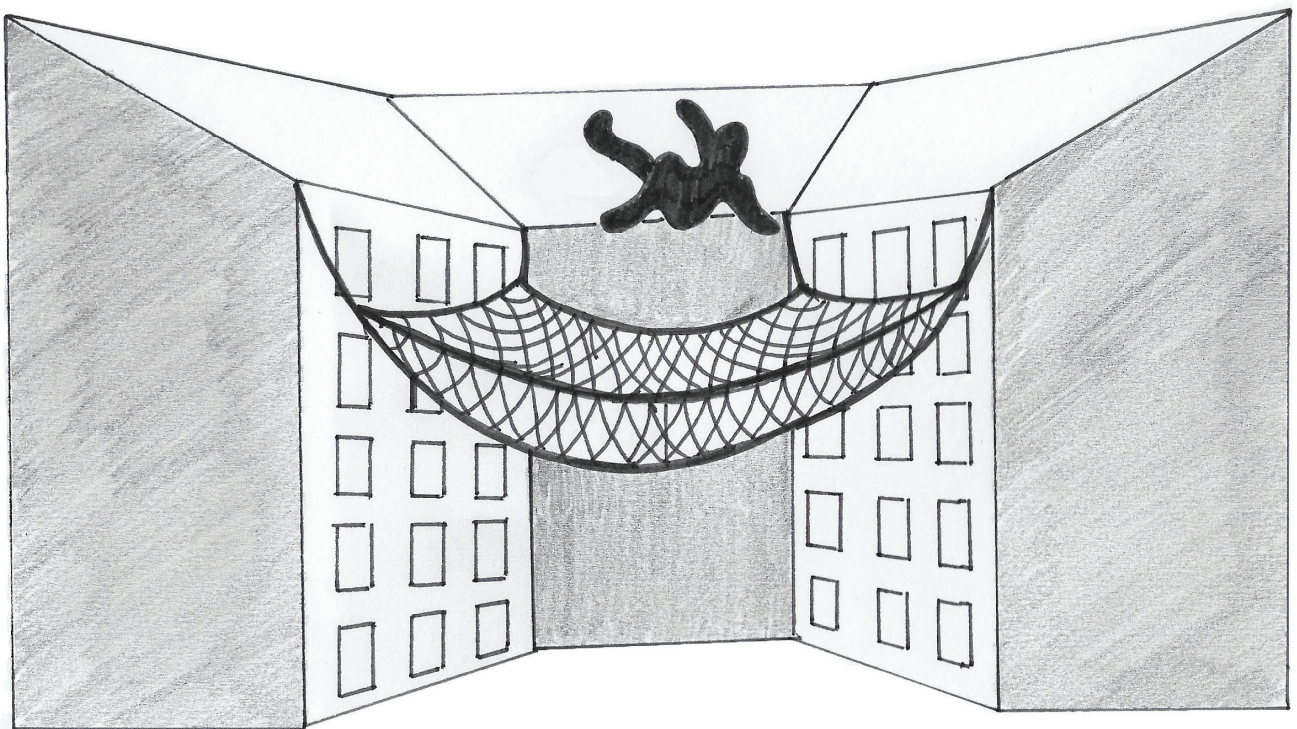


# The Safetynet

A research into designing a shelter for the vulnerable people of this era



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A research into designing a shelter for the vulnerable people of this era

Research report

Dutch housing graduation studio  
Architecture and Dwelling  
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# Preface

This research report is written as a part of my graduation in Architecture. For my graduation, I chose the studio Dutch housing. In my opinion, a dwelling is the most important place in a person's life, it's our safe haven, the place where we could truly be ourselves, it is even a part of our identity. But what if we suddenly lose this all? What if we for any reason become homeless?

The name of the studio of Dutch housing is '*between standard and ideals*'. Ideals have manifested in architecture as long as we can remember, but in this studio, we should seek our own ideals and our own aspiration for the future. We were asked what our utopia would look like. Mine would be an inclusive city, a city that belongs to everybody and where everybody could find their place. In my utopia, we would take care of each other, especially when things go wrong.

These ideals would eventually be formed into a concrete design proposal, which is feasible, functional, rational, technically sound and in accordance with the law. The location of this assignment is the former fortification works around the inner city of Amsterdam. Due to the many transformations, a great variety arose. The site challenges us with its physical limitations but gives us a lot of freedom as well since it is just outside the city centre and therefore not burdened with the Unesco World Heritage designation.

In this report, you will find a research into how to make a shelter for the vulnerable people of this era. I will start with a research into the history of shelters and the needs of the residents. In my manifest, I will clarify my ideals and proclaim my utopia. In the plan analysis, the principles of flexible apartments will be investigated and in the site analysis, I will show the important specifications of the location I chose. Finally, I will formulate the brief of the project I will design for my graduation.

Amanda Schuurbiers  
Halsteren  
June 15, 2018

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## Introduction

Looking at the policy documents of Amsterdam, I found 3 problems that are related to each other. The first one is the fixed housing market. This is due to the low supply of available dwellings in Amsterdam; a lot of families want to move to a bigger house but can't find one. The other cause is that people are afraid to pay more money for less square meters. Mostly elderly are willing to live in a smaller apartment, but they have lived there for such a long time that the rent is relatively low. When they move they have to consider the new prices on the market which are higher than what they pay now, so they get less for more money (Ivens, 2017; p18).

This problem leads to 'scheefwonen'; in other words, a lot of people are not living in an appropriate dwelling. We see this as we compare the incomes of the residents with how much they have to pay for rent or mortgage. No less than 14% of the high income live in social dwellings and 4% of lowest income live in high-class dwellings that they can't afford. Both low income and high income live in middle-class dwellings as well. Since the middle income isn't allowed to rent a social rent apartment and they can't afford the high-class dwellings, it is nearly impossible for them to find a dwelling in Amsterdam and so they are driven out of the city (Ivens, 2017; p16).

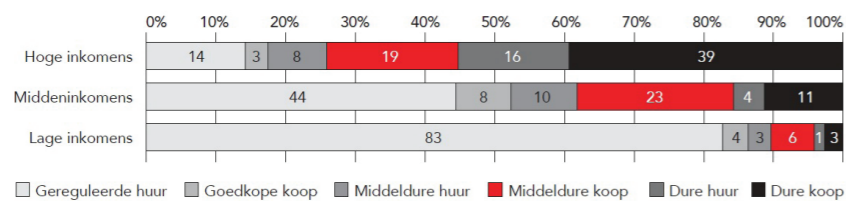


Figure 0.1: division income compared with the expenses for a dwelling, source: Ivens, 2013

The third problem is that the fixed housing market gives starters almost no chance. Nowadays children stay longer with their parents because they can't find a house for themselves, which causes financial troubles (kostendelersnorm). This means that people have to pay more rent because there are more people with a paying job living in the dwelling. Eventually, the starters will be driven out of the city (Ivens, 2017; p20).

These three problems are turning Amsterdam into an exclusive city, a city where only specific people could live. My ideal for Amsterdam, however, is the inclusive city, where everybody is welcome and has a place to live. The municipality of Amsterdam recognized the problem of the exclusive city and named the problem that the families, the elderly, the middle class and the starters are driven out of the city and they made plans to create better chances on the housing market for these groups (Ivens, 2013; p38). Only, in my opinion, these groups are not the only ones in need.

There is an increasing amount of articles in the news about people getting homeless after a divorce, a calamity or a bankruptcy. In 2015 no less than 2767 people got a divorce in Amsterdam (CBS, 2017). In 2017 the fire department of Amsterdam had to respond to 708 fires inside buildings (Smith, 2017). At the same time, the risk of floodings increases and while the number of bankruptcies in the Netherlands decreased, the amount of bankruptcies in Amsterdam increased in 2017. In fact, 282 corporations went bankrupt in that year in Amsterdam (Stil, 2017). Due to the fixed housing market, it is really hard to find a new dwelling in Amsterdam, it could take up to 8 years to get a new dwelling (Ivens, 2017; p19). In certain emergency's the municipality of Amsterdam gives priority, but there are strict rules about in what situation priority will be granted and when not (Gemeente Amsterdam, nd). Even if the priority is granted, it is still hard to find a suitable dwelling on such short notice.

Ieder jaar steeds meer gescheiden ouders naar daklozencentra

Figure 0.2: headline: each year more and more divorced parents to the homeless shelters, source: Monitor, 2018

Aerdenhouts gezin dakloos na brand

Figure 0.3: headline: family form Aerdenhouts homeless after fire, source: Molducci, 2018

Vrij, Overveerd  
**Het Parool** HOME AMSTERDAM OPINIE STADSGIDS

**In Amsterdam juist meer faillissementen**

Figure 0.4: headline: in Amsterdam more bankruptcies, source: Stil, 2018

These three groups need a temporary dwelling at short notice. In fact, they need a shelter where they can heal emotionally and built back their life. The main question for this report will then be:

### *How to design a shelter for people in a crisis situation?*

To answer this question I will have to answer several sub-questions, like *what do these people need? What have they been through? What family compositions should be housed in this shelter?* The family composition would probably differ from singles to families with three or four children and their residence will be temporary, this lead to the question: *how to deal with changing residents and differentiation in family composition?* An answer to that question could be flexible dwellings.

The first chapter will give an historical review of shelters, it will answer what the future residents have been through and what family compositions can be expected and it will focus on the needs of the future residents. Chapter three will examine the possibilities of flexible dwellings.

# 1 Literature study

## Guesthouse

The greediness of the nobleman and clerics that run the monasteries caused a rebellion in the 6th and 7th century. Guesthouses were founded independent of any monastery and everybody was welcome in these guesthouses. One of the first in Europe was the guesthouse in Lyon, which was founded in 542. The nobility took again disadvantage of the hospitality of the guesthouses. The council of Vienne in 1311 stopped this misuse and stated that the clerics should not manage the guesthouses anymore. The managers should be chosen by their ability instead of their background, their social position or their wealth. Since this reformation in management, guesthouses started to evolve more and more and there were different departments formed. There was a shelter for orphans and foundlings, an infirmary, a shelter for the phenetric, a shelter for the elderly who could live by themselves and a shelter for all travelers, even the criminal ones (Linde, 2007, p49-52).

## 1.1 Time line shelters

We know a long history of shelters and helping people in need. This timeline will give an overview of the most important shelters and the idea's behind them.



### Monastery

Antonius (251-356) was born a rich man, he felt his possessions were an obstruction by following Jesus, so he sold it all and gave the money to the poor people. He stated that the poorer you are, the closer to god. He is seen as the founder of the monastery. The first monastery is built in 356 on his grave in Egypt and became a refuge for poor people and people in despair. This is the first shelter home that's been written about (Linde, 2007, p41).

After this first one, a lot of monasteries were founded in Africa and Egypt and after a while, they came to Europe as well. In 529 a new way of living in the monastery was introduced, which contained a new daily schedule for the inhabitants: eight hours praying, eight hours working and eight hours resting. Thanks to the introduction of work, the monasteries could earn money. This was meant to help the poor even more, but unfortunately, it attracted greedy nobleman and cleric (Linde, 2007, p43).

Figure 1.1: St. Antonius monastery in Egypt, source: BBC, 2010

### Almshouses

Not all shelters were meant for the poorest people of the society. The 'hofjes' (almshouses) were groups of little houses built around a communal garden where the elderly could live safe and quiet. These elderly had to buy themselves in, so this shelter was meant for the more whealthy elderly (Weerheijm, 1979, p8). The first almshouse founded in the Netherlands was the 'Bakenesser kamer' in Haarlem and was built in 1395 (Cardozo, 1977, p8). This almshouse was meant for women only, who were 60 years and older. Most almshouses were meant for women only or for couples, almost none of them were meant for man. This was due to the fact that women could take better care of themselves and their households than man could (Margry, 1997, p34).

Left: figure 1.2: woodengraving of the council of Vienne, source: Schedel, 2017  
Right: figure 1.3: Bakenesser kamer, source: Haarlems hofje, nd

## Madhouse

There have always been people with mental illnesses. The first 'dolphuis' (madhouse) founded in the Netherlands was the 'Reinier van Arkel' in Den Bosch in 1442 (Linde, 2009). Before, the phrenetic were tight up in little cages in the backyard of their families. Now, these cages were brought together in the madhouses. These were not focused on curing or care, but to keep them off the streets (Linde, 2007, p52). These houses didn't have enough money so to earn extra money they held viewing days. On these days people paid money to get a look inside such a house. They saw how the people were chained and got beaten, they even fed the insane people to amuse the viewers. Luckily there came new laws in 1800 the so-called 'krankzinnigenwetten', these laws stated that the phenetric patients should be treated more humane and they deserve better care (Linde, 2009).



1450

1442



## Orphanage

At the end of the dark ages, there were a lot of guesthouses in the Netherlands. In Den Bosch, there were already more than 14 guesthouses in 1450. Thanks to these enormous amounts, guesthouses could specialize. The departments were no longer established in one guesthouse but got their own guesthouse per department. This is how the orphanage was founded (Linde, 2007, p54)

The first orphanage in the Netherlands was the 'Zoudenbalch huis' in Utrecht (Wiel, 2012). It was founded in 1491 and was meant for all children, no matter what social position or how much money they had. The only restriction was that they had no family left (Walda, nd). After this example, more orphanages came, but those were not as open as this one. There came a division between the 'Burgerweeshuizen' meant for the orphans originating from the bourgeoisie and the 'Aalmoezenersweeshuizen' meant for the poorest orphans (Wiel, 2012).

Left: figure 1.4: plaque above the entrance of 'Reinier van Arkel' madhouse, source: Slikker, 2015  
Right: figure 1.5: plaque above the 'Zoudenbalch huis', source: Gevelstenen in Utrecht, 2017

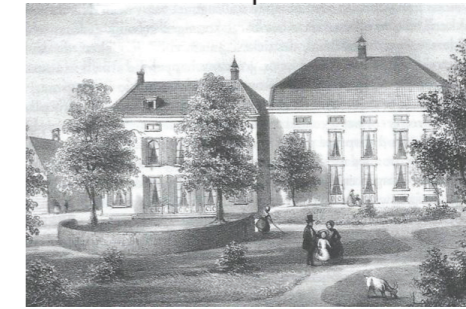
## Addict care

At the end of the 19th century, alcohol addiction became a major problem in the Dutch society. People have always had beer and wine to drink, but now the liquors became very popular. These contain more alcohol, what caused the large addiction problems. The 'Maatschappij van Matigheid' was the first abolition association in the Netherlands. It was founded in 1832 in Friesland (Linde, 2007, p137). A lot of associations followed, but the 'Nederlandsche Vereeniging tot Afschaffing van Sterke Drank' or short the VN was the most powerful one. The VN was founded in 1842. The membership was for free, but they united to moderate the use of alcohol or even to stop drinking (Stel, 2016). The associations helped to lower the use of alcohol but couldn't solve the problem entirely. Therefore the sanatorium 'Hoog-Hullen' was founded in Eelde in 1891. There were some earlier examples in Germany, but this was the first in the Netherlands (Stel, 2009).



1848

1832



## A safe haven for women

In 1848 the first shelter for women in Europe was founded by Ottho Gerhard Heldring. It was located in Zetten and was called 'Asyl Steenbeek'. It was meant to help the fallen women in the society, women who worked as a prostitute but wanted to quit. It was founded by a man, but the management and the care for the women were done by women. It was focused on the re-education of the women; when they would leave the shelter, they would be able to live on their own. They got a religious education and they learned how to keep up the domesticities so they could work as a servant or function as a housewife (Boere, 2014).

Left: figure 1.5: Sanatorium 'Hoog-Hullen', source: Van der Stel, 2016  
Right: figure 1.6: 'Asyl Steenbeek', source: Boere, 2015

## 1.2 The future residents

If we look at the development of the shelters we see that every time a new group of people in need occurs, we adapt a shelter or we create a new one. As stated in the introduction we have at least three 'new' groups of people in need: people who went bankrupt, who got a divorce and who lost their house due to a calamity. These situations are of course not new, but we still have no solution for people in these situations. These people had their life on track but tripped and fell. Nowadays, you have to fall to the ground before you can get any help, but if we help these groups before they lose everything they have, it is so much easier to climb up again.

### Divorce

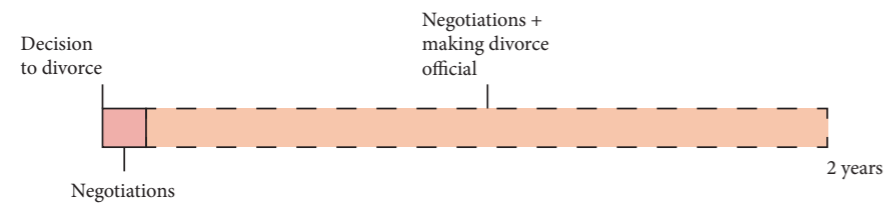


Figure 1.7: expected duration residence in shelter in case of divorce, source: authors creation

Getting an divorce is a emotional decision. When someone decide to get a divorce there are a lot of things to arrange; where will the kids live, what will we do with the dwelling, how do we divide our belongings, how much alimony will be paid? (rechtwijzer, 2014)

For the decision about what to do with the dwelling, it is important to know if one of the two can bear the housing costs on his/her own. If so, one of them could stay in the house and the other has to move, if not, both have to move (rechtwijzer, 2014).

The period before your divorce is official can differ between 6 weeks to more than 2 years. If you and your partner agree and both want this to be quick, it will take 6 to 10 weeks, but the average is between 3 and 4 months. In extreme cases where they just can't agree with each other, it could last more than 2 years (leggle, 2017).

**At least one of the two would need a temporary dwelling for 6 weeks to 2 years where they can arrange the divorce and search for a new dwelling. It is important that this temporary dwelling is in the same city, so the both of them will see the children regularly. The amount of needed space can vary during the week since the children wouldn't be there all the time, there might even be no children involved.**

## Bankruptcy

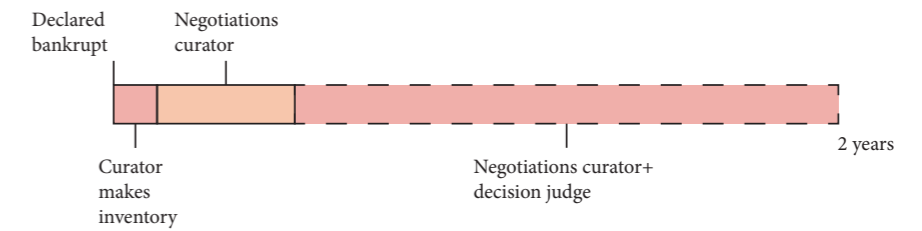


Figure 1.8: expected duration residence in shelter in case of bankruptcy, source: authors creation

When an entrepreneur can't afford the debts of the company anymore he can ask for his bankruptcy or someone else can ask it for him. The judge can approve, reject or convert the request into a debt restructuring. When the judge approves and declares the bankruptcy the entrepreneur can no longer utilize his belongings, actually, it doesn't belong to him anymore. The curator will decide what debts will be paid and how much can be spend on a daily basis (Habets, 2014).

When the entrepreneur owned a private company (*besloten vennootschap* in Dutch) the company will be bankrupt and he will be responsible if he made mistakes. If the entrepreneur owned another type of company, a sole proprietorship, for instance, the bankruptcy is personal and all his private belongings will be on stake as well (belastingdienst, nd). In this case, everything will be taken except clothes, a bed, the necessary furniture and provision food. When you own a house, this will be sold (De Rechtspraak, nd).

It could take 6 to 24 months before the judge would end the bankruptcy (schuldeisersbelang, nd). It could be ended when all debts are paid, when the judge approves the settlement to pay at least 75% of the debt, or when the creditors wouldn't agree with the settlement. In case of the latter, the creditors would get a part of their money, but they can still recite their money on the ex-entrepreneur (Habets, 2014).

**In the worst case scenario, the ex-entrepreneur will have only his furniture, some clothes, and some food, but no house. He could be alone, but he could also have a wife and kids. They will need a temporary house for at least 6 to 24 months where they can wait for the conclusion of the bankruptcy and build back their life.**



## Calamity

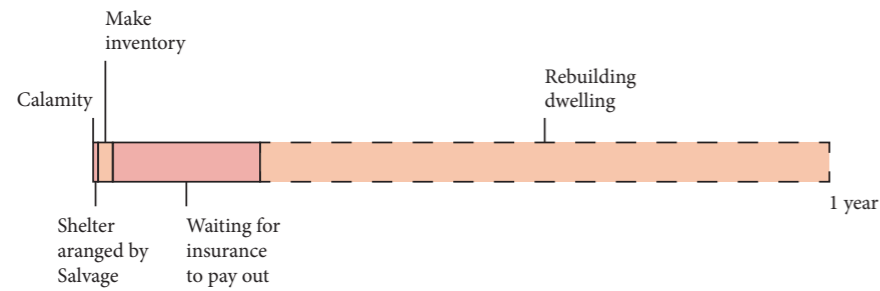


Figure 1.9: expected duration residence in shelter in case of calamity, source: authors creation

When a house gets affected by a calamity, like fire or a flooding, the owners lose all their belongings in just a few minutes. Even if a part of the house could be saved, they can't stay there for a while. Salvage is an organization that will help the affected in the weeks after the fire, but they only arrange a shelter for one night. After that, they have to find one themselves (Stichting Salvage, 2018).

It is very important to make an inventory of the damage and photograph all of it for the insurance. Only after the insurance company approved, they can start with cleaning up the remains (Brandweer, nd.). If they rented a house they can look for another dwelling or wait for the landlord to build the dwelling back (Nijs, 2015). If they owned a house they have to build it back themselves. It will take 10 weeks from the request till the insurance company will pay out. Before that they can start building, but then there is the risk that they already spend more money than they will get and they need a lot of money to do so (Delta Lloyd, nd). How long it will take to build the house back depends on the severity of the damage, the contractors, the choice to build the old house back or to design a new one, the permits needed etc.

***The residents of the damaged dwelling need a temporary house to wait for the insurance to pay out and to look for another dwelling or to build their dwelling back. This will take about 10 weeks to 1 year. The affected resident could be single, but they could also be a family with children. In the worst case, they have nothing left so the dwelling should be furnished.***

## 1.3 The needs of the future residents

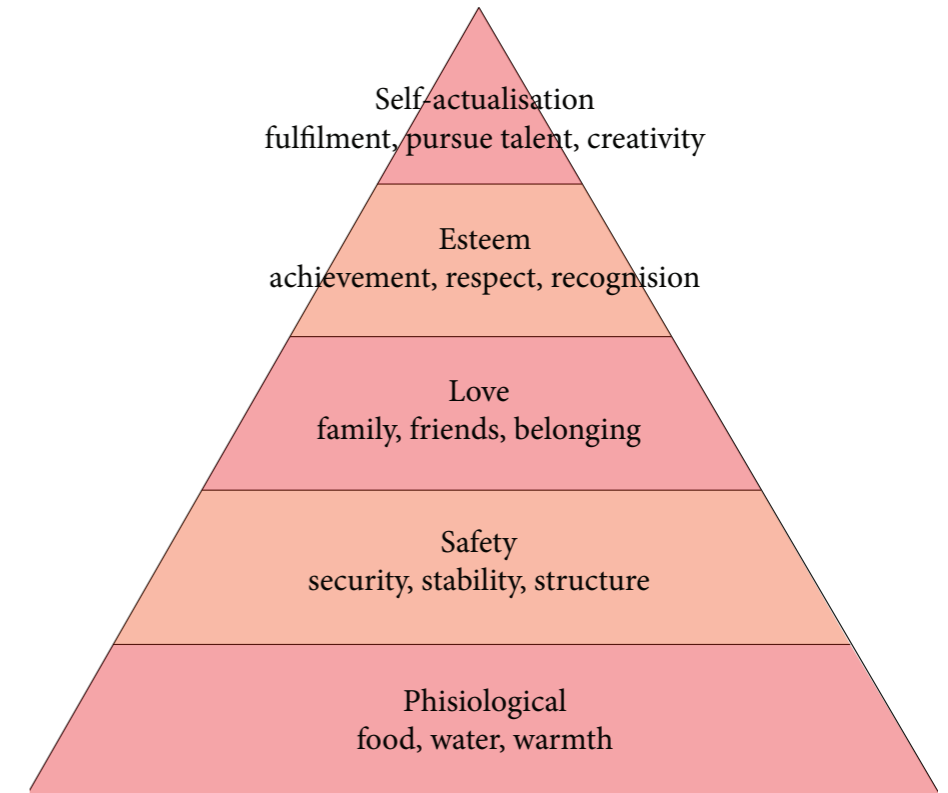


Figure 1.10: pyramid of Maslow, source: authors creation

Now that it is clear what the future residents have been through, it is important to look at the needs of the future residents.

In 'a theory of human motivation', Maslow states that humans have five basic needs; physiological, safety, love, esteem and self-actualisation. These needs form the famous pyramid of Maslow, where the physiological needs form the bottom and the self-actualisation is the top. He claims that when the physiological needs are not satisfied, none of the other needs are important. As Maslow said: 'For a chronically and extremely hungry man, Utopia can be defined very simply as a place where there is plenty of food' (2017; p10). The physiological needs dominate the life until it is satisfied, only then a new need will occur. The next need in this hierarchy is safety and again only when this need is relatively well satisfied, the next need will occur and so on (Maslow, 2017; p10).

It also works the other way around. Envision a person who satisfied almost all his needs and is working to satisfy his need for self-actualisation. All of a sudden he can't satisfy his physiological need anymore. When he is extremely hungry, all the higher needs are unimportant, they don't even exist anymore and his physiological need dominates his life again. Only when he satisfies his physiological need, the next need could occur again, but in some extreme situations these higher needs will never occur again (Maslow, 2017; p20).

The situation of the target groups is similar to this latter example. They have their life on track, but due to the calamity, divorce or the bankruptcy, they can't satisfy their safety needs anymore. This safety need comprises security, stability, and structure. They don't only lose the security of their dwelling, but also the stability and the structure of their old lives. They can't continue with their daily routine, the occasions were unpredictable and their situation is now partly uncontrollable, maybe they feel it is unfair what happened or

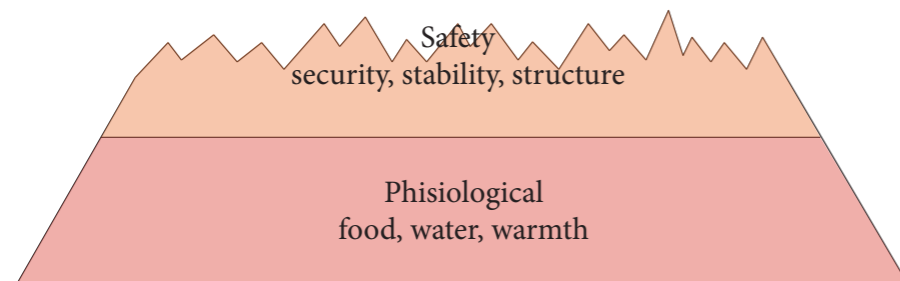


Figure 1.11: affected pyramid of Maslow, source: authors creation

they feel injustice and they have to leave so much familiarity behind. All of this causes an unsafe feeling and the need for safety will dominate their life (Maslow, 2017; p11-15). To satisfy the safety need they must retain the security of a dwelling, create a new daily routine, get control over their lives, accept the unfairness, deal with the injustice and get familiar with their new surroundings and lives.

When the safety need is satisfied, the need for love will occur. They will long for friends, a spouse, children, they will feel the urge to belong to a group, in society. When this is satisfied, they could work on their self-esteem and self-respect and along to the esteem of others. The last need, the need for self-actualisation is seldom satisfied. This is about self-fulfilment, for instance being an ideal mother or become a high-class athletic (Maslow, 2017; p15-16).

**Looking at these needs, there will probably be three phases in the shelter; in phase 1 the residents will satisfy their safety needs. The shelter should provide a dwelling that creates a place for their familiar belongings. They should get enough space, time and privacy to create a new daily routine, get the control over their lives, accept the unfairness and deal with the injustice. In phase 2 the residents will satisfy their love needs. The shelter should provide communal spaces where the residents could meet and connect, this creates opportunities to work on the satisfaction of the need for love. In phase 3 they will work on their esteem needs. It is really hard to provide for this need, but to help satisfy this need, the shelter should be a building to be proud of.**

**If the residents will fulfill all the phases depends on how quick they found a new dwelling and how long they want to stay, but when they leave they should at least have satisfied the need for safety.**

## 1.4 Comparison with a women's refuge house

When we look at the theory of Maslow, we can conclude that the situation of the target groups is a bit similar to the situation of the women in a women's refuge house (in Dutch a blijf-van-mijn-lijf-huis). These women were mentally and physically abused by their husband at home and found shelter in these houses. Their situation is worse than that of the target groups, but both fell back to the safety need. Another reason to compare the shelters is the similar differentiation in the family composition of the residents; with or without children.



Figure 1.12: simple decorated room in a women's refuge house, source: Wagenaar, 2008

In women's refuge houses, the configuration of the shelter is part of the healing process, but nowadays these configurations undermine the process. Most of these shelters are very restrained and simple decorated, there is no comfort at all (Wagenaars, 2008; p26).

In a lot of shelters, living in a community is a therapeutic model; the women understand each other's situation and could draw upon each other. In these communities, the women and children live together and share the kitchen, living room and bathroom. The women have an individual bedroom, but there are no separate rooms for the children. This way of living increases the stress of these vulnerable women (Wagenaars, 2008; p29).

Living in a community is also not the appropriate situation for children. A community is based on a group of equal persons; in this case the women in the shelter. They form the community and the children are just the entourage. In a family, the most important bond a child has is with his parents, siblings, and grandparents, the bond with friends and neighbours is less important. In this community, the bond between the women is as important as the bond with family, but the child does not share this bond, he is just entourage. This is very confusing for a child and makes him feel uncomfortable (Wagenaars, 2008; p30).



Figure 1.13: modern almshouse as women's refuge house, source: Wagenaar, 2008



Figure 1.14: modern almshouse as women's refuge house, floor plan, source: Wagenaar, 2008

However, not all women's refuge houses are communities. One of the analysed shelters in 'Van huis en haard' was a modern almshouse, where the women lived individually and only shared the courtyard. The women found it very comforting to have neighbours who were in the same situation. This is, however, a whole different way of living together; it is more like real close neighbours than a community. They have their own life and their own household and the children have a normal relationship with their mothers. The women visit each other a lot, but when they do, it is not like meeting in a communal living room. The woman of the house is really the hostess and the others are the visitors, like when friends visit each other (Wagenaars, 2008; p30).



Figure 1.15: option for informal setting for meetings, source: Wagenaar, 2008

This example shows that a communal space does not have to be a living room and that women don't need to be forced to meet, they arrange these meetings themselves. Wagenaar states that the area between the individual dwelling and the public street outside should provide enough communal space to facilitate these meetings in an informal way. In the example, this was implemented by the courtyard, but this could also be realised with an atrium or with over-dimensioned hallways with leftover spaces (Wagenaars, 2008; p33).

***The shelter should thus provide individual dwellings for families. A communal living room is not required, but there should be some space to meet informally within the building or within the complex.***

## 1.5 Needs for the single future residents

The informal meeting spaces may, however, not be enough for the single future residents. Van Tilburg states that the risk of loneliness increases significantly after a divorce (2015), but a change in the living environment or in social cohesion can trigger the feeling of loneliness as well. Loneliness is more than just being alone, it is the lack of mental intimacy with other people. It is a common problem in large cities like Amsterdam. Especially in a city when one is surrounded by people, one can feel extremely lonely (Laing, 2016). If we look at the pyramid of Maslow, loneliness is the lack of belonging to a community. This must be solved to satisfy the need for love, the third need in the pyramid.

However, loneliness can also prevent the satisfaction of the second need; the need for safety. Leijssen states that, when people go through a traumatic experience, like a fire in their house a divorce and even a bankruptcy can be seen as traumatic, that loneliness will increase the feeling of guilt and counteract the process of coping with the trauma (2013). In fact loneliness is seen as an illness itself (Laing, 2016).

Having dinner together can diminish the feeling of loneliness. Van Os states that eating dinner is a physical and social need. With sharing a meal, relations can be made and maintained. In all cultures, sharing a meal is seen as a ritual to initiate, confirm and strengthen bonds with other people. Celebrations, weddings and holidays are almost always accompanied with food (2008; p17).

***For the single future residents of the shelter, a communal kitchen and dining room could be an answer. Here they can cook with each other and share meals. With sharing meals they can connect with their neighbours and draw upon each other, since they're all in a similar situation. This could help to prevent loneliness of the residents.***

## 1.6 Conclusion

Figure 1.17: background information future residents, source: authors creation

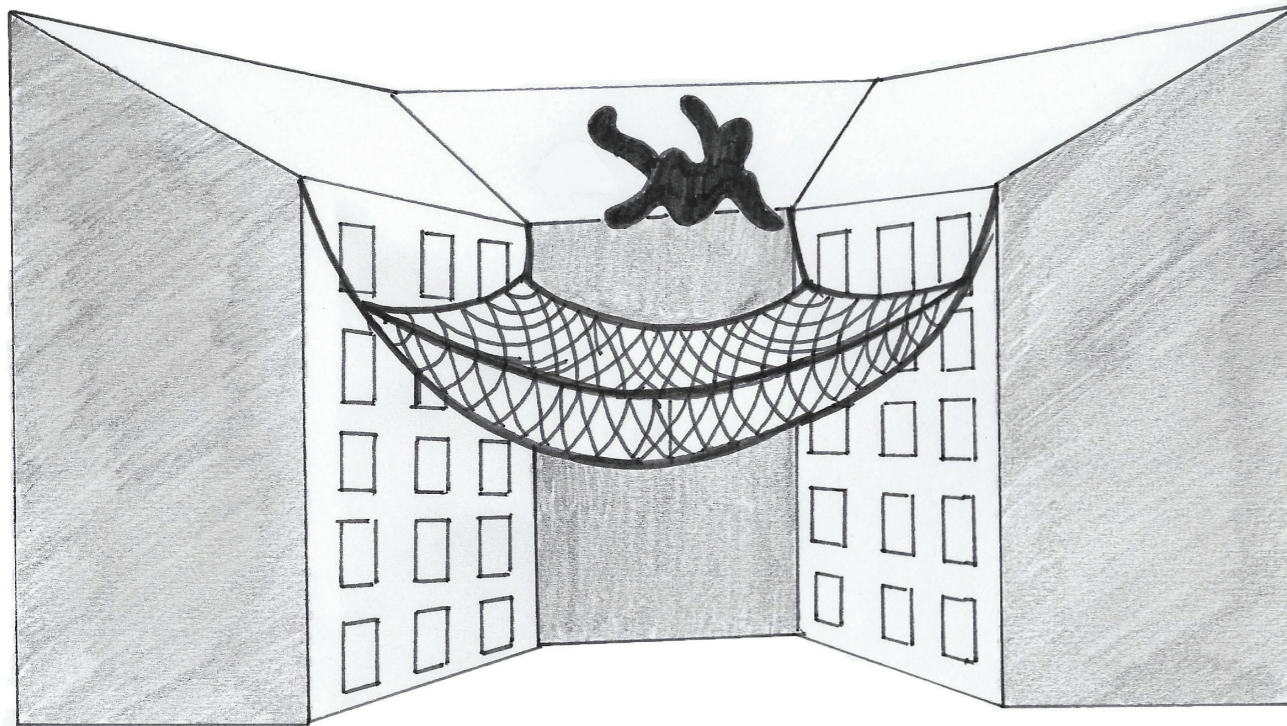
	duration residence	single	couple	with children	furnished
divorce	6 weeks to 2 years	x		x	maybe
bankruptcy	6 months to 2 years	x	x	x	only additional
calamity	10 weeks to 1 year	x	x	x	yes

Figure 1.18: needs according to Maslow with corresponding architectural needs, source: authors creation

	safety needs	need for love	need for esteem
needs	- Create new daily routine - Create new familiarity - Get control over their lives - Accept unfairness - Deal with injustice - Privacy	- Friends - Children - Spouse - To belong	- Self esteem - Respect - Recognition - Achievement - Esteem from others
architectural needs	- Dwelling with place for familiar belongings - A place for themselves	- Communal spaces	- Building to be proud of

Figure 1.19: requirements family dwelling and single dwelling, source: authors creation

family dwelling	single dwelling
- Completely individual dwelling - Informal communal spaces ( an atrium or over-dimensioned hallway)	- Communal space to dine - Private bed- and bathroom - Informal communal spaces (an atrium or over-dimensioned hallway)



### The compassionate city

The abolition of the aristocracy meant we could make our own lives; we can be born poor but work ourselves to the top. This also changed our way of thinking; good is not good enough anymore, we should be the best, but do we only earn esteem when we are the best? We think that when we want something really bad, we could make it happen. Of course it is good to have dreams and to chase them, but sometimes we can't make it true and we can't accept this.

We are so eager to reach the top that we sometimes forget to look at the people around us. We hardly see when someone is struggling or in trouble. This is partly due to our weird social habit to answer the question "how are you doing?" with "I'm fine how are you?" even though we're not fine at all. This is enhanced by our tendency to only post our successes and greatest moments on social media. There are a lot of post with holiday pictures, parties and achieved goals, we never post about our boring day at work or about the eggs we broke on our way home from the groceries.

This way of thinking leads to a fear to fail. When we only see the successes of everybody else, we think it is the standard. When we fail, we think we are the only ones that failed and we are ashamed of it. The downside of the meritocracy increases our fear to fail; when we can climb up in life, we also could fall down and the higher we climb, the deeper we fall. In the society of these days, we only get help when we're flat on the ground. However, when we are caught mid-air, it is so much easier to climb back up.

The ideal city belongs to everybody and everybody has a place to live. In a city as Amsterdam it is really hard to stay in the city when we fall in life; the housing market is stuck, so when we can't afford our dwelling anymore or we lose our dwelling, it is nearly impossible to find another one. Therefore, these people are driven out of the city.

In the ideal city there will be a safety net. This safety net will catch us when we fall. This safety net assures us we bounce back when we fall. This safety net assures us that we won't lose everything when we fall. This safety net assures us that we won't have to leave Amsterdam when we fall. So, this safety net will reduce our fear to fall.

In the ideal city we won't forget the people around us. We keep an eye on each other and help when needed.

In the ideal city we answer the question "how are you doing" truthfully, so we could take care of each other.

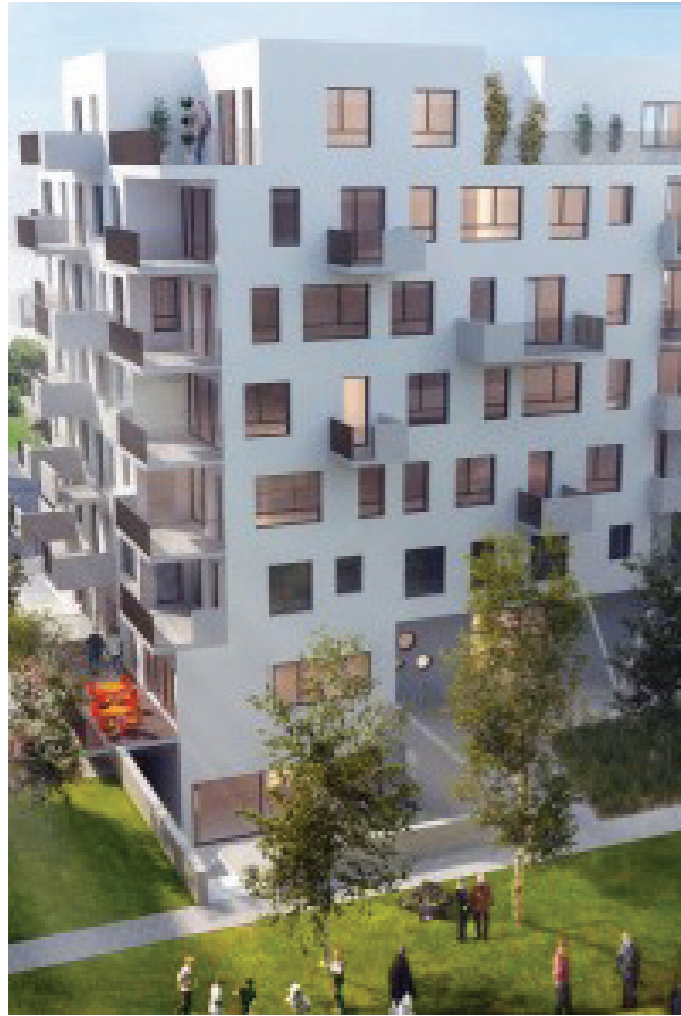
In the ideal city we are not ashamed to fall. We know it is normal and that we can't learn without making mistakes.

When we don't forget the people around us, we will not be lonely anymore.

When we take care of each other, we reduce the chance to fall.

When we are not afraid or ashamed to fall, we could climb higher in life than ever before.

Figure 2.1: safety net, source: authors creation



Left: Figure 3.1: Seestern,  
source: Eins zu eins, nd

Right: Figure 3.2: Transithuis,  
source: FAB, 2015



Left: Figure 3.3: Die Maus,  
source: Frei, nd.

Right: Figure 3.4: Aranya,  
source: Architecture in  
Development, 2014

### 3 Plan analysis

As shown in the first chapter of this report, there will be a great variety in the residents of the shelter. It should house a family with children as easy as a single person. To achieve this, flexibility is essential. However, flexibility is a very broad concept; it could be seen as a construction that doesn't constrain the spatial arrangement but it could also be a temporary building that can be moved. To be able to house the variety of family compositions, the dwellings should be able to grow and shrink with the needs of the residents, without radical alterations. There are two ways to let a dwelling grow; thicken or expand. With thicken, the inner spatial arrangement can change to provide more rooms, for example with sliding walls. With expanding, a room can be added to the dwelling. For this plan analysis, I chose projects that can expand because I didn't know the possibilities on the forehand.

Flexibility in buildings is an important issue these days since our society changes faster than we can build. When a building could adapt the future needs, it is more sustainable. There are a lot of buildings that are claimed to be flexible, but they are only flexible for the first residents. The first residents can choose what layout they want, and how big they want the dwelling to be, but when it is built, it can only be changed with the demolition and rebuilding of the dividing walls. Since this is such a radical alteration, this is scarcely done. Buildings should thus be more flexible, but the flexibility should be practical and be applicable without radical alterations.

This plan analysis is meant to answer the question:

***What principles can be used to expand a dwelling and what are the consequences?***

When a dwelling is expanded with a room that can function on its own, there could be some superfluous functions, like two kitchens or two bathrooms. An extra bathroom can be very useful when you live in a family, but a second kitchen is a waste of space. When making expandable dwellings, communal spaces can be a solution to reduce these superfluous functions in the dwellings. A follow-up question is, therefore: *Are there communal spaces, if so, what is communal?* Another problem that could occur in expanding dwellings is how to connect the dwellings, but still leave the possibility to use them separately. In other words: *how can the extra room be entered when the dwellings are combined and when they function separately?*

The principles and the entrances could be best shown in a floor plan, here the superfluous functions could be noticed and the connections are clearest. When the floor plans differ per floor, the most common will be shown. The options of the principle will be shown with the corresponding entrances. The communal spaces are mostly spread over the building. To show them properly an exploded view, which highlights the communal spaces, will be used.

### 3.1 Seestern



The Seestern is located in Aspern in Austria. It is built in 2015 and designed by Eins zu eins Architektur. It is built for the Seestern association, a group of creative people who wanted to design their own dwelling. The building contains 28 apartments between 30 and 112 m<sup>2</sup> and 5 flex apartments. Every apartment has its own bathroom and kitchen so they can function completely individual. However, there are a lot of extra communal spaces in the building as well, like a kitchen, a sauna, a living room, a roof garden, a playroom for the children, a bike and stroller parking, a multifunctional room and a co-working space. The route through the building is centrally arranged (Eins zu eins, nd).

The Seestern association wanted to make a place for people in need. People in a difficult situation who need a temporary place to live, like people who got a divorce. This is achieved by making flexible apartments. The flexible apartment is located between two regular apartments and has an entrance from the hall, a bathroom, and a kitchen, so it can function on its own. When the apartment isn't in use, one of the adjoining apartments can expand by adding the flexible apartment. The dividing walls are prepared to make a door in it, so the flexible apartment can be reached from within.

Pros:

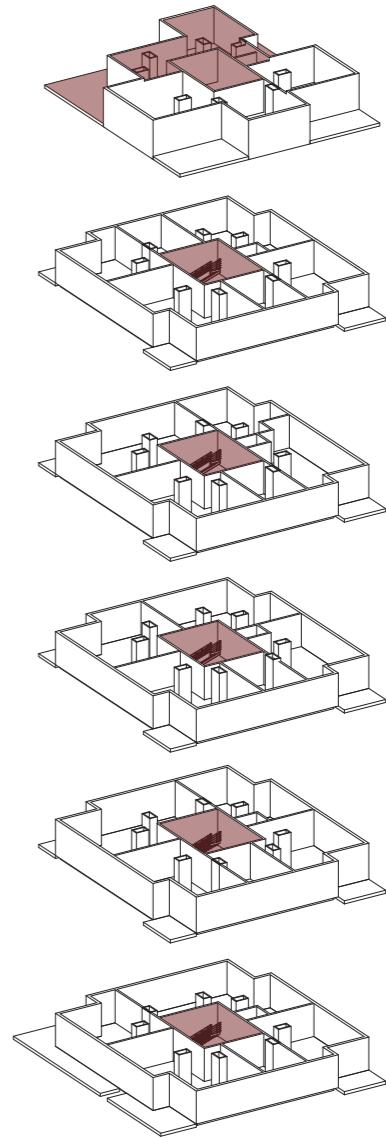
- Flexible apartment can function on its own.
- Flexible apartment can be reached within the regular apartment.

Cons:

- There is only one flexible apartment per floor.
- There are no doors yet between the flexible apartment and the regular apartments, so these should still be made when they want to expand their apartment.
- When the apartments are joined there will be two kitchens in one apartment.

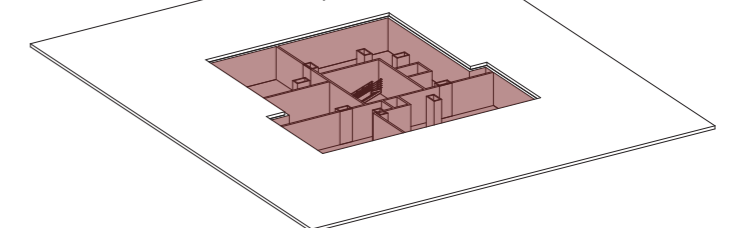


Figure 3.5: Seestern, source: Eins zu eins, nd



- dwelling
- entrance apartment
- connection to make
- communal

Above left: figure 3.6: option 1  
 Above middle: figure 3.7: option 2  
 Above right 3.8: figure: option 3  
 Right: figure 3.9: communal space  
 source: authors creation



### 3.2 Transithuis



Figure 3.10: Transithuis, source: FAB, 2015

The Transithuis is built in 2006 in Oostende in Belgium and is designed by Jonas Beckers and Matthias Verhulst. It is built to provide a temporary dwelling for people who lost their dwelling due to a crisis situation. The building consists of 2 apartments for disabled residents, 5 apartments and 11 rooms of respectively 45 m<sup>2</sup>, 45 m<sup>2</sup> and 18 m<sup>2</sup>. The apartments for the disabled residents have a bathroom and a kitchen of their own. The apartments have also a bathroom and kitchen of their own and they have one bedroom. The rooms have a kitchen and a place to wash, but they share the bathrooms on the corridor. The garden, the terrace on the second floor and the roof terrace are communal. The route through the building is arranged by an outdoor stair, which is placed at the back of the Transithuis. The outdoor staircase connects with the corridor inside the building, only this connection shifts per floor (Meulder, 2009; p18-20).

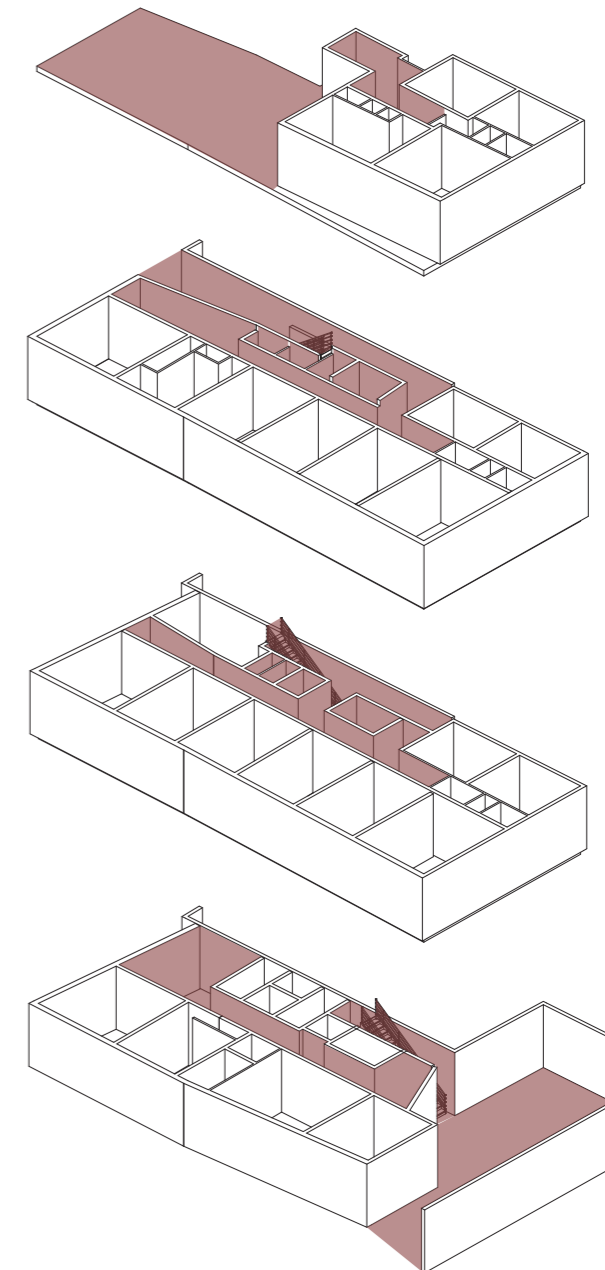
To provide all people in a crisis situation, the dwellings should be flexible; a family with eight children should find a safe haven here as well as a single person. To pursue this flexibility, a system of apartments with rooms in between them was designed. These apartments and rooms can be used separately, but the apartments could also be expanded with the rooms. The rooms can only be entered from the corridor, so an inner connection between the apartment and the extra room is not possible. This is inconvenient when the extra room is meant for a little child, but it also gives more flexibility. When the room adjoining the apartment is already taken, another room can still be added. There is also the possibility to add more rooms to one apartment.

Pros:

- More flexibility thanks to the entrance through the corridor
- Multiple rooms can be added to the apartments

Cons:

- Entrance of the rooms through the corridor
- The rooms have no bathroom
- When a room is added to an apartment, there are two kitchens



- dwelling
- ▲ entrance apartment
- communal

Above left: figure 3.11: option 1  
 Above right: figure 3.12: option 2  
 Middle left: figure 3.13: option 3  
 Middle right: figure 3.14: option 4  
 Right: figure 3.15: communal space  
 source: authors creation



### 3.3 Die Maus



Die Maus is part of the project Hunziker Areal in Zurich, Switzerland. It is built in 2015 and designed by Müller Sigrist Architekten. The theme of Die Maus was family house and on the ground floor, a kindergarten was designed. The building contains 15 apartments with 4.5 rooms, 15 apartments with 3.5 rooms and 5 extra rooms with a bathroom. The apartments are respectively 150 m<sup>2</sup>, 120 m<sup>2</sup>, and 26 m<sup>2</sup>. The extra room can be entered from the hallway and is meant for a teenager who needs more private space than the apartments can offer. There are no communal spaces in this building. The routing in the building is through two central staircases. Both of them give access to three apartments, which results in four corner dwellings and two enclosed apartments per floor (Hochparterre, 2015).

The building wasn't meant to be flexible, however, the apartments with 4.5 rooms can be used as flexible. Looking at this apartment, it can be noticed that one bedroom and a bathroom is situated at one end of the apartment and two bedrooms with another bathroom at the other end. This establishes the possibility to create two dwellings in this apartment which will share the living room and kitchen. In this case, the apartment could be used as one big dwelling and as two small ones.

#### Pros

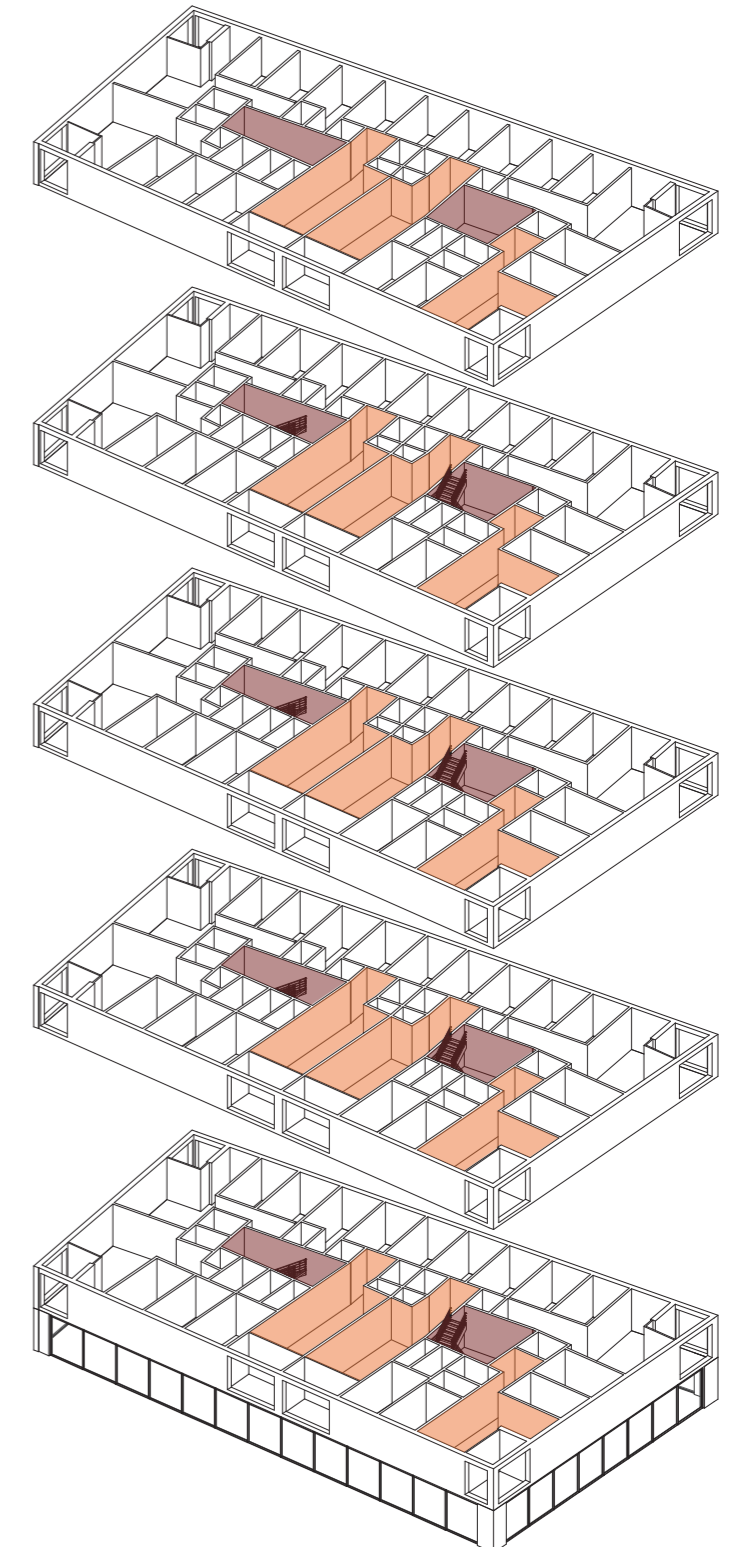
- Dwelling can expand easily
- When dwellings are combined, there is still one kitchen

#### Cons:

- Less privacy



Figure 3.16: Die Maus, source: Frei, nd.



- dwelling 1
- dwelling 2
- communal within dwelling
- entrance apartment
- communal

Above left: figure 3.17: option 1  
 Above right: figure 3.18: option 2  
 Right: figure 3.19: communal space  
 source: authors creation

### 3.4 Aranya



Aranya is a housing project just outside Indore in India. It is designed by Balkrishna V. Doshi and the foundation was made in 1989. The project was meant to house the poorest people and to create a community where rich and poor could be joined. The project contains 6500 dwellings divided into six sectors and is able to house 42.000 to 72.000 people. In the middle of the sectors are plots made for the poorest people, the more well-off people could obtain a dwelling at the periphery of the sectors. The plots in the middle are made in clusters of nine with two communal courtyards at the back. One big courtyard is adjoined with five plots and the small one is adjoined by four plots. These plots contained the foundation, a service core, and a room. The residents could expand the house by themselves. If they have enough money they could build a stair in front of their dwelling, this one could be open or closed (Doshi, 2016).

When the staircase on the front of the dwelling is open and the dwelling is expanded to the first floor, this floor could be rented to another family. This is a way of making money for the original residents, but this makes the dwelling flexible as well. The house could be used as one big dwelling and as two smaller ones.

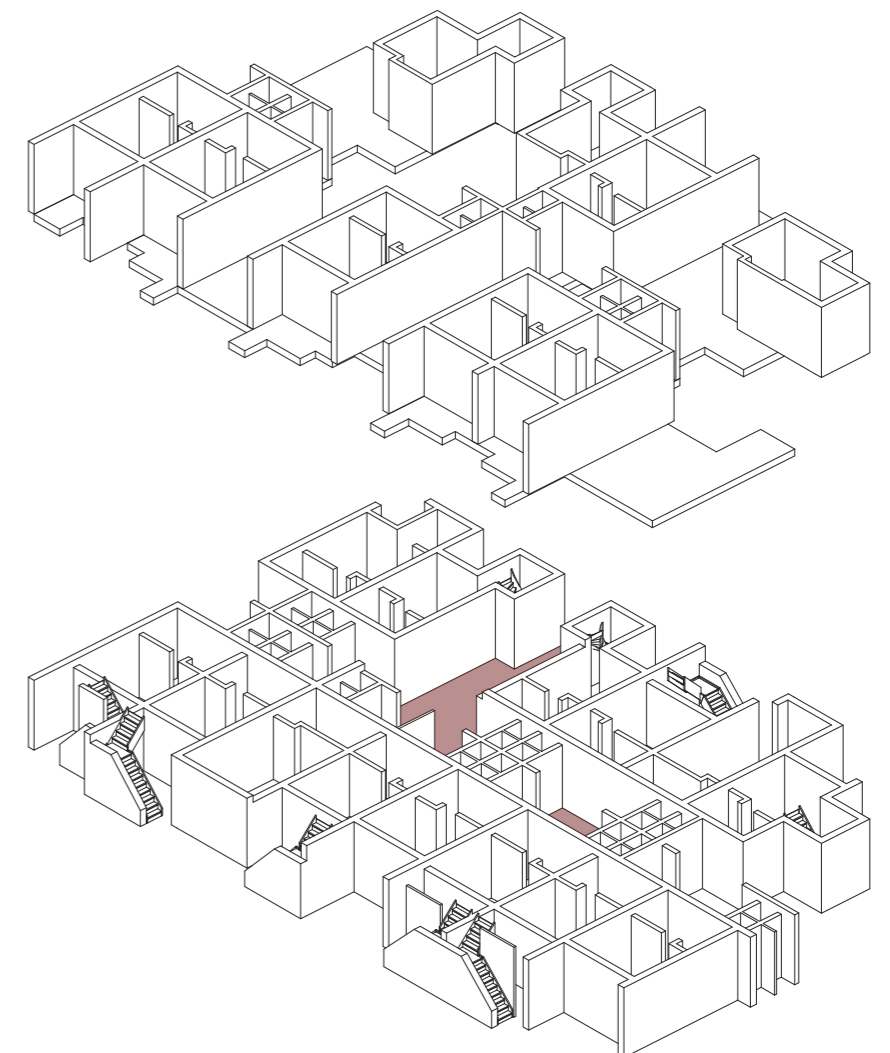
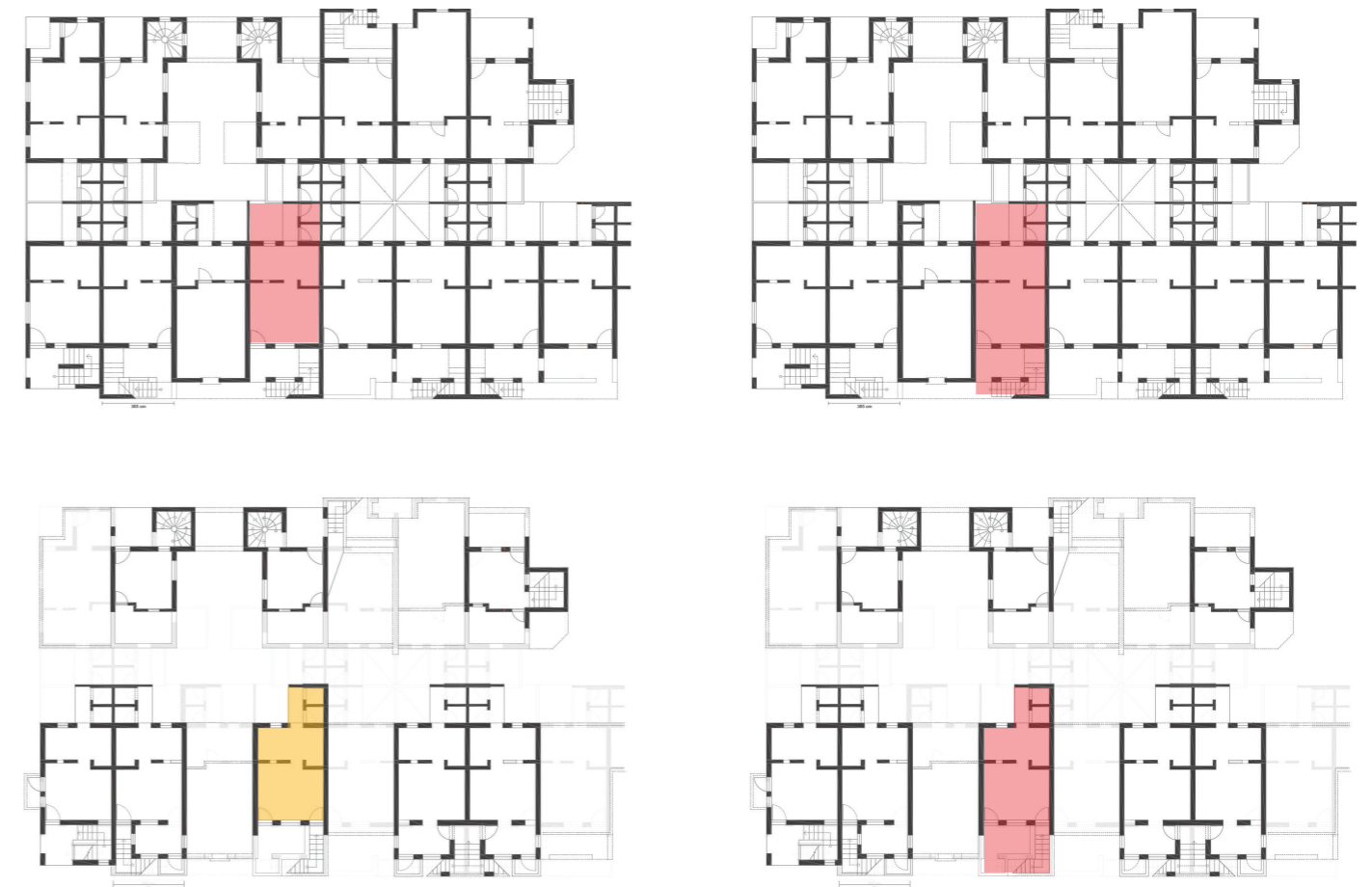
Pros:

- Easy to combine
- Dwellings could be used separately

Cons:

- Staircase is outdoors
- There will be two kitchens when the dwellings are combined

Figure 3.20: Aranya, source: Architecture in Development, 2014



Above left: figure 3.21: option 1 ground floor  
 Above right: figure 3.22: option 2 ground floor  
 Middle left: figure 3.23: option 1 first floor  
 Middle right: figure 3.24: option 2 first floor  
 Right: figure 3.25: communal space  
 source: authors creation

### 3.5 Conclusion and discussion

The principle of the Seestern is very interesting to take into consideration for my design. It is very practical to be able to enter the extra room from within the dwelling, although the connection should be made in advance. When you could just unlock a door to connect the dwellings, this will be so much easier than to cut a wall to make a connection. This latter option could be too big of a step to take, so the dwellings wouldn't be connected after all. Also, I would use more flexible apartments in my design, one per floor is just not enough. And final, the problem with the superfluous kitchen need to be solved.

The flexible rooms in the Transithuis offer much more possibilities to expand a dwelling. This is very interesting, but I would prefer an indoor connection since the extra rooms will probably be needed for families. It is not desirable that a little child needs to walk down the corridor to come to its parents. Also, I would give the rooms a bathroom instead of a kitchen. As explained in the introduction of this chapter, an extra bathroom would be convenient, but an extra kitchen is a waste of space, these rooms have it just the other way around.

The principle of Die Maus is a solution I hadn't thought of before. There is no need to make a connection between the dwellings since these are connected on the forehand. The problem with the superfluous kitchen is solved here and still, there is some privacy since the rooms are as far apart as possible. This is a solution I would definitely keep in mind when designing my shelter.

The principle of Aranya is a vertical connection instead of a horizontal one like the others. When combined with the other principles, this could connect more dwellings at once. In an apartment building with entrances on each floor, the vertical connection would be useless when the dwellings are not combined. When the building would have entrances every other floor, the vertical connection would be used even if the dwellings are not combined.

When I chose the projects for this plan analysis, I selected them on the principles of the flexibility. This is a bit strange since I wanted to research the principles of flexibility. I chose four different principles, so I could compare them, but this also means that these four are not the only possible principles. This plan analysis could be extended with a lot more projects with different principles of expanding a dwelling.

	principle	entrances	communal	function individually	superfluous functions
Seestern	flexible apartment can be added	within apartment	all the communal rooms are extra	yes	kitchen
Transithuis	room can be added	trough corridor	bathrooms are communal	communal bathrooms are needed	kitchen
Die Maus	two dwellings share kitchen and living room, can be combined to one dwelling	within dwelling	kitchen and living room communal when dwellings are not combined	no	none
Aranya	apartment above can be added	through exterior staircase	courtyard is communal	yes	kitchen

figure 3.26: summary plan analysis  
source: authors creation

	Pros	Cons
Seestern	<ul style="list-style-type: none"> <li>- Flexible apartment can function on its own.</li> <li>- Flexible apartment can be reached within the regular apartment.</li> </ul>	<ul style="list-style-type: none"> <li>- There is only one flexible apartment per floor.</li> <li>- There are no doors yet between the flexible apartment and the regular apartments, so these should still be made when they want to expand their apartment.</li> <li>- When the apartments are joined there will be two kitchens in one apartment.</li> </ul>
Transithuis	<ul style="list-style-type: none"> <li>- More flexibility thanks to the entrance through the corridor</li> <li>- Multiple rooms can be added to the apartments</li> </ul>	<ul style="list-style-type: none"> <li>- Entrance of the rooms through the corridor</li> <li>- The rooms have no bathroom</li> <li>- When a room is added to an apartment, there are two kitchens</li> </ul>
Die Maus	<ul style="list-style-type: none"> <li>- Dwelling can expand easily</li> <li>- When dwellings are combined, there is still one kitchen</li> </ul>	<ul style="list-style-type: none"> <li>- Less privacy</li> </ul>
Aranya	<ul style="list-style-type: none"> <li>- Easy to combine</li> <li>- Dwellings could be used separately</li> </ul>	<ul style="list-style-type: none"> <li>- Staircase is outdoors</li> <li>- There will be two kitchens when the dwellings are combined</li> </ul>

figure 3.27: summary plan analysis pros and cons  
source: authors creation

## 4 Site analysis



Figure 4.1: location the Groenmarkt, source: authors creation

The shelter should be a building that gives protection, but at the same time, it should be a building to be proud of. So the location should, on one hand, give some cover, but on the other hand, should the building not be hidden in the surrounding. With this ideal in mind, the Groenmarkt would be the best location on the Singelgracht. The Groenmarkt is adjoined by the Groenmarktkade and the transformer house of Meander. The buildings along the Marnixstraat form a barrier between the street and the location, but on the other hand is the location situated prominently along the Singelgracht.

### 4.1 History of the location

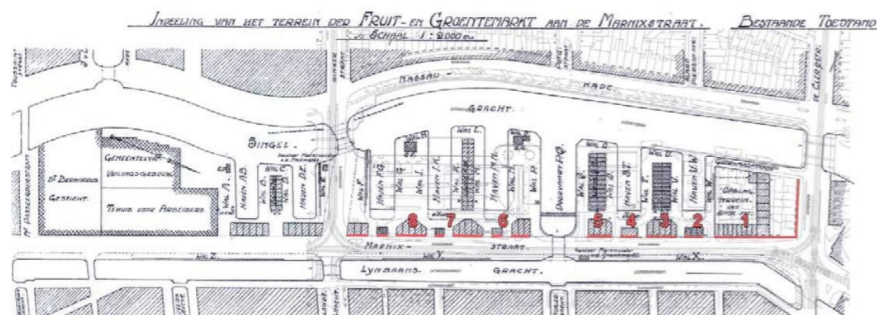


Figure 4.2: former vegetable and fruit market projected on current situation, source: Gemeente Amsterdam, 2013

The Groenmarkt was part of the fortification works build in 1625. In the nineteenth century, the fortification works weren't needed anymore and started to disappear. In 1823 the Amsterdamse-Pijp Gas Company was built on the former stronghold. This building ignored the structure of the city completely and was destroyed in 1887. The stronghold was then transformed and used as a market for fruit and vegetables. The Singelgracht was relocated and docks were made in the former fortification works to facilitate the transport over water. The market didn't look as clean as wanted, so they tried to hide it by building a row of dwellings along the Marnixstraat. In this row, there was a gap each three to four houses to make an entrance to the market. At the west side, the market was adjoined by a row of workers

houses (Amsterdam, 2013; p17-19). As shown in figure 4.2 the Groenmarkt was bigger than it is now. The dwellings that form the border between the Marnixstraat and the Groenmarkt are the only ones standing and they tell the story of the location. The gaps in between these dwellings are very specific for this place and should be contained, if not highlighted.

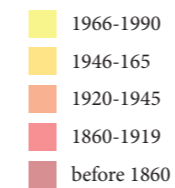
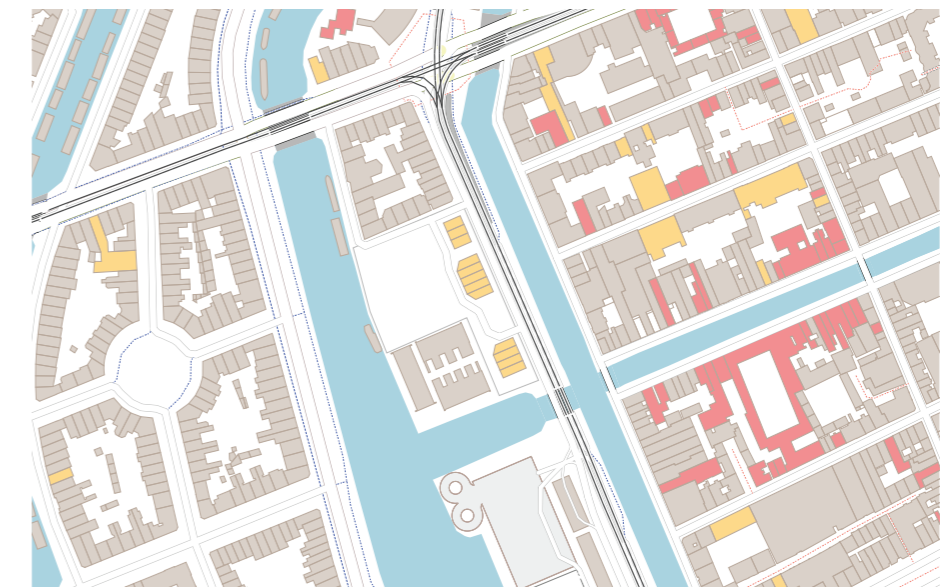


Figure 4.3: date of construction, source: authors creation

Figure 4.3 gives the date of construction of the buildings in the surrounding. This part of Amsterdam is mostly built in the early twentieth century, the time when the fruit and vegetable market could be found at the Groenmarkt.



- national monument
- municipality monument

Figure 4.4: monuments in the surrounding, source: authors creation

As shown in figure 4.4 most of the monuments are located in the Jordaan, on the east side next to the location. The monuments along the Marnixstraat will form no complications for this location.

## 4.2 Architectural styles



Figure 4.5: Marnixstraat 200, source: authors creation

Figure 4.5 shows one of the buildings along the Marnixstraat. It is built in the traditional style of Amsterdam. The construction works make it hard to see the plinth, but there is a clear division in plinth, middle part, and top. The use of brick in combination with natural stone is also typical for this style.



Figure 4.6: Groenmarktkade 9-13, source: authors creation

The dwellings along the Groenmarktkade are built in a more modern style. There is only brick used and the windows are horizontal instead of the vertical windows at the Marnixstraat. Nevertheless, there is still a clear division in the plinth with the garage doors, the middle part, and the top. The sunscreens are very prominent in the facade, this is partly because they differ in colour and are not placed above all windows.



Figure 4.7: transformer, source: authors creation

The Transformer shown in figure 4.7 is built in an industrial style. Due to the function, there are only windows in at the top. The buildings look really rectangular, but thanks to the use of brick the building find a minor connection with its surrounding. The lack of maintenance affects the appearance of the building in a negative way.



Figure 4.8: Nassaukade 165-170, source: authors creation

Figure 4.8 shows a few of the buildings at the other side of the Singelgracht, at the Nassaukade. These buildings are built in the same period as the buildings along the Marnixstraat, but these buildings miss the clear division. The plinth is in some cases slightly visible, but a clear top lacks in these blocks. This absence of division makes them look more modern.

### 4.3 The immediate surroundings

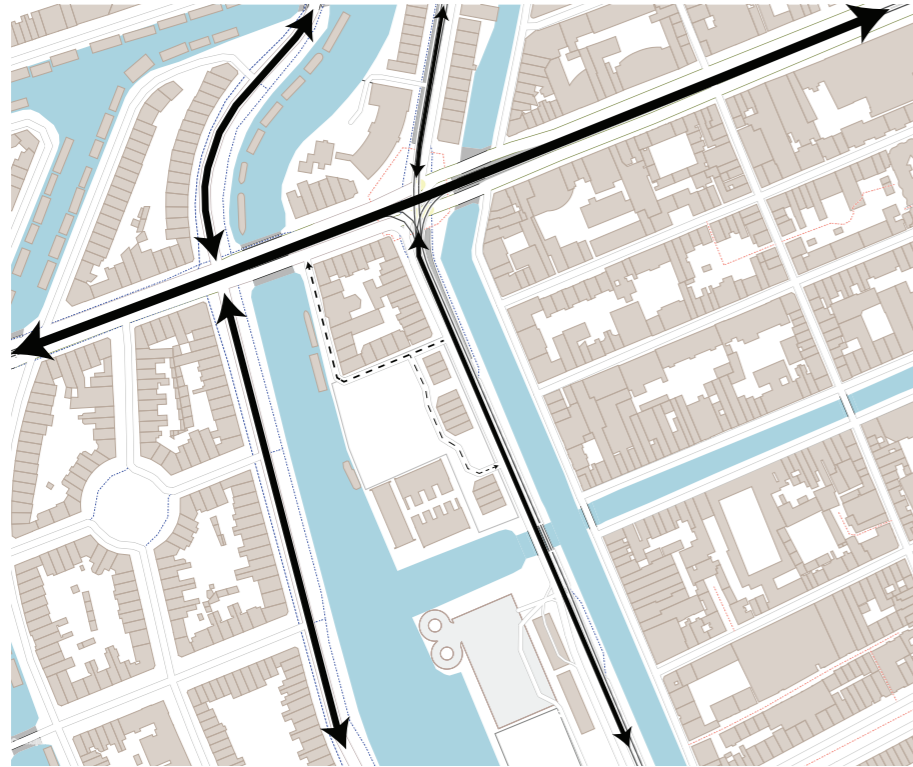


Figure 4.9: Intensity traffic: authors creation

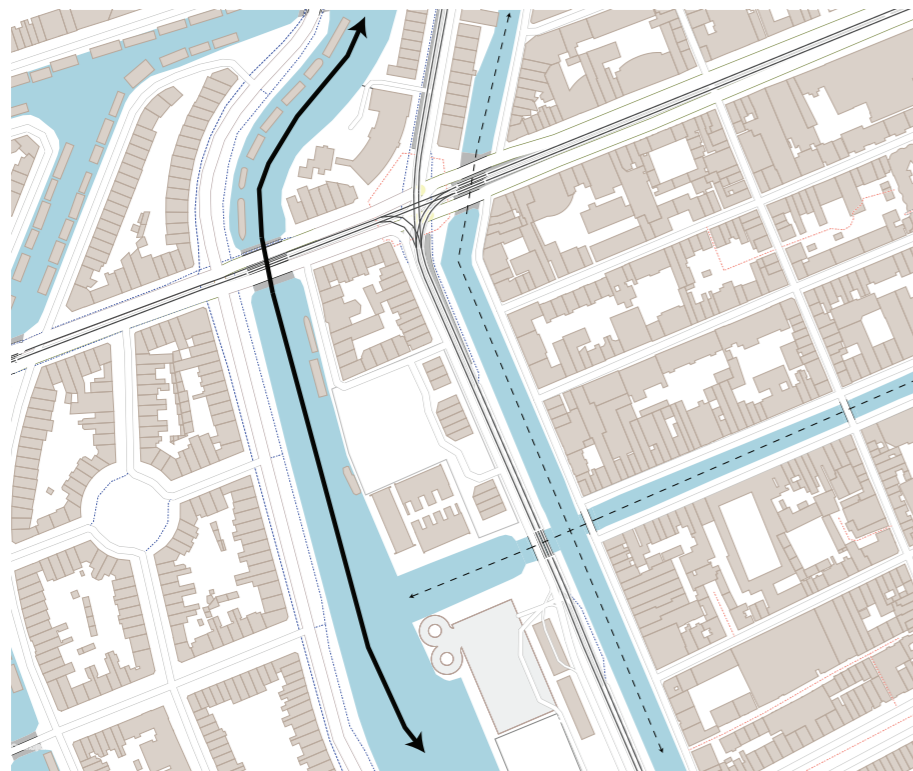


Figure 4.10: Intensity traffic over water: authors creation

When standing on the Groenmarkt the traffic of the surrounding is not that noticeable. The routes on the location are only used by a couple of bikers and a few cars. The route at the other side of the water is more crowded, but thanks to the distance this is not that disruptive. The Marnixstraat is relatively crowded as well, but because the location is shielded off by buildings, this road is hardly noticed. The Singelgracht is relatively crowded with pleasure yachts and tour boats, this gives a bit noise from the people laughing and talking, but the boats are rather quiet.



Figure 4.11: Sound: authors creation



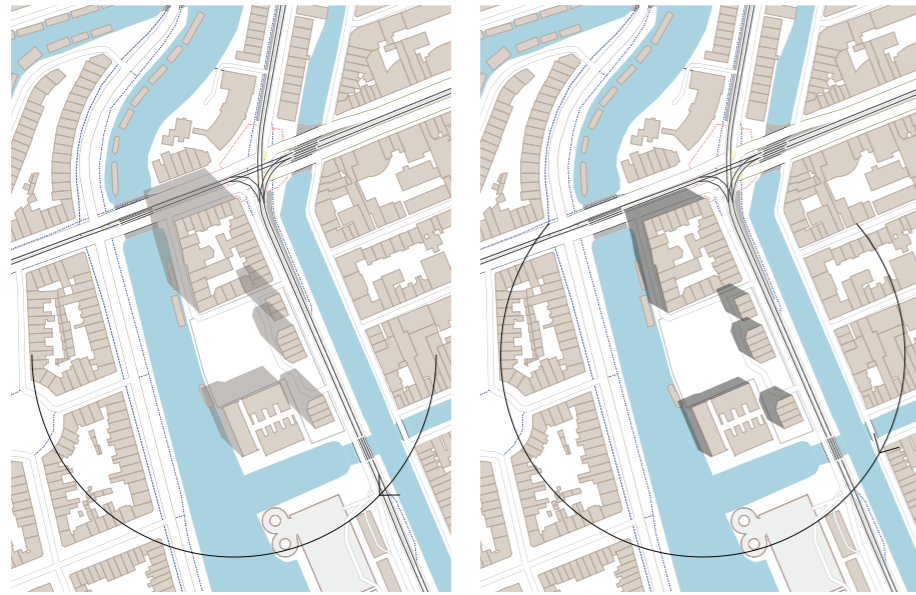
Figure 4.12: Functions ground floor: authors creation



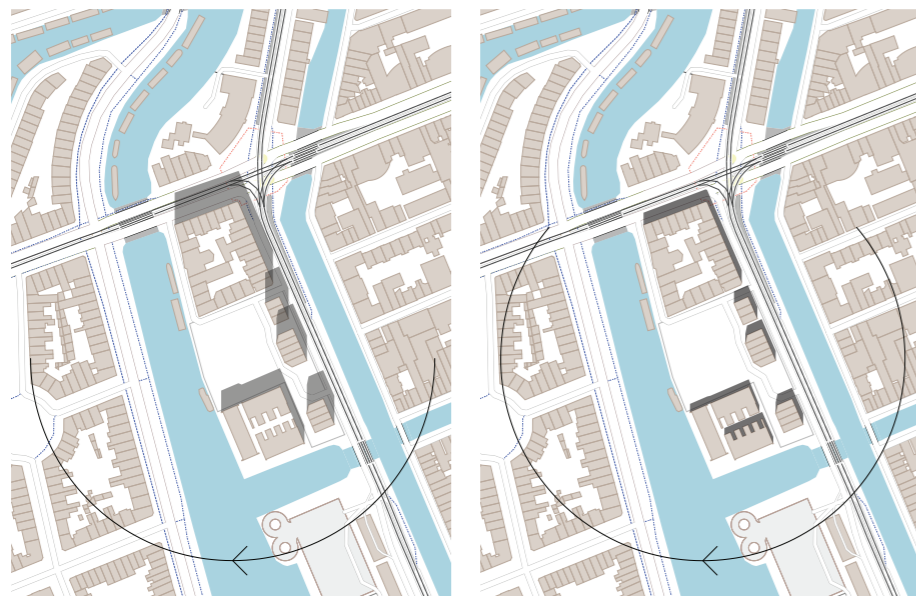
Figure 4.13: Trees: authors creation

As seen in the noise map in figure 4.11, is the location relatively quiet, even though it is in the centre of Amsterdam. In the function map, figure 4.12, is seen that around the location no dwelling functions are situated on the ground floor, only on the first floor and higher. Looking at the trees in figure 4.13 there is no direct need to cut down any tree.

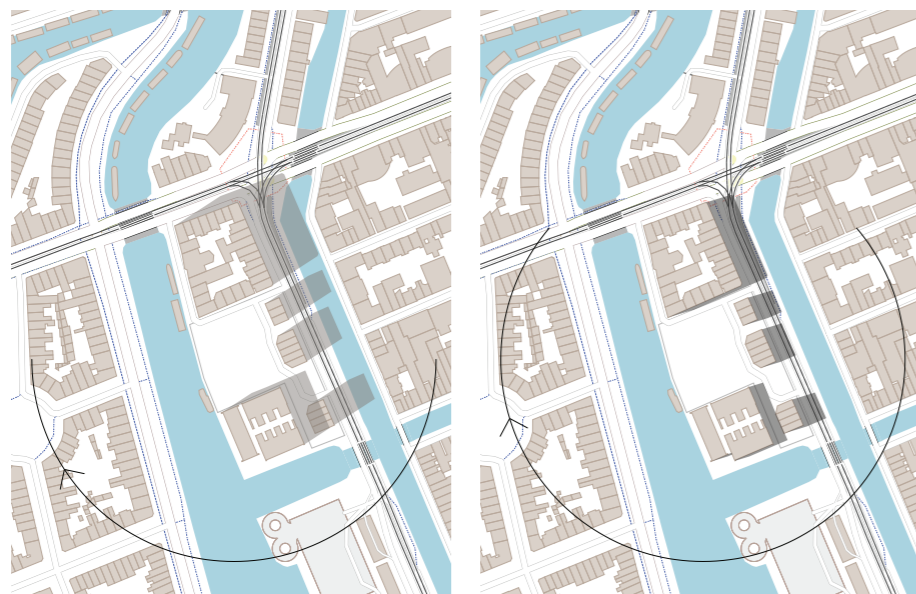
## 4.4 Insolation



Left: figure 4.14: shadow at March/ September at 10 o'clock  
 Right: figure 4.15: shadow at June at 10 o'clock  
 source: authors creation



Left: figure 4.16: shadow at March/ September at 12 o'clock  
 Right: figure 4.17: shadow at June at 12 o'clock  
 source: authors creation



Left: figure 4.18: shadow at March/ September at 4 o'clock  
 Right: figure 4.19: shadow at June at 4 o'clock  
 source: authors creation

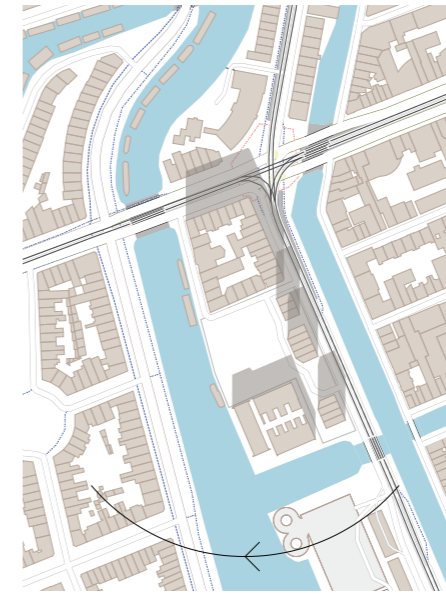


Figure 4.20: shadow at December at 12 o'clock  
 source: authors creation

Figure 4.14 up to 4.19 show the shadow casted by the immediate vicinity on the location in June, September and March. The sunlight in the winter is less intensive and the shadows casted by the surrounding buildings will be very vague at ten o'clock in the morning and four o'clock in the afternoon. Therefore only the shadow casted on twelve o'clock is shown in figure 4.20. The location catches a lot of sunlight; next to the transformer, the biggest shadow is formed. It must, however, be taken into consideration that the design on this location could cast a shadow on the buildings in its surrounding.

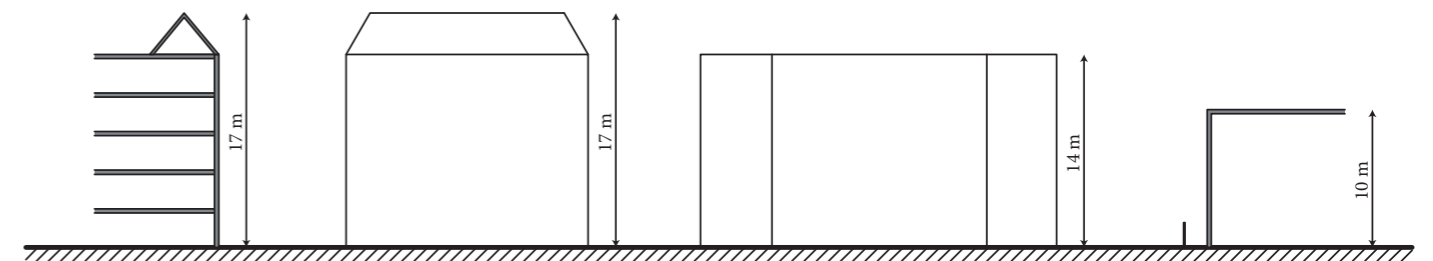


Figure 4.21: schematic section location with the height of the buildings in the surrounding  
 source: authors creation

## 4.5 Sight

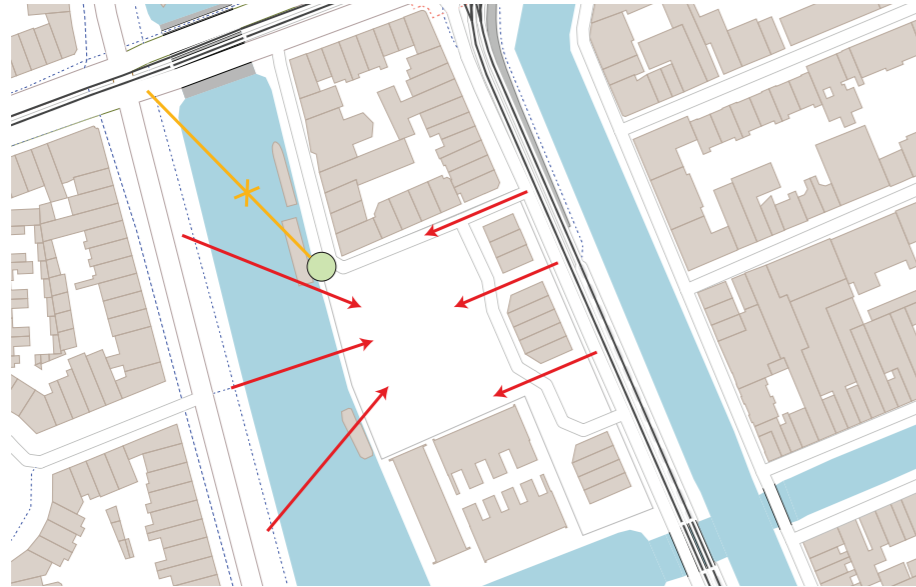


Figure 4.22: sightlines location, source: authors creation

The sight from the Marnixstraat is partly prevented by the buildings, but the gaps in between create some see-throughs. From the other side of the water, at the Nassaukade, the location will be in full sight. However the water creates some distance, so this will not feel too intimidating. The sight from the bridge is totally blocked by the enormous tree at the corner of the location.



Left: figure 4.23: sight form the Marnixstraat  
Right: figure 4.24: sight form the bridge, source: authors creation



Figure 4.25: sight form the Nassaukade, source: authors creation

## 4.6 Closed facades



Figure 4.26: closed facades, source: authors creation

The adjoining facades are very closed on the ground floor, this is due to the industrial and storage function on the ground floors of the buildings. The facade on the north is dominated by garage doors, the facades of the buildings along the Marnixstraat contains mostly closed doors as well, there are just a few small windows, but those are covered with bars. The facade on the south side is from the transformer house and should be closed to serve the function. The fence in front of this facade intensifies this closed feeling.



Left: figure 4.27: façade Groenmarktade  
Right: figure 4.28: façade transformer, source: authors creation



Figure 4.29: back façade Marnixstraat, source: authors creation



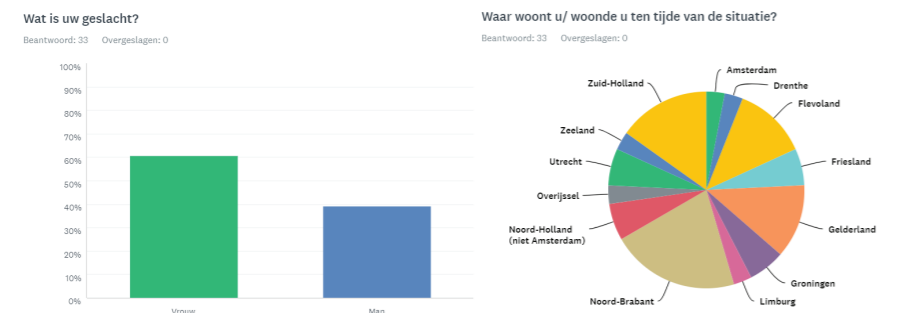
## 5 Need for facilities

During the design, there was an idea to make collective facilities on the ground floor. However, there was as good as no information to the need for facilities of the target groups. In order to gain the information a survey was made.

The main question for this survey was : what facilities would be needed in the building? The hypotheses is that facilities as a child daycare, a legal advisor, a financial advisor and a psychologist would be needed.

To get as much response as possible, the survey was posted on Facebook with the request to fill in the survey if you are or had been through a divorce, a bankruptcy or other economic crisis or had a calamity in their house. The survey was also posted on three different forums for people who are in or had a divorce and on two forums for people who were in an economic crisis or who lost their dwelling due to a calamity.

### 5.1 The questions

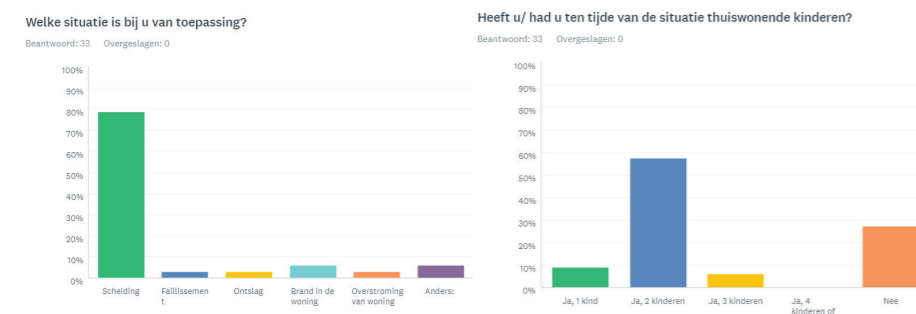


Left: figure 5.1: question 1 of the survey, source: authors creation  
Right: figure 5.2: question 3 of the survey, source: authors creation

According to Baarda (2001) the response rate increases when the number of questions is limited. Therefore the survey only consisted 10 questions. The first questions were the general ones, like gender, age and location. These questions provided a potential distinction in the analysis.

For the respondents who had been through such a situation in the past, it was important to know their answers in time of the situation. Therefore a little different way of questioning was needed. For example: by the age and the location it was very important to know how old they were during the situation. So this had to be cleared up in the questions.

The next two questions where to find out in what situation the respondents are. These questions were if they had children who lived at home and what they have been through.



Left: figure 5.3: question 4 of the survey, source: authors creation  
Right: figure 5.4: question 5 of the survey, source: authors creation

The most important question was what kind of facilities the respondents needed and where they wanted it to be. For this question a list of potential facilities was made, i.e.; child daycare, psychologist, support group, legal advisor, career advisor, financial advisor, gym, and a yoga studio. The participants could answer if they wanted this facility in the building, in the surrounding or didn't need this facility. There was also the possibility to add a comment and in the question comments were encouraged.

One of the potential facilities is the child daycare. With this facility the question arose if parents would rather use the daycare in the building or continue using their current daycare, even if they have to take a longer route every day. This was therefore the next question in the survey.

With some of the potential facilities, privacy could be desired. To figure out which facilities should provide some privacy and to what extent the next question was if the respondents would have a problem with their neighbors seeing them enter the facility. The same potential facilities were listed here, but now with the choice it would bother me, it won't bother me, it would bother me a bit, and not applicable.

On each floor of the design, a collective kitchen and living room was planned. In order to know if this would be used by the future residents, the following question explained this idea and asked if the respondents would use the collective kitchen and living room or not.

The design consists two separated towers. To decide to make either a distinction between the target groups and make separate departments in the towers or to place the target groups mixed in the building the next question was asked. This question asked if the participants would prefer to live with neighbors who are in exactly the same situation or if they preferred to mingle with the other target groups.

### 5.2 Results

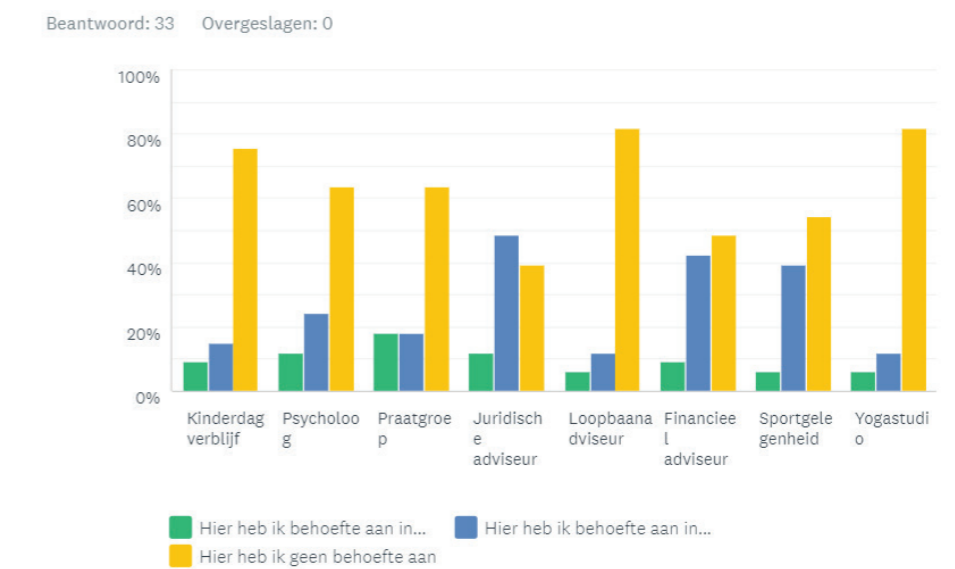


Figure 5.5: question 6 of the survey, source: authors creation

The results were contrary to expectations. The hypothesis was that at least a few of the potential facilities would be needed, but most of the services were not needed at all. The legal advisor scored most on the answer needed in the surrounding (49%), then financial advisor (43%) and then a gym (40%). The other facilities scored more than 60% on the not needed option.

However, the legal advisor, the financial advisor and the gym are needed in the surrounding. These facilities could be accommodated in the building when the offering in the surrounding area is sufficient. Nevertheless, looking at the surrounding this is not the case. There are as many as 11 legal advisors already situated at a 7 minute bike ride or 20 minute walk, two of them are even specializes in divorces. Eight financial advisors and four gyms can be reached within a 5 minute bike ride or 15 minute walk, one gym is even only three minutes away.

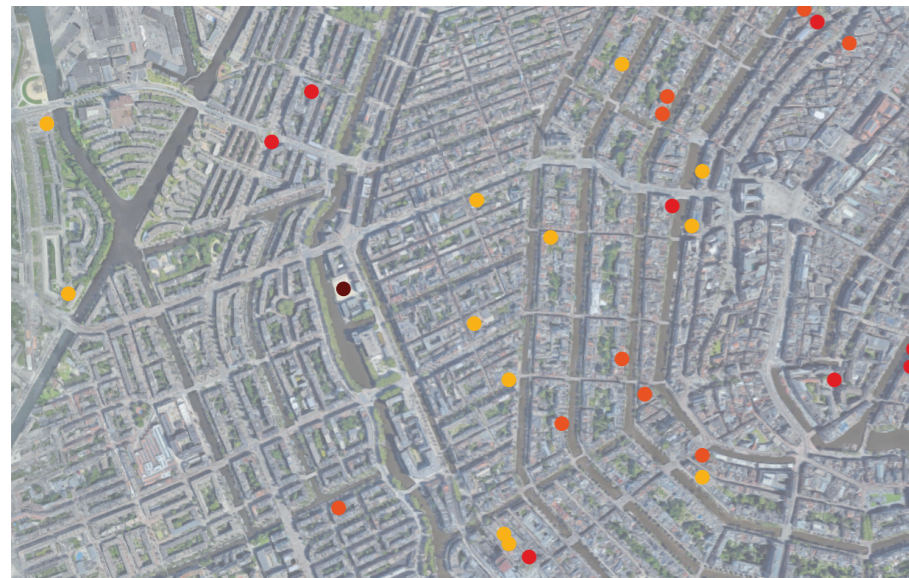
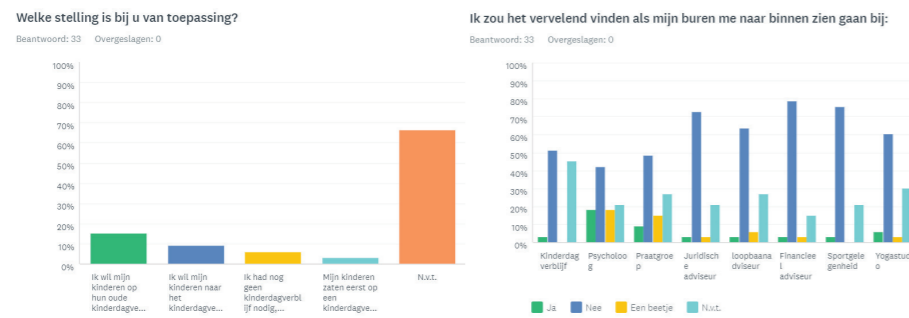


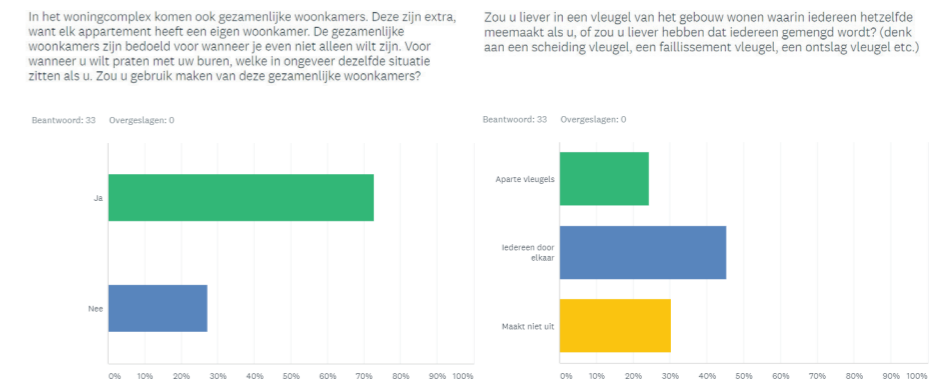
Figure 5.6: facilities in the surrounding area, source: authors creation

The questions about the child care and privacy are a bit irrelevant now, but the respondents who needed a childcare would prefer to bring their kids to their old childcare, even if they have to drive further. For the psychologist and the support group some of the respondents bothered when their neighbors saw them enter, but with the rest of the facilities privacy was not an issue.



Left: figure 5.7: question 7 of the survey, source: authors creation  
Right: figure 5.8: question 8 of the survey, source: authors creation

As many as 74% of the participants would use the collective kitchen and living room. 47% of the respondents would like a mix of the target groups, 29% has no preference and 24% wants the target groups to be divided. So the target groups will be mixed thorough the building, this is also the better option if we look at flexibility. Since the future residents stays different lengths of time accordingly to their situation, a new resident can be placed more easily when everyone is mixed instead that they have to wait for a dwelling in the right section.



### 5.3 Conclusion and discussion

So eventually none of the facilities is needed in the building. Therefore the remaining area at the ground floor will be divided in to free rentable spaces. The profit of this rent can be used to lower the rent of the apartments. The collective kitchen and living room will stay in the design and the target groups will be mixed in the buildings.

If I would do this research over, I would firstly revise the question about age. Now I made it an open question, what makes it hard to analyze, next time I would make a multiple choice with ranks of age (-20, 21-25, 26-30 etc.) On the other hand, when I looked through the ages, I saw someone who was only 15 years. When I looked at his answers it seemed his parents got bankrupt when he was 15 and this gave some very interesting results to see what kids needs.

Another question I would alter is question 8 about the privacy. I added the not applicable here, I thought it could be used when the participants had no need for this service, but when I would have let it out, the answer would be more conclusive then now.

I would also have removed the no preference in question 10 about the mix of target groups. This question would be more conclusive as well if this answer was not a possibility.

## 6 Summary

Amsterdam is becoming an exclusive city. The fixed housing market makes it impossible for people in crisis situations to stay in the city. There should be a shelter for people who fall in life, people who lose their house due to a calamity, divorce or a bankruptcy. This research will answer the question: *How to design a shelter for people in a crisis situation?* It will shed a light on what the future residents have been through and what they need in a shelter. It will also explore the possibilities to expand a dwelling to be able to facilitate the changing residents.

When someone's house got affected by a calamity, the owner loses everything he owns. A shelter will be arranged for one night, but after that, he must find a shelter on his own. So the resident of the damaged dwelling needs a temporary house to wait for the insurance to pay out and to look for another dwelling or to build his dwelling back. This will take about 10 weeks to 1 year. The affected resident could be single, but they could also be a family with children. When they have nothing left, the dwelling should be furnished.

When someone is declared bankrupt, he could not utilise his belongings anymore, in fact, these don't even belong to him anymore. When the ex-entrepreneur owned any other type of company than a private company, his personal belongings are at stake as well. In the worst case scenario, the ex-entrepreneur will have only his furniture, some clothes, and some food, but no house. He could be alone, but he could also have a wife and kids. They will need a temporary house for at least 6 to 24 months where they can wait for the conclusion of the bankruptcy and build back their life.

When getting a divorce, there are a lot of things to arrange; where will the children live, what will we do with the dwelling, how do we divide our belongings, how much alimony will be paid? At least one of the two would need a temporary dwelling for 6 weeks to 2 years where they can arrange the divorce and search for a new dwelling. It is important that this temporary dwelling is in the same city, so the both of them will see the children regularly. The amount of needed space can vary during the week since the children wouldn't be there all the time, there might even be no children involved.

	duration residence	single	couple	with children	furnished
divorce	6 weeks to 2 years	x		x	maybe
bankruptcy	6 months to 2 years	x	x	x	only additional
calamity	10 weeks to 1 year	x	x	x	yes

Figure 6.1: background information future residents, source: authors creation

The future residents of the shelter had their life on track, but due to the calamity, divorce or the bankruptcy, they can't satisfy their safety needs anymore. Since the higher needs become unimportant when a lower need is not satisfied anymore, the shelter should firstly provide by satisfying the safety need. This will be done by designing a temporary dwelling that creates a place for their familiar belongings. It also should create enough space, time

and privacy for the residents to create a new daily routine, get the control over their lives, accept the unfairness and deal with the injustice. When this need is satisfied, the need for love will occur. For this, the shelter should provide communal spaces where the residents could meet and connect. When this need is satisfied the need for esteem will occur, this need is very hard to design for, but the shelter should be a building to be proud of.

	safety needs	need for love	need for esteem
needs	<ul style="list-style-type: none"> <li>- Create new daily routine</li> <li>- Create new familiarity</li> <li>- Get control over their lives</li> <li>- Accept unfairness</li> <li>- Deal with injustice</li> <li>- Privacy</li> </ul>	<ul style="list-style-type: none"> <li>- Friends</li> <li>- Children</li> <li>- Spouse</li> <li>- To belong</li> </ul>	<ul style="list-style-type: none"> <li>- Self esteem</li> <li>- Respect</li> <li>- Recognition</li> <li>- Achievement</li> <li>- Esteem from others</li> </ul>
architectural needs	<ul style="list-style-type: none"> <li>- Dwelling with place for familiar belongings</li> <li>- A place for themselves</li> </ul>	<ul style="list-style-type: none"> <li>- Communal spaces</li> </ul>	<ul style="list-style-type: none"> <li>- Building to be proud of</li> </ul>

Figure 6.2: needs according to Maslow with corresponding architectural needs, source: authors creation

When looking into the designs for women's refuge houses, it turns out that these shelters are very restrained and simply decorated without any sign of comfort. A lot of shelters use living in a community as a therapeutic model, but it is shown that this is not good for the children. They get confused and feel uncomfortable in such a way of living. A newly designed almshouse teaches that community could be formed in other ways than sharing the whole living environment. In this almshouse, the residents live on their own and share only the courtyard. It is even stated that the area between the individual dwelling and the public street outside should provide enough communal space to facilitate meetings in an informal way. This could be realised with an atrium or with over-dimensioned hallways with leftover spaces.

However, the informal meeting spaces may not be enough for the single residents of the shelter. They have a high risk of loneliness and this could influence their healing process. It is stated that sharing a meal is seen as a ritual to initiate, confirm and strengthen bonds with other people, so a communal kitchen and dining room could help prevent loneliness of the residents.

family dwelling	single dwelling
<ul style="list-style-type: none"> <li>- Completely individual dwelling</li> <li>- Informal communal spaces ( an atrium or over-dimensioned hallway)</li> </ul>	<ul style="list-style-type: none"> <li>- Communal space to dine</li> <li>- Private bed- and bathroom</li> <li>- Informal communal spaces (an atrium or over-dimensioned hallway)</li> </ul>

Figure 6.3: requirements family dwelling and single dwelling, source: authors creation

Since the family composition among the future residence can change so much, a flexible dwelling is needed. However, flexibility is a very broad concept. To facilitate the needs of the residents, expandable dwellings can be used. In the plan analysis, the question: “what principles can be used to expand a dwelling and what are the consequences?” will be answered. At the same time there will be paid attention to the communal spaces in these buildings and the entrances of the dwellings. To answer these questions, four projects will be analysed; Seestern, Transithuis, Die Maus, and Aranya. The following chart gives the summary of the plan analysis.

	principle	entrances	communal	function individually	superfluous functions
Seestern	flexible apartment can be added	within apartment	all the communal rooms are extra	yes	kitchen
Transithuis	room can be added	trough corridor	bathrooms are communal	communal bathrooms are needed	kitchen
Die Maus	two dwellings share kitchen and living room, can be combined to one dwelling	within dwelling	kitchen and living room communal when dwellings are not combined	no	none
Aranya	apartment above can be added	through exterior staircase	courtyard is communal	yes	kitchen

Figure 6.4: summary plan analysis  
source: authors creation

The shelter should be a building that gives protection, but at the same time, it should be a building to be proud of. So the location should, on one hand, give some cover, but on the other hand, should the building not be hidden in the surrounding. With this ideal in mind, the Groenmarkt would be the best location on the Singelgracht.

There is no need for special collective facilities in the building. The target groups don't need a lot of facilities and the ones desired are already offered sufficiently in the surrounding area. Nevertheless, a collective kitchen and living room is desired. The future residents won't be divided in departments, since the respondents preferred to be mixed and this is also the better option if we look at flexibility. Since the future residents stay different lengths of time accordingly to their situation, a new resident can be placed more easily when everyone is mixed instead that they have to wait for a dwelling in the right department.

## 7 Brief

The design should verifiable comply with the existing building code and the local regulations.

The building is meant as a shelter for people in a crisis situation, people who lost their house due to calamity, divorce, or bankruptcy. The shelter should be able to house families with children as easy as single persons. The dwellings should therefore be expandable. The shelter should provide at about 60 dwellings, which contains family dwellings and expandable dwellings. The family dwellings should be 50-60m<sup>2</sup>, the expandable dwellings should be 20-30 m<sup>2</sup>. The family dwellings should function completely individual. The expandable dwellings may contain a communal kitchen, but should have a private bedroom and bathroom. At least 10% of the dwellings should be accessible for disabled residents. The maximum building height of the building is 27 m. To be able to adapt to future needs, the desirable interior height is 3m free space. The building should provide informal communal spaces.

### Building content

- Maximum building height: 27 m
- Desirable interior 3 m
- 60 dwellings
- 10% of the dwellings accessible for disabled residents
- Family dwellings:
  - 50-60 m<sup>2</sup>
  - Function completely individual
- Expandable dwellings:
  - 20-30 m<sup>2</sup>
  - May contain communal kitchen
  - Private bed- and bathroom
- Informal communal spaces
- Clustered by situation of residents

### Public or communal external space:

- Sustainable, low-maintenance and safe
- Place for children
- Clear division between public and private external space
- Parking facility for cars and bikes
- Parking accessible from within building

### Design of the building:

- Proud building
- Stand out, but not ignore surrounding
- Recognizable entrance
- Welcoming entrance
- Transport of the building materials as short as possible
- Structure of building may not constrain future changes in floor plans.

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<http://www.architectureindevelopment.org/project.php?id=401>

Figure 3.5: Einz sue eins. “Seestern Aspern.” Accessed May 24, 2018

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Figure 3.10: FAB. “Belgische prijs voor architectuur; projecten.” Last modified  
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Figure 3.16: Roger Frei. “Haus H: kindergarten im erdgeschoss.” Accessed  
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Figure 3.20: Architecture in Development. “Indore, India. Aranya housing  
project.” Last modified April 9, 2014.

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## 4 Site analysis

Gemeente Amsterdam, “Stedenbouwkundig programma van eisen  
Groenmarkt,” Gemeente Amsterdam (March 26, 2013)

## Images

Figure 4.2: Gemeente Amsterdam, “Stedenbouwkundig programma van eisen  
Groenmarkt,” Gemeente Amsterdam (March 26, 2013)

## 5 Need for facilities

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