

# ACTIVE AMSTERDAM

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THE CITY AS A HEALTHY LIVING ENVIRONMENT

Reflection Report - December 5th 2018  
Josien Gankema - 4527275

Dutch Housing Graduation Studio spring 2018  
Theo Kupers, Ferry Adema, Pierijn van der Putt  
Charlotte van Wijk



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# PREFACE

In the Dutch Housing Graduation Studio I designed a residential building that facilitates and encourages an active lifestyle and by that contributes to the city as a healthy living environment. To arrive from the central question of the graduation project 'How do we want to live in cities in the future and what kind of buildings do we need to allow for that?' to the design of this building I conducted research in various ways. This reflection report looks back upon how I used research to bring my project further, what methods and tools I used and how the outcomes of research influenced my design. This report is a reflection on the relationship between research and design during my graduation process.

December 5th, 2018  
Josien Gankema

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CHAPTER I.  
INTRODUCTION

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Doing research has been an important part of my Master education at the Delft University of Technology. Research at the Faculty of Architecture and the Built Environment comes in many different shapes. Unlike students of other faculties we do not work in labs or spend weeks on solving mathematical formulas. We spend our time in our studio's and use research as a way to inform our designs. Instead of using test tubes and computer simulations to find the answers to our questions, we use sketches, models and collages.

The Dutch Housing Graduation Studio is organized by the Chair of Dwelling, which has a lot of experience in doing research on the architectural design of housing, changing lifestyles and our daily environment. The working method of the graduation studio is based on this experience and their publications have been important sources for my project.

The relationship between research and design in the field of Architecture is a much discussed topic. In this reflection report I will look back at my own graduation process and reflect on the relationship between research and design in my project.



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The whole graduation process can be seen as a year of research with a building design as result, but to get to this result many partial investigations have been done. This report starts with a concise description of the whole graduation process, to find out what types of research were done and if there was a certain order or if certain phases can be distinguished.

To illustrate how different types of research have been part of the graduation process, the next part of the report shows a selection of research types supplemented with examples. I have reflected on each on these types, asking myself questions like: Why did I use this type of research? What were my questions and how did I use this research to find answers? What methods and tools did I use? What were the results of the research and how did I use them to develop my design further? Was the research useful and/or what can be improved the next time?

In the final part of this report I will incorporate the aspects to reflect on as given in the Graduation Manual of the MSc program of Architecture, Urbanism and Building Sciences. First I will use the aspect 'the relationship between research and design' to zoom out again and reflect on doing research in the graduation process as a whole. To conclude I will reflect on the other aspects:

- The relationship between the graduation topic and the studio topic, the master track Architecture and the MSc AUBS programme
- The research method and approach chosen in relation to the studio methodical line of inquiry, reflecting hereby upon the scientific relevance of the work
- The relationship between the graduation project and the wider social, professional and scientific framework and the transferability of project results
- The ethical issues and dilemma's encountered in doing the research, elaborating the design and potential applications of the results in practice



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## CHAPTER II.

# PROCESS

About ten months ago I had the first Graduation Studio Meeting where we first talked about the task that lay in front of us, today I am working on the final details of my design for a dwelling complex that encourages its inhabitants to live active and healthy lives. This chapter describes what I did inbetween these two moments and it analyses what different types of research I used to come closer to a final design.

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The graduation process can be separated in five periods, all periods end with a presentation (P1-P5). At the moment of writing I am at the end of the fourth period and P4 is coming closer. The fifth period will be about finishing touches and making presentation material, this period is not part of this reflection report.

## Before P1

We started off with getting to know the assignment as a group. It was given that we were going to design residential buildings in a given area. We got a course guide which explained more about the assignment and requirements, we looked at former students work, we did a site-visit where we noted down our impressions using sketches and sound-recordings and photographs.

Next to the studio-meetings we also followed the Research Seminar course where we analysed reference projects and worked in groups to transfer characteristics of these projects to a new design.

A main aspect of this first period was finding a relevant topic and target group. I read a lot of news-articles and looked up books to find out what were current topics in dwelling and architecture and I took a subscription to the Parool to find out what people of Amsterdam were writing and reading about. I scanned policy documents of the Municipality of Amsterdam to find out what the current trends and points of attention were. I chose my topic based on the information I took from this research, but I also took my personal preference into account as I knew that I was going to work on this project for a whole year and wanted to work on something which made me enthusiastic. After choosing a topic based on the information I took from this research I dived further into the topic, trying to define it more precisely. I read books and articles, made a time-line to see the topic in a broader historic and present perspective and started on a Utopian manifesto on my vision of the city of the future: the Healthy City.

I chose a site in the given area based on what I just had learned about Amsterdam's history of the relation between healthcare and city-development. My choice of target-group was determined by projecting the topic of healthy city life to the chosen site. In the policy documents of the Municipality I found that on this location children were notable unhealthy, mainly due to the lack of space and facilities for physical activity in their living environment. Combined with the current topic of the departure of families from the cities I knew that I wanted to design for city-children and their families.

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The goal of the period until P1 was to collect information, to find inspiration and to start to formulate a relevant and coherent story.

## P1 - P2

After choosing a topic and a target-group in the first period, in the second period it was time to research them more in depth. For the in depth research on the topic and the target group I did literature studies of which I wrote the results down in a research report. I also analysed several case studies to see how the theory I read could be incorporated into the design of a building. The goal of this research was to have a better understanding of the topic and the target group and how this understanding could be translated into starting points for an architectural design.

Also, in the second period, I analysed the site. My goal here was to get to know the site and to the boundaries and opportunities the site gave me. I did site visits, made sketches, perspective drawings, a computer-model and looked up data to collect information. I made maps, a time-line and collages to collect information and organize my findings.

With all this input I got from doing research I started on a conceptual design. I did mass-studies using architectural models and sketching. As part of the Research Seminar I tested dwelling types and circulation systems on the site.

In the second period, the goal was to define a relevant, coherent and convincing story and translating this to starting points or boundary conditions for the design. The products of the research done in the first two periods was the Graduation report, a conceptual design and the P2 presentation.

## P2 - P3

While before the P2 the focus of the graduation studio was research to collect information to formulate starting points for the design, after the summer break the focus was more on the design and research became a tool to improve the design.

In the third period I developed the conceptual design further, based on the starting points I took from the research before P2. I continued doing model studies, with which I studied the building mass in the urban context, the facade proportions and

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openings, and the image from eye-level perspective.

In this period I sketched a lot, I used sketching to note down and to communicate ideas. I made sketches of floor plans, sections, perspectives, elements like stairs or material details to see their relation and to quickly try out different variations on an idea. I made a 3D computer-model which I kept up to date with my design decisions, I used drawings from the model to print out and sketch over new ideas or different options.

Another important aspect in this period was making a realistic design, meaning that it is user-friendly and meets the current regulations of for example fire-safety and accessibility. To accomplish this I looked up requirements and regulations like described in the Bouwbesluit and NEN-norms, filtered the information I needed and translated them into elements of my design like the positioning of the staircases.

On different moments I looked up reference projects in literature or online, for example after a suggestion of an other student or a tutor. Sometimes these reference projects gave me inspiration, in other moments they helped by showing how other designers had solved problems that I was also dealing with.

I also re-read some of the sources I used in the second period, but this time I took different information from them. For example I used 'Beweeglogica In Gebouwen' by BETA Office for Architecture and the City (2016) in the second phase to get a better understanding on theory on active building design could be implemented in buildings. The second time I read it I used it to find design ingredients for an active building like the use of colour to get people to take the stairs.

I made a digital pin-up board where I collected inspiring images or things I wanted to remember. I worked on the board when I was looking for inspiration, but I also used it to organize my ideas or to explain them to someone else.

In the third period I also went on two architecture excursions. One was by myself, when after the summer break I wanted to get started with the project again I looked up different residential buildings in Amsterdam and took the bike to go visit them. The second excursion was to Hamburg with the studio, where we had organized different guided tours through the city. These excursions helped me to get out of the studio and a design that only exist on paper into thinking about the design as part of the 'real world' with tactile materials and on scale 1:1.

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## P3 - P4

The goal of the third period was to translate the ideas and input from the first semester to a realistic design for a residential building. The fourth period can be seen as a continuation of the third, only now main design decisions like the placement of the building volume in the urban context, organization and circulation systems and the dwelling types are already made. The fourth period is about improving the design and materializing it in a way that it could actually be built.

To improve my design I cross-checked it with my own design starting points as I formulated them at the P2. I tried to see my design in a more abstract way using reduction drawings to see in how far I had incorporated own findings.

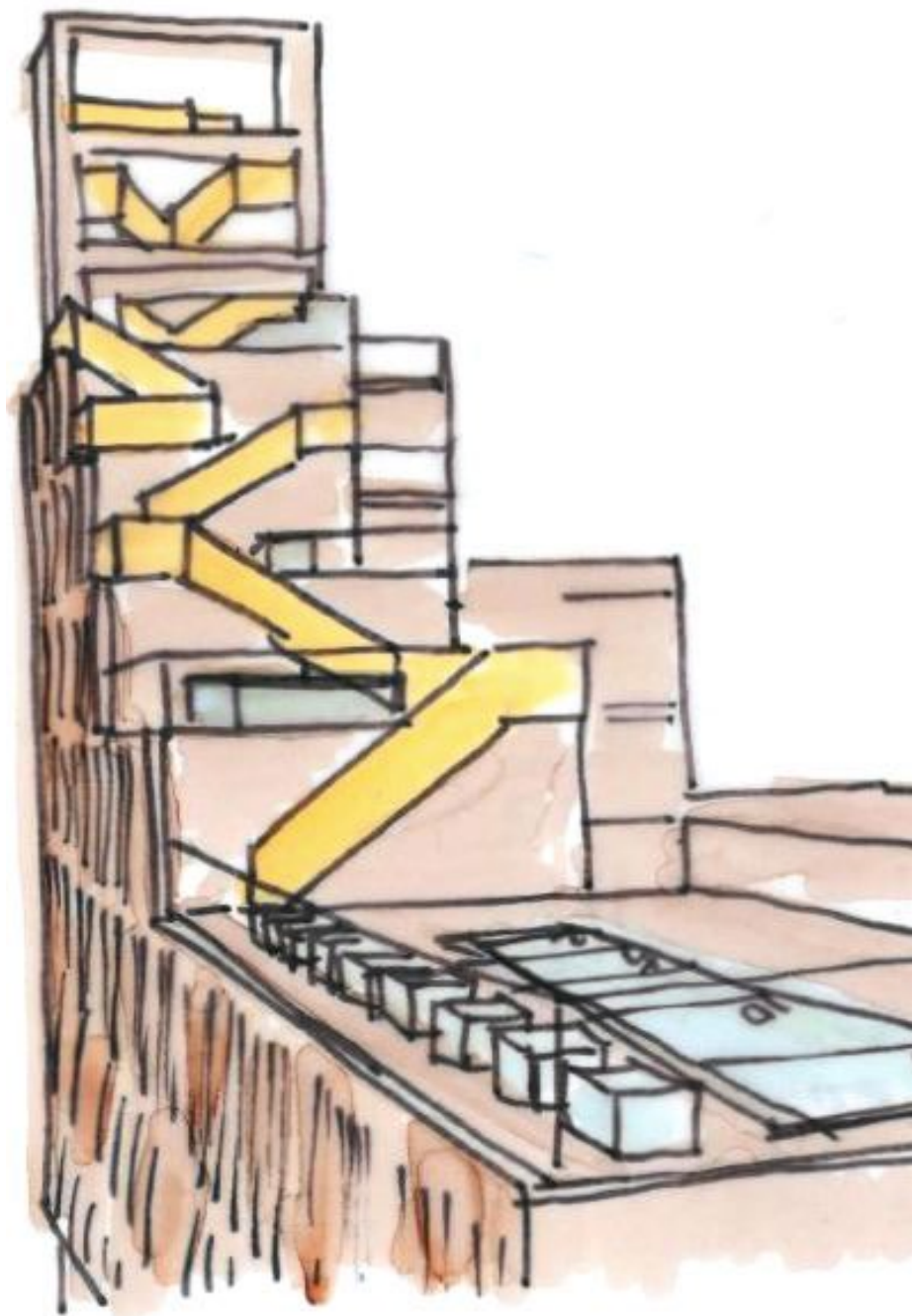
In order to materialize my design I used mood boards and sketches to study what atmosphere fitted my design and what material combinations made this possible. After I chose a direction I looked up reference projects and technical documentation, with which I made several options of elevations and sections of the façades. I used a matrix in which I set out the technical properties of different materials to my design principles. This helped me make well-informed choices.

The fourth period is also the time to look back and reflect on the graduation process and to look forward and start to think about presentation products and techniques.

In general I can conclude that the relationship between research and design has changed during the graduation process. I can clearly distinguish two phases: before and after the summer break. In the first phase, before P2, the main goal was doing research to find a relevant topic and to define a coherent story that could serve as a base for the design. Doing research was about *collecting* all information needed and *organizing* them into starting points for the design.

The second phase was about *translating* all this information into the design of a building that also has to meet all the requirements to be built. The starting points from the first phase are *applied* and become elements in the design. In this phase doing research was not the main goal, it was always meant to feed the design.

Interesting enough, at the same time in the story still developed further and became more precise.





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# CHAPTER III.

# RESEARCH & DESIGN

I have used different ways of doing research to bring my design further. Different types of research, working methods and tools have helped me to get to the answers I needed to develop my design. To illustrate how I have made a selection of research types I have used, which I will discuss using examples from my own process and on which I will reflect.

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## Literature research

Studying books and articles has been an important source of information during my graduation process. I used literature research in different ways to serve different goals.

First, reading news-articles and scanning books has helped me to get to my topic and target-group. For me reading was a way to find out what topics were relevant and which interested me to find out more about. In this kind of research I did not read every word or sentence of the articles, but I scanned their information to quickly find out what they were about. I made a list with short descriptions of the articles I wanted to remember. In this way certain topics caught my attention because they returned often or because I saw connections between different sources. Next to text, I also looked at diagrams or pictures that illustrated the essence of the articles (Figure 1).



Figure 1. De Nieuwe Generatie Stadskinderen, L. Karsten and N. Felder (2016)

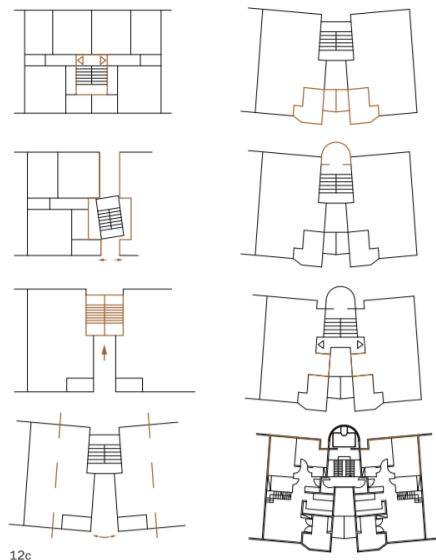


Figure 2. Schöne Aussicht, H. Hertzberger (1980-1982)

Reading books about my topic and translating this information into a written research report has helped me to get to formulate a coherent story to serve as a base for my design. The process of reading sources, selecting the most important infor-

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mation and composing them into a coherent written piece has been a difficult one. For me it worked very well to not only try to write my story down, but also to talk about it to someone else. It happened multiple times that I told my story out loud to find out that I needed to tell it in a different way or order to have it come across better.

Another way in which I studied literature is when I used books as a source of inspirational reference projects and design principles. This was especially useful in the second half of the graduation process. An example of this way of research is looking up more information of the design of a 'portiekontsluiting' which lead me to the book 'Het ontwerpen van Woningen: een handboek' by Bernard Leupen and Harald Mooij. The paragraph and schematic drawings (Figure 2) on H. Hertzberger's transformation of the access system in his Schöne Aussicht project has given me a much better insight in the possibilities of it for my own design.

I have learned that to do literature studies I need a good way to organize the information I collect. If I use a set method of noting down the information I need to remember from a source down it is much easier to find it back and to use it again. This can be done in different ways, but for me it worker very well to start with an 'annotated bibliography' in which I briefly write down the essence of the article and where I found it.

For me literature research is a way to position my design and research in relation to the findings of others. By reading and writing about their theories and ideas I can link my project to a wider context and show that my design does not stand on its own. I believe that it makes my project stronger when I can show that others are or have also been thinking about its topic and design principles. I do not see my project as a completely new invention, but I see it as being based on existing principles, which I applied in a new way that is relevant in the current time.

I did not realise that literature studies can be done in so many ways and can be useful in so many different moments of a design process. Before this graduation project I saw literature study as research that takes place in the library, with a clearly formulated research question and working method, studying books thoroughly with a new piece of written research as result. I saw this kind of research as interesting and important, but not necessary as part of a design process. I changed my mind after this project, I now see for example scanning news-articles as a way of doing literature research and as a very useful ingredient for a design.

## Precedent research

Researching precedent projects can be seen as a way to learn from how the designers have solved the same problems you are encountering now.

I have used this type of research in different ways. For example before the P2 when I used the 'Beweeglogica'-theory and projected them onto case studies, to find out how the theory on active lifestyle design was implemented into buildings. I attempted to make this Plan Analysis as 'scientific' as possible, meaning that the research was conducted using a clearly defined research question, hypothesis, method, results, conclusions and discussion. Making reduction drawings helped me to distil the active design elements of a building and to see the relations between them. This did not result in one 'answer' but it gave me insight in how Beweeglogica can be implemented in a building in different ways (Figure 3 and 4).

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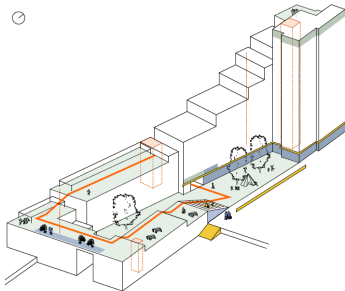


Figure 3. Analytical drawing of the Beweeglogica of a precedent, own illustration

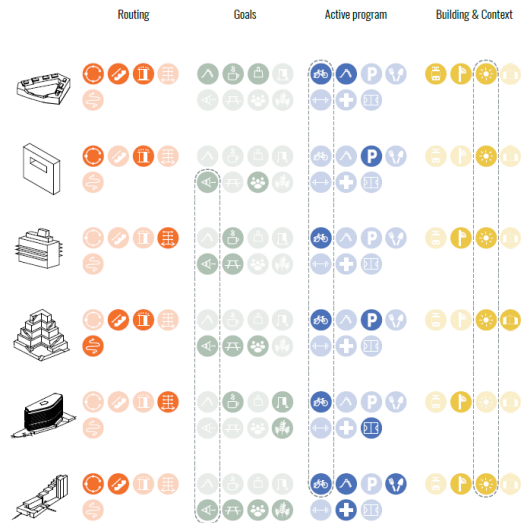


Figure 4. Table with the results of the Plan Analysis, own illustration

Between P2 and P4 I frequently looked up built examples of residential buildings to use as references for different design aspects. This research was not conducted with a precisely defined research question or method but did help me learn more about the possible ways in which the element I was researching is already implemented in built examples. It gave me inspiration and showed possible solutions to the problem I was dealing with. An example of this was looking up the design of

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Liesbeth van der Pol of Dok Architects for the Pieter Vlamingsstraat in Amsterdam (Figure 5). I was thinking about ways to design flexible floor plans in which it was possible to combine two smaller rooms into one big room and vice versa. I was considering dividing the floorplan into three zones so the rooms would always be on a facade, Van der Pol's project gave me a possible solution to this design problem which I used to develop my floorplans further.

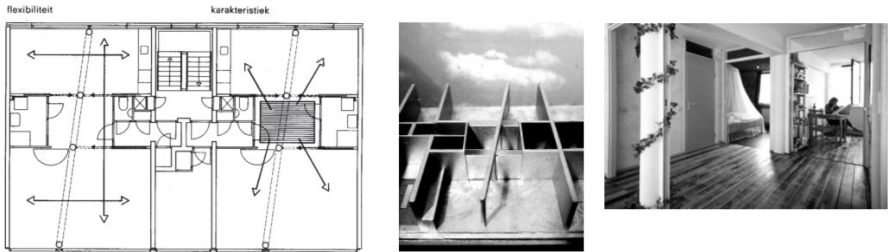


Figure 5. Pieter Vlamingsstraat Amsterdam, L. van der Pol, Dok Architects (1992)

I see these two approaches both as ways to do precedent research. The big difference between them is what I wanted to achieve with them. With the plan analysis I compared several precedent projects by analysing them on the same criteria, my goal was not to find one answer but to gain insight into the many possible directions I could take. The way in which I used precedents after the P2 was to find a solution for a specific design problem. By looking up a project just one possible solution was given, instead of many possibilities.

Both ways of doing precedent research have pros and cons. Looking up a project to find a solution for a specific problem could look like the solution of the precedent is the only solution. Because you only look at one project you can not compare different approaches. Precedent research with a precisely thought-out research question, carefully selected case studies and a clear working method can give you more results than just the answer on one question you were looking for. On the other hand, it can be very time consuming. It can be more efficient to look up one project without making a complete analysis of it, as long as you are aware it is just one possible answer to your question.

Something I learned during my graduation project is that the results of precedent research are never 'hard requirements'. For example in the plan analysis I was hoping to find some 'rules' for buildings that contribute to physical activity, but it resulted in a collection of the many ways in which you can achieve this through the design of the building. There were some elements that returned in multiple case studies, but this does not mean that every active building has to have them.

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## Site research

An important part of the research I have done during my graduation process was getting to know the project's location. Researching a place is often done using different types of research.

On the one hand there is historical research, I for example collected historical pictures of my project location on Amsterdam's Beeldbank to put together a time-line which shows where my project stands in the historical continuation of this place. A goal of this type of research can be getting to know and learning to understand the place, but it can also lead to new ideas and starting points for the design.

Another way to learn more about the project site is to make maps of it. Drawing a map of the place already gives insight into the dimensions and shapes of the site. As done often on our faculty, this map is then used as a base for analytical drawings. On these drawings one specific aspect of the site is distilled and all other aspects are ignored. For example for my project I made a map of the facilities for physical activities like sports and play (Figure 6). Analytical maps like these give insight in specific properties of a place. In my case I learned that there a very few facilities for playing outdoors on walking distance of my site, something that was not directly visible when I looked at a normal map.



Figure 6. Map of facilities for physical activity on walking distance, own illustration

These ways to research a site are both examples of objective research. If someone else would repeat this research they should be able to get the same findings. In my graduation process our group was lucky, a group of students with the same assignment before us already had done a lot of objective research on the area. This meant that our group could focus on researching the more subjective aspects. Our first site visit was about collecting our experiences. I was part of the sketch-group. We were inspired by Jan Rothuizen's 'soft atlases' and made quick sketches and notes of the things we saw, smelled, heard and felt while walking through the area. In this way we made a 'soft map' of the area (Figure 7).



Figure 7. Soft map of the former defence works of Amsterdam, own illustration

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Another example of researching subjective aspects of my project site are the series of perspective drawings I made after being inspired by Gordon Cullen's *Serial Vision* as described in *The Concise Landscape* (1995). The sketches present the site as a series of revelations as you walk towards and past it (Figure 8). This research gave me multiple insights, I began to see how the site as seen from one sight looked like part of a row of buildings while seen from another view it was the end of a long sight-line. Putting the perspective sketches together also gave insight in how the site seen from the opposite the canal is surrounded by informal backsides of buildings and green, while the other perspectives show more the formal straight lines of surrounding buildings and wide streets. For the results of this research are a good example of finding something I wasn't looking for. I started making the perspective sketches inspired by Cullen and the results gave me important starting points for my design. The volume of my building was defined by using them to choose the location of my look-out tower, making a informal waterfront-side and more formal façades along the streets that follow the height and proportions of the surrounding buildings.

During the graduation process I learned more about how to analyse and show more subjective elements of the site, which will definitely be useful in the future. It also made me more aware of thinking about what you want and need to know when you are analysing a site. Next to the 'facts' like plot-size, height regulations and what buildings are surrounding the site you can also focus more on analysing elements that are useful for your topic research, like how do you experience the place while moving towards or through it.

Doing research on the topic and analysing the site simultaneously lead to different maps than I would otherwise have started with. An example of this is the map I made of facilities for sports and play on walking distance from the site. In literature I read that this area of Amsterdam there are not enough facilities for children to play outside, which leads to less active children. Making a map of these facilities around the site helped me decide that a facilities for outside play should be part of my design for a residential building that provides for an active lifestyle.



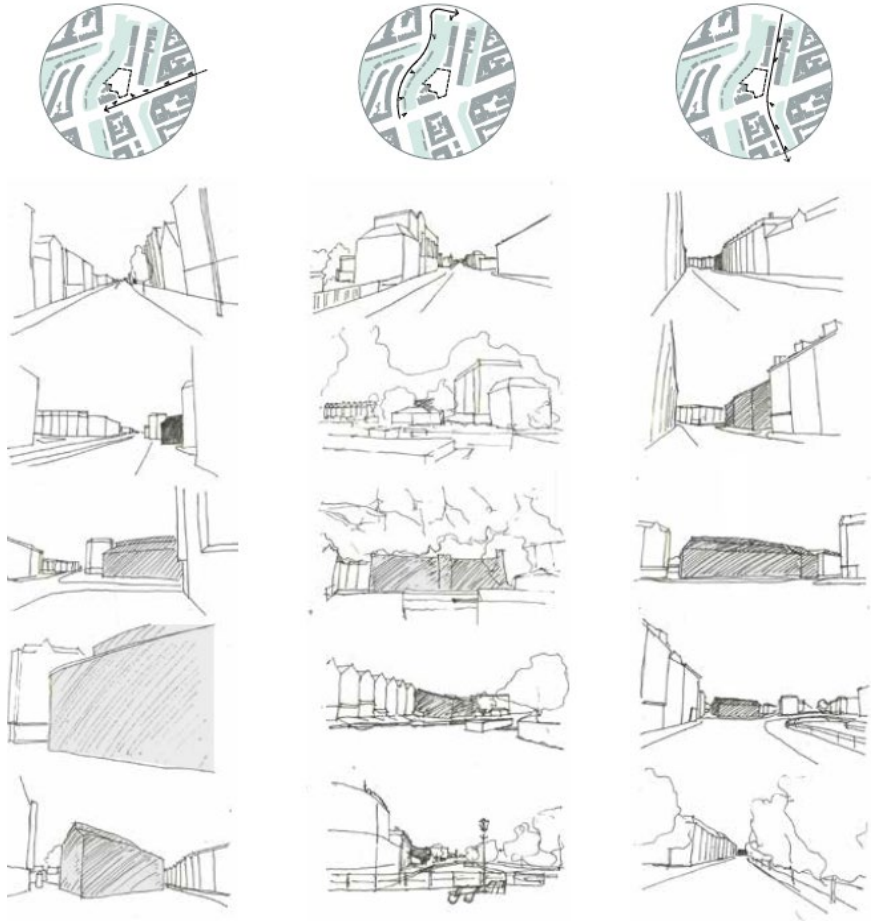


Figure 8. Experiencing the site as a series of revelations, own illustration

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## Field research

Architecture is all around us, looking at the buildings of the cities we visit can be very useful in the process of designing a new building. Especially in the case of the Dwelling Graduation Studio, because we dwelling is something we all do every day, we can learn from our own living environments.

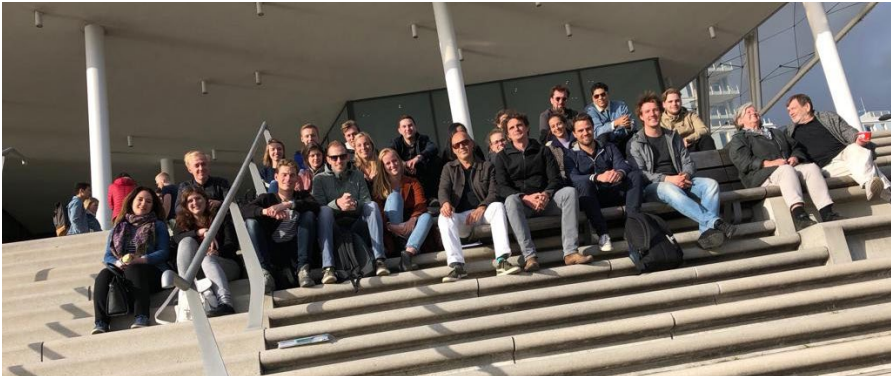


Figure 9. Group picture of the field-trip to Hamburg

Looking at and learning from the architecture around us can be done in different ways. It can be an organized field-trip with a tour guide who can point out interesting elements to look at and who provides extra information, like the field-trip to Hamburg (Figure 9). But for me it is also, in a more spontaneous way, looking around on a daily base and noticing the inspiration around you. In this way, you can be on a field-trip every day.

Reflecting on doing field-trips for the graduation project I have noticed that during a field-trip I had certain themes or subjects in mind, that I was not necessary conscious of. Often it was something I was encountering at that moment in my design process. Walking through the projects I visited I was paying more attention to this subject. For example, when I was visiting Blok 23B1 by Dick van Gameren in Yburg (Figure 10). I was working on the design of a narrow street lined with front doors in the centre of my project. I was looking for the right dimensions for this street and the façades along it. The project has much more I could be noticing, like the use of red brick and red window frames, but I was looking for proportions so my notes did not include the choice of colour but were about the measurements of the building.

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On the other hand, I also enjoy the serendipity of field-trips. By going outside and opening yourself up to new experiences you can by accident discover something you were not looking for. An example of this is when I visited the Waterwoningen by Marlies Rohmer on Steigereiland (Figure 11). The main reason I went there is because I passed the project on my way to Blok23B1. I had used pictures and maps of the Waterwoningen project as a reference for the Research Seminar course but I had never seen it in real life so I decided to go see it while I was in the area. I ended up spending much more time at the project than I anticipated because I was really inspired by the way the building block at the main street provided for a quiet inner area in which not only the Waterwoningen were situated but also the outside spaces of the apartments were part of. I also took a lot of time to discover the complex network of piers, quays and jetties that connected the different dwelling clusters

For me the skill of looking around and take lessons from what you see around you is an essential skill for an architect. It is a way to visualize what you are designing on paper into the 'real world'. In my opinion when you only stay inside and work your design out in scale-drawing and models you loose the connection to the 1:1 scale on which the building is actually going to be realized.



Figure 10. Blok 23B1 Yburg by Dick van Gameren, own picture



Figure 11. Waterwoningen Steigereiland by Marlies Rohmer, own picture

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## Research through collecting pictures

During my process I collected a lot of pictures. These pictures have been very useful during different stages of my design process and I have used them to bring my design further in many different ways. I for example used them to collect ideas on materialization and atmosphere, to find inspiration and to organize and explain my ideas.

Something I did during my whole graduation process is making a pin-up board. I used Pinterest to make a digital pin-up board where I collected inspiring images or things I wanted to remember. I worked on the board when I was looking for inspiration, but I also used it to organize my ideas or to explain them to someone else. At this point my pin-up board contains almost 400 pictures organized on chronological order. Because I pinned on this board during my whole process, when you scroll through the board you see my process explained in images. Figure 12 is an screenshot of my digital pin-up board from when I knew already that in my design an active routing was going to be an important design task. I knew I wanted to compose a route out of stairs and lead it to a lookout tower, but I did not know yet what it was going to look like. To visualize my ideas I saved a collection of stairs and look-out towers. Non of these pictures is an exact example of what I wanted to design, but by putting these pictures together they show what I the direction I wanted to go with my design.

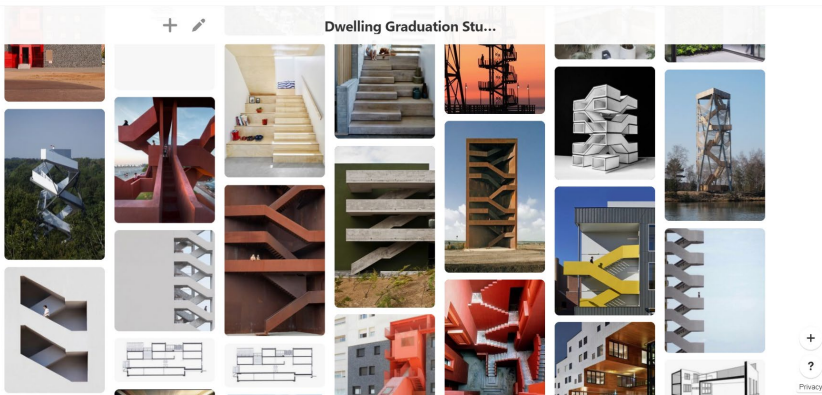


Figure 12. Screenshot of my digital pin-up board on Pinterest

Another way in which I used pictures to bring my design further took place in the studio meetings. When I discussed my design ideas with my tutors they often sug-

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gested to look at the work of architects of artists who's ideas had a lot in common with mine. We would look up a picture of a project or an artwork during the studio sessions or I would look it up later. Looking at pictures of these works allowed us to talk about aspects of design that can be hard to put into words, for example the way in which the works of John Körmeling contains humour and mockery or what Berthold Lubetkins design for a penguin pool in London (1934) has in common with my design (Figure 13 and 14). Sessions like these in which we talked and looked at different projects and especially the ideas behind them inspired me to find my own direction for the design. I found it a very interesting addition to also look for inspiration outside the field of architecture, for example in art.



Figure 13. Chandelier for Schiphol, John Körmeling (1993)

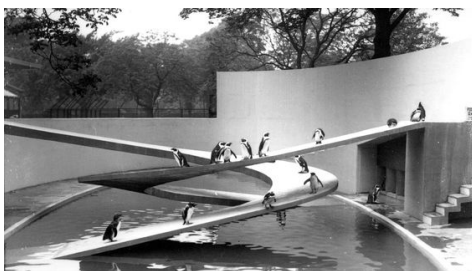


Figure 14. Penguin Pool, Berthold Lubetkin (1934)

I found that the pictures I had collected came in very handy when I wanted to research or explain something quickly. An example of this is when I made drawings of tree variants of the materialization of the facade. As addition to my digital elevations I put together a few pictures of façades that together expressed the atmosphere I was attempting to design. For me this was a very handy and quick way to study different variants without having to draw them all into detail. The combination of drawings and pictures was also very helpful in discussing my ideas with others.

When I was collecting the pictures I did not see it as a way of doing research, it happened more intuitively because it helped me organize my ideas. Looking back I do see it has been very useful research for my design. The pictures have made it much easier to visualize, talk about and solve design issues I encountered. Especially the pin-up board has been a very helpful tool I have used almost every day. A danger I do see in making a pin-up board is that there can be too many pictures which does not make an idea any clearer but makes it more confusing. For me the collection of pictures is only useful if I can see it as a visualization of an idea. Now that I am more aware of the advantages and dangers of this way of working I can hopefully use it even better next time.



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## 3D-model research

I have made digital and physical 3D-models of my design as tools to research for example its position in a wider urban context and spatial qualities of both its exterior and interior.

An example of the use of 3D models in the design process is when I after the P2 reconsidered the dimensions and proportions of my conceptual design. I made a mass model of my conceptual design on scale 1:500 which I placed into a scale model of the project location. I then made multiple variations on this design. First I made scale models of different other ideas I had, like splitting the building into two parts creating a narrow street in the middle. I also placed these models onto the location and compared them to each other (Figure 15). I made more variations of the models I liked best. This process of making, comparing, choosing and refining did not follow a specific research method or answer a specific research question. The process comparing and choosing was partly based on starting points of my design I had formulated earlier, but intuition also played an important role. In the end I choose the option that met my starting points well, but also the one I liked best.

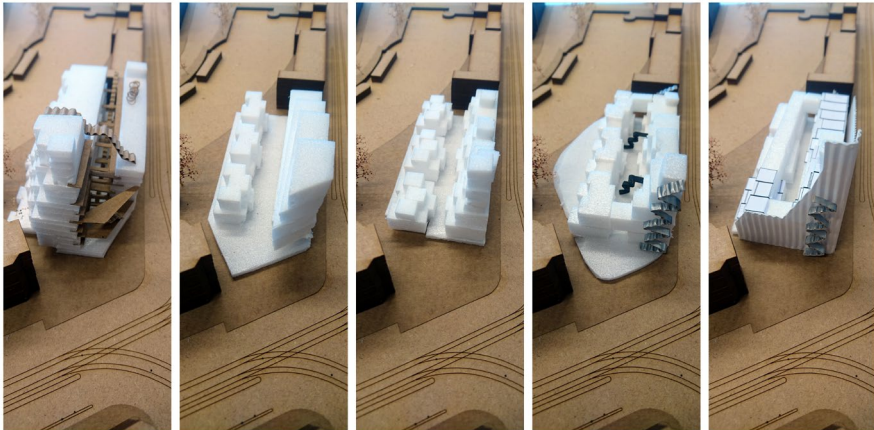


Figure 15. Model studies, own illustration

Even though I used both digital and physical 3D-models to work on similar aspects of the design I have found that the combination of working digital and physical works best for me. I like the precision of digital drawing but the speed, flexibility and creativity of physical drawing, sketching and model-making. A working method

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that has helped me to develop my design further is to use physical drawing and model-making to quickly test out ideas and make design decisions of which I then only work out the best one in a digital model. In this way the 2D drawings I take out of the digital model are always precise and up to date while I still have the freedom to quickly try out things and be more intuitive. I then print out a digital drawing as a base for new sketches and physical models, of which I use the best to update the digital model. This interaction between digital and physical model-making has been a continuous working method for my graduation design process.

An example of this working method are the eye level perspective sketches I made for the P3 presentation (Figure 16). At this point in the design process I had already made the decisions on the shape and dimensions of the building, but I was still working on the materialization of the building. For the P3 I wanted to show an impression of my vision on the materialization and the accentuation of the active program in the circulation spaces of the building. I used the digital 3D-model to print out eye level perspective views. I used my sketching paper to trace over the view but I took the freedom to add colours and to design details that were not yet precisely designed in the digital model. For me this is a very easy way to combine the precision of the digital 3D model with a design idea. It is very helpful in showing quickly what I have in mind without having to completely work out every detail in a digital drawing.

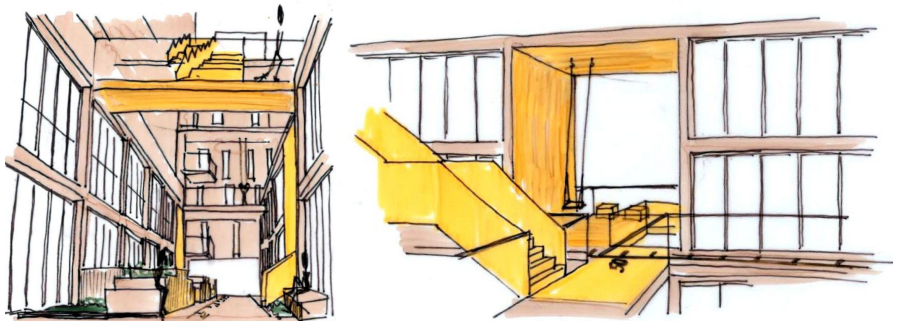


Figure 16. Perspective sketches, own illustration





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# CHAPTER IV. RETROSPECT

To conclude this reflection report I use the aspects that are given in the Graduation Manual. Here I continue to zoom out and look back on my graduation process as a whole. I will start with a conclusion on the relationship between research and design in my graduation process and then introduce and reflect on the other aspects from the manual.

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The first aspect is about reflecting on **the relationship between research and design** during the graduation process. Chapter II and III already reflected on my process and how I have used different types of research to bring my design further. In general I can conclude that during my whole graduation process I have used research in many different ways. The ways in which I have researched, how I have asked questions and what research tools I have used are very different. What they do have in common is that they have all influenced my design, though in many different ways. Looking back at doing research in a design project I can not see doing research separate from designing. My conclusion is that designing = researching. The development of a design consist out of many small researches in which you ask yourself design questions and work on solutions for them. I see my final design as a collection of answers to questions I have asked during the graduation process.

The second aspect is **the relationship between the graduation topic and the studio topic, the master track Architecture and the MSc AUBS programme**. The topic I have chosen to graduate with is a combination of the approach of the studio and my own fascination. The studio has motivated me to look for an relevant topic for our cities of the future, which is related to a vision on the way in which people live. Seeing the design of dwellings as the design of living environments relates strongly to the view of the chair of Dwelling where the individual house is never seen on its own but also as part of building, cluster, neighbourhood or city fabric. I found it very interesting to consciously choose for a topic that is innovative and to design for the challenges our cities will face in the future. In my opinion graduating with an vision on or possible solution for living in the city of the future fits studying on this faculty and this university, who are constantly looking for innovative ideas.

About the third aspect, **the research method and approach chosen in relation to the studio methodical line of inquiry, reflecting hereby upon the scientific relevance of the work**, I can refer to chapter II where I have described my process. I found the studio quite structured compared to other studios. Especially at the start of the project there was guidance in what products where expected every week. At the same time there was enough freedom to bring in your own ideas and show initiative. We were not the first group of students graduating in this graduation studio and in my opinion it was very helpful to use the experiences of earlier groups for a streamlined process. I feel like I really benefited from having a structured studio and strict deadlines, which has definitely helped me to finish my work in time. It also made sure that our group of students was working on the same subjects at the same time, which I found very useful because in that way you can combine forces and help each other out. Although I did also learn that this can be a disadvantage.

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It can be harder to stay original and make a unique design when you are constantly discussing your ideas with others. Still in general I would say that the approach of the studio helped me to develop my design easier than if I had to do it all alone, because when you are working in a group you have more knowledge and insights.

The fourth aspect is **the relationship between the graduation project and the wider social, professional and scientific framework and the transferability of project results**. I do not feel like my graduation project stands on its own. It is not only part of the research done in the graduation studio and the chair of Dwelling, it also has relations with all the sources I have used. The literature and precedent projects I have studied have been important sources of information and inspiration which I have incorporated into my design. I see my design as a application of and continuation on existing knowledge. Even though my graduation project is based on existing knowledge, it is also new. It is a combination that has not been made before.

My graduation project will be available on the repository to others and will be part of the portfolio and experience I will take with me from now on. What I have learned in this project will play a role in my next projects and maybe even someone else's.

An last but not least, **on the ethical issues and dilemma's encountered in doing the research, elaborating the design and potential applications of the results in practice**, I can see the potential application of the results of my graduation project in practice as quite realistic. Not necessary the realization of my final design on the chosen location in Amsterdam, but the theory and design principles it is based on are very relevant. Among others, Mecanoo for example is now working on the design of a healthy and active residential area close to the centre of Utrecht, the Cartesiusdriehoek District, of which I am very curious how it will turn out. I really believe there is a future for healthier cities that include the design of buildings and public space that provide for active lifestyles and who knows my graduation project can contribute to this.



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## Figures

Covers: own illustrations

- Figure 1.  
Karsten, L., Felder, N. (2016) *De nieuwe generatie stadskinderen – ruimte maken voor opgroeien*. Rotterdam: nai010
- Figure 2.  
Leupen, B., Mooij, H. (2011) *Het ontwerpen van Woningen: Een handboek*. Rotterdam: NAI Uitgevers, p. 52
- Figure 3.  
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- Figure 4.  
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- Figure 5.  
Leupen, B., Mooij, H. (2011) *Het ontwerpen van Woningen: Een handboek*. Rotterdam: NAI Uitgevers, p. 58
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- Figure 12.  
Screenshot of Pinterest board. Retrieved on 30-11-2018 from <https://nl.pinterest.com/>
- Figure 13.  
Kormeling, J. (1993) *Chandelier for Schiphol*. Retrieved on 30-11-2018 from <http://www.johnkormeling.nl/>
- Figure 14.  
Lubetkin, B. (1934) *Penguin Pool of London*. Retrieved on 30-11-2018 from <http://archeyes.com/penguin-pool-london-berthold-lubetkin/>
- Figure 15.  
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- Figure 16.  
Own illustration