Building for the solo dweller

an antidote for urban loneliness

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Dutch housing graduation studio
Relfection report

Relfection report

December 6, 2019

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Preface

The document in front of you contains a reflection on my delivered graduation project ‘Build for the solo dweller. An antidote to urban loneliness’. During this project I tried to answer the question raised by the dwelling studio ‘for what type of target groups should we build housing for in the new to build part of Amsterdam ‘Havenstad’. During the process of coming up with a design proposal for a residential building in this area, several types of research have been conducted. The purpose of this document is to reflect on those different types of conducted research and their effectiveness. These multiple research methods will be described with examples in image and text.

Introduction

Research plays an important role at the Technical University of Delft. The value of quality research is that it can back up your resign. It gives you solid arguments for the overall design, but also every for design choice made along the way. This will have as a result that the design will be more believable that that's otherwise the case. This report will give the reader an insight into the multiple types of conducted research that had lead to the final design proposal and reflect on them. This report isn't written in chronological order. Because sometimes different kinds of research where done at the same time. And the same kind of research was done more than twice during the whole process.

The first part of the paper gives a summary on what Theo van de Voordt wrote in 1998 in his paper 'Research methods and techniques'. This allows the reader and myself to have a better understanding in what the definition of research is and what the criteria of scientific research are. Now I can compare the conducted research during the whole process to with the criteria of van de Voordt his paper. And finally and can tell what my own thought are on the relation between research and design. I will describe in what way this research can be seen as scientific research and it's utility.

The second part of the paper gives an overview of the research that has been done during the graduation period. Each of the different methods will be talked about separately. This part describes what type of research is done for what purpose and what effect it in the end had on the design. This will give a insight in conclusions drawn from the research, the choices that have been made and how they are eventually implemented in the design.

In the final part I will tell what I have learned by doing research and how I have grown to see the value of research in relation to architectural design.

Research and desgin

In 1998, van de Voordt wrote a paper on research methods and techniques. Especially focussed within the context of faculty of architecture at the TU Delft. van de Voordt states first that the faculty of architecture at this technical university is an institution for scientific research and scientific education. He describes research as 'to collect, edit and analyse data to know more. Sometimes this knowledge is a goal in itself and the research is purely focused on increasing knowledge and insight. In other cases, "know more" serves as a means for better informed decision-making.' The part that makes it scientific is by testing it against certain criteria. Those criteria are:

- The researcher searches in a methodical manner.
- It needs to be objective.
- The whole structure of the research needs to be verifiable.
- Validity and reliability of the measuring instruments.
- The conducted research needs to have a scientific relevance.

So van de Voordt states scientific research as 'Scientific research is the methodical, verifiable, objective, valid and reliable collection, processing and analysis of data in order to better understand and explain reality and thereby make it more manageable.'

It's good to have an understanding of the definitions. In order to graduate at the Technical University of Delft implies that our work can be called scientific. Because when graduated we receive the title Msc (Master of Science). Especially in the field of

architecture at the TU the debate whether this study is certified as master of science and why it isn't a master of arts for example. I can understand why there is a debate about this issue. The reason is that architecture also has an emotional element. Architecture deals with beauty, which is partly subjective. This automatically weakens the criteria of objectiveness as van de Voordt pointed out. An architect A with the same starting point and methods as architect B will still design a completely different building. The differences are explainable by the personal input of the architect such a previous experiences, different visions on certain aspects, beliefs and expertise. In my opinion architecure graduates deserve the master of science title. During the two year master studies we have had several courses and papers we have to write that introduced us into the scientific field. Next to that, the emphisis of the design courses through the masters is focussed on the relation between research and design. But it delivers eventually a design, which is partly subjective. There is definitely a scientific element to research conducted during an architectural design project. But the personal element of the architect itself makes the whole scientific part wobble. So the debate will continue.

Literature Research

In order to start a design, there need to be a concept/guiding theme/topic. Literature research was used as the start of the project to find the right topic for the research report. While reading a wide range of literature it became more clear what kind of problems the city of Amsterdam is dealing with. I knew it should be a topic I was going to be really interested in when diving in to. Sinds I was going to work with that topic for the next year. One of the best ways to find out what kind of issues our society has was reading several newspapers like Parool, Volkskrant, Telegraaf and also online news media like nu.nl. By reading different type of newspapers I was trying to avoid reading articles of only one type of media which come from the same angle. An earlier project I did during this master studies was on elderly housing. Loneliness was a theme that was very present at that studio. Also while reading these newspapers, there were several recent but also older articles on the loneliness topic. I was reading all these articles trough a critical lens and was only extracting the overall problem out of them. And not taking all the figures and statistics they where putting forward as the absolute truth. This type of literature gave me an overall view of a general problem, urban loneliness. The question then was, how do you intergrade the topic of loneliness into an architectural project? I needed an target group. The first thing that came to mind was to make a project for elderly again, sinds I was going further with the urban loneliness topic. But further research on the statistics and demographics of the topic changed the potential target group.

Vrij, Onverveerd

Het Parool

HOME AMSTERDAM OPINIE PS STADSGID

300.000 Amsterdammers voelen zich eenzaam

© ANP

Amsterdam is een magneet voor kwetsbare mensen. Uit GGD-onderzoek blijkt dat 300.00 mensen zich eenzaam voelen, 80.000 Amsterdammers voelen zich zelfs 'ernstig eenzaam'.

De Telegraaf

Meer dan miljoen mensen ernstig eenzaam

KENNISLINK

De eenzame Nederlander

Auteurs: Eric Schoenmakers en Noëlle Bont | 8 februari 2010

de Verdieping Trouw

HOME RELIGIE EN FILOSOFIE GROEN DEMOCRATIE SAMENLEVING CULTUUR OPINIE

'Eenzaamheid, het probleem van nu'

HOME

MAAIKE VAN HOUTEN – 1:32, 25 september 2014

interview | Wat de zon is voor planten, is aandacht voor mensen, zegt emeritus hoogleraar Ivan Wolffers vandaag in de Nationale

De epidemie van eenzaamheid is net zo schadelijk als roken

figure 1. Newspaper articles

Location research

The reason why for me location research and also an actual visit to the building site is absolutely necessary is because the feeling you get from the place. I got a first glimpse of how the atmosphere is from pictures of the site. But to actually be there is a whole different experience and it gave me information I didn't got otherwise. There was a harsh wind and the sound of container ships and construction noises dictated the atmosphere. I already knew the place before the start of the project, but now that I was going to do a project there I started to look differently to the area. We were taking pictures of all the existing buildings (which were all offices and warehouses by the way). Every ones in a while I need to be in one of those warehouses. So I'm visiting the site quite often. Especially at this site it's important to visit it more often I think. Sometimes there are no boats at all in the dock, and on other time it's full with boats. This gives the whole area a totally different feeling. The rapid development of the houthavens changes the way I look a the site every time I'm there. This gave me the opportunity to see potential in the location.

Further research on the location such a historical research and by making analytical drawings of the area gave me more grip on the site as a whole. At first sight the location is just a other industrial site. But historical research showed the nature of the current shape and gave me a hierarchy of what was valuable and what was less valuable.

Loction visit gives you the scale of the site. This helped me during the design process.

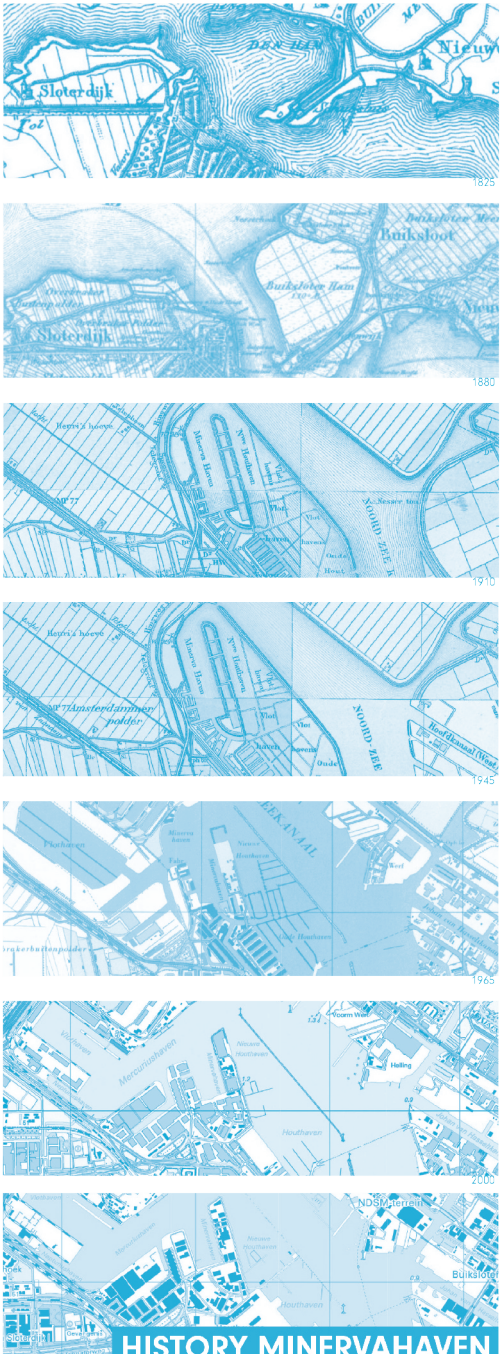


figure 2. Historical decvellopment Minervahaven

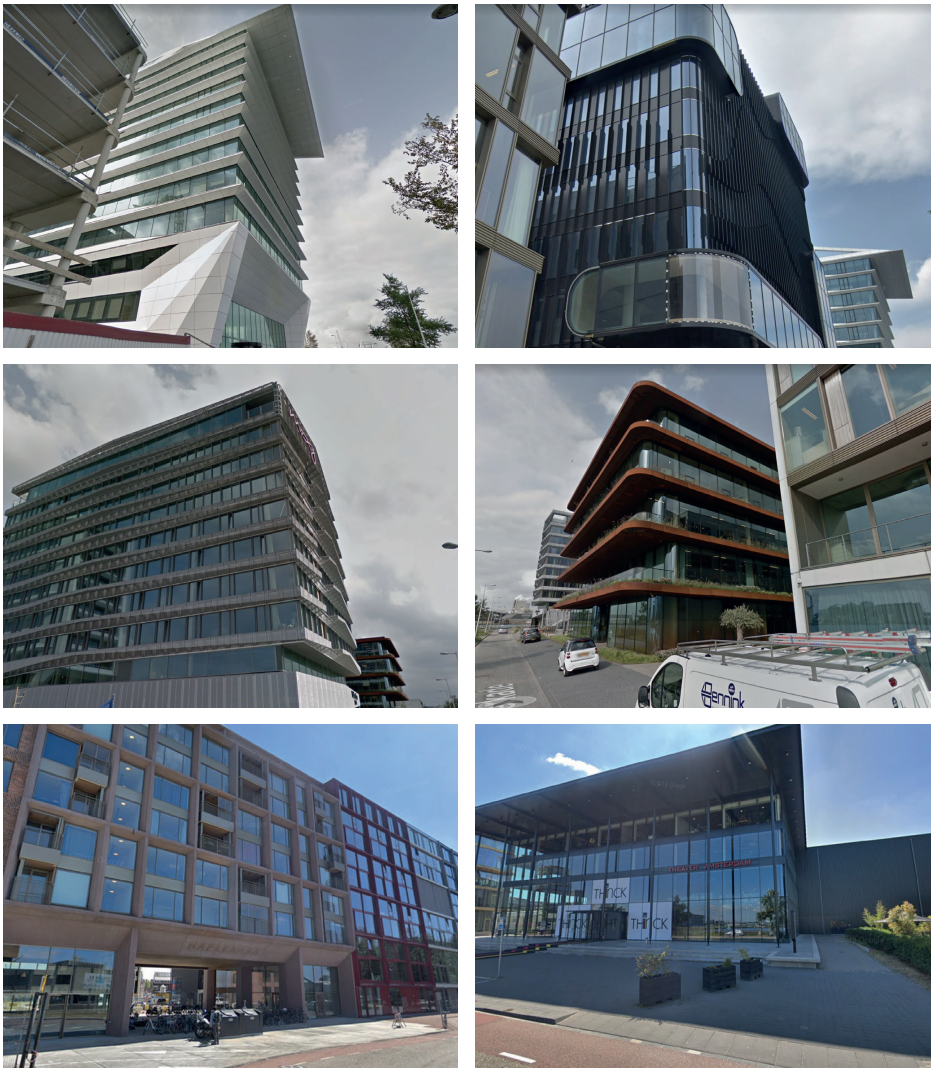
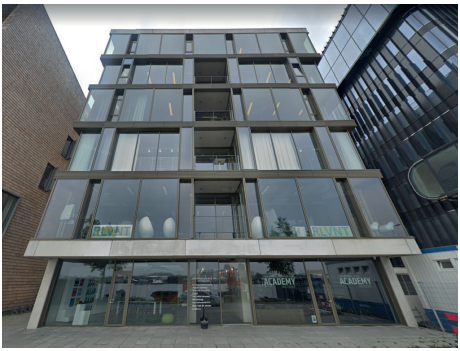


figure 3. Collage extisting buildings Minervahaven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dentsu AEGIS network

Case studies and precedents

Robert Yin (2009) divines case studies as: 'A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident'. I wanted to know how is dealt with the transition between private and public spaces in buildings that have small dwellings. And why try to invent the wheel again when probably hundreds of architects have been struggling with the same problem. Seeing what kind of solutions other architects came up with and using that partly in your own project is not stealing or copying. It's a great source of inspiration.

The case studies where carefully picked out on certain criteria. They needed to have small dwellings and needed to have a collective program. There is also chosen to include student complexes. This was done to see what exactly the overlap and the difference are residential buildings for students and residential buildings where units are for solo dwellers who aren't students. The hypothesis was that the concept of student complexes is also largely applicable for solo non student dwellers. By analysing the different buildings the same way I could compare them was able to abstract useful information for my own research and design.

One of my favourite ways of containing precedents and examples was by scrolling through Pintrest. The cool thing about this website is that you can search really specific on images. And once clicked on an image, the site give you a whole list

of similar images. This way I was able to find a lot of examples for wooden facades or the way I wanted my collective spaces to be like. It also gave me the option to save all imagery that I liked. This way I created a whole database of pictures related to every design step I was in at that time. Normally I would have got examples out of books or other websites. But Pintrest gives you an almost endless stream of images on every topic. The upside to this is that I could create a frame of reference on what was possible with a wooden façade for example rather quickly. Where on other websites or in books this process will take much longer. Next to that, Pintrest was suggesting images to me at the same time. A bit like online web shops do. 'you might also be interested in …'. This way of clicking myself deeper and deeper into the website was the most rich source of aesthetical inspiration I got during the design process. From facades to floorplans. And from render styles to diagram examples.

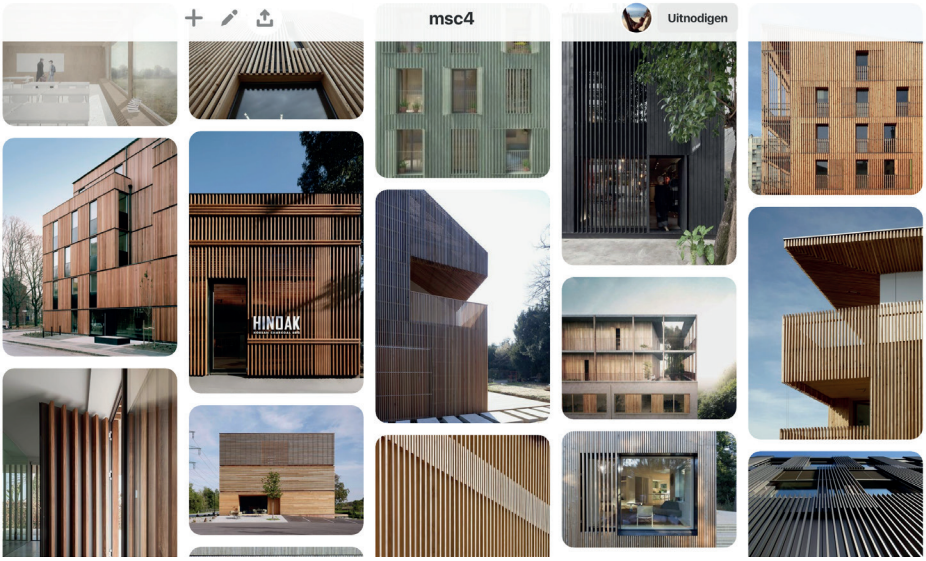


figure 4. Pinboard of my pintrest page

Digital and hand drawings

During the msc4 phase the most time was spent on drawing in one way or another. From the p2 presentation there was already a schematic building design. But now was the time to really start designing the building step by step. There were three types of drawing I used during the msc4 period. Hand drawings, 2D digital drawings (Autocad) and 3d modelling (Sketchup). Each of these types have their pro's and their con's and aren't always suitable to investigate the same things. Designing a residential building is a bit like solving a jigsaw puzzle. It depends on millimetres sometimes. And to get a clear floor plan scheme takes time and a lot of trail and error. This was mostly done by 2D digital drawings. Although Autocad is not the most sophisticated drawing tool, it provides the perfect handlebars for creating floor plans for these kinds of school projects. Making variants on dwelling entrances for example, as can be seen in figure..., gives an easy but clear insight in various options and how eventual choices have been made. The 3d digital modelling had two purposes. Due to the fact that Autocad and Sketchup aren't linked to each other, the 3D model was also a checking device to see if the 2D drawings were correct. But at the same time the 3D model could be edited by itself without the 2D drawings changing automatically. This gave me the opportunity to make different options for the building entrance (figure 6.). And when satisfied by the final result, change this in the 2D floor plans. Creating several variant of the main building entrance was something 2D drawings wouldn't have been suitable for. This back and forward way of working between these two programs gave me more grip on the whole design. Because I had to draw the building in 2D as in 3D manually. And It stimulated me

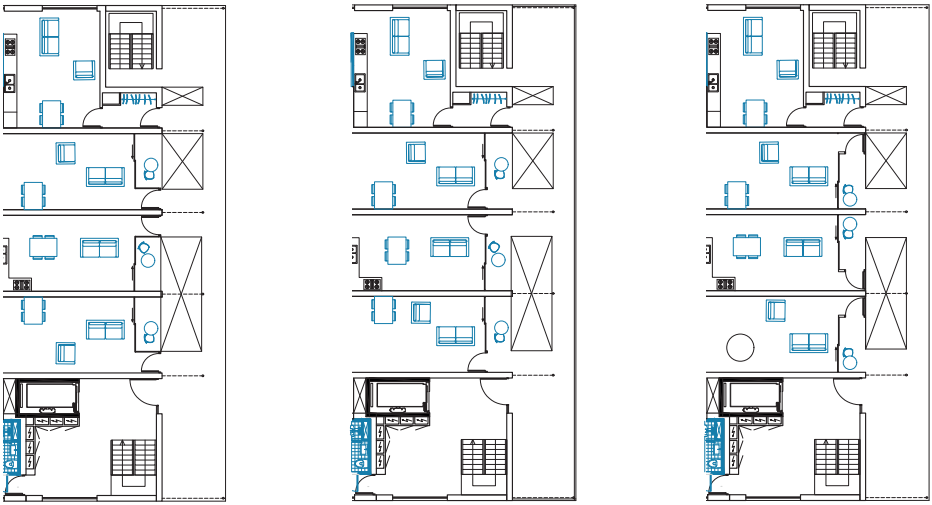


figure 5. various dwelling entrance options in 2D

figure 6. various building entrance options in 3D

to come up with more possible solutions both ecstatically as technical. The downside is that it takes more time towards the end of the project when the building gets more complicated. It also requires more focus from my side. Because when changing the 3d drawing, the 2d drawing doesn't change automatically like in other programs such as Archicad, Rhino or Revit. I have to manually make sure the 2d drawings and the 3d drawings are in sync.

Hand drawings are a great way to make things clear to myself and other really quickly. They haven't been used extensively, but still consistently during the whole semester. Mostly they have been rough sketches of how some details had to be designed or quick diagrams of the intentions of spaces. I know that have a lot in my head during the whole process. Most of the time I also have a clear image of how spaces should look like and how they should work. But in order to communicate the way I imagined these spaces during the process, the best way was to roughly make hand sketches in 3D. They tell the tutor in what direction I wanted to go. This was something that maybe should have done much earlier in the process. This because the tutor could then give feedback on these impressions and I could develop them even more and think about things I hadn't thought about before.

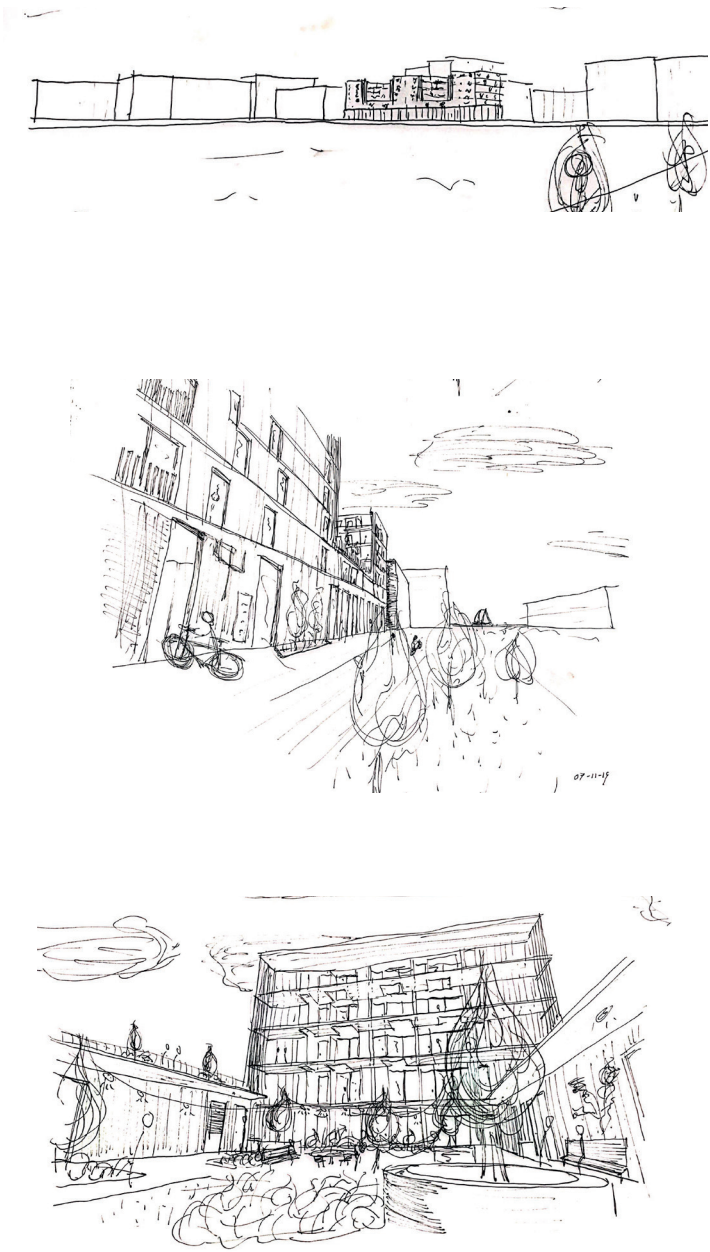
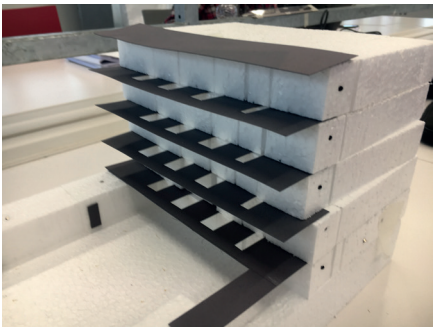


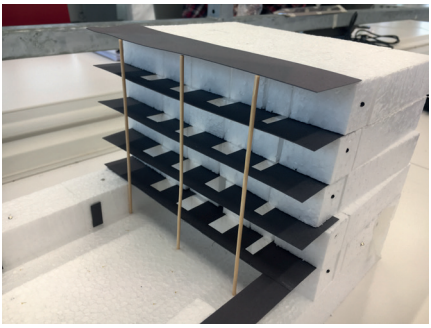
figure 7. Hand drawn impressions.

Models

At the start of this graduation project, the studio provides us with a site in Amsterdam where our project had to be realised. This site is right on the edge of the Houthavens, where a lot of new residential projects have been realised, and the beginning of the new to be built Havenstad. For the area of the Minervahaven, we as a group designed our own vision of how this area should look like in a master plan. This master plan design was based on a type of plan called a campus model. Although we made our vision for this site in drawings as well 2D as 3D, we came to the conclusion that the site was way to packed when we finally made a physical model 1:1000. The physical model gave us much more feeling for scale and proportions. So only by making the physical model we adjusted the design for the area. The downside was that we already laser cut this fist 1:1000 model and glued everything together to make a presentable model. So we had to re do the whole thing over. It would have been much better to have had a work in progress model where we could test things before making it final.

With this in mind I made my 1:100 'work in progress' model of the building volume in foam during the beginning of msc4. A model which I could change over and over again, and test certain aspects of the design which I knew were less effective when done in a drawing program. Proportion- and scale wise, it gave me a much more clear look on how the inner courtyards were spatially. The fact that both of them are really inclosed but still have enough space. During the design I made on the computer, I was afraid that the smaller courtyard was to small





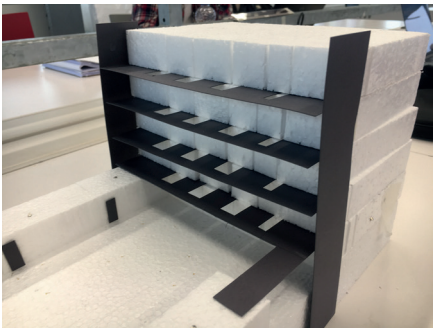
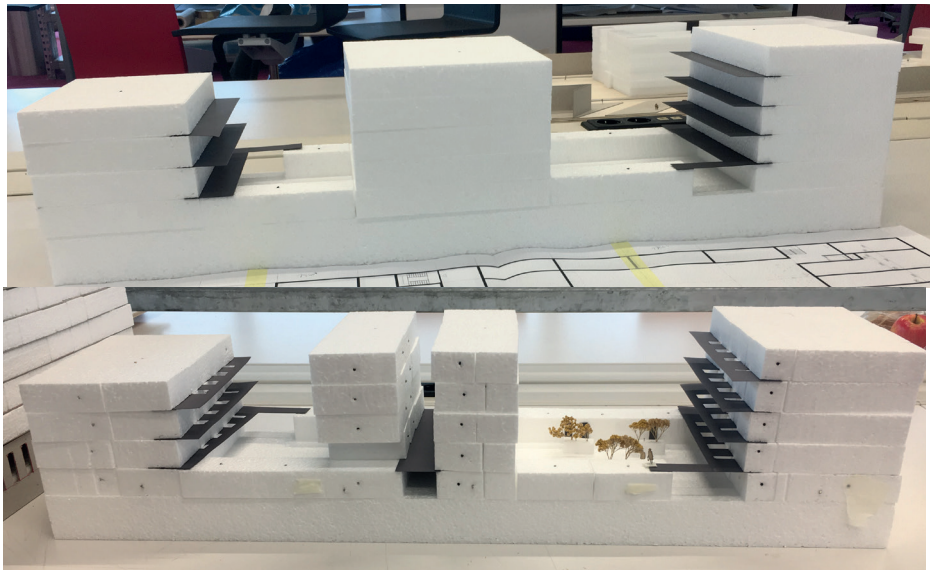


figure 8. galery options in physical model



figurw 9. Working model in progress

and therefore I chopped of one layer of the building on that side. But the model showed me that this wouldn't make such a difference of that layer was places there on top. This provided five extra dwellings to the building. Another example is the relation between the gallery with the private outdoor spaces connected to them and the inner courtyards. Because the loadbearing structure of the building is made out of solid timber I couldn't use a system like Isokorf to connect the gallery to the main structure. This had consequences on the aesthetics of the design.
In order to see what impact different methods of supporting the gallery had on the inner square of the building, several options where tested in the 1:100 model.

By starting roughly and using a material like foam that is easily formable, I was able to almost sculpture the design step by step.

Retrospect

The Dwelling studio where this graduation project was taken, gave me certain research methodologies to start up the whole research process. In fact, it was more or less mandatory to have used certain types of research methods for the research report. Methods such as literature- and case study research. Next to that we needed to 'prove' our first building schemes with reference projects. Although working in such a strict methodological framework, It gave me the guidance I needed in this rather busy semester. This was all done prior to the p2. Between the p2 and the p4 the studio provided more freedom in investigating our design and conducting our research. But I also want to look back and compare the relation between research and design of this graduation studio and my first master studio of msc1 dwelling. A studio which I didn't passed by the way due to various reasons. First I want to provide some context. I did a bachelor in structural engineering at the University of applied science. As far as I can remember we didn't really do research in relationship to our projects. Because these were no design projects. When I came to Delft to study architecture, I didn't knew what it was to design a building. When reflecting on the msc1 project now I can understand what partly went wrong then. There was no solid research on different levels to back up the design. To reflect on the msc1 project helps me to better reflect on this graduation project in terms of the relation between research and design. I can see what the benefits are of certain types of research in relation to the design because I also know what happens when you don't do that.

Conducting research to improve the design and the whole narrative is something in which I have massively improved during the master study. It's also the way I look at doing research. I understand the value it has much more. During the pre-master for example, we had a subject called plan analysis. This was just something I needed to do for a grade. But at that time I didn't understood the value of this kind of research. This also has to do a lot with my own mind set. This is maybe a bit of track but has a lot to do with understanding the value of research in this context I think. The way of obtaining knowledge at the university is different than other schools I had been in before. Like high school and the bachelor (which have been most of my life). At those schools we were roughly told what to learn and then make tests. Of course during the masters we also had to learn from books and make tests, but the studio project are more free. We could do anything we wanted to do basically. As long as you can provide concrete evidence to make the whole project believable. This requires a goal (what do I want to achieve), genuine interest in a topic and the willingness to find things out on your own. This is one of the main things I learned during the masters. This gave me also realisation of the importance of conducting different kinds of research. And the value research can have in relationship to the eventual design.

Other aspects

Aspect 2 - The relationship between your graduation project, the studio topic, your master track, and your master program.

The master track of dwelling asks the question for who do we need to build in the future. My graduation project gives a proposal for one of many target groups we need to build for in the future. Because the demand for smaller (and affordable) dwellings in cities is increasing rapidly. By finding a way to design such a residential building from this ideal I was also searching for a way to standardise the whole scheme. This suits perfect with the title of the dwelling studio 'Between standards and ideals'. At the same time it touches upon the Architecture master track by envisioning how this building should look like and design it.

Aspect 3 - Elaboration on research method and approach chosen by the student in relation to the graduation studio methodical line of inquiry, reflecting thereby upon the scientific relevance of your work.

Unlike some other graduation studio's in the Architecture master track, the Dwelling studio has a rather strict methodical approach. The research report for example, which is the basis for the p2 presentation, has more or less the same structure among all students. This rather strict (but logical) methods used by the studio gave me predictability and guidance during the whole process. Building up a story from a problem statement, and using the conducted research on the topic as a backup for the design. Some aspects didn't were clear why we did them while

doing them, but afterwards the make sense considering the whole process and the project.

Aspect 4 - Elaboration on the relationship between the graduation project and the wider social, professional and scientific framework, touching upon the transferability of the project results.

The chosen topic and the eventual single dweller target group is not only relevant now but will be even more in the future. The data indicated that the next twenty years people that are living alone will only increase more and more. While the type is housing for this group isn't available. As the studio title 'Between standard and ideals' is suggesting, the proposed design also needs to be a believable design. I my opinion this is really important and also prepared me partly for places I'm going to work after the study.

Aspect 5 - Discuss the ethical issues and dilemmas you may have encountered in (i) doing the research (ii) elaborating the design and (iii) potential applications of the results in practice.

The whole project started with the notion of urban loneliness in Amsterdam. The feeling of loneliness is fine (and has a biological function) as long as it doesn't become chronically. And if there is a way to make it not worse than it has to be, we are morally and ethically obligated to find a solution, also as architects. But during the design I needed to make a decision for a certain target group. The eventual chosen target group was the one I thought was the best way of approaching this problem. In my opinion I have succeeded to implement elements that are necessary for a 'social' residential building. Elements I have documented during research and stated in my research report. You will never really know how a building would function in real life. But the there is strong evidence from the relevant literature that the in the architectural interventions I have implemented into the design will do what I was trying to achieve.

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