’s difficult. The new use of the buildings is in most of the cases a cultural area.

Warehouses and barracks

There are a lot of typical traditional warehouses from the seventeenth century in the city centre. In the nineteenth century on the former edges of the city a lot of new warehouses have been built with a new typology. Some have lengths of more than 100 meter. The entrepôtdok in Amsterdam is an example and also the grainsilo. Both buildings are transformed to dwellings. Besides these warehouses, also barracks seems to have a suitable typology for a transformation to dwellings. A good example of this transformation is the Oranje Nassau kazerne in Amsterdam.

Hospitals, bathhouses and nursing homes

Because of the growth of the city and demand for healthcare in the last quarter of the twentieth century one big hospital has been built outside the city centre. All the inner city hospitals moved to that one hospital. There are not that much examples of transformations of these areas to dwellings but the Wilhelminagasthuis area in Amsterdam and also the Academic hospital in Utrecht is. Also bathhouses are in this category. With the introduction of the bathroom in houses the function of bathhouses disappeared. Most of the bathhouses are transformed to cultural areas and restaurants.

School

Most of the school buildings date from the last decades of the nineteenth century. This has to do with new regulations of the government about the quality of a school and the place where they were. This led to a wave of new build schools at the end of the nineteenth century. Although it can be expected that the typology is suitable for transformations to residential architecture, there are not that much examples of it. The Timorschool in Amsterdam is such a building, but it is transformed to a multifunctional building.

Offices

The first offices that show similarities with our offices nowadays are also from the end of the nineteenth century. The typology is not really suitable for dwellings, however it is for shops or new offices. Not many of these buildings are vacant.

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7: http://www. kennisbankherbestemming.nl/ kennisdossiers/religieus-erfgoed (03- 04-2014)
2.0 Literature review

2.3 An introduction to intervention styles

In Discovering the assignment a very elaborated definition of reuse or redevelopment is given. It can be composed as follows:
- Architectonic intervention in the existing heritage,
- Varying from restoration (conservation of the existing) to the adoption of the existing to new uses,
- On the levels of modification, intervention and/or transformation,
- Based on programme of requirements, a plan of approach and design,
- In which central values are historic continuity,
- And the related values acted upon by research, and the inventiveness and flexibility of the designer.

Based on this definition it is immediately clear that there's a lot difference in approach, styles and goals of interventions. Also creativity and inventiveness of the architect is mentioned which makes it even more difficult to categorize interventions, generalize them or use them as a toolbox. Placing architecture in a style is something that happens afterwards. It is not that the architect designs conscious in a certain style. Afterwards the architecture is categorized in a certain style or time period.

For intervention styles it is the same. Intervention styles cannot or should not be used as a design tool. Every intervention is different and is treated in a different way. However, categorizing architecture styles or intervention styles can provide a framework for reflection, analysis and communication. A lot of architecture can be placed or translated in typologies with common dimensions and characteristics. I can imagine that certain styles of interventions better fit to certain typologies of architecture.

It is pretty difficult to categorize the intervention styles, because there's a proliferation of used terms in practice and literature. So first it is good to identify and clarify some of the used terms to be able to understand some intervention styles and be able categorize them.

2.4 Inventory of terms

Already twenty years ago Provoost tried to categorize intervention styles. She used eight metaphors to express the used styles. Some of these metaphors are a bit unclear or vague but it's an good overview to get a better understanding of the different intervention styles. The metaphors are shortly explained.

- **Underground** | The intervention is done/ build (partly) underground. The operation can be seen as submissive, but it does not have to be submissive. It can also lead to an radical and own interior world
- **1+1=2** | This stands for the figure of contrast. The old and new building are still two separate volumes. The old volume as architectonic object keeps it's own integrity. (typical 20th century. Also for monumental buildings that need to keep independent entity)[Image 2].
- **1+1=1** | The old building is not untouchable and does not have to keep it's own independent entity. The old building prospers when it is incorporated as part of the new building. Old and new merge (Image 3).
- **Continuity** | Continuity is based on the idea that the foundations of architecture are not time-bound, but a continuous tradition. Interventions are not based on contrast but should be based on similarity and congruence with the existing [Image 4].
- **Palimpsest** | The metaphor refers to a growing city, a layering of unpredictable accumulation of buildings. On the level of a building, the formal and conceptual differences of the different extensions are expressed. Every intervention changes the previous intervention (Image 5).


Image 2 | http://www.stedelijk.nl/pers/persbeeld/gebouw


Image 4 | http://sauthanis.tumblr.com

Image 5 | http://www.mnc.nl/2014/04/18/

Image 6 | http://www.bcentrepotdok.nl/afbeeldingenen

Image 7 | http://www.architectuurrotterdam.nl

Image 8 | http://www.architonic.com/aasht


The metaphors of Provoost

| Image 1 | Underground |
| Image 2 | 1+1=2 |
| Image 3 | 1+1=1 |
| Image 4 | Continuity |
| Image 5 | Palimpsest |
| Image 6 | Palimpsest |
| Image 7 | Recapitulation |
| Image 8 | Facelift |

Underground | Rijksarchief Limburg, Maastricht, Rijksgebouwendienst
1+1=2 | Stedelijk museum Amsterdam, Benthem en Crouwel
1+1=1 | Head office Mexx international Leiden, Robert Stern
Continuity | Murcia town hall, Rafael Moneo
Palimpsest | Boijmans van Beunin, Rotterdam, Bodin 1960, Herkert 1993
Heremietkreeft | Entrepotdok Amsterdam, van Stigt
Recapitulation | Mees Pernot bank Rotterdam, van Nieuwenhuyzen, van der Heijden & Moerman
Facelift | Ministry of finance, Den Haag, MVSA
2.0 | Literature review

+ Heremietkreeft | This type of intervention has in the first place the goal of conservation of the architectural image. Facade’s are renovated and the interior is hollow to make it fit its new use. Form and content do not correspond. (typical style for transformation to residential architecture)(Image 6 | Previous page)

+ Recapitation | The relationship with the history is based on a schematised imitation, resemble of the old. It is not a copy of the old, but the design mentality of the original designer should be recapitulated (Image 7 | Previous page).

+ Face-lift | The architectonical qualities is rarely a consideration to keep this buildings. Most of the reasons are economical. The technical status of the buildings is modernised as well as the facade to modernise the architectural image (Image 8 | Previous page).

Although some of the used metaphors of Provoost are a bit vague and it’s already twenty years ago that she wrote about it, they are actually still quite accurate. A more recent example of some categories about intervention styles is of Labuhn. In her thesis she first highlights the difference between maintenance and transformations10. Maintenance aims to keep the building more or less in the same conditions and will be visible as less as possible. The current situation is maintained. With transformations, only maintenance is not sufficient. Extra interventions are necessary to revitalize the building again. This can be necessary for different reasons. Within the transformations, Labuhn distinguishes two different approaches. The first one is Laissez-faire. With this is referred to practical interventions for economical or technical reasons of non monumental buildings. The other transformation is of monumental buildings. Besides the practical reasons, also cultural value is important.

From an historic perspective Labuhn described four different transformation approaches namely, recovery of the image, material conservation, contrast and analogy. With recovery of the image, the focus is on saving or recovering the image of the past. Everything is aimed at the aesthetics of the image of the history. Image 1 & 2 is an example of this. The gable was once removed and is placed back with a renovation. With material conservation, everything that is authentic is meaningful, not only the original building. The forum romanum is such an (extreme) example. The authentic materials are only there and kept as a status quo (Image 3). Contrast is an intervention in the existing that contrasts with the existing. The basis of this approach can be found in the Modernism. The interventions aims at increasing the contrast between old and new (Image 5). Analogy is an intervention where it is tried to strengthen something of the existing with the new. The new tries to relate to the existing and strengthen it² (Image 4).

A last example about intervention styles is of Coenen. In the Art of blending he mentions five terms about intervention styles that are common nowadays and where the focus should be on namely: continuity, polarity, dialogue, congruence and blending². Unfortunately he didn’t explain them in the book. However, together with the examples described above they speak more or less for themselves and some overlap can be recognized.

To get a better overview of all the terms and the overlap, they are summarized in six categories with their own characteristics (Image 6). Special attention goes to the style of recovery of the image, recapitation and heremietkreeft. With this style there’s a strong focus on the recovery of the image. Within the transformations of monumental buildings to residential architecture, this style if often used. In the next chapter this style is further explored. The other categories can be used in the analysis to point out what the idea was behind the intervention and sometimes also help to declare the interventions based on its time period. Unfortunately it’s not always that clear and delimited.

<table>
<thead>
<tr>
<th>Recovery of the image</th>
<th>Recapitation</th>
<th>+ Focus is very strong on the image</th>
<th>+ Used for transformations to residential architecture</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Heremietkreeft</td>
<td>+ Recovery of the original image, the content is transformed totally</td>
<td>+ Break between facade/ Form and interior</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Material conservation</th>
<th>Heremietkreeft</th>
<th>+ Focus is on conserving the material</th>
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<table>
<thead>
<tr>
<th>Continuity</th>
<th>Congruence</th>
<th>+ Interventions are based on similarity and congruence with the existing</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Contrast</th>
<th>Polarity</th>
<th>+ Strong focus on contrast between old and new in shape and material.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1+1</td>
<td>1+1+2</td>
<td>+ Typical approach from the eighties and Modernism</td>
</tr>
<tr>
<td>+ Useful approach when the monument cannot be changed</td>
<td>+ Idea behind the approach is reversibility</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analogy</th>
<th>Dialogue</th>
<th>+ The existing buildings does not have to keep its own identity. Existing and new merge.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1+1+1</td>
<td>+ The new tries to relate to the existing and strengthen it.</td>
<td></td>
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<table>
<thead>
<tr>
<th>Laissez faire</th>
<th>Face-lift</th>
<th>+ This typifies interventions of non-monumental buildings</th>
</tr>
</thead>
</table>

because the focus of this research is about the transformation of institutional architecture to residential complexes a closer look of the intervention style "recovery is the image Heremietkreeft" is necessary.

Provoost\(^{13}\) pointed out in her book that this approach of intervention gets a lot of attention and is often used for the transformations of old warehouses, factories, barracks and hospitals. When transforming this typology of architecture there’s always the problem of the dimensions. Especially when the buildings are transformed into residential architecture.

The absolute main goal of this style is to conserve the image of the building. Most of the time the strategy is to renovate the facade into its original style. Like can be seen in image 1, 2 & 3 of the Kalenderpanden in the Entrepotdok in Amsterdam. There are hardly changes in the image of the facade. Only the shutters are replaced with glass because the character of the building is very closed, but the dwellings need daylight.

The interior of the building on the other hand is completely hollowed out to be able to fit its new function. Again daylight is a problem. The building has a depth of at least 20 to 25 meters which is too much for a dwelling especially with these small windows. So in the case of the Kalenderpanden, a part of the building is simply demolished to make the building less deep. A new facade is made to close the building of again. Image 4, 5 & 6 show this intervention.

Another problem is the entrance of the dwellings. Buildings like this do not have a corridor or something. So it should be made. Or in other typologies of buildings there is a corridor but the question is if it fits with the new program. Image 7 & 8 show a solution that is made in the entrepotdok. A courtyard is made in the building to make an entrance for the dwelling.

Some types of program fit better in the existing building than other types. Like for instance in Paris, London or New York there is way more a culture of living in lofts and apartments. In the netherlands, these type of dwellings are from an historical perspective not very usual. However, they fit better in the monumental buildings. The dimensions for social housing or smaller apartments do not correspond with bigger dimensions of the monumental buildings. More changes in structure are necessary to transform the building.

With the styles of Heremietkreeft or recovery of the image, the identity of the new part of the building is totally derived from the old part. Form and content do no longer correspond anymore. The new part of the building should not be functionally subordinate to the old part of the building, however the architectonic expression is. Although this style makes it possible to transform a building like the Kalenderpanden or the Entrepotdok, it can be questioned if the character of the building is still the same or maintained in the best way (image 11 & 12).

2.5 A closer look on the intervention styles

2.6 Aspects for analysis

The aspects mentioned in the previous paragraph are used for an analysis of three cases. The aim is to discover how the transformation is carried out with a focus on:

- Facade
- Structure
- Dimensions
- Entrance
- Type/ size of program
- Character of the building

2.0 Literature review

**Facade | Recovery of the image**

**Structure**

**Entrance**

**Program**

**Character of the building | Image vs Content**

Based on the aspects mentioned in the previous chapter derived from the intervention style “Recovery of the image | Heremietkreeft” three case studies are done to discover more about the transformation of some institutional monumental buildings to residential architecture. The aim of the case studies is to discover how is dealt with the unusual dimensions of the monumental buildings in the transformation to residential architecture and also how is dealt with the characteristics of the building or cultural historical value. This last aspect is not the judge or value the way it is done, but an attempt to discover possibilities. The bigger question behind the first part of the research is:

How are the interventions carried out and what aspects of the lessons learned are useful for the transformation of the Binnenengasthuisterrein?

What are the ideas behind the intervention?
How is dealt with the façade?
How is dealt with the structure?
How is dealt with the entrance?
What is the new distribution of the program?
How is dealt with the characteristics of the building?

- Jobsveem, Rotterdam
- Oranje Nassau, Amsterdam
- Academic hospital, Utrecht
3.1 | Casestudy analysis | Jobsveem, Rotterdam

General information

Pakhuis Jobsveem
Lloydsstraat, Rotterdam
J.J. Kanters | 1912 | Warehouse/ Grain silo
Transformation | 2007
Mei Architects (transformation) and Wessel de Jonge Architects (Renovation)
TRANSFORMATION | Warehouse/ Grain silo => Residential

Architect J.J. Kanters designed in 1912 a for that time very modern warehouse in the St. Jobshaven. The complex consisted of a warehouse of 130 m. width and a silo of 60 m. width. The silo consisted totally of reinforced concrete. However, this silo is demolished in 1987 and replaced with a commutator house. The warehouse has a concrete foundation, concrete columns and concrete loading balconies on the waterside. The facade of the warehouse is made of bricks. The floors inside the building are made of wood and wooden and iron beams filled with concrete. The columns inside the building are made of cast iron.

In 1975 the long lease contract ended and the building did not have a clear function anymore. The Lloydpier became an empty area because of the movement of the harbor to the Maasvlakte. A lot of buildings were demolished at that time. They already started to demolish Jobsveem but it turned out that the buildings was packed with goods so they stopped. In the mean time the municipality of Rotterdam bought the ground. The long term urban planners of the municipality pointed out the area for more residential purposes with at least 70% of the existing buildings. Jobsveem became an icon of these new plans to make a new living and working area of the Lloydpier.

For Jobsveem some studies were carried out to find the opportunities and the points of attention of the building. It was concluded that important aspects to look after are the grid size of 4.9 m., the building depth of 25 m., the height of the ground floor of 6 m., the inside structure of wood and cast iron and the demands of the buildings code for firesafety, insulation and daylight. Especially the point of daylight and the depth of the building of 25 m. will have a lot of influence on the possibilities.

The designing proces was difficult and in the mean time the building became a monument. Which resulted in more rules and demands. Because the only solution to add daylight was to make big atria and holes in the facade, the aesthetics committee agreed with this interventions. However a renovation architect was added to the design team to make sure that the facade would be renovated exactly like it once was.

The project resulted in a complex with a a lot of unusual but very popular dwellings. The dwellings are all lofts and because there are no internal structural walls, the residents are able to divide the apartment to their own needs. Image 1 to 18 is an impression of the old and new situation.

### 3.1 Casestudy analysis | Jobsveem, Rotterdam

#### Ideas behind the intervention

The change in function from (empty) warehouse to residential building is of course the main reason for the intervention. The character of the warehouse was extremely closed. This was on purpose to protect the goods against the daylight, sun, wind and rain. This typical character of the building did not really match with the new residential purposes of the building. So interventions were necessary to add light into the building.

The depth of the warehouse with 25 m. is pretty small compared with other warehouses. So the often used method of making an atrium in the middle was not possible. The architect perceived Jobsveem as a tilted warehouse so the atrium should be in a horizontal way instead of a vertical way. This intervention should take care of the necessary daylight. In the middle of the building a corridor is added to connect the atria with the dwellings. This concept can be seen in the Images 1, 2, 3, 4 & 5.

Another big intervention is made on the roof. The existing roof was too bad to keep or renovate, so it is replaced with a new roof. This gave the opportunity to add an extra storey to the building and add penthouses on top of the building. From an economical perspective this intervention saved the project4.

#### How is the intervention carried out

**Facade**

<table>
<thead>
<tr>
<th>What</th>
<th>Why</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Absolutely necessary for the dwellings in Jobsveem was the addition of daylight. However, the character of the building is very closed. The architect wanted to keep this closed character in some way. So three big atria and three big holes are made in the facade to add the necessary daylight (Image 6 &amp; 7).</td>
<td>* The rest of the facade is restored into its original state as much as possible in an attempt to keep the closed character of the building the same, despite the major interventions.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>* The chosen approach to justify the big holes in the facade is to make the contrast between the closed and open parts and old and new parts of the facade as big as possible (Image 6 &amp; 7). To do so, the facades of the atria are made of glass, but with space between the glass, it’s open (Image 8 &amp; 9). These openings have an aesthetic reason to emphasize the contrast on the one hand and on the other hand the reason is functional. It serves as a ventilation system for the atria. The structure behind the glass is also very light. Instead of using heavy steel profiles, thin steel cables are used with a thickness of around 40 mm (Image 10). Image 11 is an illustration of the principle of the glass and the steel cables5. So the new materials are all very light, thin and open which contrasts with the original brick of the facade and wood of the shutters. The effect is that the original image still can be recognized in the facade and the interventions are clearly visible.</td>
<td></td>
</tr>
</tbody>
</table>

The governmental heritage department was absolutely not happy with the big interventions in the facade and the municipality heritage department either. According to them, the new big openings in the facade change the closed character of the building. Because of the lack of options they agreed with the intervention, however a special restoration and renovation architect needed to be added to the design team. The big openings in the facade were allowed provided that the rest of the facade was restored to its original state and even disappeared elements had to be restored6.

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6: Citroen, H., e.a. 2008. pp. 16-17

Images 1 - 5: Projectdata Mei Architects | http://www.mei-arch.eu/projecten/jobsveem

Images 6 - 7: Citroen, H., e.a. 2008

Images 8 - 10: Citroen, H., e.a. 2008

Images 11: Own illustration
3.1 | Casestudy analysis | Jobsveem, Rotterdam

Structure
What | Why
+ The basis of the structure is kept more or less the same. There are no structural walls inside the building. The outside walls are structural and inside are only columns. So there’s already a lot of flexibility in the building for a new program (Image 8).
+ Where the new atria are, the original structural columns are removed totally. The floors are also removed in the atria otherwise the concept of adding light is not working (Image 9).
+ The inner walls are no longer on the 4.9 m. grid of the structure anymore. The grid of 4.9 m width is too small for residential purposes because of the very small windows in the facade.

How |
+ In the new situation the structural grid is ignored. The new inner walls are not structural but just separation walls so they can placed everywhere. The dimensions between these walls vary per dwelling (Image 9). Because the original structural grid is ignored, the structural columns become also decoration in the new situation.

Entrance
What | Why
+ The depth of one area is changed from 25 m to two times 11 m. Dependent on the width of the windows in the facade the maximum depth of a dwelling is around 10–11 m. This is based on the amount of entering daylight (Image 10 & 11).
+ The new areas vary in size with a minimum of 6 m width and a depth of 11 m, because the structural grid was ignored. This gave the opportunity to make different types and sizes of dwellings in the building (Image 11).
+ The entrance is changed from the balcony to the inside of the building to be able to use both facades for dwellings and reduce the depth of the area (Image 11).

How |
+ Three vertical access points are added in the atrium and connected with a new corridor that serves as an entrance for the dwellings on different levels.
+ The big areas are separated with non structural inner walls. These walls can be more or less placed everywhere.

Although the chosen approach is to make contrast, at the same time the goal is to improve the building with the interventions and not to deny them. The interventions are very visible and add something to the building and the original image.

References


Images 1, 2, 3, 4 & 6 | Citroen, H., e.a. 2008


Images 7 | Own illustration

Images 8 – 9 | Own illustration based on | Projectdata Mei Architects

Image 10 – 11 | Own illustration based on | Projectdata Mei Architects

Images 10 – 11 | Shutters can still be closed

Images 7 | Shutters behind facade

Image 5 | Balconies original

Image 6 | Unused balcony: just image

Image 7 | Principal with shutters and new windows

Image 8 | Floorplan original situation vs structure

Image 9 | Floorplan current situation vs structure

Image 10 | Original situation entrance

Image 11 | Current situation entrance

Images 1, 2, 3, 4 & 6, Images 5, Images 7, Images 8 – 9, Images 10 – 11 | Citroen, H., e.a. 2008


Images 7 | Own illustration

Images 8 – 9 | Own illustration based on | Projectdata Mei Architects

Images 10 – 11 | Own illustration based on | Projectdata Mei Architects

Images 10 – 11 | Shutters can still be closed

Images 7 | Shutters behind facade

Image 5 | Balconies original

Image 6 | Unused balcony: just image

Image 7 | Principal with shutters and new windows

Image 8 | Floorplan original situation vs structure

Image 9 | Floorplan current situation vs structure

Image 10 | Original situation entrance

Image 11 | Current situation entrance
3.1 Casestudy analysis | Jobsveem, Rotterdam

Program
What | Why
• The structural dimensions are kept the same in the building. The height dimensions of 3.0 m until 4.5 m are suitable for residential purposes.
• From the first floor until the roof the program changed from warehouse to dwellings. This program fits in the original structural dimensions.
• Only the ground floor causes a problem with the height of 6 meters. It would have been possible to make an extra floor in between, however it was not very easy to do. Besides this, keeping the same dimensions fits more with the character of the building. So on ground floor the program is changed from loading dock for the trains to offices and other commercial activities.
• The program of the dwellings varies in size depending on the place of the inner walls. The dwellings are between the 70 and 120 m².

Lessons learned
Ideas behind the intervention
• Addition of daylight is the main reason for the big interventions of the atria.
• The architect wanted to keep the closed character of the building.
• The governmental and municipality heritage department were in the beginning not happy with this kind of interventions. It affected the closed character too much. The lack of options was why they agreed.

Facade
• The approach to justify the intervention is the use of contrast. The distinction between old and new is as big as possible.
• The used new material is mainly glass and very thin steel cables. The facade is even open to emphasize the difference between the glass and the brick.
• The rest of the building is restored into its original state as much as possible.
• Disappeared elements are restored and also useless original balconies are still there in front of the atrium.
• The new windows are behind the original facade so the frames are not visible.

Structure
• The advantage of this building is that the outside walls are structural and inside are columns. This gives the building a lot of flexibility for a transformation. Inner walls can be placed more or less everywhere. By ignoring the original grid, the columns became visible and are decoration.

Entrance
• By changing the entrance from the balconies to three vertical access points with a corridor in the middle of the building it is possible to make dwellings on both sides of the corridor. This is very useful because the depth of the building of 25 m is too much for dwelling, especially with these little windows.

Program
• The program fits the structure. In this particular case it was not that difficult because there were no structural walls inside the building.
• On the ground floor the program is changed to the dimensions of the building.

Program
What | Why
• The structural dimensions are kept the same in the building. The height dimensions of 3.0 m until 4.5 m are suitable for residential purposes.
• From the first floor until the roof the program changed from warehouse to dwellings. This program fits in the original structural dimensions.
• Only the ground floor causes a problem with the height of 6 meters. It would have been possible to make an extra floor in between, however it was not very easy to do. Besides this, keeping the same dimensions fits more with the character of the building. So on ground floor the program is changed from loading dock for the trains to offices and other commercial activities.
• The program of the dwellings varies in size depending on the place of the inner walls. The dwellings are between the 70 and 120 m².

Opinion about intervention
Strengths
• The use of glass and thin steel cables as structure work very good in recovering the image. The interventions are necessary but because of the thin, light and open materials, the contrast between the old and new is clearly visible and it’s still possible to recognize the original image.
• At the same time the interventions are not denied but add something new to the building and enhances the building. Despite the effect of contrast the new and old materials also merge to something new.
• The detail with the old shutters and new windows is pretty smart. The new frames are hardly visible and it’s still possible to close the shutters.
• The solution with the vertical access points and the corridor is smart to be able to use the building for residential purposes. Otherwise it would probably not have been possible with the depth of 25 m.

Weaknesses
• The interventions were necessary and probably the only solutions and despite the attempts to keep the closed character of the building, it’s not very closed anymore. Especially not when all the shutters not in front of the windows.
• The solution by adding the vertical access points and a corridor is smart and necessary to be able to make the dwellings but it destroys the character of the warehouse with long dark areas and access from the balcony. The intervention really harms the spatial structure of the building.
• The useless balconies in front of the atrium do not really add something. It looks weird and it’s a bit of a forced attempt to recover the original image. With the little houses above the lifting beams it works, but the balconies do not.
3.2 | Casestudy analysis | Oranje Nassau Kazerne, Amsterdam

General information

Barracks Oranje Nassau
Sarphatistraat 154, Amsterdam
Picot de Maras & Abarham van der Hart | 1810-1813 | Barracks
Transformation | 1989-1990
Architectenbureau Van Stigt

TRANSFORMATION | Barracks => Residential

There’s a series of barracks and warehouses of the army in the east (centrum east) of Amsterdam. They are all made in the beginning of the nineteenth century. The Oranje Nassau barracks is the biggest of all with a length of 278 meters. In the original plans the barracks should house 1600 soldiers, but Napoleon wanted a bigger building. So eventually the building was made for 2400 soldiers. When the building is finally finished, the French were already expelled from the Netherlands and the building was named the Oranje Nassau kazerne.

From the nineteenth century on the barracks are used by around 1800 soldiers. The facilities are not in the building, but in wooden sheds behind the building. From 1860 the barracks are used by the government to store supply and artillery. In 1989 the government gives the building back to the city of Amsterdam. The state of the building was very poor and the city of Amsterdam didn’t know what to do with it². The walls of the building are 500 mm thick and the building was sunk into the ground for around 100 – 300 mm. It would cost around 5 million guilder to renovate the foundation.

The aim of the city of Amsterdam was to realize social housing in these former barracks or on the place of the former barracks. Based on the costs of the renovation it was decided that demolishing the building was the only solution. In that time period it was pretty common to demolish the old nineteenth century buildings. In most of the cases they were perceived as heavy, ugly, outdated and not valuable. However, there was a lot protest from people living in the surrounding area and the office of historic preservation against this intention of the municipality. They wanted to keep the building because of its historical and cultural value.

The municipality decided to do another investigation to the possibilities of a transformation in an attempt to keep the building. Eventually the architect came up with a plan that made it possible to renovate and transform the building instead of demolishing it. The difference between the plan of the architect and the original plan of the municipality was in the approach how to deal with the existing structure. By keeping the structure the same, the costs were way lower than by transforming the structure. The facade was renovated, but the internal program totally changed³. Image 1 to 15 is an impressions of the old and new situation.

Intervention style | Recovery of the image

Original situation | Current situation


2: Kalk, E., 2006. p.42


3.2 | Casestudy analysis | Oranje Nassau kazerne, Amsterdam

Ideas behind the intervention

It is quite interesting that the municipality concluded that the building needed to be demolished and the architect concluded that it was possible to transform the building and even make it social housing.

The basis of the success of the transformation can be found in two ideas of the architect. The first one is that the foundation was not that bad, it only needed some extra carrying capacity. The second idea was the statement of the architect that in this case functions follows form and not the other way around. The dimensions of the structure did not fit the dimensions for social housing. So if the strict dimensions of social housing were ignored it was possible to make social housing in the existing structure. Together with this idea, the architect proposed to make a great variety in dwellings to be able to use the existing structure. Whereas with social housing, the municipality used to standardize all the dwellings.

The intention of the architect was to keep the character of the facade, however the character of the interior is changed. The architect claims that a building is never made as a monument. If the city changes, buildings can change or functions of buildings can change. It’s allowed to see these changes in the building. On the other hand, the interventions should never change the character of a building. In this particular case this statement is mainly applied on the facade.

How is the intervention carried out

Facade

What | Why
+ It was necessary to add daylight into the building, to be able to make dwellings in the former barracks. These intervention had a lot of influence on the facade, so the rest of the facade is restored to its original state. This is an attempt to keep the character of the building or at least the facade as much the same as possible.
+ Because of the need of extra daylight for the dwellings, new windows are made on both sides next to the original windows. In image 1 and 2 the original situation and current situation are compared.
+ Another intervention is carried out on the roof. To be able to use the third floor for residential purposes as well, addition of daylight was necessary on this floor.

How |
+ On both sides next to the original windows, new windows are cutt out of the facade (Image 3, 4, 5 & 6). From a frontal view, this has a major impact on the facade, however it was absolutely necessary for the needed amount of daylight. In an attempt to keep the image as much the same as possible, the window frames are placed behind the wall and not inside the wall like with the original windows. Image 7 is an illustration of this. The goal of this approach is to keep the original image. When the view is not frontal, which is almost impossible with the length of this building, you’ll only see the original windows and window frames and not the new ones. The image is the same like the original image. In Image 8 it is shown that it worked pretty well actually. The new widows pretend not to be there.
+ On the third floor, loggia’s are cut out of the roof and a horizontal window is added on one side of the roof over the full length of the building for the necessary daylight. It is a solution to be able to use this floor as well. The way like it’s carried out right now ensure that the intervention is not visible from the street or groundfloor. Again the approach is to pretend the intervention is not there. If it’s not visible, it’s not there (Image 9, 10, 11).

5: Kalk, E., 2006. p.43
7: Own illustration

Facade | Recovery of the image

Image 1 | Original situation
Image 2 | Current situation | extra windows next to the original
Image 3 | Façade original
Image 4 |  Façade current
Image 5 | Façade original
Image 6 | Façade current
Image 7 | Detail new facade
Image 8 | Recovered image
Image 9 | Roof original
Image 10 | Roof current
Image 11 | Loggia
### Structure

**What | Why**

- The basis for the structure is kept more or less the same. The structural grid has a width of 6.8 m and where the entrances are 3.1 m. The depth of the building is 19 m with a corridor in the middle of 2 m. So each room has a depth of 8.5 m. Image 1 shows an original floorplan with the structure marked in blue. Because according to the municipality the grid of 6.8 m was not suitable for social housing, the idea was to ignore the original grid, demolish the walls and make new walls. However, this was too expensive because the walls have a thickness of 50 cm and thus are very strong.

**How |**

- In the new situation the architect used the grid as a starting point. The idea was that function follows form and not the other way around. Like can be seen in image 2 & 3, the structure is more or less the same. The spaces between the grid of 6.8 m. are used to situate dwellings. The spaces between the grid of 3.1 m. is used on ground floor to make smaller entrances for the dwellings instead of the long corridor. On other floors, the grid of 3.1 m. is used for different functions, like sleeping rooms or kitchens. Small new holes in the structural walls create passages to the other side and make it one dwelling (Image 3).

Some of the walls are extended which result in a dwelling from facade to facade with in the middle the functions that do not need that much daylight. Because some of the dwellings are from facade to facade, the corridor in the middle of the building disappeared and becomes only a small entrance zone (Image 3 & 4).

### Entrance

**What | Why**

- The original building had seven entrances and a long corridor through the whole building to connect all the rooms like can be seen in image 4 and image 6. In the new situation the building has eleven entrances and the corridor is gone. The entrance to the dwellings is from the outside and through vertical point access instead of a corridor in the middle of the building (Image 7). This gives the opportunity to make dwellings from the one facade to the other with a depth of 19 m. The space of the corridor is used as extra space for the dwellings (Image 5).

By removing the corridor and making grouped entrances for the individual dwellings, the collective character is changed into a more individual residential character. The entrance becomes more private and the atmosphere of entering a dwelling is better than with a corridor of 278 meters. The collective character of the interior and the specific character of the corridor however is also gone with this intervention.

**How |**

- The places were the structure has a width of 3.1 m. is used for the new entrances. There are eleven new entrance points. On the side of the Sarphatistraat are the entrances for the offices and on the side of the courtyard are the entrances of the dwellings. From here there’s a stairs going to the floors above. A small hallway connects five dwellings to the vertical access point (Image 5 & 7).


### Program

**What | Why**
- The program changed from rooms on both sides of a corridor into dwellings with a small hallway as entrance zone. Some the dwellings are from the one facade to the other facade with a depth of 19 m. Other dwellings use two times the grid size of 6.8 m so the width is 13.6 m and a depth of around 9 m. A third typology of dwellings is between the grid of 6.8 m. and 3.1 m. so the width is 9.9 m and a depth of also around 9. These dimensions are used so that it was not necessary to break the existing structure (Image 1).

- The groundfloor has a height of 4.6 m. and the others two floors have a height of 3.8 m. The municipality wanted two stories of dwellings on the ground floor, but in the new situation this floor is used for offices. This program fits the structure better instead of making a new floor and it was cheaper to do it like this.
- The attic is used for dwellings as well. With a height of 5.7 m. it has space for an extra floor or entresol. The existing structure is used for that (Image 2).

**How**
- The architect used the existing structure to fit the dwellings in. To be able to do so, a diversified program is necessary. With a diversified program and divers typologies of dwellings, its easier to fit the existing structure. Only on some place there are little passages in the walls. The height of 3.8 makes the rooms spacious.

### Lessons learned

**Ideas behind the intervention**
- Addition of daylight was necessary to make dwellings in the buildings.
- The intention of the architect was to keep the character of the facade the same. Interventions should never change the character of the building. In this particular case this statement is many applied on the facade.

**Facade**
- The approach to justify the interventions in the facade is continuity. The needed interventions are carried out in such a way that they are in line with the original situation or are not visible at all (with the interventions on the roof). It’s tried to make the intervention in a continuous style. From certain angels the image of the facade looks the same as the original.

**Structure**
- The basis approach for the structure is function follows form. The be able to realize transformations like this, it’s important to use the existing structure. Small changes in the structure result in useful dimensions.

**Entrance**
- The entrance typology with a corridor is very collective. Breaking the corridor and making vertical access points makes the entrances to the dwellings a nicer and more individual space. However, the collective character of the building disappeared with this intervention.

**Program**
- Diversity in typology of dwelling makes it possible the keep the existing structure
- Diversity in program on groundfloor and the rest of the building makes is possible to keep the same structure
- Although probably for that time, the intervention worked with a program of social housing. Nowadays, the sizes of the dwellings are not really realistic for social housing anymore.
- Some of the dwellings are 130 m².

### Opinion about intervention

**Strengths**
- The detail in the facade that is used to be able to add extra windows worked pretty well. From an inclination only the original image is visible. Because the building is so long, the view is almost on an inclination and thus the building looks like the original building.

- The approach of the architect to use the existing structure, thus function follows form, and fit the dwellings, in the existing structure saved the building. This is a smart approach that enables you to use institutional monumental buildings. The small changes in the structure result in useful dimensions.

- Breaking the corridor is also a good solution for a building typology like this. 278 meter of corridor is simply just too much for residential purposes. By making some of the dwellings from facade to facade, the corridor is gone. It’s a smart technique that enables you to make dwellings in such a building with nice and more individual entrances.

**Weaknesses**
- The way the interventions in the facade are carried out is a bit modest. All the effort is put in keeping the outside image the same. So the approach of the interventions in the facade is more or less to pretend not to be there. The intervention is not enhancing the building or trying to merge with the existing brick. It is more a necessary intervention that is carried out in a very functional way. Aesthetically it’s not an addition to the building.

- The approach of breaking the corridor is a good technique to be able to make the entrances more individual and give it more quality. However it also harms the collective and spatial character of the building and the typical corridor structure. Probably keeping parts of the corridor could have been a better solution to preserve some of the characteristics of the building with the same result of a more private entrance.

- The size of the dwellings are way too big for social housing nowadays. So the technique of fitting the program to the structure can be a solution but as in this case it’s not realistic.
3.3 Casestudy analysis | Academic hospital, Utrecht

General information
Academic hospital (Englhenschild)
Catharijnesingel, Utrecht
C. Vermeys | 1870 | Hospital
Transformation | 1990
Architectenbureau Van Stigt

TRANSFORMATION | Hospital => Residential

The hospital on the Catharijnesingel was finished in 1870 and for the first forty years it was just one building. From the beginning of the twentieth century, two more main buildings and also more and more little buildings and pavilions were added to the original building. The area is described as a little village off additions in which you could get lost easily. The back of the first main building was connected with a corridor to a new big building in which the hospital wars were. Image 1 and 2 shows aerial pictures of the situation of the hospital with all the additions.

After the several extensions, the hospital could not further be extended. So in the eigthies of the previous century the board of the hospital decided to build a new and bigger hospital outside the city centre. After five years of discussion, with a new zoning plan it’s determined that the building should be used for residential purposes. The architectural and monumental qualities of the main building (Englhenschild) (Image 3 & 4) should be respected as much as possible.

Because of several extensions, carried out interventions on rear facade of the building, lowered ceilings and demolished interior, the main building lost a lot its appearance. So when it was decided to transform the area into a residential area, all the additional buildings were demolished besides the three main buildings (Image 3 & 4). Image 5 to 13 is an overview of the existing and new situation of the building.

Ideas behind the intervention
A detailed analyis of the building resulted in the conclusion for the architect that it was the most economic to make a lot of different dwelling typologies in the building. With a lot of different dwelling typologies, the existing structure could be used and not too much interventions were necessary in the interior. One of the characteristic of the building, the windows in the facade of four meter height are kept the same in the front as in the back facade as well.

All the additions on the area were demolished and replaced with a new building with the same scale and details as the original first building. Image 14 and 15 are drawings from the original situation of the building.
3.3 | Casestudy analysis | Academic hospital, Utrecht

Facade

What | Why
+ Because of the big windows, it was not necessary to add extra daylight into the building for residential purposes. Like can be seen in Image 1, the approach of the intervention on the facade is in line with the existing (Image 11 & 15 previous page). The facade is cleaned and the windows are painted in the style it once was.
+ On the rear facade of the building there is major hole. The building was connected with another building that was behind this one. The architect used the hole to make an atrium. Nowadays behind this facade is the main entrance of the building and it splits the building more or less into two different wings5.

How |
The hole in the building is closed with a glass facade. The used materials are very light and thin. Vertically there are hardly frames visible, horizontally there are. The new glass facade is quite modest and it’s more or less denying its existence. However, with the approach of recovery of the image it’s interesting that the facade is not restored back into its original state but that the architect kept the hole in the building. It was not necessary for daylight.

Structure

What | Why
+ The approach of the architect was to use the existing structure without demolishing too much. With the use of a lot different dwelling typologies in the building the existing structure could be used and not too much interventions where necessary.
+ Like can be seen in Image 3, the existing structure had different sizes of rooms. However, it’s at least in the middle part of the building, always a multiple of 3.6 m. The corridor in the original building has a width of 4 m. So from facade to facade without the middle risalit the building has a width of 16.5 m. In Image 4 it’s clearly visible that the architect used existing structure and the gridsize of 3.6 m. Just extra walls are added to divide the bigger rooms of 7.2 m into smaller rooms. Sometimes although a wall is added, the new dwelling has still a width of 7.2 m. The corridor is also used. The walls are extended so the new dwellings are from facade to facade with a depth of 16.5 m. (Image 4).

Entrance

What | Why
+ The original building had one main entrance and a corridor system that connected all the rooms and staircases (Image 5). In the current situation the corridor is gone and four access points are made to enter the dwellings.

By removing the corridor and making grouped entrances for the individual dwellings, the collective character is changed into a more individual residential character. The entrance becomes more private. The collective character of the interior however is also gone with this intervention.

How |
The original entrance is transformed into a big atrium. Two other places on the left and right side of the building where the staircases were, are transformed into new entrances. Four vertical access points are added to be able to enter all the dwellings. The original corridor is now part of the dwellings that are positioned from facade to facade (Image 6).

5: http://www.angherschild.nl

Image 1 - 2 | http://www.burovanstigt.nl/product/academischziekenhuis/

Image 3 & 5 | Own illustration based on: Vermeij C. Floorplan AZU. De Opmerker, 5e jaargang, no 37 (10 september 1870).


Image 4 & 6 | Own illustration based on: Kalk, E., 2006. p.49

66.85

3.6
3.6
3.6
3.6
12.5
16.5

5.0

2.8
7.2

11.5
3.3 | Casestudy analysis | Academic hospital, Utrecht

**Program**

- The program changed from rooms around a corridor into dwellings with a small hallway as entrance zone. The most of the dwellings are from the one facade to the other facade with a depth of 16.5 m. On the one facade a dwellings has two times the grid size of 3.6 m., and on the other facade it has a width of 3.6 m. The dwelling next to it has the same, but mirrored (Image 1). The dwellings at the end of the building have a total different dimension that just fits the structure. These dimensions are used so that is was not necessary to break the existing structure.

**How**

- The groundfloor has a height of 4.85 m. The first floor has a height of 5.0 m. and the second floor has a height of 4.2 m. All the floors are used for residential purposes. The big windows of 4 meter height causes that an extra floor was not possible and probably also not desirable. So every dwelling has an entresol. These entresols or between floors are not accessible from the staircases. So the building has still four stories.

**Lessons learned**

**Ideas behind the intervention**

- One of the main characteristics of the buildings are the windows of four meters height. These are kept the same in the front as in the rear facade as well. So the new floors are adapted to the windows
- All the additions on the area were demolished and replaced with a new building

**Facade**

- The approach of the interventions in the front facade is continuity. Everything is in line with the original.
- The hole in the building of the rear facade is just closed with glass, in a modest way. It’s accepting the situation and a reference to the connection there once was. The approach of this intervention is not really enhancing the building or trying to merge or blend.

**Structure**

- The basis for this intervention is the existing structure. The existing grid is used as a starting point.
- Walls are extended from facade to facade.
- Small changes in the structure makes the dimensions usefull.

**Entrance**

- The entrance typology with a corridor is collective. By extending the walls and dwellings from facade to facade, the corridor is gone. Breaking the corridor and making four different vertical acces points, makes the entrances more individual and nicer.
- Breaking the corridor however affects the collective character.

**Program**

- Diversity in typology of dwelling makes it possible the keep the existing structure
- All the dwellings got an entresol to gain extra space. The entresol is also used to be able to stay away from the facade and the four meter height windows.
- The dwellings are all pretty big and luxury. Because of the entresol and the big dimensions there’s a lot of space.
Lessons learned - Casestudies

Facade Jobsveem

- Addition of daylight
- Contrast old & new
- Emphasis closed vs open
- Light vs heavy materials
- Restore to the original
- Keep original elements
- Place elements back
- New frames behind existing
- Contrast
- Enhancing the building

Facade Oranje Nassau

- Addition of daylight
- ‘Invisible’ intervention
- Emphasis on original image
- Light materials
- Restore to the original
- New frames behind existing
- Modest
- Denying the intervention

Facade Academic hospital

- Upgrading facade
- Material and colour in line with existing
- Focus on original image
- Light materials
- Restore to the original
- New frames behind existing
- Hole is closed with glass
- Modest
- Denying the intervention

Structure Jobsveem

- Use the existing structure
- Outside walls are loadbearing
- No structural walls inside
- Lot of flexibility
- Structural grid is ignored
- Separation walls make the new dwellings
- Structural columns become decoration

Structure Oranje Nassau

- Use the existing structure
- Function follows form
- Existing grid is used
- Grid of 3.1 is used for entrance, sleeping rooms, kitchens
- Extend walls from facade to facade
- Small new holes in the structure makes new dimensions

Structure Academic hospital

- Use the existing structure
- Function follows form
- Basis of existing 7.2 m. grid is starting point
- New walls on grid of 3.6 m. makes new dwellings
- Extend walls from facade to facade
3.4 Lessons learned Casestudies

Entrance Jobsveem

- Three vertical access points with a corridor are added.
- The depth of the building of 25 m. is changed to two times 11 m. and a corridor of 3 m.
- The depth of 25 was too much because of the needed amount of daylight.

Entrance Oranje Nassau

- Break the corridor
- Make dwellings from facade to facade
- Make new vertical access points to reach the other floors
- Entrances are more private with just a few around an access point
- The intervention affects the collective character of the corridor/building

Entrance Academic hospital

- Break the corridor
- Make dwellings from facade to facade
- Make new vertical access points to reach the other floors
- Entrances are more private with just a few around an access point
- The intervention affects the collective character of the corridor/building

Program Jobsveem

- The structural dimensions are kept the same.
- Height of 6 m. on ground floor causes a problem
- Office and commercial functions on ground floor
- Different dwelling typologies and sizes are used
- The size/width of the dwellings is based on the amount of daylight and windows
- Sizes differ from 70 m² – 120 m²

Program Oranje Nassau

- Diversity in typology of dwellings make it possible to keep the existing structure
- Different program om groundfloor based on the height of 4 m.
- A building depth of 19 to 20 m. maximum makes it possible to make dwellings from facade to facade
- Dimensions are not realistic for social housing

Program Academic hospital

- Diversity in typology of dwellings is used to fit the existing structure.
- The height of a minimum of 4.2 of floors makes it possible to make entresols in every dwelling and keep the big windows
- The building depth of 16.5 m. is suitable to make dwellings from facade to facade
The second part of the research is an analysis of the Binnengasthuisterrein. It starts with an overview of the urban transformations from the nineteenth century. From that point on, more or less the same framework is used to do the analysis as is used with the case studies. However, not every aspect will be that interesting for this analysis because the approach is a bit different. The aim of the analysis of the Binnengasthuisterrein is to discover the cultural historical value of the area and of some of the buildings. The analysis is also used to get more insight in the facades, structures and dimensions of the buildings and the transformations. These two different goals should eventually give an overview of the possibilities and opportunities for transformation to a residential area and residential architecture.

+ Urban transformations

+ Administration centre and childrens clinic

+ Clinical hospital

+ Nurses homes
4.1 Analysis Binnengasthuisterrein | Transformations on urban scale

Transformations

1889 | When the university was established on the Binnengasthuisterrein around 1877, the area was formally designated as an educational site. When it was decided to build a new hospital, the old men-, and women hospital needed to be demolished to be able to build the new clinical hospital [Image 2]. The structure of the new hospital was a pavilion structure.

1897 | After the clinical hospital was finished it took some time before a new hospital was built. In 1897 they started to build a second hospital, the second surgical clinic. Because the area was too small for another pavilion structure hospital, the second surgical clinic got a corridor system.

In the second surgical clinic there were deliberately no sleeping places for nurses in the attic. So separated nurses’ homes were added to the area. The building also got a corridor system with rooms on both sides of the corridor. The groundfloor was used for a kitchen, dining room and parlor [Image 3].

1900 | When the second surgical clinic and the nurses’ homes were built, the municipality decided to shorten the workshift to a maximum of ten hours a day. The amount of nurses increased so a new building with 50 one-person rooms was added to the nurses homes [Image 4].

1913 | When in 1911 the maximum of work hours for nurses decreases from ten to nine, again the amount of nurses increases. A new building was necessary and the nurses’ homes got extended again in the same style as the previous nurses’ homes. Four buildings were demolished to be able to extend the nurses’ homes.

At the same time, on the north part of the area a new administration building and childrens clinic was build. The building exists of a front and rear building that were connected. The front wing was the administration centre at the entrance of the area and the rear wing was the childrens clinic. The building was made in the style of the “Amsterdamse School”. An introduction of a new architectural style in the area [Image 5].

1963 | In the sixties, a new connection between the two pavilions of the clinical hospital is made. The courtyard is closed to get a faster connection between the two wings of the building.

In 1961 the Hotel des Pays Bas in the Doelenstraat is closed. In the years after it is sold and finally it is demolished with the purpose to make a new bank for the dutch bank. From that point on there’s just a hole in urban structure that’s used as a parking lot [Image 6].

1986 | When the Binnengasthuisterrein loses its hospital function around 1981, the University of Amsterdam has decided to open up the area. In 1983 the anatomy building is demolished to make place for a new modernistic building with social housing.

In 1986 the area is connected with the Kloveniersburgwal. A little part of the nurses’ homes on ground floor is demolished and an arch is made in the closed walls of the buildings. A new street (Vendelstraat) connects the area with the Kloveniersburgwal [Image 7].

1991 | The area is opened up further with the demolition of the rear wing of the administration building, the childrens’ clinic. A new pavilion emphasizes the idea of a plaza [Image 9].

When in 1986 the Binnengasthuisterrein loses its hospital function, the University of Amsterdam has decided to open up the area. The anatomy building is demolished as well as the children’s clinic to open up the area and to be able to design a plaza in the middle of the area.

Also around 1986 the area is connected with the Kloveniersburgwal. A little part of the nurses’ homes on ground floor is demolished and an arch is made in the closed walls of the buildings. A new street (Vendelstraat) connects the area with the Kloveniersburgwal.

The atmosphere in the area nowadays is open and lively. It’s a continuous and connecting area between different other areas of the city centre. This can be kept when it is a residential area and even be developed a bit further by opening up a part of the courtyard of the clinical hospital and use the information centre to get more interaction with the plaza. Probably also parts of the ground floor zone of the second surgical clinic can be used to extend the idea of a plaza even more.

In 1961 Hotel des Pays Bas in the Doelenstraat is closed. In the years after it is sold and finally it is demolished with the purpose to make a new bank for the dutch bank. From that point on there’s just a hole in urban structure that’s used as a parking lot.

The closed wall of the facades on the Nieuwe Doelenstraat has urban historical value because it protected the Binnengasthuisterrein and gives the area a closed character. Nowadays the place where the Hotel des Pays Bas once was is just empty.

The closed wall facade can be restored like it once was or at least partly like it was and partly close the area again, so the urban structure is restored. Inside the Binnengasthuisterrein is open and lively with the plaza and on the edges it is more closed.

At the same time when the area is opened up, the courtyard of the clinical hospital is closed with an atrium. This is a bit contradictory.

The urban typology of the inner courtyard(s) is typical for the area and for the typology of the hospital building(s). The fact that it is closed disturbs the urban structure.

The courtyard can be opened up as well to emphasize the idea of the plaza and make it nice and liveable area for residential purposes. Probably the pyramid of atrium needs to be replaced with something smaller because of the intangible cultural historical value of the place (this is explained later). However, it would be could to open up the courtyard.
Van der Mey had been working for a year as aesthetic advisor of Public Works of the municipality of Amsterdam. In this position he was the architect of the Children’s Clinic and Administration building on the Binnengasthuis area. Besides this project he also worked on the Scheepvaarthuis on the Prins Hendrikkade. This building was the first building in the Amsterdam School style. This style is a unique and expressive (brick) architectural style. Basically van der Mey only designed the facades, which was a bit against his philosophy and the philosophy of the Amsterdam School style that the building is a “gesamtkunstwerk”. The characteristics and expressions of the Amsterdam School Style can be seen very clearly in the facades of the Administration building and Childrens Clinic (Image 1, 4 & 8). However, van der Mey designed it with respect for the centuries-old canal houses. This is actually pretty exceptional. The architectural principles of the of the canal buildings are a sober facade with a characteristic pattern in the many windows. Van der Mey used this principles also for the Administration building and Childrens Clinic, but at the same time he introduced the expressionistic elements of the Amsterdam School Style. There’s a lot of decoration in the facades. The bricks are not only used for structural purposes, but also for decoration. Also the use of a more yellow brick gives the building an individual character in the red-brown surroundings (Image 8-11).

In the early 1970 the municipality of Amsterdam and the University of Amsterdam decided to move the hospital function to the edges of the city. A new build hospital replaced the hospitals in the centre of Amsterdam (Binnengasthuis, Wilhelminagasthuis and the Emma childrens hospital). As one of the latest, in 1981 the clindren’s clinic left the Binnengasthuis and the building became vacant.

Around 1988 there were plans to demolish the entire building. However a compromise was reached after a lot of protests of neighbors and the aesthetics committee. Only the rear part of the building was demolished while the front part was preserved (Image 1 & 2). Instead of the rear wing, a new building was placed in 1994, designd according to the modernistic ideas of Theo Bosch (Image 3, 11, 45, & 15).
Ideas behind the intervention

In 1981, the childrens clinic left the building on the Binnengasthuisterrein. The university of Amsterdam, owner of the area and surrounding buildings announced that they wanted to open up the Binnengasthuisterrein and give parts of it back to the city by making a plaza in the centre of the area [Image 1-4]. 60% of the buildings kept their program of the university. Mixed use would be achieved by building a new residential complex and a theatherschool.

To do so, the outside ring of the area was kept the same as it was, but on the inside some buildings were demolished with the aim to create a plaza. In 1990 a taskgroup stated that the architectural historical value of the rear wing of the building was very little and the building itself was perceived as too heavy for the plaza concept. Despite of a lot of protest of stakeholders, demolishing of the childrens clinic was adopted by the taskgroup as the solution. After this decision, the childrens clinic was demolished in 1991. However, the universities’ facility department would be the new user of the building and they needed more space. So Theo Bosch got the assignment in 1991 to design a new building on this place.

To emphasize the quality of the new plaza the architect wanted to design a pavilion, a building with only front sides. The curved shape of the building guides the walking routes. The transparency of the building contributes to the liveliness of the area.

Facade

The appearance of the building is totally changed with the demolishment of the children’s clinic. The former building was heavy, angular and made of bricks and concrete. The new building is a fleet-footed pavilion made of glass placed on a concrete plinth [Image 10-13].

The light grey plinth marks the transition between the plaza and the facade. It also increases the autonomy of the pavilion as freestanding. Besides this it functions as an element to sit on and as a light transporter for the basement. The transparency of the building contributes to the liveliness of the area. It serves as a lantern during the evening. The only closed parts in the new facade are the parapets made of plywood and mahogany. The idea is to be able to watch through the building. The windowframes are painted a metallic-colour to fit the dark glass [Image 8].

The lightness of the pavilion is a contrast with the heavy, angular and closed back of the administration building. To emphasize the intervention approach, the connection between the old and new building was carried out with a glass corridor [Image 9]. The idea with the pavilion is to create a contrast between old and new with shape as well as material. Everything new is in contrast with the old building. The old and new are connected at the old staircase with a glass corridor.

Beside the front part of the building, nothing is left anymore of the original image of the building. With the pavilion the appearance is totally different. There’s no connection or reference at all with the old building or historic situation. The structure of the facade, the shape and materials are totally different and contrasting.

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Structure

The structure of the building is totally changed. The former building was made of bricks and concrete and the walls were load bearing (Image 1). After the demolishment of the children’s clinic the new structure is made of small round columns and a curtain wall as facade. The new structure is very light and open compared with the old structure. On the first floor there’s a void that makes the area on ground and first floor one open space. ‘The new pavilion is an independent structure’.

On ground floor, all the original walls in the existing building are demolished. The idea was to get an open and light new building (Image 2). From the first floor of the old building to the first floor of the new pavilion there’s a small bridge. That’s the only connection between the existing building and the new pavilion, besides ground floor.

On the second floor and the third floor, the structure in the existing building is still the same as it once was.

Entrance

The old building had a small corridor system with one vertical access point. The hospital rooms were connected to the corridor. The rooms itself were one big area with all small little rooms made of glass with a steel frame (Image 3).

The administration building and children’s clinic had three different entrances. One entrance was on the east side of the building and two entrances were on the west side of the building. The entrance of the whole Binnengasthuisterrein was also on the west side of the administration building so people could get registered immediately (Image 3).

In the new building the existing entrances were closed and the connection between the existing building and the new pavilion became also the entrance of the building. On ground floor there are no internal walls anymore so the connection zone in the middle is immediately the entrance for the other spaces. The original staircase is still there and is used to be able to go to the other floors. There’s also a new stair in the pavilion to be able to reach the floors of the pavilion (Image 4).

Program

The program of the building changed from hospital to facility building. Like can be seen in image 5 the staircase and corridor was the separation between the administration building and the children’s clinic. The front part was used as administration and the rear wing as children’s clinic. The original building has a floorheight of 4.5 m.

In the new situation the corridor is gone and the entrance zone serves as a connection between the old and new building. However, all the internal walls are demolished on the ground floor, so the ground floor and first floor of the old and new building are more or less one big open space (Image 6).

The pavilion has different floorheights than the old building. The groundfloor has a height of 3.4 m. and than there’s a entresol or in between floor with a height of 3.0 m.. The first floor has also a height of 3.0 m. and is connected with a bridge to the first floor of the administration building (Image 6).

Program
Conclusions

The value of the administration building and information centre is mainly in the administration building. The facade in Amsterdam school style has architectural and cultural historical value. The new pavilion from the eigthies is not a protected building or does not have any value (yet).

The main reason for the destruction of the childrens clinic was the idea of the university of Amsterdam to give a part of the Binnengasthuissterrein back to the city by making a plaza. To be able to do so and to open up the area, some buildings needed to be demolished, including the childrens clinic. It can be concluded that this urban transformation has been of major influence on the character of the Binnengasthuissterrein and the way it is nowadays.

The pavilion symbolizes and emphazis this transformation.

The new pavilion is made in contrast with the Administration building. The destruction of the children’s Clinic was typical for the modern movement. Concerning city planning, they just removed the old city and placed back new buildings according to their standards. Theo Bosch, who was part of the taskforce and also the architect the information centre, designed a lot of his buildings according to the modernistic style.

The used interventionstyle “contrast or 1+1=2” is also typical for this time period. It can be as useful style with monuments that cannot be changed in any kind of way. In the design, it is very clear what the new building and what the existing building is. Everything is in contrast with the existing building. The new building is an entity on itself and the connection with the existing building is as thin and light as possible. So the distinction between the existing and the new is expressed in the shape of the building, in concept and in material.

For residential purposes, the building is not really suitable (anymore). The ground floor and first floor are one big open area. The shape and dimensions of the pavilion are also not really suitable for dwellings. To emphasize the plaza even more the pavilion could be used for commercial functions, little offices or retail.

Opinion about intervention | building

Strengths
- The idea of designing a plaza and a pavilion to emphasize the plaza is an improvement for the Binnengasthuisterrein. It opened up the area and made it accessible.
- Although it can be questioned if it was necessary to demolish the children’s clinic, the new pavilion add something to the old building. The glass connection between old and new is done pretty well and it’s a good transition in material to the pavilion.
- The used materials of the pavilion are light, open and of good quality. It’s in contrast with the existing and give the pavilion it’s own identity.
- More or less the whole interior of the existing building is also demolished with the intervention. Although contrast is used to demonstrate the difference between old and new, this is only applied on the exterior. The interior intervention is pretty weak.
- The spatial qualities of the building are very specific which is not bad, but because it’s one big open space it is very difficult to use it for different activities.
- The pavilion is made to enhance the idea of a plaza. With its shape and appearance it works like that, but with the accessibility not. The pavilion is actually a pretty closed building.

Weaknesses
- More or less the whole interior of the existing building is also demolished with the intervention. Although contrast is used to demonstrate the difference between old and new, this is only applied on the exterior. The interior intervention is pretty weak.
- The spatial qualities of the building are very specific which is not bad, but because it’s one big open space it is very difficult to use it for different activities.
- The pavilion is made to enhance the idea of a plaza. With its shape and appearance it works like that, but with the accessibility not. The pavilion is actually a pretty closed building.

Opportunities
- To further develop the idea of a plaza in the middle of the Binnengasthuisterrein the pavilion building can be used for communal functions to serve the residents of the area.
- It can also be used as little offices, a retail function or a restaurant.
- Some small interventions on ground floor can open up the building and make it accessible from the plaza so more interaction is possible with the surrounding area.

Threats
- There are not that much threats with this building. It’s more or less impossible to restore the original image. So this building should be used in a smart.
- The state of the interior can be a threat for new possibilities and also the inside structure/routing. It’s still more or less two different buildings connected to eachother.
- Small interventions are necessary to open up the building a bit more. If it is kept the same like it is it will not emphasize the plaza because the facade is physically closed.
In 1877, when the University was established in the Binnengasthuisterrein, the area was formally designated as an educational site. When it was decided to build a new hospital, the old men’s- and women hospital needed to be demolished to be able to build the new clinical hospital.

The architect, H. Leguyt, did some studies on how to build a modern hospital and it was for the first time that a hospital was build with certain principles on the Binnengasthuisterrein. The Clinical Hospital was designed with two independent pavilions that received enough light and air on both sides of the building. One of the wings was for men and the other wing was for women. The two pavilions where connected with an in between building. Normally this in between building was placed more in the middle between the pavilions, but to keep the area as open as possible this connecting building is placed on the north (Image 1, 4, 5, 7, 10).

Every floor of a pavilion has two halls with place for around twenty beds. In between these halls was a building with all the services like stairs, sinks, kitchen and a bathroom. These in between buildings where a bit too small actually because some of the services of the northern halls are placed in the building that connects the two wings2.

In the Clinical Hospital there were two clinics, on every floor was one clinic with its own professor. They had their own lecture hall that was situated in the tower next to the in between building. In the souterrain there were storagerooms and diner halls for the staff. Also the technical functions where placed over there. On the attic were a lot of little bedrooms for the staff and on the south part of the wings a backup hospital hall. The architecture of the building was/ is perceived as a bit sober and almost primitive. Although there was central heating system, there was no elevator and not enough bathrooms and sinks. The architectural style is Dutch Renaissance, but it’s not carried out in a very inspiring way3.

In the sixties, a new building was build in the courtyard of the hospital to make an extra connection between the two different pavilions (Image 2, 6, 11, 12). It was placed in the middle of the pavilions next to the service part of the building with the staircases. After the building got a new function and became part of the faculty of arts, a new glass pyramid is added to the building and the courtyard is closed off. The pyramid got the function as the universities restaurant and a place to meet4 (Image 8, 9, 13, 16).
4.3 | Binnengasthuisterrein | Clinical hospital

Ideas behind the intervention
It is a bit unclear what the reason was for the first addition of the building on the courtyard around the sixties. It seems logical that it is build to gain extra space and also to connect the two pavilions. The only connection until then was the building in between the pavilions on the north (Image 2).

In the early 1970 the municipality of Amsterdam and the University of Amsterdam decided to move the hospital function to the edges of the city. A new build hospital replaced the hospitals in the centre of Amsterdam (Binnengasthuis, Wilhelminagasthuis and the Emma childrens hospital). In 1981 the Binnengasthuis moved to the new build AMC near Amsterdam Holendrecht6. The Clinical Hospital became part of the faculty of political science of the University of Amsterdam and they decided to upgrade the building.

The architect asked himself the question, what to do with a 19th century hospital of two pavilions, a deserted courtyard and a round extensions. The University of Amsterdam asked the architect what his ideas were about political science. He associated this with the Forum Romanum, a place for dialogue and a place for everybody. Later on the university came with the idea of a modern university restaurant and these things combined resulted in the atrium (Image 3). The idea behind the atrium was to create an empty place for people to colour it themself. This place should be the marketplace or bazaar of the Uva and the surrounding city (Image 4, 5, 6). And this happend. 1500 people could eat in the mensa within two hours. Still there were lines because there was no place to sit anymore. The mensa was and still is a place for everybody. Students, professors, residents from the neighborhood and wanderes are still there. The only thing that is not allowed is to sleep in the atrium7.

Facade
The original facade is made in the style of the Dutch renaissance, however it is pretty sober. Characteristic elements are the windows of 4 m. height to take care of the necessary amount of daylight. The overhanging gutter is carried by pretty heavy consoles. The middle buildings have a smaller gable with obelisks and a parapet. All the windows have a sill and are framed with red brick. The facade is of cultural and architectural value as being part of the Binnengasthuisterrein8 (Image 7, 9, 10).

The original south facade became an inner facade because of the building that was placed in the courtyard in the sixties. Probably to get a faster connection between the two wings of the building. The sixties building was perceived as ugly so in the nineties a pyramid was placed in front of the sixties building (Image 8). The whole courtyard was closed. The reasons for this approach were mainly functional. The concept of the closed courtyard and a roof above the courtyard was cheap. The original facades did not have to be renovated and insulated with this solution. To prevent the students and professors from noise out of the Mensa, extra glass windows were placed in front of the existing (Image 8).

The idea of the atrium was to be light and open. No heavy beams were used, but a self supporting spaceframe to carry the roof. The pyramid was made of glass panels also with the purpose to be light and open. However, for protection against the sun, the glass panels are made of milk glass (Image 11).

Although the attempt was to be as light and open as possible, the contrast between the materials of the old and new is pretty heavy and the white material got dirty throughout the years. Especially inside the atrium the contrast is very visible and the old facade dissapears more or less (Image 12).
4.3 | Binnengasthuisterrein | Clinical hospital

Structure

The structure of the clinical hospital is made of load bearing brick walls. There are hardly internal structural walls because the typology of the building is a pavilion structure. Two buildings in the middle provide the services like stairs, a bathroom and a kitchen. The width of one pavilion is around 9 m. so the span of the floor is between the structural outside walls. The space between the two wings is around 27.0 m. In the building between the two wings there are more services and in the original situation there are also structural walls and a corridor that connects the two wings (Image 1).

Somewhere in the sixties another structure is added between the two wings and the courtyard was more or less closed. The new structure was partly made of brick and the rest was a steel frame with glass panels. The structural walls in the north part of the building that connects the two pavilions are demolished. So there are no internal structural walls anymore (Image 2).

In 1989 the last structure is added. In front of the sixties building a pyramid made of a steelframe and glass is added. Also a roof is made between the two pavilions and the sixties building. The roof is made of a lightweight steel spaceframe. The courtyard is now closed (Image 3 & 10). The material is in contrast with the heavy brick.

Entrance

The hospital was build as a pavilion typology. In the middle, the hospital halls of the pavilions are connected with a middle building. In the middle building were the staircases and the entrance for the hospital halls. Two hospital halls per floor were connected to these middle buildings. These hospital halls do not have a corridor or something. It’s one big open space. The two wings of the pavilions are connected with another building that in the case of the clinical hospital at the north. This building had a little corridor to be able to go from one wing to the other. In the in between building was the office of the professors and also the entrance to the lecture halls that were situated in the round tower (Image 4 & 5).

With the addition of the sixties the entrances did not change and were still in the courtyard. The courtyard was still accessible, however with the addition of the nineties the entrances were changed. The central function of the middle buildings changed. The courtyard was closed with a pyramid in front of the sixties building so the entrances moved the outside of the middle building. The new atrium building got two entrances next to the pyramid (Image 6 & 9).

The inner structure of the buildings also changed. Instead of the big open hospital halls, smaller rooms are made with non structural walls. To be able the reach these rooms a corridor is added to the hospital halls of the building. There was already a corridor in the building between the two wings. This one shifted to the other side of the hall to be able to make new rooms on the facade side. The corridor is connected to the middle buildings were the staircases still are (Image 6, 7, 8).

With the new internal structure the building loses a lot of its original appearance. The typology of a pavilion and the accompanying way of entering the building is totally lost. The function of the courtyard is totally different than it used to be and the quality of the big open halls is gone. Like can be seen in image 7 and 8, the new corridor is necessary to reach the new rooms, however they are not really an improvement for the building. The corridor is pretty dark and there’s hardly direct daylight. On the other hand, if there’s no corridor, the area can only be used as one big open space because the only way to reach the area is by the stairs in the middle building.
4.3 | Binnengasthuisrein | Clinical hospital

Program

The original distribution of the program can be clearly recognized in the dimensions of the building. In the souterrain were storage rooms and three dining rooms for the staff. Also the heating and water facilities were situated over here. The height of the souterrain is just 2.8 m. On the first floor and second floor were the hospital rooms. These rooms have a height of 4.7 m with windows of around 4 m. height for the necessary amount of daylight. On the attic were sleeping places for the male staff of the hospital and there was a backup hospital room. The height of this floor is 2.2 m with a pitched roof on top of it (Image 1).

With the additions and the change in function the hospital rooms became a library and faculty rooms. The structure of the four open halls connected with an entrance building does not fit the new functions of the university anymore. On the second floor the big open halls are divided into smaller rooms and a corridor is added. The height of the structure inside is kept the same. Only non structural inner walls are placed. The function of courtyard changed into a restaurant. A spaceframe roof is added to the pavilions with a height of around 11 m (Image 2).

Conclusions

The building has cultural historical value because it’s part the ensemble of hospital buildings that were build during the modernization of the Binnengasthuisrein in the nineteenth century. The typology of the hospital is a pavilion structure which was a very often used structure for hospitals in that time period. The former inner courtyard is very typical for the urban structure that is part of the character of the Binnengasthuisrein[10].

In the sixties and nineties this courtyard is closed and became an atrium. The reasons for this approach were very functional. The architect wanted to cover the ugly sixty six buildings and it was cheaper to close the courtyard than to renovate and insulate the original facade. The used materials were very light and open for that time, however nowadays the materials became ugly and dirty over time and the contrast with the old brick is pretty big. The atrium building does not have that much architectural value.

However, the atrium building has a lot of intangible cultural historical value. The idea behind the atrium was to create an empty place for people to colour it themself. This place should be the marketplace or bazaar of the Uva and the surrounding city, and this happend. The used materials were very light and open for that time, however nowadays the materials became ugly and dirty over time and the contrast with the old brick is pretty big. The atrium building does not have that much architectural value.

The pavilion typology of the building and the cultural historical value it has as part of the ensemble of hospital buildings on the Binnengasthuisrein.

+ The building is designed with special attention for daylight and sun. So the wings of the building are perfectly orientated on the sun.
+ The dimensions of the building are big and suitable for residential purposes.
+ The concept of the atrium and the intangible cultural historical value it has for the area and surrounding areas.

Weaknesses

+ The original image of the building is gone when the courtyard is closed with the atrium building.
+ Although an addition can be a good solution for a building, the contrast of the materials of the old and new building is too big and heavy. The quality materials of the atrium became bad and ugly over time.
+ The reasons for the atrium building were very functional. The building itself does not have that much architectural value.
+ The new rooms, the corridor that is made to connect the rooms and the new entrance structure is weak. It is not an improvement for the building.

Opinion about intervention | building

Strengths

+ The original image of the building is gone when the courtyard is closed with the atrium building.
+ The building has cultural historical value and it has as part of the ensemble of hospital buildings on the Binnengasthuisrein.
+ The building is designed with special attention for daylight and sun. So the wings of the building are perfectly orientated on the sun.
+ The dimensions of the building are big and suitable for residential purposes.
+ The concept of the atrium and the intangible cultural historical value it has for the area and surrounding areas.

Opportunities

+ The original image of the facade can be restored by demolishing the atrium building. This is also necessary for the needed amount of daylight for dwellings. However the atrium building has intangible cultural value. Replacing the atrium pyramid with a smaller one and independent from the building can be a solution.
+ The courtyard can be opened up and thus a part of the urban structure can be restored.
+ The original image of the facade can be restored by demolishing the atrium building. This is also necessary for the needed amount of daylight for dwellings. However the atrium building has intangible cultural value. Replacing the atrium pyramid with a smaller one and independent from the building can be a solution.

Threats

+ The entrances to the dwellings are a problem if the original typology of the building and the way of entering is used. The width of a pavilion wing is just 9 m. So if the area is subdivided into smaller rooms, it’s difficult to reach the new areas.
+ The atrium building symbolizes a certain period of the Binnengasthuisrein. There are a lot of different architectural styles in the area and this is typical for the Binnengasthuisrein. By demolishing the atrium building one little part of the architectural development of the area is gone.
4.3 | Binnengasthuisterrein | Clinical hospital possibilities

+ The original pavilion structure of the building can be restored with demolishing the atrium building. This makes the building more suitable for residential purposes.
+ The original places in the middle building can be used for the entrances for the dwellings.
+ The left over space can be used as shared spaces or communal spaces like in the original situation (e.g. laundry, workplace).

+ The building has a lot of flexibility. The facade walls are structural and there are hardly internal structural walls. So different dwelling typologies and sizes of the dwellings can be used if necessary or wanted.
+ The building is suitable for different target groups because of its flexibility. The program is not restricted by structural dimensions.
+ The dimension of the building are useful for residential purposes.
+ A part of the bel etage can be used for communal functions or public function like retail and little offices.

+ The new independent structure can be used to get more interaction with the surrounding area and develop the idea of a plaza in the middle of the Binnengasthuisterrein even more.
+ The courtyard can be used combined with the bel etage as support for the commercial and or communal functions.

+ Vertical acces points can be added to be able to make the acces to the dwellings without using a corridor.
+ It is also possible to add vertical acces points and a corridor, hower this limits the width of the rooms (to 3.5 m.)
+ Another possibility is to make dwellings from facade to facade and make acces to the dwellings from the outside of the building.

+ The original pavilion structure of the building can be restored with demolishing the atrium building. This makes the building more suitable for residential purposes.
+ The building itself does not have that much architectural value.
+ The original image of the facade can restored by this intervention as well as a part of the original urban structure.
+ A new independent smaller pyramid or different shape can be made to keep the intangible cultural value of this place. New light and open materials should be used like the idea was of the original atrium building.

+ The unusual spaces of the building like the lecture hall can be used for communal functions like childcare, laundry or working places for the whole building.

+ The original atrium can be demolished. The building itself does not have that much architectural value.
+ The original image of the facade can restored by this intervention as well as a part of the original urban structure.
+ A new independent smaller pyramid or different shape can be made to keep the intangible cultural value of this place. New light and open materials should be used like the idea was of the original atrium building.
In 1897 a new second hospital was built on the Binnengasthuisterrein, the second surgical clinic. Because the area to build on was too small for another pavilion structure hospital like the clinical hospital, the second surgical hospital got a corridor system. In the previous designs of the hospitals on the binnengasthuisterrein the attic was used as sleeping places for nurses. However, in the surgical clinic there were deliberately no sleeping places for nurses in the attic. So separated sleeping places were added to the area, the nurses’ homes. The building is next to the second surgical clinic. The nurses’ homes building is also a corridor system with rooms on both sides of the corridor (Image 2, 3, 5). The original building had 40 rooms with place for 45 beds. The groundfloor was used as a kitchen, dining room and parlor (Image 4). During the building of the nurses’ homes, the municipality of Amsterdam decided to shorten the workshifts of the nurses to a maximum of ten hours a day. The amount of nurses increased so a new building with 50 one-person rooms was added to the nurses’ homes. Because of the corridor structure, the facade ran the risk of being a bit monotone. However, the architect managed to make them lively (Image 1).

The architecture of the second surgical clinic and the nurses’ homes is totally different than the architecture of the clinical hospital that was build ten years earlier. The big symmetrical floorplans of the pavilions made place for a more lively structure. The buildings are made in a more simpler architectural style instead of the Dutch Renaissance. The building adapts more to the possibilities of area.

When in 1911 the maximum of work hours for nurses decreases again from ten to nine hours per day, the needed amount of nurses increases. A new building was necessary and the nurses’ homes got extended again in the same style as the previous nurses’ homes. Four buildings were demolished to be able to extend the nurses’ homes (Image 1 & 8). In 1961 the Hotel des Pays Bas in the Doelenstraat is closed. In the years after it is sold and finally it is demolished with the purpose to make a new bank for the dutch bank. Hotel des Pays Bas was adjacent to or almost in between the nurses’ homes and the second surgical hospital. From that point on there’s just a hole in urban structure that’s used as a parking lot (Image 6 & 8).

In 1986 the Binnengasthuisterein is connected with the Kloveniersburgwal. A little part of the nurses’ homes is demolished and an arch is made in the closed walls of the buildings. A new street (Vendelstraat) connects the area with the Kloveniersburgwal (Image 8, 9).
Ideas behind the intervention

The reasons for the interventions or extensions are pretty clear. Because the government changed regulations about the maximum time of a work shift, more nurses were necessary for the clinics. So the nurses’ homes needed to be extended. A first extension is made around 1900 (Image 1 & 2) and a second extension around 1913 (Image 3). The architectural style is different than the previous used style of the Dutch Renaissance and the pavilion structure. The building adapts more to the possibilities of the area.

The architect chose to use a corridor system for the second surgical clinical as well as for the nurses’ home. He tried to make the facades as lively as possible despite its’ length. The first and second extension are made in the same style as the original facade.

Facade

Because of the long corridor structure, the facade ran the risk of being monotone. However the architect still tried to make it a lively facade with different heights, different heights of the gutters, different floor heights, dormer windows with far overhanging roofs and decorative brickwork.

The extensions are visible in the facade wall. One part of the first build part of the nurses’ homes has a different floor height of 4.5 m whereas the other parts of the building have a height of 3.5 m. This is clearly visible in the facade. This part of the building had a collective function as kitchen, meeting place and parlor. The windows on groundfloor are higher than the windows of the buildings next to it (Image 5 & 6).

The style elements of the Dutch renaissance like used in the other hospital design on the Binnengasthuisterrein disappeared. The architect tried to use simple and “honest” architecture based on that time period and based on the way the architecture was made headed by Berlage. Used decorations are not based examples of the past.

The aim of the architect was to build in the same style, however he second extension is clearly visible in the facade. The building is lower, the windows are smaller and closer to each other. This is based on the small one person rooms behind it, whereas in the building of 1897 the rooms are bigger (Image 7). The style however in which the building is build is the same as the previous nurses’ homes.

Although there is an entrances in the facade on the Nieuwe Doelenstraat and Kloveniersburgwal, nowadays they are not used anymore. The entrances on the Kloveniersburgwal are used for the dwellings. The facade is pretty closed and there’s not much interaction with the liveliness on the Nieuwe Doelenstraat (Image 8 & 9). Especially the later added white fences give the facade an even more closed character. In front of some of the windows on street level the original black fences are still there, made in Art Nouveau style (Image 9).

The facade wall of the nurses’ homes is of urban value. It is seen as the edge or the scene of the Binnengasthuisterrein. The edge of the whole area was pretty closed to protect it and keep it a closed area. Because of the closed facade wall along the Nieuwe Doelenstraat and the Kloveniersburgwal the Binnengasthuisterrein is still a pretty closed area. Later on some small passage are made to open up the area a bit (Image 9).
4.4 | Binnengasthuisterrein | Nurses’ homes

Structure

The structure of the nurses’ homes is made of load bearing brick walls of 44 cm thickness of the outside walls. On the inside the walls of the corridor are also load bearing and they have a thickness of 32 cm. The load bearing structure is typical for the typology of the building with the corridor.

On both sides of the corridor are rooms from the corridor to the facade with a depth of 3.93 m. And the corridor itself has a width of 1.93 m. The distance from facade to facade is around 11.93 m. including the walls. The grid of the structural walls perpendicular on the facade differ. In latest build part of the building on ground floor the distance between the walls is 5.3 and 5.2 m. Between the walls are two windows. On the other floors, an extra non structural wall is placed in between the two structural walls so behind every window is one room. In the other parts of the building the grid differs more.

On the ground floor, in the first part of the nurses’ homes built in 1897, a part of the structural wall of the corridor is removed and replaced with columns so the room is from facade to facade (Image 1).

Entrance

The nurses’ homes had five entrances in the original situation around 1913 plus the two extensions. Three entrances are situated on the inner courtyard, one was situated on the Nieuwe Doelenstraat and one was situated on the Kloveniersburgwal. The focus of the building and the entrances however is on the inner courtyard. The facade wall of the building was made to close the Binnengasthuisterrein, so the main focus of the building is also on the inside of the Binnengasthuisterrein, the courtyard.

The first part of the nurses’ home from 1897 was build with a corridor system. So the extension from 1900 and 1913 could easily be connected to the existing corridor. Because of the differences in floor height of the building from 1897 and the other buildings, the extensions can be recognized in the corridor because of there are little stairs (Image 3 & 4). These differences are based on the differences in program of the original situation and can also be recognized in the facade.

The adjacent building of the nurses’ homes also has a corridor system. Although the buildings are connected physically, the corridors are not, so there’s no internal structure between the nurses’ homes and the second surgical clinic. The floorheights of the second surgical clinic are also different than the floorheights of the nurses’ homes.

There are five staircases connected to the corridor (Image 2, 5 & 6). On both sides of the corridor the nurses’ rooms are positioned. The corridor itself has a width of 1.93 m and from the beginnen until the end the length of the corridor is around 93 m. Like can be seen in image 3 & 4, the corridor is pretty small and there’s hardly daylight. Only in the middle of the building is one place where daylight enters the corridor.

The corridor is a typical element for this type of building and also for the other hospital buildings on the Binnengasthuisterrein, except the clinical hospital. However, for residential purposes this corridor can cause problems because of the length of it and also because of the limited amount of daylight.
Program

The main program of the nurses’ homes was to provide sleeping places for the nurses. However in the building from 1897 on the ground floor and the first floor the program differs. On ground floor there was a kitchen, a dining room and a parlor. The difference in program is still visible in the floor heights. The floor height on groundfloor of the 1897 building is 4.5 m. On the first floor there were two hospital rooms and two rooms for the director. This is also still visible in the different floorheight of 3.5 m. The rest of the building were 40 sleeping rooms for the nurses (Image 3).

The first extension of 1900 had 50 small sleeping rooms and a tower. The second extensions of 1913 had also mainly sleeping rooms. Only the room behind the baywindow had a different function as conference room. The dimensions of height in the first and second extension are the same. The floors have a height between 3.30 and 3.55 m [Image 2 & 4]. Like can be seen in the section [Image 2, 3, 4] and floorplan [Image 1], all the rooms are situated around the corridor, so there’s hardly daylight in the corridor. The quality of the corridor is not that good.

Conclusions

The building has cultural historical value because it’s part the ensemble of hospital buildings that were build during the modernization of the Binnengasthuisterrein in the nineteenth century. The inner courtyard that’s defined together with the second surgical hospital is also very typical for the urban structure that is part of the character of the Binnengasthuisterrein. The building is part of the facade wall that makes the Binnengasthuisterrein a closed area, so the building is also of urban value. At the end of the nurses’ home there’s the parking lot that breaks the urban structure. It’s a result of a demolished building in the sixties.

The first part of the building from 1897 is made together with the second surgical clinic. Two extensions are build in 1900 and 1913. The style of the facade is different from the previous build hospitals on the area which were build in the Dutch renaissance style. The style of the nurses homes is described as transitional architecture that followed the ideas of Berlage. The two extensions are made in the same style. There’s continuity in the facade.

The buildings exists of load bearing brick walls. The direction of the structural walls can cause problems with a transformation. The walls of the corridor are structural. Because of the shape and extensions of the building, there’s not a clear structural grid. The distance from facade to facade is 11 m. There a lot of different dimensions in the building which can be used to make a divers program with divers dwelling typologies.

The building has a corridor structure used to be able to enter the rooms. The corridor has a length of around 93 m. and there’s almost no daylight. The length and lack of daylight causes a problem for residential purposes. Breaking the corridor and adding vertical access points can be a solution to make a more private entrance for the dwellings. The quality of the corridor is not that good, although it is typical for the building structure.

The original differences in program are still visible in the facade, the structure of the building and the floor heights. The differences in floor height and structure can be used for diversity in program and to make shared or communal areas.

The building has a lot of opportunities to transform and use for residential purposes, probably together with the second surgical clinic. There’s no connection yet and although the scale is a bit different, it has the same typology with a corridor. Together it can become a residential complex with shared and common areas based around a nice courtyard.

Opinion about intervention I building

Strengths

+ Cultural and architectural historical value of the building and its typology with the corridor.
+ The inner courtyard is of urban historical value very typical for the whole Binnengasthuisterrein.
+ The façade wall has urban value as part of the wall that closes the Binnengasthuisterrein.
+ The corridor is typical for the building and the atmosphere.
+ Althought the several extensions, the appearance of the building coherent. The extensions are made with continuity.

Weaknesses

+ The lenght of the corridor and the amount of daylight is a problem if the building is used for dwellings.
+ The dimensions of the building give a lot of opportunities for residential purposes with a variety of program that fits the structure of the building.
+ The spaces with unusual dimensions can be used for communal and commercial functions.
+ The ground floor zone can be used to get more interaction with the Nieuwe Doelenstraat.
+ The building with the second surgical clinic it can become a residential complex with shared and communal functions around a nice courtyard.
+ Combining the corridor with areas of shared functions can solve the problem of daylight.

Opportunities

+ The dimensions of the building give a lot of opportunities for residential purposes with a variety of program that fits the structure of the building.
+ The spaces with unusual dimensions can be used for communal and commercial functions.
+ The ground floor zone can be used to get more interaction with the Nieuwe Doelenstraat.
+ Together with the second surgical clinic it can become a residential complex with shared and communal functions around a nice courtyard.
+ Combining the corridor with areas of shared functions can solve the problem of daylight.
+ Probably the original corridor building can be demolished or integrated in the new part to connect with the surgical clinic.

Threats

+ The structure of the building can become a problem. It will be very expensive if a lot of structural interventions are necessary.
The second surgical clinic and the nurses’ homes can probably be connected. The typology of both of the buildings are more or less the same. Only the scale is different. The approach how to deal with the corridor can be the same. A diversity of dwellings can be made in both the buildings. The unusual spaces can be used for common/shared and commercial/office functions.

The unusual spaces around the plaza of the Binnengasthuisterrein can be used for public or communal functions to get more interaction with the area.

On ground floor the second surgical clinic and the connection between the two buildings can be opened up like it was in the original situation. The inner courtyard is than accessible from different directions.

On the place of the parking lot a new building can be made to partly increase the facade wall like it once was. The building can be used for a connection between the nurses’ homes and the 2nd surgical clinic. Probably the original corner building can be demolished or integrated in the new part to connect with the surgical clinic.

Different scale of the two buildings can be used for different target groups. Bigger scale of the 2nd surgical clinic for more luxury dwellings and families. Smaller scale of the nurses homes for starters and cohousing program.

Use the existing staircases as access points. Break the corridor. Make dwellings from facade to facade. Make different dwelling typologies with different sizes. Use unlogical spaces for shared/common functions (Cohousing program). Combine corridor and shared space to keep character the character of the corridor.

The interaction with the Nieuwe Doelenstraat can be increased with a less closed facade and less fences. Shared or common functions and/or commercial/office functions can be placed in the part of the building with a floor height of 4.5 m. The original function was a shared and common one.
To get more into depth on the content of residential architecture, in the third part of this report research is done about Cohousing or some forms of shared living. The aim is to discover what Cohousing exactly is, what the ideas are behind this type of living and for what target groups it can be used. Hopefully this will result in some recommendations in general about Cohousing and some suggestions how this type of living can be a useful program for the transformation of the buildings on the Binnengasthuisterrein.

- Introduction
- Six examples
- Conclusions and recommendations
5.0 | Research on Cohousing |

Introduction

The focus of the housing program for the Binnengasthuisterrein will be on Cohousing. Another term that is often used is shared living. Unfortunately there’s not that much literature about Cohousing, so most of the information will be from examples or studies about Cohousing projects. A short research is carried out to find out what Cohousing is and what the ideas are behind Cohousing. The aim is to discover whether the ideas of Cohousing can be applied on the Binnengasthuisterrein. This chapter will give a short overview or information that can be found on the ideas behind Cohousing. A few examples are analyzed to get a better understanding of it.

Cohousing

Cohousing is an alternative way of living. People share several common functions. This can vary for instance between a central meeting place, a kitchen, a laundry, a central garden or a place to work. The dwellings in a Cohousing project can be rentals but also owner-occupied property. Whereas in the eighties the reasons to start or make a Cohousing project were mainly ideological, nowadays the reasons vary more between social, financial and ecological. Also the scale of the project can vary. In some examples the project is on the scale of a building. Image 1 is an example of one of the first projects of Cohousing in Utrecht. Four dwellings share one common area that can be used for different purposes. The communal area is just a bit smaller than one dwelling. Another examples of a project is on an urban scale. The common elements are for instance squares or courtyards. Image 2 is an example from Denmark. The focus of this research is mainly on the scale of a building.

Some examples

Cohousing is a form of living that is used by different target groups. Whereas family areas like in Image 2 are pretty rare, for other groups like elderly or students it’s more common to share several functions in a house. It is important to understand the degree of privacy people want or need and the type of functions they want to share. This differs probably by target group.

Image 3 and 4 are a scheme or an illustration of a Cohousing concept with family houses, houses for people with one child and single households. Four different stages of privacy can be recognized. The first one is the common or public stage, the outside world. The second stage is the private stage. This part contains sleeping places, bathrooms, a kitchen, but also a small living area. This part is only for the family. The third part in this example is the shared stage. Two houses share one bigger living room. The last stage is the communal area. All the different groups share a big communal area. The building structure makes sure that there’s enough privacy for everybody and the degree of interaction varies. With this scheme also target groups can be combined, like for instance the family house with a smaller house for the grandparents and a shared living.

Image 5 is an illustration of several student housing complexes in Denmark. Although on a smaller scale, the same levels in privacy can recognized as with the previous illustration. The first example only shares the bathroom and toilet and the fourth example shares bathroom and living room. The stages of privacy are limited. However the second and third example are more interesting. The two rooms in the second example are separated with a shared living and bathroom that can be reached from both the dwellings. With the third example the stage of sharing and privacy are more or less the same as with example of Image 3 and 4. Two rooms share one bathroom and four rooms share one living room. So again there are three stage of privacy. The fourth stage is the hallway and shared areas with the rest of the building.
5.0  | Research on Cohousing |

**R50 | Heide & Von Beckerath architects**

This building is an examples of a Cohousing project in Berlin for families. In this project, the aspects of Cohousing already starts in the design fase. The building is designed as a very flexible building. Every floor is divided into three apartments without a specific floorplan and with a lot of windows in the facade. The balcony is placed around the whole building (Image 6). The new residents could adjust the floorplan to their whishes and needs. In germany, one aspect of Cohousing is that the residents are part of the design process and could make the floorplan to their own needs. In this example the shared or communal areas are not on the level of a dwelling or group of dwellings but on the level of the building and the design process. Shared and communal areas in the program are the garden, the all-round balconies (Image 6), the basement, a two-story community space for multiple uses, a laundry, a workshop, a roof terrace and a summer kitchen on top of the building (Image 3–5, 7). So within the dwellings itself not much is shared, but on the level of the building there are shared functions. The gradation in privacy is pretty strict. The communal areas are on ground floor and the top floor and the balconies. The other floors are only private areas (Image 7).

**60 Richmond housing cooperative | Teeple architects**

The concept of this building is that there’s a shared restaurant and training kitchen on the ground floor that needs to be maintained by the residents (Image 13). The inspiration for the design were social spaces dedicate to food and its production. The vegetables, fruits and herbs for the restaurant grow on the sixth floor of the building (Image 11 & 12). There are different dwelling typologies in the building. It varies between 1 room apartments for singels to 4 room apartments for families. Besides the restaurant and the training kitchen, there’s also a communal area on the first floor with a kitchen and a terrace. The function of this area is not clear, it can be used for different purposes (Image 14). On the first floor is also a laundry service for the whole building that can be used by the residents (Image 14). The rest of the building is just normal apartments. The residents do not share any areas on the level of a dwelling.

**Mount pleasant | Peter Barber**

This building is a sheltered housing project for homeless street people. So the time of staying in an apartment is temporarily. The courtyard is the principle circulation of the project and the main meeting space. It is the social hart of the project with little spots for people to sit (Image 20). From the courtyard people have direct acces to a laundry, a shared kitchen, a consulting room and the apartments (Image 17). The apartments are divided in different clusters. When entering a cluster, there’s first the shared living area with a kitchen. The sleeping rooms and the more private areas are connected to this living area. Dependent on the building structure, every living area is connected to three to four sleeping rooms (Image 18). Compared with the two previous examples of 60 Richmond housing and R50 this project has more gradations of sharing. Besides the overall communal areas as the courtyard, laundry, consulting room and kitchen, every cluster has its own shared space. So the communal functions are not only limited to the building as a whole but are also applied on the scale of the dwellings. This has to do with the typology of the dwellings and the target group. All the areas are just one little room with a bed and not full-scale apartments.
Share house Funabashi | Kasa architects

The share house Funabashi is a shared house capable of accommodating up to 45 residents. Besides the private living accommodation, the building offers also a lot of communal amenities like a kitchen, a dining room, a study room, a library, a lounge or living room and a roof terrace (Image 1–4). The way of sharing is again different than in the previous examples. All of the private areas are distributed along a corridor on three different levels of the building. On every level only the lavatory is shared. All the other functions are also communal but they are situated on the ground floor and on the roof of the building. The private areas are 15 m² and do not have a kitchen or own bathroom. So individual dwellings do not share a bathroom or kitchen with for instances four other private areas. The communal amenities are shared with the whole building. The level of sharing and type of shared amenities are pretty focused on a typical target group. This type of Cohousing can be suitable for young people or starters that cannot yet pay for a full-scale apartment. However the size of 15 m² is so small that it almost becomes student housing. The type of shared areas like a study room, library and place to work can determine the target group. The same structure of sharing can be used with bigger apartments for different target groups.

Share house LT Josai | Naruse Inokuma architects

The LT Josai share house is made with communal areas for eating, cooking and relaxing that encourage residents to interact with each other in different ways (Image 7–10). The house is made to respond on the increasing demand in Japan for houses where unrelated individuals share kitchens, living spaces and bathrooms. The individual bedrooms are placed across the building’s three levels. The void in between the bedrooms houses an open living, a place for dining, a rug space and a kitchen. Because this building was a new build project it was possible to place the individual spaces in a three dimensional way so the remaining or left over space was used for the communal areas with different sense of comfort. The sequence of areas is important. The middle of the building on the ground floor has a big dining table to provide seating for groups (Image 11). The kitchen, sitting room and a rug place offers alternatives for smaller gatherings. The corner of the living room and spaces by the windows are good for spending time alone. This gives some gradation of privacy that encourage residents to interact with each other in different ways. The bedrooms have a size of 7.2 m² and the total floor space per resident is 23 m². The architect states that this amount of square meters per person is favourable compared with many one-room apartments.

Social housing | AllesWirdGut

This project houses a lot of different dwelling typologies varying from single – person apartments to family apartments. The aim of the project is to facilitate different lifestyles. Two examples are interesting from a Cohousing perspective. Image 19 is a floorplan of a single household apartment. Beside the apartment itself there’s also a communal area that connects the different apartments. The apartment is actually in between the communal area and the outside. No functions are shared and the communal area is not used as a transition zone but is an addition for the private areas. Image 20 is a floorplan of an area with 10 bedrooms and a communal area. In this plan all the functions are shared. There’s a gradation in privacy or amount of functions shared. In the middle of the area is a big open living space, a dining table and a kitchen. To the edges of the area on both sides there’s are the bedrooms and toilets. Here is also extra living space to be able to get some privacy. In this examples the gradation in privacy is clearly visible. One cluster of bedrooms share certain functions and have some shared space. For the other cluster it’s the same and together they share another living room, dining place and kitchen.
5.0 Research on Cohousing

Conclusions and some recommendations

Based on the different case studies, four patterns, concepts or typologies of shared living can be recognized. The first one is mainly used with family housing. The families share certain functions, but the dwellings are private. So within a building or a group of buildings, big functions like childcare, workplaces or a rooftop terrace are communal (see typology 1).

The second typology is used more often with starters, just graduated people and singles. The private areas are relatively small and a lot of functions are shared and communal. To provide privacy, within the structure of the building different levels of privacy are arranged (see typology 2).

The third typology is the same as typology 1. However, the difference is the type of communal functions. All the communal functions are on the ground floor and/or first floor and the private areas are on a different floor. This concept can be recognized in student housing or housing for elderly. Of course there are some small differences in the shared program, but the concept is the same. Within countries with a necessity for high densifications this typology is also used for starters because it provides cheaper rooms (Japan, Hongkong) (see typology 3).

In the fourth typology the communal and shared functions are only additional. It can be used with different dwelling typologies. The idea is that all the functions are in the dwelling itself as well, but the communal and shared parts are only used if someone wants to. It’s more a concept for singles or older single people that want their privacy, but also in high interaction with others. Also a high level of services in a building can be part of this typology like prepared diner, gym, grocery, cleaning et cetera (see typology 4).

Recommendations

**Organization**

- A group of dwellings share a common area and form a cluster
- Several clusters make the building
- Bigger functions like childcare or workplaces are shared with more clusters
- Smaller functions are shared with dwellings
- Full-amenities like housekeeping and laundry will be included in rent or building services
- Place communal functions central (not at the end of the hallway)
- Design space for interaction
- Transition zone between dwelling and outside

**Diversity**

- Use a diversity in sizes of dwellings
- Use a diversity in target groups and dwelling typologies

**Social**

- Open to having new experiences and forming new relationships
- Respectful of others’ differences, needs and privacy
- Supportive of each other’s well-being and growth
- Respectful to the neighbors and and existing culture of the area
- Valuing personal freedom
- Recognizing that everyone has the need for private space and alone time
- Organize the community by application

Type 1: Families
- Sharing and communal areas on the level of the building
- Communal areas on ground and first floor
- Rest of the building are apartments without shared functions
- Laundry
- Communal space | Different purposes
- Roof terrace
- A place to work | Workshop
- Childcare
- Different apartment typologies from 1-4 room apartments

Type 2: Starters, graduates, singles
- Sharing and communal areas on the level of the dwelling
- Communal areas can be on all floors
- Levels of privacy
- Shared areas with cluster of dwellings
- Communal areas with the clusters together
- Laundry
- Communal space | Different purposes
- Living room
- Kitchen
- Bathrooms
- Place for dinner
- A place to work | Workshop
- 1 Bedroom or little apartment per person, the rest is shared or communal

Type 3: Students, elderly, starters
- Communal areas on the level of the building
- Communal areas are on ground floor
- Share areas with cluster of dwellings (Only lavatory)
- Communal areas with the clusters together
- Laundry
- Communal space | Different purposes
- Living room
- Kitchen
- Bathrooms
- Place for dinner
- A place to work | Workshop
- 1 Bedroom per person, the rest is shared or communal

Type 4: Luxury sharing
- Communal areas on the level of the dwelling
- Additional communal area to meet people or work outside the dwelling
- Nothing is shared
- Can be 1 – 4 room apartments

T: [http://www.lvcw.nl/?choice=160](http://www.lvcw.nl/?choice=160)
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After the research and analysis part of my graduation studio I chose to focus my design on the Nurses’ homes. The goal of my project was twofold:

The first goal was to design a building (and area) with a program of shared living and working by making use of the qualities of the existing building and surroundings.

The second goal was to research by design what kind of interventions can be made and additions can be added in and to the existing monumental building.

ENSEMBLE XS
SHARED LIVING AND WORKING

+ Introduction – Concept
+ The exterior
+ The ground floor zone
+ Facades and floorsplans
+ Living and sharing
+ Materialization and technology
SHARED LIVING AND WORKING AREA
SHARING CITY IN THE CITY
DIFFERENT TARGET GROUPS
DIFFERENT LEVELS OF SHARING
CONTINUOUS ROUTING IN COURTYARD NURSES’ HOMES
RESTORED FACADE WALL NIEUWE DOELENSTRAAT
TRANSPARENT GROUND FLOOR ZONE
7.2 | Concept | Nurses’ homes

**COMMUNAL GROUND FLOOR ZONE**
- Places to work
- Places to meet
- Places to sport
- Places to eat

**BUILDING IS SPLITTED INTO 3 PARTS**
- Shared area
- Residential area
- 6-9 dwellings

**SHARED AREA**
- Workplaces
- Kitchen
- Storage/laundry
- Place to meet

**TYPICAL ROOM 30-35 M2**
- Shower, toilet, kitchenette, storage, bed
- Free space 20 M2

**TRANSPARENCY | VISUAL CONNECTION**
- Interior and courtyard

CONCEPT NURSES’ HOMES
7.2 The exterior | Nurses’ homes

BIRDSEYEVIEW - ADDITION NURSES’ HOMES
7.2 | The exterior | Nurses’ homes

BINNENGASTHUISSTRAAT – ENTRANCE COURTYARD
7.2 | The exterior | Nurses' homes

Nieuwe Doelenstraat - Entrance Binnengasthuisterrein
The exterior | Nurses' homes

COURTYARD NURSES' HOMES
The ground floor zone

Nurses' homes
7.3 The ground floor zone | Nurses' homes

ENTRANCE CORNER NIEUWE DOELENSTRAAT
The ground floor zone | Nurses’ homes

IMPRESSION WORKPLACES
7.3 | The ground floor zone | Nurses' homes

COMMUNAL AREA
7.3 | The ground floor zone | Nurses' homes

IMPRESSIONS INTERVENTION NURSES' HOMES
7.4 | Facades – plans – sections | Nurses’ homes

FACADES NURSES’ HOMES + ADDITION

Facade Nieuwe Doelenstraat

Facade Binnengasthuisstraat

Facade Coutryard
7.4 | Facades - plans - sections | Nurses' homes

SECTION
7.4 | Facades - plans - sections | Nurses' homes

TYPICAL FLOORPLAN
7.5 | Living and sharing | Nurses’ homes

TYPICAL FLOORPLAN 1-100 - SHARED SPACE
7.5 | Living and sharing | Nurses’ homes

TYPICAL ROOM 30-35 M²

- Sink
- Shower
- Toilet
- Storage
- Kitchenette
- Free space 20 M²
- Bed

Living and sharing nurses’ homes
7.6 Materialization and technology | Nurses' homes

ELEVATION AND SECTION NEW BUILT PART OF THE BUILDING
7.6 | Materialization and technology | Nurses' homes

WINDOW PART AND HORIZONTAL SECTION NEW BUILT PART
7.6 | Materialization and technology | Nurses’ homes

TECHNICAL SECTION NEW BUILT PART OF THE BUILDING
7.6 | Materialization and technology | Nurses’ homes

Details 1, 2, 3

1. Concrete tile 20 mm
2. Water drainage
3. Thermal insulation 150 mm 1.5% gradient
4. Bubble deck concrete floor 340 mm
5. Plaster finish white 10 mm
6. Plywood layer 12.5 mm
7. Galvanized steel cladding 1 mm

8. Plywood layer 12.5 mm
9. Steel framing structure 6mm + insulation
10. Aluminium window frame
11. Double glazing
12. Concrete stone grey 45x450 mm
13. Concrete floor finish 30 mm
14. Floor heating and insulation
7.6 | Materialization and technology | Nurses' homes

ELEVATION AND SECTION INTERVENTION
Details 4,5

1. Existing wall solid masonry 330 mm
2. Internal insulation 100mm
3. Concrete floor finish 30 mm
4. Floor heating and insulation
5. Insulation 2x 100 mm
6. Floorbeam 400 mm
7. Plaster finish 10 mm
8. Plywood layer 12.5 mm
9. IPE 400
10. Galvanized steel cladding 1 mm
11. Plywood layer 12.5 mm
12. Steel framing structure 6mm + insulation
13. Aluminium window frame
14. Double glazing
15. IPE 400
8.0 Introduction

The past year I’ve been working on a research and design project in the studio Heritage and Architecture. Within this studio, the emphasis is on the theme of heritage and housing. The focus of research and design is mainly on the city centre of Amsterdam. The assignment I chose to focus on is to design a concept for the transformation of the Binnengasthuisste- rin in the city centre of Amsterdam. The Binnengasthuissteerin is a heritage site of a former hospital that is located in the buffer zone of the Unesco World heritage canal district.

I’ve tried to combine this graduation project with a three of my personal interests. One of the interests is the adaptive reuse and transformations of (historic) buildings and the used intervention technique, approaches or styles. The stock of monumental architecture in cities like Amsterdam and Rotterdam is enormous. For several different reasons functions disappear or move to other buildings and the (monumental) buildings become vacant. This is an opportunity for adaptive reuse and transformations of the buildings. One of my other interests is housing and the liveability of inner cities. City centres become more and more a place for offices, shops and hotels and the prices of houses are very high. For young people, less rich people, single households and families it’s getting very difficult to live in a city like Amsterdam. I think this is a pity. The last interest has to do with a new tendency of sharing. All these new services like Car2go, Airbnb, Peerby et cetera are very popular in cities.

From the beginning of my graduation project, I was curious whether these concepts sharing can be translated to housing and architecture and can be combined with adaptive reuse and transformations of monumental buildings. To get a better understanding of these topics, in the first part of this graduation studio I did research on transformations and intervention styles or approaches. A second part of the research I did was on shared living and cohous- ing. A last part of the research was a site analysis with a strong focus on the past transforma- tions of the area and on some of the buildings on the Binnengasthuissteerin. Together, all the findings were the starting point for my design.

The goal of this reflection paper is to give insight in the design product and process and look back if the chosen approach and method worked. The next four themes will be discussed: 1. Research vs Design, 2. Theme graduation lab vs design, 3. Methodological approach studio vs approach design and 4. Social relevance vs Design.

2.0 Research vs Design

The first starting points for design came from the site analysis. I chose to use the Nurs- es’ homes as a case for my design ideas. Based on a SWOT analysis of the building and the area around it I’ve formulated “what” I wanted to do with the building and “why”. One of the first starting points was to get more interaction with the surrounding area, the Nieuwe Doelenstraat. This facade was very closed even with fences in front of the windows. The ground floor zone could be used as a shared and/or common area. The original function of this ground floor was also partly common. The place of the parking lot could be used for a new building to restore the original facade wall. To get more interaction in the courtyard, the original entrance underneath the second surgical clinic could also be opened up.

A second starting point derived from the literature research is based on founding’s about shared living or cohousing. In all the case studies I did it was pretty clear that there are different stages or levels of sharing. It’s important that people still feel responsible for the shared areas. So one strategy can be that a big building is divided into smaller parts with a number of around 8-10 dwellings with a shared area. Together, all these smaller parts share also different functions on for instance the ground floor. A disadvantage of this part of the research is that all the case studies are projects abroad. The culture of these countries and cities, like for in- stance Japan, is totally different than the culture in Holland. So it can be questioned if the results can be generalized and used for projects in Amsterdam.

The last starting point for design was to see what kind of intervention styles or methods could be used to do interventions in a monumental building facade. And also what kind of architecture or method could be used to build a new building adjacent to the monumental buildings. Different in- tervention styles that where described in the literature part where used to test whether it could be a solution for the interventions. It was used for the “research by design” approach.

The three starting points for design, based on the research are elaborated in the final design. However, in the beginning I was focussing too much on the concept of the shared program. By trying a lot of different interventions in the existing building and design options for the new build- ing I was trying to find a “good” design. However, actually I did not have clear what I was looking for. I neglected the surrounding area and also the different stages of sharing. By changing the focus from an only program driven approach to architectural driven approach with focus on the ground floor zone, the design became better. The “what”, “why” and “how” where more logic, based on each other and seem to make sense. So actually from the research part on I chose to focus on the three described and researched points, however it took a while to discover that I was not designing according to my initially proposed starting points.

3.0 Approach studio vs approach design

The main or central theme of my graduation lab within the Heritage and Architecture studio is housing in historic inner cities. The assignment should be a design of a housing project within the borders of the UVA Binnengasthuissteerin. The question is whether these university buildings can be transformed and used for residential purposes again. Questions about the right scale, location, typology and atmosphere can be incorporated in the project. As well as questions that can’t need to be answered about the role of historic growth, authentic materials, former functions and old nar- ratives.

The first part of my graduation project is already related to the theme of the graduation lab. I did a thorough research about transformations on urban scale of the area as well as different transfor- mations and reuse of several buildings on the area. It gave a good insight in the historic growth of the Binnengasthuissteerin and former functions and transformations of some of the buildings.

With my design of the Nurses’ homes, a transformation of the building into a shared housing and working complex. I’ve tried to search and answer what possibilities there might be with the trans- formation of monumental historic buildings into a residential complex. With the design I’ve tried to incorporate findings from my site analysis on an urban scale. The facade wall on the Nieuwe Doelenstraat is of historic urban value. By designing a new building on the parking lot, the idea of historic facade wall is partly restored. The common functions on the ground floor zone refer to the former functions of the Nurses’ homes. Parts of the ground floor where also common areas like a kitchen and dining hall. The function of the inner courtyard as a place for residents to gather, relax, but at the same time connects the Nurses’ homes with other parts of the area refers to the former use of this place by the hospital. The choice for a shared program with very small dwellings is a link to the former program of the Nurses’ homes like the very little rooms for the nurses. This program fits the character of the building based on its typolo- gy and structural dimensions.
8.0 Reflection

I think that in the beginning of the design process I forgot too much that the building, the history of the building and the surrounding should be the leading theme in the design and not the program I chose. I did not really succeed in getting a good grip on the necessary intervention until I changed my thinking to the perspective of the surrounding area and the building itself. This shift made the interventions more logical, substantiated and in line with the theme of the graduation lab.

4.0 Methodological approach studio vs approach design

The Heritage and Architecture studio focuses on the historic monumental built environment. The past plays an important role in research and design in this studio. Heritage is seen in a broad sense, tangible as well as intangible, and not only focussed on the monumental status of a building itself. Technological aspects with renovations, restorations, interventions and transformations play an important role as well as the cultural historical value (tangible and intangible) and design itself. The studio uses a triangle to illustrate this approach and way of thinking. Research on all three of the topics plays a major role in the design within this studio. With theoretical research as well as site analysis the "answer" for an intervention or new building should be found. The research and analysis is not only part of the beginning of the design process but should be a recurring tool in the design. Within my graduation lab two extra goals where proposed; The first is to get a deep insight in the origins, history, contemporary situation and actual problems of the site and inner city housing. This by doing research and site analysis. The second is to work on a design that can offer existing stock opportunities for a sustainable future.

I think that the approach for my design is the same as the studio approach. In the first part of the year I focussed on the theoretical part of transformations and intervention approaches and also did case studies to get a better insight in the approaches in practice. To discover the origins, historic situation and actual problems on the site I did a thorough site analysis and building analysis. This resulted for the starting point for my design. If I have to place my process of research and analysis and design in the triangle of Heritage and Architecture, I think that from the beginning on, the focus was strongly on the design part of the triangle. The focus of the analysis and research was on the design aspects of the building and less on the historical cultural value or technology. I think that later on the design process I tried to incorporate more of the historical value of the building and the surrounding area.

A part that I could have done better in my approach is to step back in an earlier stage of the design, to get the overview again with what I was doing, with what goal or purpose and why. Like with the recurring tool of research and analysis during the design process. It could have helped me if it was incorporated in my method. With the research by design approach I used for the design I got a bit lost with "what" I was doing and especially "why". However it could also be part of the process of getting closer to a "better" result.

5.0 Social Relevance vs Design

I think that my graduation project is not only related to the site-specific place, but the ideas can be generalized to other big cities as well. Within a lot of big cities in the world there's the need to densify. Because of this densification, it's hard to live in the inner city centre and the prices are very high. The city centres of big cities become a monotone places with just shops, hotels and offices. But in a lot of cities there are also these old buildings that can be used for residential purposes.

Within the traditional way of thinking about housing, these buildings are more difficult to use for a transformation to residential architecture. A lot more interventions need to done to realize for instance an own entrance for everybody. The different way of thinking about shared entrances, a shared ground floor zone, but also shared functions like storage, laundry, a kitchen or a place to work gives more opportunities to use the monumental buildings for residential purposes.

With my graduation project I've also tried to answer to the new tendencies of sharing and working as a freelancer. By combining the demand for places to work and places to live with a common ground floor zone, the residential function fits perfectly in the lively area of the city. Because of the common and shared functions, the dwellings itself, the private part, can be very small. Which gives the ability to densify.

I think that the idea of sharing is not only applicable on young people, but can be solution for different targets groups, however with different configurations. Especially in an area like the Bin-nengasthuisterrein, the several buildings with different typologies can be used for different target groups. The several stages of live of the people can strengthen the concept of sharing. I think that for instance older people who live in cities and are alone like to accompany each other. Maybe not by sharing a workplace anymore, but they like for instance to dine with each other. Families with children and a career can combine childcare or make use of the services of youngsters people that also live in the area. So within my graduation project I only focused on one type of a target group, but I'm convinced that this concept can work on a bigger scale with different target groups and different building typologies.
Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences
**Graduation Plan: All tracks**

The graduation plan consists of at least the following data/segments:

<table>
<thead>
<tr>
<th><strong>Personal information</strong></th>
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<tbody>
<tr>
<td><strong>Name</strong></td>
<td>H.M. Klaassen</td>
</tr>
<tr>
<td><strong>Student number</strong></td>
<td>4103424</td>
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<td><strong>Telephone number</strong></td>
<td>+31638308939</td>
</tr>
<tr>
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<td><strong>Teachers</strong></td>
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| **Argumentation of choice of the studio** | I’m interested in housing in (historic) big cities. The inner city of Amsterdam is becoming more and more a place for offices and hotels and I think this is a pity. Within this project I want to learn and research about the opportunities to redevelop/ transform monumental buildings of inner cities into residential architecture. |

<table>
<thead>
<tr>
<th><strong>Graduation project</strong></th>
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<td><strong>Title of the graduation project</strong></td>
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<td><strong>Location:</strong></td>
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| **The posed problem,** | On the one hand, there’s an enormous stock of monumental architecture in Amsterdam (and in the Netherlands). The tendency that hospitals, offices and industrial activities move to the edges of the city centre gives the opportunity for adaptive reuse of these buildings. On the other hand, the city of Amsterdam wants to add 70.000 dwellings to the city within the next thirty years. Dwellings in the centre become unpayable and there’s hardly space. Besides this, there’s a tendency in cities of sharing, freelance jobs, individualization and an outwards turned life of young people. There’s a demand for different housing typologies and different ways of living compared with the traditional. These three aspects together can result in reuse of institutional buildings with a new dwelling typology and forms of shared living in the city centres. |
research questions and design assignment in which these result.

| research questions and design assignment in which these result. | How can the Binnengasthuisterrein and 19th century buildings of this area be transformed into a shared living and working area? The design assignment is to transform two of the institutional buildings into residential buildings with a program of shared living and working for different target groups that answers to the current demand of the market in Amsterdam. |

**Process**

**Method description**

The method for this graduation project can be divided into three different phases. In support of the design assignment it starts with a literature research about intervention styles and research about renovated, transformed and reused buildings. Three casestudies are done about institutional buildings transformed into residential buildings to learn about the reasons for the intervention and the way they are carried out. In addition to this, literature research is done about cohousing and forms of shared living. The second phase is a site analysis to understand the site-specific problems and building specific problems and opportunities. During the design phase, research by design with different variances is the used method.

**Literature and general practical preference**

Reflection

Relevance
The research and design on new forms of shared living and working contributes to the ongoing tendency in cities of a more individual and shared live. The dwelling itself and property is not the most important thing anymore for young people, but the city and its’ surroundings is. The design can be an answer to this changing demand of housing typologies in cities. Forms of shared living and working are scarce in the Netherlands.

Time planning
Week 7-15 (feb – april) = Research on transformation/reuse & site analysis | P1
Week 16-26 (april – june) = Research on Shared living & Preliminary design | P2
Week 36-37 (sept) = Reconsideration Preliminary design
Week 38-43 (sept-okt) = Elaborate preliminary design into full plan | P3
Week 44-50 (okt – dec) = Elaborated design | P4
Week 51-2 (December – Januari) = Presentation | P5