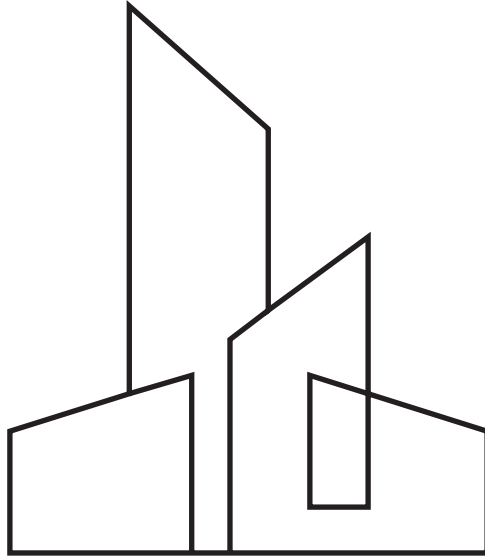


An architectural rendering of a modern high-rise building with a public plaza and trees. The building features a light-colored, vertically-slatted facade and multiple levels of balconies with glass railings. The plaza in the foreground is paved and lined with young trees, with several people walking and sitting on a bench. The sky is a clear blue with some light clouds.

**Young professionals in the city**  
*Reflection report*

Moaaz Al Assadi



## ***Young professionals in the city***

*Designing affordable and suitable dwellings for young professionals*

Moazz Al Assadi

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Delft University of Technology

Faculty of Architecture and Built Environment

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Advanced Housing Design Graduation Studio

November 2021



# Contents

. Introduction.....	3
. Research process:	
- Collectiveness.....	5
- Typology transfer and location.....	6
- Target group.....	9
- Analysis of statistics.....	10
- Literature review .....	11
- Questionnaire.....	12
- Case studies.....	14
- Quick start.....	16
- Computer Aided Design.....	18
- Points system.....	19
- Materiality.....	23
. Conclusion.....	34
. Four other reflections.....	34





Despite the fact that I had done research several times in my prior academic education, I was not much aware of the relationship between design and research until my graduation project because I had to make many decisions and choices more than ever. Designing depends on architect's comprehension of physics, history, sociology, psychology, and a lot of other aspects. Thus, these considerations are too complex to be grasped by one individual. Here lies the centric role of research which demystifies the complexity of "designing". Research allows finding to be drawn that influences design choices and decisions. However, I started to notice that during the writing of my graduation project.

Therefore, being part of the technological sciences is one of the things you learn when you study at the faculty of architecture of TU Delft (van der Voordt, 1998). The insight that I received through the curriculum, especially, in the graduation year was like (eye-opening) to the importance of scientific research, as well as the contrasts between scientific and non-scientific research.

As mentioned above, making a design with a full sensibility of scientific awareness is strenuous task, but I have acquired the knowledge to utilize several research methodologies which help making thoughtful decisions in order to come up with validated design.

I will highlight, In this reflection report, most of the research techniques in order to formulate an appropriate decision throughout my graduation project. Moreover, I will mention the decisions that have been taken from these techniques. rewefa

## **What is research?**

Wang & Groat (2013) defined research as "systematic inquiry directed toward the creation of knowledge.". Also, the authors mentioned that during the design process, the interplay between research and design is equally relevant for every phase of the design process. Similarly to Wang and Groat (2013), Van der Voordt (1998) defines scientific research as "collecting, processing and analyzing data to find out more. Sometimes this knowledge is an end in itself and the research is purely aimed at increasing knowledge and insight. In other cases, "knowing more" serves as a means of more informed decision-making.".

In the following paragraphs, I will go through most of the requirements that I have done during my graduation project in the Advanced Housing Design Studio as follows:

- Collectiveness
- Typology transfer and location
- Target group and analysis of statistics
- Literature review
- Questionnaire
- Case studies
- Quick start
- Computer-Aided Design
- Points system and affordability
- Materiality



# Collectiveness

the first (group) assignment in the studio was an ethnographic research in order to study and investigate collectiveness in a specific building in Rotterdam (Spaansekade). In this ethnographic research I used three methods to analyze collectivity:

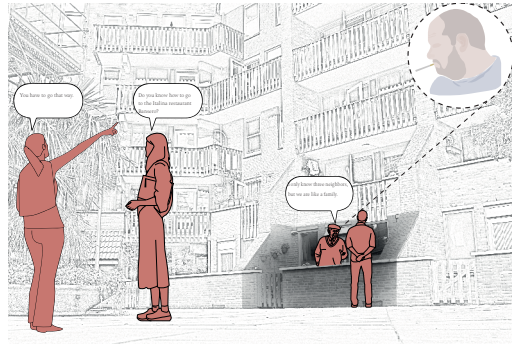
- Sketching;
- Observing;
- Photography;
- Interviews.

After collecting and analyzing the data with the group, we came up with two main results.

- 1- Aspect that promotes collectivity;
- 2- Aspects that diminish collectivity.

**Based on the findings of this research, I made the following design decisions:**

- A- The inner courtyard boosts accidental meeting and visual connections.
- B- Placing the active functions of the dwellings (such as living room) towards the courtyard
- C- Providing the building with many staircases reduces the chance of accidental meetings



Living room towards courtyard



Accidental meetings

# Typology transfer and location

The location of the project is Merwe-Vierhavens (M4H) in Rotterdam. This was also a group research and on a larger scale. First, we were split up into four different groups (also the location of M4H was divided into four quadrants) and each group had to investigate a specific neighborhood in Rotterdam. Thus, my group analyzed and studied most of the important residential buildings in Katendrecht - Rotterdam in terms of:

- Dimensions of the blocks;
- Functions (mixed-use/ only residential);
- Building typologies;
- Heights.

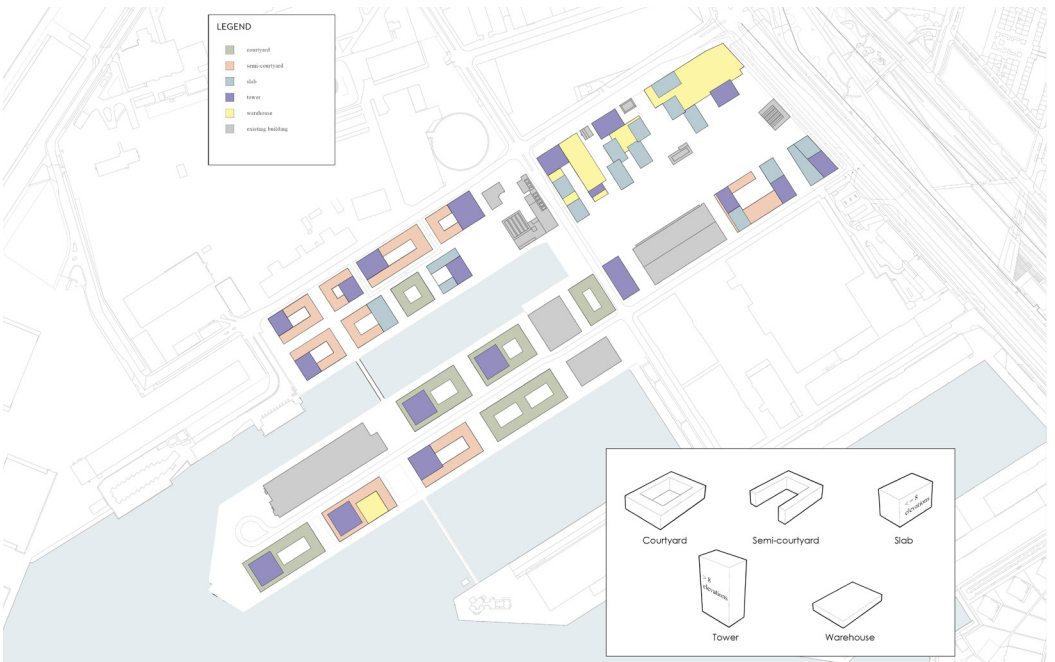
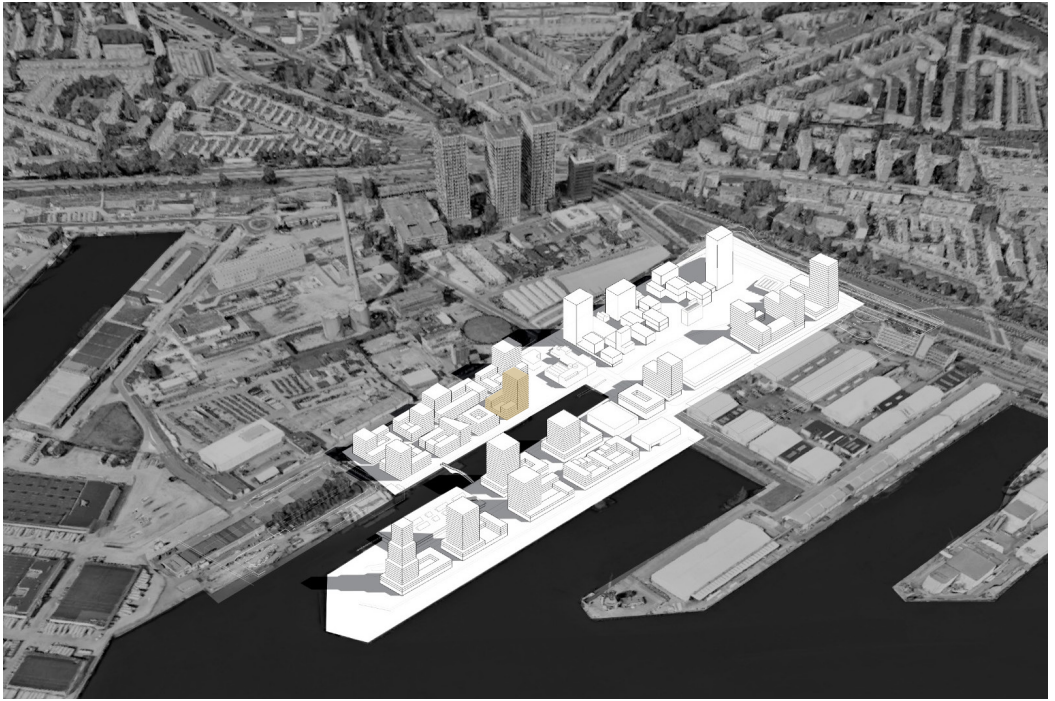
I have to mention here that Katendrecht is a post harbor area and transformed into a vibrant neighborhood.

The concept of Typology Transfer is to transfer the studied blocks of Katendrecht into M4H. Each group kept experimenting with the transferred block types and taking into account the process of the other groups in order to make one master plan for M4H. After that, the adopted master plan was analyzed by the whole four groups in order to present it (P1 presentation).

The analysis of blocks typologies gives me an insight into the consideration and the major dimensions of each block typology and analyzing the city helped me to identify the target group.

*Based on the findings of this research, I made the following design decisions:*

- Recognizing the needs of the location
- Plot number 20
- Target group (Young Professionals)









# Target group

Just after finishing the first group presentation (P1), a pivotal decision had to be made and the whole graduation project passed on: choosing a target group.

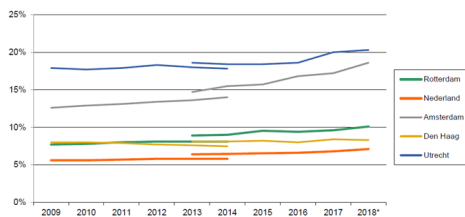
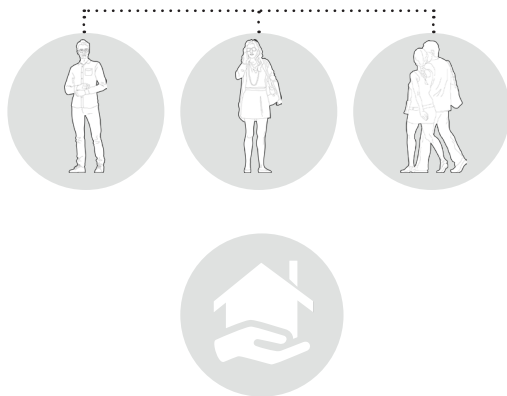
For me, choosing Young Professionals was based not only because of the lack of housing but also searching on other hidden issues that contribute in a way or another to the current main problem. Therefore, I had relied on many trustworthy resources to base the research on, such as:

- Municipality of Rotterdam;
- Rijksoverheid
- Central Office for Statistics;
- Universities reports on graduates;
- Books and academic articles;
- Financial (banks) reports;
- Journals;
- Questionnaire.

During the preliminary skimming of the collected data, I formed a general perception of the target group including their age, which ranges from their early twenties up to early thirties, highly educated, single /couples status, the conspicuous financial-related issues which provoked me to orientate the design theme on affordability.

*Based on the findings of this research, I made the following design decisions:*

- Designing affordable dwellings.
- Designing dwellings for singles and couples.



Bron: CBS, Sociaal Statistisch Bestand; bewerking OBI. Peildatum: 1 oktober.

The proportion of Young Professionals in Rotterdam compared with the other big cities and the national lot.

I could find plenty of statistical data about the young professionals in Rotterdam between 2009 to 2020 on the financial front.

I also used a research that had conducted by Rabobank about the financial barriers that hinder young professionals from purchasing dwellings. The reason for this is, mostly, due to their middle-income status, which prevents them from obtaining a sufficient mortgage. For example, a young professional with an average income of 43.000 € in Rotterdam will get a mortgage of not more than 135.000 €, while the average property price is 265.494 €. As a result, there is a deficit of 130.000 € (also keeping in mind that the student loan reduces the mortgage).

I had to see the regulation of the Rijksoverheid that concerns renting a social housing and compare it with their average annual income of young professional according the Employee Insurance Agency (UWV/ Het Uitvoeringsinstituut Werknemersverzekeringen). ) The average annual salary of young professional ranges between (43.000 € and 46.000 €) and the maximum annual income to rent a social housing is 39.055 € (prijsspeil 2020). As a result, their yearly wage does not entitle them to rent in the social housing sector.

*Based on the findings of this research, I made the following design decisions:*

- Designing affordable **rental dwellings**.
- Determining the rent range of the dwelling as (750 € to 1000 €).
- Concentrating on cost-effective architectural techniques and strategies.

Following that, I continued the research by reviewing the literature. I had noticed that less is written about the young professionals in the Netherlands. Thus, I had to relate the selected target group to the generation that they belong to which is Millennials or generation Y. This step allowed me to grasp the traits, characteristics, aspirations, and the lifestyle of the generation as a whole (including young professionals), here I depended on the book of A History of Collective Living: Models of Shared Living by Susanne Schmid.

By reading the book, I found that the notion of “sharing” appeals to the target audience. Here, I could distinguish two models:

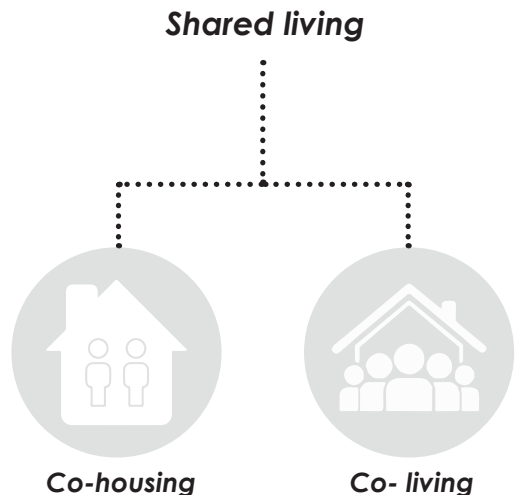
- Co-living: comprises of small individual residences (micro-dwellings) coupled with shared facilities such as a communal kitchen or communal laundry room. Also, co-living is frequently correlated with co-working spaces.

- Co-housing: When multiple tenants share a living room, kitchen, and/or bathroom in the same dwelling. Even though I obtained the necessary information, I was perplexed between the two choices.

I kept questioning myself, “Do I have to use both options or just one?” If I choose one of them, the other tenants will be excluded. As a result, I decided to conduct an online survey in order to find out the preferences of Rotterdam's young professionals regarding co-living and co-housing.

**Based on the findings of this research, I made the following design decisions:**

- Designing affordable **rental dwellings**.
- Determining the rent range of the dwelling as (750 € to 1000 €).
- Concentrating on cost-effective architectural techniques and strategies.



The questionnaire was created with two goals in mind. The first purpose was comparing a specific trend between the past and the current days which helped me to finish the historical part of the thesis. The second section focused on young professionals' preferences for co-living and co-housing.

Although that the survey placed in the pages and the groups of young professionals on Facebook such as **The FIZZ** and **OurDomain**, the survey's respondents had to meet the following requirements in order to participate:

- Recently or finished his/her higher education (HBO or WO);
- Age between 20 to 30;
- Succeeded to find at least part-time job in the labor market;
- Only singles or couples;
- Live in Rotterdam.

These criteria are characteristics of young professionals according to the literature. Therefore, the first section of this questionnaire is dedicated to gathering information on the abovementioned topics. Eventually, the questionnaire was filled with 15 respondents.

When I asked the young about the concept of co-housing, I introduced

it in terms of **friends' apartment**. Almost half of them accepted it and the rest rejected it. By looking over the data of the respondents, I found that all the couples refused it, while most of the singles accepted it.

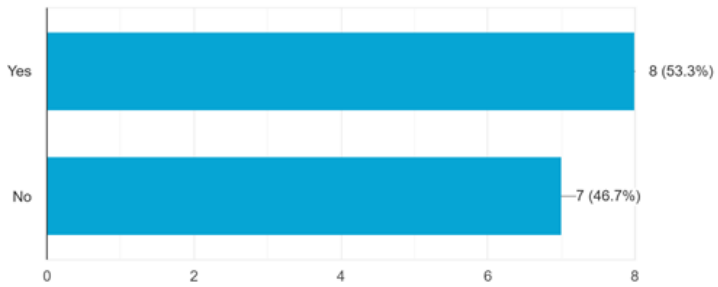
Regarding the notion of co-living, I tried to simplify the form of the question and not to mention the term of co-living explicitly in order to avoid any sort of ambiguity and misunderstanding to the respondents, so I mentioned it as **communal spaces**. Approximately half of the respondents agreed with providing the building with communal facilities such as communal kitchens.

**Based on the findings of this research, I made the following design decisions:**

- Applying both of co-living and co-housing with the needed requirement.
- Knowing which kind of projects to analyze and look into.

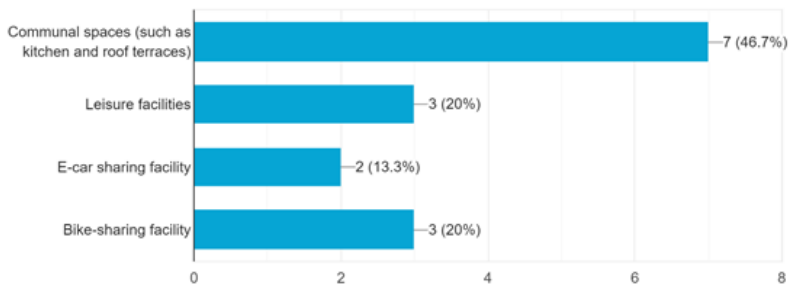
Do you prefer to live alone or to share your dwelling with other tenants (such as a friend)?

15 responses



What are the building-related facilities that influence your decision?

15 responses



Before designing, I selected four reference projects to analyze them thoroughly in terms of the following aspects:

- Public - Private spaces & functions;
- Accessibility and circulation;
- Dwellings : dimension & typologies.

## 1- Tietgen Dormitory in Denmark by Lundgaard & Tranberg Architects:

I chose this project because it promotes the concept of co-living and it has a gallery dwellings typology with an inner courtyard (which I have in my block). Also, the programme on the upper floors was helpful to investigate in terms of the number of users for every communal facility and the required square meters.

## 2- Villa mokum in Amsterdam by Kampman Architecten:

This project is relatively aimed at young professionals and it, partly, includes the notion of co-living. The corridor micro-dwellings and communal terraces are oriented towards the inner public courtyard.

## 3- Westbeat in Amsterdam by Studionedots:

Westbeat is partially devoted to young professionals. The corridor dwellings, mid-rise tower, elevated inner courtyard, elevations with the greenery system, and the public

plinth were all helpful to analyze.

## 4- The FIZZ Don Bosco (Block A) in Amsterdam by Studionedots:

It is fully dedicated for young professionals and promotes the concept of co-housing because it contains many friends apartments and gallery dwellings typologies.

*Based on the findings of this research, I made the following design decisions:*

- Dwellings typologies: orientation, dimensions, and layout.
- Circulation: accessibility and escape routes
- Public - Private spaces & functions
- Programme

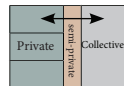
Gallery



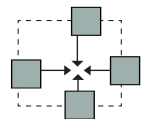
Corridor



Transition zones



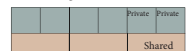
Interaction among clusters



Co-living



Co-housing



Clusters: dwellings and communal facilities and dwelling division

shared facilities in the same dwelling and dwelling division



### **Tietgen Dormitory**

- Public - Private spaces & functions
- Accessibility
- Dwellings : dimension & typologies



### **Villa Mokum**

- Public - Private spaces & functions
- Accessibility
- Dwellings : dimension & typologies



### **WestBeat**

- Public - Private spaces & functions
- Accessibility
- Dwellings : dimension & typologies



### **The FIZZ Don Bosco (Block A)**

- Public - Private spaces & functions
- Accessibility
- Dwellings : dimension & typologies

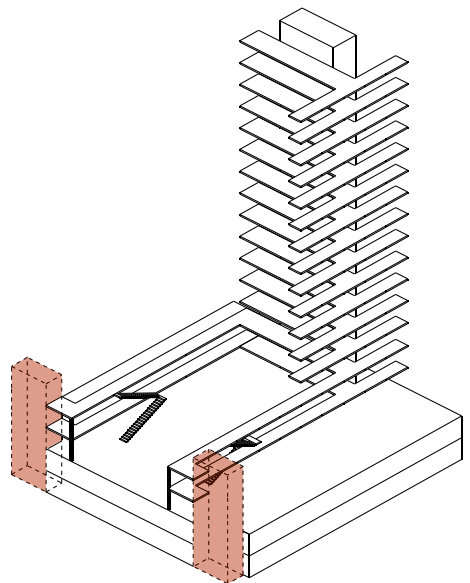
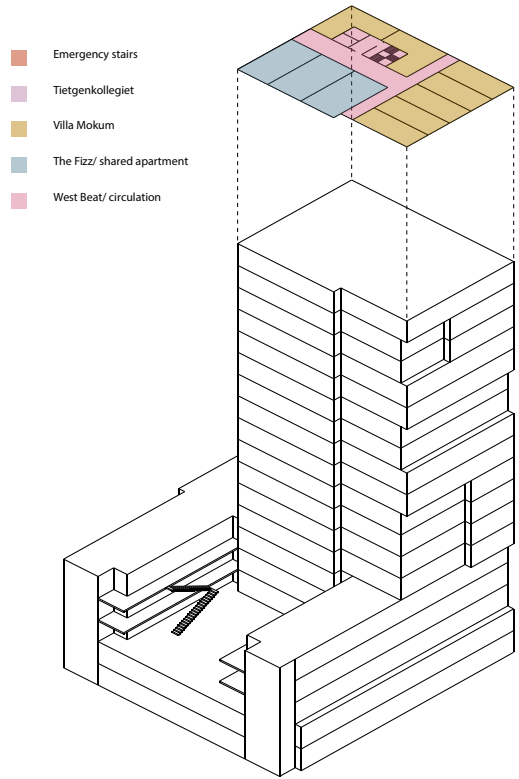


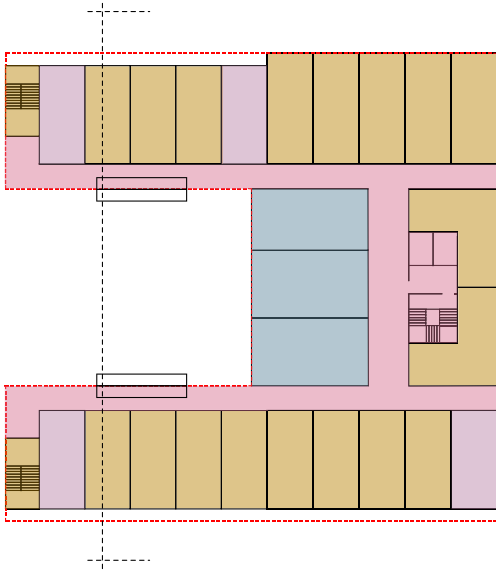
# Quick start

The assignment of quick start was the starting point of the design. The task was to put the typologies of the case studies in the selected building block. Here, we had the choice to transfer only one case study or use all of them. For me, it was an interesting exercise because it encouraged me to understand the dimensions of the chosen plot, how to mix between the tower and the gallery typologies, and thinking twice about the escaping routes.

*Based on the findings of this research, I made the following design decisions:*

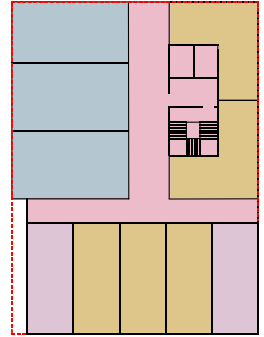
- Dwellings typologies: orientation and dimensions.
- Enhancing escape routes.



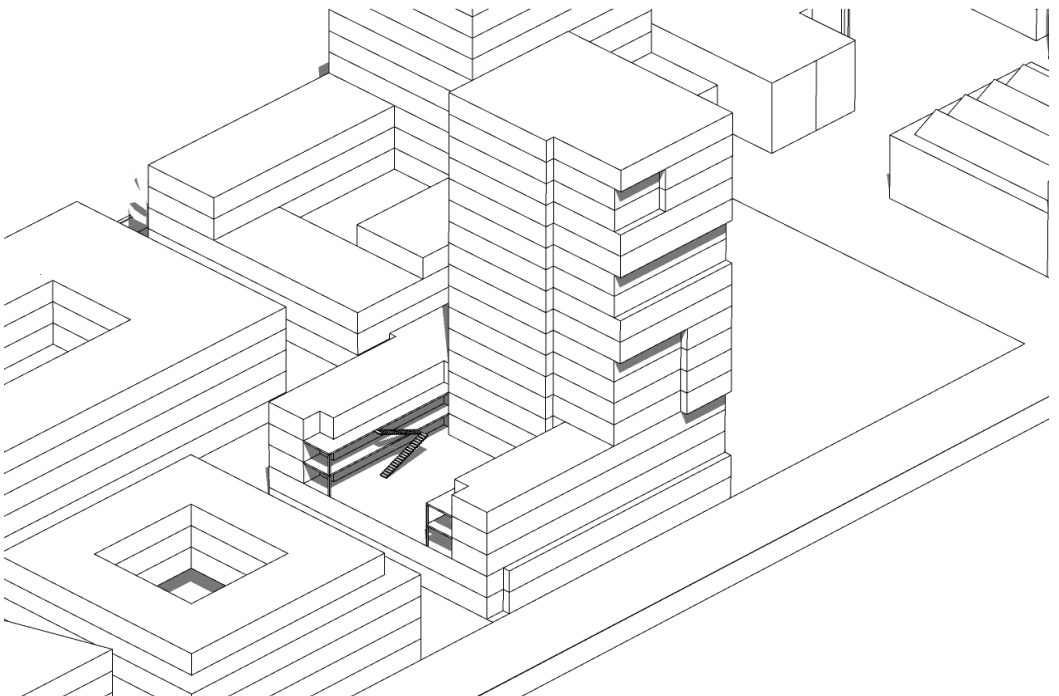


Floor plans 2,3,4

- Tietgenkollegiet
- Villa Mokum
- The Fizz/ shared apartment
- West Beat/ circulation



Floor plans 5 to 16



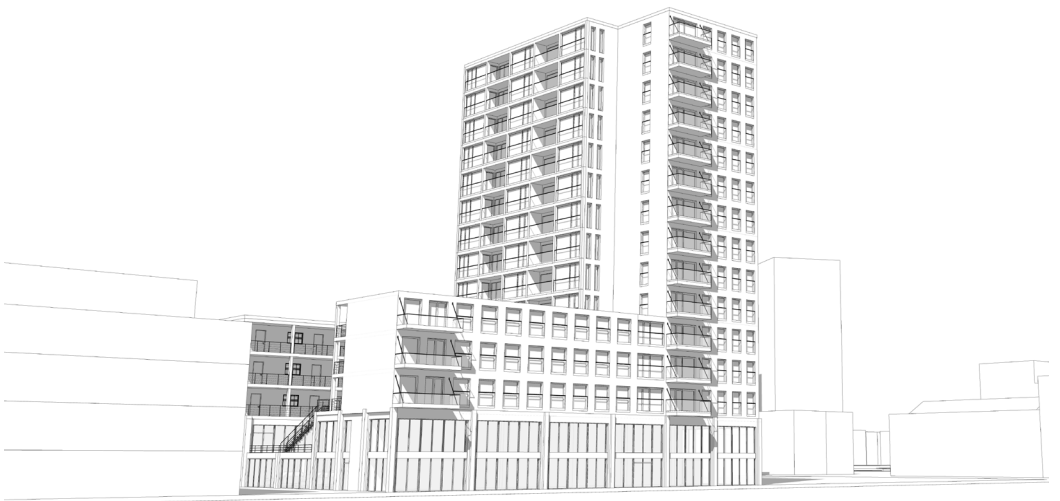
The 3D form of the selected block was continuously changing. It was important for me to see the influence of the changes and the design decisions on the function, human scale, inner atmosphere, and surrounding because the 2D drawings do not give me the proper perception. Basically, the aspects that I continuously changed were:

- the layout & openings of the dwelling: because I wanted to provide every dwelling with private outdoor space and a variety of typologies.
- The position of the communal facilities: For instance, it is preferable to place the co-work spaces in a centric place in the block.

-The position of functions in the plinth in order to avoid "dead facade"

**Based on the findings of this research, I made the following design decisions:**

- Enhancing wellings typologies: orientation and dimensions.
- Enhancing circulation escape routes
- Thinking about materiality, construction principles, and facade fragment.



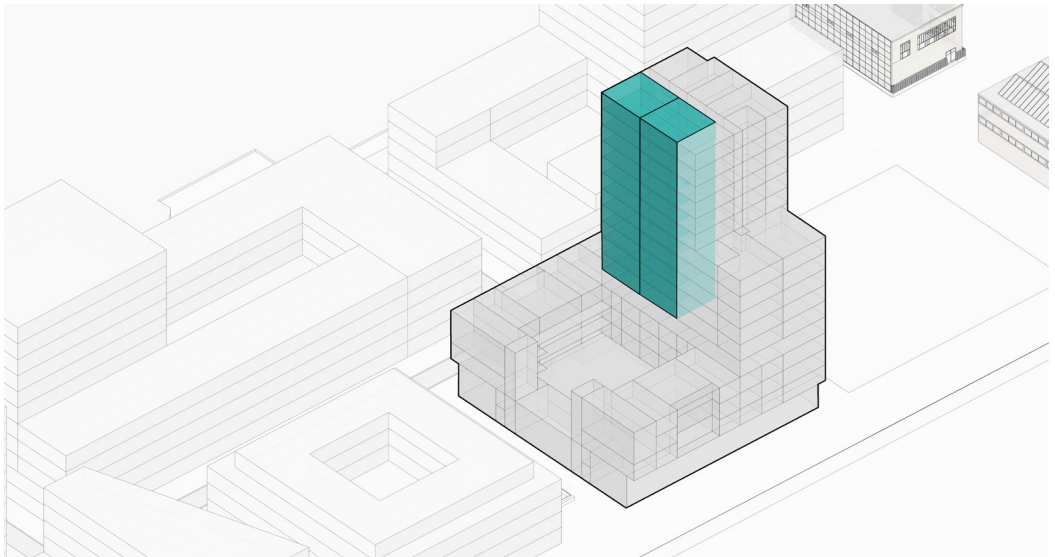
# Points system

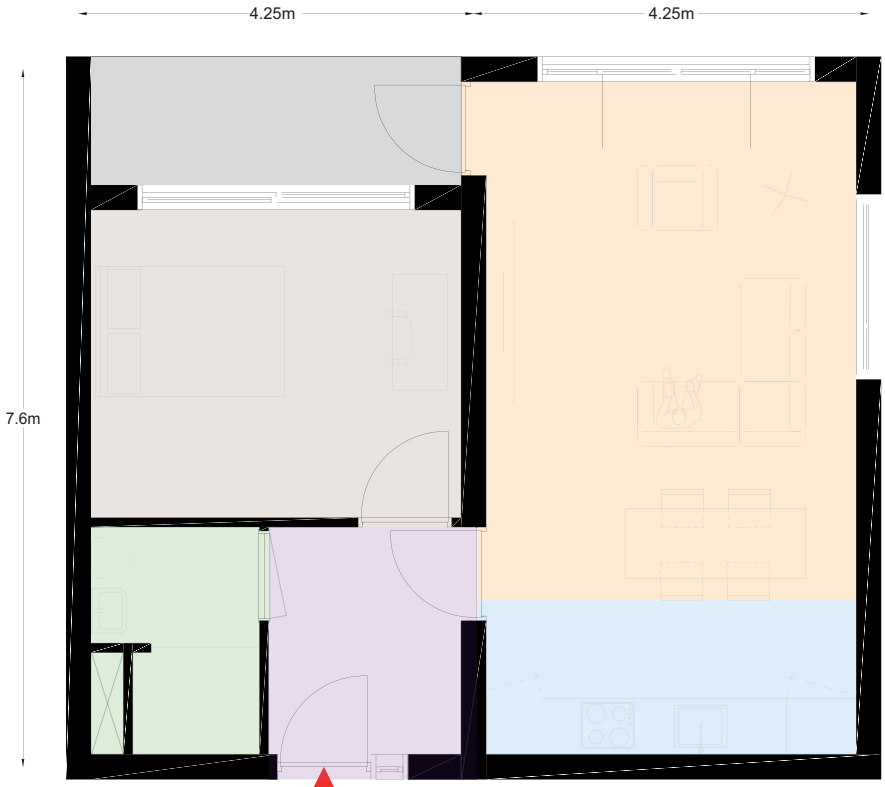
I mentioned in a previous paragraph that the dwellings fall in the mid-rental sector (750 € to 1000 €). Therefore, to make the study more realistic I applied the point system on the dwellings in order to determine the rent. The challenge of the points system was the balancing between the size of the dwelling and its facilities, so I eliminated most of the unnecessary luxury in order to gain more square meters, such as combining and compacting the bathroom and WC. Another important aspect was that I have in the suggested design twelve typologies in total, so studying everyone separately will be time-consuming. Therefore, I used Standardization, Repetition, and Prefabrication in order to reduce the time of the study and the cost of the building at the same time.







After that, I divided the dwelling into several divisions in order to make the calculation process comply with the points system. In the end, I came up with a scheme that includes all the designation info of each dwelling.

**Based on the findings of this research, I made the following design decisions:**

- The exact square meters of each dwelling.
- Determining the rent of each typology
- Calculating the points of each typology
- All inclusive rent
- Scheme includes all the designations info of each typology.





- |                                                                                     |                 |                                                                                     |                    |                                                                                     |                 |
|-------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------|-----------------|
|  | <b>Entrance</b> |  | <b>Living room</b> |  | <b>Bed room</b> |
|  | <b>Balcony</b>  |  | <b>Kitchen</b>     |  | <b>Bathroom</b> |

# Punten telling voor zelfstandige woningen

Oppervlak vertrekken (1 punt per m <sup>2</sup> )		Keuken			
Woonkamer	18 m <sup>2</sup>	18.00	Lengte aanrechtblad	2 meter of meer	7.00
Slaapkamer	16 m <sup>2</sup>	16.00	Het maximale puntenaantal voor dit onderdeel is 4. Bij een aanrechtblad <1m. Anders is het het dubbele van het puntenaantal van het aanrechtblad	Inbouw inductie/elektrische plaat	1.50
2e slaapkamer	m <sup>2</sup>		Kookplaat	Inbouw vaatwasser	0.50
3e slaapkamer	m <sup>2</sup>		Oven	Inbouw afzuigkap	0.50
4e slaapkamer	m <sup>2</sup>		Afzuigkap	Inbouw magnetron	
5e slaapkamer	m <sup>2</sup>		Inbouw magnetron	Inbouw koelkast	0.75
Badruimte	3.5 m <sup>2</sup>	3.50	Inbouw koelkast	Inbouw vries/koelcombinatie	
Keuken	6 m <sup>2</sup>	6.00	Inbouw vrieskast	Inbouw vaatwasmachine	
Zolder/kamers	m <sup>2</sup>		Dubbele spoelbak	Luxe mengkraan	
Andere kamers	m <sup>2</sup>		Luxe mengkraan	Thermostatische watermengkraan	0.50
Toilet bevindt zich in douche of badruimte?	<input checked="" type="checkbox"/>	-1.00		Extra enkele kast	
<b>Totaal vertrekken</b>		<b>43</b>		Extra dubbele kast	
<b>Overige ruimtes</b> (1% punt per m <sup>2</sup> , minimum 2m <sup>2</sup> )				Extra wandbelegging (naam? 2m <sup>2</sup> )	
Kelder	m <sup>2</sup>			Vloertegels (naam? 2m <sup>2</sup> )	
Bijkkeuken	m <sup>2</sup>			Algehele luxe uitvoering (maximaal 2 punten)	
Wasruimte	m <sup>2</sup>			<b>Totaal keuken</b>	<b>10.25</b>
Berging/schuur	m <sup>2</sup>			<b>Sanitair</b>	
Vaste en ingebouwde kasten	m <sup>2</sup>			Aantal toiletten	1
Garage	m <sup>2</sup>			Waaraan hangende toiletten	3.00
Zolderruimte	m <sup>2</sup>			De extra punten voor hangende toiletten worden meegerekend met de luxe voorzieningen onder douche en bad.	
Andere ruimten	4.6 m <sup>2</sup>	3.45		Aantal wastafels, fonteinjes, lavetten en bidets	1
Zolder aanwezig maar geen vaste trap naar zolder	<input type="checkbox"/>			Douche en/of bad?	<b>Douche aanwezig</b>
<b>Totaal overige ruimten</b>		<b>3.75</b>		Het maximale puntenaantal voor het onderdeel is het dubbele van het puntenaantal van de douche en bad, plus de punten voor de toiletten en wastafels.	4.00
<b>Verwarming &amp; installaties</b>				Design radiator	0.25
Type verwarming	Overige			Kastje, waarin ingebouwd een wastafel	0.25
Aantal verwarmde vertrekken (open keuken telt als apart vertrek)	4	8.00		Toiletkastje met ingebouwde verlichting	0.25
Aantal overige ruimten met verwarming (maximaal 4 punten)				Extra voor een bubbelbad (whirlpool)	
Video hallofoon	<input type="checkbox"/>			Schuif- of vouwwand met aluminium frame	1.00
<b>Totaal verwarming</b>		<b>8</b>		Luxe mengkraan (b.v. Eenhandsbediening)	
<b>Energieprestatie</b>				Thermostatische watermengkraan	0.50
Soort woning	Eengezinswoning			Extra wandbelegging (naam? 2m <sup>2</sup> )	
Datum energielabel/-index	Na 01-01-2021			Algehele luxe uitvoering (maximaal 2 punten)	
Zoek op via postcode en huisnummer op <a href="http://www.ep-online.nl">www.ep-online.nl</a>	≥ 40m <sup>2</sup>			<b>Totaal sanitair</b>	<b>10.25</b>
Gebruiksoppervlak	Label A+				
Energietabel		40			
<b>Totaal energie</b>		<b>40</b>			

**Buitenruimte**

Buitenruimte  2,00

Buitenruimte is gemeenschappelijk

Carport

Totaal buitenruimte

---

**WOZ-waarde** (minimaal € 55888)

Vul de WOZ-waarde van de woning in (op te vragen bij het WOZ-waardeloket) €

Nieuwbouwwoning 2015 of later (zie ook [website kadaster](#) / Of verbouwd in 2015 of later met energieprestatie conform nieuwbouweisen (bouwbesluit 2012)

Oplevering (nieuwbouw/verbouwd) in:

In welke gemeente ligt de woning?

WOZ punten absoluut

WOZ punten ratio oppervlak

Totaal WOZ-waarde

---

**Totaal puntenaantal** (minimaal 40 punten)

Maximale kale huurprijs

Een bedrag van (47,1€) voor gemeenschappelijke voorzieningen

Een bedrag van (100€) voor energie- en waterverbruik (coupons)

Designations	
<b>Size</b>	64.5 m <sup>2</sup>
<b>Rent</b> (all inclusive)	985.64 €
<b>Division of the dwelling</b>	Separated bedroom
<b>Points</b>	158
<b>Storage</b>	Yes
<b>Kitchen</b>	Full Kitchen
<b>Private outdoor space</b>	Loggia or Winter-garden
<b>Communal facilities</b>	Yes
<b>Car charging</b>	Yes
<b>Bicycle storage</b>	Yes



During the final phase of the design process, choosing the materiality of the elevations has been a challenging issue because of the industrial character of the context, the existence of two monumental buildings beside the plot, and the natural materials of the block. Therefore, my decision was to make a clear distinction between the old existing material and the new natural material by applying the spirit of the old materials on the plinth while keeping the natural materials on the upper residential floors. As a result, the materiality differentiates between old and new, as well as public and private/collective functions.

By selecting the possible options of the materials, applying them on the block, and using realistic renders, I had the chance to choose the option that fulfills the desired distinction.

When I was working on the renders, an idea came to my mind. Most of the students try to present their projects in their most ideal condition, that is logic, but it is well known that the weather in the Netherlands is rainy and unpredictable. Therefore, these factors will have an impact on the building's materials at the very least. Thus, I applied the weathering influences on the materials of the building and its surrounding. Afterward, I made a comparison between the

optimum conditions of the materials, and after five years when weathering and time had done an impact on it.

***Based on the findings of this research, I made the following design decisions:***

- Choosing the material of the plinth and upper floors.
- Harmony between the material of context and the material of the block.
- Experimenting with the appearance of the material after weathering and time had done an impact on it.

# Upper floors material



## Thermowood

Sustainability level : Klasse I  
Durability: more than 35 years  
Color: light brown  
Rot: good resistance  
Finishing: The wood will barely shrink or expand; the dimensional stability is large.



## Hard wood FSC

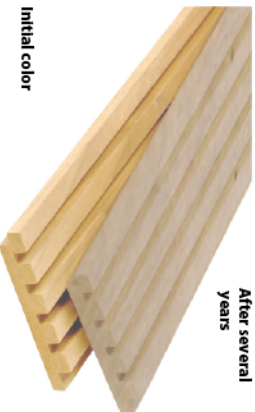
Sustainability level : Klasse I  
Durability: More than 25 years  
Color: yellowish light brown  
Rot: Good resistance  
Finishing: The dimensional stability is large. "expensive comparing with Thermowood"



## Eiken Deens

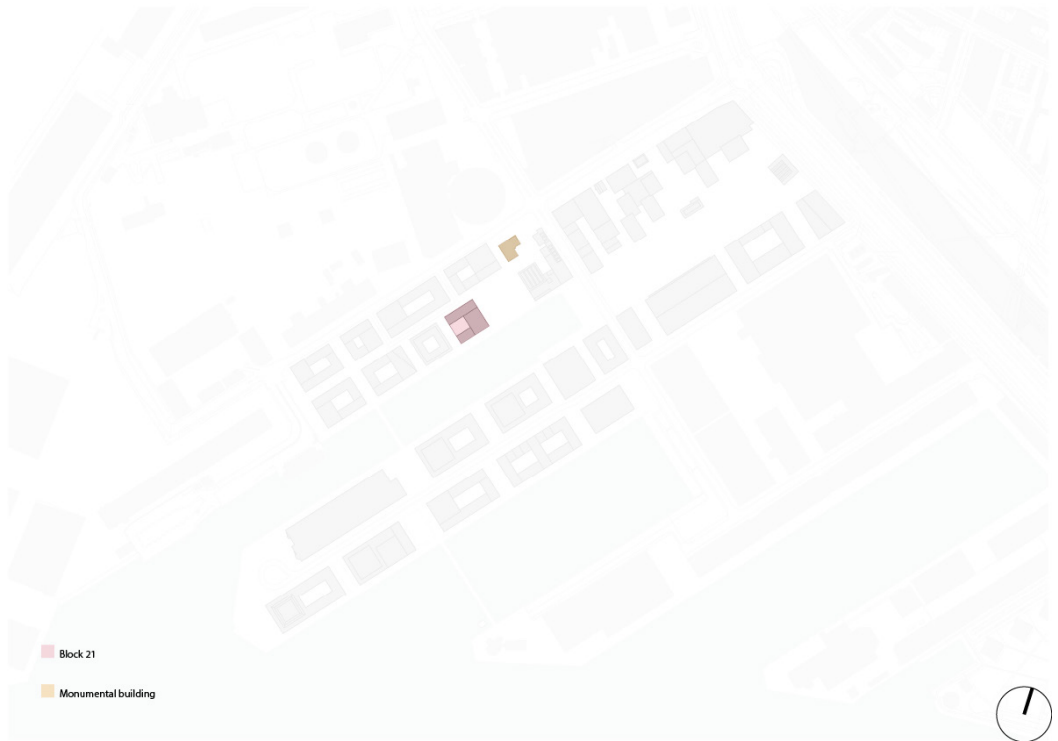
Sustainability level : Klasse II  
Durability: 15 to 25 years  
Color: light brown with golden brown lines  
Rot: moderate  
Finishing: The wood will shrink or expand by the time.

The aim is to choose the best option of wooden cladding that has light brown color. Because the color of the wood will change from light brown to grey after several years and this transition will be less remarked by using this color. Therefore, Thermowood has been chosen.



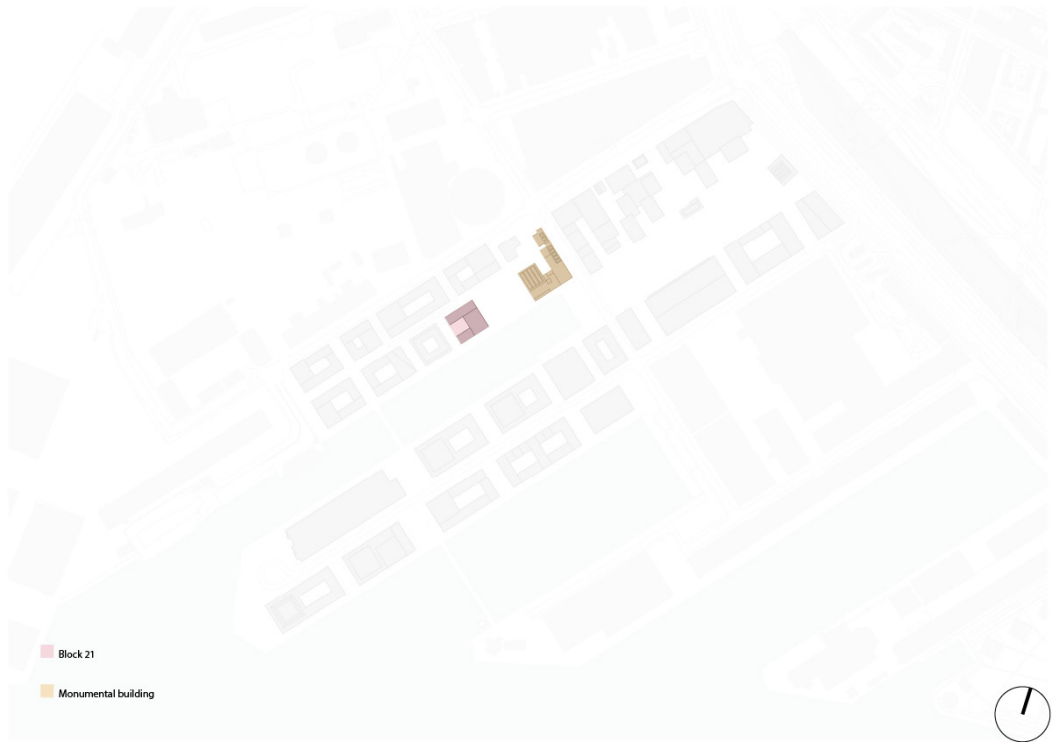
Initial color

After several years



**Yellow bricks is the dominant material in this building.**





**brown bricks is the dominant material in this building.**

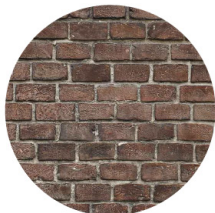
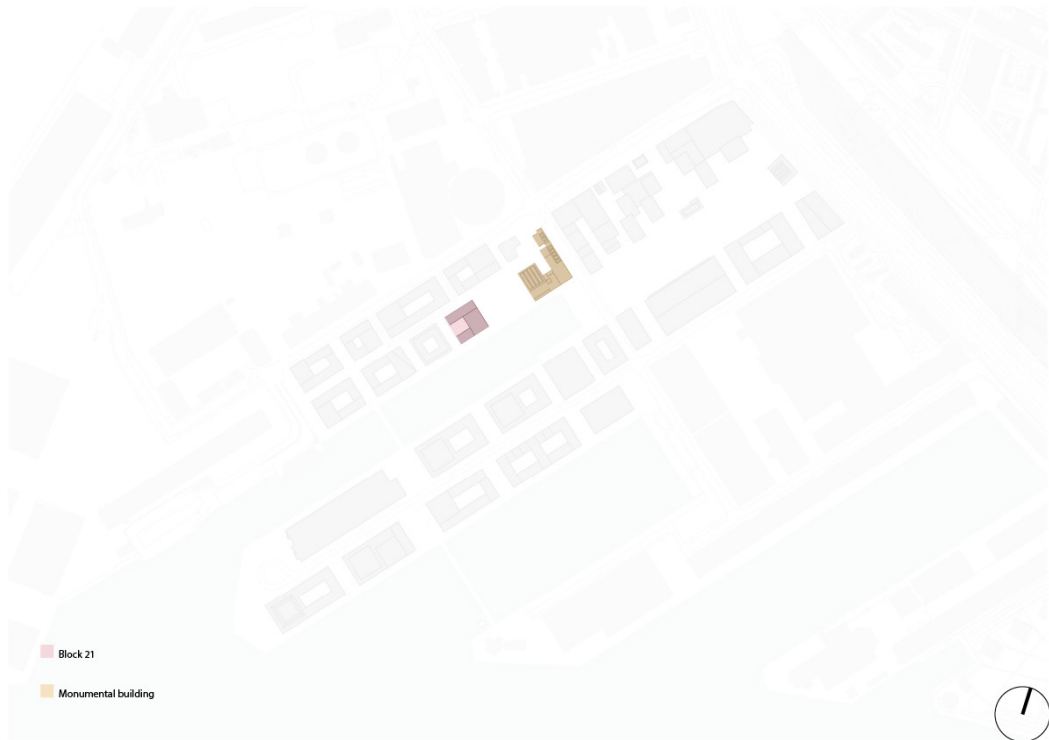




Using only concrete which is the construction material of the plinth.







**Old brown bricks is the dominant material in this building.  
Applying brick material that has the same color tone**





The initial condition of the materials.



The condition of the materials after 5 years.





# Conclusion

In the end, the process of design and research does not have a standard forms and techniques and the designer can use a variety of tools in order to make a decision. By reflecting on all the methods that I have used, I believe, that the majority of my decisions have been based on research by design or scientific research. In other words, I combined design by research and research by design to make decisions.

Overall, I can say that I am glad for conducting this research for my graduation project and I consider it thorough with regard to tools and techniques that I applied in order to come up with a reliable and realistic project. Undoubtedly, the experience that I have gained and the way of tackling the dichotomy of design and research will help me in the future when I practice the profession.

## Four other reflections

***1- The relationship between the graduation (project) topic, the studio topic, the master track, and the my master program:***

The studio of Advanced housing design focuses this year on creating a living-work area in M4H in Rotterdam and the theme was

collectiveness. The studio of Advanced housing design focuses this year on creating a living-work area in M4H in Rotterdam and the theme was collectiveness.

My graduation project is dedicated to young professionals and they face difficulties in terms of finding dwellings that fit their budget. Another hidden aspect is that the young professionals want to create a new living biography away from the existing outdated solutions. Life is changing and the lifestyle as well. Therefore, more attention is required with regard to dwellings design, especially, after the outbreak of COVID19.

Another aspect is the national housing shortage in the Netherland which addresses the importance of housing design because the challenge is not only to build but also to meet the requirements of the dwellers. Thus, there is a crystal clear relation among the studio topic, the master track, and the master program.

***2- 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 the work.***

I already described my research method in the previous paragraphs. Generally, in my graduation project, I followed the specified research criteria of the studio and they are literature research, analyzing four case studies, and site analysis. The literature research was the essential part of my project (research report) by collecting qualitative and quantitative data in order to comprehend the lifestyle, aspirations, and characteristics of young professionals. Also, the online questionnaire helped me to identify the demands of young professionals who live in Rotterdam. The case studies, reference projects, and other visual techniques (research by design), on the other hand, were more influential on design decisions, especially, in terms of compactness and efficiency.

### ***3- 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 municipality of Rotterdam wants to build more than 8000 dwellings by 2030, and these dwellings will be dedicated for the people who earn between 37.000 euros to 55.000 euros (Gemeente Rotterdam, 2020).

Furthermore, in other research that has been conducted by the municipality of Rotterdam called Strong Sholders "Sterke Shouders", it is mentioned that young professionals are one of the target groups that want to increase their numbers (Gemeente Rotterdam, 2019). Therefore, my graduation project can provide the municipality with a good understanding of the requirements of the residential buildings for young professionals.

Moreover, throughout the research process, I have noticed that there are plenty of resources talking about the financial problem of young professionals in the residential sector, while less is written about their aspirations, needs, and residential requirements. Therefore, the research can be useful to any researcher or student who is interested in this target group.

### ***4- Discuss the ethical issues and dilemmas I may have encountered in doing the research, elaborating the design, and potential applications of the results in practice.***

The ethical issues that I have encountered were about the rent and the square meters.

- The easiest way to reduce the rent is by decreasing the square meter.

I believe that this strategy should be used wisely in order to design dwellings rather than capsules. My struggle was to find the optimum square meters and dwelling quality that fit the suggested rent. In the end, by using the points system and applying “repetition and standardization” the process has become easier and faster. Therefore, I highly recommend every student who wants to design an affordable dwelling to understand the points system

- The dichotomy of dwellings and communal facilities is always controversial in such projects because if I add more communal spaces then I have to reduce the amount of the dwellings, so more charges have to be added to the rent. Thus, I had to think about every facility, the number of users, and the quality that it will add.



**TU Delft**  
**November 2021**

