

# Research

- extending independent living by design -

Master Architecture

Design for Care - Towards an inclusive environment.

Birgit Jürgehake | Marieke Berkers | Peter Boerenfijn | Lex van Deudekom | Serdar Asut

Marijke Blom | 4350553

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This booklet is the *second* part of the research series that focuses on designing for an inclusive environment for people who need care and in particular elderly who need or do not need care. This *second* part goes more in-depth into a research of independent living, separated in physical independence, mental independence and emotional independence.

The *first* booklet shows the first steps taken in the research. This includes the fieldworktrip in the Boomborg, observations, interviews, movies, literature and documentaries.

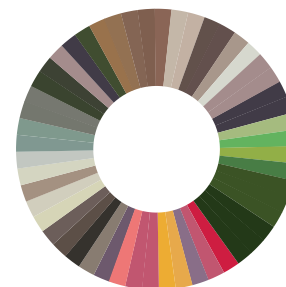
The *third* booklet shows the location analyses of the project site that is chosen to develop. The site is in Driebergen, called Nassau-Odijckhof and Sparrenheide.

The *fourth* booklet shows the process of the design of the masterplan of Driebergen.

The *fifth* booklet shows the process of the dwelling on the chosen plot in the Masterplan of Driebergen.

The *sixth* booklet explains what I have learned by reflecting.

The *seventh* booklet shows the final individual design.







'Design for Care – Towards an Inclusive Living Environment' is a graduation studio that focuses on elderly in their daily life, environment. To create an inclusive environment, it means that we will not only look at elderly who need care, but also keep the starters, children, empty nesters, elderly without care etc. in mind.

My motivation why I have chosen for this graduation studio is because I noticed a lot can be improved in our current built environment if we are looking at care. Second, the studio is looking from an user's perspective, it is human centered. On top of that, this studio tries to solve a social problem: The people in the Netherlands are aging and the care staff will stay the same. This combination of a human centered research approach and trying to solve a social problem, made me enthusiastic. I am curious how and how much value I can add to the solution of the social issue. When I was younger I experienced care myself. I have had several knee injuries and therefore I only could walk with crutches and had to occasionally use a wheelchair. That is when I discovered how it feels to be weaker and being dependent on people other than yourself. More importantly I got to discover the built environment as a person with care and came to the conclusion that it is not designed for people who are physically or mentally weaker. The built environment is not inclusive. Every threshold, every time looking for a bench to rest, every time you needed to ask help, made me think: 'Why do we have to accept this?'

Another experience I have with care is related to my family. My grandfather had dementia and needed to live in a nursing home because my grandmother ended up in the hospital and could not take care of him anymore. They had lived in many places in the world, but eventually my grandfather ended up in a locked up department. Because of his dementia he did not understand why he was placed there and why he could not go outside. He said: 'I feel like a rabbit in a cage' ('Ik voel mij als een konijn in een hok'). For me it was hard to see that a relative did not like living there, although I have had 3 years experience as a housekeeper in a nursing home. It is something different when you see a loved one struggling with the fact he lives in a nursing home. Why should a person spent his last days, in a way he/she does not want to? I would like to change that.

*KEYWORDS:*

Physical, mental, emotional, independence, daily life, inclusive environment.

## ABSTRACT

The Dutch population is aging and therefore the Netherlands requires more capacity in care since this is currently not enough. Living independently as long as possible is a solution and this solution corresponds to the wishes of elderly. Therefore the purpose of this research is to answer the following question: 'How can architecture extend independent living while supporting elderly (65+) in their feeling of independence in daily life?'

Three types of independence are identified and discussed: the physical, the mental and the emotional independence and these are placed next to the different types of elderly. Because of the importance of feelings in relation to tangible requirements, anthropology and epistemology are the most used methodologies in this research. A difference has been made between environments that stimulate/heal and between environments that help/deals with your abilities. Nature has a big impact on the physical and mental independence, while people also like to show their identity as well as having their own place, which allows them to create a home feeling. Since every person is different, the environment should be diverse so this place can be inclusive. A neighborhood should stand on its own in order to let the people live independently for as long as possible.

When growing old your health will deteriorate, this is confronting. Architecture is changeable, life is not. With the identified design options from this research, a built environment can be created that stimulate each person to be independent, physically, mentally and emotionally.

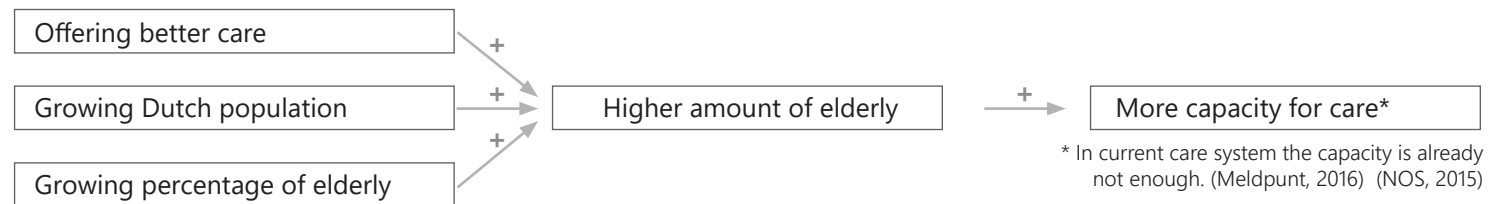


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*Main problem:* Elderly care increases in size.



*Possible solution:* Let elderly live longer independently. It is also a wish of elderly, to live as long as possible at home.

*Sub problem:* Elderly, even who are living independent, have the feeling of not being part in society, not taken seriously, feeling undervalued, feeling patronized.

*Goal design:* Designing a place where elderly can live independently in an inclusive environment as long as possible.

*Main Research question:*

**How can architecture extend independent living while supporting elderly (65+) in their feeling of independence in daily?**



*'You don't look down on us.'*

*- C. de Heus*



## PROBLEM STATEMENT

While researching about elderly and care, it comes to notice that there are a lot of problems. These problems need to be changed to create an inclusive environment for elderly or people who need care. Not all of these problems can be researched at the same time. This is why the chosen problem is one that showed most priority during the fieldwork trip: Elderly feel like they are not taken seriously, they feel like being patronized. Combining the observational problem with the overall social problem results in the focus point in this second research booklet. This focus is about the feeling of independence. How can architecture provide people to stay independent as long as possible and how can the built environment extend independent living in order to keep an independent feeling. Because people do not want care unless they really require care. If the independent living can be extended, the care system is relieved and the elderly have more feeling of independence.

The first booklet gives more background and in-depth information about the fieldwork observation, social and other problems that are related to elderly and care.



#### FIELDWORK OBSERVATION PROBLEM

During my stay in Hilversum for 5 days, a problem was discovered on the evening we organized the question dinner. At the end a man, Cor de Heus (75), stood up and answered the question about the 3 most important things in his surroundings. (Translated in English) Cor de Heus answered: 'the three most important things of this evening: 1. You guys 2. The food 3. That you don't look down on us.' After the last sentence, you could hear the other elderly agree. We did not look down on them, we treated them as equal. I was maybe more surprised that they did not look down on us, as students. They treated us as equals as well. Because Cor said this, it is good to realize that this does not speak for itself. The residents have the feeling of people looking down on them and they do not like this. It is like they are not taken seriously, they do not feel part of society anymore and they feel patronized.

Where could this feeling come from? All these people live in sheltered housing, this is meant for people who are still independent but could use care if they want to. Why do they have this feeling if they are independent? Maybe it is because we asked them their opinion just like Habion does, but HilverZorg did not. HilverZorg thought for them, not with them. They chose what elderly like to do, but it should not be decided by someone else.

What also came to notice is that the elderly in the Boomburg are perfectly able to take care of themselves, when they need help they will ask. Everyone is different, this means everyone needs another type of care and living.

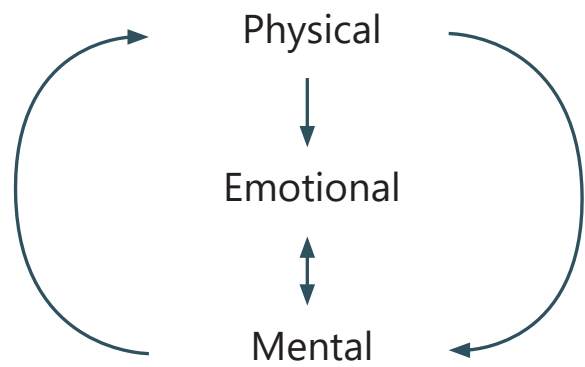
Just like everyone, also the elderly want to have freedom of choice.

#### SOCIAL PROBLEM

In the Netherlands the population is growing and on top of that, there is a growing percentage of elderly. Thirdly, better care is offered and taken this together, results in a higher amount of elderly in the Netherlands (CBS, 2020) (CBS, 2019). But with the current care system, there is already not enough capacity for care.

Only if we do not change the way we are used to now, we will have a big problem in our near future. A solution is that care can become even more efficient, this means less personal care and no time for individual preferences. Efficient care is a solution but, well-being and individuality, must then be surrendered. Elderly and future elderly do not prefer this. So what is another solution? Changing the way how we live, who takes care of whom?





## TYPES OF INDEPENDENCES

In this research, three kinds of independence is investigated. The physical, the mental and the emotional state of independence. These different types are connected to each other and can have effect to one another. This booklet is divided by the comprehensibility of the independence types. The most concrete and tangible independence is physical independence. This type is for people easier to understand, since people can relate. For physical independence, the solutions are measurable. The second independence is less tangible and more abstract, it is the mental independence. Understanding mental illnesses or mental issues, is harder to cope since people are not able to visually see what is wrong. Researching the mental state of mind, is a challenge because the person who is dealing mentally, is not always able to express what they are feeling.

The third kind is emotional, this is the most abstract and intangible of the three. How people feel addressed, react or deal with situations is all related to who this person is.

To understand this form of independence, it is important to emphasize. For each type, it will be discussed which interventions are needed in the built environment to stimulate independence.



Out of the analyzed problems, a research question followed in order to create a solution for the fieldwork trip problem and the social problem.

Main research question:

● **How can architecture extend independent living while supporting elderly (65+) in their feeling of independence in daily life?**

In order to answer the main research question, subquestions need to be asked as well. Therefore is independence in this research separated in physical independence, mental independence and emotional (feeling) independence.

- What does physical independence mean for architecture?
- What does mental independence mean for architecture?
- What does emotional independence mean for architecture?
- What does the daily life of the elderly look like?





*"The hospital has become so completely a product of the technologies of medicine and manufacture, so precisely adapted to the uses of science, as to become in effect a scientific instrument not essentially different from the X-ray machine or the operating table which it encloses".- Joseph Hudnet, 1947. (Dijkstra, 2009)*

During this research about how elderly live and how care is designed, I discovered that we are one of the few architecture students who are beginning the research from a human perspective. The research is human-centered. The methodology that fits with human centered research is called Anthropology. This methodology studies the human behavior, human biology and societies. So both physical and cultural (Smith, 2020). It is classed as behavioral and social sciences and the word anthropology comes from the Greek word ἄνθρωπος = human being, and a -λογία = study.

'The best source of information is the person for whom the designer is designing the product', wrote the Italian architect Luigi Buti (2019). With this way of researching you can notice what really is important for the users. What is the essence of living for each user, each individual. They are going to live with/in it and they are the ones to live with the consequences when it is not right for them. Users add the value to the architecture.

"Both architecture and anthropology study the identity of a place – what makes that place unique." (Sfintes, 2018) To become conscious about the phenomenon, the community and its functioning, anthropology is used. On the other hand, architecture uses analysis of the project to create a new design that is part of the local context (Sfintes, 2018). So the difference is that the architect specifically looks how the space is in its context and listens to what the project must offer with the client, while an anthropologist looks at how the space is used and why. Combining architecture and anthropology will result into a suitable for the context and suitable for the user who is experiencing it. This way buildings and the built environment will be used for the better and will probably be used for a longer time. Although it has to be taken into mind that anthropology sometimes

cannot give an architectural solution. On top of that, finding the combination between both can be a challenge. For this research the focus point in combining these two ways, will offer a solution where elderly have their own place, where they can live as independent as their health situation allows.

Another way of further research in elderly is literature. Literature that is found, can show the physical independence in relation with architecture. These sources get more into detail about the practical solutions. Literature about the mentally independence part, likewise. Books and articles about mental independence such as dementia in relation to architecture, show options to provide a space that is soothing for the Alzheimer patients. The topic mentally independence is also covered more frequently in social literature. From the social literature it is needed to translate this in architecture and therefore into architectural solutions of what the users want. On top of that, literature about this topic is very useful. These type of diseases are not able to tell or show what they want themselves (anthropological). These studies of literature show solutions of what research *thinks* is right for the people with the disease.

My research will deviate most from the third form of independence, namely emotional independence. Emotional independence is about feeling and how this feeling can be translated in architecture. This is not all, because how can architecture stimulate people to make use out of the built environment so it will help them.

't Kampje in Loenen is provided with a new kitchen which the residents can use. This way of cooking, being self-reliant, was a wish from the inhabitants. While observing how much the kitchen is used, the conclusion was that the residents do not make use of it (Heikamp and Rimmelzwaan, 2021). Creating quality to an environment is not enough, there needs to happen more than just placing a kitchen.

The emotional feeling can be researched through interviews with people of all ages, so the nowadays elderly and the future elderly. The way of qualitative researching is used, since researching feelings is not possible with quantitative research.

All these types of independence, physical, mentally and emotionally, will offer a new range of perspective on the topic independence with architecture. This way, a more inclusive environment can be created with the research outcomes in mind.

In my research there are several different methodologies that will be used. The topics of my research are listed with the methodologies behind it, that will be used in that specific chapter.

## **Independence**

### *Physical independence*

– Anthropology, with this methodology I will be able to observe, interview and experience how the mobility of elderly is. From my own experience, as a person who walked on crutches for several months, I will be able to know where difficulties lie. Knowing what the certain difficulties are, can help to come up with a solution. For example, less thresholds or always a wheelchair accessible path.

- Material Culture. Knowing what technical solutions and objects are designed to move through the built environment can help to discover where the real problems are with mobility. For example, a wheelchair, a walker, crutches, ceiling lift, duobike. With Material Culture, Different textures and material choices can be save or not save for the mobility (think about slipperiness or loose tiles), even comfortable or not comfortable (coarse stoned or smoothness).

- Epistemology. With literature it will be able to gain more knowledge about more experiences with mobility problems for elderly. It can be focused on people who use a tool like a walker but also about people with Parkinson who cannot control their own body fully anymore.

- Typology of dwellings. Analyzing and comparing floor plans by focusing on the height difference and use of thresholds and stairs, will allow to show where difficulties are for people with mobility problems. This way I can look what is not useful and therefore do not design these mistakes in my design. There will also be designs that show solutions, these options can be integrated in my own design.

### *Mental independence*

– Epistemology, literature will help to make an overview with mental illnesses that will lead to a person that cannot be independent anymore. Think about people with Alzheimer, who at some point will no longer be able to find their way back independently and need help with making food for example.

- Typology of buildings. Analyzing buildings who are designed for people with a mental illness will help to see what the design choices were and therefore conclude if it works with the knowledge of current and renewed literature.

### *Emotional independence*

- Anthropology, by the method of interviews it will be possible to know how people feel when they are independent or how they feel when not treated like an independent person. This research started with a quote from Cor de Heus: 'You don't look down on us.' He sometimes felt that people did not take him seriously. It is not that he was physically or mentally dependent, but it was the way he was treated like a dependent person. By asking questions and handing out surveys it will be possible to know what is important for a design so that people do not have the feeling of patronizing. Not only elderly, but people of all ages are important. Think about teenagers who are becoming more independently or think about starters who will live on their own for the first time or an empty nester who need to deal with a quieter home and more room since the children are not living at home anymore. This way of researching of emotional independence can help in understanding what it means for the people themselves, although it can be hard to get quantitative information since there is no good or bad in describing emotions. Yet, the answers of the people should be clear and gone into depth, why do people really feel like this.

### *Independent living*

- Epistemology. reading literature will help to understand what the definition is of independent living.

- Documentary, through documentaries, talkshows, movies and newspapers it will be possible to get a wider point of view on the topic elderly and care. It shows the perspective of the users and the people who are involved.

Though this way data can sometimes be incomplete or the data can be taken out of context.

Independent living will be formed through the overall conclusions of architecture of the physical, mental and emotional independence, combined.

#### *Daily life*

- Anthropology, through interviews and surveys the daily life can be mapped.

- Epistemology, literature will help in what the other research has discovered about the life of an elderly.

It can be useful to look if daily life has changed during COVID-19 and how it probably changes in the future.

Combining and/or comparing these two methodologies will show an overall image of what the future elderly do in daily life.

#### *Types of Elderly*

- Anthropology, through interviews and observing it will show the different kind of elderly since everyone is different. Hopefully it is possible to make divisions in types of elderly, what do they prefer and what not. While observing and interviewing it is important to see if all types of persons are covered. Introverted people feel less need to contact you comparing to extroverted people. One type of person can be seen in the park while the other one can be found in their own home. It is good to realize everyone is different, to take this in account while drawing conclusions.

- Epistemology, literature will provide information from different viewpoints.

- Documentary, through documentaries it will be possible to see if all types of elderly are covered that came from the anthropology study.

- Typology of buildings, there is not one type of housing that people prefer. Looking at the differences through the advantage and disadvantage, it will be able to know why people chose this typology.

*Main research question:*

How can architecture extend independent living while supporting elderly (65+) in their feeling of independence in daily life?

*Sub questions:*

- What does physical independence mean for architecture?
- What does mental independence mean for architecture?
- What does emotional independence mean for architecture?
- What does a daily life look like of an elderly?

## DEFINITIONS

### INDEPENDENCE

To start researching and eventually answering the research question, the definition of independence needs to be clear. Cambridge (2020) defines independence as following:

*"The ability to live your life without being helped or influenced by other people."*

Synonyms of independence according to the Oxford dictionary (2019) are:

- autonomy
- self-determination
- self-reliance
- self-rule
- self-support
- self-sufficiency

To completely understand the word independence, it is helpful to know the definition of the opposite word: dependence.

### DEPENDENCE

Dependence means:

*"The state of relying on or being controlled by someone or something else." (Oxford, 2019)*

This word comes from the Old French word: *dependre*, dependance that comes from the latin word *dependere* (de- means down, pendere means hang). In combination with the English word *depend* it merged into *dependence*. *Depend* has three meanings.

1. be controlled or determined by
2. **be able to trust; rely on**
3. hang down.

### INDEPENDENT LIVING

*"A living arrangement that maximizes independence and self-determination, especially of disabled persons living in a community instead of in a medical facility." (Placement Counselors Corp., 2020).*

This definition of independent living already includes disabled persons. So for an inclusive definition it will become the next sentence:

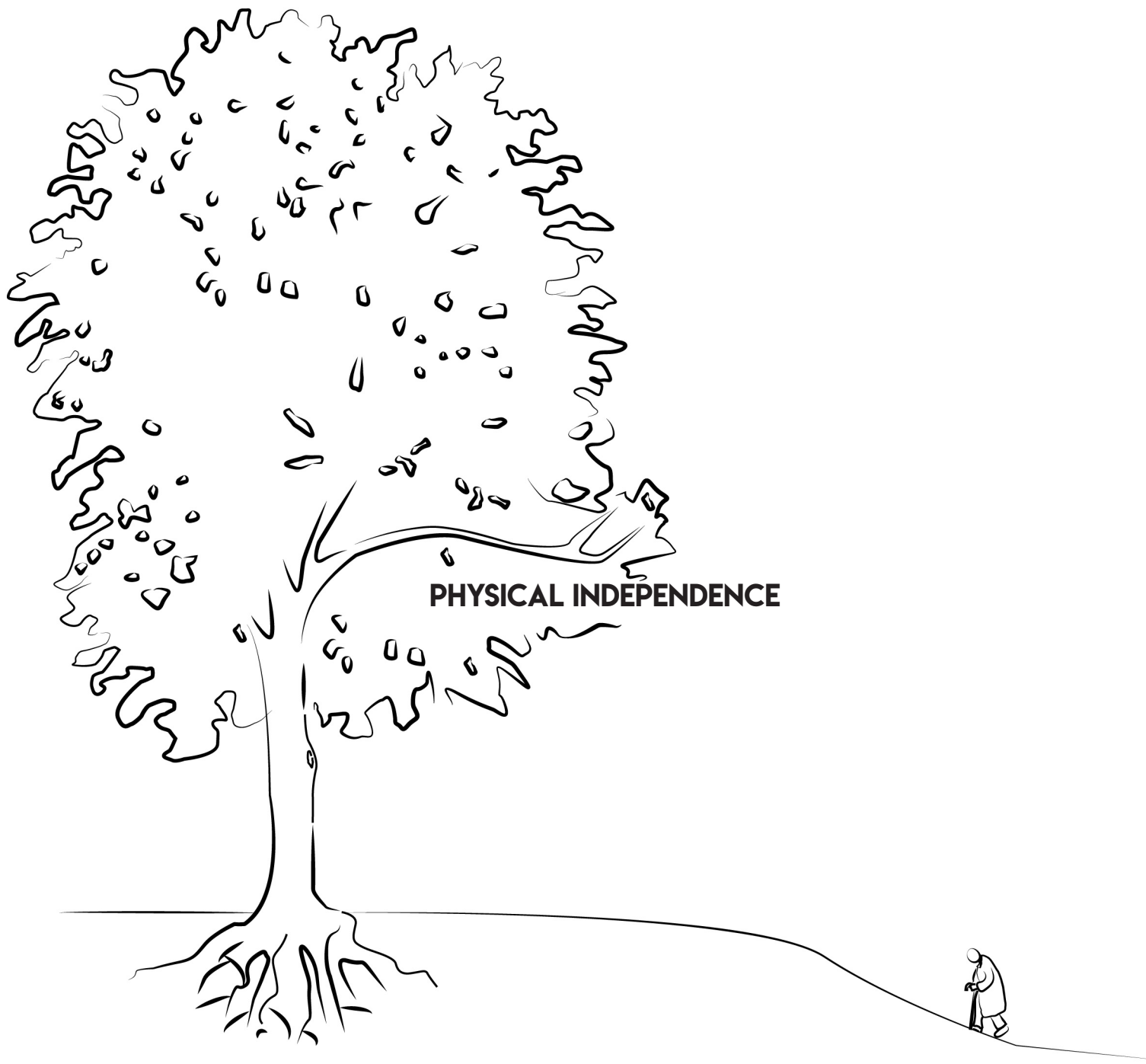
*'Independent living is a living arrangement that maximizes independence and self-determination.'* (Placement Counselors Corp., 2020).

### DAILY LIFE

*"The activities and experiences that constitute a person's normal existence." (Oxford, 2019) (on a daily basis)*

Synonyms daily life:

- Everyday life
- Routines



**PHYSICAL INDEPENDENCE**

#### *WHAT DOES PHYSICAL INDEPENDENCE MEAN FOR ARCHITECTURE?*

This chapter is about the most concrete of independences: the physical independence. This type is besides concrete, also a broad subject since there are different forms of physical limitations where each limitation needs various points of attention in the built environment. People who are in a wheelchair, who are visually impaired, who are deaf or have physically a normal standard, all have a different kind of perception of space (Haak, 2005 and, van abbemuseum, 2018). Therefore this chapter will focus on some of the senses: touching, hearing and seeing. First touching will be discussed by going deeper into movement and mobility, than it will be discussed how the environment should look like for people who are deaf, eventually it will be discussed how blind people experience spaces and how the environment can help them.



Figure 1. Maximum distance of daily facilities for a physical health person. (Cammelbeeck, Engbers, Kunen, and L'abée, 2014)



### MOVEMENT AND MOBILITY

Physical independence is the ability to physically take care of your own, where you do not need help from other people. Tools like a walker, wheelchair or crutches are tools to help you to become more physically independent while moving. These objects help for mobility, inside and outside. But what are the 'tools' in the built environment, what 'tools' are integrated in our surrounding spaces? Are there simpler ways to move through the city or in your home, eventhough you are injured or impaired?

Starting on the bigger scale, the city should provide a way so impaired people can easily go from one side to the city to the other side or even outside of the city. This means offering an accessible, wide traffic network. Not all people can use a car, therefore public transport is crucial for a person who likes to go from point A to point B. Zooming further into the scale of the city, the train and metro (<800m) can be further away compared to the bus (<500m). This can be seen in the *figure* on the left. The primary services should be within the reach of 500 meters, secondary services within 800 meters. Although these distances seem small, for elderly these dimensions can still be too much. Therefore for people who cannot walk huge distances, there have to be benches in the surrounding area to rest on (Cammelbeeck et al., 2014). Still, 500 meters radius can be too much for an elderly with a walker. A walkable distance for an elderly with a walker is around the 250 - 500 meters (Gemeente Amsterdam & ANA Architecten, 2017). This new insight means a whole different approach on an urban scale. In order to seduce an elderly to go outdoors and be independent, it is necessary to have your daily amenities inside the smaller radius. Taking into account that a person also needs to walk back from a facility, the maximum distance is 125m.

	General	Well-being	Care
Basic	Shop / Toko ● ● Public transport ●	Living room ● Recreational activities / Recreation areas ● ● Well-being of the elderly ●	Instant aid in emergencies ● Indoor care support center ● Alarm ●
Quality	Reception ● ● Caretaker ● Laundry / Washing- and linen care ● ● Atrium / Wintergarden ●	Hairdresser ● ● Internetroom ● Silence and prayer center / Church services ● ● Spiritual Care ● Cafeteria ● ● Restaurant ● ● ● Smoking area ●	Night watch ● Domestic help ● Meal service ● General practitioner ● Physiotherapy ● ● Bridging aid / temporary recording 24-hours availability healthcare personnel ● Group care / Day care ● ● Care ● Nursing ● Guidance ●
Extra	Post / Bank facilities / ATM ● ● Front Desk 24 hours manned ●	Pedicure ● ● Library ● ● Fitness ● ● Beauty Salon ● Swimming pool ● ● A la carte restaurant ●	Home care office ● ● ● Dietitian ● Occupational therapy ● Speech therapist ●

- Kies Beter
- ZorgGids Nederland
- Kenniscentrum Wonen - Zorg

Figure 2. Facilities that need to be in the surrounding of elderly (Spierings, 2014)

### FACILITIES

So, facilities need to be within a range of 125m, as discussed above. But what care facilities need to be in the surrounding? The schedule shows the level of facilities linked to the importance of facilities of the Dutch care institutes: Kies Beter, ZorgGids Nederland and KennisCentrum Wonen-Zorg (Spierings, 2014).

A division is made between levels of necessity for facilities:

1. basic facilities
2. quality facilities
3. extra facilities.

Combining the data of the care institutes, separates the most common general, well-being and care facilities. Following, it is arranged according to the Pyramid of Maslow, which shows the hierarchy of needs (Gherman, 2012).

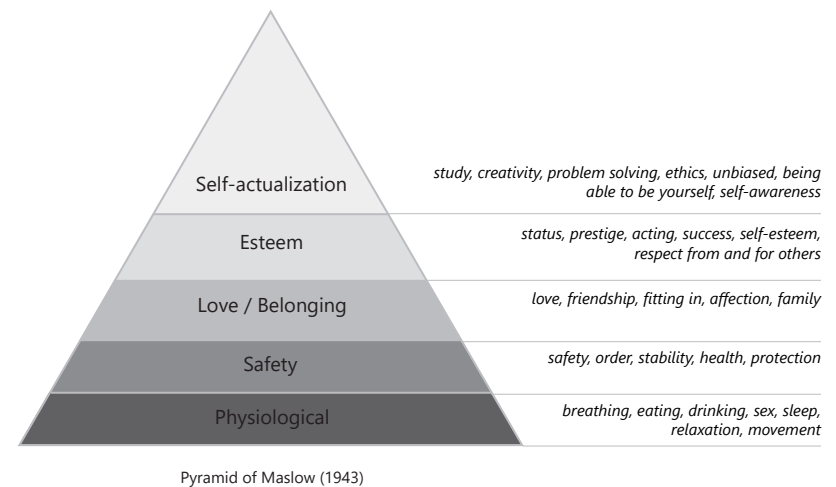


Figure 3. Pyramid of Maslow (1943).

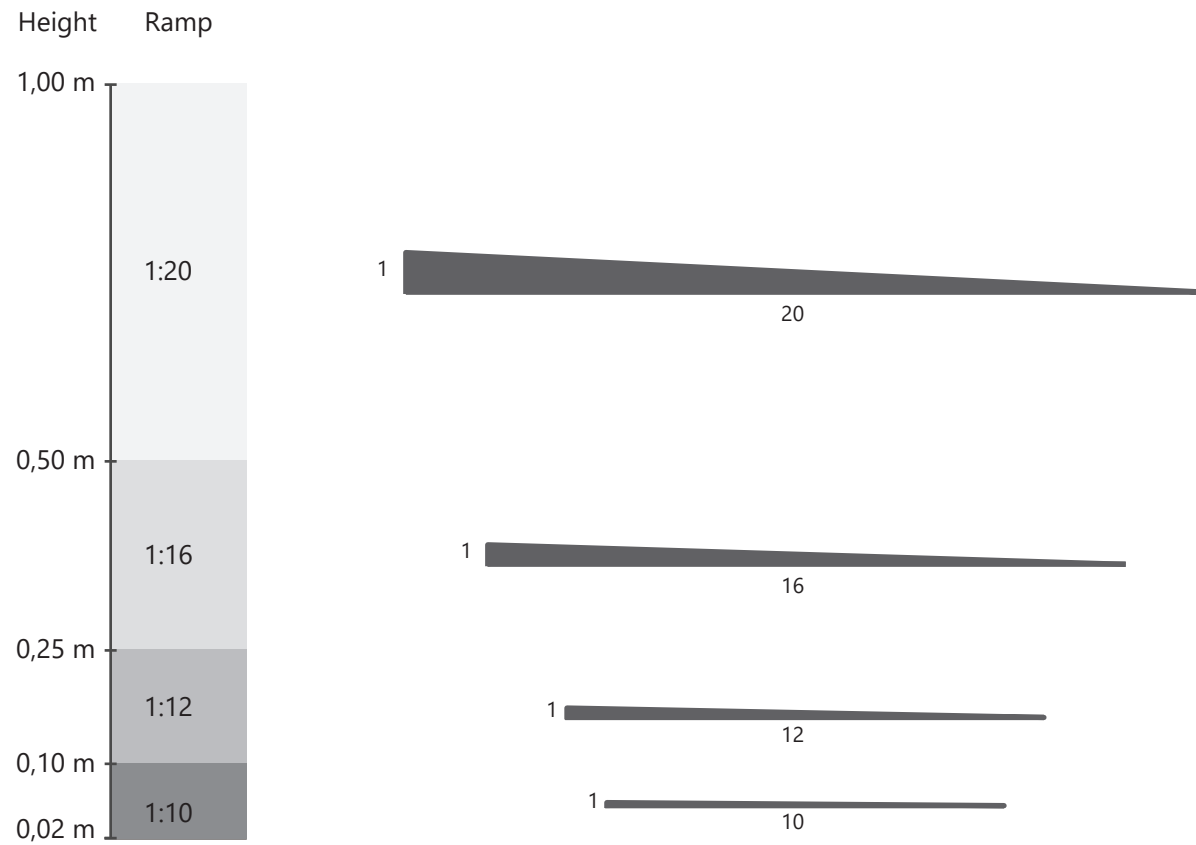


Figure 4. Inclination angle of a ramp.

### LIMITATIONS

For the smaller scale, the neighborhood scale, the surfaces and heights are mainly important. First, the surfaces will be discussed.

While experiencing how it feels to be weak or as I would rather say: how it feels to be limited, I came to a couple of insights.\* In the common neighborhood, streets are too wide in order to cross within the time of the traffic light. By designing a stopover, it creates a space to rest or stop. Eventually, with this stopover, slow(er) traffic can cross. If the focus lies on infrastructure for slow traffic instead (pedestrians and cyclists) or fast traffic (cars) the area would be a safer place and people will feel safer (SWOV, 2020).

Have you ever counted how much thresholds you come across each day? While being in a wheelchair or using crutches, you notice: a lot. Every threshold is another boundary to overcome. It holds you up and most of the time a ramp is not near, but even when a ramp is placed it is mostly far away, as a hide away path. On top of that, there are types of ramps that are too steep and can be dangerous while rolling off. Therefore the government has set rules to create a safe inclination angle (Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, 2021). These regulations are visualized in an image of the left page.

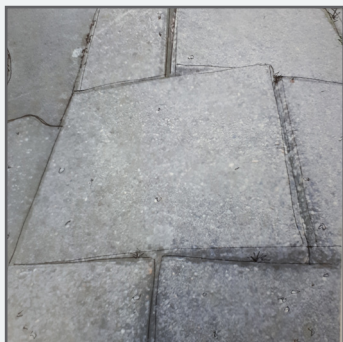
Unfortunately horizontal surfaces without thresholds, also create challenges. Depending on the material and how this material is placed, it can help or hinder. Smoother surfaces cause less resistance, therefore will help a person who uses a walker. Coarse materials like gravel, loose bricks or even sand on the other hand, take a lot of energy. Thinking back about the maximum distance of facilities for elderly, some elderly could not afford to lose more energy to these kinds of surfaces.



This ramp is too steep.



Thresholds hold you up.



Loose tiles are difficult to walk on.

Figure 5. Experiencing how it feels to be limited.

\* More information can be found in the first booklet, page 13 - 17.

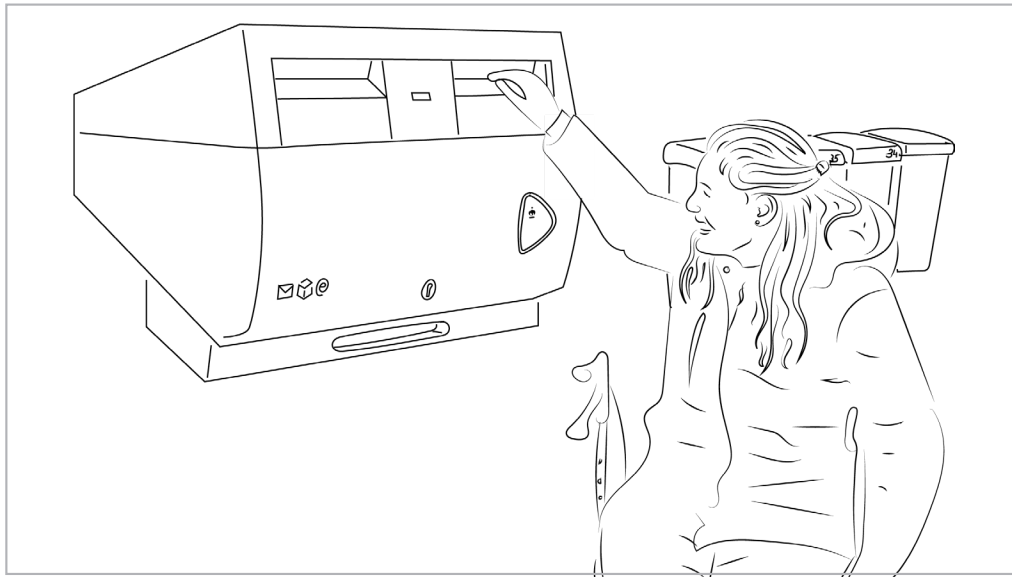


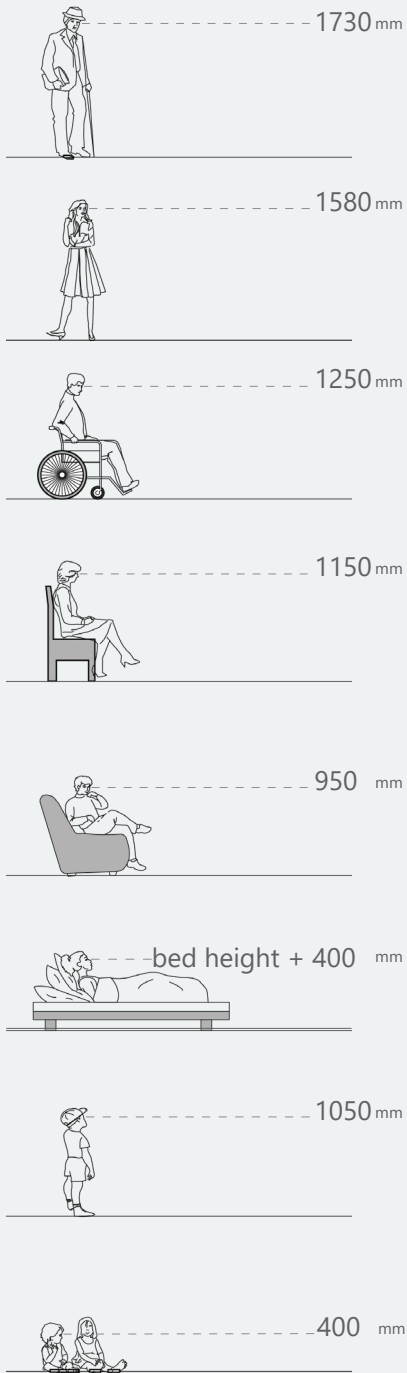
Figure 6. Being able to use the mailbox, even while sitting.

### ARM REACH AND EYE HEIGHTS

Besides the height of ramps, there are more height measurements that have to be taken into account. Most design decisions for heights are made due to the 'normal' standards, the average. Positively these heights are perfectly suitable for the largest amount of people, sadly this approach is not inclusive at all. People who deviate from the standard, experience difficulties that can easily be changed so that everyone can use the object. The most left image shows how a small change in height, can result in more independence. Everyone should be able to use public objects, the mailbox in this example, by lowering the height. Not only people who are sitting, but also people who are less tall, like children, can now use the object themselves. Think about, objects like a doorbell, caot rack or a garbage can.

Not only arm reach should should be taken into account, but also eye height. Assumptions can be made on the eye heights. Looking at a seated person, the height of a windowsill is preferably a maximum of 850mm (Haak, 2005). Signs should not only be focused on standing people but also people who are in a wheelchair. Therefore important information should not be at 1655mm (the average of the eyeheight of men and woman standing). Information should be placed lower so people in a wheelchair or smaller people are aware immediately.

Researchers of the University of Texas (Matthis, Yates and Hayhoe 2018) discovered that when people walk on a more rough terrain, steps will become slower and shorter, but more variable, the participants are looking at the ground for more than 90 percent of the time. Why? Because it takes time to fixate the upcoming footholds. Keeping this in mind, elderly who find walking more difficult, will look down more often. This means the focus of the eyes, is lower than their average eyeheight. So not only for people in a wheelchair or smaller people, but also for elderly it is important to have information on a lower height. Henri Snel, a researcher at Alzheimer-Architecture, designed the 'boodschappenroute' (Alzheimer Nederland, 2020, p. 18). This is a pathway with pavement tiles which has information written on it. People (especially with dementia) can use the information to know which way they have to go.



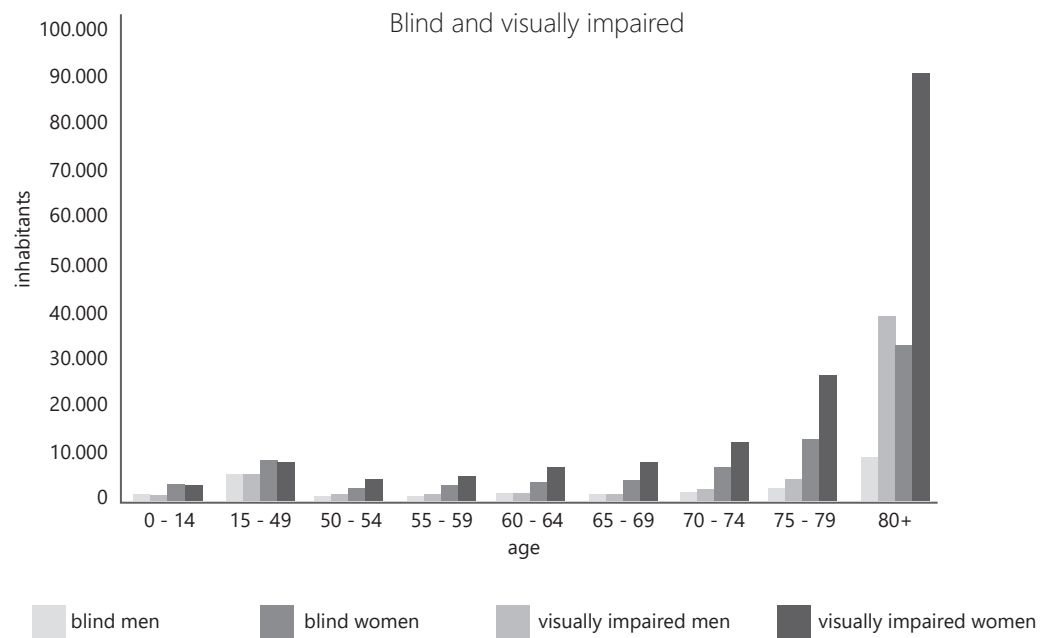


Figure 7. This is a graphic that shows the amount of blind or visually impaired people in 2009 in the Netherlands. Nowadays the amount is higher since the Dutch population is aging, this will grow even more. (Keunen, Verezen, Imhof, Rens van, Asselbergs and Limburg, 2011, p. 4)

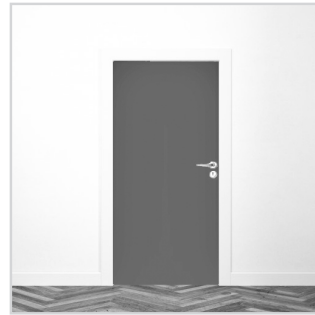


### *SIGHT*

Information should be on the right eye height and (especially public) objects should be within armreach is what we read in the last chapter. But what about people who cannot see the sign even if it is at the right height? In the Netherlands, almost 250.000 inhabitants have loss of vision where around 150.000 are blind or are visually impaired (Oogfonds & Specsavers, 2018, p. 8). This number will grow since the Dutch population is aging and older people have a higher chance of getting visually impaired (Sociaal en Cultureel Planbureau, 2011, p. 65). This can be seen in the chart on the left page. When creating an inclusive environment, it is important to make a design that fits variable sights. Different types of eye diseases show different variations of an image. Some people, for example, can only see a light difference while others have an overall blurred sight. This was discovered while experiencing to be blind (page 11, first booklet) and the variations of sight during a visit to Muzieum in Nijmegen together with my sister. During an interview with my sister, she gave a couple of insights she got from the blinded tour and talking to the blind guide. To create a view where objects can be identified or where things are placed, contrast in colors is needed. This is confirmed by Melis-Dankers and Havik (2012). It will be clearer where objects stand and what the size is.



Color



Gray



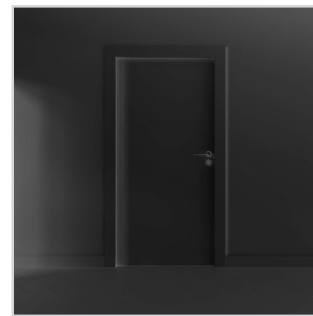
Inverted colors



Color



Gray



Inverted colors

Figure 8. The study of visual effect with color contrast.

### *VISUAL CONTRAST*

To show what the effect of colors is, the images on the left are made. Materials with the same color, so less contrast, are less recognizable. Eight percent of the Dutch population are colorblind and see mostly gray colors. The red-green colorblindness is the most common for men, about 1 out of 12 men experiences this, compared to just 1 out of 250 women (Oogvereniging, 2020). To visualize what a person sees who can only see gray, the gray color images are made. These images show that the red door is easier to see. The designer can use contrast in such a way, that is could guide a person. When the design will not use contrast and leave it white on purpose, a person will not see and therefore not use the door. If we are looking at the colors of the overall built environment, you can fall since some objects are the same color of the street. Likewise, a street post should be bright colored because these are quite thin and often gray, so it is easy to look over when you have blurred sight.



Figure 9. Guidance through materials changes in pavement. Pictures from 'Blind on campus', first booklet,

### *VISUAL GUIDANCE*

Besides contrast, recognition points must be in the surrounding (Haug, 2005). Not only for people who need to remember and recognize where they are, this also adds value for people with dementia (Nillesen and Opitz, 2014). A structure that is clear and predictable helps in wayfinding. Also, using textures helps to function as a guidance in finding your way. For instance by placing tangible tiles, a blind person will know where they are and where to stop or in what kind of traffic situation it is safe to continue (Haug, 2005 and vanabbemuseum, 2018). Change in pavement can help well in guidance. The same material can serve as a route and changing materials can therefore help by knowing where the boundary is and where a new area begins (Kimbols, 2020).

Sudden steps as in thresholds can be dangerous. When a sense, like sight, is lost the other senses are more stimulated but maybe more importantly: appreciated (Tokuyama, 2017). The other senses will play a bigger role in sensing the area around you. The smell of cut grass, flowers and freshly baked pastries will be a treat for your nose. Blind people use smelling to know where they are, if they know the place. Hearing birds sing, a fountain splashing, people laughing will draw a clearer picture of the atmosphere.\* Architect Martijn Braunstahl, who is an expert in designing for people with sight problems, realized that 'Blind and partially sighted people do not want large, open spaces' (Visio, 2020). Open spaces give no guidance for a visually impaired person. There is no support or way of orientation to get a feel for what is where. For walking it is important to make use of straight pathways. As straight pathways, compared to short curved pathways, can help people in finding their way easier. (Visio, 2020).



Visual healthy



Near-sightedness



Farsightedness

Figure 10. How we experience visual distance (Gehl & Rogers, 2013).

### *VISUAL DISTANCE*

Besides the personal visual capabilities, distance also plays a part in your sight experience. There are dimensions of spaces that fit our specific human size (Gehl & Rogers, 2013). We can see as far as 100 meter and still see a difference between objects or species. Therefore this is the maximum size of a comfortable place. From up closer, a distance of 25 meter, facial expressions can be recognized (Platform 31, Who Cares community of practice, & Krabbendam, 2021, p. 16). On the left, images are shown of how people with different visual capabilities see. When growing older, elderly will become more farsighted. This means not being able to see from up close. So facial expressions are not perceived from a short distance. While creating or designing it is necessary to take these two sizes, 25 meters and 100 meters and use them to create a space that adds value and quality and where people feel safe. When a place is more spacious by dimensions, the 'human size' should be brought into the place by using different textures in pavement. (Platform 31, Who Cares community of practice, & Krabbendam, 2021, p. 16) The different textures creates smaller spaces, a variation in zones.

\*The experiences of the 'Soundwalk' (page 91) and dining in the dark (page 171) can be found in the first booklet.

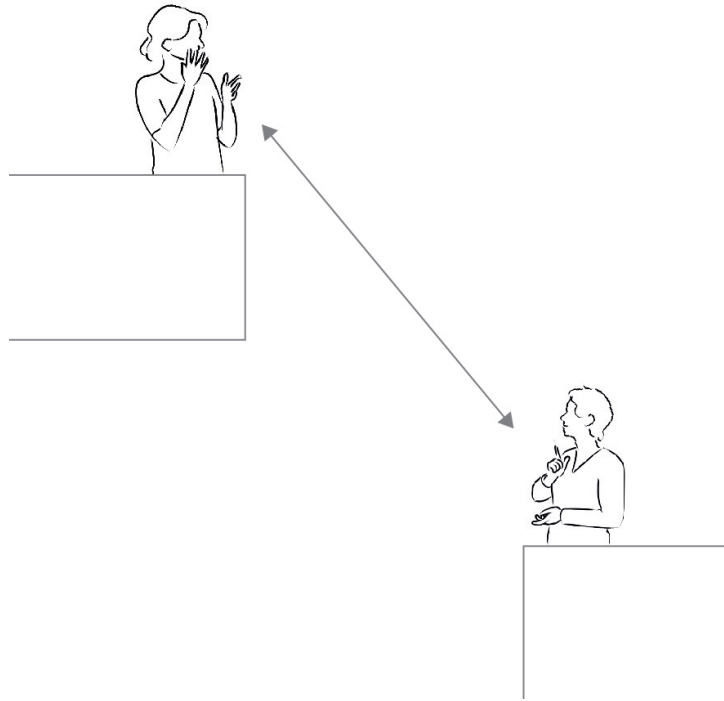


Figure 11. Visual connections on different levels.

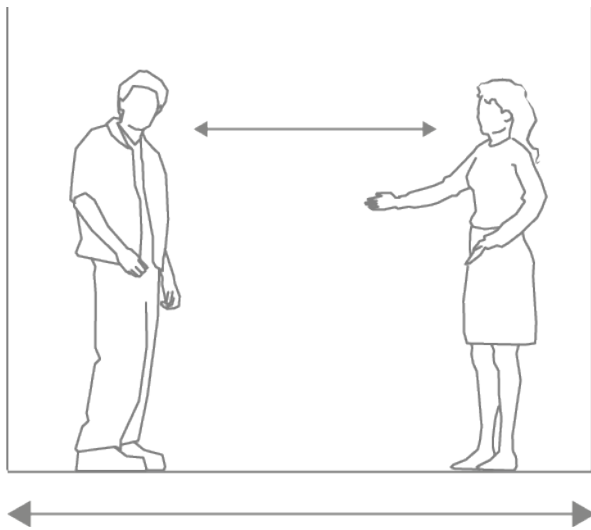


Figure 12. Wider hallways helps in communicating



Figure 13. Ramps help in slowing and creating more intimate contact



## HEARING

Besides people who lost their sight, there are also people who lose or have lost their hearing, also elderly (Sociaal en Cultureel Planbureau, 2011, p. 65). People who are deaf or have impaired hearing, experience a space in a different way than a person with no loss of hearing. In Washington an university is specially designed for students who are deaf. The designers approached the building from a different perspective, keeping people with impaired hearing in mind. A couple of architectural decision are therefore now helpful for the deaf students ("How architecture changes for the Deaf", 2016).

With wider hallways, people walk and talk by parallel signing. Then they can see each others hands and their hand movements. These wider hallways also results into wider stairs. The use of ramps will come in handy, because of the slope of the ramp people will slow down while walking and therefore a more intimate space is created.

So almost everything in the world of the hearing impaired is focused on the visual aspects. Color and lighting are highly aligned to communication access. Light must be diffused to clearly see each others gestures or read their lips, which is even more difficult. People who are hard of hearing, need a light space for lipreading. When a room is darker, it takes more energy since they need to focus continually on the sound. For elderly this is often the case. When a room has too much resonance, it is hard for the people to follow the conversation\*.

With the use of reflective materials, it is possible to see if a person is coming from behind. When this material is placed next to a reading sign, the people who are reading are comfortable by standing there. By using transparent or milk glass, it creates privacy but you will also be able to see when someone is at the door ("How architecture changes for the Deaf", 2016).



\*This can be read in 'Coffee meeting', page 47 of the first booklet.

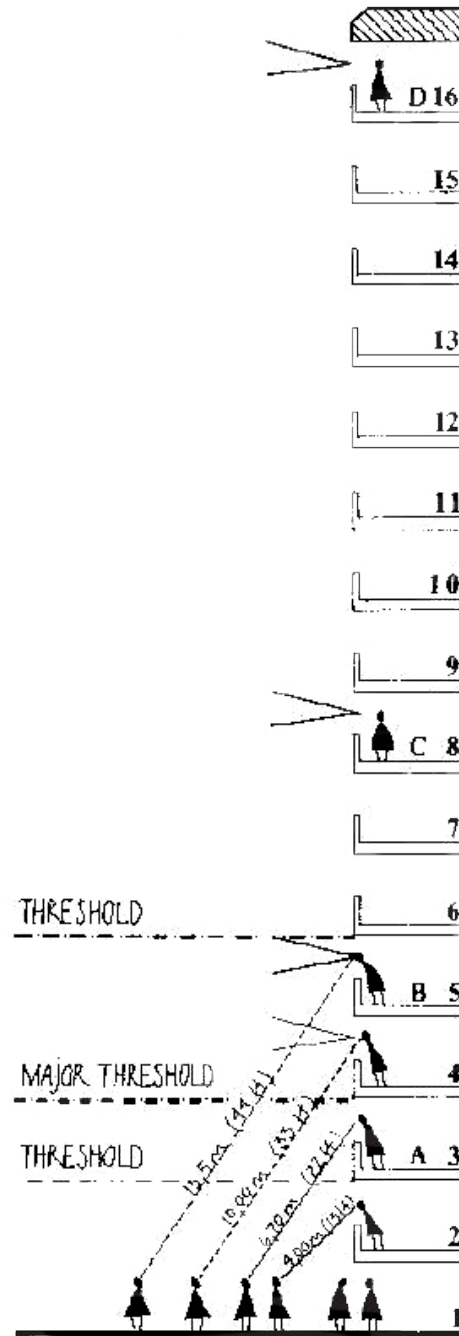


Figure 14. The visual connections (Gehl and Rogers, 2013).

#### *VISUAL CONNECTION*

Visuals connections are important to create interaction between spaces and therefore people. For people who are deaf or have impaired hearing, visualization is their main sense. Therefore in, for example, meeting areas the tables are orientated in a U-shape or a semi-circle, so anyone can see everyone and everyone has a front row seat to seeing. People can interact with others over a distance to maximum 25 meters (Gehl & Rogers, 2013). For people who are deaf, this interaction on distance is meaningful. But also for people who can hear every sound, visual connection should exist also on the vertical levels. Jan Gehl (2013) concluded that the height of buildings and creating connections can help in interaction between people. The height from where you are living and therefore looking, is the relation you have with the ground level and others. Till the fifth floor it is possible in having contact with the ground floor possibly by waving. Standing above the fifth floor it is harder to lay contact and harder to recognize who the person is. Meaningful contact is only possible from the first floors. Whereas the two floors above, the third and fourth will not stimulate to have contact with the lowest level. "Anything above the fifth floor is out of touch with the ground level events." (Gehl and Rogers, 2013). It has to be said that it depends on the building, how high the height levels are. So taking only the amount of levels into account, is not the way to go. One has to take into account the specific building height.



### *BLUE ZONES*

While researching physical abilities, it was noticed that there are specific places in the world where people live longer and are healthier. These places where people are physically at its best, are called: The Blue zones. There are five blue zones, spread over the world. The Ogliastra Region, in Sardinia (Italy) is the place where the oldest people in the world live. Okinawa (Japan) is the place with the highest percentage of centenarians, specially women. The third place is in Ikaria (Greece) which people refer to: 'the island where people forget to die.' In Nicoya Peninsula (Costa Rica) the population lives on average 90 years and is healthy. The fifth place is Loma Lima (California, USA) where there is a group Seventh Days Adventists who live on average 10 years longer than the average American (Buettner 2020). But how do people stay so vital and how do people live independently for as long as possible? In one of the Blue Zones in Italy, Acciaroli, researchers have found that almost none of the centenarians show any sign of Alzheimer. Those elderly have blood tests results that show a lower level of cholesterol and therefore lower changes of hart disease. Centenarians are less often depressed than the younger generations. Almost every one of them, live independent all their life (Longevity: Journey into the Blue Zone, 2017). One of the reasons is the architecture of these places. The cities of the blue zones are often not full accessible by car or not wheelchair friendly. Moreover, the surrounding is designed for people to reach facilities, including nature, by walking or by biking. If people tend to go further, there is public transport to use. If nature is close, like parks or other public green or other public is integrated in the streets, people tend to go outside more often and visit these areas (Longevity: Journey into the Blue Zone, 2017). It stimulates people, unconsciously, to move more themselves.



### *BLUE ZONES*

Other aspects of the architecture is that the Blue Zones built environments is actually not suitable for (weaker) elderly or is adapted in favor of them. There are many hills that hundred-year-olds still have to climb by using the stairs, because they do not have the opportunity or luxury to use an elevator (Buettner, 2010). This 'forced' way of movement, results into daily activities which let the elderly stay vital or become more vital. In our surrounding, in the Netherlands, we try to make everything wheelchair friendly and walker friendly, but is this the right choice? The Blue Zones show that the architecture and urban environment stimulate healthy living in the city. We have to find a balance in stimulating people to move more and that the environment is also still suitable for people in a wheelchair. This is complex, since stimulating people to move and suitable for weaker elderly is a different approach. Movement, like walking or biking should be as natural as possible. Luckily, the Netherlands is already a place where bikes are often used as a means of transport. A solution for creating balance would be, to offer people a choice. A choice where activity is stimulated and therefore accessibility is only chosen when needed. For example, a flight of stairs should be right in front of you and an elevator should be around the corner, where you do not see it immediately.

The food of the Blue Zones inhabitants also has influence on the health of the people. The inhabitants do grocery shopping in small shops around the city. Some people even grow their own vegetables in their garden. Growing your own food stimulates to eat healthier, this can also be implemented more in the Netherlands (Poulain, Herm, Pes, 2013). Having backyards and gardens with vegetables and fruits, to make this more local, sustainable and healthier. Prior, there used to be no big supermarkets or fast food stores. Unfortunately nowadays more American influences can be found in the Blue Zones. Researchers expect that this will lower the age expectation for the younger generations (Buettner, 2010).

Than about the social interaction. The people go outside every day and often visit their family or friends who live close. Since the cities are relatively small, the people know each other. Social interaction is important for the happiness of people (Buettner, 2010). Architecture can play a role in this by creating social places for the spontaneous and longer meetings.





# PHYSICAL INDEPENDENCE

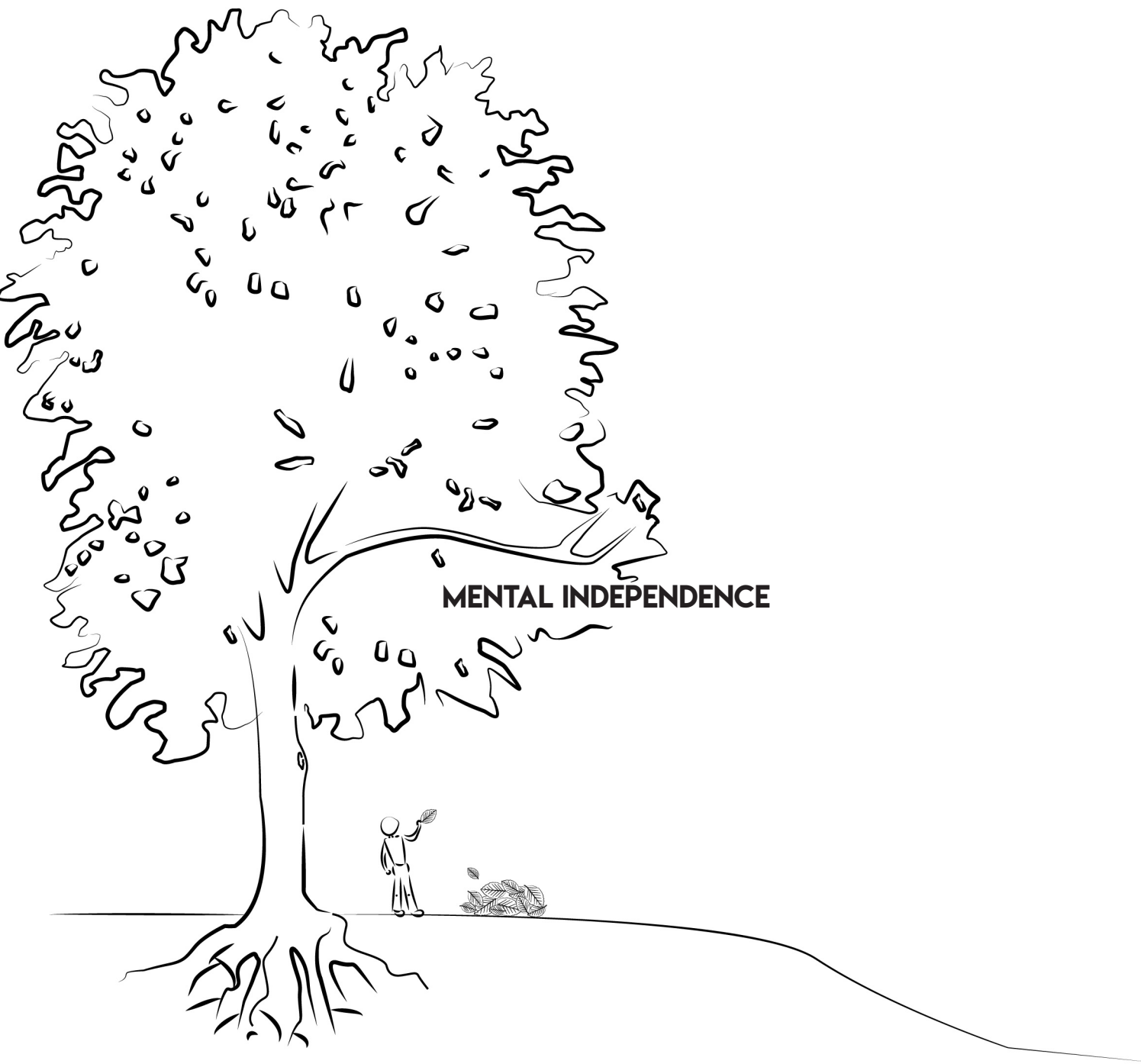
## CONCLUSION

### WHAT DOES PHYSICAL INDEPENDENCE MEAN FOR ARCHITECTURE?

Physical independence depends on several different forms. To make it more tangible, the decision is made between 'Stimulating movement' and 'help during movement'. Stimulating movement refers to keeping or improving physical health. When a person is moving more, this will help in staying more vital. Help during movement is about the people who are physically weaker. This means not oppose, but cooperate with the built environment. So how can these two types of movement be achieved in architecture? First of all, accessibility. There always needs to be a path or elevator for the physical disabled persons but this should not be in plain sight. The stairs on the other hand, should be the first thing you notice so you get stimulated to move more. That way you give people a choice, an easy and health choice. Secondly, nature should be integrated as much as possible in the surrounding. People tend to go outside more and therefore move more. To create a save feeling while moving, even if you are slow at walking, the priority in traffic should be given to slow traffic. This means wider streets where people can stroll together and can enjoy walking or cycling together. For people to be independent in daily life, the daily life facilities needs to be in less than 125 meter. The weekly facilities can be a bit further. If this is not possible, there has to be a place to store the mobility scooter or walker.

The heights of objects that everyone should be able to reach, needs to be at a height which people in a wheelchair and people standing can reach. There should be contrast in color in the public areas so it becomes clear what the object is. Likewise, visual connections are needed to create interactions between people. On top of that, the urban plan should be clearly structured so people can recognize where they are and this can function as a guidance. Incorporating these functionalities into the design will result in increased physical independence.

Stimulate movement	Help during movement
<ul style="list-style-type: none"><li>● Stairs</li><li>● Nature close by</li><li>● Priority slow traffic</li><li>● Accessibility daily life</li><li>● Visual connections</li></ul>	<ul style="list-style-type: none"><li>● Accessibility</li><li>● No thresholds, elevator</li><li>● Wider streets</li><li>● Contrast in color</li><li>● Measurements</li><li>● Guidance</li></ul>



**MENTAL INDEPENDENCE**

*WHAT DOES MENTAL INDEPENDENCE MEAN FOR ARCHITECTURE?*

This second chapter is becoming less tangible and more abstract, it is about the mental independence. Mental independence is the ability to mentally take care of your own. Researching the mental state of mind is more challenging because there are no facts or obvious reasons (no thresholds for example) as in the physical part. However, there are architectural designs that can help in the mental state of mind, these findings will be shown in this chapter.



### *MENTAL DISEASES*

One of the most common mental diseases for elderly is Alzheimer (Alzheimer Nederland, 2019). For people who suffer from Alzheimer, it is useful to stimulate the brain in order to slow down the mental illness. Movement, sunlight and nature are important conditions. For an Alzheimer friendly environment a clear structure with boundaries is one of the necessities for the patients, as this creates a clear overview. No dead ends are used, only a continuous path so the Alzheimer patients (who feel the urge to move), can keep walking. This way they can dispose their tension. Another way to get rid of their state of agitation, is placing a busstop for instance. People with Alzheimer often are searching for their way back home, now they can rest while waiting. On a smaller scale, smelling flowers, touching, sculptures and hearing birds help in giving experience. The recognizable flowers, plants, pictures are heightened so seeing and feeling is more comfortable for the elderly. Because the elderly are familiar with the kind of flower/plant by their colors and smells, it is good for their memory. A railing next to a path has to be available since some elderly have balancing issues (Nillesen, Opitz, 201 and Intogreen, 2017).

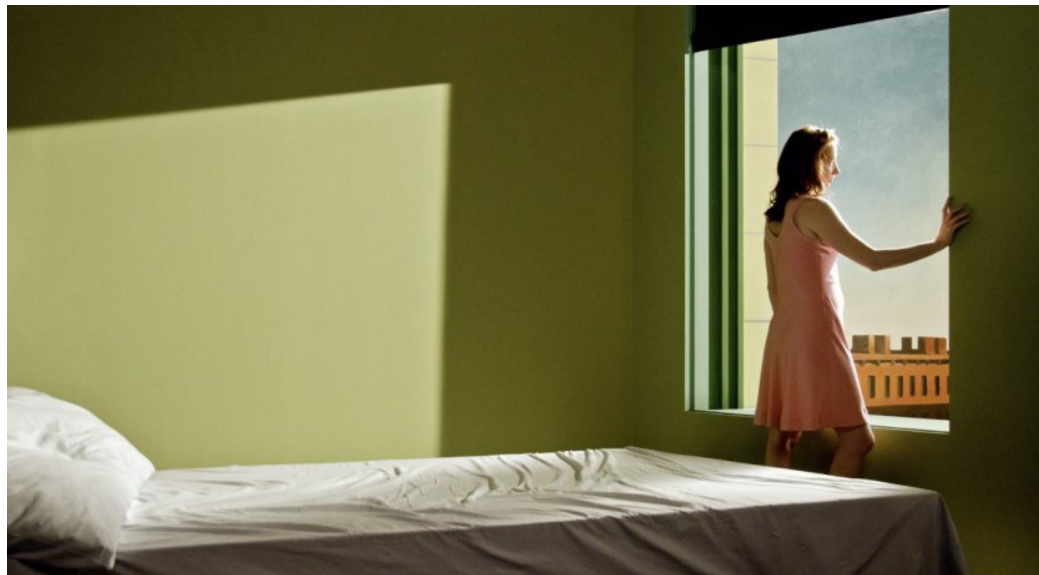


Figure 15. *Movie Visions of Reality* (2014) inspired by painting of Edward Hopper, 'Morning Sun' 1952.

#### HEALING ENVIRONMENTS

*“Several researches have shown that the psychological distress which inevitably follows the sickness can be contrasted with an environment able to support patients’ psychological needs”* (Ulrich 1991, McKahan 1993, Lemprecht 1996) and (Architectural Research Centers Consortium, 2011) .

Researches like Ulrich, Zimring, Joseph, Quan & Choudhary (2004) proved that an environment is able to help a patients mental desires. created a whole new discipline called: supportive design. This design is in line with healing environments. Healing environments are environmental factors that have an impact on a better health. Such surroundings affect even the well-being of patients in healthcare facilities. It can trigger a patient’s sensory and stimuli can reduce the pain experience (Ulrich, 1984). Research shows that especially sunlight, window placement, seating arrangement and color have a positive physical effect on people and therefore help in their well-being. Each of these points will be discussed more in depth.

#### NATURAL LIGHT

The ratio of natural light in a room is tested. Evidence shows that patients in brighter rooms, who have 46% more natural light, need 22% less medication. This leads to 21% fewer medication costs and even more promising: less stress and pain for the patients (Malenbaum, Keefe, Williams, Ulrich and Somers, 2008). This means that patients heal faster and therefore have a shorter stay in the hospital. On top of that, another research by Beauchemin and Hays (1998) shows that fewer death occur in lighter rooms. But what is not taken into account is that there is a possibility that healthier patients are put in brighter rooms to get used to the day and night rhythm.

#### NATURE

Nikos Salingaros (2015) suggest that humans should have a bond with nature because of Biophilia and therefore can obtain health benefits by having contact with nature. Biophilia, according to biologist Edward O. Wilson (1986), means that humans have a naturally, genatically and innate affinity with nature. For this reason, being surrounded by natural elements reduces stress. Even visual contact with nature helps, but if nature is not around, indoor plants also help to reach the same effect. Paintings of nature on canvas can have the same effect as a real plant (Ulrich, 1984 and Dijkstra, 2009). When architects design the built environment with more integrated green, it will have a healing effect, as well as helping the biodiversity, climate adaption and cooling. (Who Cares, 2011).



Figure 16. Green in the direct living environment together with natural light, base image by David Sim (2019)



## HEALING ENVIRONMENTS

### SOUND

Besides Biophilia, listening to classical music can reduce anxiety and stress as well (Rea, MacDonald, and Carnes, 2010 and Altimier, 2004). Classical music affects the positive state and people perceive a space, like a waiting room, as more professional (Dijkstra, 2009). Though not every type of music helps in the well being of a patient. Heavy Metal increases the feeling of tension and nervousness. While Pop music reacts likewise as classical: decreasing in moods related to worry and tension and increasing feeling of ease (Rae, et al., 2010). Combining listening to music with watching visuals, will result in decreasing pain. Pain intensity will be less, pain quality lowered aswell as anxiety which can result in less sedative medication. (Depledge, Stone and Bird, 2011).

### COLOR

Maybe not expected, but research shows that colors can have a healing effect when using this correctly. Using color can affect an atmosphere and the essence of a room. (La Torre, 2006). Specific colors like blue and green stimulate relaxation and balance where as yellow and orange seem to energize and activate the room (McKahan,1993).

On the other hand Dijkstra (2009) writes that the colors green and orange have a bigger impact on reducing stress, compared to other colors. Whereas the color white results in patients perceiving a place as more professional and therefore they are willing to provide more information about themselves. The intensity how a color is use, is also important for the spaciousness of the room. A lighter hue of a color results in a more spacious feeling. A color can cause the effect that your attention goes to a painting or a view (La Torre, 2006).

*The house invites the outdoor to come inside*



*Figure 17. The windows, the view, the light and orientation invites the outdoor to come inside. (Picture)*

*CASE STUDY: LOOSDRECHTSE PLASSEN*

The Netherlands

*“There is a risk that disabled persons develop a negative self-image as a victim of the disability. A manageable environment could contribute to the mediation of a negative self-image.”*  
(Nord, 2008, p1).

As written in the last pages, creating a healing environment can help people in their health. But what does such a place look like? Luckily, there are endless of possibilities. For this chapter, some case studies will be discussed, the first one: a holiday home at the Loosdrechtse Plassen. ‘When you are there, you do not feel the need to go outside, because you feel you are already out.’ This was said by the owner of the house whereas the family reacted with agreement. The house is orientated to the water and makes use of large windows to provide natural light and to catch your eye to look outside. Because of the water, the sunlight reflects into the home, this way, the rooms even light up more. Because of the position of the house, the view to nature and the natural light, the house invites the outdoor to come inside. The urge to go outside becomes reduced and you do not feel the tension to go outside. This house creates a calming effect and you are aware what time of day it is all the time.

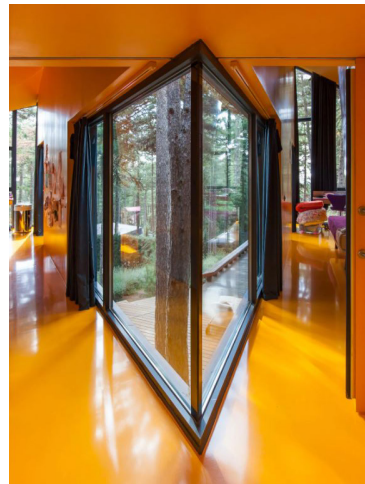


Figure 18. Casa Levene in San Lorenzo De El Escorial, Spain by NO. MAD (Luzestudio Photo, 2006)

### CASE STUDY: CASA LEVENE

San Lorenzo De El Escorial, Spain by NO. MAD

'It feels a bit like we are in a nest' said architect Piers Taylor when he visited the site for the first time (The World's Most Extraordinary Homes, 2017). This building is designed in a way that all the trees could be kept. The designers have looked at where there can be build and they filled the gaps. NO. MAD (the architect company) ended up with a building that has come out of the shape of the site. On the outside the house is in complete empathy of the surrounding nature. On the inside the architect had the freedom to create an atmosphere that provides contrast to the surrounding wood. They used color theory to create two distinct atmospheres on the inside. The colors blue and green to focus and relax, as we could read in the last pages, and therefore yellow and red are used in this design to lift up your mood. One of the architects, Eduardo Arroyo explains "that the forest was guiding us. It was guiding how the forest let ourselves occupy it."(The World's Most Extraordinary Homes, 2017). Because of the materialization, like stainless steel, the natural sunlight reflects. Nature flows around this building.

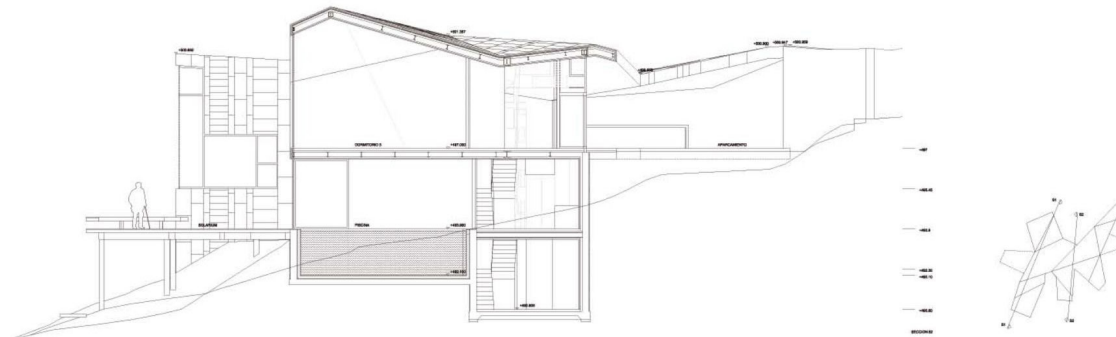


Figure 19. Casa Levene in San Lorenzo De El Escorial, Spain by NO. MAD





Figure 20. Under Pohutukawa designed by Herbst Architekten, pictures made by Patrick Reynolds (Herbst Architekten, 2012)

### CASE STUDY: UNDER POHUTUKAWA

New Zealand by Herbst Architects

So how can a building be created that has a focus on nature? Another residential building that lets nature flow inside is the house: Under Pohutukawa. The owners wanted a house with three bedrooms that could function both indoors and outdoors. The biggest challenge for the architects was to find a way to bring the nature right into the dwelling, whilst having to navigate strict conservation laws. The house has two stories and an open plan for a living and dining area. On the side of the house, two wooden towers has the bed and bathrooms on the inside. To connect the building, a glass roof is placed that is supported by steel and timber. The structural trees mimicks the branches of the natural environment. Geometry has been applied that is an element which is neither man-made nor organic (Pierson, 2017). The facade gets its inspiration out of the texture and color of the bark of the surrounded trees. By using the same material for different layers, it gets textured. When standing on one side of the house, you can see through the house, to the roof, to the trees on the other side. The nature flows in and out of the house. On the inside the materials of glass and wood will create a feeling that the house is invisible, transparent from its surrounding. From every direction the forest can be viewed at. The higher the building becomes in the trees, the more delicate the building gets till you are in the trees again. This building is about transparency and breaking down the mass of the building, or as the architect would rather say: 'We had to come with something very poetic.' (Herbst Architecten, 2012 and Arch Daily 2019).

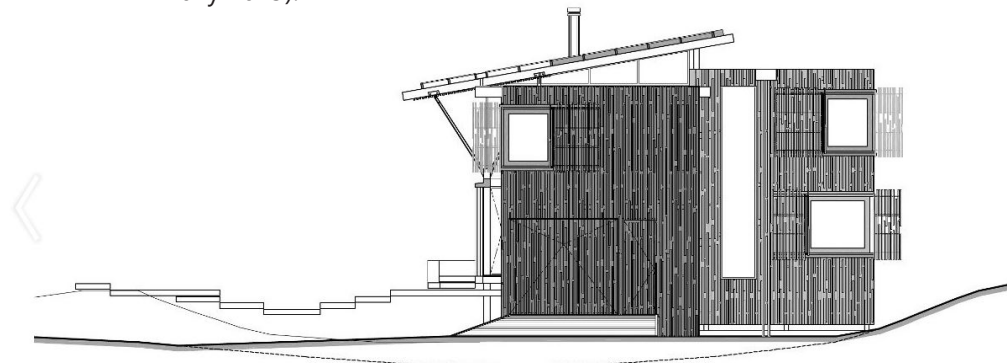


Figure 21. Illustration from Under Pohutukawa by Herbst Architecten (Herbst Architecten, 2012)



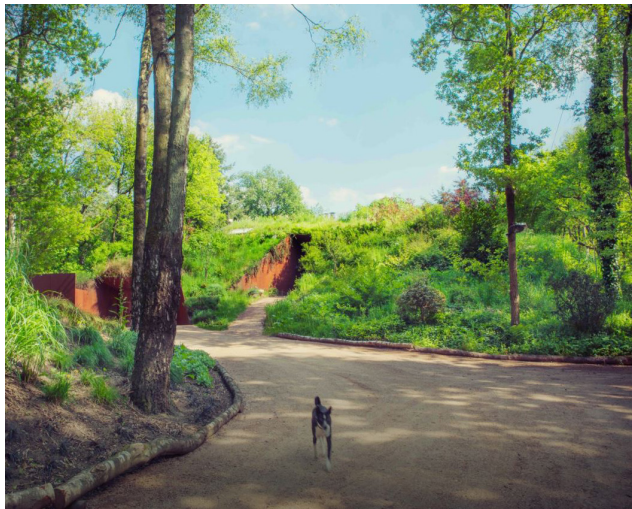


Figure 22. Dutch Mountain by denieuwegeneratie pictures made by Mark Seelen and John Lewis Marshall (Arch Daily, 2012 and Denieuwegeneratie, 2011)



### CASE STUDY: DUTCH MOUNTAIN

Amsterdam by denieuwegeneratie | Sanne Oomen

In the Netherlands there are barely height differences, but this house has created one. The Dutch Mountain or as the Dutch would say: De Molshoop, is a four bedroom family home that lives in a sustainable way. It was designed to be part of a natural environment and that has worked. The home is a large contemporary home embedded in the landscape. This way it integrates with the local nature reserve. The house stands out on one side for as little as possible because of the surrounding forest. It uses the heat and cold of the earth where the north side is embedded in the ground, this gives natural insulation. Skylights are used to bring natural light into almost every part of the house. These skylights bring more natural light in the building than normal windows that are usually placed on the side of the house (Dolnikova, Katunsky, Vertal, & Zozulak, 2020). In the core of the residence is a Finnoven. This is a heater made out of concrete and it stays warm for 12 hours after the fire goes out. Besides the heater, the house has other tricks up its sleeve to make living more sustainable. Like the wood pellet boiler system and solar panels placed south to maximize the sun's rays. On top of that area a lot of products that are recycled or used in a different form. Their old car is now hanging on the wall to function as a closet. (Arch Daily, 2012 and Denieuwegeneratie, 2011 and The World's Most Extraordinary Homes, 2017).

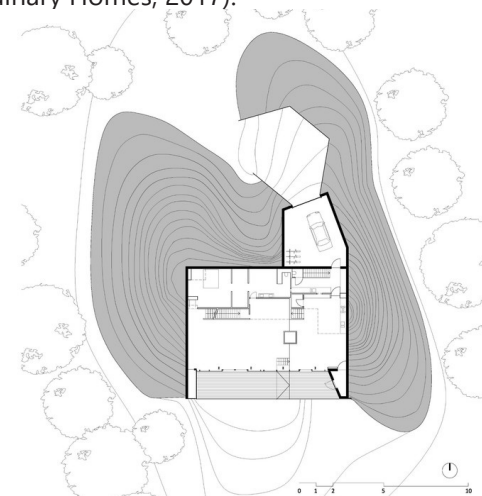


Figure 23. Illustration from Dutch Mountain by denieuwegeneratie (denieuwegeneratie, 2011)



### WHAT DOES MENTAL INDEPENDENCE MEAN FOR ARCHITECTURE?

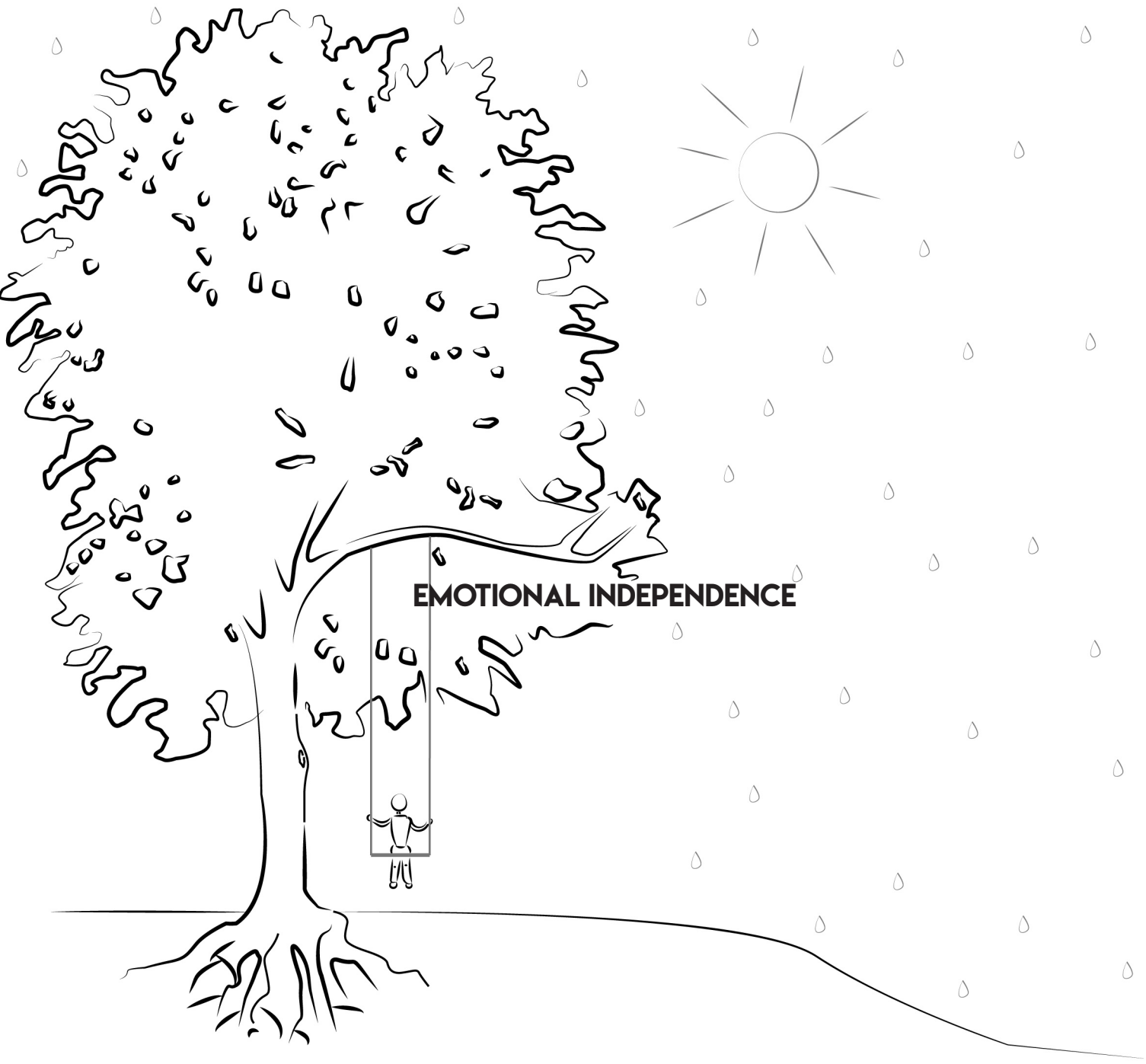
Just like with physical independence, two divisions have to be made within the mental independence. Healing environments and as I would call, dealing environments. Healing environments help in recovering and stimulate the brain in becoming healthier. Dealing environments are environments which help people who are dealing with their mental disease, an illness like Alzheimer for example. To create a healing environment, there has to be a view on nature. This can be in multiple forms, paintings, indoor nature, being outside between greenery. Natural light will help in creating a brighter place, that has a healing effect. For people with Alzheimer, natural light is important since the day and night rhythm gets disrupted and therefore they can become restless if this is not taken care of. The sound of classical or pop music helps to reduce the pain. The dealing environment requires a clear structure, for example an ongoing pathway is preferred. The surrounding environment of someone with a mental illness, should be a recognizable point or objects, this is something an elderly can hold on to.

#### Healing Environments

- View on Nature
- Color
- Natural light
- Indoor Nature
- Sound

#### Dealing Environments

- Structure
- Recognition
- Daylight



**EMOTIONAL INDEPENDENCE**

*WHAT DOES EMOTIONAL INDEPENDENCE MEAN FOR ARCHITECTURE?*

This third chapter is about the emotional side of independence. This type of independence is the most abstract and most intangible of the three forms. Emotional independence is about the feeling you have while being independent or treated as an independent person. When someone is treated as an emotional dependent person, then people notice that the independence is missing. Because this chapter is the most abstract, more research is done by interviews and observations.



Figure 24. Front door windows in the Boomberg, Hilversum

### *IDENTITY AT OUR FRONT DOOR*

You don't look down on us, with this sentence the more in depth research started as can be read in the problem statement. This comment is said by Cor de Heus, 75 years old, who lives in the Boomborg in Hilversum. The Boomborg is an apartment building where people over 65 years live independently. Cor's comment is all about the emotional feeling of independence. People can be physically and mentally independent but if they are threatened or do not feel like an emotional independent person, then they are not independent. So how can architecture be a part of providing people to be emotional independent? Next to the sentence by Cor de Heus, more emotional independence showed in the days of the fieldworktrip in the Boomborg. The photo series\* on the left shows the windows of the front doors of the inhabitants. Windows on a front door are used to look through when someone is at the door. But with this type of window, the person who is standing on the other side, maybe a stranger, can also look inside. Thirty-seven out of forty-two front door windows are covered. This makes a total of 88% of all residents. While interviewing people about why the windows are covered or not, they gave variable answers. Some said about privacy, while others gave safety reasons. Remarkable, most of them did not even know that they covered the windows. Besides that the covering of the windows create privacy and safety, the masking gives and creates identity. What is created as a transparent and meeting feature, is now used to give identity. Or as Rutger Bregman would like to say: 'Our identity is a house, with solid foundations. Then we can open up our doors.' (2019).

\*More research can be found on pages 43-45 and 101-104 from the first booklet.



Figure 25. Kitchen windows in the Boomberg, Hillversum.



### *FUNCTIONALITY*

Next to identity, privacy is an important theme in home feeling. (Platform 31 et al., 2021, p.29). Where home feeling is an important theme in the emotional independence, when your home feeling is gone, so is the independence. On the left is another photo series\* of the windows in the Boomberg, this one is about the kitchen windows. These windows look out to the corridor. Thirty-one out of thirty-six windows are fully or half covered. This makes another high total of eighty-six procent. For this windows it is not only a privacy or safety issue but also because people need the space behind the window. The kitchen is designed in a way that only the place at the window is flexible to place what the owner wants. A couple of inhabitants have placed a large fridge or cupboards since this is for the residents not logic to place elsewhere. Using the square meters and height is more important than using the window for daylight or to see through to create spontaneous short encounters. But these encounters are very important for the inhabitants. 'Residents can live in close proximity to each other and via fleeting encounters build a network that they can turn to someday' (Platform 31 et al., 2021, p.29). Though, some people are aware that the windows are covered and closed off and try to improve the view of the people in the hallway. This is shown in the middle picture. People want to show their identity, consciously and unconsciously. If people have room to show who they are, this will help in the emotional independence. But now the windows show that privacy and functionality is above social interaction.

\*More research can be found on pages 43-45 and 101-104 from the first booklet.



Figure 26. Carpet 'Don't leave me' designed by Mariëtte Wolbert.

### FEELING HOME

Research shows that in creating a home feeling in a neighborhood, the neighbors should have a common denominator such as shared hobbies or interests. This is even more necessary than a shared lifestyle, which is commonly thought (Platform 31, Duyvendak, & Wekker, 2015, p. 39-40). A person only feels at home if he / she has a place where that person can withdraw, such as a bedroom, to recharge over there. From that point, a person can eventually engage contact with others (Platform 31 et al., 2021, p. 29). As we could read in the last page, building up a network is necessary because they can eventually help each other if needed. If a place should feel like home, there has to be a place that is your own. This outcome, of having your own place even if this is in a shared space, is also confirmed in the survey.\*

When do you feel at home? (translated in English)  
*'In my own home with my own stuff and my own roommates surrounding me.'*

*'Being surrounded by nice people on a place where you can be yourself and having a spot on your own.'*

*'Coziness, warmth atmosphere and my own place, chamber.'*

The carpet on the left image, lays in the house where I grew up. At my parents, this is the place where I have the true feeling of being at home. This carpet is in the living room and has many different colors. I like to lay here and just feel the texture with my fingers and listen to the sound that my surrounding makes. Music, singing, walking, cooking and traffic. Everyone has a place where someone feels at home. In order to make people feel at home, you therefore have to create a space that offers the freedom to design that place as you would like to have it. For emotional independence you should have your own place.

\* The survey can be found on page 107.

\*\* More information about The Eye of Memory can be found at page 9, first booklet.

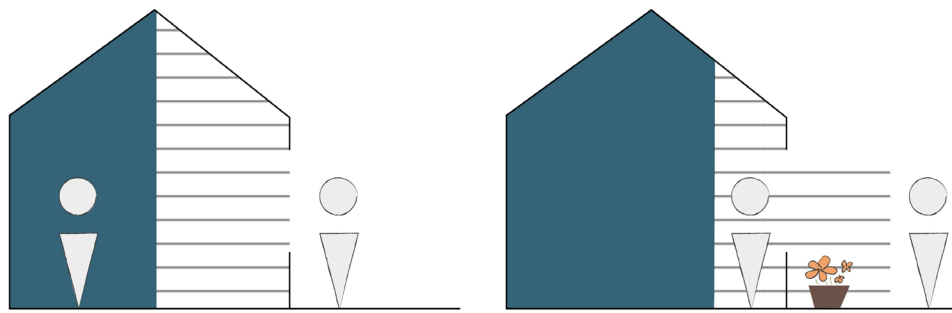


Figure 27. Image is based on the principle transition zone between private and public (Ulden & Heussen, 2015)

### *TRANSITION SPACE*

Next to having your own place, being surrounded by people with the same interest or hobbies is important for the home feeling. But how do you meet your neighbors? How can spontaneous encounters be created? Specially for elderly it adds extra value to living when these short spontaneous encounters take place (Platform 31 et al., 2021, p. 3). Researching encounters and interactions in the built environment is actually a research itself. Therefore it is difficult to go really in depth into this topic, as this research is focused on independence.

What is helpful to keep in mind are the transitions spaces, this is the zone between public and private. Private space is important for your home feeling. Public space, like greenery and facilities are important for your physical independence. The transition zone will help in having spontaneous encounters, but these small meeting spaces can also be found in public, like on benches that are placed together in a park. An example of a meeting place from the private zone to the transition zone is the space in front of your house. When there is no transition zone, than this zone will come inside your house instead of being a private space. This principle is one more reason why the inhabitants of the Boomberg cover their front door windows since they do not have a transition space outside their doors. The ideal width of a transition zone in front of your house is between 1 and 2 meters, bigger than this, the area will be used as a private space (Sim, 2019 and Ulden & Heussen, 2015).



Figure 28. Neighbors having contact because of how the balcony is designed. Image made from observation in Rotterdam.

### *NEIGHBOR INTERACTION*

There are more transition zones apart from the front door, actually the balcony. A balcony can have connections to the ground floor and also with the surrounding buildings, as is discussed in the chapter about physical independence. While designing a balcony interaction can follow if a part is not private space but transition space. For example, a part is hangs over and touches the older balconies of the neighbors. People can chose whether they have a conversation or just greet each other. Knowing your neighbors and neighborhood can help when needed.



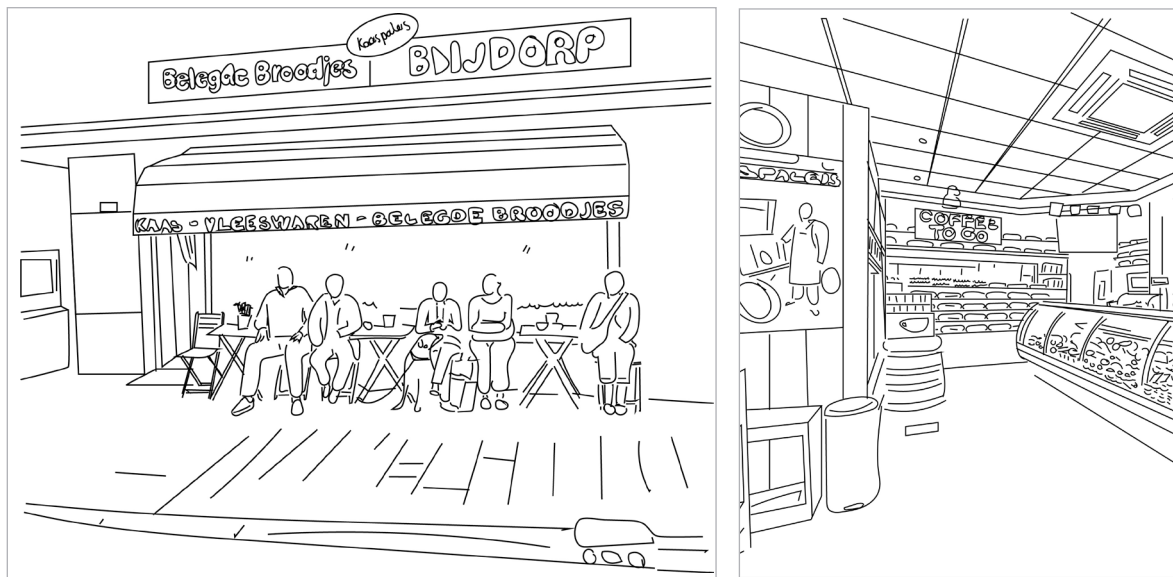


Figure 29. Facility that also encourages interaction and spontaneous encounters.



#### *FACILITIES INTERACTION*

Places outside a home where people spontaneously interact are facilities or greenery spaces. Places where people go during their daily walk. A facility like this, is for example a store in Rotterdam. While working and therefore observing there, a couple of things came to notice. Outside and inside the shop there are benches where people can rest on and enjoy their food and have interaction. There is a wide range of products that are offered from different price ranges so diverse customers are attracted. Some people come daily and the shop knows what they prefer and the customers all have a common interest: the groceries. Customers have a little chat with the salesman or with other customers. For some elderly this visit to this shop is their special weekly activity where they get greeted and have a chat. Everyone, but especially elderly are searching for a reason to go outside and have some interaction. Facilities are not only useful for buying products but can also have a social impact (Platform 31 et al., 2021, p. 18).



Figure 30. Room in the care facility Gooizicht.

### CARE FACILITIES AND IDENTITY

A home feeling is an important theme in the emotional independence, but when your home feeling is gone, so is your independence. An example of how a place would look like when there is no emotional independence is a room in Gooizicht, seen on the image on the left. Gooizicht\* is a low care hospital, built in 1972. There are three departments, somatic care, psychological care and geriatric care. The image is of a room on the psychological department. This is where people with dementia live in a closed off department. This room is from a person who already lives here for a couple of months and will spend his last time. The door had to be opened with a key since it was locked. When looking in the room, no personal items are found, only a postcard. This is the only item that showed identity. Besides this card, the room looks exactly the same as the other rooms. Especially for people with dementia it is important to have recognizable and personal items surrounding you, to trigger your memory (dementie.nl. platform van Alzheimer Nederland, 2017). Not only for the person itself this is important, but also for family and friends to know the person with dementia is taken care of in a personal way.

Out of the interviews\*\*, it came to notice that people want to choose what they want to do and at any time. For example, Gerrit Dokter (77 years old) sometimes sleeps at 11 o'clock and other times past 1. Because he lives independently, he can decide when to go to sleep. Another resident of the Boomborg, Wilma van Barnevel (89) is happy being on her own and does not need and therefore seek social events. It is up to her if she wants to meet or not, she is not forced. As well as people want privacy, a home feeling, spontaneous encounters, people also want to have a freedom of choice. This freedom of choice is in alignment with emotional independence.

\*More information about Gooizicht can be found on page 55, first booklet.

\*\*Interviews can be found on pages 59 - 69, 146 - 167 of the first booklet.



# EMOTIONAL INDEPENDENCE

## CONCLUSION

### *WHAT DOES EMOTIONAL INDEPENDENCE MEAN FOR ARCHITECTURE?*

Emotional independence is the most abstract of all independences that are discussed. Luckily tangible requirements came out of the research. People want to show their identity, consciously and unconsciously, they should have a place or spot where they can show this identity. Identity is also created by having a place that is your own. A place where you can be yourself and withdraw when needed. An important feature that goes hand in hand with having your own place is privacy. To create privacy, a transition space (between 1 - 2 meters) is necessary in front of your house.

Research shows that spontaneous encounters can help in creating a home feeling. When people have the same interest and get to know each other in a low-threshold way, your neighbors can help when it is necessary. To turn something into a place that is suitable and as inclusive as possible, facilities for different ages and houses of different sizes and for different types of people should be available in the neighborhood.

- Identity
- Own place
- Privacy
- Transition space
- Spontaneous encounters
- Facilities for different ages
- Houses for different types and sizes



**DAILY LIFE**



*WHAT DOES THE DAILY LIFE OF THE ELDERLY LOOK LIKE?*

This last chapter is about the daily life of an elderly. First it will go into detail about the types of elderly and eventually it will discuss the limitations a person experiences in daily life.

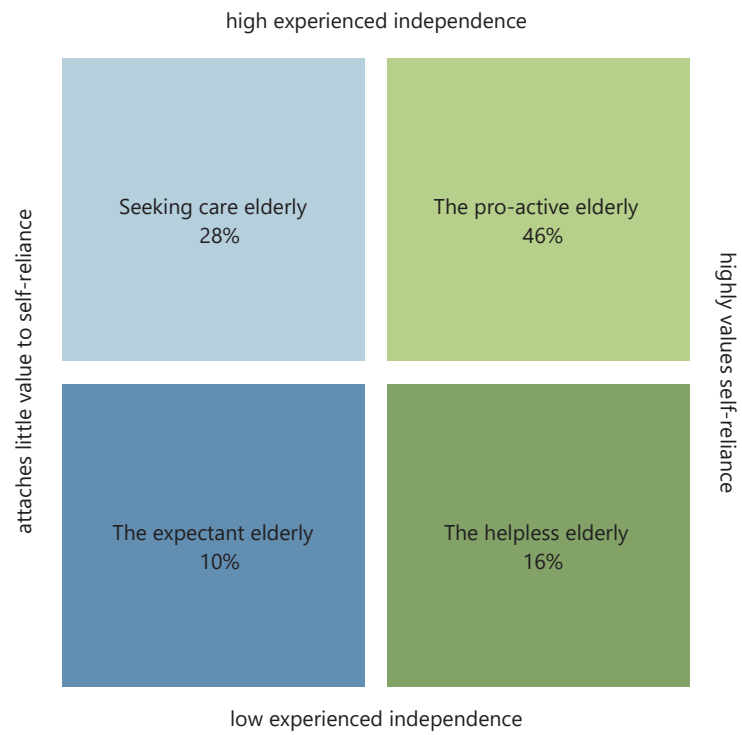


Figure 31. (Nivel et al., 2014, p.20-23)



### *TYPES OF ELDERLY*

Besides differences in needed care, there are also variation in personality of elderly. Taking this together, results in the fact that the daily life of each type of elderly is difficult to write down and this can never be complete since every person is different. Luckily there are some general profiles of elderly which takes the amount of independence as a scale. A note is that within the profiles, there is also a wide range of different elderly (Nivel et al., 2014. p.20-23). After all, in the future, the built environment needs to be diverse, so also in diversity of elderly who need or do not need care.

What can be seen from the diagram is that the elderly seeking care and the pro-active elderly are highly independent and can take care of themselves by asking or handling it themselves. These two groups often experience a better health, physically and mentally. On the other hand, there are elderly with a feeling of low self-reliance. The expectant elderly have the feeling that they cannot decide for themselves how their life should look like. They experience a bad quality of life and experience worse psychical health. The last one is the helpless elderly. This profile wants to be independent but it does not always work that way. This group has the least assistance by their surrounding (Nivel et al., 2014. p.20-23).

\* More interviews and observations can be found in the first booklet.

JOSEPH SCHAMP



- 68 years
- Flank 105 (45m<sup>2</sup>) | 3 years
- Single
- Was a 'plugger' in the music industry. Now he is a courier in medicine three times a week.

WILMA VAN BARNEVELD



- 89 years
- Flank 173 (45m<sup>2</sup>) | 10 years
- Has 5 children, 18 grandchildren and 19 great grandchildren
- 

GERRIT DOKTER



- 77 years
- Flank 175 (45m<sup>2</sup>) | 1,5 years
- Widower and divorced with children
- Retired taxidriver, now he volunteers at a soccer club.

ANNETTE MEEUWESEN



- 72 years
- Flank 163 (60m<sup>2</sup>) | 6 years
- Divorced with children
- Retired from catering industry

WILL WILDSCHUT



- 85 years
- Bergstaete 44-205 (88m<sup>2</sup>) | 16 years
- Has children, had a husband with alzheimer
- Retired teacher.

FELIX AND LOES WOLBERT



- 87 years | 83 years
- Oss in a patio house
- Empty Nesters, 3 children.
- Retired, worked in care facilities

Extrovert



Introvert



'Forces' daily activity



Lives independent



View on people



View on nature



Walker



Working/Volunteer



### *TYPES OF ELDERLY*

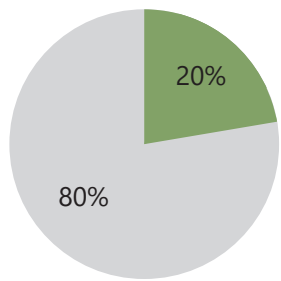
Besides the independent / self-reliant profiles, people have their own way of living. On the left, there is an overview of some of the observations and interviews\*. Each person lives differently. Where one person likes to be on its own, another persons finds that lonely. But which factors decide whether you are independent or not?

The first factor is the needed care. Research has shown that 97% of the elderly find it important to have their own direction and responsibility of their own health, but when more care is needed, it has influence on the importance (Lindenberg, 2013 and Galenkamp, 2012). Secondly, ethnicity is one of the factors. People with an immigrant background, find it generally more important to help as a family and Turkish and Moroccans have more sense of duty. Whereas Surinamese and Antillean seem to prefer to stay in control of their own life for as long as possible (Nivel, et al., 2014) (de Graaff & Francke, 2003; de Jong et. all., 2004; and Kullberg, 2010).

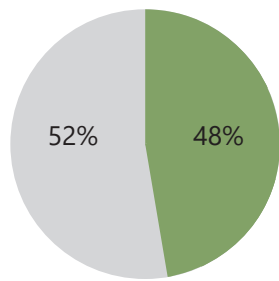
The third factor is knowledge. Because of lack of knowledge, motivation and confidence almost half of the Netherlands cannot play an active part in the care facility (Nivel, and Rademakers, 2013). Elderly should actively work on creating independence (Shearer et. all., 2012).

The last factor is about your personality, your background. What kind of education level and job has a person done?, where has a person lived before? How big is your social network? When a person has less to afford and has a smaller social network often the care is in the hands of professionals. (Nivel, et al., 2014).

\* More interviews and observations can be found in the first booklet.



64 - 75 years

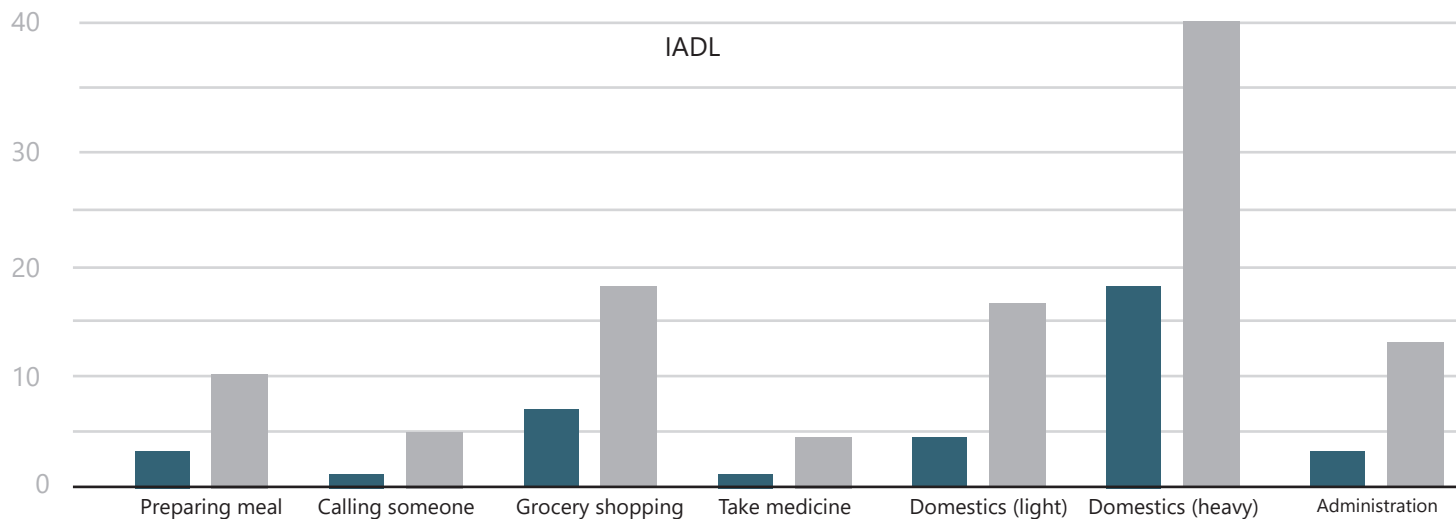
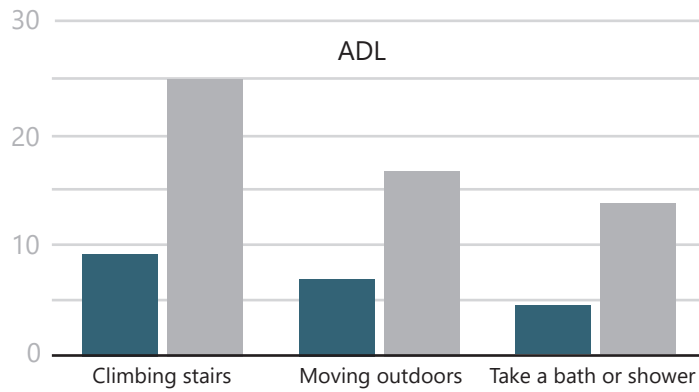
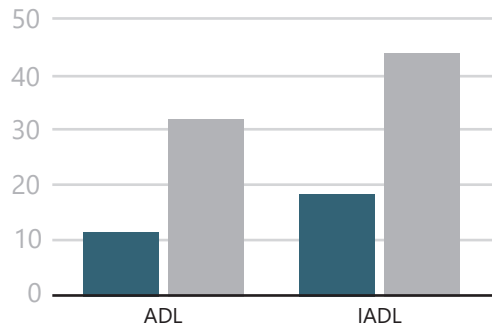


75+ years

● No limitations daily life

● Limitations daily life

● 65 - 75 years ● 75+ years



**ADL - General Daily Life Operations**

*Includes:*

- Bathing and showering
- Personal hygiene and grooming
- Dressing
- Toilet hygiene
- Functional mobility (getting out of bed, in and out of chair, walking)
- Self-feeding (not including cooking)

**IADL - Instrumental General Daily Life Operations.**

*not necessary for fundamental functioning, it lets an individual live independently.*

*Includes:*

- Housekeeping
- Managing finance
- Preparing meals
- Shopping for groceries and necessities
- Taking medicine
- Communication such as using telephone.

Figure 32. CBS: Central Bureau of Statistics, 2016

#### *DAILY LIMITATIONS OF AN ELDERLY*

To know what the daily life of an elderly looks like, it is useful to see what the daily limitations are because these are therefore the things an elderly does. With the use of surveys, CBS (The Netherlands Central Bureau of Statistics) have charted the daily, long-period limitations of elderly (CBS: Central Bureau of Statistics, 2016). ADL and IADL is a term used in healthcare to refer to people's daily self-care activities. It is like a measurement of their functional status of people with injuries, disabilities and elderly (De Luca, Bramanti, De Cola, 2016). ADL stands for General Daily Life Operations. It is activities such as walking stairs, getting and out of bed, eating, washing and getting dressed. IADL stands for Instrumental General Daily Life Operations. This is not necessary for fundamental functioning, a person can live independently but needs help. Most people, two-thirds of the elderly, do not experience limitations. These are activities such as housekeeping, managing finance, preparing meals, shopping for groceries, taking medicine and using the telephone (CBS: Central Bureau of (Dutch) Statistics, 2016). In the schedule, it becomes clear that the older a person gets, the more limitations it experiences. With the ADL activities, the built environment can help, such as creating ramps or an elevator instead of a stairs. With the IADL, things like heavy domestics can easily be taken over by a housekeeper or the groceries can be brought to you directly. There are solutions, but the elderly will not be fully independent anymore. We should help elderly so that they can be independent for as long as possible, even if it is the small stuff.

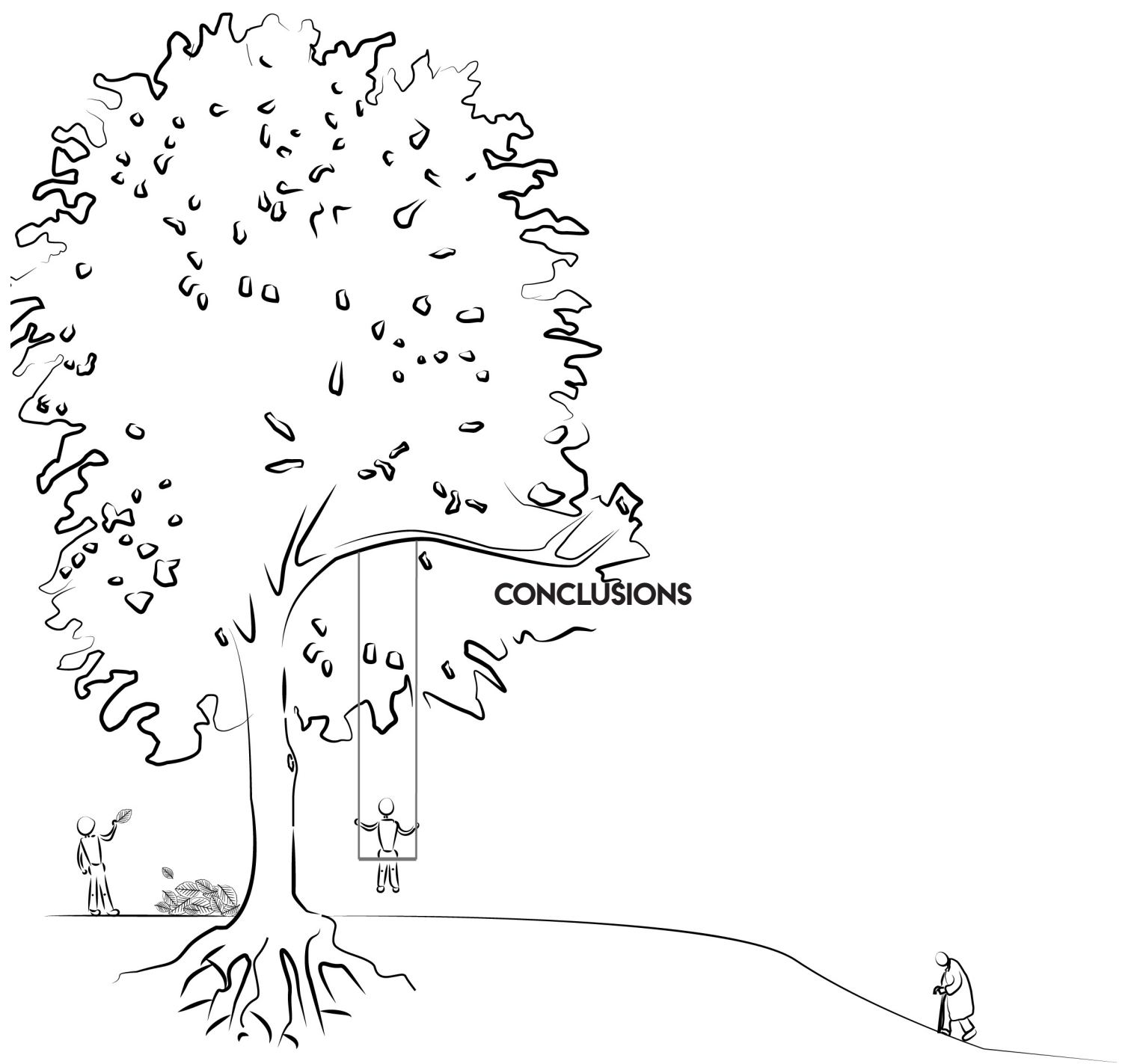


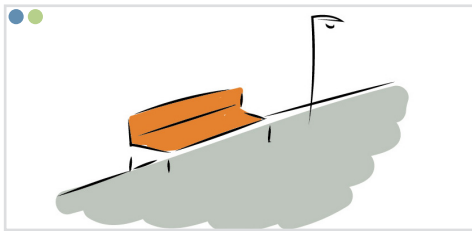
*'HOW CAN ARCHITECTURE EXTEND INDEPENDENT LIVING WHILE SUPPORTING ELDERLY (65+)  
IN THEIR FEELING OF INDEPENDENCE IN DAILY LIFE?'*

The chapters physical independence, mental independence and emotional independence have its own conclusion, which can be seen in their chapters. The following chapter is an overall conclusion about the combination between all types of independences.





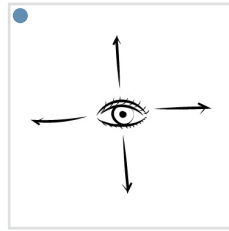




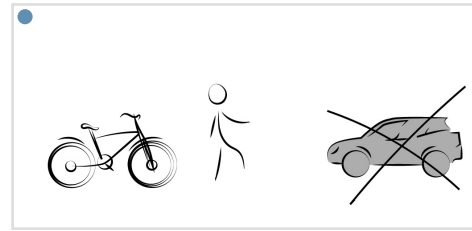
Contrast helps in giving guidance where an object is and where it is not.



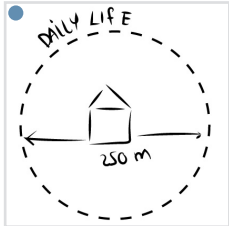
Spontaneous interaction can happen if these spots are designed.



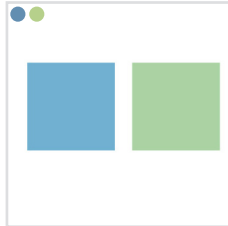
Visual connections should take place.



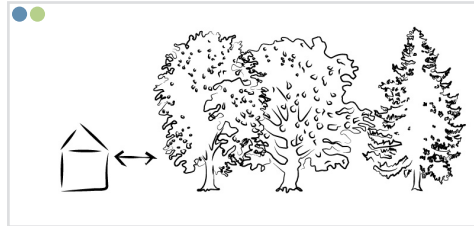
Slow traffic should have the priority.



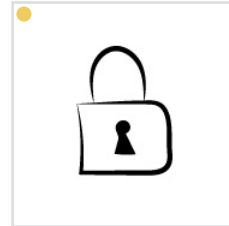
The daily life and therefore weekly life, should take place within 250 meters of your home.



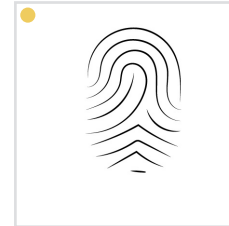
Use the right colors in the right places.



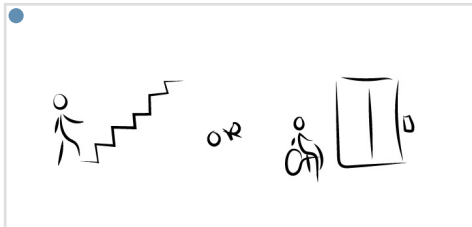
Nature should be close by, also be more integrated in your home. Nature should flow through your living.



Everyone should have their own space.



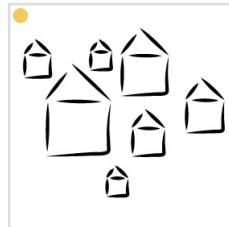
The possibility to show your identity



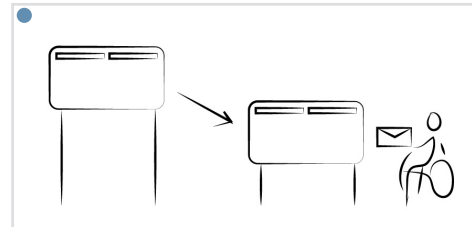
Motivate people to use the stairs by placing this in view, but there always needs to be a possibility for a physical disabled person to move.



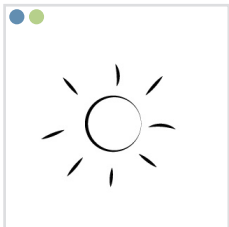
Facilities should be diverse.



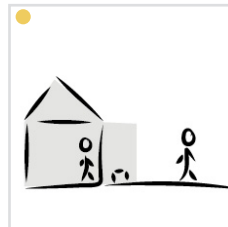
Diversity in houses for different types of persons.



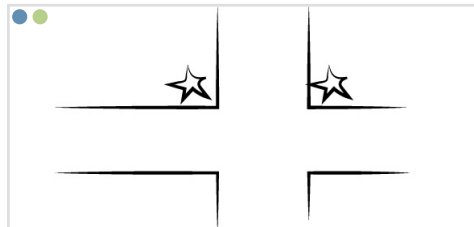
The measurements of heights and width should take into account that both a standing person or someone sitting in a wheelchair can reach or pass through.



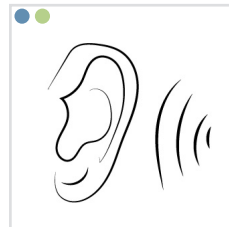
Daylight should be the most important source of light.



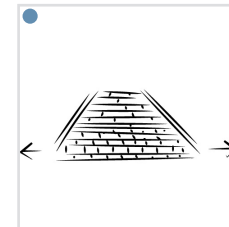
The transition zone in front of your own space should be between 1 - 2 meters.



The routing should have a clear structure with recognition points. The pavement should have diversity in textures. This can also help in guidance.



Sound can be beneficial for your health (e.g. classical/pop music)

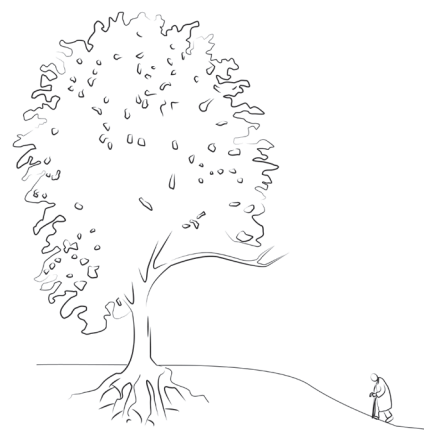


Wider streets and hallways for the interaction and communication.

## CONCLUSION

In this research, the following question is discussed: 'How can architecture extend independent living while supporting elderly (65+) in their feeling of independence in daily life?' The main problem that needs to be solved, is that the Dutch elderly care increases in size and the Netherlands needs to add more capacity in care since this is currently not sufficient. We cannot continue with living the way we are doing now. The elderly should therefore live longer independently, and this is also the wish of the elderly themselves. So how can the extension of independent living be reached? The combination between the types of independence (physically, mentally and emotionally) has resulted in a unique research that leads to a more inclusive built environment. Unique, because the emotional factor is rarely combined with both the physical and mental independence. The emotional independence is the most abstract of all and therefore important to write down together with the tangible design ideas of the mental or physical. Each of these types has its own specifics. However, for an inclusive environment it is best to discuss the three types together.

On the left images is shown which design ideas are necessary to create an inclusive environment. Combining all these requirements in the built environment will help in being independent as a person, but also on the bigger scale of a neighborhood. Nature has a big impact on the physical and mental independence and people like to show their identity and have their own place in order to create a home feeling. When a neighbor or neighborhood can rely on itself or its surrounding, the independence will not be a problem. However, this research does not go in depth on the social aspect of independence. This theme adds value to the research and is discussed in small parts spread over the different chapters. When you become older and your health is deteriorating, it is confronting enough that your ability to perform certain actions is reduced or even gone. No longer being capable of doing anything you want anymore. The built environment is manufacturable, and this should support you by having a design that stimulates you to be independent, physically, mentally and emotionally.



PHYSICAL INDEPENDENCE



MENTAL INDEPENDENCE



EMOTIONAL INDEPENDENCE





*POSITION*

'Everyone wants to grow old, but no one wants to be old.' - Nicolaas Veul (2014).

Architecture is manufacturable. Life is not. I think we should help where this is possible and I think being independent begins in the built environment. The Netherlands already has a problem with the capacity for elderly and this problem will only become bigger. So there has to be some fast and improved changes. The solution is to let elderly live longer independently and help them in making this possible. Support the people by independent architecture. The government wants the elderly to live for as long as possible at home and the elderly also wants this, this is a win win situation.

The neighborhood should stand on its own and help each other on the smaller scale. People should be able to live in a place that feels like home and stay there as long as they want to, not just as long as they are able to. This means that an environment has to be created that is adaptable to the stage of life. Growing old is already hard enough since your body and mind start to work against you. A place where you can live physically, mentally and emotionally independent.

That is where I want to live, now and in the future.



**You can live where you feel at home.  
Your physical or mental health should not matter in where  
that place is.  
When you grow old, you are already processing your (new)  
problems.  
Architecture is changeable, your physical, mental or  
emotional problems could be manageable.  
A built environment should support that.**





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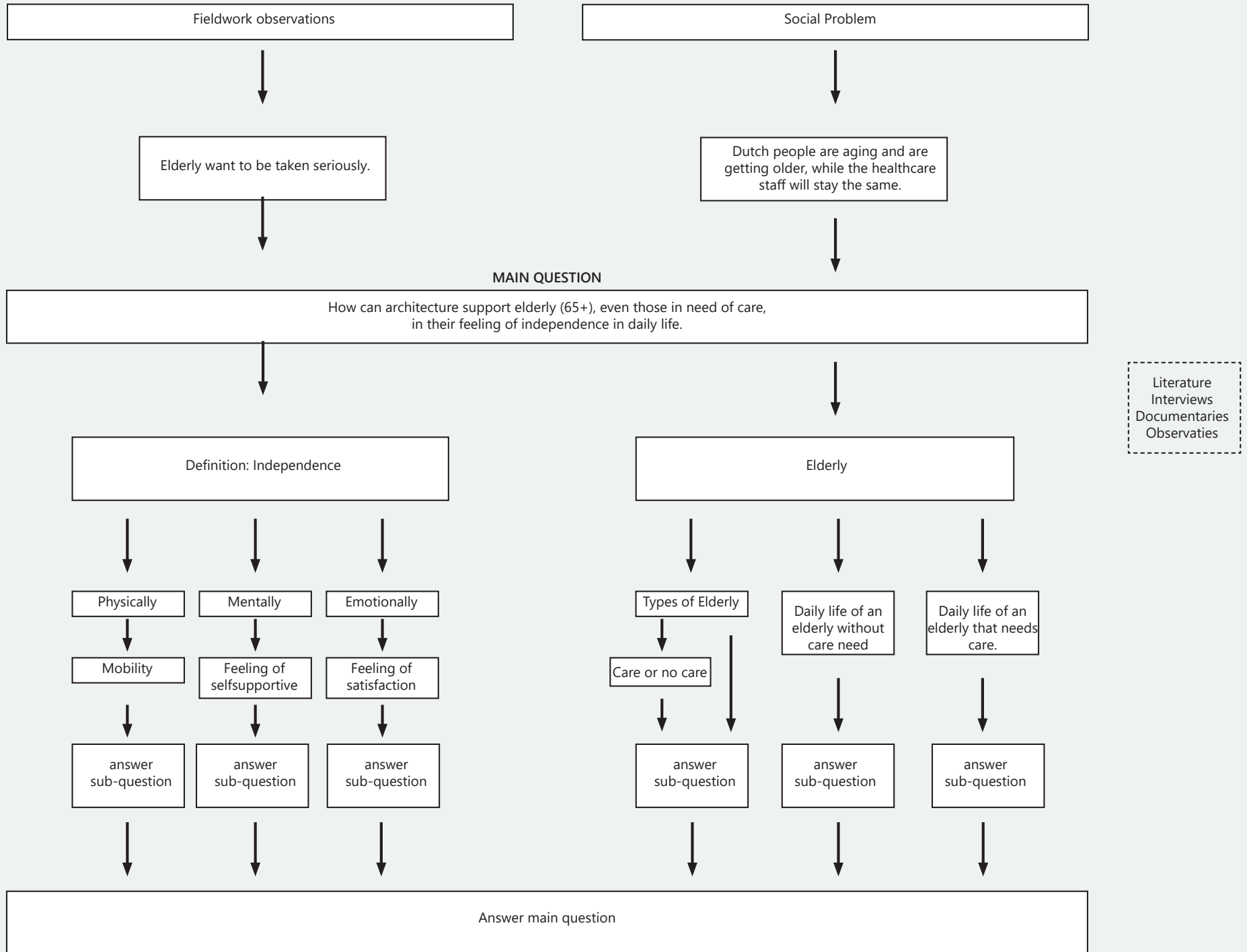
**ATTACHMENT**

*GOAL OF RESEARCH*

Design an inclusive environment where people of all ages  
can live with a feeling of being independent.

# RESEARCH PLAN

December version



Methodology - *is the systematic, theoretical analysis of the methods applied to a field of study. A methodology does not set out to provide solutions (Cross, 1984).*

Examples methodology studies:

- Anthropology (human behavior)
- Ecology (biology of the environment)
- Epistemology (knowledge, theoretical)
- Material Culture (objects which surround humans)
- Morphology (form of things, shape or structure)
- Ontology (nature of reality or of exists)
- Praxeology (use of architecture)
- Phenomenology (experience of architecture)
- Semantics/Semiology (signs in architecture)
- Typology (the types in architecture)

Methods - *present established ways of doing things, techniques, or procedures that define a series of steps to be taken to arrive at a specific goal.*

Examples methods:

- Fieldwork
- Interviewing
- Historical Research (timelines, historical policy documents)
- Drawing sections
- Sketches of users in their environment
- Diagramming.
- Questionnaire
- Material analyses
- Laboratory research
- Media research
- Sensory mapping
- Imagery
- Axonometry
- Photography
- Narrative, mapping, graphic novel
- Demographic analyses



The Research Plan course (AR3A010) has its aim to help students 'to improve their critical and analytical skills necessary to design a sound theoretical and methodological research framework through which to engage their graduation projects. There were individual lectures about each of the subjects: Methods, History and Theory. On top of that "How-two" tutorials were taught. How to design a spatial construction of architectural research (Methods). How to design a historical research (History). How to design a problem statement (Theory). After these lectures, special masterclasses were given that fitted the most with the subject of your graduation studio. For my studio, Design for Care towards an inclusive environment, the masterclass: Disciplinary Mergers and Multi-Disciplinary Encounters was chosen.

During the first lecture, how to design a historical research, examples were shown with different methodologies and the belonging methods. What I maybe found most learnable was the way these methodologies and methods where shown and visualized. There is a huge variation between them, but mostly it was clear what was showed. A couple of examples showed details on a specific topic and at the end this was combined to visualize a schedule to give an overview. This way the last slide was a conclusion of the more detailed research and images that were shown in the earlier slides.

Also there is a difference in qualitative questions and quantitative questions. Qualitative gives the answer in a 'Yes' or 'no' while quantitative can offer a more varied answer, if 'yes', how many.

The second lecture dove more into history. What can be taught from the past and what can we use for the present and therefore the future. This was more related to what different cultures all over the world can teach us. How did they solve a problem? Even knowing where words come from, looking at different languages. For example: Street, Strasse, strada, straat. Words and languages are a main element in determining how we think. This lecture was I think more suitable for the graduation Studio Heritage, since one part is how to redesign a building. But knowing where the history of a place, building of surrounding can help you understand why specific decisions were made, so you can translate it into a modern way.

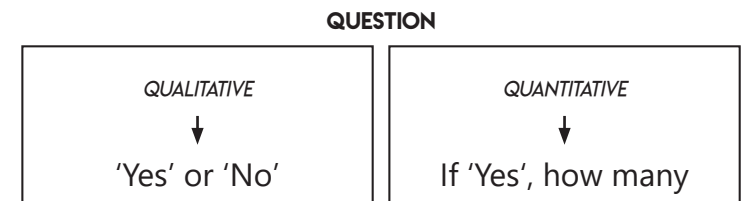
The third lecture is about the problem with problem-solving. It was given to show us the base of how to come up with a problem statement for our own research. It is said that architecture is a process of constant problematization. They talk about values that we give to create a problem. When we don't value it, it will not give a problem.

The masterclass focused on the relation between architecture in combination with other disciplines. The architectural research can differ such as literary description, data analyses or fieldwork techniques which relate to social spatial practices and user behavior. This way of researching provides fresh insights and innovative viewpoints to question architectural hypotheses. When our graduation studio had to discuss what methods we used so far, we came up with the following: interviewing, documentaries, literature, observing, data, case studies, experiencing ourselves, guided tours. Klaske Havik reacted with a couple of questions and remarks:

- With your findings, try to find a connection with architecture. Study relationship between the users and buildings or the building environment. How does it relate to space.
- Be aware of the methods using from other fields.
- Methodology is Anthropology which is like an architectural sociologist.
- Can society change architecture? or as Birgit Jürgenhake likes to question back: Can architecture change society?

Every studio had to show there methodology and methods that were used. I was happy to notice that this studio is special because it is using anthropology.

During this course I mostly learned that there is a lot of different kinds of scientific research. Data or literature is not the only source of science. Interviewing, observing in an objective way can give also scientific results.



Balpol Delft



Dakpark Rotterdam



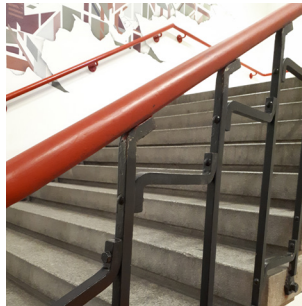
Voorlinden museum



Voorlinden museum



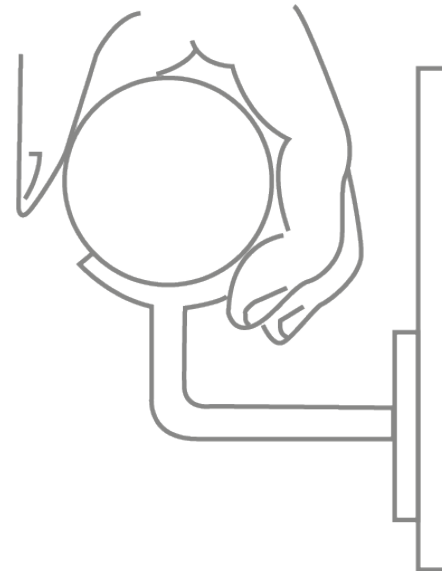
House



Architecture faculty

### *INDEPENDENCE ON THE SMALLEST SCALE*

Even on the smallest scale, the theme of inclusiveness can be continued. On the left, images are shown of handrails. The one of the Balpol, in Delft shows a handrail that is not inclusive. A person who needs guidance or a person who needs support cannot continuously use the railing because of the design. When a person uses this handrail, the person has to ungrab and grab the railing again. This design can easily be changed so you can fully use the handrail, like in the image below.



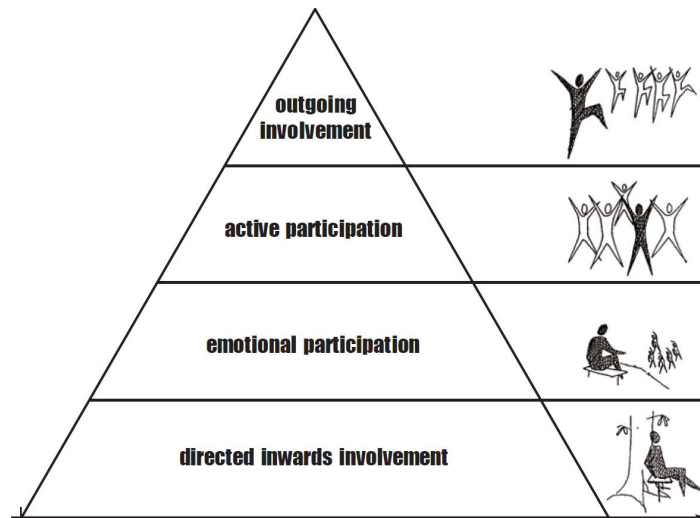


Figure 34. Involvement model (Stigsdotter, Grahn, 2002).

#### LANDSCAPES FOR CARE

There are three types of landscape: urban, nature and cultural. When designing for a garden you have to take into account that the garden is not only about the three dimensions (height, breadth and depth) but also the fourth dimension, time. For example, nature looks and feels different in the morning light than in the evening. Winter gives an other color palette than summer. There are effects of how rainy or how sunny a day is and how the garden is perceived different (Stigsdotter, Grahn, 2002. p. 60-69).

Than about the visitor of a healing garden. Stigsdotter and Grahn (2002) visualizes this through the various stages of mental power. There are fourth types. The higher the mental power, the higher placed in the schedule.

The *directed inwards involvement* is the place in which the emotional status is weak. Physical activities are only private and disturbances are disliked (Ottosson, 2001. p 165-172).

The *emotional participation* takes notice of their social surrounding and like to observe but do not want to take an active part of it. (Stigsdotter and Grahn, 2002)

The *active participation* is found when individuals that are part of a group, do activities together. It is about giving and sharing. (Stigsdotter and Grahn, 2002)

The *outgoing involvement* level is the strongest level of mental power. This person is capable of leading a group and takes initiative. (Stigsdotter and Grahn, 2002)

A visitor of a healing garden can have one of these four types of mental power. When designing it is important to realize this and offer different areas. Places where people can stay together and places where people can be in private.

The Eight Garden Rooms Characters	
Characters of the Garden Rooms	
Serene	Peace, silence and care. Sounds of the wind, water, birds and insects. No rubbish, no weed, no disturbing people.
Wild	Fascination with wild nature. Plants seem self-sown. Lichen- and moss-grown rocks, old paths.
Rich in Species	A room offering a variety of species of animals and plants.
Space	A room offering a restful feeling of "entering another world" a coherent whole, like a beech forest.
The Common	A green, open place admitting of vistas and stay.
The Pleasure Garden	An enclosed, safe and secluded place, where you can relax and be yourself and also experiment and play.
Festive	A meeting place for festivity and pleasure.
Cultural	A historical place offering fascination with the course of time.

Figure 35. Types of gardens (Stigsdotter & Grahn, 2002).

## LANDSCAPES FOR CARE

A garden must be suitable for all types of persons. Taking the four types of mental power in mind, Grahn has made an overview of areas (rooms) that need to be in a garden to make it suitable for everyone. He describes this as the 'The Eight Garden Room Characters'. During the lecture of Saskia de Wit, 3 types of gardens were given to design for different types of people.

The experimental garden (perceiving)

The social garden (meeting)

The active garden (acting)

When designing for an inclusive environment these types of gardens should be combined. Then everyone has a place or spot where they will be comfortable.

A garden should be stimulate all the senses to make it inclusive, so not only sight. With the sense hearing, you can design a source of sound but have to take the loudness and reflection into account. Keep in mind, that there is a difference between controllable sound and not controllable sound. Placing a waterfall is controllable sound. Placing birdhouses so birds will chirp there, is not controllable. Through placing birdhouses the sound can be stimulated, but it is not 100% sure it will happen.

For people who or visually impaired it is important to design a landscape with very strict boundaries when a new area (room) begins. This can be done by different materials, textures or colors. Than it is clear where a person is, using gradient transitioning can confuse some people. Straight lines can offer guidance to visually impaired people.

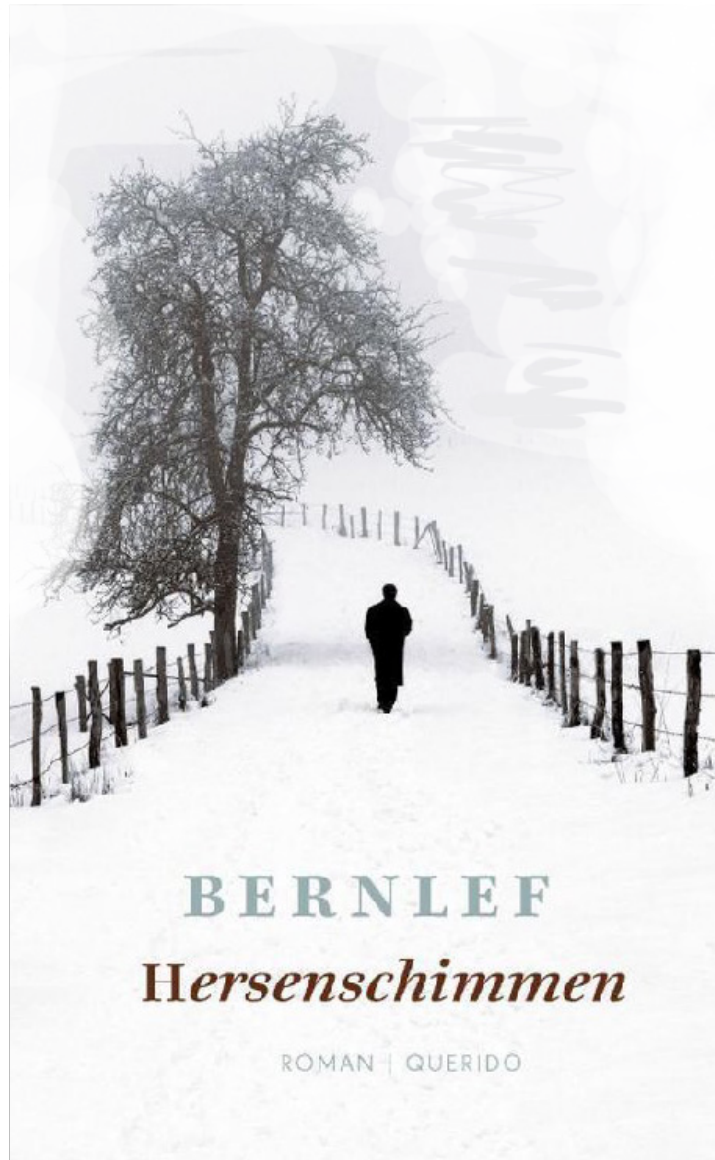


Figure 36. Cover of the book *Hersenschimmen* written by J. Bernlef.



*HERSENSCHIMMEN - J. BERNLEF*

How does it feel if you have dementia? The book, *Hersenschimmen*, is about a 71 year old man who experiences his own dementia process. His name is Maarten. The story is written from Maartens perspective, the I-narrator. Some things are unclear or does not fall into place. Soon it becomes clear that information from the experimenter and the narrator is not always reliable. Through reactions of Vera, his wife, the way of Maartens thinking is corrected. Through his dog Maarten communicates most and these are the moments where he speaks the most open. As a reader you have the feeling of not knowing and not understanding why certain things are act like that. It feels like yourself suffer from oblivion.

*STRUCTURE*

The book has nine unnumbered chapters. Every chapter shows chronology a day in the quickly demented Maarten. This chronological way of telling gets interrupted by childhood memories. During the story, Maarten's world is narrowing to a point where he as a person, has disappeared.

*SPACE*

Maarten and his wife live in the remote town of Gloucester where it is winter with a lot of snow. At the beginning Maarten blames the snow for forgetting things. Later in the book, as he loses his grip on reality, his freedom of movement is increasingly restricted. At some point he is being locked up in the house, than being tied to a bed and finally has to live in e home for people with dementia.

*THEME*

*Hersenschimmen* is man who loses grip on the reality around him because of his rapidly increasing dementia. Maarten has always occupied himself with recording facts, even in his job. Eventually he admits that recording fact was a pointless activity, 'reality cannot be captured in fact and goes its own way.' Even common events are a mystery to him. He discovers that: 'to see something you first have to be able to recognize the object. Without memory you can just look. Than the whole world slips right through you.' Even though he realizes that something is wrong with him, he tries to hide this from his wife and his surrounding. At some point, he 'discovers' lying again. Through the lying he is able to come up with a reality that cannot be distinguished from the real. Through the book, Maarten tries to hold on to his language. He finds out that knowing a word, does not mean he is able to find that certain object. 'I am the only survivor of my own language.' Almost at the end of the book the person who Maarten is, disappears. The word 'I' is not used because it is not used in his thought. He does not recognize himself in the mirror and burning his pictures, confirms this process of depersonalization. Maarten talks about that everything is leaking in his mind. At the end of his life Maarten asks himself if there is a thing as life. 'Or was everything just an imagination of the head? Chimeras? (*herschenschimmen?*).'



Figure 37. Question dinner in the Boomberg in Hilversum.

### QUESTION DINNER

As visitors, we organized a three-course dinner, with at each course a question they could answer. The tablecloth was replaced by paper and we facilitated markers so they could write their answers.

Questions and overall conclusions:

1. *What is your favorite place and why?*

Being outside. (Nature, green, biking- walking routes, balcony)

2. *What do you miss here and why?*

They do not miss a lot. Some miss only the more practical options (benches to rest, dining options, no thresholds). Three people indicated socializing matters, of which two in the form of young residents.

3. *Draw/sketch/write 3 important things in your surrounding.*

This question provides more deviant answers. Facilities nearby are accessible on foot or by bike. Care and presentation. A book. Familie. A striking point of Cor de Heus: 'The elderly are in charge of their own home' 'Ouderen baas in eigen huis.'

A special comment was from Cor de Heus. The three most important things were. 1. 'You students. 2. The lovely food. 3. How we interacted with them, we do not look down. '





## SECOND INTERVIEW - COR DE HEUS

Met Cor de Heus.

Hoi, je spreek met Marijke Blom van de TU Delft.

Oh Dag!

Ik dacht ik bel even.

Ja prima.

Bel ik gelegen?

Ja hoor.

Mooi, want ik zag je mailtje en het is grappig omdat je zegt dat je eigenlijk niet meer weet dat je dat hebt gezegd. Van dat jullie niet op ons neer kijken. (You don't look down on us).

Nee, dat klopt.

Want dit was tijdens het questiondiner, toen aan het einde gaf je een speech waarbij je de vraag behandelde. Welke 3 dingen zijn het belangrijkste voor je omgeving?

Ja

En toen had je een aantal dingen opgeschreven op papier

Ja

En je zei: 1. Jullie 2. Het eten. 3. Dat jullie niet op ons neerkijken. En dat laatste was bij ons drieën best wel bij gebleven.

Oh!

Dus best wel grappig dat je niet weet dat je dat hebt gezegd.

nee nee nee

Maar kan je je er enigszins in vinden? Wat je toen hebt gezegd? Of?

Naja, wat ik toen al had geschreven. (in de mail) Ik vind dat niemand op je neer hoeft te kijken of wat dan ook. Dat je iedereen dus hetzelfde moet benaderen.

Ja

Dat is eigenlijk wat ik wil zeggen of wilde zeggen

ofzo. Daar komt het op neer.

Heb je dan wel eens meegemaakt dat dit niet zo het geval is?

Dat heb ik wel meegemaakt ja.

Waar ligt het dan aan? Daar ben ik eigenlijk benieuwd naar.

Dat denk ik, ik heb het meegemaakt met anderen met name heeft te maken met discriminatie. Ik heb een tijdje in Ghana gewoond. Dan merkte ik toch af en toe wel dat mensen toch, de bewoners daar, anders benaderde. Dat vond ik daar heel duidelijk. Misschien dat ik het daarom heb gezegd, dat dat in mijn achterhoofd zat. Dat viel mij toen al op. Daar waren toch wel mensen, laten we zeggen blanke mensen die daar toch de bevolking, waren toch wel aardig maar toch wel met onderdrukking erin benaderde. Dat kan ik mij toch wel herinneren misschien dat ik het vanaf die positie heb gezegd. Of dat ik dat in mijn hoofd heb gehad. Dat zou kunnen ja.

Want je hebt dan niet het gevoel dan dat ouderen niet serieus genomen worden, in die zin. Want dat is eigenlijk waar het op neerkomt, niet op iemand neerkijken.

Ik denk wel dat ouderen als je het in het algemeen neemt, dat zij anders benaderd worden dan bijvoorbeeld jongeren dat geloof ik wel. Niet dat dat discriminatie is, je wordt als oudere toch anders behandeld met name denk ik dat als bij wijze van spreken boven de 80 bent. Als je echt wat moeilijker loopt of moeilijker praat of dat je wat meer moeite hebt om te bewegen, dat je dan toch anders wordt benaderd. Dat wel ja. Dat je dan niet afgaat op ja, over wat voor intellect mensen hebben. Dat ze prima met je kunnen praten maar omdat ze ja gewoon omdat ze of, in een rolstoel zitten en moeilijk bewegen en dergelijke. Dus voornamelijk thuis zitten. Mensen vinden dat zelf wel moeilijk hoor, dat merk je hier ook. Ik denk dat jullie dat v ook wel gemerkt hebben. Ik denk dat veel, mensen toch in huis hui blijven, een klein boodschapje doen maar verder komen ze er niet uit. Ik ga nog regelmatig wel eens fietsen. Met ouderen merk je met name dat dat die toch ja dat niet meer doen, tenzij er kinderkomen dat ze bij wijze van spreken niet verder komen dan de tuin., misschien is dat ook wel mijn voorland. Dat je misschien wel zou kunne., maar het niet doet. Ik denk dat er ook een verschil zit in mensen voor de

oorlog en mensen na de oorlog. Dat wordt een hele generatie ouderen.

Waarom merkt u dat dan.

Wat ik net zeg, dat zij zich anders kleden, anders inrichten. Dat zij zich eerder ouder voelen. Ik ben nu bijvoorbeeld met mensen en die zijn 80 die het dan helemaal hebben gered. Ik proef dat wel een verschil in ja. Wat ik dan noem de jongere ouderen, rond de 70. En dan de 80ers dat is toch een andere groep. Dat zie je bijvoorbeeld in de liv inn. Dat zijn voornamelijk de jongere ouderen, de 70ers en de 60sters. Ze komen niet en ze hebben er ook geen zin in zeggen ze.

Ja hoe is het met de Liv Inn? Loopt dat een beetje? Wordt het een beetje gebruikt.

Je door corona is dat natuurlijk een beetje stil. Er worden initiatieven genomen. Er komt een scherm waar mededelingen opkomen. En in het krantje komt ook een cursus hoe om te gaan met computers aan te bieden. Aan ouderen waar het om gaat hoe met computer som te gaan ook via de stichting voor welzijn hebben we dan computers gekregen om het aan te bieden. Sommigen ouderen erbij te betrekken duikt dat andere ja niet.

Leuk om te horen dat het een beetje aan het rollen is

Ja wat ik zeg alles gaat langzamer door corona, nu plannen om dat soort dingen aan te passen. Mensen erbij te betrekken. Het wordt wel een andere situatie wanneer de mensen weer terug kunnen wonen, eind februari. Zij wonen niet zelfstandig, maar zijn dan wel in de buurt in kamer. Een stuk of 50/60 mensen wonen daar, dan wordt het een heel ander soort situatie. Het is gewoon pure huisvesting. En die ouderen zullen natuurlijk in die liv Inn komen. Maar goed dan moet je ze er wel bij betrekken Jullie hebben het café gezien een paar keer per week om er een uur voor de ouderen. En die worden dan in het café gezet, dat gaat allemaal wel komen. Die kunnen dan zingen.

Mogen ze er dan wel zelf voor kiezen om te zingen.

haha Ja, ze mogen zelf kiezen. Ze worden dan van de kamer gehaald als ze willen. Dat zingen was vroeger ook dat iemand dan voor de groep stond en dan gingen ze oer-Hollandse hits zingen. Ja dat willen we wel graag doen, ze even van hun kamer halen.

*Dat gaat wel weer gebeuren, dat willen we wel weer oppakken. Dat we de mensen toch af en toe van de kamer afhalen.*

Want zelf kunnen ze het niet dan?

*Nee dat doen ze niet meer. Wat je zelf zegt. Mensen blijven de hele dag op hun kamer en nemen het initiatief er niet meer voor. Misschien zitten ze wel fijn op hun kamer of dergelijke. Maar om ze er af en toe even uit te halen of met ze te gaan wandelen of dergelijke. Daar nemen ze zelf het initiatief meer gewoon voor.*

Mensen nemen dus zelf niet het initiatief maar willen het eigenlijk wel?

*Nee niet iedereen. Iedereen is anders natuurlijk. Mensen zijn er wel die het wel willen en die gaan dan mee. Als je een keertje niet bent geweest dan zijn er altijd wel mensen die vragen: 'he, waar was je Waar ben je gebleven?' Goed mensen blijven verschillend wat dat betreft. Rond de 80 zijn er mensen die wel willen maar die niet meer het initiatief nemen.*

Hmm. Ik vroeg mij af, nu is het niet meer van HilverZorg maar van Habion. Wat is nu het verschil, wat merken jullie?

*Dat is duidelijk hier, merk ik. Wat mensen hier allemaal zeggen, zijn blij dat de breuk is ontstaan. Wat HilverZorg deed was de ouderen op een ouderwetste manier benaderen. Ze deden leuke dingen maar dan moest je daarvoor extra betalen. Habion die is totaal anders, zij mogen zelf de zeggenschap over hun eigen huis. Ik noem het een bejaard instelling, een bejaardenhuis. Zij wilde ook niet mee over het nieuwe plan met Habion. Er moet namelijk ook zorg bij komen. We hebben nu advertenties gestaan voor de zorginstellingen er zijn een aantal instellingen die willen solliciteren. En die mensen komen dan in dienst van de vereniging*

Wat fijn dat er zoveel reacties zijn!

*Ja er hebben redelijk wat mensen gereageerd. Je zegt nu eigenlijk ook dat Habion ook bezig houdt met eigen zeggenschap*

*Ja dat is uiteindelijk het initiatief geweest van Habion. Richt een eigen vereniging op. Die hebben Cosimo en ik toen opgezet en nu komen er ook meer initiatieven. En Habion zal zeker nodig zijn voor ondersteuning maar straks komen professionele verzorging.*

*Dat zijn allemaal plannen op de langer termijn dat ze in dienst zijn van de vereniging. Ouderen hebben zelf te zeggen hoe we het gaan doen en regelen.*

Ja want dat heb en tijdens het diner heb je ook opgeschreven, baas in eigen huis.

Ja! Dat is heel belangrijk.

Ja want dat is dus eigenlijk meer de kant van Habion dan Hilverzorg

*Ja duidelijk. Er zijn ook ouderen die willen juist op hun kamer zitten, eten krijgen en die vinden dat fijn. Ik laat mij lekker verzorgen en dat is genoeg voor mij.*

*Maar wij proberen nu juist mensen aan te sporen om dat als je ouder bent nog wat te doen. En zelf initiatief te nemen. Vroeger toen wij de vereniging opzetten was er nog niet echt. Toen waren er maar 2 of 3 die af en toe iets deden. Stuk van 8/9 mensen kwamen bij de oprichting. Nu gebeurt er iets. Er is nu een accommodatie ze hebben zelf de sleutel om naar binnen te gaan. Dat is een heel verschil met hoe het vroeger was.*

Dat klinkt fijn!

*ja dat is fijn. Ik ben er redelijk positief over. Ik wilde kleiner wonen en kwam uit Ghana wist ook niet dat Habion er was. Maar toen merkte je dat er wel wat meer kom. Anderhalf jaar geleden toen begon het.*

Hoe lang woon je nu?

Ehm ruim 3,5 jaar.

Ik vind het leuk dat je ook blij bent met de verandering

*Ja ik ben daar heel blij mee. Ik kwam daar niet voor. Ik wist ook helemaal niet dat dat er was, daar kwam ik eerst ook niet voor. Had wilde gewoon een huisje. Een bejaardenhuis was er. Daar had ik niet veel contact mee tot dat we daar ook naar binnen mochten. Hilverzorg behandelde ze ook anders en het wordt nu anders ingevuld door Habion en daar ben ik heel blij om.*

Wat ik fijn vond om te zien is dat iedereen zijn eigen plek heeft, zijn eigen kamer. Dat iedereen zelf kan bepalen wat die doet en hoe zij leeft,

*ja in het bejaardentehuis hadden ze ook geen eigen keukentje ofzo. Nu krijgen ze dat wel. Dat is al een*

*hele verbetering.*

En wat voor dingen zouden er over 50 jaar echt veranderd moeten zijn?

Over 50 jaar?

Op de langer termijn?

*Ik hoop dan wat de mensen, dat veel van de mensen. Met de generatie jongeren die er nu aankomt. Die gaan er heel anders mee om. Er zullen zeker veranderingen. Zijn hoe mensen er mee omgaan. Dat merk ik nu al met de kleine verschillen dat mensen echt op hun eigen manier ermee omgaan.*

Want we zijn nu met mijn studie bezig met het ontwerpen voor mijn generatie, dus voor als ik oud ben. Maar ik vind het nog heel moeilijk in te schatten wat ik dan nodig heb, hoe zijn de ontwikkelen hoe zetten deze zich voort. Wat heb ik nodig als ik ouder ben. Daarom vroeg ik van 50 jaar want dan ben ik 75 jaar.

*Toen ik 25 jaar was, toen was ik er nog niet bezig. Ik kan dat me niet herinneren. Wat ik wel weet is dat, wat doe ik over 50 jaar? Je groeit er ook langzaam naartoe. Wat ik nu wel merk. Dat er juist op dit moment een enorme verandering is op het gebied van huisvesting en dergelijke. Vroeger zat iedereen in een bejaardentehuis. Dan werden mensen bij elkaar gepropt. Hilverzorg heeft ook weer voor verbeteringen gezorgd en Habion gaat weer een stap verder. En er komen straks ook weer veranderingen. Jouw generatie gaat ook weer anders ernaar kijken. Dat blijft gelukkig veranderen. Dat veranderingen zijn nu wel heel groot met wat er vroeger gebeurde. Dat ouderen toch als zelfstandig worden behandeld. Vroeger was het deze groep ouderen moeten verzorgd worden. Punt.*

Dat is inderdaad wel een verschil ja.

*Dat is wel een verschil. Als ik naar mijn ouders kijk, dan gingen zij ook ernaar een bejaardentehuis.*

Sliepen ze met anderen op de kamer.?

*Nee dat gelukkig niet. Ze hadden klein kamertjes, niet huis van vroeger maar ze waren wel weg van hun eigen huis en meubels. Alles wordt nu afgepakt. Alle boeken en meubilair die gaat weg en worden letterlijk in hun kamertje gepropt. Een hele hoop mensen moeten het daar maar mee doen. En hopelijk gaat dat veranderen dat mensen meer zeggenschap*

krijgen over hun eigen leven, activiteiten, bezittingen. Dat gaat nu gelukkig iets veranderen. Je ziet wel pijn als ze gaan verhuizen naar een kleiner huis. Dat moet weg en dat moet weg.

Ja, je identiteit gaat dan eigenlijk weg.

Ja exact.

Dat was ook in Gooizicht. Toen werd er een kamer open gemaakt en toen zag je 1 ansichtkaart en alleen daaraan zag je dat er een persoon sliep. Dat die kamer bezet was, voor de rest niets. Er was niks qua spullen waaraan je kon herkennen dat een persoon dat sliep identiteit en dat vond ik zo erg om te zien.

Ja, Oh ja meen je dat?

Ja, die mensen zitten daar totdat ze overlijden. Ik had iets van hoezo kan ik nu niet zeggen dat hier iemand leeft.

Dat is inderdaad precies wat je zegt. Dat een huis waar mensen hun spulletjes staan, die moeten in een bejaardentehuis en alles wordt ontnomen. Het enige wat ze hebben is een tafel met foto's erop. Maar zelfs dat gebeurt niet altijd. Dat is wat erover blijft. De identiteit, de mensen zelf daar houdt je ook niks van over.

Dat ligt dan ook zeker aan de ziekte. Met dementie gaat natuurlijk de persoonlijkheid ook achteruit en dan helpt juist een omgeving die herkenbaar is.

Exact

Dat soort dingen dat zou ik wel graag aan veranderen als dat zou kunnen.

Ja jij kan dat nog veranderen. Jeugd om zich heen hebben zou denk ik ook kunnen helpen. Het is allemaal heel moeilijk om het ogenblik het gaat wel de goede kant, heel langzaam, op als ik dat zo kan merken. Mensen zoals jij gaan er hopelijk ook wat mee doen. En je studiegenoten gaan er hopelijk wat in doen en veranderingen in aanbrengen. Heel langzaam gaat het vanwege regelgeving. Dat er wat gaat veranderen. Dat heb ik de laatste jaren wel gezien.

Daar heeft u gelijk in dat het langzaam gaat, en gaat het voor de rest allemaal goed?

Jazeker!

En nog walnoten geplukt?

Haha nee, die zijn er helaas niet meer. En met de mensen gaat het goed. Er is geen corona. Iemand was nog wel ziek maar dat was gelukkig geen corona. En wekelijks nog een borrel.

Oh leuk de Happy Ouwer?

Ja, Happy Ouwer. En het loopt hier nog steeds goed.

Vieren jullie eigenlijk ook sinterklaas of kerstmis?

Nou rond de kerst willen we wel iets doen. En dan een kerstboom plaatsen in de tuin. Daar zijn al een aantal mensen mee bezig. En hoe gaat het bij jullie?

Ja wel goed, Laatst presentatie gehad en dat ging prima. Momenteel zijn we bezig met het onderzoek. Ik wil dan proberen om een omgeving en woningen te creëren waar mensen van verschillende leeftijden ook komen. Maar dan mensen die met een rollator lopen daar ook prettig kunnen wonen of mensen die slechter kunnen zien. En voor mensen met dimensie betekent dit ook dat dat zij een ander soort zelfstandigheid hebben. Zij zijn fysiek meestal sterk genoeg maar kunnen het mentaal niet meer overzien.

Ja, wat ik ook vroeg was dat er ook een aantal jongeren hier komen wonen. Dat hier studenten of jongeren hier prettig komen wonen.

Komt dat er?

Oh ja, er wordt langzaam aan gewerkt. Er moeten ook een aantal jongeren tussen.

Worden die jongeren dan ook gekeurd of hoe zeg je dat?

Ja het moeten wel jongeren zijn die ook wat willen doen. Dus die bijvoorbeeld ook naar de kroeg gaan of dat ze een middagje een activiteit samen doen.

Oh ja dus mensen die affiniteit hebben.

Ja precies.

Al kom niet zo vaak in de buurt maar als ik in de buurt ben dan kom ik wel een keertje gedag zeggen.

Ja, dat moet je zeker doen!

Ik wil je heel graag bedanken voor het belletje en

dan kan ik weer verder met mijn onderzoek.

En hoe gaat het dan met je onderzoek? Wanneer is dat klaar?

Ik ben als het goed is tot en met juli bezig en ik probeer de inzichten van toen wij op bezoek waren erin te verwerken, dus bijvoorbeeld natuur erin te verwerken. Want natuur zien helpt al om mensen aan bewegen te krijgen en zo lichamelijk vitaler te worden. Dat soort dingetjes kan ik dat in een ontwerp maken.

Wat leuk! Oh ja wij hebben in de Liv Inn ook allemaal fitness apparaten, waar mensen kunnen lopen en fietsen. Wij hebben daar 3 automaten neergezet.

Oh echt? Wat goed! Waar staan ze dan?

Boven aan de trap, aan de andere kant waar de mensen zitten aan de kant van de toiletten. Ik weet niet goed ze heten.

Wordt dat veel gebruikt?

Nou, ze staan er net, dus worden nog niet heel erg gebruikt. Maar straks als de ouderen komen, dan zal dat vast gebruikt worden. Maar hoe gaat jullie ontwerp er dan uitzien?

Ik ben zelf ook benieuwd hoe dat uiteindelijk wordt haha. Ik heb als locatie Driebergen gekozen. En Antonia en Veronique hebben Delft gekozen. Garderen en Den Haag was ook een optie. Ik heb toen een bosrijke omgeving gekozen. Mijn ontwerp gaat dus totaal anders worden dan Antonia en Veronique. Het worden diverse ontwerpen. En dat is juist wel fijn.

Geweldig, goed zo.

Ik kan wel overleggen met de TU of ik het een keer kan laten zien aan jullie als je wilt.

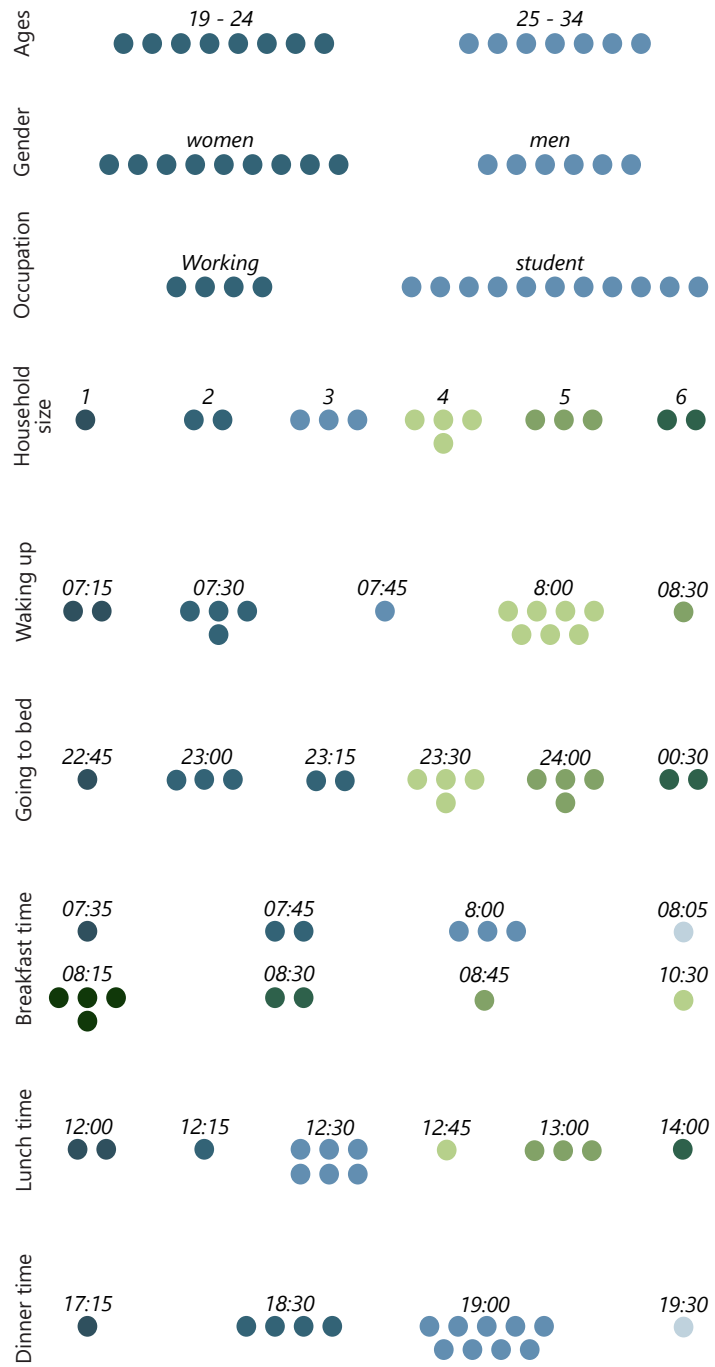
Oh ja leuk! Architectuur vind ik zeker leuk.

Mooi, Ik vond het erg leuk om je weer even te spreken!

Ja oke, Tot ziens he!

Tot ziens!

Dag, Dag



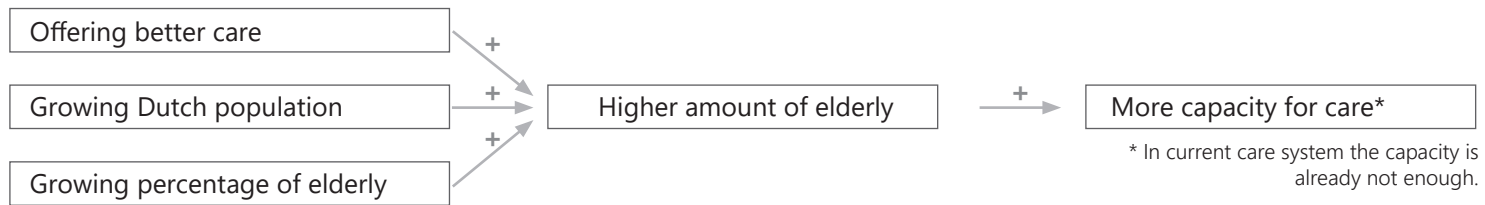


Since the design cannot be made for the elderly of today. It is interesting to see what the future elderly wants and does in daily life. Therefore a short survey was created.

*When do you feel at home?*

- Met fijne mensen om te heen op een plek waar je jezelf kan zijn en een eigen plekje.
- Familie dichtbij.
- Als ik bij mensen ben die me thuis laten voelen.
- In mijn eigen huis met mijn eigen spullen en huisgenoten om mij heen.
- Aanwezigheid van vrienden.
- Als de mensen in mijn huis voor mij zorgen en ik voor hun.
- Als het een omgeving is die je aanspreekt en je met anderen kan delen als je ergens mee zit.
- Gezellige sfeer, warmte, eigen plekje.
- Als ik ongestoord kan zingen en dansen zonder dat iemand mij aankijkt.
- Als ik op mijn gemak ben en geen open eindjes meer heb.
- Jeetje wat een vraag. Uhm als ik niet mijn best hoeft te doen, dat ik een plek heb die alleen van mij is (eigen kamer).
- Als je kan zijn wie je kan zijn en dat iedereen je daarin nog steeds accepteerd.

*Main problem:* Elderly care increases in size.



*Possible solution:* Let elderly live longer independently. It is also a wish of elderly, to live as long as possible at home.

*Sub problem:* Elderly, even who are living independent, have the feeling of not being part in society, not taken seriously, feeling undervalued, feeling patronized.

*Goal design:* Designing a place where elderly can live independently in an inclusive environment as long as possible.

*Main Research question:*  
**How can architecture extend independent living while supporting elderly (65+) in their feeling of independence in daily?**

Design Guides - Focuspoints:

Physical independence	Mental independence	Emotional independence	Sustainability
<p>Stimulate movement</p> <ul style="list-style-type: none"> <li>Stairs</li> <li>Nature close by</li> <li>Priority slow traffic</li> <li>Accessibility daily life</li> <li>Visual connections</li> </ul>	<p>Healing Environments</p> <ul style="list-style-type: none"> <li>View on Nature</li> <li>Color</li> <li>Daylight</li> <li>Indoor Nature</li> <li>Sound</li> </ul>	<ul style="list-style-type: none"> <li>Identity</li> <li>Own place</li> <li>Privacy</li> <li>Transition space</li> <li>Spontaneous encounters</li> <li>Facilities for different ages</li> <li>Houses for different types and sizes</li> </ul>	<ul style="list-style-type: none"> <li>Flexible use facilities</li> <li>Flexible future use</li> <li>Sustainable energy source</li> <li>Daylight</li> <li>Less cars</li> </ul>
<p>Help during movement</p> <ul style="list-style-type: none"> <li>Accessibility</li> <li>No thresholds, elevator</li> <li>Wider streets</li> <li>Contrast in color</li> <li>Measurements</li> <li>Guidance</li> </ul>	<p>Dealing Environments</p> <ul style="list-style-type: none"> <li>Structure</li> <li>Recognition</li> <li>Daylight</li> </ul>		

#### *FRAMEWORK*

There are many problems in care that need to be fixed. Instead of focusing on the solution, to make this better, I want to fix the problem at its core. Capacity is even more needed in care, since there is already a shortage and the amount of elderly is growing. A solution for the problem is by creating an environment where elderly live longer independently. If elderly live longer independently, then fewer people need care in a care facility. This approach can help to fix the social problem and also respect the wishes of the people: living as long as possible at home. By designing new types of dwellings and also focusing on healing environments, it will create a new future proof environment.

In the image, a schedule is made to show the framework that is used for this graduation project.

