

More and more people are moving to cities. The general idea is that there is always something to do and there is always someone to meet with in those cities. The truth is different. A lot of those city dwellers are feeling lonely from time to time. They experience a lack of social contacts and relationships. The increase in loneliness is mainly caused by our individualistic oriented society and the fact that a growing number of singles lives in one-person households. Currently those singles are living in houses designed for bigger households. Therefore, they are using a bigger amount of space and that is the exact thing cities are lacking.

In order to design dwellings for the future, a new way of living, which should tackle the social and spatial issues cities are coping with, has to be found. This research states that many of the problems could be solved with a more collective way of life. The design goal is a residential building with the maximum achievable communal space and only the minimum needed private space for every individual. Thus, the focus in this living environment lies on the collectively organised activities. Nevertheless, every individual demands and requires a certain amount of privacy. This research questions the strict separation between private and collective spaces and activities and gives a better understanding of 'what' can be collectivised and what needs to stay private. This will result in architectural guidelines to design 'a more collective way of life'.

This research is a part of the graduation project of Merel Paes at the ExploreLab Studio in order to gain the Master of Science (MSc) degree in Architecture, Urbanism and Building Sciences.

Shared living
and the desired level of privacy

Shared living

and the desired level of privacy

Shared living

and the desired level of privacy

Shared living

and the desired level of privacy

a graduation research,
in order to gain the Master of Science (MSc) degree in
Architecture, Urbanism and Building Sciences,
by

Merel Paes

studentnumber 4154932
contact merelpaes@gmail.com

ir. Robert Nottrot
main mentor

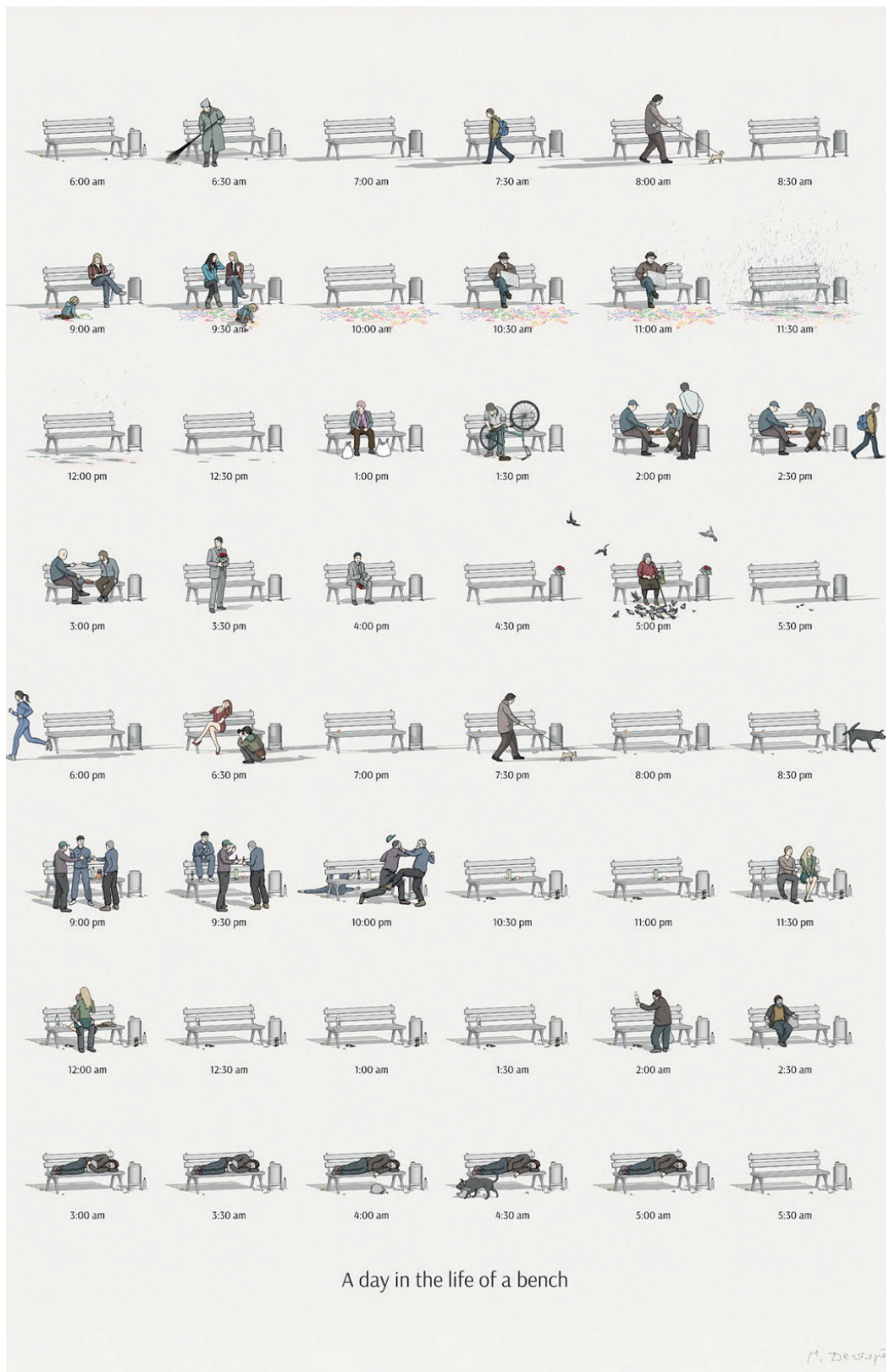
Dr. ir. Machiel van Dorst
research mentor

Ir. Ype Cuperus
building technology mentor

ExploreLab Graduation Studio
Faculty of Architecture and the Built Environment
Delft University of Technology



*“A large share of man’s activities are social, but they ultimately,
however practical or outgoing, have their source in privacy.”
from Chermayeff and Alexander, 1965, p.16*



Preface

*“We cannot walk alone.”
from Martin Luther King Jr., August 28, 1963*

This research is part of my graduation project at the ExploreLab Studio in order to gain the Master of Science degree in Architecture, Urbanism and Building Sciences from the Technical University in Delft. Herewith, this is the final product of my Architecture study which I started almost six years ago. From the beginning, I had a fascination for dwelling architecture. However, during my Masters I found the approach too 'standard'. In order to design cities for the future a new way of living has to be found. This project states that we should emphasise more on collectivity but at the same time comply with the desired level of privacy of every individual.

In order to graduate on this topic, I chose to graduate in the ExploreLab studio, which is “a Graduation Laboratory of the Faculty of Architecture, TU Delft. In this Lab students follow their fascination for a certain issue, do research and produce a graduation project out of it.”

First of all, I want to thank my tutors, Robert Nottrot and Ype Cuperus, for their guidance throughout the design process. This research would not have been possible without the advice of my research mentor Machiel van Dorst. The discussions and conversations about ‘our shared passion’, as he once said, helped to bring this research to a higher level and gaining more out of it.

This graduation project would not have been the same without all ‘co-explorers’ in the studio space. The discussions with both Saimi and Amber, about our projects, did certainly improve both the research and design process and results. The almost daily lunches (that always took too long!) with Floor, Saimi, Jonne, Evi, Lisa and Myrthe were welcome breaks from the hard working. And, last but definitely not least, I want to thank my parents for their support and my three brothers; Aron, Jonne and Finn, for all those ‘weekends at home’.

February 2017

Table of content

| | | |
|----------|---|----|
| O | Introduction and motivation | 13 |
| | <i>Problem indication and scope</i> | 13 |
| | <i>Relevance</i> | 14 |
| | <i>Goal</i> | 17 |
| | <i>Main question and sub-questions</i> | 18 |
| | <i>Method</i> | 20 |
| | <i>Thesis outline</i> | 21 |
| 1 | Privacy | 23 |
| | 1.1 <i>What is privacy?</i> | 24 |
| | 1.2 <i>Why do we need privacy?</i> | 27 |
| | 1.3 <i>Important definitions concerning privacy</i> | 30 |
| | 1.4 <i>Privacy in house; what makes a house a home?</i> | 32 |
| 2 | Collectivity | 35 |
| | 2.1 <i>What is collectivity?</i> | 36 |
| | 2.2 <i>Why do we need or want collectivity?</i> | 37 |
| | 2.3 <i>Benefits collectivity</i> | 39 |
| | 2.4 <i>Important definitions concerning collectivity (sharing)</i> | 41 |
| 3 | Perception and behaviour | 43 |
| | 3.1 <i>Sharing during history</i> | 45 |
| | 3.2 <i>What is the perception on sharing spaces and functions?</i> | 47 |
| | 3.3 <i>How do individuals behave in collective spaces?</i> | 50 |
| | 3.4 <i>How do individuals behave in private spaces?</i> | 55 |
| 4 | Design decisions (physical surrounding) which encourage social interaction | 57 |
| | 4.1 <i>Choice</i> | 58 |
| | 4.2 <i>Proximity and informal, spontaneous meetings</i> | 58 |
| | 4.3 <i>Zoning and soft edges</i> | 58 |
| | 4.4 <i>Smaller private units</i> | 60 |
| | 4.5 <i>Heart of the community</i> | 61 |
| | 4.6 <i>Outdoor communal space</i> | 62 |
| | 4.7 <i>Good accessibility common spaces</i> | 62 |
| | 4.8 <i>Common pathways</i> | 63 |
| | 4.9 <i>Limiting the number of floors</i> | 63 |
| | 4.10 <i>Good visibility on common spaces</i> | 64 |
| | 4.11 <i>Dwellings oriented towards each other</i> | 65 |
| | 4.12 <i>Building seems a unity</i> | 65 |
| | 4.13 <i>Higher densities; a positive or negative influence?</i> | 65 |
| | 4.14 <i>Clustering in a community</i> | 66 |
| | 4.15 <i>Other factors that encourage social interaction between residents</i> | 66 |

| | | |
|----------|--|------------|
| 4.16 | <i>Activities (formal social factors)</i> | 66 |
| 4.17 | <i>Conclusion</i> | 67 |
| 5 | Bounding or connecting architectural elements | 69 |
| 5.1 | <i>Varieties in heights</i> | 71 |
| 5.1.1 | Floor variety | 73 |
| 5.1.2 | Ceiling variety | 75 |
| 5.1.3 | Ceiling in open space | 77 |
| 5.1.4 | Stairs (podium) | 79 |
| 5.2 | <i>Wall</i> | 81 |
| 5.2.1 | Floor to ceiling wall | 83 |
| 5.2.2 | Eye-height wall | 85 |
| 5.2.3 | Sit-able wall | 87 |
| 5.3 | <i>Wall openings</i> | 89 |
| 5.3.1 | Wall opening | 91 |
| 5.3.2 | Door | 93 |
| 5.3.3 | Physical opening to street | 95 |
| 5.3.4 | Arcades | 97 |
| 5.3.5 | Columns | 99 |
| 5.4 | <i>Window</i> | 101 |
| 5.4.1 | Window on street level | 103 |
| 5.4.2 | Window overlooking collective life | 105 |
| 5.4.3 | Interior window | 107 |
| 5.4.4 | Windowsill | 109 |
| 5.5 | <i>Elements and objects</i> | 111 |
| 5.5.1 | Corridor | 113 |
| 5.5.2 | Alcoves | 115 |
| 5.5.3 | Curtains | 117 |
| 5.5.4 | Furniture | 119 |
| 5.5.5 | Colours, textures, materials and markers | 121 |
| 6 | Activities | 123 |
| 6.1 | <i>Activities outside home</i> | 125 |
| 6.2 | <i>Doing laundry</i> | 126 |
| 6.3 | <i>Storing</i> | 129 |
| 6.4 | <i>Working</i> | 130 |
| 6.5 | <i>Being outside</i> | 133 |
| 6.6 | <i>Letting children play</i> | 135 |
| 6.7 | <i>Gardening</i> | 137 |
| 6.8 | <i>Hobby</i> | 138 |
| 6.9 | <i>Transportation</i> | 141 |
| 6.10 | <i>Cooking</i> | 142 |
| 6.11 | <i>Eating</i> | 144 |

| | | |
|-----------|--|------------|
| 6.12 | <i>Relaxing</i> | 146 |
| 6.13 | <i>Talking</i> | 149 |
| 6.14 | <i>(Being in the) living room</i> | 151 |
| 6.15 | <i>Inviting guests</i> | 153 |
| 6.16 | <i>Cleaning</i> | 155 |
| 6.17 | <i>Maintenance</i> | 157 |
| 6.18 | <i>Going to the toilet</i> | 159 |
| 6.19 | <i>Being with the family</i> | 161 |
| 6.20 | <i>Dressing</i> | 163 |
| 6.21 | <i>Personal care</i> | 165 |
| 6.22 | <i>Being alone</i> | 167 |
| 6.23 | <i>Sleeping</i> | 169 |
| 7 | Conclusion | 171 |
| 8 | Discussion | 174 |
| 9 | Reflection | 176 |
| 10 | Bibliography | 179 |
| 11 | Appendix | 185 |
| | <i>Appendix 1</i> | 186 |
| | Template elements | |
| | <i>Appendix 2</i> | 187 |
| | Template activities | |
| | <i>Appendix 3</i> | 188 |
| | Questionnaire questions | |
| | <i>Appendix 4</i> | 196 |
| | Questionnaire results | |
| | <i>Appendix 5</i> | 202 |
| | Questionnaire conclusions | |
| 5.1 | <i>Relation between the 'shareability' of different functions</i> | 202 |
| 5.2 | <i>Relation between the 'shareability' of functions and places</i> | 204 |
| 5.3 | <i>Where do the respondents currently live?</i> | 206 |
| 5.4 | <i>Do singles want to share more?</i> | 206 |
| 5.5 | <i>Does possession influence the 'willingness to share'?</i> | 207 |
| 5.6 | <i>Does experience influence the willingness to do so again?</i> | 207 |



Collage of homes in Amsterdam, by babel 15, 2015, Jean-François Rauzier

O

Introduction and motivation

*Social interaction is an important need for the well being
of a human being.*

from Hoogland, 2000, Williams, 2003, Fromm, 2012

A dwelling is an important part of everyday life. A lot of effort is put in the transforming of a house into a home; to make it your home. It should be the place where the inhabitants feel safe. More and more people are moving to cities, which makes cities lively and busy places. This are also the reasons why people want to live in those cities. The idea is evoked that there is always something to do and there is always someone to meet with. The truth is different. A lot of people in these cities full of activities are feeling lonely from time to time. They feel a lack of social contacts and relationships. The increase in loneliness can largely be explained by our individualistic oriented society. Another aspect that affects the situation of a specific group is the growing number of singles living in one-person households (Kala, 2015, p. 53).

Currently, those singles are living in houses designed for bigger households and are therefore using a considerably bigger amount of space. Besides the fact that 'space' is the thing cities are lacking, the increase in one-person households is also significantly increasing the domestic resource consumption and the production of waste (Williams, 2005b, p. 162). In order to design dwellings for the future, a new way of living has to be found. This 'new way of living' should tackle the social and spatial issues, cities are coping with.

This research states that solutions are to be found with an unstrained perspective on the strict separation between private and collective spaces. The emphasis in such living environments lies on the collective organised activities and spaces. Nevertheless, every individual demands and requires a certain amount of privacy. The research will focus on singles who are living alone in cities, and the eventual design will show how this new, collective, way of living can be implemented in the urban fabric of Amsterdam.

Relevance

Our society is changing on many aspects. The way we live our life is more dynamic plus sometimes uncertain and unstable. During different phases of a persons' life, one is living alone. Starters without a relationship live alone, couples divorce and both start a different household and elderly lose their partner. Amsterdam even has the highest percentage of single households; in 2009 already more than fifty-five percent of the households consisted of only one person (CBS, 2009, p. 12). At the same time, the number of people moving to cities is still increasing. This combination makes the total number of inhabitants in cities and the amount of households grow rapidly. As already referred to, next to the qualities this solo-living brings, it provokes a couple of problems. First of all, it causes loneliness among singles. Furthermore, their way of living is less efficient in terms of energy consumption, transportation, occupation of space per person and they are using more goods and materials per person (Kala, 2015, pp. 53, 66; Williams, 2003, p. 52).

According to De Jong-Gierveld and Van Tilburg (2006, pp. 582-583), loneliness is *"considered to be an expression of negative feelings of missing relationships and occurs in individuals of all ages."* People who are feeling lonely are missing an intimate relationship or a wider social network. This are, respectively, emotional and social loneliness. Emotional loneliness occurs when people lose the relationship with their partner; either through divorce or widowhood. Younger people, who are newcomers in a city are frequently experiencing social loneliness. Individuals without an intimate partner are more often coping with social loneliness than people who are in a relationship (De Jong-Gierveld & Van Tilburg, 2006, p. 593).

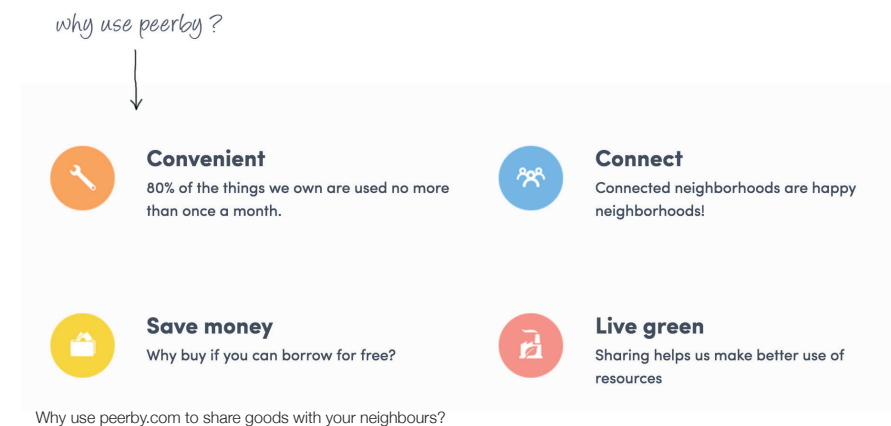
Loneliness means that someone experiences his or her amount of social contacts smaller than desired. One step further than loneliness is social isolation; this is caused by the absence of relationships with other people and is the opposite of social participation (De Jong-Gierveld & Van Tilburg, 2006, p. 583).

Our individualistic society sees the individual as an independent being that is able to maintain itself. However, if the interaction between these individuals is lacking, they will miss the advantages of sharing and social interaction.

Currently, we are living behind our closed front doors without knowing our neighbours. All dwellings have their own spaces and services but they are lacking communication, interaction and sharing with other dwellings and its residents. Today's society consists of 'bubble homes' as Silva and Coch (2010, p. 3) calls these homes.

This brings us to the next problem; the fact that smaller households are occupying a significantly larger amount of space. At the moment is already pretty difficult, for some even impossible, to find a house or apartment in Amsterdam. The growing number of one-person households does not help; two singles living separately are occupying more space than a two-person household does (Kala, 2015, p. 53). Especially when the one-person household lives in a dwelling that could also house more persons. A new trend is the 'tiny house movement'; people who live in a house with minimum measurements and only the absolutely necessary. This is similar to the private spaces in projects with collectively organised facilities; the private spaces tend to be smaller than average (Williams, 2005b, p. 163). Clustering those 'tiny houses' gives the opportunity to add common facilities, as a lot of space is saved with these private units.

Besides the use of more space, one-person households are also using more goods and materials per person. Our Western society is one of overconsumption. Every household uses and possesses



all needed services and goods individually. Research shows that ninety-nine percent of the stuff we buy is turned to trash within six months, our car stands still twenty-three hours a day and a drilling machine is only used for less than ten minutes altogether (Botsman & Rogers, 2011). In their book 'What's mine is yours' they promote sharing certain services and goods and see it as *the* solution for the described problems. They are not the only ones interested in sharing goods and living a more collective oriented life.

On the one hand we live in this individualistic oriented society, on the other hand, a lot of 'borrowing-services' popped up the last years. Via apps or websites, people are able to use a shared car (greenwheels.com), rent their own car to others (MyWheels.nl) or offer a seat in their car (BlaBlaCar.com). There are many, local, initiatives to cook meals for others to pick up (thuisafgehaald.nl). We all know the websites to rent an entire house for a short period (Airbnb.com) and there are also possibilities to only rent your couch to someone (couchsurfing.com). Yet, it can be as simple as lending the drilling machine from your neighbour, instead of buying your own (peerby.com).

Next to the sharing of goods, more and more co-working spaces are set up and shared as well. These examples show that people are willing to share; the 'sharing economy' ('deeleconomie') or 'collaborative consumption' is becoming more popular.

Can we go one step further and solve the problems with a more collective way of life? Instead of a society in which each home uses all services and spaces individually, we should aim for one in which spaces and facilities are collectively used and shared. In the Netherlands, there are only a few small-scale examples, often organised by people who already wanted to live together. The 'Eva-Lanxmeer' neighbourhood in Culemborg is a good example of collectivity that, generally, offers social advantages. All dwellings are self-sufficient and the common gardens and community buildings are an addition. Sharing more could generate further advantages. The residents that share more are most of the times 'hippy-like' people. This also indicates the problems and objections people feel towards communities and collective housing; they associate sharing with an alternative way of life; hippies or squatters for example. In order to regain the values of the collective realm, we need

Goal

to allow the implementations of collective solutions (Altés Arlandis, 2011, p. 24). Observing built examples in other countries can help to better understand the motivations and effects.

One important thing to realise is the fact that, besides all the above mentioned problems collective housing is a solution to, many singles are happy with their way of life or explicitly chose to live alone. Living alone brings a lot of qualities as well; it gives a lot of freedom and independence for example. Nowadays, younger people interpret the quality of their life differently and find property less important, than the generation before (Fairs, 2015). They suspend their adulthood and have a reduced desire to settle; the average age of marriage shifted from twenty to twenty-nine in the last forty years (Mairs, 2016). They want to live close to culture life and amenities and in order to do so, they are happily willing to live in a smaller unit. James Scott, chief operating officer of 'The Collective'; London's co-living start-up, said that *'this type of property is growing so rapidly that is likely to become the standard way of life'* (Mairs, 2016). He is actually talking about the owning of 'no-property'. The millennials are choosing 'living as a service', which makes home ownership something of the past. Decoupling the function of living from a physical location will provide 'living as a service' and is leading to a future in which everyone is 'homeless'. His approach is an extreme one, however, it is the kind of statement this research is aiming for.

The design goal is a residential building with the maximum achievable communal space and the minimum needed private spaces for every individual. The focus in this living environment lies on the collectively organised activities, nevertheless every individual demands and requires a certain amount of privacy.

Therefore, the goal of this research is to question the strict separation between private and collective spaces and activities and get a better understanding of 'what' can be collectivised and what needs to stay private and how participation in the community can be encouraged through architecture. This will result in architectural guidelines for designing 'a more collective way of life'.



Main question and sub-questions

We need to question the strict separation between private and collective spaces and activities in the residential environment. Nevertheless, the individual privacy must be guaranteed (Silva & Coch, 2010, p. 1). The main issue is; how far can we go? This leads to the main question of this research:

How can we emphasise on collectivity in a residential building and at the same time comply with the desired level of privacy of every individual?

To understand what can be organised collectively, we first need to understand what privacy really is and why exactly we need it.

What is privacy and why do we need it?

Secondly we have to investigate what collectivity is and why this is important in everyday life.

What is collectivity and why do we need it?

When the meanings of privacy and collectivity are clear; it is important to investigate both the behaviour of people in private and collective spaces and their perception on privacy, collectivity and sharing. This in order to gain a better understanding of the wishes and needs of individuals.

What is the perception of individuals on private and collective functions?

And **How do individuals behave in private or collective spaces?**

Followed by the question how their behaviour can be influenced by, or with, architectural elements and/or design decisions. As it is important to understand what certain design decisions provoke. This knowledge is crucial during the actual design and should be actively used to encourage social interaction and regulate privacy, and herewith create a stable community.

How can architectural elements regulate privacy, encourage interaction and influence the behaviour of residents?

Besides being able to influence behaviour, it is essential to get clear which activities need (the security) of privacy, which can be organised collectively and the level of privacy each activity demands.

What is the desired level of privacy for different home activities?

The answering of this questions will lead to a better understanding of the private and common realm. The list of architectural elements and design decisions will be of help when designing a residential building with the maximum achievable communal space and the minimum needed private space for an individual. To create a 'pleasant' living environment the perfect balance between this private and common spaces has to be found.

Throughout this entire research, it is essential to realise that the desired level of privacy, behaviour and perception varies per person, per activity, per situation and can change over time. The physical environment should meet the desires of all these individuals with different wishes. A certain level of privacy can be experienced as pleasant for one activity while causing social isolation for another. As well as a particular amount of interaction is wanted by one person, while another wants to avoid all interaction in the exact same situation. This also points out that one outcome will never be suitable for everyone. It indicates that the possibility to choose, between having interaction and avoiding this interaction, is crucial and should always be available.

When taking the average of a group, none of the individuals belonging to this group will resemble this exact average. Yet, there is 'common ground' and there are basic needs. A design should fulfil these basics and, next to this, offer possibilities for variations per person, per activity, per situation and over time.



Method

The above posed questions will, basically, be answered by the combination of an intensive literature study and an own survey. This survey will be held under people living in the Netherlands. They will be questioned on their living and personal situation, living preferences, current possession of spaces and facilities and their experience with shared objects or services. All questions of the survey can be found in appendix 3. The most important questions in the survey are those questioning 'which places or functions they are willing to share with others' and 'which activities, they think, can take place with others in the same room'. Those two questions should give a better insight into the perception on sharing and the willingness to share. The other questions will tell something about the respondents themselves and their current situation. This will give insight in what influences their opinions on and towards sharing and collectivity. In order to get a representative group of respondents, the survey will be spread via Facebook and LinkedIn in a Google Docs Form. This resulted in a total of 246 respondents, from all over the Netherlands, from all ages and different groups of the population. More information about the respondents can be found in appendix 4. The conclusions derived from the survey are added in appendix 5.

The first sub-question '*What is privacy and why do we need it?*' will be answered with the information retrieved from many different papers, books and studies on the subject of privacy. One of the most important are the books by Irwin Altman. His theory on privacy is widely used and accepted. Another often used research is the one of Westin. This research uses Margulis' (2003), as he compares Westin's theory of privacy with Altman's. To better understand the true meaning of privacy, others are also compared. A few examples are Chermayeff and Alexander (1965), Hoogland (2000), Laufer and Wolfe (1977), Lofland (1998) and Williams (2003).

For the following question '*What is collectivity and why do we need it?*' the research of Williams (2003, 2005a, 2005b) is mostly used. Two other important researches are those of Ali, Dom, and Sahrum (2012) and Silva and Coch (2010).

A literature study is the basis of the next two questions '*What is the perception of individuals on private and collective functions?*' and '*How do individuals behave in private or collective spaces?*'. The way individuals behave in private or common places differs and are examined by Christie (2009), Hoogland (2000), Lofland (1998) and Williams (2003, 2005a, 2005b). The perception on sharing and collective housing is researched through surveys and interviews by Vestbro (2012) and Williams (2003). This will give insight into the motivations to live in communities. Those results are compared with the outcomes of the own survey.

The answering of the question '*How can architectural elements regulate privacy, encourage interaction and influence the behaviour of residents?*' will, primarily, be done by the studies of Williams (2003, 2005a, 2005b) and Hoogland (2000). The study of Hoogland focuses on how semi-private zones facilitate social cohesion. For chapter five; the description of various architectural elements and how they encourage interaction or offer privacy, the research of Warner van Haaren (2014), a previous Explorelab graduation student, will be used. His research will be the starting point for this research. He asks himself the same questions and doing the exact same work double is unnecessary. He used the book of Chermayeff and Alexander (1965) to examine various architectural

elements and their levels of offered privacy. His results are used as basis, yet critically discussed and transferred to own observations and conclusions. Still, these outcomes are hypothesis and should be tested 1:1 in buildings, to be proved.

The last question '*What is the desired level of privacy for different home activities?*' will be answered by dividing the activities in different sub-sections. First, the meaning and importance of the activity will be retrieved from the research of Meesters (2009). These findings will be compared to the outcomes of the own survey, which will lead to a better understanding of the desired level of privacy per activity. Meesters' research also examined the relations between activities and specific places in a dwelling. Her findings and the outcomes of the own survey will be compared again.

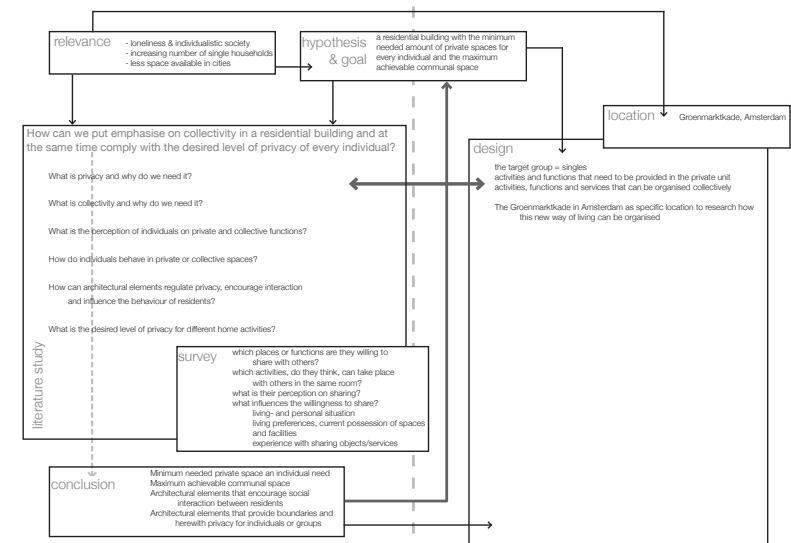
Additionally, Van Haaren's research (2014) will be used again as background information for this chapter. The outcomes of the own survey will also be discussed per activity; 'are the respondents willing to share certain spaces and activities', 'does current possession or experience with sharing influence the willingness to share' and 'who are more willing to share'? Are questions the survey will give answers to.

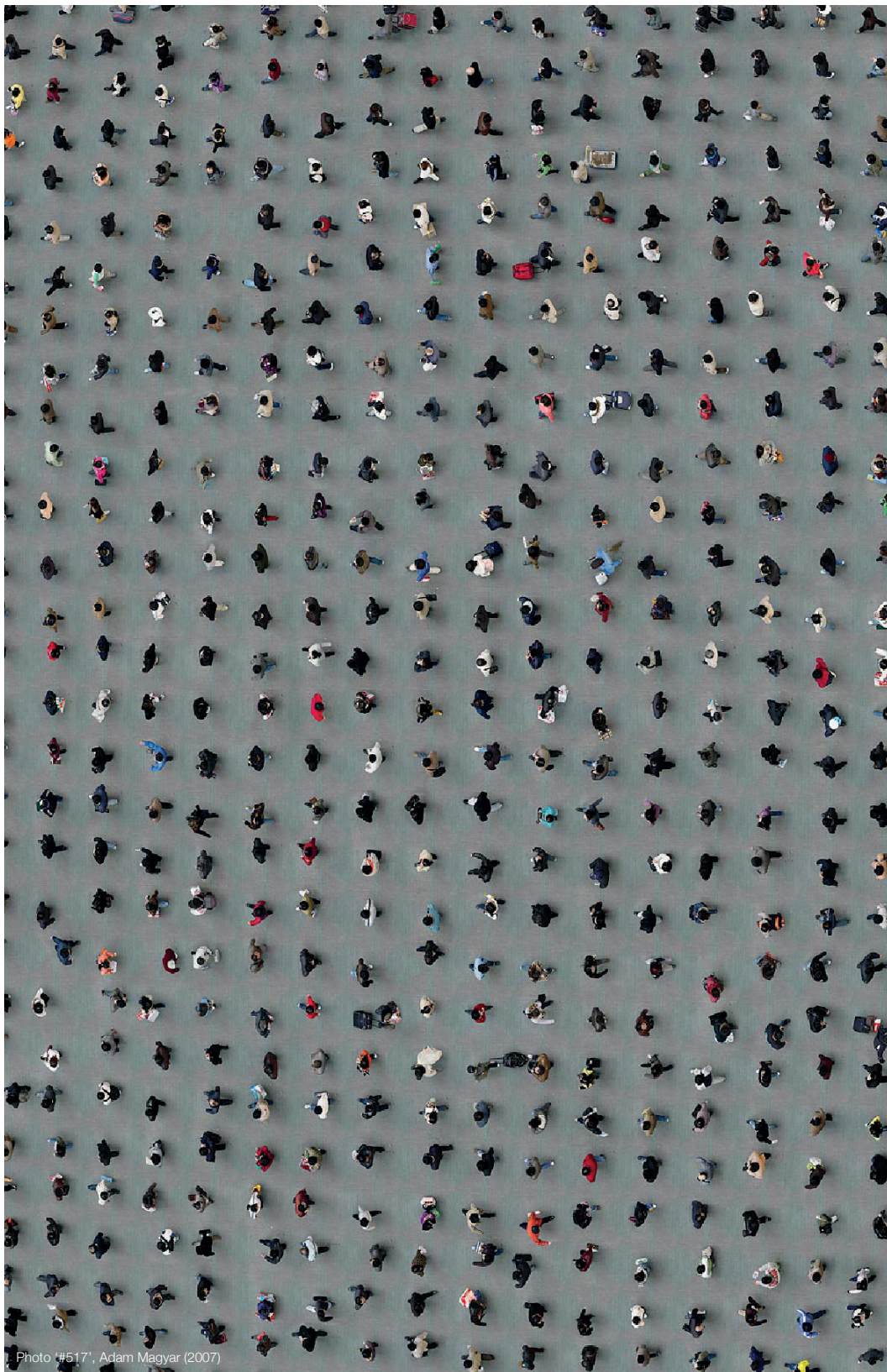
Thesis outline

This research can be divided into two parts, and both parts can be divided into three chapters.

Part 1 – Literature study; understanding privacy, collectivity and behaviour, will be done in, respectively, chapter one, two and three.

Part 2 – The designed surrounding can encourage social interaction between individuals; what is already found by others in literature and built examples will be discussed in chapter four. An elaboration on which architectural elements can be used to influence the interaction and what they provoke will be made in chapter five. And, as literature studies did not explicitly mention which activities can be shared and which cannot, this will be discussed in chapter six.





1

Privacy

*“Privacy as selective control of access to the self or to one’s group”
from Altman, 1975, p.18*

To organise functions, activities and spaces collectively instead of individually or in the sphere of the private, it is necessary to get an understanding of what privacy is, how it works and why we need this privacy. The level of privacy differs per activity, room, person, situation and can even change over time. As it varies per occasion and is influenced by many different factors, it is difficult to explain privacy for every situation. The explanation of privacy will, therefore, be a general approach, made with the use of several, frequently used, theories on privacy.

1.1 What is privacy?

A well-known, and frequently used, theory on privacy is the one of Altman (1975, p. 18), he defines privacy *"as selective control of access to the self or to one's group"*. According to him, privacy has five properties: the dynamic process of interpersonal boundary control, the desired and actual levels of privacy, an ever changing optimal level of privacy, the interaction that involves input from others and output to others, and that privacy applies at the individual as well as the group.

Tomah, Ismail, and Abed (2016, p. 1) compare different definitions and theories in their research. They mention Lang (1987) who says that *"privacy is the ability of individuals or groups to control their visual, auditory, and olfactory interactions with others"*. Others define it as the using of several techniques in order to regulate the desired social interactions based on the individuals' preferences (Tomah et al., 2016, p. 1). Combining and comparing the definitions of others, they conclude that privacy serves three main functions: limiting social interaction, establishing strategies to manage that interaction and developing and maintaining self-identity.

Another theory is the one of Westin (1967), he considers the ways people protect themselves from others by temporarily limiting access to themselves as privacy (Margulis, 2003, p. 412)

All these theories describe privacy as the ability or opportunity to regulate and control the access of others to oneself. Opposing to what most people assume as privacy, it does not necessarily mean avoiding every contact. It is about the regulating of the type and intensity of stimulation, the ability to choose how, under what circumstances and to what degree one is exposed to others (Laufer & Wolfe, 1977, p. 37). Besides the, earlier described, interaction with others that needs to be regulated, privacy also concerns the controlling of other stimuli; noise and visual stimulation (Laufer & Wolfe, 1977, p. 39).

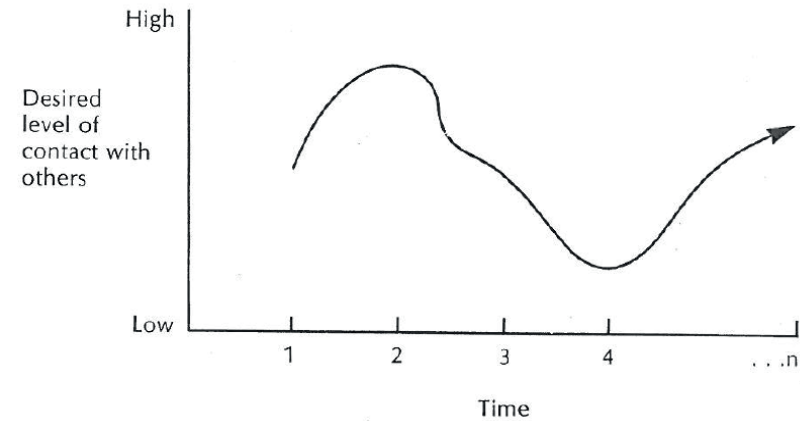
The desired level of privacy is different for every person and every situation but is always the, for that moment, optimum medium between too much and too little contact with others. Whenever there is less than desired contact with others, people experience loneliness and social isolation (Altman, 1975, p. 27). The opposite of social isolation is the invasion of ones' privacy; there is more than desired contact with others, which leads to social crowding and intrusion.

In the research of Laufer and Wolfe (1977, p. 23) they ask themselves if it is possible to create a society in which there would be total disclosure among all individuals. They conclude that this is impossible, as we have to accept that there is unknown knowledge about others and that we have feelings others do not know of. This existence of secrecy is what they see as privacy. Opposed to total disclosure is the missing of shared experience, which will eventually lead to total isolation.

The presence of privacy is most important in the places where people live (Chermayeff & Alexander, 1965, p. 37). As this is the place where someone retreats from the rest of the world. In order to accomplish this, privacy is indispensable.

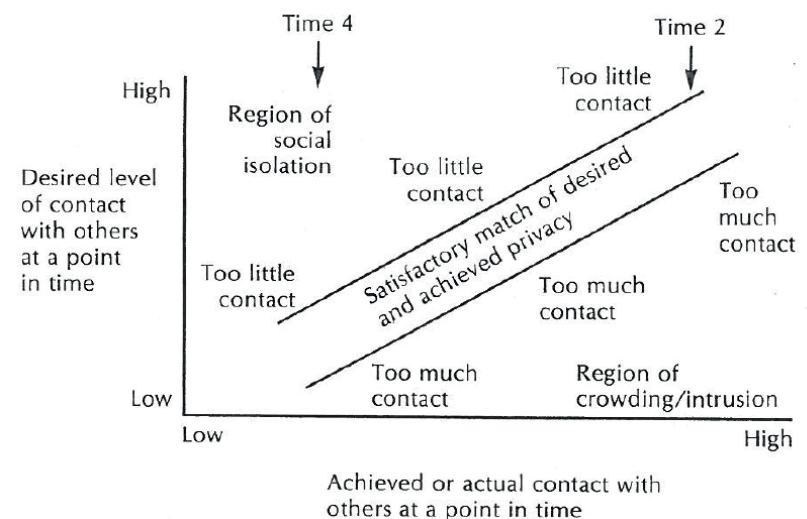
Both the social and physical environment can help to control the level of privacy, as social interactions are facilitated and limited by the environment. An enormous space can offer privacy, but the regulating becomes more difficult when there are other individuals in the same room. Adding barriers such as walls and the positioning of physical objects can help to offer private spaces (Margulis, 2003, p. 419). Privacy is about the interacting with others on different levels. The level of privacy is influenced by our five senses; seeing, hearing, feeling, tasting and smelling. Of which seeing and hearing are the most important. The desired level of privacy for these different senses is different for every activity. The activity of dressing, for example, demands a high level of visual privacy, while olfactory privacy is sometimes even unwanted.

1a. Privacy as a Dialectic Process



'Privacy as a dialectic proces' (Altman, 1975, p. 26)

1b. Privacy as an Optimization Process



'Privacy as an optimization process' (Altman, 1975, p. 26)

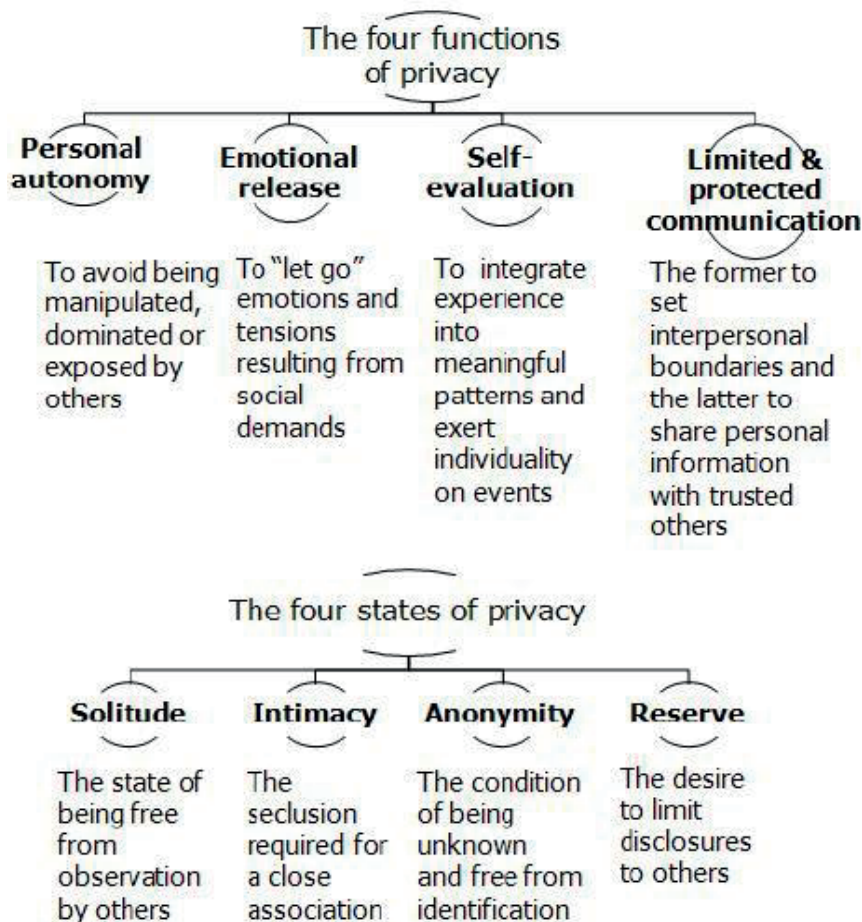
1.2 Why do we need privacy?

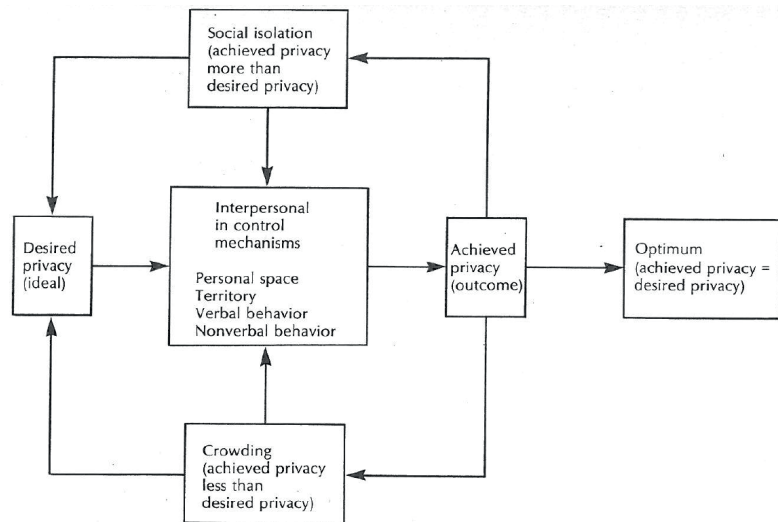
Now that it is clear what privacy is, it is interesting to ask ourselves why we actually need privacy. From history, we can learn that *"it is important that we can secure a place for ourselves on this earth"* (Jacobson, 2012, p. 179). This place is our home and stories from long ago highlight the difficult search for this ultimate private space. Jacobson (2012, p. 178) gives a few stories as example of this search for a home. Many parts of the Jewish Bible explain the need of making a home and mention it as essential for the human condition. Socrates makes a similar point by stating that homemaking is a character of the human being. Adam and Eve have to work till the end of time to secure a home for themselves and an entire nation is on the move in search of a home when Moses leads the Israelites. The stories of Homer, the Odyssey and the Iliad, are respectively stories of the efforts to return to home and a siege against an entire nation because they violated the principles of home and hospitality. All these stories emphasise the urge human beings feel to create their own place in the 'open world'.

"If the individual cannot at least sometimes shut out the crowd-noise, how shall he notice and become fully reassured by the sounds of a child at play or the sight and sound of a bird as it signals the seasons change?" (Chermayeff & Alexander, 1965, p. 75)

The need for privacy is described by Jacobs (1961, p. 56): *"a certain degree of contacts is useful or enjoyable; but you do not want them in your hair. And they do not want you in theirs either"*. There is a maximum to the amount of interaction an individual needs and can handle. The possibility to protect oneself against unwanted contact with others is what privacy is about. We need privacy to get ourselves a break from social demands, to avoid the exposure to others, to be released from the tensions and obligations of social life and to evaluate the self (Westin, 1967 via (Margulis, 2003, p. 412)). It is the moment when one feels free from the observation by others, as *"the gaze controls everything and intimacy is missing"* (Altés Arlandis, 2011, p. 34). Westin (1967 via (Margulis, 2003, p. 412)) describes the purposes of privacy with the help of five elements; personal autonomy as the desire to avoid being manipulated, dominated, or exposed by others. The time-out from social demands gives the opportunity for emotional release; releasing the pressure of one's social life. Also self-evaluating is an important element of privacy; the possibility to reflect on issues individually without being influenced by others. Last is the protecting and limiting of communication with others. These elements are realised when privacy is available, Westin (1967) also describes the functions of privacy with five characteristics that show the differences in why people want privacy. Being free from the observation by others (solitude), the creating of a close relationship with a small group (intimacy), the absence of identification in a bigger group (anonymity), the desire to limit disclosure to others and making sure that others recognise this desire (reserve).

In every situation, we need a certain amount of privacy. This amount constantly differs. When the achieved level of privacy is higher than the desired level someone experiences social isolation, which causes loneliness. When the achieved level of privacy is lower than the desired level someone experiences too much contact. As this is different for every situation and every person experiences privacy differently, it is important to understand that there is a desired level of privacy for every situation and that the need for privacy is an individual feeling. So the choice to retreat from others has to be there as constant exposure to others will irrevocably lead to social alienation and the inability to keep participating with and in this group (Williams, 2003, p. 212). This is what Chermayeff



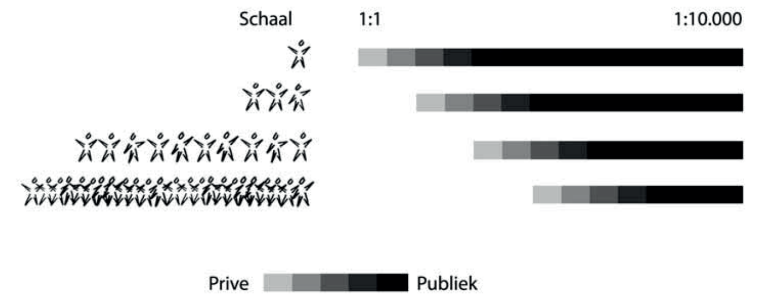


'Overview of relationships among privacy, personal space, territory, and crowding. (Altman, 1975, p. 7)

and Alexander (1965, p. 78) also mentioned: *"If man is restricted to one extreme, subjected exclusively to the excitement of the large scale, without the contrast of relief of the minuscule, it is easily conceivable that the human organism might atrophy"*. Places that provide both private and communal spaces are, in general, more attractive and will encourage interaction and the use of common spaces (Williams, 2003, p. 212) because it is possible to avoid interaction.

A group of people can also feel the need to create privacy for the group as a whole. Interaction with others in this group is desired, while interaction with outsiders is not preferred. Every group of individuals has this need, although the scale depends greatly on the size of the group. An individual has to deal with its household members, the households must protect itself against their neighbours, and the neighbourhood is again part of a bigger city, which lies in a country, a continent and the world as a whole.

In cohousing projects, a balance between private and common spaces is achieved by the buffers of semi-private spaces between the common spaces and the individual units. The focus can lie more on the common than the private, but the private should not be forgotten as this can lead to conflicts and eventually to a reduce in the use of the common facilities. *"Privacy is essential in a communal situation, especially in a society that values it so high"* (Williams, 2003, p. 212). However, in a community, various groups will be formed by individuals that have something in common. Probably, most of them are a member of more than one social group, which makes switching between and participating in several groups possible. All these groups need clear boundaries and their territory has to be defined, in order to reach the desired level of privacy for the entire group. The figure on the next page shows that privacy occurs on different scales (Van Dorst, 2005, p. 133). What a 'semi-public space' is for one individual, can be 'private space' to a group of residents.



'What a 'semi-public space' is for one individual, can be 'private space' to a group of residents.' (Van Dorst, 2005, p. 133)



1.3 Important definitions concerning privacy

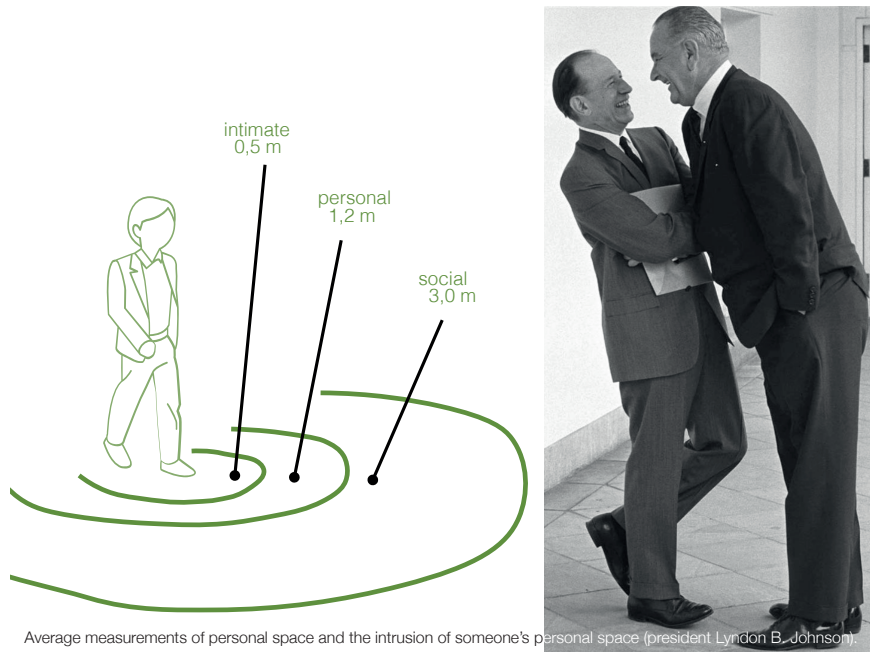
When talking about privacy a couple of definitions come forward; the personal space of every individual, the territoriality they feel towards a place, the protection and secrecy a place can offer and the zoning that makes the differences between private and public, and everything in-between, clear to each individual.

Personal space

Every living being has personal space; going from intimate, to personal, social and public. It depends on ones' relationship to the other in which part of the personal space one is allowed. When someone is close to a person that is not well-known, people avoid eye-contact as this feels as an intrusion. This is also the case with people who do know each other, not making eye-contact is a way of regulating the level of privacy. The average measurements of someone's personal space are shown in the figure.

Territoriality

Territorial behaviour is part of the instinct for survival, security and safety, the feeling to protect oneself and its family (Fox-O'Mahony, 2012, p. 233). It helps to avoid conflicts and miscommunications by preventing others to intrude in the territorial space of someone else (Hoogland, 2000, p. 18). Again the definition of Altman (1975, p. 107) is often mentioned and covering all aspects. "*Territorial behaviour is a self/other boundary regulation mechanism that involves personalization of, or marking of a place or object and communication that it is 'owned' by a person or group. Personalization and ownership are designed to regulate social interaction and to help satisfy various social and physical motives. Defence responses may sometimes occur when territorial boundaries are violated.*"



Territories are used and owned by a specific individual or group (Hoogland, 2000, p. 18; Tomah et al., 2016, p. 2), is often seen as a private space, for one alone or the family (Fox-O'Mahony, 2012, p. 234), are marked and personalised to claim it theirs and will be defended against intruders (Ali et al., 2012, p. 619; Tomah et al., 2016, p. 1). When a territory is well marked, not many will cross its boundaries. Whenever invasion takes place, it is most of the times by small children or dogs (Lofland, 1998, p. 36). They are not (yet) able to read the territoriality signs and will run through another's territory.

Protection

Privacy is also a way of protecting yourself against the outside world. So, establishing privacy is done by creating protection against unwanted interaction with others. Without the interference of others, one feels save.

Secrecy

Another aspect of privacy is the existence of secrets. A lack of privacy does not allow people to keep a secret from others and they are not able to perform secret rituals (Margulis, 2003, p. 415). Being able to regulate access to secrets works in the same way as privacy concerns the regulating of interaction. Maintaining secrecy implies more control than the regulating of interaction, as this secret information concerns greater potential vulnerability when invaded by outsiders (Margulis, 2003, p. 416).

Zoning

Zoning is an efficient way to increase the amount of privacy as it reduces the social interaction between people. Hoogland (2000) observed that as the number of zones increased the amount of privacy increased substantially. Zones are the areas in-between a private and common, or public, space. The functions of zoning are by Hoogland (2000, p. 20) explained with the illustration of the negative effects emerged from a lack of zoning, which prohibits people to mark their territory. When looking at different kinds of zoning in a residential environment; from a public street or square to a communal area, to a semi-private area in front of the private house, it is found that the public spaces are seldom seen as public domain by the people. These large open space remain empty most of the time, whereas the smaller spaces close to the private domain are intensively used by the residents (Hoogland, 2000, p. 21).

The desired amount of interaction with others changes all the time. When zoning is present in a dwelling or building, people are able to regulate their interaction with others. When we refer back to the definition of privacy, which is the possibility to regulate interaction, it becomes clear that zoning is an essential element in regulating privacy.

1.4 Privacy in house; what makes a house a home?

When talking about privacy, the home or house is mentioned a couple of times as the ultimate private space. But, what makes a person feel at home and what makes a house a home?

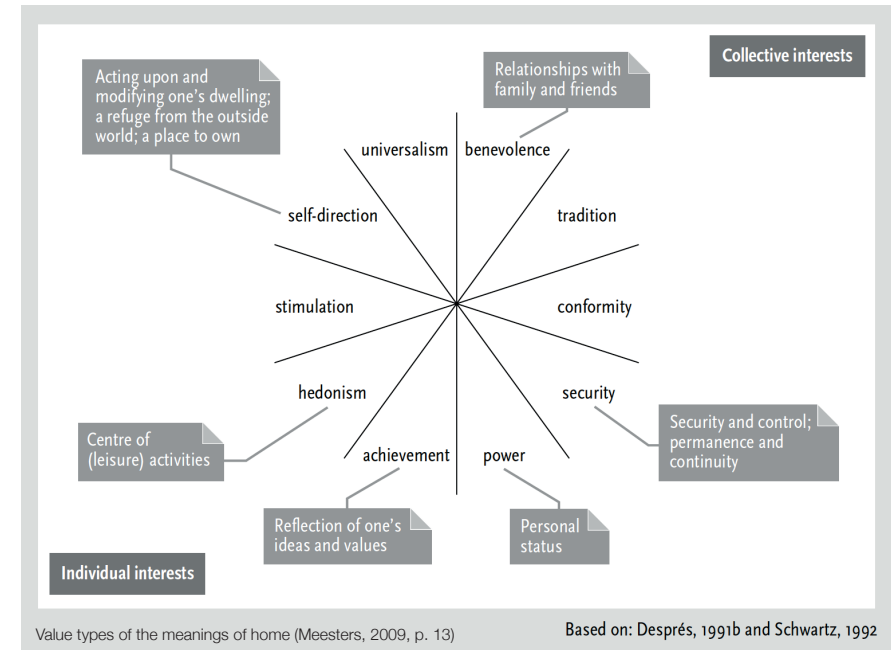
It depends per individual how they experience their home. The most often mentioned associations with home are discussed by Mee et al. (2012, pp. 145-149). The home at least provides a shelter against the outside world, followed by the function of a safe and private haven as it is the root of the family life and supports the intimacy between family members. It is the place where they feel free to be themselves and experience the security and safety that the home and the family life facilitate and ask for (Fox-O'Mahony, 2012, p. 236; Mee et al., 2012, p. 148). Besides positive feelings, negative associations are also possible; one can experience the home as a prison, this is the case when one feels being closed in and isolated at home.

The territorial feeling over a place focuses on the boundaries of the dwelling (Tomah et al., 2016, p. 1) and is closely attached to the protecting function a house has. Nevertheless, people without a house are called homeless, even though they might experience the feelings of a home (Murphy & Levy, 2012, p. 75). The 'home feeling' is essential to a human being, although the relation between a resident and its home is difficult to define and is changed over time (Fox-O'Mahony, 2012, p. 231; Mee et al., 2012, p. 150; Murphy & Levy, 2012, p. 79). Traditionally the home was interpreted as the place of emotional and physical security (Murphy & Levy, 2012, p. 76).

When comparing these home feelings with the aspects of privacy it is clearly seen that those are strongly connected. The meaning of home is formed by the psychological need for belonging, control, intimacy and identity (Mee et al., 2012, p. 145; Tomah et al., 2016, p. 1). The home is strongly associated with the private sphere, as the most occurred feeling when one is not at home, is the lack of control over the space (Mee et al., 2012, p. 145; Murphy & Levy, 2012, p. 75).

The emotional weight the word home carries is shaped by the everyday homemaking, the relationships with other people that are rooted in the home and the connected emotions (Mee et al., 2012, p. 145). Satisfying in these emotional needs is an important effect of the possessing of a home (Murphy & Levy, 2012, p. 79). Although the word 'home' can refer to much more than a dwelling. It can mean a street, neighbourhood, city, country or a continent (Murphy & Levy, 2012, p. 75). The home can be a specific place as well as a certain feeling and the sense of belonging. These feelings are primarily positive; love, happiness, security, rest and peace (Murphy & Levy, 2012, p. 75). Meesters' (2009) observations on the meaning of home are combined in the figure on the next page.

As already mentioned the home is so much more than a house. Still, it is interesting to understand what makes a house a home, as people associate their dwelling with home. Houses only become a home to and by the people that are living in them. People are forming the houses they live in, the house contains personal memories, symbols and objects and it reflects their personality and identity (Cuba & Hummon, 1993, p. 113; Fox-O'Mahony, 2012, p. 236; Murphy & Levy, 2012, p. 76; M. van Dorst, 2005, p. 298). The ability to provide the living environment with their personal touch makes them the owners of the place. As Fox-O'Mahony (2012, p. 232) explains it as "home = house + x". Having a home is a basic need but it is more than a shelter or physical structure. It offers security and privacy and allows the residents to develop their identity and provides space for reflection. It is the basis of ones' social life and their relationships with family and friends.



Place identification and attachment are caused by the emotional value one feels with a specific place or involves a shared interest that is connected with the place (Cuba & Hummon, 1993, p. 113). This identification does not necessarily need to concern a house, as it can also occur with a community, a city and even a country. One feels attached to a place if the place is associated with social contacts, particularly when it is shared with friends and family. The attachment between a person and a place is established by a cognitive or emotional connection one has with this place (Cuba & Hummon, 1993, p. 115; Hidalgo & Hernandez, 2001, p. 274).

The need for humans to feel attached to a place is strong. They have a need to not only exist as an individual but to be part of the world around them and have a connection with a specific place (Fox-O'Mahony, 2012, p. 231). The social attachment, the attachment to the people that are at that specific place, is often stronger than the physical attachment (Hidalgo & Hernandez, 2001, p. 279). The place they feel most attached to is often the home environment. Nevertheless, it can also concern another location as the sense of, or feeling, 'at home' is widespread and mostly shaped by the experiences one had and their interpretations of a specific place (Cuba & Hummon, 1993, p. 126). The connections between home and environment play an important role in the meaning 'home' has to a person (Fox-O'Mahony, 2012, p. 236). The same as with privacy, it differs per person but in general women show a stronger place attachment than men and the attachment to 'home' increases with age. While the attachment to a city decreases with age and is the highest at the beginning of ones' adult life (Hidalgo & Hernandez, 2001, p. 280).



"Man op stoep" in the 'Jordaan in Amsterdam, Ed Lodewijks

2

Collectivity

*"Strong social networks and cohesion;
positively impacts on social behaviour"*
from Williams, 2005b, p.165

This chapter will describe and define collectivity, as already done with privacy in the first chapter. It is important to mention that there actually is no such thing as privacy and, or versus, collectivity. The level of privacy defines the amount of interaction with others and this interaction is what collectivity is about.

There is no real separation between privacy and collectivity, although there is between private and common spaces. How this works will be described further on, but for now, it is crucial to understand that a high level of privacy means that there is little contact with others and that a low level of privacy implies that there is a lot of interaction and contact with others. A low level of privacy is therefore not a bad thing, as isn't a high level of privacy, or at least not when this is the desired level of an individual.

To make a distinction in this research, when privacy and collectivity are used as each other's opposites; privacy is about the private space in the dwelling which belongs to one individual or a nuclear family and collectivity is about the shared space of the entire building. This shared space belongs to anyone who lives in the building.

2.1 What is collectivity?

There are a couple of different names for collectivity in the built environment; collective living, cohousing and community housing are a few examples. The leading characteristic of all these types is that the residents share services and/or space. Generally, collective living can be divided into two main groups (Silva & Coch, 2010, p. 6). The first consists of autonomous dwellings which share facilities that are an addition to the living spaces; all individual dwellings are self-sufficient and the common spaces provide extra functions. These residents have their own private dwelling and at the same time can experience the advantages of living in a community.

The second group is the more extreme variant; private space is replaced with common spaces. The private living unit is minimal and not self-sufficient. The common spaces outside this dwelling are a replacement of private services, some private space is sacrificed to realise common rooms and services.

Collective living is about more than just sharing space and functions. It refers to shared responsibility, actions and efforts in the daily lives of a whole group. It promotes solidarity and cohesiveness between the residents of the created community (Ali et al., 2012, p. 617).

2.2 Why do we need or want collectivity?

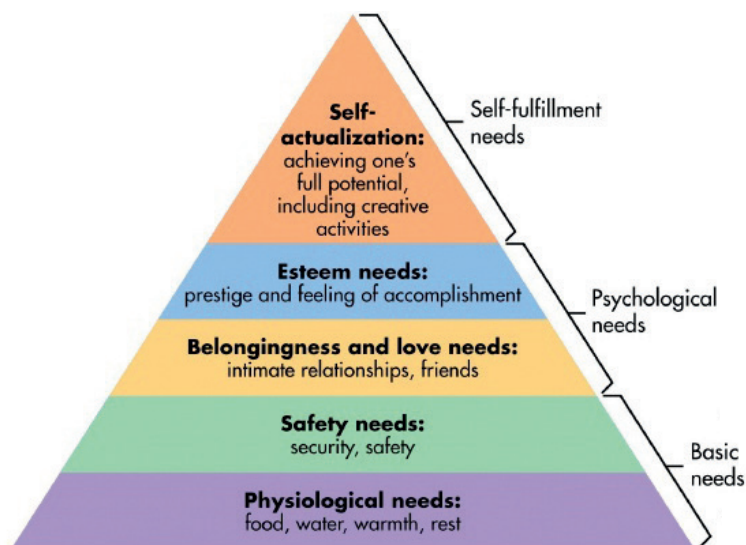
Besides our desire for privacy and the ability to retreat from interaction with others, we also have the longing for social contact with people. We need this interaction to evolve ourselves and we want people we can rely on. The so-called 'sociale vangnet' or 'social backup' is important in ones' life. It is the belief that there are always people to fall back upon in time of need. The pyramid of needs of Maslow (1970) also shows the desire for social interaction. Our basic need is the one of survival; the physiological need to keep ourselves alive. Followed by safety; the protection against anything that could harm our life. Whenever this is accomplished we feel the desire for social contacts; the urge to belong to a group, receive and give love and affection. The next need is the one of self-esteem; confidence and respect by and of others. When all of this is achieved we feel the need to evolve ourselves. Social interaction is an important need for the wellbeing of a human being and the establishing of communities can contribute to this need.

Nowadays the possibilities of interaction with others are endless. Social media and the mobile phone have a big share in this development. It gives us the ability to contact everyone from everywhere, whenever we want. This social contact increased significantly the last couple of years. Nevertheless, the actual face-to-face contact decreases and people only meet those who they 'accidently' run into.

Especially when growing older, people are seeking for more support and social contacts with others (Fromm, 2012, p. 372). Nevertheless, also younger people, living in one-person households in cohousing projects, point out that the opportunity of socialising was the most important reason to live there (Williams, 2003, p. 227). It is true that these social relationships emerge out of the living closely to each other, but are strengthened by functional relationships. These functional connections consist out of obtaining advice, help or sharing a common interest (Williams, 2005a, p. 198). The established social network in the community will be an important part of the social life of the residents and they will feel strengthened by the strong social connection they feel with their neighbours (Williams, 2005a, p. 195). They will have more trust in the other residents, experience support from their community members, create a safer and securer living environment and they will support an environmental friendlier way of life (Williams, 2003, p. 227).

Besides the improvement of the social situation of residents, collectivity in the living environment can also reduce the living costs for small houses and apartments (Williams, 2003, p. 227). Especially in combination with smaller households, as these are substantially less efficient than bigger households. Both in their energy consumption per person and their need for a proportionally bigger area to offer the same services (Silva & Coch, 2010, p. 3). It can be organised more efficiently when these spaces and services are placed outside the private dwelling and are used by the community as a whole. It is especially efficient with underutilised products and facilities. It is way more efficient, and cost reducing, to share products, spaces, facilities and services that are rarely used in one household with all the members in one residential building (Silva & Coch, 2010, p. 1; Williams, 2003, p. 212; 2005b, p. 163). Examples are guest rooms, work and hobby spaces but also washing machines, lawn mowers and drilling machines. Flexible shared space is even more efficient as it can be used by many people and is suitable for various activities.

There are different approaches towards and reasons to establish collective spaces and functions in a residential environment. However, collectivity only works if those people really want to live there



'Pyramid of needs' pyramid by Maslow

2.3 Benefits collectivity

because of this collective approach. If the main reason for living in collective housing is affordable rent and a reduce in living costs, this will negatively influence the community life. Those residents will experience the common spaces and functions and their obligations as a burden. Especially in a community with a socio-cultural approach, as solidarity amongst residents is most important. The community shares a lot of activities and social interaction, good communication and a friendlier environment are encouraged (Ali et al., 2012, p. 619).

There are also communities whose main focus is less on the social cohesion of the group. Their common approach is environmental or spatial oriented (Ali et al., 2012, p. 619). The creation of green strategies and living as environmentally friendly as possible is such an environmental approach. Communities in which the communal spaces are an addition to the self-sufficient dwellings, most of the times have a more spatial approach.

The desire for social interaction and the movement from private to communal is visible nowadays. From own experience and from many observations in literature there is a growing number of commercial spaces that offer people the possibility to use spaces to perform activities that were traditionally done in private (Christie, 2009, p. 1). A coffeehouse is probably the best example of this trend. People are doing work activities over there which were first performed in the home environment and called 'working at home'. They are searching for interaction with others and are lowering their level of privacy. Nevertheless, they also create their own privacy in these places. Arranging their stuff in such a way no one can sit close by and listening to music with their headphones on for example.

Quite some respondents (38.6 percent) of the survey were negative about sharing functions or spaces with others. Whenever talking to others about sharing more in the living environment, almost everyone's first reaction is somewhat negative or even dismissive. They only see the disadvantages and are unknown about the benefits. It is important to mention these benefits in order to understand where to focus on when designing. The negative thoughts about sharing are mainly caused by the ignorance about collectivity. When people are unaware of the advantages they will stay with their initial negative judgement.

The entire community will benefit from common events, activities and spaces. As well as every individual independently will experience benefits from the collective oriented living environment. Residents from existing communities experience social, economic, spatial and environmental benefits (Williams, 2005a, p. 219). The combination of the autonomy of the private dwellings and getting the advantages of collective living is the key reason to live in a community (Williams, 2005a, p. 200). This again shows that privacy, particularly within collective housing, is essential. Nevertheless, the social interaction among residents is the most important cause of all benefits. Activities that encourage the social interaction are eating meals with others and sharing daily expenses, goods, services and chores. Collaborative housing encourages residents to socialise, care and interact with each other (Fromm, 2012, p. 364). Those residents rely on each other for social contact and to help out in daily life (Fromm, 2012, p. 365). Whenever residents experience a social connection with other residents, their usage of common facilities and involvement in common activities increases (Williams, 2003, p. 219). It makes participation in communal activities and usage of common space more attractive. Also the willingness to support and help other residents will be higher (Williams, 2005a, pp. 219-220). In these communities, safety and security will increase, as they will notice when a stranger enters the building (Fromm, 2012, p. 365; Silva & Coch, 2010, p. 5; Williams, 2005a, p. 220). The overall well-being of residents in communities has improved, due to the increased opportunities for socialising, support, sharing chores, expertise with people with similar interests and at the same time the ability to live independently (Williams, 2005b, p. 165).

An inhabitant of a community said that the cycle of group cooking and cleaning duties produces a rhythm to her life which is less linear than she experienced when cooking every night. She states that she is energised by the weeks that she has to cook or clean for the entire group and that she appreciates the weeks when she receives meals prepared by the others (Jarvis, 2011, p. 570). This way of organising chores saves time. It means they only have to cook once every two weeks instead of spending an hour a day for preparing dinner.

Besides time efficient, a collective-oriented lifestyle is also a more affordable one (Williams, 2005b, p. 165). Sharing facilities, vehicles and goods decreases the daily expenses of the individuals. The overall resource consumption will be lower in projects with collective living. Especially space (31%) and electricity (57%) savings are substantial (Williams, 2005b, p. 165). Spaces and services that are traditionally for private use can be removed from the private dwelling and organised collectively (Silva & Coch, 2010, pp. 4-5). Collectivising part of the functions of a dwelling decreases the costs per private dwelling. The savings

2.4 Important definitions concerning collectivity

Proximity

The patterns of socialising between people are greatly influenced by proximity (Williams, 2003, p. 210). Immediate neighbours communicate more with each other than with those living further away. However, too much proximity will cause overcrowding. Which will cause people to withdraw from the community as it is experienced as invasive and beyond their control (Williams, 2005a, p. 198). This again shows how important privacy and the ability to regulate the level of interaction is. Another aspect which has to do with proximity, and has only recently influenced our level of privacy, is digital knowledge or proximity to others. We know much more about others and are able to contact them at anytime. Nowadays, 'being alone' does not necessarily mean that there is no social interaction, as this interaction can take place via social media or texting with smartphones.

Conviviality

The term conviviality is often mentioned when one is talking about establishing communities. It is an important aspect in a community, nevertheless, it is essential to understand that only proximity and social contact are sufficient to establish cooperation and conviviality between residents in a community (Jarvis, 2011, p. 573). Conviviality is an effect that emerges from other factors and cannot be added.

Unity, participation and community support

Both the unity of a community and the level of participation are important aspects in the group. The sense of feeling belonged to a place and its inhabitants is this unity. Feeling belonged is the personal relationship one has with a certain place and the feeling of being part of the group (Ali et al., 2012, p. 625). Whenever someone feels a member of a group, they will participate in the group activities, which intensifies the unity between the residents and establishes a stronger community that supports each other. Nowadays housing, care and work are separated from each other. If these will be connected again, people are more likely to help each other than to rely on official instances. Yet, this will only occur if there is social cohesion in the community.

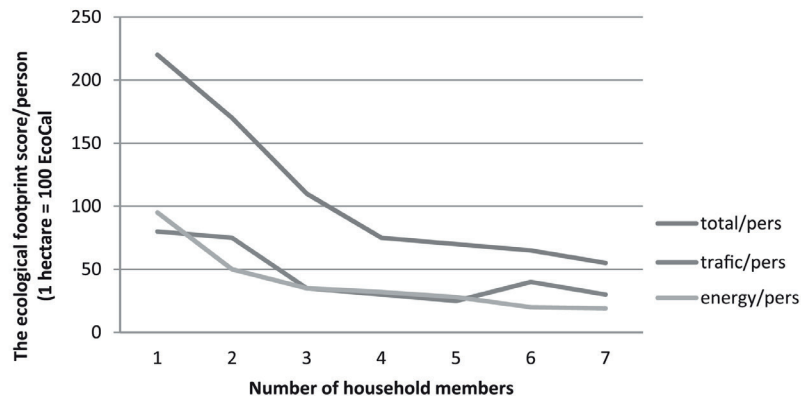
Safety

Also experiencing safety in the neighbourhood is a significant part of a community. When one trusts its neighbours and feels responsible for the environment the safety increases because of the 'eyes on the street' concept. Attachment to the place and taking pride are positive effective associations between individuals and their residential environment (Ali et al., 2012, p. 619) and will automatically make them defend the space. However, the side effect is that too much control causes a lack of privacy and eventually social pressure. This makes it an unsafe situation, yet caused by different factors.

can be used for extra collective functions or spaces and gives residents access to facilities that none of the individuals could afford on their own. The financial benefits for singles are even bigger than for families, as the amount of money spend on daily expenses is significantly higher for singles than families. (Kala, 2015, p. 57; Silva & Coch, 2010, p. 4). Next to the financial savings, the environment will also benefit from a collective organisation (Williams, 2005a, p. 222). Collective living is already a more sustainable form of housing, especially when more efficient systems are (collectively) used (Silva & Coch, 2010, pp. 4-5). High levels of social capital also encourage residents to behave pro-environmental (Williams, 2005b, p. 165).

Also, children experience benefits from collective living. Children in communities grow up like brothers and sisters, there is always someone to play with and parents can help each other with babysitting. Furthermore, children develop emotional relations with a group of adults, which is rare in other residential environments (Krantz & Palm Lindén, 1994, p. 6). The benefits for children have not been researched further, as the focus of the eventual design lies on one-person households. This group of singles also experiences more, and other, benefits than those being a member of a nuclear family. The benefits they experienced were mostly pragmatic and could be divided into two categories; social and financial. The majority of those interviewed by Williams (2003) identified the social benefits as the most important aspect of collective living. They also suggested that the ability to eat with others increased their use of communal facilities more than anything else (Williams, 2003, p. 219). Communal eating also made them cook and eat healthier dinners, especially those singles that also have a fulltime job.

Furthermore, the surrounding neighbourhood also benefits from a collective residential building. The exact benefits depend on the type of residents, the strength of the community and the neighbourhood itself. A few examples of situations that evoked advantages are; successful mixing residential incomes by introducing a different residential population, providing services and common spaces that are available to both the community and its neighbourhood. However, these effects should not be overestimated, as the primary focus of the residents is on their own community and less on the surrounding neighbourhood (Silva & Coch, 2010, pp. 4-5).



'The average ecological footprint of households' (Roy and Caird (2002) via Kala, 2015, p. 57)

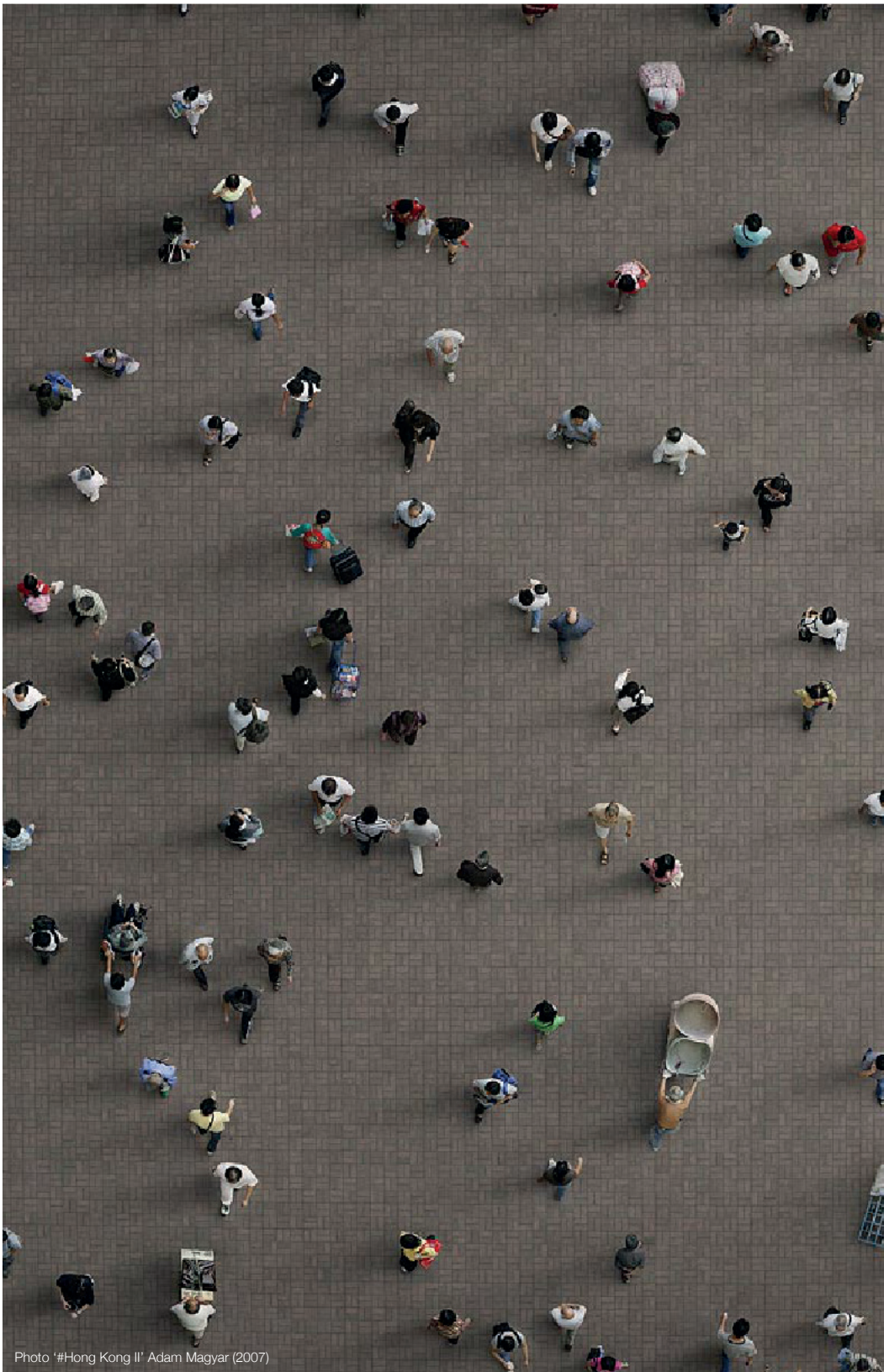


Photo '#Hong Kong II' Adam Magyar (2007)

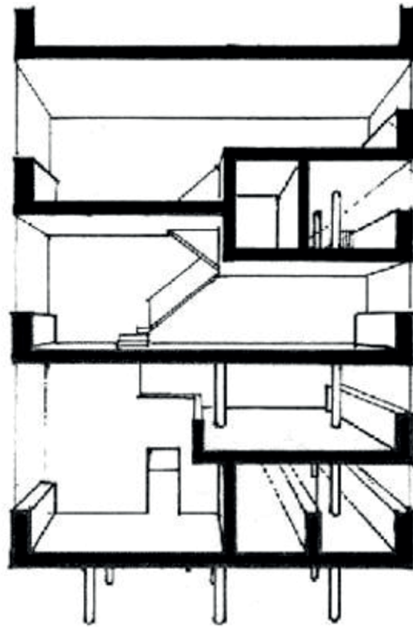
3

Perception and behaviour

“A certain degree of contacts is useful or enjoyable; but you do not want them in your hair. And they do not want you in theirs either.”
from Jacobs, 1961, p.56

In order to better understand how the environment can be used to influence the behaviour of and perception on collectivity and privacy, it is important to first investigate how people behave in certain spaces. The factors that influence the behaviour of people in common facilities are personal, physical, formal and informal social factors (Williams, 2003, p. 200).

The personal factors are mainly influenced by the people's backgrounds, such as their family, social class, culture, religion and education. Which have influenced their attitude and personality traits. The informal social factors are about the relationships between different people or in groups. The factors that influence the amount of social interaction are for instance the available time and financial resources. Besides the informal social factors, formal social factors also influence the behaviour. This mainly has to do with the organisation of activities and events, whereas the informal is about spontaneous meetings (Williams, 2005a, pp. 199-200). Whenever people are willing to blur the border between private and collective areas, the created collective living is more like a way of living than only a spatial concept (Silva & Coch, 2010, p. 8).



Section of the Narkomfin building in Moscow.



Collective garden of the Justus van Effencomplex

3.1 Sharing during history

Our perception on sharing changed during the years and even centuries. When looking at sharing during history one important aspect is present in all cases; people had a reason to live together and share functions. All these individuals belonged to a group with a common goal. Without the other members of the group they would be lost and unable to survive. This is the same in nature; animals live, feed and migrate together. Without their herd, they would not be able to survive. Long ago humans also lived this way and depended on each other and the group. When cities emerged they were relying on the protection the group offered. During the centuries this protection became less necessary, nevertheless, inhabitants needed others for services and food. Today we do not directly need the farmer in order to get food, we just go to the supermarket with its, seemingly, endless stock. Besides protection, a common goal can be a reason to form a group and perform an activity together. Monasteries are a good example of this 'group living'; the residents share their common belief and/or religion and for this reason live together.

During the last century, a couple of interesting projects have been realised. It is interesting to have a short look at those, as they learn us something about how our general perception of sharing changed during the years.

In the early twentieth century, Moscow was planning new dwellings (Per, Mozas, Ollero, & Group, 2013, p. 66). Due to massive migration from the country to the city, those people were forced to live in traditional one-family dwellings. These had to be shared with several other families, with whom they had to share kitchens and bathrooms. In order to house this enormous amount of people, they planned, and built, new housing types which focused on collective spaces and the sharing of household tasks. The private units were as small and basic as possible and facilities were organised collectively. This was the only financially viable solution at that time and the living environment should function as a social condenser. The Narkomfin building became the icon for defenders of Modern Architecture. Back in 1929, Moisei Ginzburg, the architect of the Narkomfin building, asked himself *'to what extent can we go on considering the housing model and which elements should be removed when doing so?'* (Per et al., 2013, p. 67). The private units were, in the most extreme variants, limited to a bedroom. Only a few months after completion of the first buildings, dramatic changes were going on in the parties' policy and traditional private dwellings were desired again. Only half of the planned buildings were built.

An example in the Netherlands is the 'Justus van Effencomplex' in Rotterdam, built in 1922. The dwellings are situated around a collective outdoor green space, which offers a calm ambience in the city. A lot of facilities, for example the laundries, were organised collectively. However, the residents only shared these facilities and their dwellings were really private. The complex became famous for its heightened gallery. The extra width offered a lot of possibilities, also for meeting ones' neighbours.

The functionalist manifesto 'acceptera', signed in 1931 by Gunnar Asplund, Wolter Gahn, Sven Markelius, Gregor Paulsson, Eskil Sundahl and Uno Åhrén, predicted a future with collective spaces and facilities in dwellings (Altés Arlandis, 2011, p. 30). They thought this transformation was necessary in order to adjust to the social changes. This indicates that, back then, they already found collectivity the solution for social issues.

3.2 What is the perception on sharing spaces and functions?

During the 60's and 70's, the cohousing concept was developed. It has its roots in feminist, utopian and communitarian movements, their common ideal was the motivation to live together (Williams, 2005a, p. 202). Cohousing is characterised by the clustering of private houses around a common space. In order to improve social relationships communities were built in Denmark and the Netherlands. In Sweden feminism was the main motivation; communities were built to reduce the housework for women and thereby improving the lives of children and their working parents. It was seen as the solution to avoid the exclusion of women from work (Williams, 2005a, p. 202). Later on, after 1990, the combination of privacy in the family sphere and a higher level of participation in the community were the main reasons for collective houses in Sweden (Palm Lindén, 1992, p. 11). In the 80's and 90's the Americans' need for community, social support, interaction and security in their neighbourhood started the cohousing concept in the United States (Williams, 2005a, p. 202). They already started focussing on the environmental aspect, which was one of the main focusses of the established communities in Australia and South-east Asia in the 90's.

All the described examples of collective living during history were a response to social needs and political visions. Nowadays, besides the wanted social cohesion, an environmental purpose is set (Silva & Coch, 2010, p. 1). Sharing is socially, environmentally and economically more sustainable than our current way of living. The environmental and economic advantages are the efficient benefits but are by no means as important and beneficial as those derived from the interaction and socialisation between individuals caused by the sharing of spaces and services (Altés Arlandis, 2011, p. 32). In order to design a collective-oriented building, it is crucial to better understand what the general perception on sharing and collectivity is.

The urge to share is less than before and the perception on sharing also changed. Although, the last years a minimalistic lifestyle: getting rid of unused stuff, tidying up and 'ontspullen', became a trend. Also, the 'tiny-house movement' focusses on living with fewer objects on a smaller amount of space. These two new approaches could easily be the starting point for a more collective oriented way of life.

At the moment there are people living collectively but are occupying houses designed for different purposes. Their current dwellings are not completely meeting their demands and for these people, who are willing to share, a collective dwelling type should be designed in order to meet their demands and adapt to their lifestyle.

This is not the lifestyle of only a few people. Particularly in the bigger cities, more and more people are willing to share things and live with more people. A new renting system, the 'friends concept' is recently launched in Amsterdam and is already pretty popular. Housing associations rent houses to more than one household, most of the times this are friends who want to live together for several reasons. They have their own bedroom, sometimes bathroom and have a shared living room and kitchen. They live in dwellings that were once built for families and therefore are not ideal for sharing. A newly built example is the 'Tower 1' by 'Paul de Ruiter Architecten' in Amsterdam North. In this tower, forty-eight dwellings are designed for this 'friends concept'. This are dwellings for two single households that have their own rental contract but share their kitchen, living- and bathroom. The private bedrooms are bigger than usual. Nevertheless, the dwelling is quite similar to a traditional dwelling. This supports the need for an adapted dwelling typology that focusses on collectivity and let residents experience the full advantage of collective living.

The perception of individuals on common facilities influences their level of participation in communal activities. Their perception is affected by a couple of factors (Williams, 2003, p. 216; 2005a, p. 222). The most important is their attitude towards socialising and the community. The desire to socialise with other residents is the main factor that influences their use of the common spaces. If people are rejecting beforehand it will negatively affect their use of these common facilities. The consequence is a lack of interaction with other residents. Through this, the community, essential to make collective living successful, will not be established.

People have different reasons to move to collective housing. These reasons can vary from the desire to interact with others to minimise the domestic resources. Solely moving to such housing because of financial needs is not going to work, as the social part is highly important in these environments. From already existing co-housing projects we can learn that residents value the interaction with their neighbours (Williams, 2005a, p. 222) and that they moved there because of those people, more than anything else (Fromm, 2012, p. 374).

Other reasons that motivated people to live in cohousing are ideological reasons concerning the pro-environmental approach, the sense of a community and the support between residents that comes along (Williams, 2003, p. 235). Also 'intentional communities' were created by groups of individuals who have chosen to live together for some common purpose (Jarvis, 2011, p. 564). They explicitly chose to share their living environment together.

Other benefits of a stable local community are; safety and security in the living environment, possibilities to meet others with similar interests, a more affordable lifestyle and the wish to reduce resource consumption. These benefits were also mentioned as important motivations (Williams, 2003, p. 235). Yet, the independence and individuality in a community were also appointed as a stimulus. This again confirms that the level of privacy is also found important by those choosing for a more collective living environment.

The size of the private unit is often reduced in collective living. Nevertheless, residents stated that

they *'feel as if we have a bigger home than we actually have'* (Vestbro, 2012, p. 7). Those residents made the conscious choice to reduce their private dwelling size, in order to be able to use common spaces and facilities and experience the social cohesion between the members of the community (Vestbro, 2012, p. 8). The balance between the privacy in their unit and the collectivity and social participation in the common spaces, is what triggered them to move to collaborative housing (Fromm, 2012, p. 364).

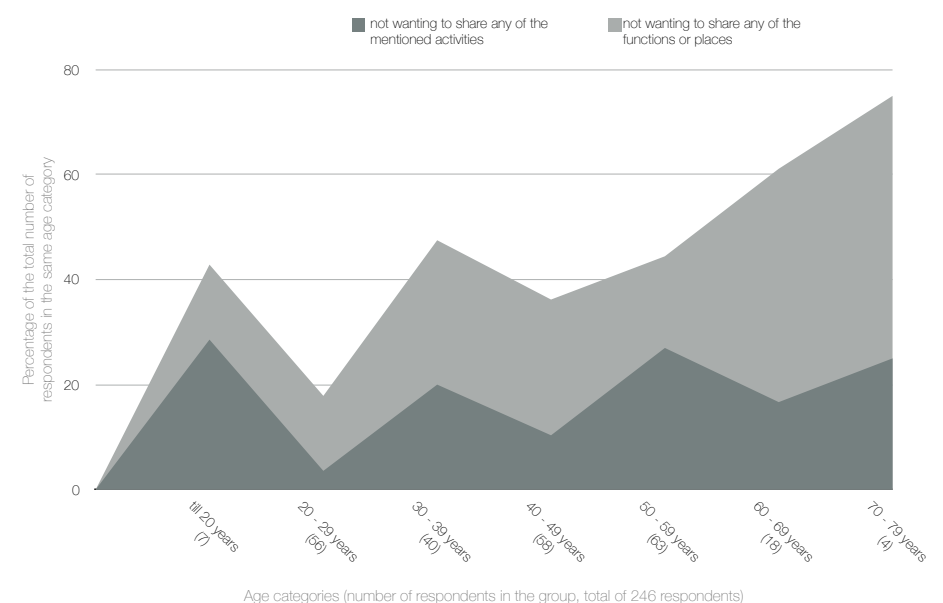
There are two essential conditions to make communal living work (Silva & Coch, 2010, pp. 4-5). First, every new resident should make the explicit choice to live in a collective house. If not, they will sooner or later, experience the sharing as an obligation. Second, the first residents should participate from the beginning, as this is the ultimate chance to get them involved. Above this, every new resident should be involved from the first encounter, to get them involved as well.

Of course there are also obstacles and negative associations to sharing. The somewhat negative outcomes of the own survey also imply that the respondents see or expect many obstacles. From the 246 respondents, ninety-five did not want to share any room or function mentioned (see appendix 4, page 200) and thirty-nine found none of the activities shareable (see appendix 4, page 201). If we look at the relation with experience with sharing and wanting to share again, the answers show that the respondents with experience were always more willing to share again (see appendix 5.5, page 209). Besides this, more than half of the respondents (126) had no experience with sharing a function or room in the dwelling (see appendix 4, page 200). They are probably unknown about sharing and its benefits and only see disadvantages.

One of the explanations can be found in the stereotype of sharing during the sixties and seventies and that only hippies and alternative people are living in these types of housing (Jarvis, 2011, p. 574). Another is the sense of belonging, sharing things lowers the amount of property one has. Property is often related with status and is found important nowadays. People are reluctant to share dwelling activities or functions for this reason. Their house is an important symbol of their property, the bigger a house, the higher the status. When one shares services with others it is not really their property. Some may have a dismissive attitude towards this collective sharing.

Individuals are not using all their stuff all the time, but they want the opportunity to use it whenever they want to. When sharing objects, functions or services there is always the possibility that another resident is already using it. It can also occur that some services are more often used during specific hours or days, and are unused at other times. The usage should be regulated, for example by a system or scheme, so others can see when it is available for them to use. The younger generations are less focused on property and more on experiences. Which makes collective housing more attractive to them. The survey supports this theory; the older the respondents the higher the percentage of 'negative answers' (I do not want to share any of the activities or functions and places) were given (see figure on the next page).

Another obstacle is the idea that, if everything belongs to everyone, nothing actually belongs to anyone (Chermayeff & Alexander, 1965, p. 19 & 66). The quality of the common spaces and objects in these spaces will decrease when no one feels any responsibility towards it.



The older the respondents the higher the percentage of 'negatives answers'. Graph of the results of the own survey.

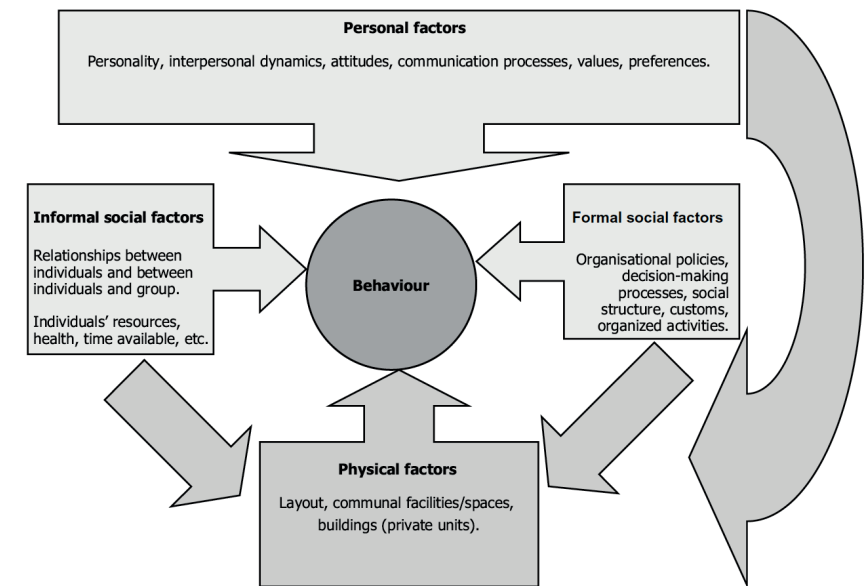
3.3 How do individuals behave in collective spaces?

As already mentioned the behaviour of people in common facilities is influenced by personal, physical, formal and informal social factors (Williams, 2003, p. 200). All these factors affect the behaviour of the residents. Their attitude towards socialising occurs to be very important (Williams, 2005a, p. 221). Although this attitude can easily change when one experiences the benefits of collective living; the social interaction with others for example. Formal and informal social factors and the physical environment can positively influence the attitude of the residents. Nevertheless, their personality cannot easily be modified. During the rest of the chapter, we will focus on individuals that are willing to blur the line between private and common spaces.

The behaviour of residents is greatly affected by the other residents. A strong social cohesion in the community will effectively generate a certain peer pressure to adopt the behaviour of the entire group (Williams, 2005b, p. 166). The peer group pressure will cause all residents to behave like the set norm and this will avoid, or at least minimise, conflicts about maintenance, involvement in activities and the management of the communal spaces. If people foresee frequent encounters with the other residents, they are more eager to collaborate and participate in communal activities (Hoogland, 2000, p. 9). They are willing to invest time and energy in the community to establish a common future. Whenever the common spaces are controlled by members of the community, others are more eager to participate in the organised activities (Williams, 2003, p. 214). The majority of social interactions take place in the communal or semi-private places (Williams, 2005a, p. 208). Formal social interactions, during the organised activities, usually occur in the indoor or outdoor common spaces. Whereas, the informal spontaneous meetings often take place in the semi-private spaces, which are generally closer to the private dwellings.

As already mentioned, people adapt to the behaviour of others. In combination with the feeling of responsibility, or the lack of, a rather astonishing thing occurs; a persons' action to intervene in something is mainly decided by the number of bystanders. This phenomenon is clearly described by Lofland (1998, p. 37): *'... even those who are fully aware that they are witnessing an emergency and who are able to help may not do so if other bystanders are present, a rather remarkable and counterintuitive finding, which the researchers explained as follows: not feeling the responsibility to intervene as there are many others who could also do something. Observing others and concluding that not interacting is what everyone does. The presence of other people dilutes the responsibility felt by any single bystander, making him feel that it is less necessary for himself to act.'* This means that you are less likely to get help when there are more people watching. This is, of course, another approach of responsibility than in collective housing. However, it does show that the feeling of responsibility decreases when this responsibility is shared with more people.

Although there are many social encounters in collective spaces, each individual wants to ensure enough privacy in these areas as well. The behave in certain ways and give signals that indicate that no interaction is wanted. A few examples are given by Lofland (1998, pp. 34-35). The simplest action is to turn away from your neighbour; this makes interaction impossible or at least highly inconvenient and gives the indication that one is not open to having a conversation. Avoiding eye-contact is also a way to avoid interaction; *'I know you are present and you know I am present but we are, of course, each invisible to the other.'* A more extreme behaviour is acting as if someone is not present at all,



'The interaction between physical, personal and social factors and the impact on behaviour.'
Adapted from Ciltheroe et al. (1998) by Williams (2003, p. 200).

which is something that most often happens at toilets. Accepting someone's personal space both says 'I am not intruding in your personal space' and 'do not intrude in mine either'.

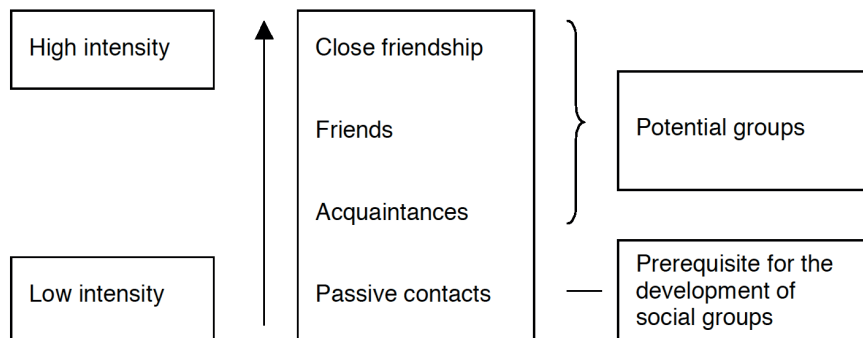
Besides the fact that a strong community feeling positively influences the behaviour of the members of this community and that it will increase the level of participation in communal activities, the physical environment also has a significant impact on the behaviour. The cues of how to use or behave in a certain space are provided by the physical environment (Christie, 2009, p. 7). If an individual understands the cues of a specific place, he or she is able to behave as expected. Whenever the cues given by the surroundings are not clear and readable to everyone, they are not able to behave as expected and will perform social deviating and unwanted acting. How the physical environment can be used to influence the behaviour of individuals will be described in chapter four; on encouraging social interaction by the surroundings, and chapter five; on regulating the level of privacy and social interaction by architectural elements.

More and more activities that were once performed in private spaces now take place in common, or even public, places (Christie, 2009, p. 1). As already said before, this is especially visible in coffeehouses. Different studies focused on the behaviour of individuals in such spaces. Still, people tend to claim territoriality over a place, even for a short amount of time. They seat themselves in such a way that they can oversee as much of the surroundings as possible (Christie, 2009, p. 6). They claim a certain amount of space to avoid others sitting too close or starting a conversation. They choose to work in that specific common place, yet they still want a precise level of privacy and feel



the urge to create their own space within (Christie, 2009, p. 7). This is what happens in all collective rooms. When various individuals are independently using the same space, they claim a particular spot and often they are somewhat evenly spread across the room.

When striving for a high level of collectivity in residential buildings, it is essential to realise that a collection of people does not make a 'real' group. In order to form a group, they need 'meaningful places'; where there is something to do, which makes them want to participate. As people need to have reasons to meet others (Alexander 1977, p. 696-700). Whenever there is a common interest or motivation, they found this reason and will form a group. This is the reason that 'living with like-minded others' works well for communities. If all these individuals are somewhat thinking and behaving the same and have a similar opinion, it increases the possibility to become a cohesive group of people. Whenever people are sharing interests it is more likely that they become friends (Williams, 2003, p. 240). Since 'birds of a feather flock together'. These friendships are a solid basis for a community. Families (Williams, 2005a, p. 212) and working one-person households (Williams, 2003, p. 224) tend to use the common facilities more often. The last group does so because of the practical benefits derived from sharing. The families are often bounded by their children, which are playing together and encourages their parents to interact with each other as well. In a community, various groups will be formed by individuals having something in common. As a group of people having nothing in common will soon split up as there is no common interest or activity on a regular basis that keeps them together and offers them possibilities to socialise. When people live together they already share more than usual. There are a lot of occasions and situations where they can meet. Every person is different and this gives the possibility to create many different groups within the community. Those groups overlap and residents can be a member of more than one group. This strong social network and cohesion between residents in the community will positively influence their social behaviour (Williams, 2005b, p. 165) and attitude towards interacting and sharing (Williams, 2005a, p. 201).



Even though 'living with like-minded others' is proved to encourage social cohesion within a community, some diversity in residents of a community also encouraged greater social interaction (Williams, 2005a, p. 212), as long as the attitude of the residents is pro community. With a diverse group of individuals, the number of various activities and relationships will increase. A greater diversity of residents ensures a more extensive amount of resources they have to offer each other. For a larger number of problems and chores, there are people able to solve it. Non-working residents have more time to organise common activities for the community and singles are able to participate in the family life of the families. One-person households participate more in the community as this is a meaningful part of their social life (Williams, 2005b, p. 167). While older persons both enjoy being together with each other as well as enjoying the presence of families with children (Krantz & Palm Lindén, 1994, p. 6).

The social cohesion of this diverse group of individuals is a noteworthy characteristic of collective housing. It is able to bring people together from completely different households, backgrounds, ages and personalities (Silva & Coch, 2010, p. 6).

'Passive contacts as a precondition for the development of groups' (Gehl, 1987, p.17)

3.4 How do individuals behave in private spaces?

In private spaces, one feels that he or she can do whatever they want, without being watched and judged by others. They feel safe and secure in these rooms and are able to be who they really are. The essence of private spaces is that the level of interaction with others can be controlled. People want to make their house a place of their own. In order to experience a house as their home and let it reflect their identity, they have to add their personal touch to the surrounding. They like to show that they are different than their neighbours (Hoogland, 2000, p. 20). However, privacy is also possible in common spaces. With the use of certain objects and architectural elements; doors, wall openings and alcoves, the level of interaction with others can be regulated.

Yet, people behave differently in private rooms than in common rooms. It mostly has to do with the chance that others may see or hear them and the possibility that others enter the same room unexpectedly. If a shared room can be locked, this avoids the interaction with others and thus offers a higher level of privacy and will influence the behaviour of the user. The smaller the space, the more controllable the level of privacy is (Chermayeff & Alexander, 1965, pp. 135-136) and the more people will feel comfortable to perform private activities in there.

It is essential to realise that the desired level of privacy, behaviour and perception varies per person and activity and that the physical environment should meet the desires of all these individuals with different wishes. A certain level of privacy can be experienced as pleasant for one activity and causes social isolation for another activity. As well as a particular amount of interaction is wanted by one person, while another wants to avoid all interaction in the exact same situation. This also points out that a standard dwelling will not be suitable for everyone. It indicates that the possibility to choose between having interaction and avoiding this interaction should always be available.

When taking the average of a group of people, none of the individuals belonging to this group will resemble this exact average. So what is the purpose of taking the average person, which does not exist at all, as the person we are designing for? It is not so much about 'average people', every individual has some basic needs, which are roughly the same for everyone. On top of these general needs, every person is different and wants different additions. This can be achieved by designing a basis, which every individual can adapt to its own specific needs. This will eventually result in similar private units that are all unique and fit perfectly with the behaviour of its inhabitant.





'Places to stay', easily connected to 'places to go'

4

Design decisions (physical surrounding) which encourage social interaction

*“An architects first concern should be to create objects that
offer opportunities to meet, see and hear other people.”
from Gehl, 1980, p.13*

As the behaviour of people is influenced by personal, physical, formal and informal social factors (Williams, 2005a, p. 200), the social interaction between people can be influenced by the physical environment they are in. Lofland (1998, p. 186) states the same: *'We do not normally think of space or the built environment as a medium of communication, space not only structures how communication will occur and who will communicate, it also has consequences for the content of that communication.'* The influencing of the content has to do with the desired level of privacy; a very personal story is not likely to be told in a common space with others who could hear the conversation.

Gehl (2011, p. 13) wrote: *'The presence of other people, activities, events, inspiration and stimulation comprise one of the most important qualities of public spaces altogether. Therefore, an architect's first concern should be to create objects that offer opportunities to meet, see and hear other people.'*

In order to encourage social interaction in, and by, the living environment, certain decisions need to be made during the design process. As the design can influence the level of interaction positively or negatively. The arrangement of the physical objects in the environment influences what people do in that space. It does not determine exactly how they are going to interact with each other, but it does amplify or constrain the type of interactional possibilities (Lofland, 1998, p. 181).

The importance of the design influencing the social interactions between community members should not be overestimated as the other factors, personal, formal and informal, are also crucial (Williams, 2003, p. 199). Not to forget other circumstances that modify an individual's behaviour. Even if all designed architectural elements encourage social interaction and encounters, whenever people are not wanting to interact, architecture is not able to solve the problem. Although, the designed surroundings can worsen one's negative attitude towards the community (Williams, 2005a, p. 222). Still, design can, and should, as much as possible be used to encourage the interactions in communities. The environment can encourage meetings and at the same time provides guidance in how to use specific places (Christie, 2009, p. 7).

4.1 Choice

The most important aspect of stimulating interaction between residents is to offer them both the possibility to interact and to avoid this interaction. They should always have the choice between common and private space. If they are forced into the collective areas, they will develop negative feelings towards this common space. The intensity of collective areas can be increased, but should stop before people experience a lack of privacy, as the participation level will drop when this occurs (Williams, 2003, p. 210). Just as Chermayeff and Alexander (1965, p. 215) already pointed out; *'Provision for voluntary communality rather than inescapable togetherness is essential'*.

4.2 Proximity and informal, spontaneous meetings

The number of encounters between residents is greatly influenced by proximity (Williams, 2005a, p. 197). Residents living further away in communities tend to be more isolated than those living in the middle. Immediate neighbours communicate more with each other than with those living further away. Increasing the proximity between individuals will raise the number of contacts, as they will meet each other more often. Nevertheless, there should be convenient spaces to meet, especially where spontaneous encounters take place. These places should be located amidst the various private units and in-between the private units and the common spaces (Fromm, 2012, p. 370). Those transition zones are crucial for meeting and socialising with neighbours (Palm Lindén, 1992, p. 3). As those zones are the borders between the different territories and this are the places where everyone meets, as everybody uses these zones to move to different spaces. If the areas directly in front of the private units are used for semi-private activities, neighbours passing by will have a little talk and cohesion is increasing. The creation of semi-private spaces offers many opportunities for spontaneous meetings with neighbours (Hoogland, 2000, p. 28). However, these zones can also cause conflicts and misunderstandings as they lack a universal readability. Whenever it is not clear to whom or which group a certain zone belongs, people might behave in an inappropriate manner and interfere with the privacy of others.

Also, the functional spaces further away from the private units, mailboxes and parking spaces for bikes, for example, should be designed in attractive ways, so that people also meet each other there and walk through the community together (Hoogland, 2000, p. 28). The spontaneous and accidental meetings are highly influential on the level of community feeling (Hoogland, 2000, p. 19). A living environment with enough meeting spaces will establish a stronger cohesion between residents. Since a multitude of small meetings will possibly trigger to organise bigger ones (Hoogland, 2000, p. 26). *'The built environment – space – can encourage or discourage people from 'hanging about' and thus encourage or discourage interaction of more than fleeting sort.'* (Lofland, 1998, p. 182).

4.3 Zoning and soft edges

The spontaneous meetings places described above are partly facilitated by a proper zoning in a residential building. Zoning is the gradual transition from the private units to the public space (Williams, 2005b, p. 163). The transition zones between the places with various levels of privacy are facilitating the majority of the social interactions and develop social cohesion. Those buffer zones ensure a good transition between private and public space and functions as a protective



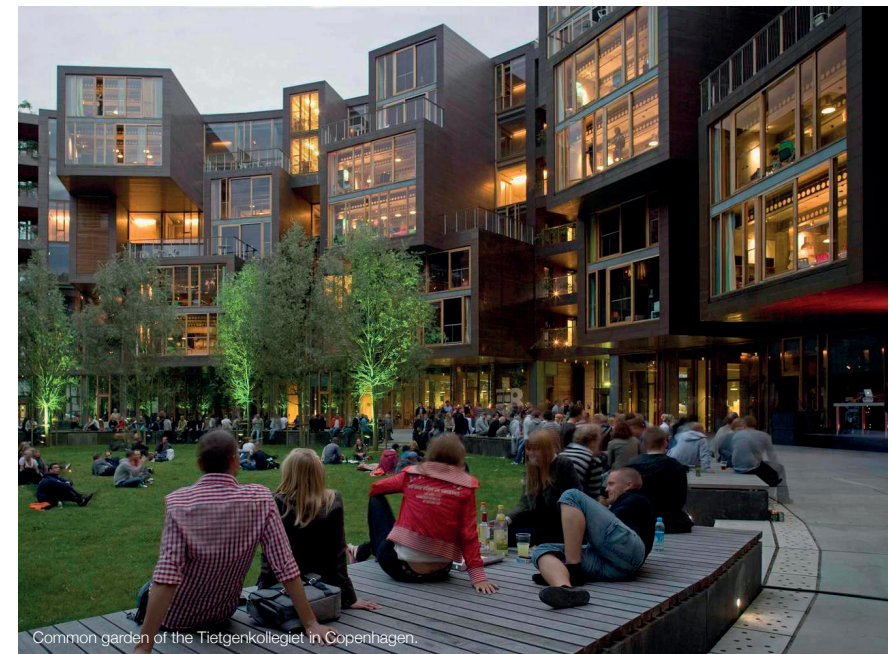
barrier against unwanted visitors (Williams, 2003, p. 97). At the same time, it is a neutral area which facilitates and encourages neighbours to socialise (Hoogland, 2000, p. 19). The densities can be higher and the proximity between residents can be increased, as long as buffer zones in between private and common areas are provided. Zoning ensures that the residents of the community are not overexposed to social interaction (Williams, 2003, p. 97) and offers them the ability to regulate the desired level of privacy. This is important as overexposure will eventually lead to the complete withdrawal of the social community life.

The different zones that can be found are ranging from private, via semi-private, collective and semi-collective to public. When leaving the private unit and the residential building one should pass all these zones in this order. The private dwelling is the first zone and the area directly attached to the unit, preferably close to the entrance, is the semi-private zone. This zone can be (a part of) a corridor or outdoor space and can be used for a range of activities. Residents can sit in this place and have a chat with neighbours passing by and children can play with each other. It is experienced as a safe place as only acquaintances will enter this zone (Vestbro, 2012, p. 7). It provides a gentle transition from the private to the collective. The collective zone can be utilised by all the residents of the building, yet this can differ per room and activity. Whenever a specific room is used by a specific group this can be seen as the private space of that group, although this can differ from time to time. The last zone that is still part of the community is the semi-collective zone. It is used by the residents of the community; however, outsiders are also able to use this space. The transition to the public space is easily made.

Chermayeff and Alexander (1965, pp. 121-122) divided 'from private to collective to public and everything in-between' in six, somewhat different, domains; urban-public, urban-semi-public, group-public, group-private, family-private and individual-private. We will only shortly discuss the last four,

4.5 Heart of the community

In collective housing, many facilities are shared by the residents. An important space for the encouraging of interaction, besides the sharing of a specific service, is a common place where they can come together. This can be both indoor and outdoor. This main common space can be seen as the heart of the residential community (Fromm, 2012, p. 385). It should be a place where every individual from the community comes to once in a while and should function as the binding factor of the community. Especially the activity 'having dinner together', is a frequently mentioned shared activity. Eating together provokes social interaction and cohesion and at the same time saves time as one has to cook less often (Williams, 2003, pp. 216, 219). Organising these common dinners in the heart of the community will increase the interaction between the residents even more. Especially centrally placed squares or streets are effective. These spaces need to be of good quality and flexible in their use, as this maximises the potential use and thereby the number of encounters (Williams, 2005a, pp. 199, 216). The flexibility of such places make them suitable for many diverse activities, thus the space will reflect the different interests of all individuals and will generate meetings between those various groups. If these spaces are overlooked from the private dwellings this stimulates the sense of community, the feeling of security (Fromm, 2012, p. 369) and the involvement of residents in communal activities (Williams, 2003, p. 98).



4.6 Outdoor communal space

The heart of the community can (partly) be outdoor space. Outdoor communal space is an essential area for a community and strengthens the feeling of belonging to that community. When the semi-private spaces, of the dwellings situated on the same level as the outdoor collective area, will blend into each other it will increase the feeling of attachment to this area. This is especially the case when there are children involved. Children who notice other children playing are motivated to join them, while the parents are still able to keep an eye on them (Hoogland, 2000, p. 28). This is, of course, also the case for adults, since they will be more likely to join others who are eating or drinking together in the shared garden. Private units located on higher floors or further away should have a maximum visibility on the outdoor garden as this will provoke the same behaviour and results. Besides these zones, the biggest part of the outdoor space should be semi-public or collective, as the other residents should also be able to use the garden. When the communal outside is, partly, a shared allotment garden the interaction between residents will also increase (Hoogland, 2000, pp. 19-20). As they will work together in this garden, for example; collecting vegetables for the community dinner.

4.7 Good accessibility common spaces

An easy access to common rooms is necessary to encourage the use of these rooms (Williams, 2003, p. 97). The entrance should be, both functionally and psychologically, easy to pass through (Hoogland, 2000, p. 25). Too many doors, corridors or changes in height are creating separated rooms and will make it more troublesome to enter. The entrances should be, besides easy to access, also easy to find (Williams, 2003, p. 216).

When the common spaces are relatively close to the entrances of one's private units it supports the feeling of attachment and makes it easier to use the collective areas (Hoogland, 2000, p. 28). This is especially the case when the zones next to the entrance are equipped as resting areas (Hoogland, 2000, p. 26).

The common facilities, or the entrances to, should be placed on common pathways which are regularly used by the residents (Vestbro, 2012, p. 1; Williams, 2003, p. 210; 2005a, p. 199). These common pathways should be the walkways residents use to reach different activities. People going outside, to the laundry room or the garden, should meet each other on their way (Hoogland, 2000, pp. 19-20; Williams, 2005a, p. 198). The other way around it works the same; the walkways of people entering or leaving the community should be positioned in such a way that they pass the common areas when leaving or coming home. When the common spaces are visible from their walkways, people tend to enter the rooms more often and therefore interaction will be encouraged (Williams, 2003, p. 97).

4.8 Common pathways

Research of collective living environments always shows that car parking should be situated outside the community (Fromm, 2012, p. 369; Hoogland, 2000, pp. 19-20; Williams, 2005a, p. 198; 2005b, p. 163). This can be easily organised in rural areas but is an almost impossible task in crowded city centres. The essence of this principle is the meeting of others on the way home and it does not necessarily mean that the car should be parked further away. Having to walk past communal areas before reaching your private dwelling creates the same effect. It prevents people to walk straight from their car to their private unit without meeting anyone. A quote from someone living in cohousing in Denmark shows how important the interaction on the way is: *'sometimes it takes me an hour to get from my car to my home'*. Which again shows the importance of 'spontaneous meetings'.

4.9 Limiting the number of floors

One is more likely to visit a place that is on the same floor than one three stories lower. It can be seen too much of a burden to walk from the fourth to the ground floor to see if there is someone to have a coffee with. Particularly the spontaneous and accidental short meetings will disappear (Williams, 2005a, p. 199). Limiting the number of floors to avoid losing the connection between the shared spaces and private units. Too many floors will also cause a decline in the contact with the ground floor, which causes this ground floor to become a transit zone instead of a room to stay in (Hoogland, 2000, pp. 19-20).



4.10 Good visibility on common spaces

Whenever common spaces are easily visible and legible, the interaction and cohesion between residents will increase (Vestbro, 2012, p. 1; Williams, 2003, pp. 98, 210; 2005a, pp. 216, 220; 2005b, p. 163). When residents can see and hear others using the common facilities, they can decide whether they want, and it will encourage them, to interact and spend time with those in the communal areas (Williams, 2005a, p. 198). Centrally situating these spaces and providing them with glazed walls will stimulate the spontaneous use of the facility as well as the meetings with other residents (Vestbro, 2012, p. 1; Williams, 2003, pp. 97-98). The using of glazed walls depends on the activity that is performed in that specific room, as common spaces should also provide some level of privacy. The visual privacy is low with large windows, so the benefits of applying glass should be properly weighted against the desire for privacy.

Next to the visibility from the transition zones on common rooms, the visibility from private units on the collective areas is important as well (Williams, 2003, p. 210). Residents in their private unit who see others using a common room are more often triggered to go to this room as well.

The eyes on the common areas also contribute to the feeling and sense of supervision, safety and security (Fromm, 2012, p. 369; Williams, 2005a, p. 199). The surveillance of these areas happens according to the 'eyes on the street' concept. When people feel observed they are less likely to perform unwanted activities. This is not only about demolishing things, but also about the communal way of life, which could be more environmentally friendly for example. People who are aware that they could be seen by others will for instance properly separate their waste.



4.11 Dwellings oriented towards each other

Dwellings which are orientated towards each other encourage the social cohesion between the individuals living in these houses as well (Hoogland, 2000, pp. 19-20). In combination with shared outdoor space, it would be ideal if the outdoor space is (partly) surrounded by dwellings. The orientation of a separate dwelling and a complete residential building is induced by the position of the various entrances and the used walkways from the outside to the inside of the building.

4.12 Building seems a unity

The residential building and the direct surrounding should be recognised as a unity. This can be done by homogeneous building material (Hoogland, 2000, pp. 19-20, 28) and a certain repetition in the design. The feeling of belonging to the group is strengthened when the entire building seems a unity. Nevertheless, every individual wants to be able to show its own identity, so every private unit should in some way reflect the personality of the resident and demonstrate that he or she is different than their neighbour.

4.13 Higher densities; a positive or negative influence?

The appropriate density that is required to establish a well-functioning community is difficult to define. Literature studies and experiences from realised projects show that cohousing groups that are too small are not able to take the burden of demands from the individuals and cannot provide enough resources (Williams, 2003, p. 100). Whenever a group of individuals has a positive attitude towards socialising with each other it enables higher densities to be achieved while avoiding people to feel overcrowded and withdrawing from the community (Williams, 2005a, p. 222). Nevertheless, groups that become too big tend to become anonymous and the number of spontaneous encounters between the residents will decrease (Williams, 2003, p. 100). The number of residents should be kept manageable to prevent this anonymity, as the exceeding of a certain amount of residents causes them to fail to remember who is a member of the community and who is not (Hoogland, 2000, pp. 19-20). If the residents are unknown to each other, it will reduce the social interaction between them. The residents who are part of a smaller community tend to participate more in communal activities and use the common facilities. Yet, the residents of communities that are too small, often experience a lack of privacy, as they feel observed all the time (Williams, 2005a, p. 199), which will eventually cause the exact same effect; a drop in participation level and withdrawal from the community and its social interaction.

To increase the social interaction in larger communities, smaller groups within have to be created. The subdivision of this large group establishes an increase in social interaction within these smaller clusters instead of focussing on the entire group (Williams, 2003, p. 100; 2005a, p. 199).

4.14 Clustering in a community

As mentioned above, clustering in communities can reduce the negative effects of larger amounts of people. In the larger communities, the clustering can already be started at the entrance of the building. If the residents are divided into subgroups immediately this increases the clarity of who belongs to the group and who does not (Hoogland, 2000, pp. 19-20). Clustering can also be done by forming smaller groups around a central facility, making several groups use another common space together and let the entire community use the less regularly used facilities or services (Williams, 2003, p. 210).

Chermayeff and Alexander (1965, p. 137) already questioned how many dwellings a community should, or could, contain. They focus on the advantages that can be retrieved from this collective action and let the number depend on the number of households that can share the facility without bothering each other. Their approach can still be used, nonetheless, their reasoning is a bit old-fashioned. They state that a washing machine can be used by several households, whereas a cooking stove is not suitable for sharing. As they argue that it is not even possible for two households to share because they would always want to use it at the same time. The possibility of one of the households cooking and serving dinner for the two households is not even mentioned, which points out that sharing is possible and could save a lot of time.

4.15 Other factors that encourage social interaction between residents

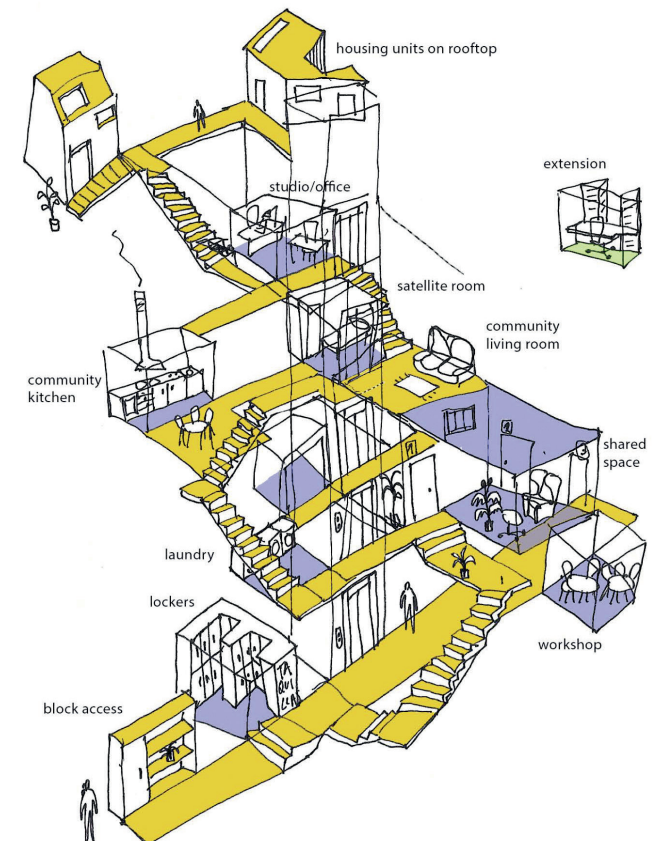
Aside from architecture promoting the use of the communal spaces, there are also other factors that stimulate the use. Some will shortly be pointed out here. The common rooms should be pleasant and attractive environments and organised activities should be suitable for and appeal to the residents (Williams, 2003, p. 218). They have to offer the expected quality since people will not use the rooms if these do not meet their requirements. Also the maintenance of the common rooms, facilities and services should be of good quality and should be, convenient to the users, managed.

4.16 Activities (formal social factors)

The organisation of activities for or by the residents is influential for the social cohesion of the group. The diversity in both facilities and activities will reflect the interests of the residents and creates different subgroups in the group. All residents will find at least one group they share an interest or activity with. More frequently organised activities are more efficient as the participants become a group by meeting on a regular basis (Williams, 2003, p. 216; 2005a, pp. 201, 208-211). The cohesion of this group will increase and they will also more often meet for other activities. There should be a place where all members of the community could meet and at the same time, the residential area should provide rooms where smaller groups can meet and experience some level of privacy as a group. A club of individuals doing yoga or watching a film together, do not want to be interrupted by other residents. They desire a certain level of privacy, not as separate individuals, but as a specific group of people. It should be noted that every individual has its own interests and that the community should offer space for all these different interests to take place.

4.17 Conclusion

The literature study shows that a collective-oriented residential building needs to include certain physical elements and the building should be designed with specific components in mind, in order to create a strong community feeling among its residents. First of all, residents should always have the choice between private or collective environments; they should not be forced into a common area. The building should accommodate spaces for spontaneous encounters between residents. Especially in the 'in-between spaces' of the different zones, ranging from private to public. These 'in-between spaces' establish the gradual transition from private to public and are very important for the social interaction. The minimising of the private units, with good accessibility to collective areas via common pathways and visibility on the common spaces, outdoor and indoor, will increase the participation in communal activities and the usage of common spaces and facilities. Orienting the dwellings toward each other, while at the same time the building seems a unity. The number of floors should be limited to increase the proximity and higher densities can only be reached if clustering in the community is organised. Last but not least, every community should have a 'heart'. There should be a place where all members of the community can come together, meet and interact. All these elements will encourage social interaction and thereby strengthen the community feeling.



Concept drawing of collective living for 'Orba neighbourhood' by Improvistos.











A chair that offers privacy in the 'Rogers Stirk Harbour's London cancer treatment centre'.

5

Bounding or connecting architectural elements

“An architects first concern should be to create objects that offer opportunities to meet, see and hear other people.”

from Gehl, 1980, p.13

The guidelines that can be derived from the previous chapter tell something on the scale of the entire residential building and its surroundings. The wanted privacy or social interaction in common spaces can be realised by architectural elements. These elements can both be  bounding or  connecting and  ensuring privacy or  stimulating interaction. The kind of privacy they offer can be  physical,  olfactory,  auditory and  visual.

Both individuals and groups have a certain desired level of privacy in the common spaces, also when there are others present in the same room. This kind of privacy can be created with the addition of boundary elements. Three examples are a door, a wall and a curtain. A wall can divide a room into smaller spaces, a door can be shut to completely disconnect from the adjacent spaces and people. Whereas a curtain could fulfil, in some way, the functions of both the wall and the door. However, a curtain only provides visual privacy and does not offer acoustical privacy, which the wall and door do. Next to elements that function as bounding, there are also elements that could function as connecting ones. An opening in a wall can connect two spaces and an open door creates a welcoming atmosphere. These examples also show that the same architectural element can be both bounding or connecting in different settings. It can offer privacy, and in another circumstance be connecting and encouraging interaction among residents.

The interesting question to ask, for every architectural element; *How can those elements be used to influence the behaviour of its residents?* Users need to be able to read the 'behavioural rules' of a certain room when entering. It should be clear what behaviour is expected, in order to act as desired. Architectural design is needed to make a building, with all its different rooms and activities, readable and ensure the desired level of privacy. By investigating various architectural elements (the template is added in appendix 1), whether they are bounding or connecting and what kind of privacy they offer, these elements can eventually be implemented in the design on the right spots and evoke the wanted effects.

To answer these questions, the research of Van Haaren (2014) is used as starting point. He describes the different architectural elements in order to get a better understanding of those elements, the privacy they realise and the behaviour they evoke. He asks himself the same questions as I do. For this reason, his research, on the various elements, are used as the basis, yet critically discussed and transferred to own observations and conclusions. Still, these outcomes are hypothesis and should be tested 1:1 in buildings, to be proved.



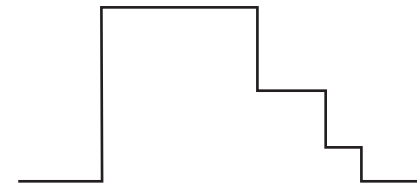
House in Chayagasaka by Tetsuo Kondo Architects.

5.1 Varieties in heights

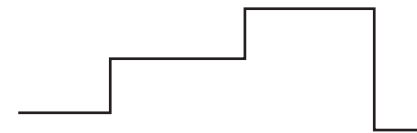
Variation in heights create different atmospheres and offers possibilities to regulate the level of privacy.

Whenever a room is completely empty and does not contain any elements or objects, it is hard to use for more than one activity at the same time. Those activities need some kind of boundaries to generate a certain level of privacy. Instead of adding visually blocking elements such as walls, varieties in heights of floors and ceilings can be used to construct various spaces. Those spaces offer users the opportunity to situate themselves and therefore regulate their level of privacy and the amount of interaction with others.

Divers atmospheres are established whenever the height varies. A room with varying distances between floor and ceiling creates different experiences. Divers atmospheres are especially experienced when the ceiling differs in height. If the floor varies in height, it is more seen as a boundary, as it takes more effort to cross the space. This also occurs with a slope. A slope suggests accessibility, however, it also suggests some kind of border.



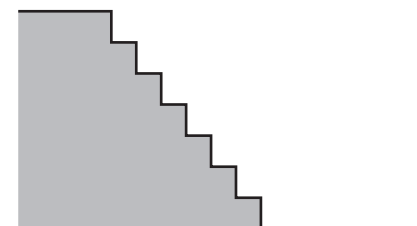
Floor variety



Ceiling variety



Ceiling in open space



Stairs (podium)

5.1.1 Floor variety

Varieties in floor height can achieve different levels of privacy in the same room.

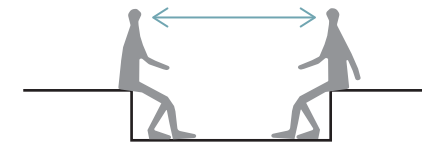


Figure 1

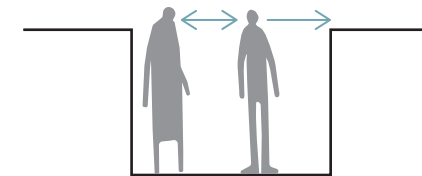


Figure 2

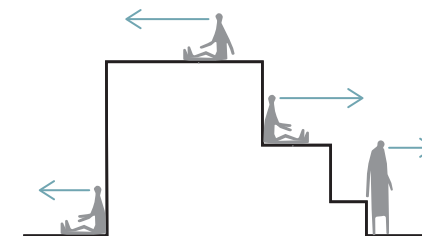


Figure 3

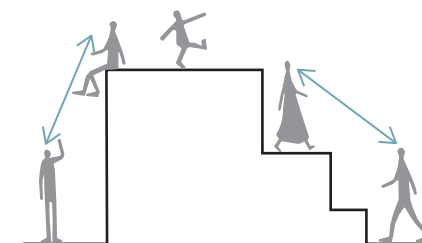
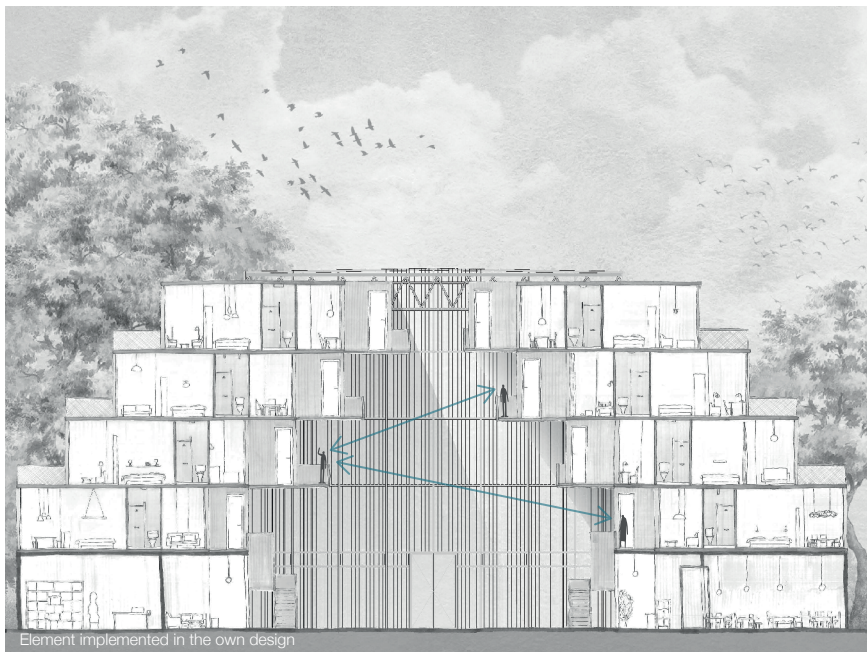


Figure 4

Whenever a floor varies in height or depth, different spaces are created. If a part of the floor is lower, the formed space can be used as a place to sit. It depends on the exact depth if the edges are seen as sitting places (figure 1) or the lowered floor is used as a place to come together (figure 2). Various settings can be established by creating floor differences. In nearly all situations the floor variety functions as a boundary element and creates different levels of privacy (figure 3). These levels of privacy offer the possibility for various activities, each with its own desired level of privacy, to take place. However, interaction between people participating in another activity is easily made (figure 4).



5.1.2 Ceiling variety

Spaces with lower ceilings are experienced as more intimate.

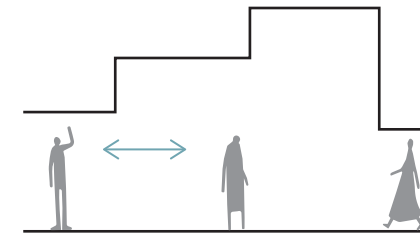


Figure 1

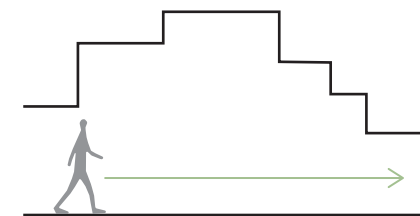


Figure 2

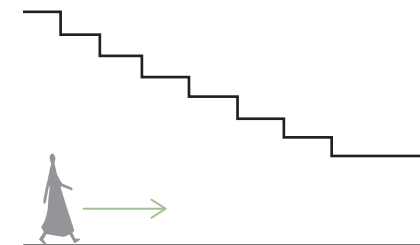


Figure 3

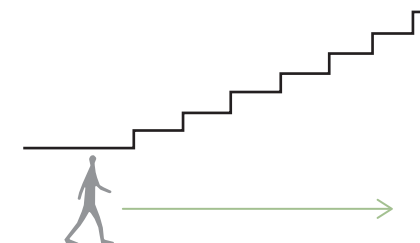
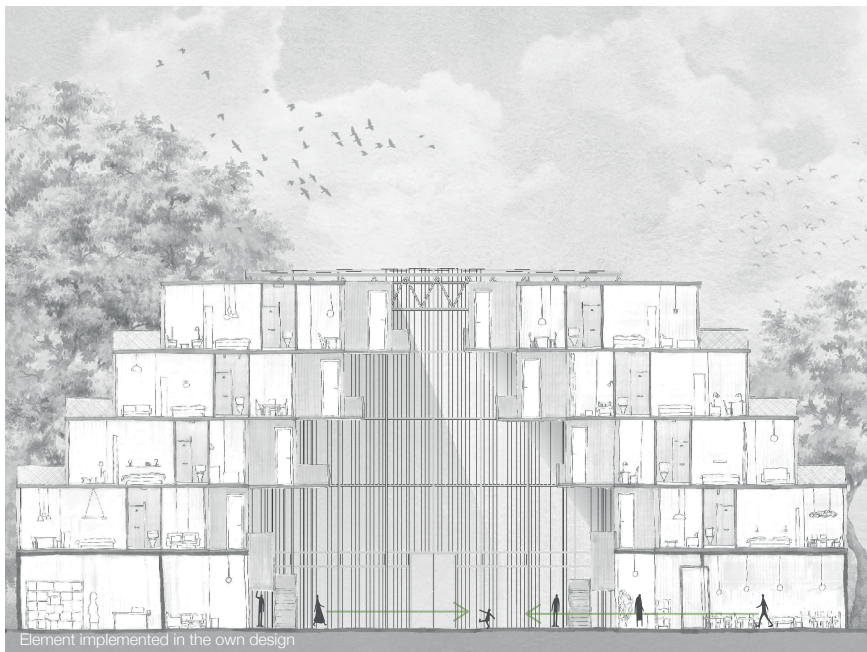


Figure 4

The ceiling height defines the level of intimacy one experiences. Lower ceilings tend to feel more intimate and high ceilings make the room look bigger. 'High' and 'low' are relative. Experiencing a room as less intimate also has to do with the height of the adjacent rooms (figure 1). If people are able to choose between rooms with different ceiling heights, they are able to choose a room that matches their desired level of privacy and intimacy.

A variation in ceiling heights creates some boundaries between different spaces, although these boundaries are easy to cross and the accessibility is high (figure 2). When the ceiling is lowered this will increase the intimacy and thereby function more as a boundary (figure 3). On the other hand, increasing the distance between floor and ceiling will increase the accessibility and will be experienced less as a boundary (figure 4).



5.1.3 Ceiling in open space

A lowered ceiling accentuates and differentiates a certain area within the bigger space.



Figure 1



Figure 2

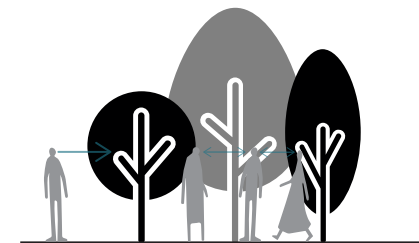
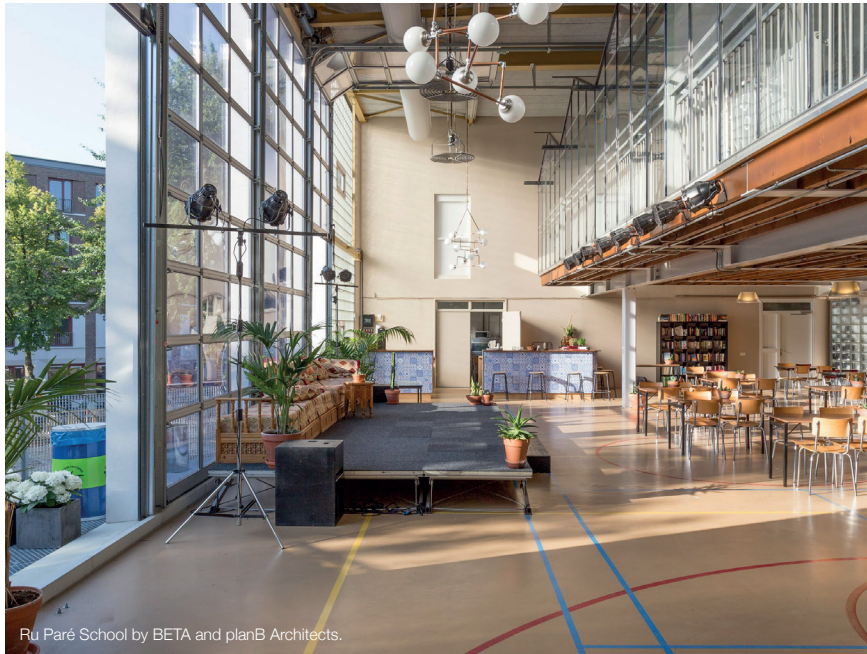


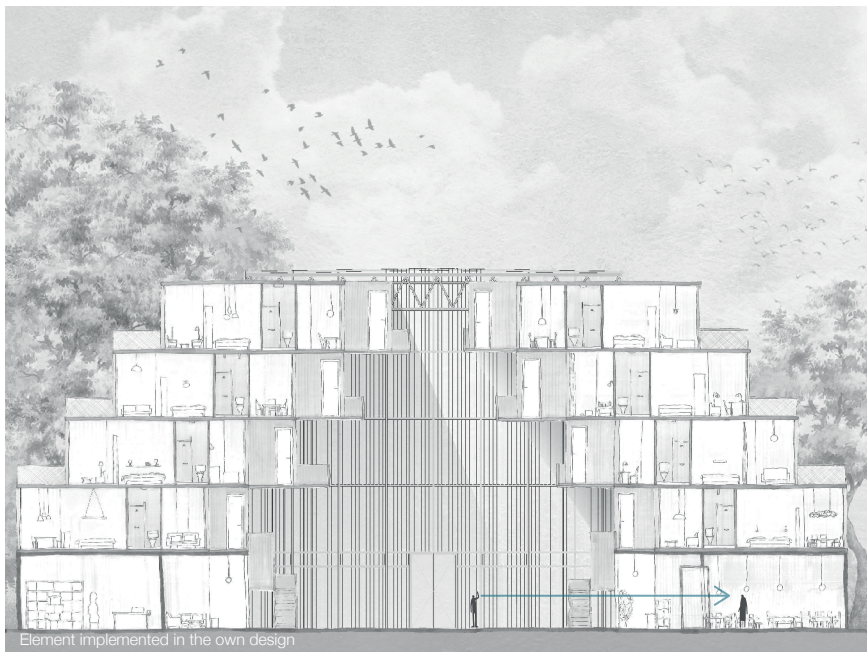
Figure 3

A ceiling in an open space defines a certain area. As already described with 'ceiling variety', this creates a more intimate space where people can gather. This lowered ceiling draws the attention to this place (figure 1), however, it also offers a higher level of privacy and protection (figure 2).

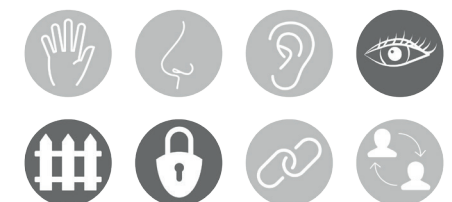
This element does not, literally, have to be a ceiling. A group of trees can also function as a ceiling, as well as a cloth hung between columns, trees, lamppost or whatsoever (figure 3).



Ru Paré School by BETA and planB Architects.



Element implemented in the own design



5.1.4 Stairs

A tribune offers visual interaction between the people seated on and those in front of and provides privacy for those gathering on the different steps.

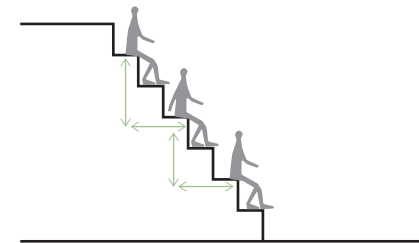


Figure 1

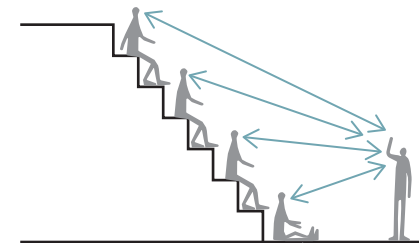


Figure 2

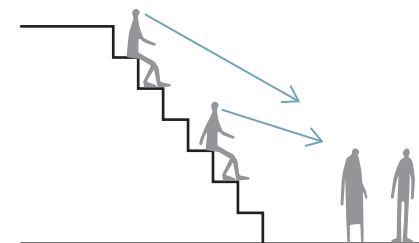


Figure 3

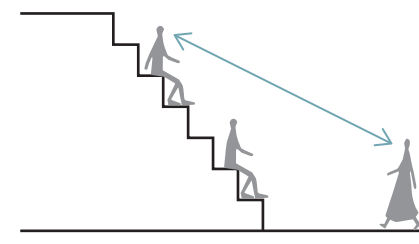


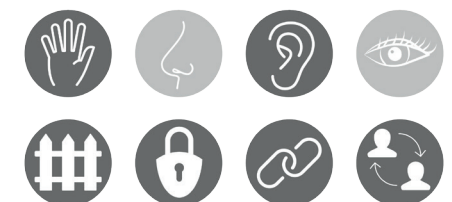
Figure 4

A tribune can host way more people than the same space without could. Also, the level of privacy is higher when different groups are seated on the tribune; they not only have a horizontal distance to each other but also a vertical one (figure 1). The bigger the vertical distance between persons and the ground floor, the more privacy they can get.

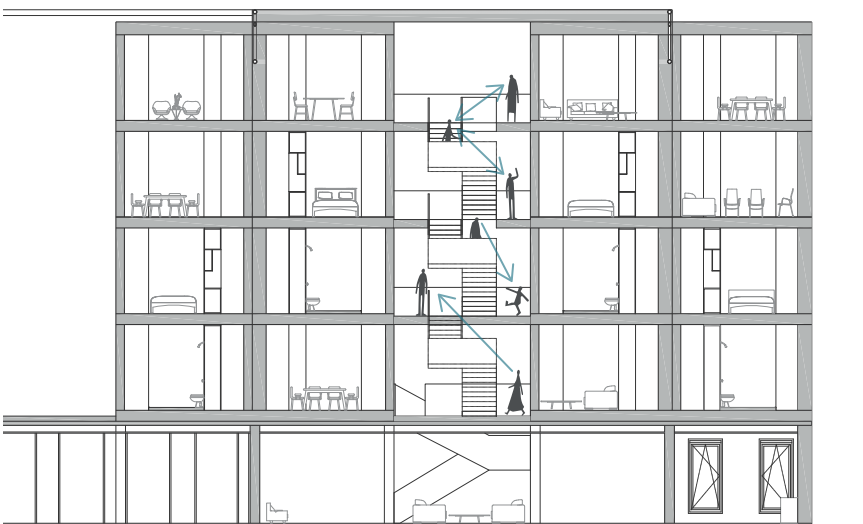
Whenever one is sitting, he or she is not able to see as much as in a standing position. A tribune offers every person the same view on whatever is happening in front of the tribune (figure 2). The tribune offers a higher level of privacy for those on the tribune, but less privacy for those in front. Activities performed in front of the tribune should demand a low level of privacy and those persons should not feel intruded by being watched (figure 3).

In general, people like to watch others. A tribune should be placed in front of an area where a lot of activities in the collective or public setting takes place.

A tribune, or stairs, mainly function as boundary element, as there is a clear boundary between every step (figure 4). Although it also establishes a connection between the people on the tribune and those in front of. Furthermore, stairs suggest some level of accessibility, as one can climb the stairs.



International School of The Hague.



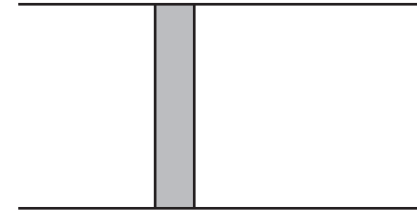
Element implemented in the own design



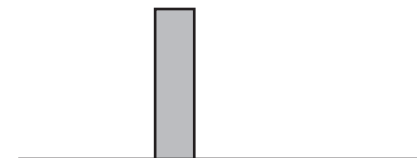
The Iron Curtain in Germany, how a wall can act as a boundary.

5.2 Wall

Walls are the elements that can offer the highest level of privacy and completely block social interaction.



Floor to ceiling wall



Eye-height wall



Sit-able wall

Walls can divide bigger spaces into smaller areas, which makes it possible for many activities to occur at the same time. Spaces without any walls are completely open and could lack to afford the desired level of privacy of its users. In general, they could feel overexposed and being watched by others. However, the desired level of privacy depends on the kind of activity. This determines which activities people will perform in this specific area and which they will not. If people prefer a higher level of privacy, they will feel uncomfortable when performing that activity in this area.

Walls are elements that can bound discrete spheres. Especially walls from floor to ceiling, without any opening, can function as most 'bounding' elements. Whenever spaces have four walls around them no interaction between that space and the surroundings is possible. A high level of privacy can be achieved and opposing activities can take place next to each other. Whereas an eye-height wall only offers visual privacy when seated and offers a lower level of auditory privacy. No visual privacy is provided with sit-able walls; these walls only mark a certain space.

5.2.1

Floor to ceiling wall

'Floor to ceiling' walls can completely enclose different spaces from each other.

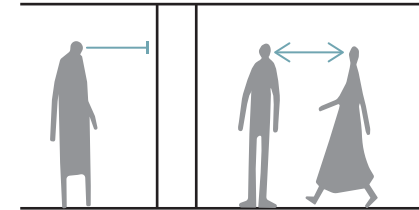


Figure 1

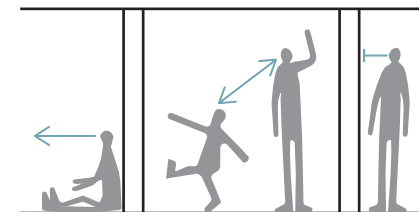
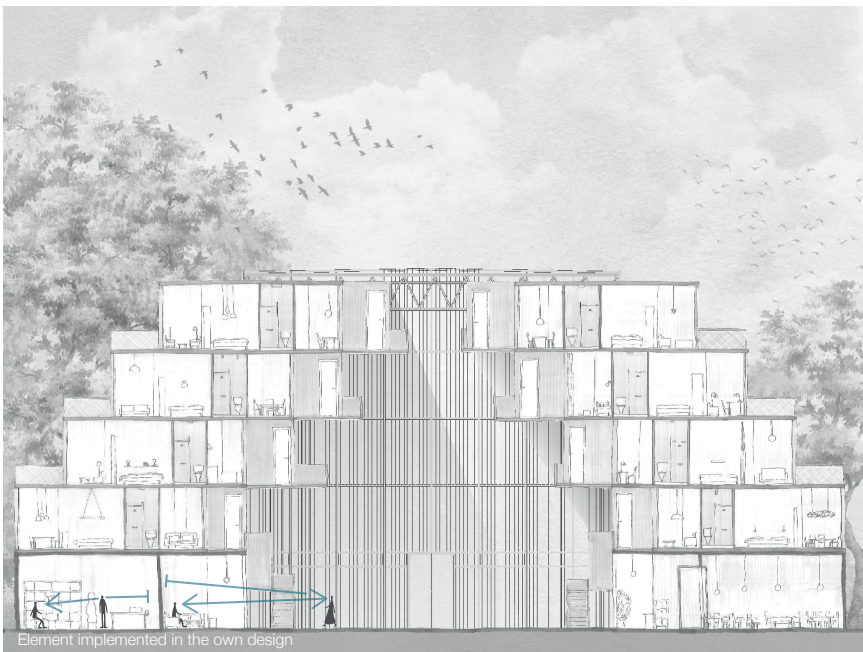


Figure 2

Spaces need to be connected to each other and at the same time be enclosed. This means that the wall, as most bounding element, should achieve the perfect balance between closed parts and its openings. Walls can separate different spaces from each other and create connections with each other through those openings. The perfect balance will differ for every wall and every space it encloses. Floor to ceiling walls can offer a high level of privacy (figure 1). For activities that need a lot of privacy, walls are perfect elements. In adjacent rooms, separated by a wall, completely different activities can take place at the same time (figure 2). Although, activities, or spaces, that are totally enclosed can cause its users to experience social isolation. So, 'floor to ceiling walls' with no openings should not bound activities that require some interaction.



Fujigaoka M apartment by Sinato.



Element implemented in the own design



5.2.2 Eye-height wall

A physical separation between persons is made, yet they can regulate their visual interaction, by choosing a specific position regarding the wall.

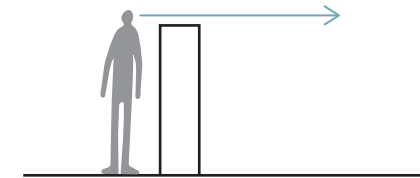


Figure 1

An 'eye-height wall' offers the possibility to look over the wall (figure 1). The exact height defines the amount of visual privacy; the higher the wall, the higher the level of visual privacy and the ability to control the own privacy. Although, it is merely a physical barrier between both sides and interaction is still possible (figure 2). The walls create separate areas inside the bigger space, without establishing visual and acoustical obstacles.

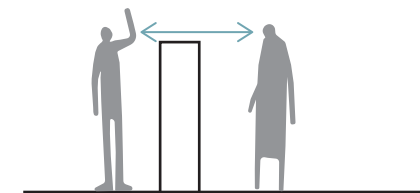


Figure 2

Eye-height walls offer the highest level of privacy when people are seated (figure 3). Their taken position towards the wall tells something about the wanted privacy. Whenever someone is sitting next to the wall, you could say that he or she is hiding and maximised its level of visual privacy (figure 4). Having a wall in the back affords a feeling of safety. While a feeling of intimacy is provoked when one sits directly next to this wall.

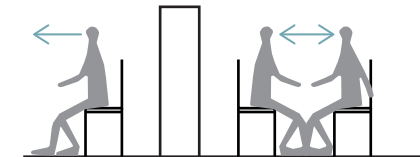


Figure 3

An 'eye-height wall' is a bounding element, which offers different levels of privacy. Yet, plenty of interaction is still possible. It does not necessarily have to be a real wall, as cupboards or other eye-height objects evoke the same effect.

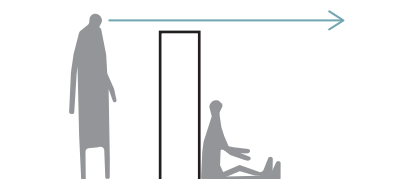
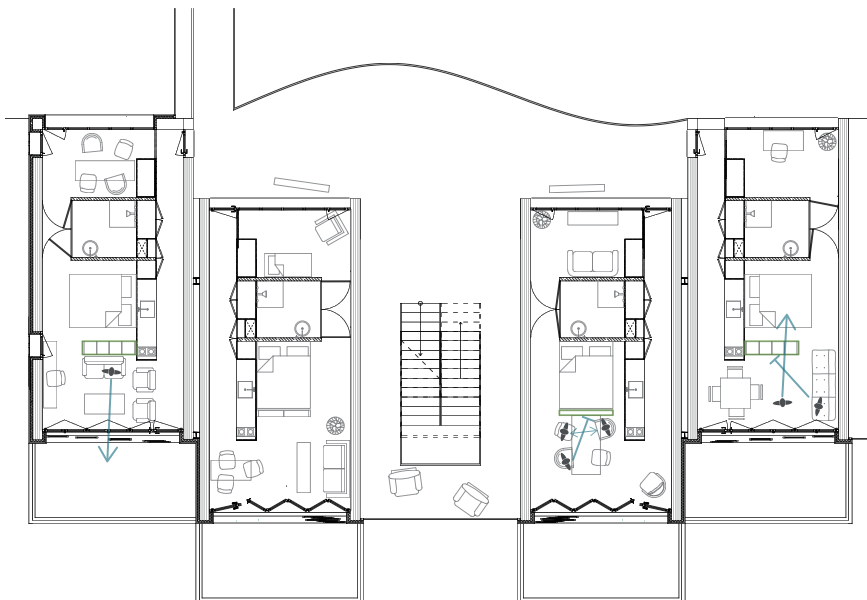


Figure 4



Element implemented in the own design

5.2.3 Sit-able wall

It does not offer any privacy in-between two spaces, however, it does indicate that there are two different areas.

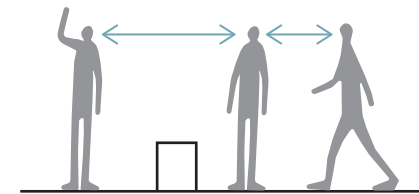


Figure 1

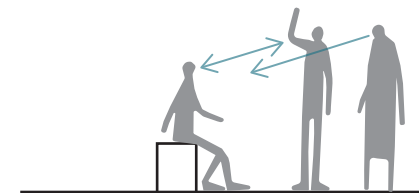


Figure 2

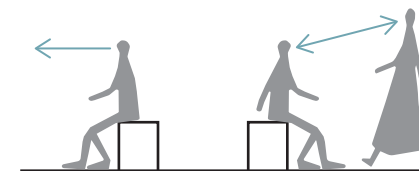
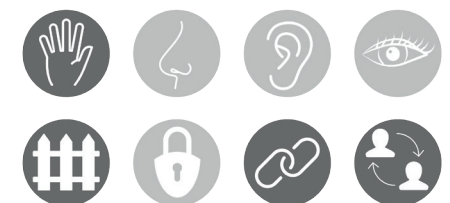
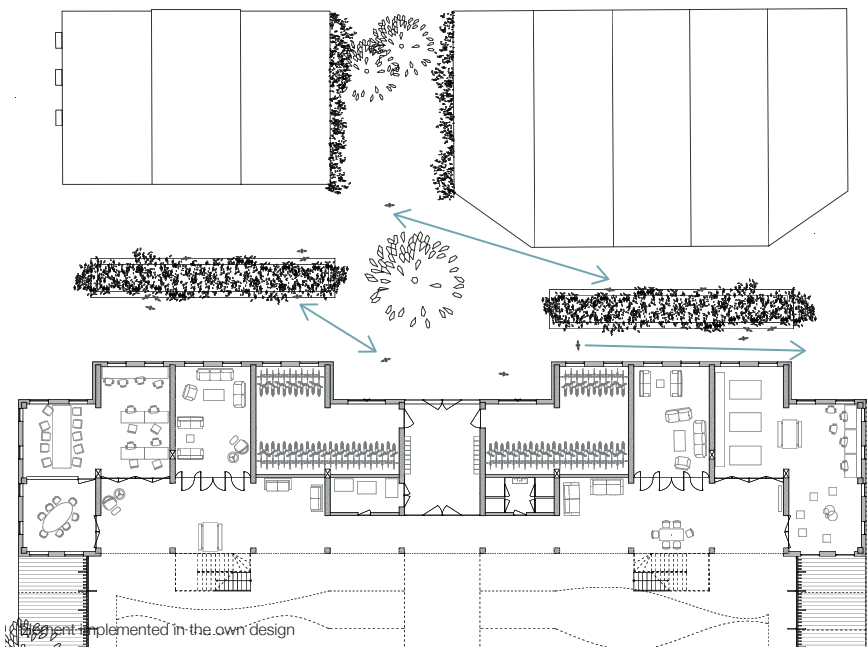


Figure 3

An 'eye-height wall' forms a physical boundary and provides some visual privacy between spaces. A 'sit-able wall' indicates a boundary between two different spaces. Although, it does not offer any visual privacy (figure 1). The level of wanted interaction can be controlled by its users. Their position on this wall and towards its surroundings specifies if one is open to interaction or not. Whenever the users chose to face a crowd, they suggest that interaction is wanted or at least possible (figure 2). Sitting with their back towards this crowd offers more privacy and implies that they are not completely part of the crowd (figure 3).





Different wall openings in Ant-house by mA-style architects.

5.3 Wall openings

Openings in walls take away the insuperable character of a wall. It connects the spaces separated by this wall.

A wall lacking any openings does not offer any possibility for interaction and can be seen as an insuperable element. There is a variety of openings that all have different functions and evoke various actions or feelings. In this paragraph, the focus lies on openings that start at floor level and one is able to cross while walking. The next paragraph will discuss openings that only offer visual interaction and still form a physical barrier.

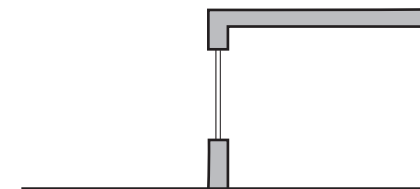
A wall opening connects different rooms or spaces and users can enter via the opening. There is no physical barrier between those spaces, however, the setting changes and the users will change their behaviour based on the type of opening. One will undoubtedly enter a space with a two-meter-wide opening but might think twice about opening a closed door.



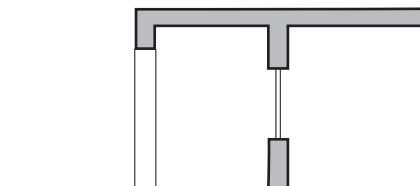
Wall opening



Door



Physical opening to the street



Arcades



Columns

5.3.1 Wall opening

An opening itself does not afford any privacy, but does signal that a person is entering another setting.

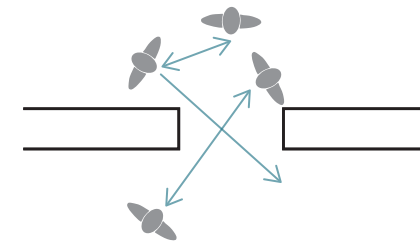


Figure 1

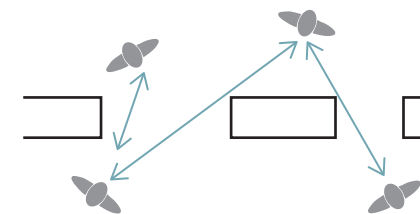


Figure 2

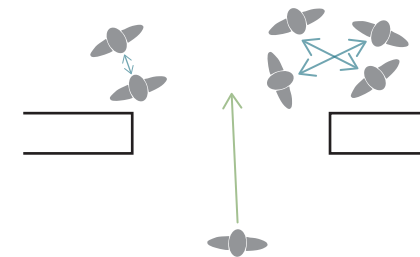


Figure 3

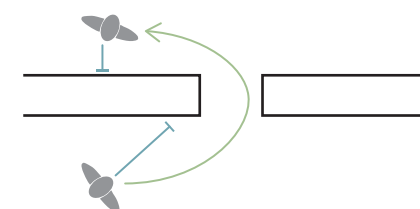
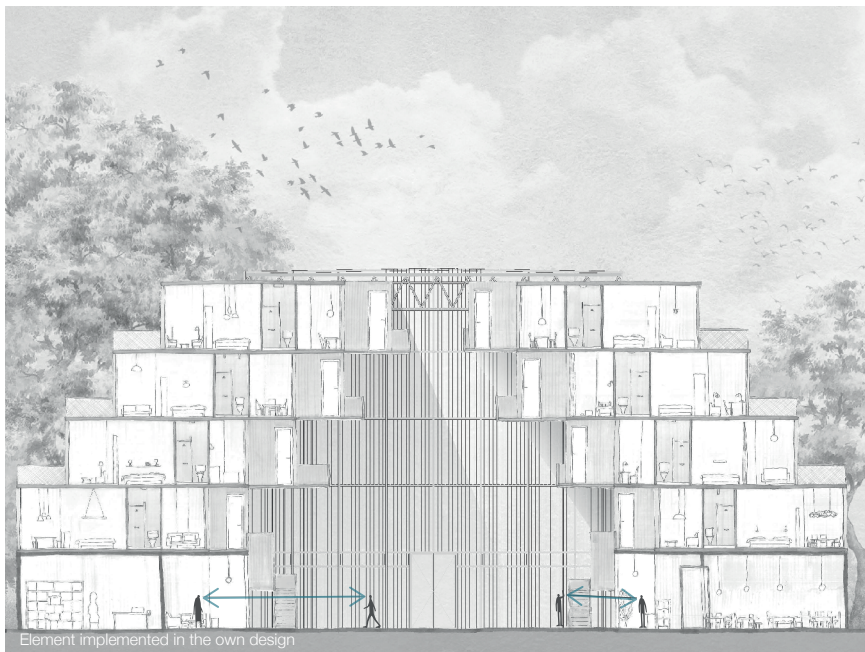


Figure 4

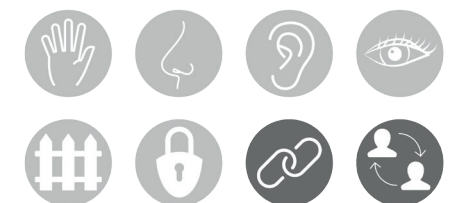
The opening in a wall itself does not offer any privacy at all. The two adjacent rooms should be used for similar activities, yet the setting can differ (figure 1). A person crossing the opening will experience the feeling of entering another room and will adapt its behaviour if necessary. Nonetheless, the convenience one feels when entering another setting, through such an opening, is influenced by some aspects. A wider or higher, or both, opening is easier to pass (figure 2). If the visual connection between both spaces is high, entering is less of a threshold, as one can already see what to expect and how to adapt their behaviour (figure 3). An opening in a wall functions as a connecting element, the boundary that one can experience is created by the element the opening is made in, most of the times a wall (figure 4).



DECERTO bt MOKO Architects and MFRMGR.



Element implemented in the own design



5.3.2 Door

The position of a door, closed or open, signals the desired level of privacy someone requests and this position can be changed at any time.

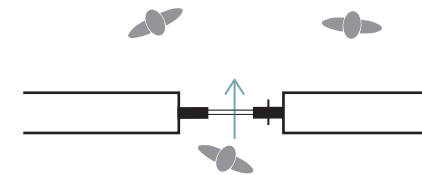


Figure 1

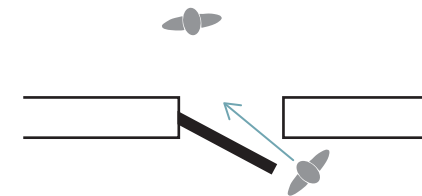


Figure 2

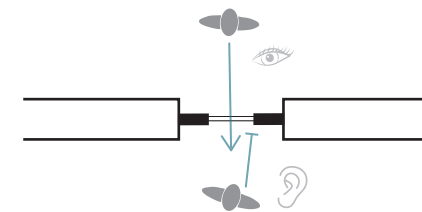


Figure 3

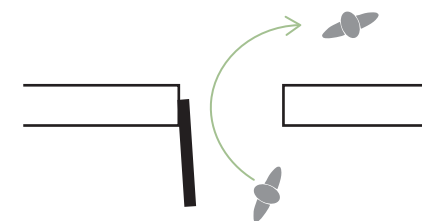
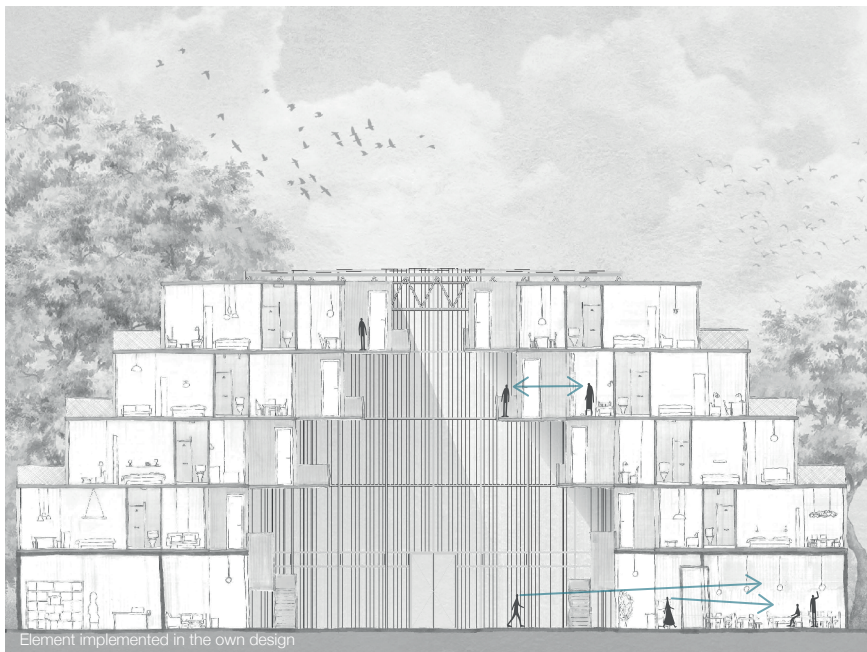


Figure 4

A door is an opening in a wall, which makes interaction possible. Even though, it is also an element that can function as a physical, visual, olfactory and/or auditory boundary. A door allows people to enter the room or space behind it. However, it depends on the type of door if someone is actually opening it. One with a window provides the possibility to first have a look and decide if it is acceptable to enter (figure 1). Whether a closed door does not offer this option, one needs to decide on its own if opening is allowed. This could result in opening a door and intervening in a situation or setting where this is found annoying and unwanted. Someone is able to show their desired level of privacy by closing or (partly) opening their door (figure 2). If one closes its door, he or she does not want to be bothered, wants to work concentrated or be alone. Entering is possible, but knocking is appreciated. If they see that the person is in its room, they will knock and open the door in order to ask a question or whatsoever. Fewer people will open an opaque door in the exact same setting. A door with a window affords visual connection but excludes auditory interaction or distraction (figure 3). Whenever there is a completely open door, both rooms are connected with each other and every kind of interaction is possible. An open door is also a welcoming gesture (figure 4), and may even be seen as 'more open' than an opening without a door at all.



Physical opening to the street

The connection between collective and public life should clearly signal whether outsiders are allowed to enter the residential building and participate or this is unwanted by the members of the community.

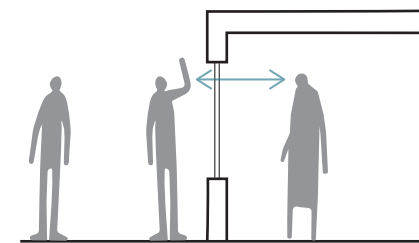
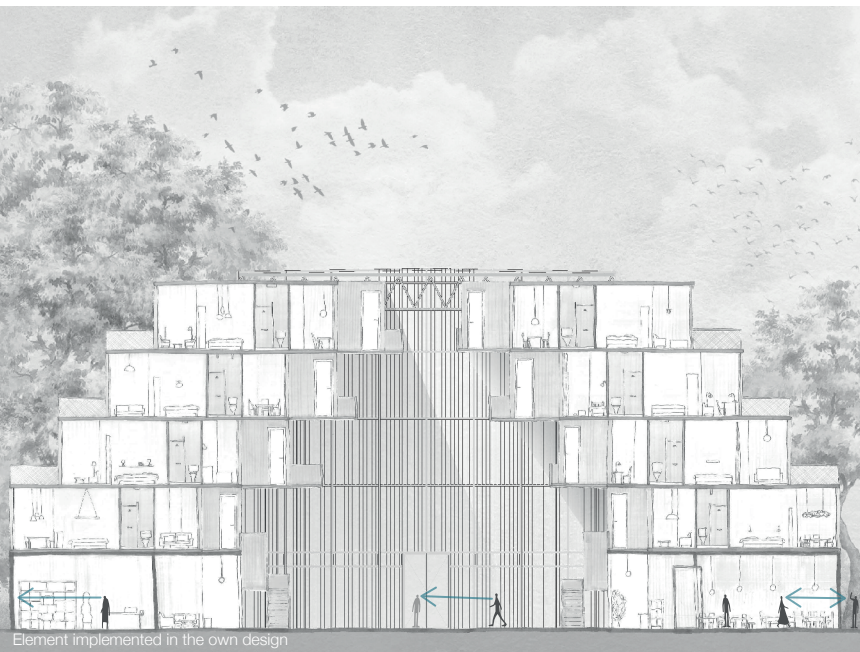


Figure 1

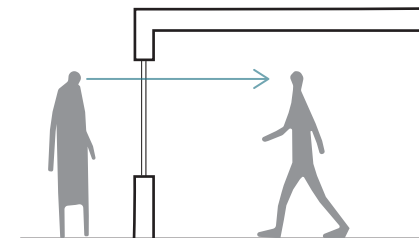


Figure 2

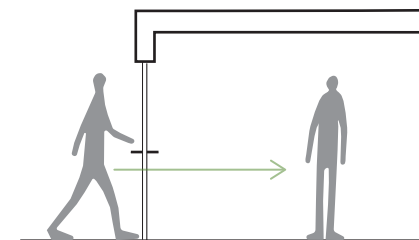


Figure 3

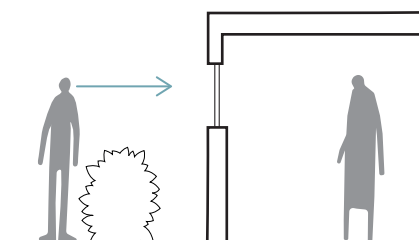
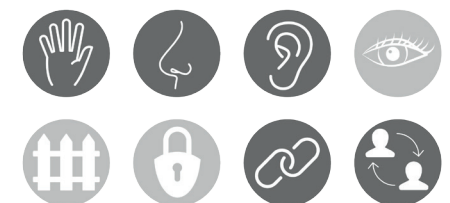


Figure 4

The collective activities which are situated next to more public areas are the connection between the collective and public life (figure 1). Those activities become part of the public life and the other way around. Whenever this connection is made, the public street will profit from the communal benefits. Important is the fact that this visual connection should not interfere with the desired level of privacy (figure 2). It depends on the kind of activity whether visual interaction is wanted and if it is an interesting activity to look at. Besides only looking at people performing an activity, it is also possible that some communal areas and/or activities are open to people from outside the community (figure 3). The 'physical opening to the street' is an important element to indicate whether outsiders can enter or the spaces are only for residents of the collective building. Spaces and activities that are open to public life should be enclosed by a 'physical opening to the street' that functions as a connecting element. Open doors, doors which are not locked, wide openings and welcoming paths towards those entrances signal that entering is allowed.

Whenever outsiders are seen as intruders, this opening should clearly signal a boundary (figure 4). A few examples are; locked doors, a blocked visual connection between inside and outside and no easily readable entrances. If people feel like intruding, they are less likely to enter that space.



5.3.4 Arcades

An arcade is both bounding and connecting and creates a smooth transition between private, collective and public life and everything in-between.

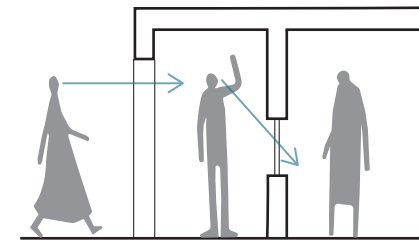


Figure 1

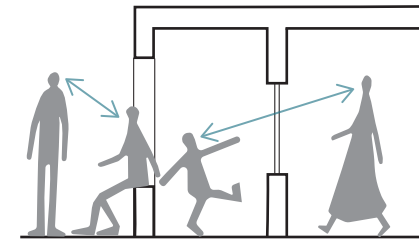


Figure 2

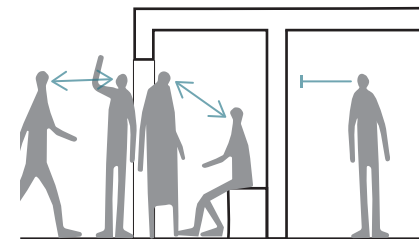


Figure 3

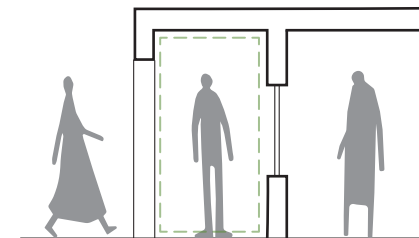
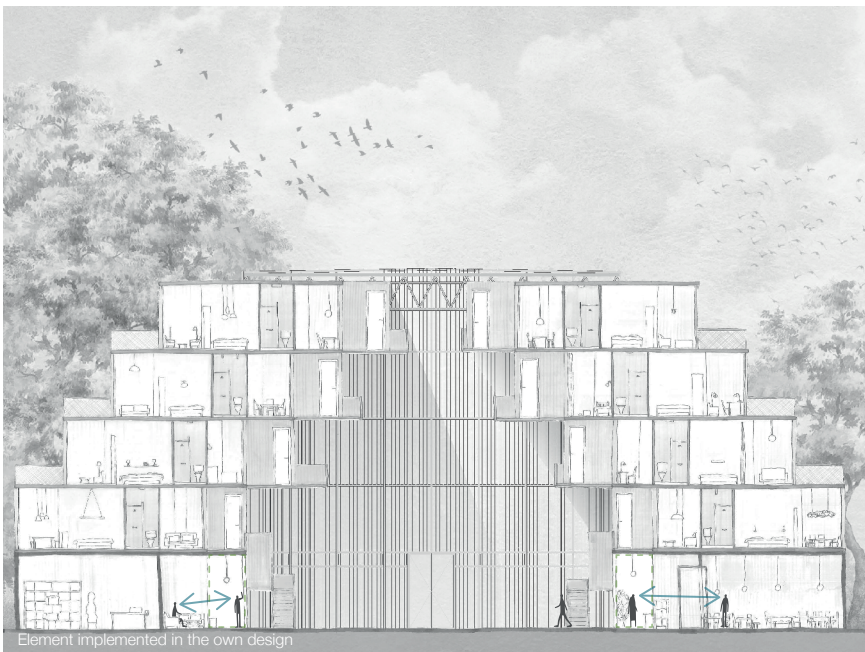


Figure 4

An arcade is an element that perfectly functions as an in-between zone. It is not completely public, not private or collective either. An arcade functions as a transition zone and clarifies the boundaries (figure 1). It should be easy to enter the area underneath and at the same time, people should feel that they have to adapt their behaviour. The requested behaviour is influenced by the design of the arcade; width, height and distance between columns, signals the feeling and generates a certain level of privacy. And the placement of other elements; sit-able objects or windows, for example, create a particular atmosphere and define the activities that can take place under the arcade (figure 2 & 3). Already in early centuries arcades were used as important outside space of public buildings. This is still visible in ancient cities like Rome. It is both a connection and boundary between the public and collective life (figure 4). It offers those inside more privacy, as they are not directly connected to the public street. Outsiders, neighbours, for example, will feel more connected with the community as they are not on the public street, yet not completely part of the collective life.



Own photo made in 'the Temple of Heaven' in Beijing, China.



Element implemented in the own design

5.3.5 Columns

Columns will always create a boundary, yet the arrangement and measurements define its strength.

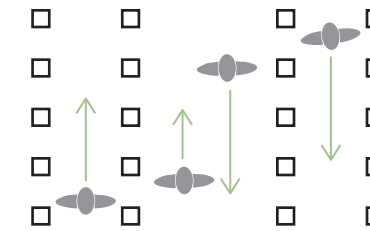
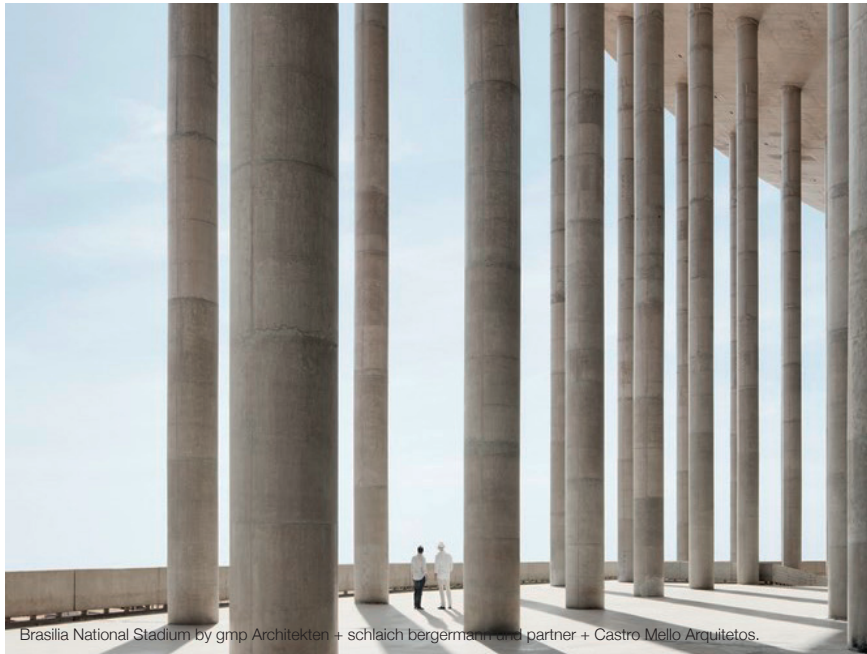


Figure 1

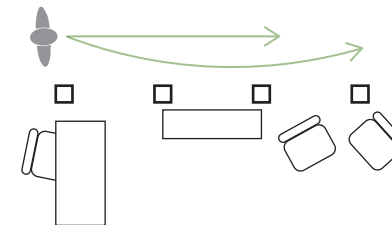


Figure 2

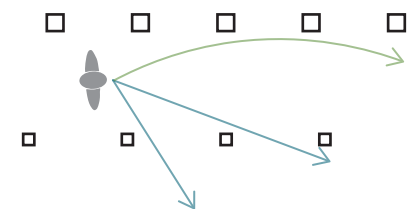


Figure 3

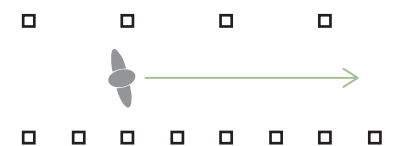
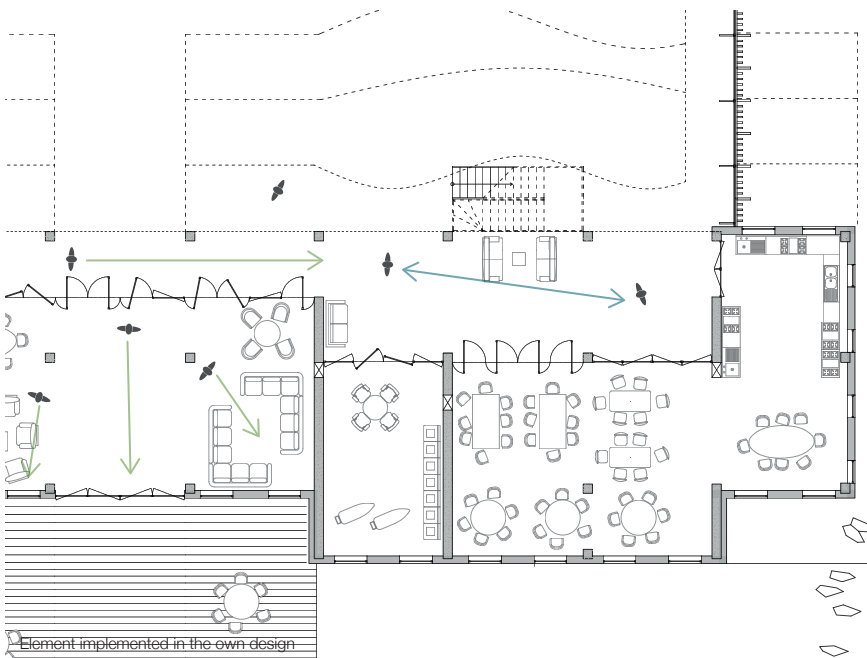


Figure 4

Columns can be made of steel, wood and concrete. Their basic function is constructive and allows to make big spans. A bigger space with a repetitive arrangement of columns creates a certain division and structures the bigger space (figure 1). Four columns can mark the territory of a group of people who situate themselves in the space created by those four columns. Adding other objects can strengthen the effect of a row of columns (figure 2).

A column or an arrangement of columns will always create boundaries. The distance between two columns and the measurement of a column define the effect of this boundary. Thicker columns which are closer together will create a stronger boundary than thin ones, far apart (figure 3). Alexander (1965) states that a column should at least have the width of a person, between fifty and sixty centimetres, to function as a boundary element. This is only the case with a single column, as a row of thin columns does create a boundary (figure 4).

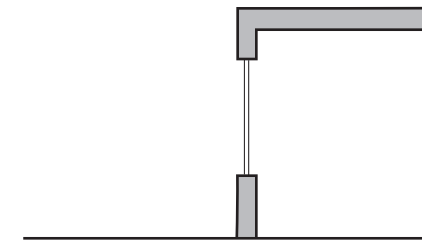




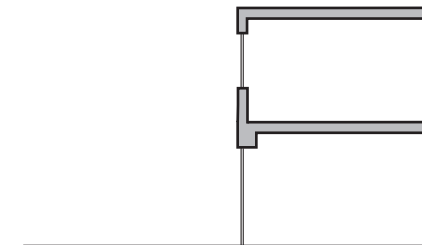
Collage of photographs of illuminated windows at night in Amsterdam, by Anne-Laure House.

5.4 Window

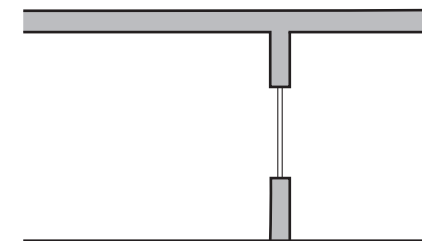
Windows create visual connections between two adjacent places.



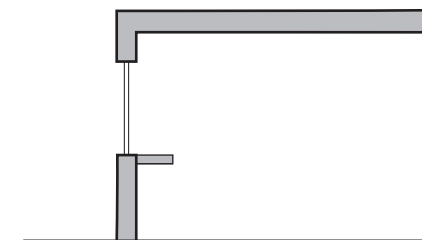
Window on street level



Window overlooking collective life



Interior window



Windowsill

As already explained in the previous paragraph, 'wall openings', a wall without any opening lacks possibilities for interaction. Windows still form physical barriers but offer options for visual connection and interaction between people on both sides. People inside can enjoy the outside and those who are outside can have a glance at the inside world. The ability to look outside and the natural light that come in, give a peaceful feeling, offer positive distraction and prevent the feeling of total isolation.

Window on street level

A window is always generating visual interaction and connections, the amount depends on the size and position of the window and the adjacent activities.

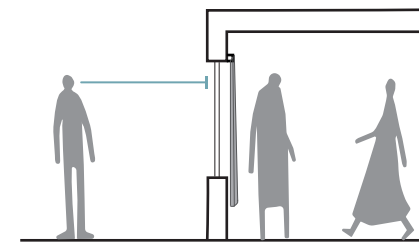


Figure 1

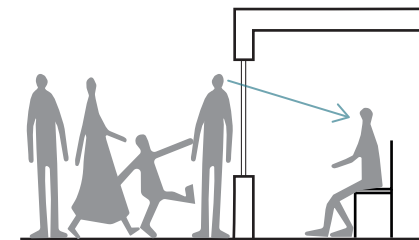


Figure 2

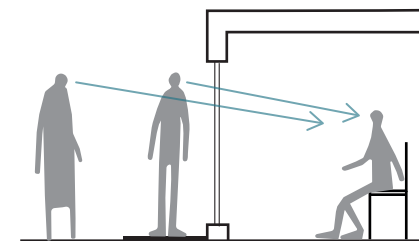


Figure 3

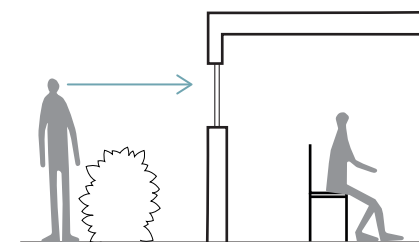
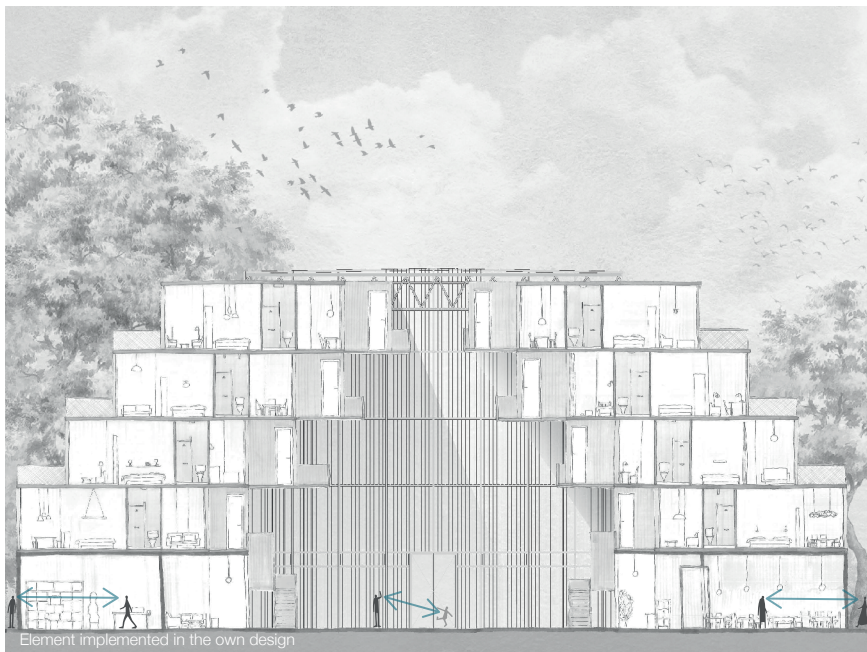
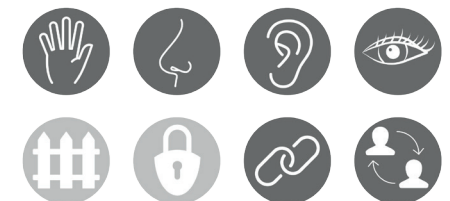


Figure 4

The connection with the outside world is an important one, at the same time it is sometimes unwanted. Blocking the view with curtains or adding mat foil to the windows, points out that those windows do not offer enough privacy for the activity behind it (figure 1). The type of street this window looks upon influences the achievable level of privacy. Busy streets interfere more with the inside life and it also depends on who the passer-by is (figure 2). 'Being looked at' is less of a problem than the feeling that someone is keeping track of your behaviour. The measurements of the window, its position in a wall and the distance between this wall and public life define the impact on the level of privacy. The most visual interaction is created with bigger windows, starting relatively low in walls that are immediately adjacent to the street (figure 3 & 4). Whether this is a positive or negative effect, depends on the activity performed in the room.



5.4.2

Window overlooking collective life

A view from the private unit on the collective life is required, while the other way around is less preferred.

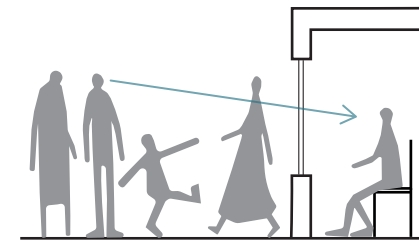


Figure 1

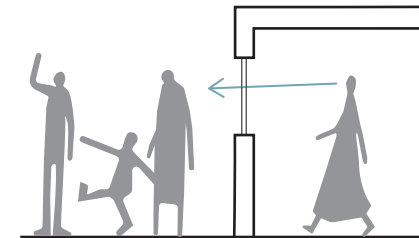


Figure 2

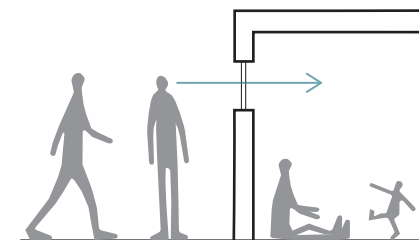


Figure 3

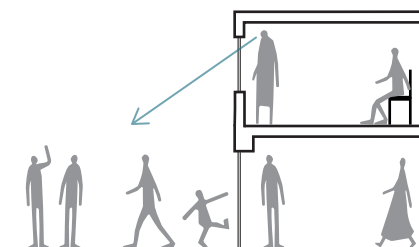
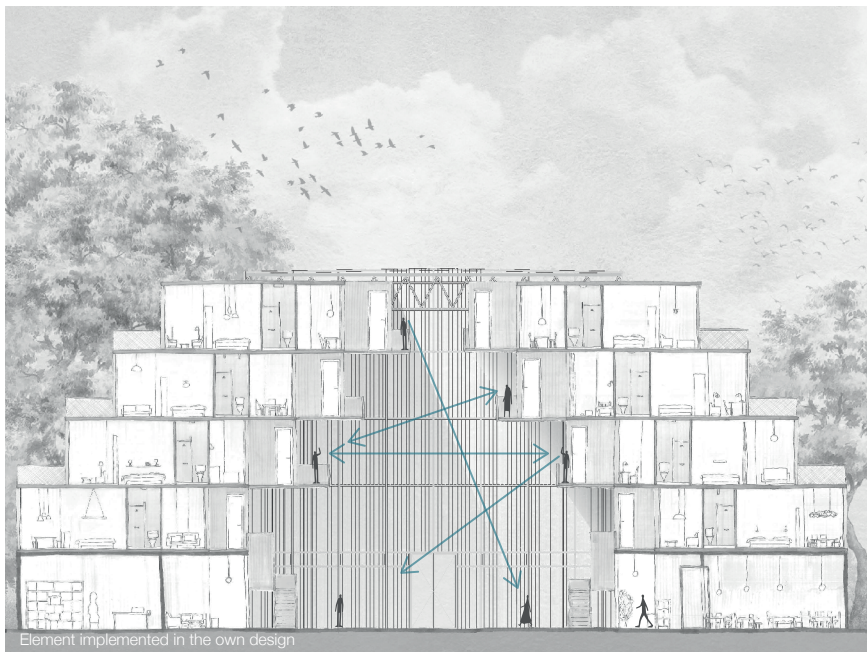


Figure 4

Overlooking collective life is an important aspect of communal living. Whenever people, who are participating in this collective life, are able to watch those in their private unit, this will excessively affect the privacy (figure 1). This visual connection should be avoided or at least minimised (figure 2). This means that the windows that overlook the collective life should be positioned in such a way that, those in their private unit, are able to control their level of privacy (figure 3). A vertical distance between the two settings creates a higher level of privacy, as looking up is done less often and less of the inside is seen (figure 4).



5.4.3 Interior window

The visual connection between two rooms is established by an interior window, yet it still serves as a physical barrier.

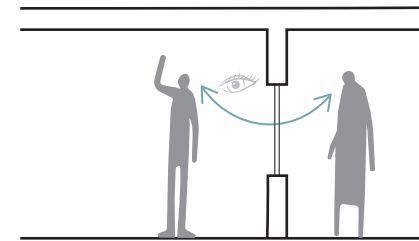


Figure 1

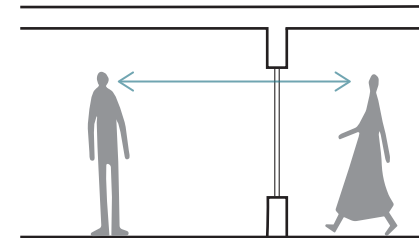


Figure 2

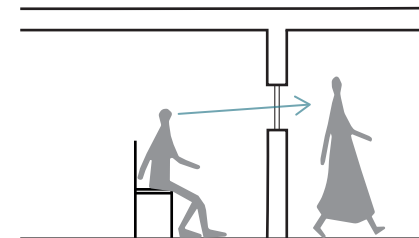


Figure 3

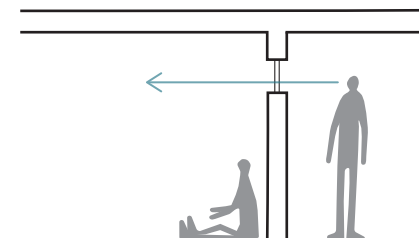
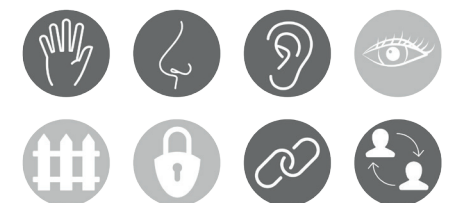
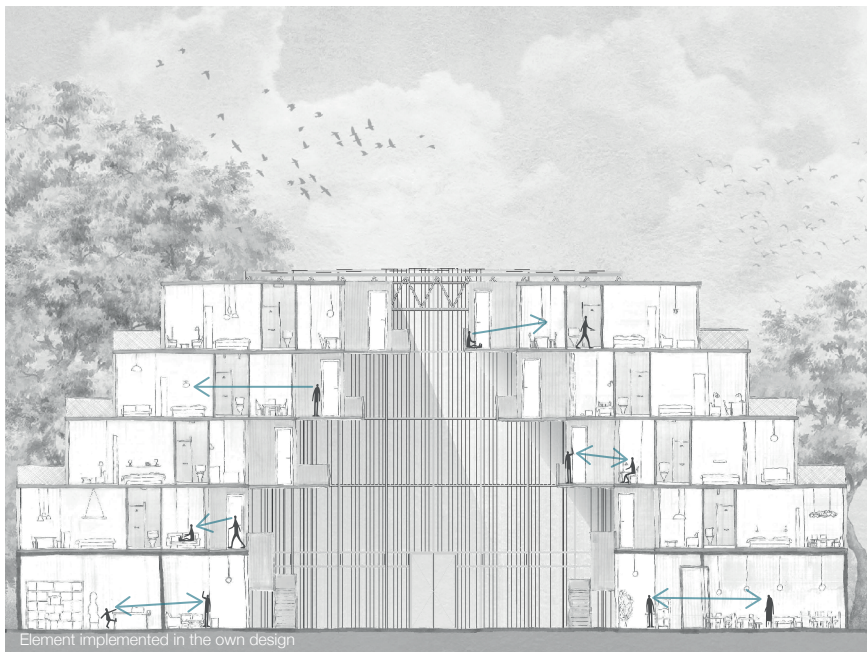


Figure 4

An interior window does not create interaction between inside and outside but among two inside rooms. It is a visual connecting element that enables people to keep an eye on others, without being part of their activity (figure 1). The windows size and position define how much privacy is still possible (figure 2 and 3). This also depends on the position of a person in the room, whether he or she is sitting or standing. A window that allows a visual connection if people are standing, can provide a higher level of privacy for both rooms (figure 4). Nonetheless, an interior window is always a connecting element.



Polak Building by Paul de Ruiter Architects.



Element implemented in the own design

5.4.4 Windowsill

A windows sill is not so much bounding or connecting, but it creates a different sub-setting near the window.

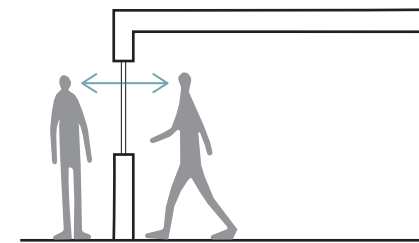


Figure 1

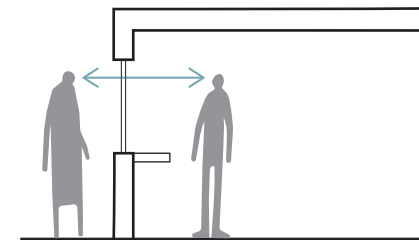


Figure 2

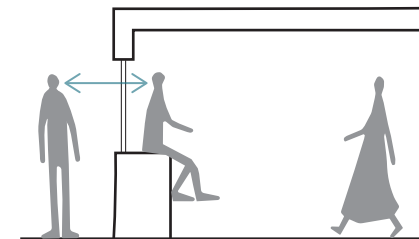


Figure 3

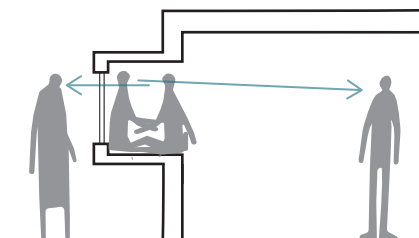
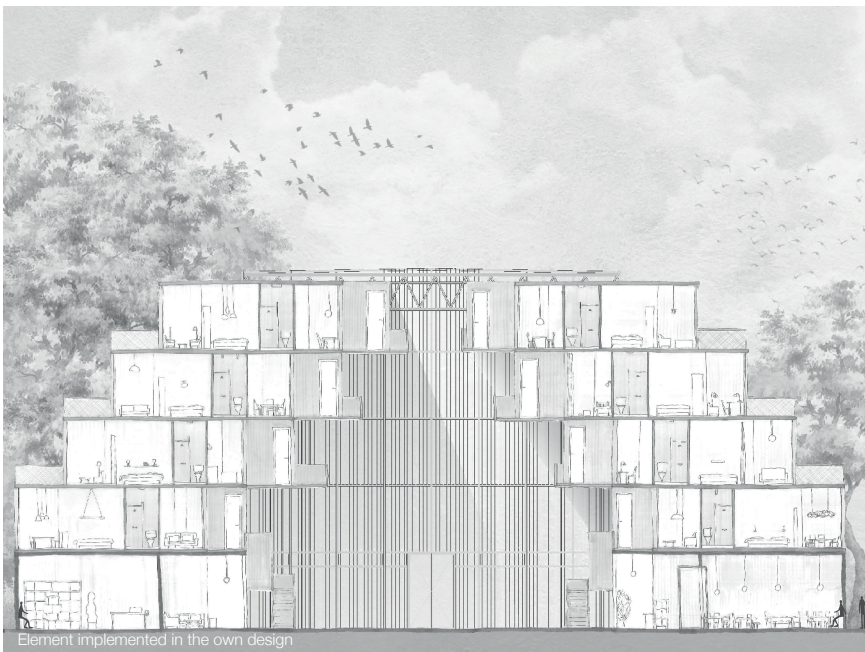


Figure 4

As already described, the position of a window greatly influences the amount of visual interaction (figure 1). A windowsill can lower the amount of interaction, as an extra horizontal barrier is added (figure 2). At the same time, if a windowsill is wide enough to sit on, it can increase the visual interaction between inside and outside as one sits closer to the glass (figure 3). Window sills can also become an isolated setting. If the width of the window sill is the same on four sides, two people can sit 'in' the windowsill and separate themselves more from the indoor space (figure 4).



Children's Home by CEBRA.



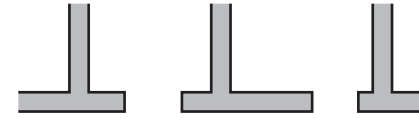
Element implemented in the own design



Furniture in Rogers Stirk Harbour's London cancer treatment centre by Gitta Gschwendtner.

5.5 Elements and objects

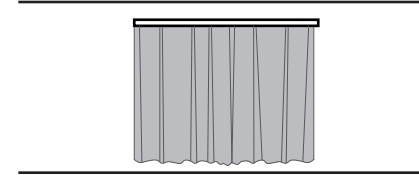
Other objects or elements that can be used to create boundaries.



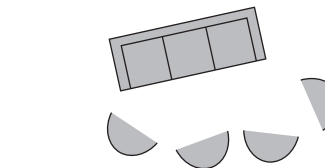
Corridor



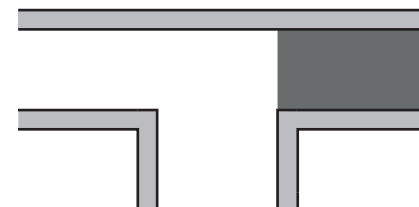
Alcoves



Curtains



Furniture



Colours, textures, materials and markers

This paragraph will discuss some different elements and objects that do create boundaries and connections, yet some of them are not architectural elements and can easily be changed and added by its users. Curtains and furniture, for example, are important boundary elements, nevertheless their position, and herewith the effect can be changed anytime. The part 'colours, textures, materials and markers' describes their bounding and guiding functions. Nonetheless, it can be concluded that these elements should be seen as addition and are only subtle distinctions between spaces and areas.

The discussed corridor and alcove are stronger bounding elements, that are better implemented in the architectural design process.

5.5.1 Corridor

Corridors connect various rooms, while at the same time are the separation between them.

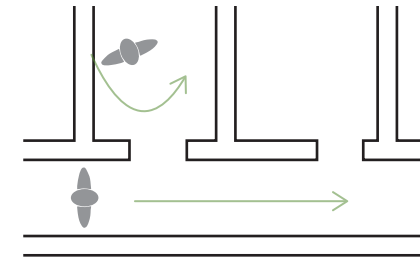


Figure 1

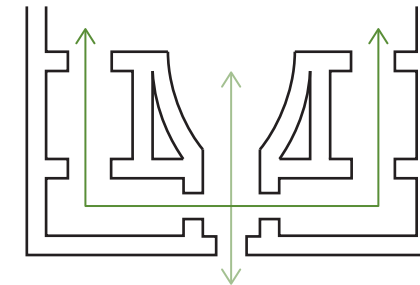


Figure 2

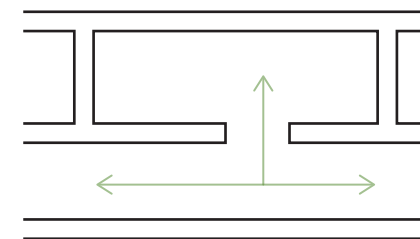


Figure 3

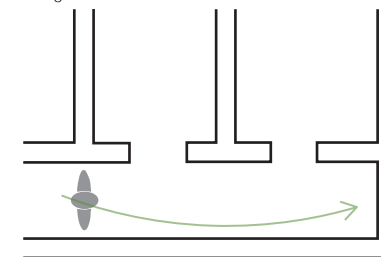
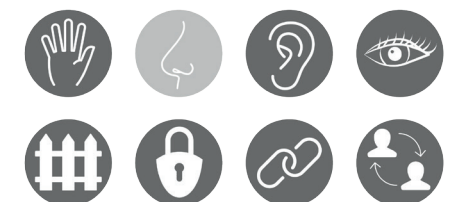
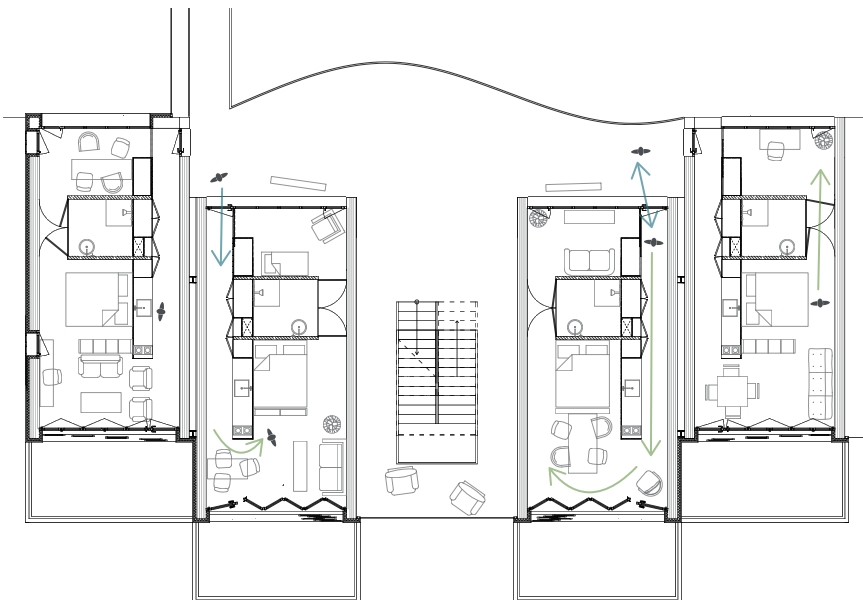


Figure 4

A corridor is often described as useless space, as it is only used for moving. The division between circulation space and rooms creates more privacy in these rooms (figure 1). Before the corridor was invented in the domestic interior, all separate rooms were linked with each other by many doors. This is for example visible in the well-known Palladian villa. All users, also visitors had to pass through different rooms to reach their destination (figure 2). A corridor offers more privacy to the adjacent rooms as it only has one access door (figure 3). So, the corridor creates boundaries between rooms and at the same time it is the connection between rooms. A corridor marks a path between spaces. Although the setting at the end of a corridor determines whether the corridor is experienced as a connection. A corridor with a dead end is less welcoming than one that has an open connection to the adjacent room (figure 4).



New home for Children with Autism near Hareskov by CREO Arkitekter and JAJA.



Element implemented in the own design

5.5.2 Alcoves

An alcove offers privacy and at the same time preserves the connection with the bigger space.

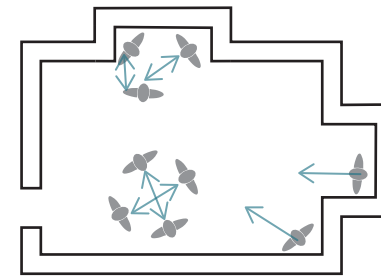


Figure 1

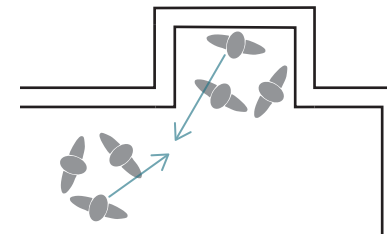


Figure 2

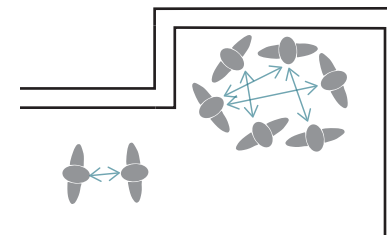


Figure 3

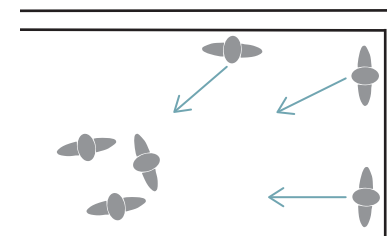
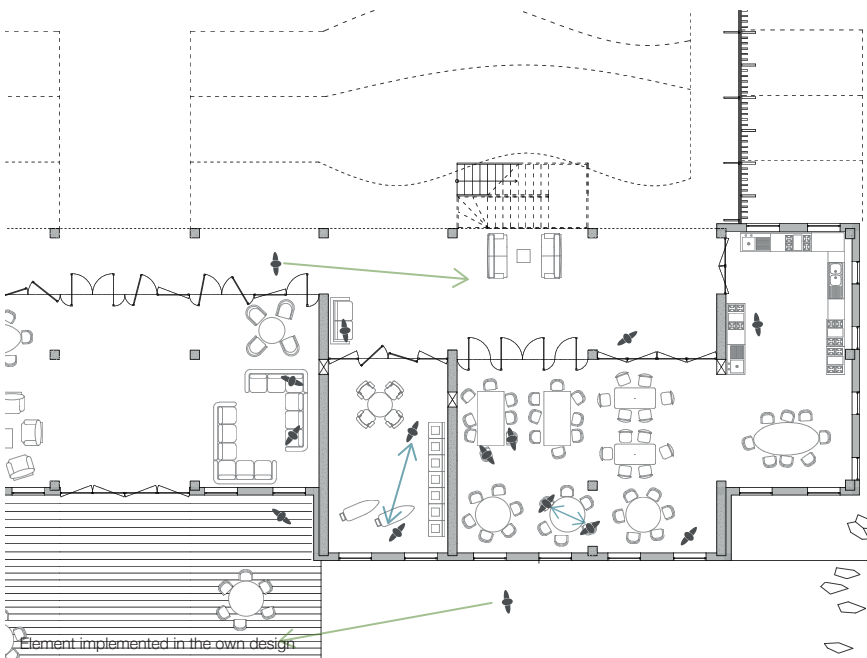


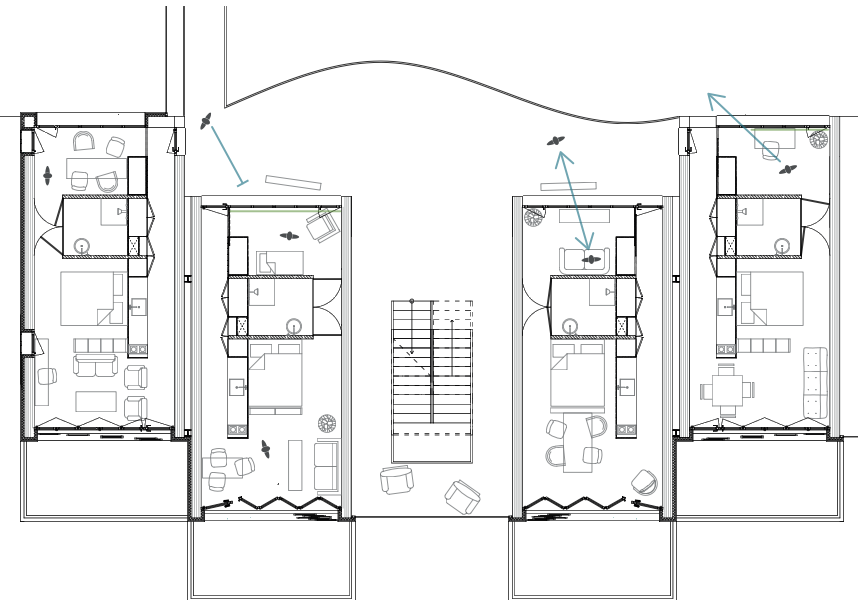
Figure 4

Whenever a variety of activities take place in one room, different areas or spaces have to be created to offer enough privacy. All activities need different levels of privacy, therefore, the users need to have the choice between different settings in the bigger room. Alcoves are perfect spaces to create various settings, while at the same time, stay connected with the bigger space (figure 1). The variety of settings enables users to perform different activities in the same room and do not force them to seek another space, in order to get enough privacy (figure 2). The alcoves should be big enough to perform an activity in and should be clearly 'different' than the bigger space (figure 3). The alcoves should be positioned on the edges; this already offers more privacy. People tend to move to the edges of rooms, as this enables them to observe the rest of the room and its users better and they feel less observed themselves (figure 4). In this way, they are taking over control and their privacy is easier protected.



5.5.3 Curtains

Whenever flexibility in the level of visual privacy is demanded, curtains are elements that easily adapt to this need.



Element implemented in the own design

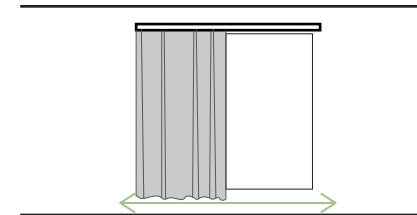


Figure 1

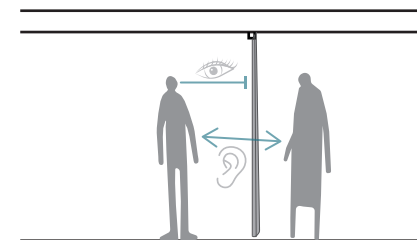


Figure 2

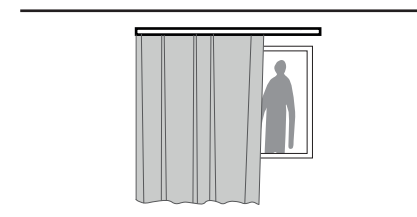


Figure 3

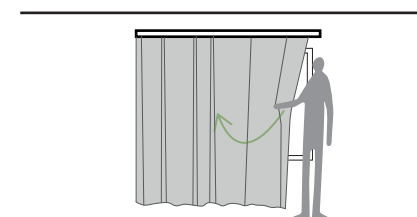


Figure 4

Curtains only offer visual privacy and it is easy to change the level of this privacy over time (figure 1). Some activities only need visual privacy (figure 2), changing clothes is such an activity. We do not want others to see our undressed bodies but continuing with a conversation is no problem. Curtains are often used in front of windows (figure 3). The combination makes it possible to achieve both visual and acoustical privacy. This makes a curtain a boundary element, however, it is a boundary that can effortlessly be adapted to one's demands of privacy (figure 4).



5.5.4 Furniture

Furniture creates various settings in a space and enables users to control their level of privacy by positioning themselves the way they want.

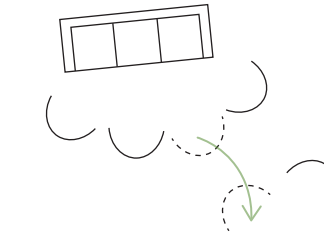


Figure 1

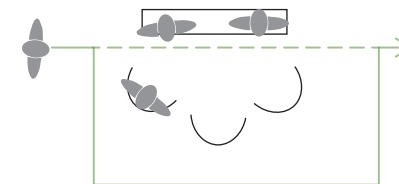


Figure 2

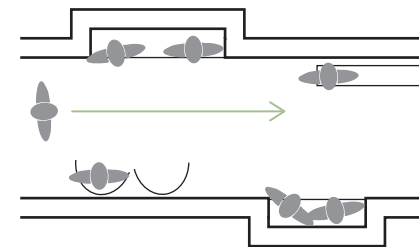


Figure 3

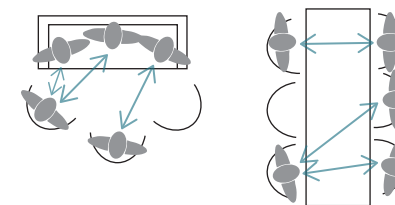
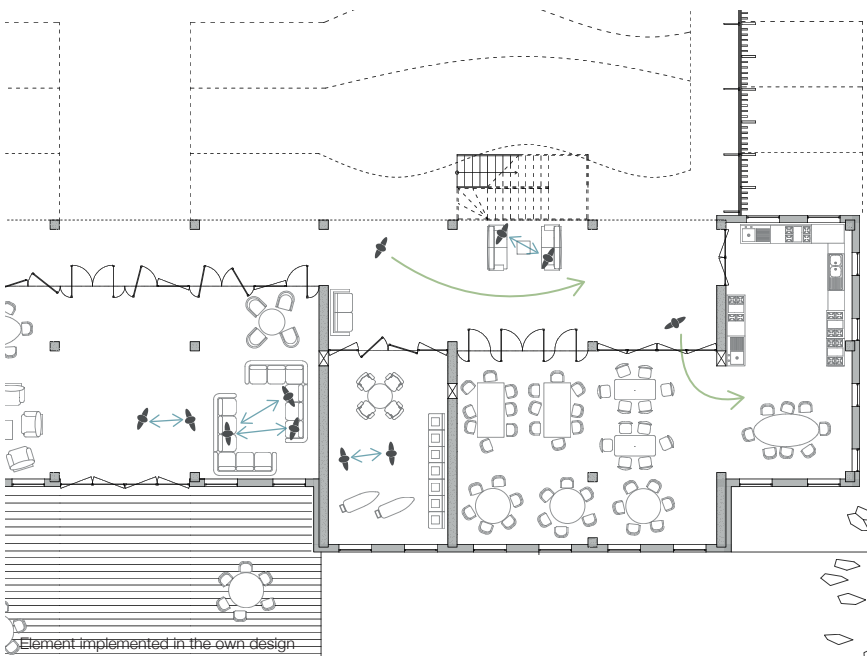


Figure 4

Furniture is an easy changeable and controllable element, concerning its privacy settings. People are able to position themselves in many different ways and thus regulate their level of interaction with others (figure 1). The wanted level of interaction is defined by a person's personality, mood and the activity they are performing. A chair is easy to move and therefore the level of privacy can easily be changed.

In a residential building, and certainly in a collective orientated one, a lot of different sitting places should be created. Those sitting spaces should be everywhere and both be easy to use and pass by. The passing is important, as you do not want others to cross through the conversation and interfering with your privacy (figure 2). Nevertheless, it should be easy to join a conversation when walking by. This is particularly important on the way from outside to one's private unit. As this increases the interaction between residents and hereby the community feeling (figure 3).

In common spaces, a great variety of sitting spaces should be created (figure 4) so that residents can have intimate conversations and small chats about the weather, while experiencing enough privacy in both situations.



Colours, textures, materials and markers

Elements that support architecture in defining borders and settings in buildings.

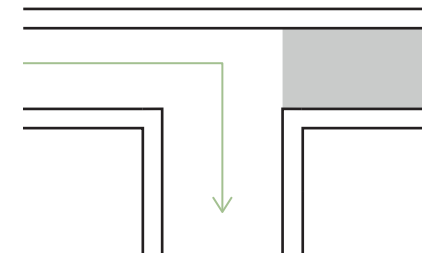


Figure 1

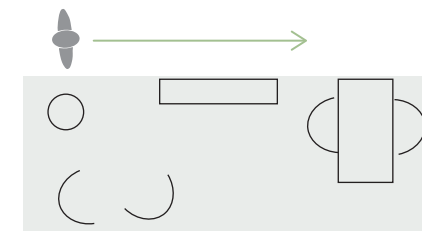


Figure 2

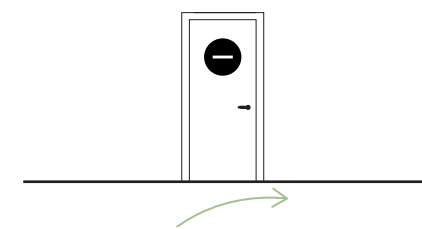
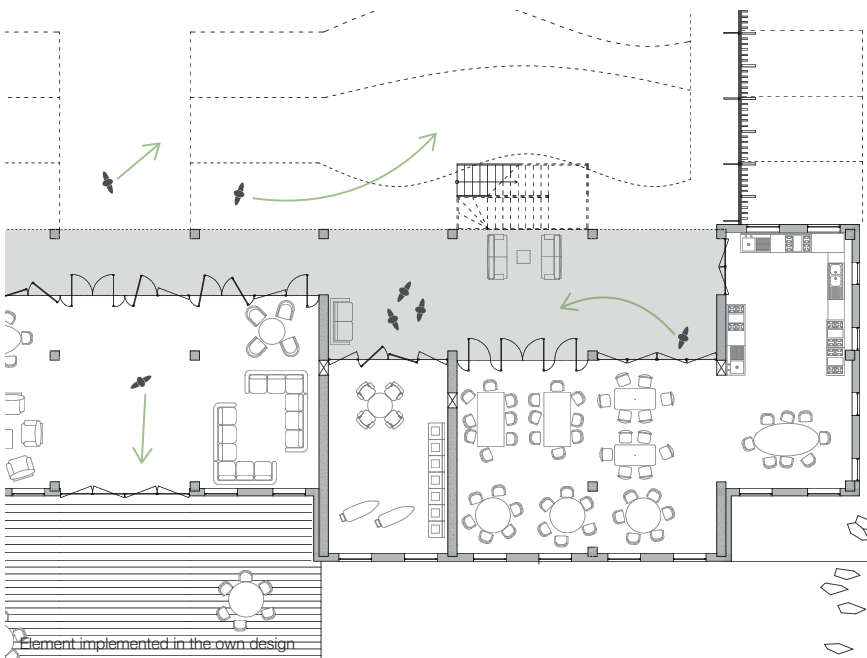


Figure 3



Figure 4

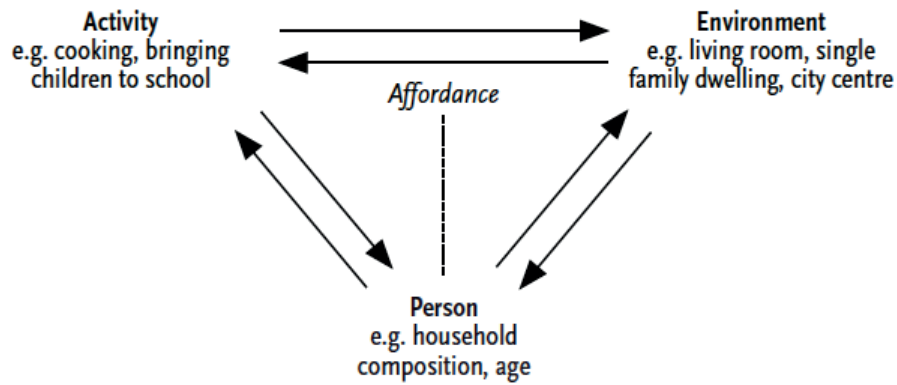
A change in colour, texture and/or material marks a change in setting and therefore creates a certain boundary. A path created with those elements implies some accessibility and will guide users in a certain direction (figure 1). It can indicate a different setting, however, it are boundaries that are easily crossed and sometimes even unnoticed. Changes in colours, textures and materials should go together with other objects to mark clearer settings (figure 2). Markers or symbols can also function as bounding. People will not enter a door with a symbol or text declaring 'no entrance' and will follow the marks with 'exit' if they want to leave a building (figure 3 & 4). Symbols and markers guide people in certain, wanted, directions and keep them out of other rooms. This has not much to do with the architectural design process, nevertheless, it is an important aspect of public buildings and can achieve a higher level of privacy.



6

Activities

“Use gives meaning to housing and at the same time meaning guides how housing is used.”
from Arias, 1993, via Meesters, 2009, p.1



'Conceptual framework for the meaning of dwelling' (Meesters, 2009, p. 25)

In order to design a residential building focused on collectivity, one needs to know which rooms, spaces, services, facilities and activities people are willing to share. Studying various activities and their level of desired privacy will result in a better understanding of which activities can be shared and which need the security of the private realm.

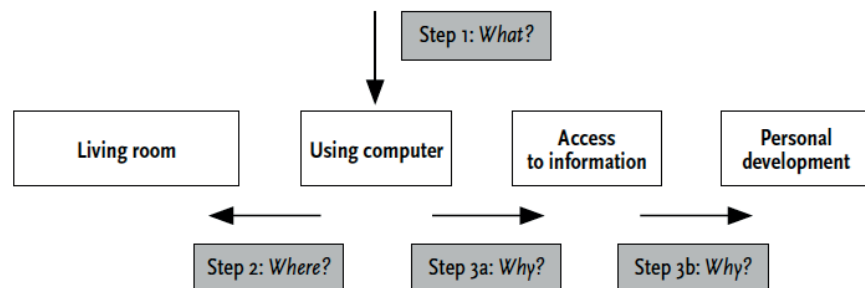
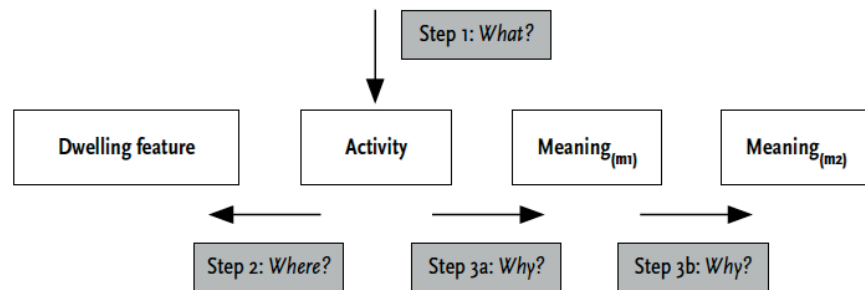
Twenty-three activities are discussed afterwards; many more could be added. However, those activities are chosen with the design location and target group in mind. The activities are described from a city dwellers point of view. The situation of and effects on urban and suburban dwellers are different, yet less interesting for this research and the following design. Another aspect that needs to be paid attention to, is the fact that all activities will be described separately. This is done to better understand what they mean, if and how they can be organised collectively. Though, in real life, activities should be combined in one room or space. As spaces which are flexible in use, are more often used and increase the amount of interaction between its users.

The level of desired privacy differs per activity but also per person and situation and can change over time. Therefore, the outcomes of this chapter will not give strict rules about the level of privacy and if the specific activity could be shared. However, a better understanding will be gained by this research and guidelines will be given.

A pattern language (template added in appendix 2) is used to describe the different activities in the home environment, it helps to cope with the complexity of all activities and structures the research in a more manageable way.

The starting point for the research of the activities is the graduation thesis of Van Haaren (2014); he formulated conclusions from the pattern language of Chermayeff and Alexander (1965). Van Haarens conclusions are compared with the findings of Meesters (2009); who focuses on the meaning of dwelling activities, and the own survey; which questions the willingness to share certain activities, functions and rooms. The meaning of the various activities is important, as they not only have a 'technical function' but also a 'meaning function'.

The activities questioned in the own survey are derived from those studied by Van Haaren (2014) and Meesters (2009). This survey has had 246 responses, from people of all ages, which makes the outcomes a quite reliable representation. Appendix 4 and 5 contain the outcomes of the survey.



'Meaning structure created with data from the questionnaire' (Meesters, 2009, p. 188)



Visiting a museum

6.1

Activities outside home

'Getting away from things' is the main reason people perform those activities outside the home environment. They usually do not demand a high level of privacy.

Interacting and meeting with other people is the main reason to leave the home environment and meet somewhere else in the neighbourhood, city or country. It is about enjoying the outside world, exploring unknown areas and events and the ability to absorb culture or nature.

Going out is an important activity and can vary from having a drink in a café or restaurant to visiting a theatre, a cinema, a concert or a festival. Also visiting a museum or doing some shopping are activities ordered under the general activity 'going out'. All these activities combined are associated with relaxation, getting away from things and social contacts, an enjoyable and pleasurable experience. City centre dwellers are also going out for their personal development, besides relaxation and meeting friends. The desired level of privacy greatly differs per activity. Nevertheless, it is always a social leisure activity, as there are continually others present.

The various activities won't be discussed in detail, as the design, following by this research, focusses on the city centre of Amsterdam. All those 'outside home activities' are relatively close by.

Respondents living in city centres were more likely to have mentioned 'going out' as an important activity. Meesters (2009, p. 36) found there is a strong relation between the preference to live in a city centre and the importance people attach to going out. Besides city dwellers who value 'going out' more, people with higher incomes and those who are higher educated were also more likely to have mentioned going out as important. This is a logical outcome as higher educated people usually earn more money, which enables them to live in expensive city centres.

The location where these activities take place differ per activity and depend on the location of the home environment. The activities performed outside the home are different in remote villages than in a city centre. However, when organising certain activities in the community environment, a better social connection with the entire neighbourhood can be made. The interaction with the neighbourhood is crucial, as the community should not become an isolated building.

The 'going out' activities can be performed throughout the day but most of the times it will be during late afternoons, evenings and weekends.

Activities normally performed outside the home environment can be organised in the community and therefore strengthen the connection with the surroundings and neighbourhood of the collective building. In this way, it can function as a social meeting space for more people than just the communal residents.

Doing laundry

Doing the laundry needs little privacy and can easily be shared by several households. Though, a system to regulate the use is needed in order to avoid inconvenience by occupied machines.

The meaning of doing laundry is quite similar to cleaning; it can be seen as an activity that has to be done and at the same time be one of pleasure, as the reward of doing the laundry is clean and fresh clothes which can be worn again. The activity of doing the laundry consists out of many proceedings; storing the dirty clothes, using the washing machine, using the dryer, ironing and folding the clean clothes, temporarily storing the folded clothes while folding the others and eventually moving the pile of freshly washed clothes to its storage place.

Washing machines and dryers are only used a couple of hours a week. It is an activity that does not need any privacy. Although, one does not want others to see their underwear for example, as this is experienced as something private. Others touching your underwear is definitely unwanted. So they should be able to put in and remove their own clothes themselves. This is not much of a problem but it means that one needs to take its clothes from the washing machine as soon as possible, whenever the machine is ready. Otherwise, it keeps a machine unnecessarily occupied and others may take out your clothes. If someone finds this idea annoying, one can avoid this by immediately going to the machine to collect its contents. This is different when owning a personal washing machine. In that case, it is possible to leave your clothes in the machine untouched for as long as you want.

The argumentation for their answers is unknown but not many respondents of the own survey are willing to share their washing machine with others. As well as most of them are negative about 'washing clothes' in a room with other people.

Doing the laundry consist of many different proceedings and these are, ideally, performed in the same room. Most of the times the washing machine and the dryer are situated in a space which is also used for other activities; the bathroom or a hallway are most common. This can be seen as the leftover space in a dwelling. When not owning your own machines, but sharing it with others, a real laundry room has to be realised. More room per machine is needed but it saves space compared to individually owning a machine. It is also an activity that saves all users a lot of money and is better for the environment when shared.

Only 12,6 percent of the respondents wanted to share their washing and/or drying machine with others. However, when comparing this percentage with those of the other spaces, it becomes clear that relatively a lot of people want to share their washing or drying machine with others. Only spaces that are 'easier to share', like 'a flexible workspace', 'garden' or 'hobby workplace', are more often mentioned as shareable. In combination with the low percentage of people who find it no problem if there are others present when doing the laundry, and explanation can be sought in the fact that people do not want others to see certain laundry. Another explanation can be sought in our habits and expectations. Nowadays we are not used to sharing our washing machines with others. While, not so long ago, and even nowadays in bigger cities, not everyone owns a washing machine and they use public laundrettes. This is affirmed by the phenomenon that respondents who do not possess a washing machine were more likely to answer positively on sharing one. Also, experience with sharing a washing machine or dryer increases the willingness to share these functions with others. Furthermore, the single respondents are more motivated to share laundry facilities with

others, yet the difference is too small to conclude that singles, in general, are more willing to share. There is a clear relation between willing to share a washing machine and dryer and washing clothes in a shared room. Respondents who want to share the machines with others were more likely to have also mentioned 'washing clothes' with others present, as no problem. The other way around the relation is less strong. This is a quite logical occurrence, as people are more willing to perform an activity with others present than actually sharing a machine or room with others.

The duration of the use is very important with this activity. A washing machine is only used for a couple of hours a week, when shared it will be used more intensely. This is way more efficient. The only side effect is that, when all machines are occupied, one is not able to use the machine. This can easily be solved by setting up a subscription list. So everyone can do their laundry when they want to and others can easily see if the machines are available.

Laundry machines are only used a couple of times a week. This makes it easy to share with various households. The initial function of a laundry room is providing facilities. Nevertheless, the space can also be used as a room for social interaction and spontaneous encounters, while residents wait for their laundry to be ready or are folding their clean clothes.

6.3 Storing

People possess too much stuff which is barely used and it needs to be stored for ninety-nine percent of the time.

We are collecting more and more stuff in our houses. This is partly caused by our materialistic oriented society and the higher social status one seems to have whenever possessing more. We value objects differently and the emotional value someone feels towards an object defines if someone else can use it. Next to the value an object has, the activity it is used for also influences the willingness to share. Here responsibility comes around again. When collectively owning and storing stuff, people feel less responsible and things are easily left broken or damaged. Storing private products is an activity that people do not want to share with others, only five percent was positive. This probably has to do with the association of 'private products' with personal objects that have a high emotional value. You do not want others to use these objects, or store them somewhere where they could get lost. However, when looking at the willingness to share items that someone does not possess at the moment, people are way more positive. People do want to share if their situation improves.

Storing is about possession but a distinction should be made between two types of storing. Personal items that need to be stored inside the private unit and are used on a regular basis. On the other side, we have the rarely used stuff that occupies a lot of space. If people experience their dwelling as 'too small', this is mainly caused by a lack of enough storage space. A collectively organised storage space can be used for all the stuff that is only used once a year and offers the possibilities to share items with your neighbours. Should all residents own their own drilling machine or can the community own one drilling machine and save a lot of money?

As people are not eager to store their products with others present, one could assume that they also would not like to share storage space. Less is true, more than two times the amount of people responded positively on sharing storage space with others. Yet, the same explanation could be used. The difference between 'storage space' and 'storing private products' is the absence of the emotional value with the 'storage space'. Only a few respondents who want to share their 'storage space' with others, find it no problem to 'store their private products' in shared spaces. The other way around, people who find it no problem to 'store their private products' in communal areas, were more often also willing to share 'storage space'. This seems logical when assuming that those respondents are less materialistic or emotionally attached to their possessions. People who are currently lacking enough storage space are more willing to share one with others. As expected also experience with sharing increases their willingness. An interesting finding turned up in the results; those who think that private products can be stored in a shared space, are optimistic about sharing in general.

The stuff stored is only rarely used. When all these privately owned objects are collectively bought and stored, this saves spaces and money. Next to this, the items will be used more frequently; tools that are only used for ten minutes a year by one household, are now more frequently used by more households.

Storing objects collectively also creates the opportunity to use these objects collectively. As the common stored stuff is only occasionally used, the storing space can be further away from the private unit. Nevertheless, every private unit still needs some space to save personal items and more frequently used stuff.



6.4 Working

Working at home creates the opportunity to perform other activities during the day. Depending on the kind of work, it demands a high level of olfactory privacy.

Working is an important part of daily life, nevertheless, it is a burden to some. The home is the relaxing environment where they can forget about their work and everything that has to be done. When replacing the workplace from the office to the home environment, the meaning of 'home' will change.

Working at home saves transportation time and one is more flexible in spending their work day. When working at an office, one is surrounded by its colleagues. Working at home is done alone. It offers the possibility to work in silence but a disadvantage is that one is isolated from social contacts and the necessary break. There won't be any distraction from colleagues, however no stimulation either. Working is seen as a social activity and the contact with colleagues is found important.

Most of the times a working environment demands a high level of olfactory privacy. Yet, the room can be shared with others who are also 'working at home' in silence. Nearly half of the respondents of the own survey says that 'working' can take place in a room where others are present, which is of course influenced by the type of work.

The home environment will cause distractions as well. During the work day, one can do the dishes, wash clothes or perform other activities that need to be done. Whenever one is at the office, these activities cannot be done and one is able to fully focus on their work. However, these so-called distractions are also the reason the respondents chose to work at home. Their reasons for working at home were the ability to work concentrated, whenever wanted, without any interruption, while being able to combine work with other activities; for example, watching the children or doing the laundry. An important connection with the activity 'being at the computer' is found. A lot of work is nowadays done at the computer. This is also the reason that working at home is possible. 'Being at the computer' is also associated with 'access to information' and a way to maintain social contacts. It is also seen as a basic need. While at the computer one demands a certain level of privacy. When referring back to the definition of privacy; 'regulating the amount of interaction with others', it shows the difficulty with the digital world. When sitting alone at the computer, one experiences a high level of privacy; a low level of interaction with others. While at the same time one could communicate with someone via social media; one is interacting with someone else.

These effects on the level of privacy will not be discussed here, as it is a completely different approach to privacy.

Whether working at home, instead of at the office, is possible, depends on the kind of work someone does. Younger freelancers are a group that work at home a lot. Those who own a company work home regularly. Also, the higher educated are working at home more often. Caused by the simple reason that working behind a computer can be done at home while working in a shop or making products cannot. Less than twenty percent of the respondents of Meesters' (2009) research, mentioned 'working at home' as a dwelling activity. It is unknown if this twenty percent is the total amount of people working at home, or the percentage occasionally 'working at home' is higher. The room where 'working at home' takes place is important for the associations and the effects it evokes. Working at the dinner table is interfering with the 'home' feeling and idea of relaxing that is connected to the place. An extra, separated room which is only used for working is less interfering. That room is meant for the working and outside of it, it is time for relaxation. Most of the respondents

of Meesters' (2009) research, work at home in the study. They are separating the living from the working, while one-third works in their living room.

When the workplace is withdrawn from the private dwelling and situated close to, but outside the dwelling, one still experiences the advantages from working at home. There is no wasted time for transportation but the division between home and work is re-established. Nowadays people are seeking such places in coffeehouses. It shows their demands for a workplace which is not at home and not at the office.

A workplace used by different users every day needs to be flexible, as it is unknown what every user needs and wants. Besides flexibility, there should be a variety of spaces, so everyone can choose the best suitable space for them. Furthermore, there should be a clear differentiation between the real workplaces and the places where a short break can be taken. Whenever this is not well defined, the break does not really feel as a break.

The 'flexible workplace nearby the dwelling' is the space or room that the respondents were most willing to share. It is a space that can be seen as a luxury and something which is quite rare. It would make it easier to work near home and save time. Surprisingly, the answers are not influenced by the current availability of a workspace in the home environment. Respondents who do have space to work at home are not more or less likely to share this workspace. This could mean that a flexible workspace is really seen as a luxury and addition, both for those who do own such a space and those who do not. Respondents who do have experience with flexible work spaces are more likely wanting to share these again. However, this is no reliable conclusion, as only a negligible amount of respondents do have this experience. This is the same for the difference between singles and the other respondents. More than sixty percent of those wanting to share this flexible workspace also found working an activity that can easily be performed while there are others in the same room. During which hours people work, differs greatly between persons. One of the advantages of working at home is that it can be done whenever wanted. It means that such a space should be available all day.

Working can be done at home, but in order to avoid the association of home changing from a relaxing environment to a working environment, a collectively shared flexible working space has to be created.

6.5 Being outside

When one sits outside they are often open to interaction with others.

The desired privacy when outside differs between private and public outdoors. The public outdoor is valued because of the experience of nature, meeting friends there and being among others. The desired privacy in a private outdoor space is much higher. It is a place for relaxation without being bothered by others. This private outdoor space is usually a garden, which can be seen as an extension of the living room and therefore needs the same amount of visual privacy. 'Being outside' is generally a leisure activity, yet a passive one. Most of the times it is not the only activity performed. Reading a book or performing a hobby can be done while outside. 'Entertaining guests' is also strongly linked to the outside, as a garden or balcony is a place where one can invite guests. Both privacy and social contacts are mentioned. An outside space offers the possibility to retreat from the busy life and enjoy nature, a higher level of privacy is then needed. However, 'being outside' has the strongest link with 'social contacts'. Collectively organising outside space will encourage social interaction between residents and will establish a stronger community.

'Being outside' can also mean enjoying the weather and affords a sense of nature, freedom and space (Meesters, 2009, p. 60). The link between 'being outside' and the sense of space and freedom were only found with city centre dwellers and the private outdoor space. This is the opposite of what was expected. The motivations people give to live in rural or suburban environments are the sense of space and freedom. The surroundings in these living environments also contribute to these senses. Whereas, the private outdoor spaces of city centre dwellers are the 'green' areas that contribute most to their sense of space. Furthermore, gardens are also exceptional in city centres. Possessing a garden is seen as a luxury.

'Being outside' is an activity of which it is generally accepted that it offers less privacy than the dwelling itself. Activities which are performed outside are more often mentioned as 'able to share with others'. Nevertheless, a certain level of privacy is wanted. Enclosing an outside space is difficult. Some privacy can be guaranteed by adding boundary elements as bushes, trees or fences. A roof is, most of the times, not preferred as it hinders users to experience the weather. Being outside is stronger related to a garden than a balcony. As people living in a dwelling with a garden have mentioned being outside more often than those only having a balcony. Both the 'outside space' and 'garden' are appointed as shareable by almost a quarter of the total number of respondents. Which is a lot compared to other spaces. When the relation with other activities is examined, it is found that those willing to share outside space or their garden, are also more likely to feel positive about sharing other spaces or activities. Being outside takes place during all hours of every day. Although, the more private outdoor spaces are more frequently used during weekends and afternoons when more people are at home. The respondents who do not own a garden at the moment are more willing to share one with others. Which is logical as their situation improves. The same applies for those who have experience with a shared garden and the single respondents. Half of those with experience, are willing to share a garden again. And a fourth of the singles is willing to share a garden, compared to a fifth of all the respondents.

The outside space also greatly varies in the desired level of privacy. Outside space can easily be shared with other residents and is important for the cohesion and amount of social interaction in a community. Outside places with various levels of privacy have to be created to meet all the desires.



The waterfront next to the co-living project Vrijburcht in Amsterdam.

6.6 Letting children play

Children who see other children playing outside, are more likely to go outside and join. As well as the parents who are watching their kids and hereby interacting with other parents.

Wherever children are playing, it should be a peaceful, quiet and safe space for them. The two most mentioned associations are the encouragement of their personal development and 'a place to retreat'. 'Letting children play' is an important part of the family life and all family-related activities. It is an activity that is not mentioned that often as an important dwelling activity. This is easily explained by the fact that not all respondents have children and those without, logically, won't mention this activity. Although, also their social interaction increases, as the common spaces are more lively and welcoming with the presence of children.

However, when designing such spaces it should be taken into account that residents without children do not always want to be accompanied by them. Children often produce a lot of noise, which can interfere with the privacy of others.

Over forty-five percent of the respondents says that 'letting children play' can be done in a room with others present. Children, whenever playing outside with others, do not demand a high level of privacy. If a child plays by itself, a high level of privacy is wanted. Most of the times this playing takes place in the home environment and when they want to be alone, they can go to their own room.

The room most people associate with children playing is the living room or the bedroom. Also, outside is mentioned as the place where children can play. The living- and bedroom are places that are associated with a high level of privacy and people are not eager to share. However, the outside or garden is easily shared with others. A communal room that is specifically designed for a larger group of children to play in, is an addition to the residential environment. Both for the children and adults, as they won't be bothered by the produced noise. Children play during the entire day, but mostly during the weekends and the afternoons of school days; which makes the space suitable for other activities. However, the target group of the design is singles, which makes this activity and the related rooms or spaces less essential for this community.

Children who are playing outside stimulate social interaction between other people. Creating spaces, indoor and outdoor, where they can play together positively influences the social skills of these children.



6.7 Gardening

While it is a relaxing activity for some, others do not enjoy gardening and see it as a necessary chore.

Gardening is often seen as an active leisure activity. Those who experience gardening as a pleasant activity, enjoy being outside, find that gardening keeps them busy and offers them a break from work. They also see it as a rewarding job, as the result of gardening is a garden that looks beautiful and they can sit in. However, it is also seen as a household chore that has to be done. Having a garden is fun, gardening can be rewarding, but having a garden entails the obligation to maintain it. Whenever someone finds gardening a necessary need, a reluctant feeling will appear when they need to mow the grass for example. Those people often have a garden with fewer plants compared to those who do see gardening as a hobby and relaxing activity.

Striking is that only suburban or rural residents see gardening as a necessity (Meesters, 2009). None of the city dwellers mentioned so. An explanation might be that city dwellers explicitly chose to live in a dwelling with a garden and that the residents of suburban and rural areas just took the possession of a garden for granted. They did no extra effort to obtain a dwelling with a garden.

The research of (Meesters, 2009) points out that gardening is seen as an important dwelling activity, as it is mentioned by forty percent of the respondents as an important dwelling activity. It is the third most mentioned dwelling activity, after relaxing and cooking. It should be possible to perform this activity nearby the dwelling. Both a garden and a balcony can be the place where gardening takes place. Although, gardening is three times more associated with a garden than a balcony. A garden provides more possibilities and can exist out of various places which offer different levels of privacy. Those different levels can be created by strategically placing plants, trees and bushes. Collectively working in a garden is more rewarding and the own survey showed that many respondents would like to share a garden with others. The respondents that are more often willing to share do not own a garden at the moment, are currently single and have experience with sharing a garden.

Sharing a garden with other individuals or households creates a common goal and activity. The gardening can be done together and creates social interaction and cohesion.



Collective garden of Vrijburcht in Amsterdam.

6.8 Hobby

An activity experienced as hobby is different for every individual and is most often enjoyed as relaxing.

A hobby is a relaxing activity, except, opposing to other activities described under relaxing, is an active leisure activity. Personal development and a way to keep busy are important reasons to have a hobby. It is a stimulating and often a creative activity. Some activities that can be grouped under hobbies are; handicrafts, playing music, maintenance of a car or bike, photography, doing odd jobs or making something. All these hobbies can be very valuable for the community as a whole. Whenever someone's hobby is to repair bikes; he or she can repair all the broken bikes from the other residents. This saves them money, while one gets the opportunity to spend time doing what he or she really enjoys.

Not much privacy is needed. It is actually the other way around; others in different rooms, or performing other hobbies, should not be distracted from the noise one produces. Neither should various activities interfere with each other. The level of privacy and the mutual interaction strongly depend on the exact activity the hobbies are.

Almost a fourth found their hobby an important dwelling activity. The real percentage could be higher, as other mentioned activities could be the hobby of a person. This is the case with cooking for example; cooking can be the hobby of someone. The older a respondent was, the more likely he or she was to mention hobby as a dwelling activity. This is probably caused by the fact that younger people have a busier life. When they come home after a busy day at work, they want to relax and do nothing. Older people, especially when retired, have more time for a hobby. Apart from their age, city dwellers, compared to people living in rural areas, did less often mention hobby as an important activity. Furthermore, the amount of one- and two-person households mentioning hobby was higher. Those two distinctions could be explained by the facts that residents in rural areas need hobbies to do something besides their work as their living environment is less lively. As well as one- or two-person households need hobbies, for the social interaction it brings, more than those part of bigger nuclear families.

The places or rooms where people perform their hobby depend on the needed level of privacy and the exact activity. The respondents of Meesters (2009) mentioned the living room, study room or garage, basement and attic as the rooms where they performed their hobby. The percentages were almost evenly spread. The chosen room is of course caused by the particular activity, as repairing a car cannot be done at the attic of a house. Activities that concern fixing, repairing or making things are mostly done in a garage or shed. Mostly these spaces do not have enough space for working and storing. A shared workspace offers more space and enables its users to use more materials and tools. Whenever such a workshop is placed along a public street, not only better interaction and connection between residents of the community but also with its neighbours will be evoked.

As every individual has another hobby it is difficult to retrieve reliable conclusions from the survey. However, the hobby workspace was the second most mentioned space that could be shared with others. It is also an easy room or activity to share with others. Those spaces are used during all hours of the day but probably most during the weekends. It also depends on the age of the person when these activities are performed. Retired, or non-working persons, have time during the day, while people fulltime working people only use such space during the weekends. A collective hobby space

should have a high flexibility as it should be suitable for a lot of different activities.

Contrasting to any other space or room discussed in the survey, current possession of such a hobby workplace does increase the willingness to share this space with others. This can be due to the fact that those who do not own such a hobby place, also do not feel the desire to own or use such a place. Next to this, it can be assumed that those who do use such places are happily willing to share and use it with others. Those who already have experience with sharing such a hobby place are more willing to share it again. Nonetheless, the number of people with this experience is too low to retrieve a common conclusion. Also, the single respondents were way more positive about sharing a workshop. The difference between the single respondents and the entire group is the biggest with this workshop. Moreover, those who want to share a hobby place are more willing to share any other space.

The spaces where people can perform their hobbies are very important for the cohesion in a community. Various groups will be formed, with their hobby as a common interest. More than one hobby can be situated in a single room. The possibility to combine hobbies is defined by the need of visual- and/or olfactory privacy and the nuisance it can cause to others.



Bike storage of Tietgenkollegiet in Copenhagen.

6.9 Transportation

People who currently do not possess a car, are more willing to share one than those who do own a car.

Transportation is most of the times an activity that has to be done to go from one place to the other. Public transportation enables its users to perform other activities during the journey, whereas riding a bike or driving a car are active activities that need full attention. There is a difference between commuting and other types of movement. Biking and walking are rated more positively than transportation by car or public transportation. They associate biking and walking with relaxation, peace and quiet, sense of space, freedom and a break from work. Whereas commuting is described as a time-saving, convenient, efficient and safe activity.

Possession of a car in the city centre of Amsterdam is rare. This makes sharing a good solution, while in rural areas car-sharing is coping with many obstacles. The main issue that determines if sharing is even possible, is how frequently one uses its car. Sharing a car is the best solution for users who only sporadically need a car. Daily commute makes shared cars more difficult.

Commuting is seen as an important activity in the residential environment, as it, of course, takes place between the dwelling and the workplace. It was most mentioned by those not living in city centres, as the distance between their work and house is probably the biggest.

The activity of transportation, whether by bike, car or public transportation, has not that much to do with a desired level of privacy. However, the level of privacy is different for each of the types of transportation. Public transportation offers a low level of privacy and whenever there are too many people in one train or bus, people will interfere in each other's personal space. People who do not like this idea might avoid using public transportation. Riding a bike offers a somewhat higher level of privacy, as you can choose yourself where to ride and avoid busy locations. Driving a car offers way more privacy, especially a high level of acoustical privacy. This is the reason cars are seen and used as private bubbles.

Sharing a car or bike with others and the spaces where these can be parked, do not have a lot to do with personal privacy. It is more about the sense of security and avoiding unwanted persons to use or come near the parked cars or bikes and either steal or demolish them.

One-third of the respondents found sharing bicycle storage no problem and almost a fifth wanted to use a shared car. Sharing a car was more popular with those who currently do not own their own car. As well as those who already used shared cars are more willing to do so again. Singles are also more willing to use a shared car instead of owning one. However, it should be taken into account that almost half of the single respondents did not own a car at the moment and this percentage is higher than with the entire group. Thirty percent of the total group does not own a car, which could explain the difference in willingness between singles and the rest of the respondents.

Parking of bikes and cars can be organised collectively. Although these spaces should be inaccessible for outsiders to prevent damage or theft by unknown persons. Sharing a couple of cars with more households is especially efficient and possible in city centres as Amsterdam.

6.10 Cooking

Cooking is done to produce food but is also a social occasion. However, it can be seen as an obligation while for others it is a relaxing activity.

Cooking is much more than only a way to prepare food. It is a relaxing and social activity, that some people experience as their hobby. It is a pleasant activity and cooking for others and inviting them over is seen as an act of hospitality; people want their friends to feel welcome in their home. However, cooking is also a household chore and can be seen as a necessary job. More than half of the respondents mentioned cooking (Meesters, 2009). The social factor of cooking becomes clear, as the associations with cooking were 'prepare food for others', 'being together with friends', entertaining guests' and 'eating together'. Cooking and eating are linked by those social activities but are separated by the association of 'peace and quiet', which is only linked to eating. Another interesting subdivision became clear; cooking is more often mentioned by city dwellers than by people not living in cities. This is a bit strange as it is assumed that residents of a city go out more often and therefore eat outside the dwelling more frequently. This would make cooking less important to them (Meesters, 2009, p. 43). However, during the day they are away from the dwelling and when returning home, the first thing they usually do is cooking dinner, which makes it an important activity for them. This is another way of comparing the outcome and could also be an explanation for this difference.

An important part of cooking is doing the shopping for the meals. Daily errands were mentioned by almost eighty percent of the respondents. When the respondents of Meesters' (2009) research were asked what this activity meant for them, most of them answered with functional aspects as 'close by', 'saving time' and 'convenience'. Those errands are, more than cooking, seen as something that needs to be done and should not demand too much effort or inconvenience. Yet, grocery shopping can also be a social activity to meet others. To satisfy the needs of the residents, it is important that close by the dwelling, there is a possibility to purchase food for cooking. The dwelling and the residential environment should be functionally designed such that they provide some support for performing these activities in a comfortable and efficient manner. This is especially found important by city centre dwellers.

Cooking does not demand a high level of privacy. Although, there should be enough space to prepare a dish and people should not be bothered or interfere with others using the kitchen. Space is also the most important functional aspect that is linked to cooking. It can be stated that those respondents experience their kitchen as too small and therefore mentioned 'space'.

Cooking is also by the respondents of the own survey, 28 percent, seen as an activity that can be performed with others in the same room and is, therefore, a social activity. This matches with the conclusions of Meesters, as she appoints cooking as a social activity. Cooking for, and with, others is often found more satisfying and enjoyable than cooking for only one person. Especially when the following 'eating' will be shared as well. This is emphasised by the big amount of people who both think cooking and eating are shareable activities.

Cooking is always done in the kitchen but a kitchen is also a place for other activities; eating and being together for example. Yet, cooking was mentioned as main activity for the kitchen (Meesters, 2009).

The kitchen is not mentioned that many times as shareable. However, from the more private rooms of a dwelling, such as the living- and dining room, the kitchen is the most often mentioned as shareable

space. Those who found the kitchen shareable were also more likely to do so for the activities cooking, eating and cleaning. The other way around, mentioning cooking and the kitchen, was less common. Which means the respondents, in general, are more open to cooking together than actually sharing their kitchen with others. Experience with a shared kitchen does increase the willingness, however, the actual number of willing to share is still low. Contrary of the expected outcome, there is no difference between the number of singles wanting to share a kitchen and people living together with one or more other persons.

Kitchens are only used during specific hours. Usually during the hour before eating, which means it could be used for something else during the other hours of the day. However, for the kitchen, this is more complex than for other spaces, as there are many facilities and objects that cannot be replaced and a kitchen will always remain the kitchen. Nevertheless, when the room has enough space for a table, for example, it is possible to use this table during the day. Connecting the kitchen with other spaces makes it less of a separated and excluded room and offers more possibilities to use the kitchen for various activities.

Limiting the area of the kitchen and the available appliances in the private units encourages residents to use the communal kitchen and sharing their dinner with others.

6.11 Eating

Eating together is, concerning social interaction, the most important shared activity of a group.

The social interaction is an important, and maybe most important, aspect of eating and drinking with others. Eating together creates a group and the feeling of belonging to a group increases when this group eats together regularly. As Chermayeff and Alexander (1965) state that no human group can stay together without eating together. Having dinner together after a long day enables the sharing of personal experiences with others. A possibility to talk the day over and a moment of rest and peace for a group and all its individuals. The common meal is often shared in existing communities. In cohousing projects in Sweden, this is usually the core activity. It is an important way of creating a sense of community, saves a lot of time and resources (Vestbro, 2012, p. 10).

Responses about the meaning of eating are all focused on the being together with others. Eating with members of the nuclear family is mentioned a lot but also eating with friends and guests are mentioned many times. Eating is an important activity as every person needs enough food to function well. Yet, another main cause is the social values that are strongly connected with eating. This is also proved by Meesters' (2009) research; people living in a household with three or more people were more likely to mention eating as an important dwelling activity, compared to those living alone or with only one other person. The activity of eating is strongly linked to cooking, both activities have overlapping meanings. The main difference between them is that eating is more seen as a relaxing and peaceful activity, while cooking can be seen as 'an activity that has to be done' and is, by some, seen as a burden.

More than thirty-two percent of the respondents of the own survey said that eating is an activity that can be shared with others or with others present. The activity of eating does not need a high level of individual privacy and can be performed when strangers are present. This is, for example, the case in a restaurant; there are a lot of unknown people in the same room while having dinner. An important aspect is that every group of people has its own table and this regulates a group's privacy. On the other hand, visiting a restaurant alone is by some seen as something strange. Evoking the feeling that others think they are alone and do not have someone to share dinner with. Eating is an activity that can be performed in different settings. In Meesters (2009) research this was also shown. Most of the respondents appointed the living room as the place where eating took place, besides this the kitchen and dining room were mentioned and a few said that eating took place outside.

Only six and a half percent of the respondents of the survey checked the box of sharing their dinner table with others. This small number cannot directly be clarified, but a possible explanation is the associations people have with having dinner. They see the activity of eating as a social activity of being together with others, although they see their dinner table as something bigger. It is a place where much more than only eating takes place and, for some, it could be seen as the centre of their home and their family. However, many of the respondents who do want to share their dining table, find eating and cooking activities that can take place together with others.

The respondents who already have shared their dining table with others were more willing to do so again. None of the single respondents wanted to share their dining table with others. Although, the total number of respondents willing to, is too low to give a reliable result.

Eating is done throughout the day. The two main dishes that are commonly consumed at home are the breakfast and dinner. Of those two, the dinner is the most shared with others and therefore the most a social activity. The activity of eating takes place at the dinner table. During the hours this place is not used for eating it can be, and mostly is, used for other activities. This makes it a multifunctional space that is used throughout the day.

Social interaction during dinner time is one of the most important social occasions during the day. Eating together, on a regular basis, is positively influencing the cohesion in a community. Some subdivision in the common eating facilities should be made, to provide various groups to have dinner with a specific group of people.

6.12 Relaxing

Every person needs time to relax in order to forget about everyday life and recharge their energy.

A lot of different activities have relaxing as a 'meaning of' or association with them. When taking relaxing itself as an activity it shows that it is strongly connected to the hobbies a person has; as both are leisure activities in the dwelling. The combination of hobby and relaxing mostly stimulates the person, feels as some time for yourself and a break from the usual work. The difference between relaxing and performing a hobby is that relaxing is a passive activity and hobbies are most of the times active leisure activities (Meesters, 2009).

The own survey also showed that there is an overlap between 'relaxing' and the activities that can be seen as relaxing; 'listening to music', 'watching television', 'talking' and 'reading'. Relaxing definitely needs a certain level of privacy. However, it also depends on the activity; 'watching television', 'reading' and 'listening to music' require a certain amount of silence, so acoustical privacy. Other people in the same room who are talking or listening to other music can be irritating. Furthermore, another unwanted happening is persons trying to interact with you. When reading in silence, others can be in the same room, except for when they seek social interaction.

Another leisure activity that is experienced as relaxing, yet not a passive but an active one, is sporting. It is done for the same reasons as the other relaxing activities; a 'break from work', 'getting away from things' and to 'forget about daily worries'. It is a way to support one's social contacts and to take care of one's health. Yet, sports emphasises on health, which is an important motivation, above relaxation, for doing sports.

More than sixty percent of the respondents named relaxing as a dwelling activity, of which watching television and reading were the most mentioned. The group of respondents under forty years old most mentioned relaxing as an important dwelling activity. This could be caused by the busyness of them and they experience the dwelling as the place where they can fully relax. The same applies to the fact that city dwellers mention relaxing more often than inhabitants of rural areas do. Furthermore, the availability of a garden influences the association with relaxing; people with a garden mention relaxing more frequently. Doing sport is found more important by people living in one- or two-person households.

Relaxing demands a certain level of privacy, but it strongly depends on the exact activity. Relaxing is one of the activities that is most mentioned, by more than thirty-five percent, as an activity that can be shared with others. This also counts for the activities that can be grouped under relaxing; listening to music (twenty-seven percent), watching television (thirty-three percent) and reading (twenty-six percent).

Over eighty percent of the people who joined the survey of Meesters (2009) and named relaxing as an important activity, said that this took place in the living room. The living room is the main room and a lot of different activities are performed in the living room. This is also found by the own survey; almost seventy percent named the living room as the room where they enjoyed staying the most. All the activities grouped under relaxing are mainly performed in the living room and are therefore sometimes interfering with each other. When collectively organising these rooms or activities, a distinction between the activities and their desired level of privacy can be made. Yet, it can be different for every person and even from time to time. The living room is the place where people enjoy

staying the most. Nevertheless, relaxing activities are not bounded to a certain room. The survey did show a strong link between willing to share the living room and the activity of relaxing; seventy percent of the people willing to share their living room also appointed relaxing as an activity that could be shared. Additionally, those with experience with a shared living room have more often said that relaxing can be done with others nearby.

All individuals find different activities 'relaxing'. All these activities demand a different level of privacy, which should be provided by the physical surrounding in the various collective areas.

6.13 Talking

Talking is a social activity. The discussed subject defines the desired level of olfactory privacy.

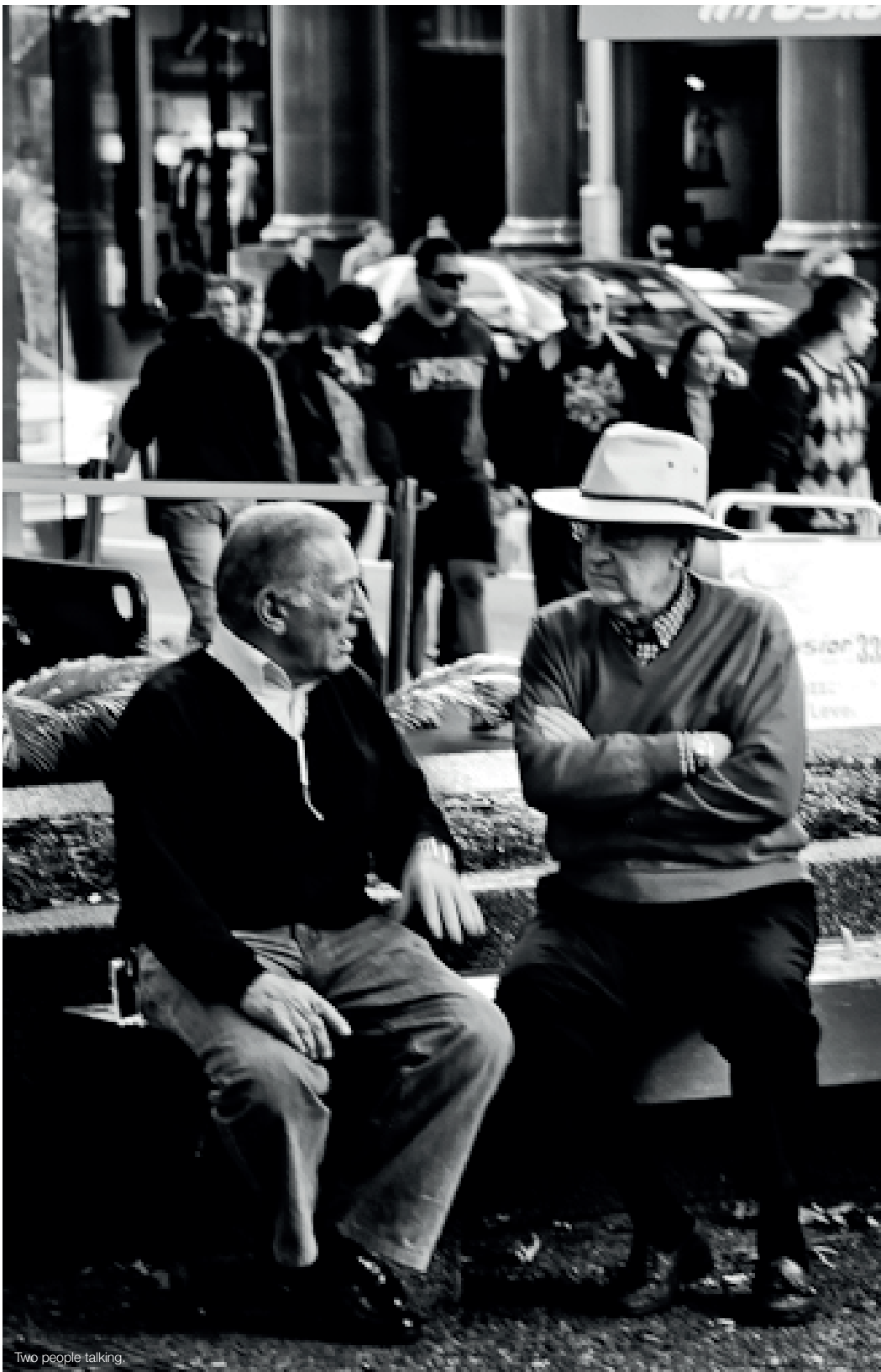
Of course, there are always others needed to have a conversation. The level of privacy is determined by the subject of the conversation. Discussing private situations or even subjects that need to stay secret demand more privacy than talking about the weather does. It is about the privacy of everyone who is participating in the conversation. This group can consist of twenty people or only two persons; they as a group do not want to be bothered or heard by others.

Talking is an important part of the social activities, and of someone's social life. It can be either to catch up with friends to discuss life and having a short chat with ones' neighbour or colleague at work. Talking can take place between persons who are, physically, close to each other. Or it can be on the phone or even via the internet.

One of the most important, maybe even the most essential, conversation is the one after a long day of work. 'Talking the day over' with someone is an important daily activity. Which is usually done in the private sphere during dinner. Whenever someone is living alone, this daily chat could take place with someone over the phone. Yet, it is unlikely that this occurs daily. A neighbour, community member or housemate, who is seen as a friend, could take over this role. In a community this could take place during communal dinner for example, or when two of them meet on the way to their private units.

Talking can take place anywhere. Although, it depends on the discussed subject where people experience enough privacy. Next to this, the setting of a room defines the level of sound one feels free to produce. In a silent room, one will lower its voice, while in a busy environment one almost needs to shout to make oneself intelligible. Nearly half of the respondents of the own survey found talking an activity that can take place in a room where others are present. This is a quite logical outcome, however, they were not asked about the kind of conversations or topics they wanted to discuss in public. Furthermore, the activity is overlapping with almost all rooms and spaces, the explanation has to be found in the fact that talking is mentioned by so many respondents that it is no more than logical that it has a strong connection with all spaces, and not so much in the point that talking takes place everywhere.

Cohesion between residents is increased when they talk with each other, as it is a way of retrieving information about the other person. Yet, talking with close family members about personal or even secret subjects demands a high level of privacy.



Two people talking.



Shared living room in the 'Old Oak' coliving building in London.

6.14 (Being in the) living room

The room where people prefer to be is the living room.

The living room is, of all rooms in a dwelling, the place where people 'feel at home' the most. The own survey also showed that it is the room where they prefer to be. 'Being in the living room' is a passive activity, as it explains where the person is at that moment and does not say anything about what he or she is doing. Associations people have with their living room are 'relaxing', 'personal development' and 'social contacts'. Twenty percent of all the activities that take place in the living room are so-called 'social activities'; there is a strong connection with the activities 'inviting guests' and 'being together with the family'.

Relaxing came forward most often, forty percent of the mentioned activities were relaxing ones, such as; 'watching television', 'reading', 'doing nothing' and 'listening to music'. Other activities that were mentioned; 'eating', 'entertaining guests', 'being at the computer', 'children playing', 'being together with the nuclear family' and 'hobby'. Another activity that was mentioned by city dwellers, was 'working at home'. This, from Meesters' (2009) research, shows that the living room is a place where a lot of diverse activities are performed, it is a multifunctional space. Which serve both the individual and collective interests; the living room is a place to be on your own or together with others. As the living room is seen as the centre of a dwelling it also has strong connections with other spaces. The kitchen for example, as many people eat in their living room. Also, the garden can be seen as an extension of the living room. When the weather allows it, the function and the activities of the living room are moved to the outside. Combining both can enlarge ones' living room and offers more space.

City centre dwellers mentioned 'eating' and 'entertaining guests' in the living room more often than respondents living in either suburban or rural type of residential environments. These city dwellers also appointed the living room as a 'basic need'; something they cannot live without. A clear explanation is not found by Meesters. Yet, it could be concluded that those respondents value the social and relaxing activities in the living room more.

The own survey showed a contrast between the willingness to share a living room and the activities that usually take place in the living room. Performing those activities with others present is substantially more 'allowed' than sharing a room, in this case the living room, with someone. This probably has to do with the regulating of privacy; reading with others present is not a problem as long as there is a possibility to read in private too. Sharing their living room makes respondents think that they have to share every activity done in this living room, which could be a too big deal and evokes a lack of privacy.

Respondents who do have experience with a shared living room and those who are single, are more willing to share a living room. Nevertheless, the difference is not too big and the number of people wanting to share a living room at all is also quite low; which does not give a reliable representation.

The living room hosts many activities and evokes many feelings. When separating these activities into independent rooms, the various levels of privacy can be easier met. Additionally, it will increase the willingness to share those activities with others. The private unit should have a small living room and the community should offer enough other rooms and spaces to perform all activities usually done in the living room.

6.15 Inviting guests

Inviting guests is an activity of social interaction.

Inviting others to your house can have various reasons. Cooking dinner for friends and eating together, throw a birthday party or even let them sleep over. Yet, they all mean the same; meeting at home with people from outside in order to maintain social contacts. Meeting with friends in the home environment is experienced as an enjoyable, social leisure activity. It varies per person how many times a year this takes place but the space needed for these activities can easily be collectively organised. However, privacy is the most mentioned association with 'inviting guests'. This privacy has to do with the level of privacy for the entire group. When inviting guests or friends over, they want to be together with this specific group of people and not be bothered by others. Other meanings were 'sense of security and harmony', 'hospitality' and 'sharing things together'. In Meesters' research a distinction is made between 'inviting guests' and 'visiting friends'. The respondents replied with the same answers for both activities. They also mentioned 'feeling at home', when visiting good friends one can also feel at home at the home of their friends. Both activities usually take place in the living room but also the 'kitchen' and 'outside' were mentioned. Which was expected as 'inviting guests' is a real social activity and the reasons discussed in the paragraph above; '(being in the) living room.'

Despite its importance for the social interaction one has, only seventeen percent of the respondents found 'entertaining guests' an important dwelling activity. Though, 'visiting friends' is more often mentioned, by thirty-six percent, as an important activity of daily life. This could have to do with the different associations one has with friends and guests; usually, a better relation is felt with friends. Interesting is the observation that residents living in suburban or rural areas were more likely to mention 'visiting friends' than 'inviting guests'. While respondents who live in cities and those who are part of a one- or two-person household, find 'entertaining guests' more important.

Nearly a quarter of the respondents of the own survey found 'inviting guests' an activity that could take place in a room while there are others present. When they were asked if 'a room to invite guests over' was shareable, only roughly twelve percent responded positively. This decrease could be explained by the way the question was asked; the space was described as 'a place to invite friends over', without any explanation or whatsoever. The real ability to share such a room or activity depends on the number of guests. The size of the group, their behaviour and their way of interacting define the level of privacy this group needs and if others, from outside this group, will feel interfered in their privacy.

Inviting guests over can have various reasons; throwing a party, serving dinner or letting them sleep over. All these activities have their own level of desired privacy and a variety of common rooms should be realised to facilitate those activities. Especially the space needed to let others stay overnight is used very little and can easily be collectively organised.



Collective garden of Vrijburcht in Amsterdam.

6.16 Cleaning

The felt responsibility towards a certain space determines the willingness to keep it clean.

Cleaning is an activity that has to be done once in a while and is mainly mentioned as one of the household chores. A distinction can be made between two types of cleaning duties; the smaller and quicker cleaning versus the bigger tasks that take longer, yet only have to be done once in a while. Some see cleaning as an unpleasant duty, while others find it a satisfying activity; living in a clean house is nicer and makes them feel better. As anyone can expect, the meanings 'a neat and tidy house' and hygiene were the most heard meanings. A strong connection with a certain room was hard to find. Cleaning is a rather difficult activity to explain in a certain setting as it takes place in all rooms and is not limited to one place in the dwelling. All rooms need to be cleaned, though, one more often than another. The only real space that is needed for cleaning is some storage space to store the cleaning products.

Actually, the activity of cleaning has not that much to do with privacy. It is more about the level of responsibility people have, or feel, for the common spaces. People keep spaces clean if they feel a responsibility to do so and if they benefit from a clean space. When collective spaces are created, it has to be clear who owns it and who is, or feels, responsible. One of the main issues co-housing projects cope with is the lack of this responsibility. It causes unwanted friction between residents and the cleaning, in whatever way, should be arranged from the beginning. Residents are more likely to keep something clean if it was already clean. When the room was already dirty or messy before using it, it is less likely that they will clean it afterwards.

One-third of the respondents of Meesters' (2009) research mentioned cleaning as an important dwelling activity. This group is mainly under forty years old, low educated, living, or willing to live, in a single-family dwelling with a small living room and in a rental house. The causes of and relations between these characteristics are a bit unclear. A cause could be that women from a lower social class are more concerned about keeping their house clean and that persons who earn more are able to hire someone to clean their house for them. This makes cleaning an activity they do less often and therefore a less important activity.

As already stated, cleaning is more about responsibility than about privacy. However, the outcomes of the own survey can be used to get conclusions. Over twenty percent found it no problem if others were present when cleaning. Those who answered positively, have in general a more positive attitude towards sharing. Whenever they found sharing a living room, kitchen or bathroom no problem, they were more willing to clean together.

People are only willing to clean a shared space if they use that space and retrieve advantages from keeping the room clean. Actually, cleaning has nothing to do with desired privacy while performing this activity, it is about the responsibility they feel towards spaces.



Laundry room facilities at WeLive in New York City.



'Maquette hall' of the Faculty of Architecture in Delft.

6.17 Maintenance

Fixing an object that is barely used is perceived useless.

Maintenance is about two different things. Either fixing something because it is broken or to add value to. People see maintenance as a way to adapt their dwelling to their own needs. It is a way to increase their residential satisfaction and to preserve the dwelling or even increase its value. Doing these things yourself saves money in the first place. However, it also an activity to keep busy and some may find it their hobby. In this case, it can be seen as an active leisure activity, while others find it one of the households' chores.

The activity has a low frequency. Maintenance of the dwelling takes place throughout the year by smaller chores. The bigger and more profound maintenance takes place only once a year, or even less. Those jobs are therefore not mentioned as important dwelling activities. Next to this, the type of someone's' dwelling and its needed maintenance has great influence on the importance.

The type of maintenance, and more importantly the kind of objects that need to be fixed, define where this activity can take place. A hobby room at an attic is not suitable for fixing a car. A communal workplace should facilitate enough space and tools to perform almost all types of maintenance. It is also an activity that is easily performed in the presence of others and it is even more enjoyed when worked on together. Especially, when it is seen as a hobby and performed in someone's spare time.

Repairing something that is broken can be seen as a relaxing activity and as a burden. Still, people will only fix something if it is used regularly and they experience disadvantages when the objects are unusable. The same as with cleaning, it has to do with responsibility. Whenever one feels responsible for the broken objects, he or she is more often willing to fix the problem.



Part of the 'going to the toilet' activity.

6.18 Going to the toilet

Going to the toilet requires a high level of visual- and olfactory privacy.

Going to the toilet is a necessary activity which everyone needs to do a couple of times a day. It is also sometimes seen as an unwanted activity, especially when one is not in the own home. Another interesting phenomenon is the fact that some people stay on the toilet for a much longer time. They are at the same time performing other activities; reading or doing something on their mobile phone. This is a rather strange combination of activities.

People want a high level of privacy when going to the toilet as they do not want others to see, smell or hear them. Besides the wanted privacy when actually using the toilet, people do not want others to see them going to or leaving the toilet too. Everyone knows that we all need to visit the toilet once in a while but still we do not want others to see us going to the toilet. Another aspect that has to be kept in mind is that people prefer to go to the toilet in their home and therefore postpone their visit until they are at home. This has to do with their desired level of privacy, in their home they experience enough privacy for this situation.

This desired level of privacy is typical for our way of life. In other countries, the privacy in toilets is completely different. In China, for example, they have communal toilets which exist of a row of holes in the ground without any separation in-between. When visiting the toilet, nothing from the other visitors is unseen, unsmelled or unheard.

To prevent people from hearing others in a communal toilet, the typical toilet stalls which are unattached to the ground and ceiling should be avoided. The walls prevent people from seeing each other but they can hear and smell one another. It is less extreme than the above described Chinese and well-known ancient Roman situation, yet it creates an unwanted and unpleasant situation. Only a very small amount of people indicated that they were willing to share a toilet with others. Except for one, all of them already had experience with a shared toilet. So, experience does positively influence their choice, however, it is important to mention that it only did by less than fifteen percent of the respondents. The number of people who find going to the toilet with others in the same room no problem is even lower. Only sixteen respondents answered positively but it is still more than expected. The reason for this response is unclear. Nevertheless, the other ninety-three percent respondents are explicit that going to the toilet is an activity that requests for a high level of privacy.

Toilets can be shared with others. Yet, the toilets need a high level of privacy and the entrances to the toilets should also offer some visual privacy. People do not want others to know they are going to the toilet.



Meeting in community space of Vrijburcht in Amsterdam.

6.19 Being with the family

Being with the family is a social activity, though only between the members of the family.

The general meaning of 'being with the family' is 'sharing things with others'. The sharing of someone's experiences after a long day is one of the most important activities shared with family members.

Privacy is the most mentioned association with this activity, followed by 'home life', 'sense of security and safety', 'harmony' and 'feeling at home'. This activity is always performed in a group and therefore, the desired privacy is concentrated on the interaction between the family and outsiders. Among the family members, interaction is wanted, it is a possibility to share things together, to reserve time for one another and maintain social contact with each other. Besides the privacy every individual needs, a group of people also demands a certain level of privacy. This level depends on the setting this 'getting together' takes place. Family members can come together in a restaurant and experience enough privacy. Nevertheless, every family needs a place where they can retreat as a group. The high level of desired privacy can be compared to the privacy an individual needs when he or she wants to be alone. Either one person or one group does not want to be bothered by anyone. A community should offer them the possibility to retreat as a family and completely block the interaction with outsiders. Chermayeff and Alexander (1965, p. 16) also described this necessity; 'the basic unit of human activity for most people, and for society as a whole, is the family. It is precisely the private familial peace (...)'

Obviously, the activity 'being together with the nuclear family' is more often mentioned by people who are part of a household of three or more persons than by those who are part of a household with fewer members. City centre dwellers focus more on being together with friends, while suburban or urban dwellers are more focused on being together with their family.

The room where a family mostly comes together is the living room, this is also the space where the respondents of the own survey preferred to be. Additionally, it is also the room that most people absolutely do not want to share; they are only more negative about sharing the bed- and bathroom. Sharing this intimate coming together with others is an absolute no go.

Experience with sharing a living room does somewhat increase the willingness to do so again. However, we should take into account that this experience is most of the times gained in a student house or as a starter. In these situations, all individuals did not yet have their own family and meeting with their parents and siblings probably took place at the parents' houses. The differences between singles and other groups are insignificantly small; this supports the idea that 'being with the family' is similar to 'being alone'.

The level of privacy for the family is high. When being together with family members they do not want to be interrupted by others. Besides various groups that need a high level of privacy, all families also demand a high level of privacy in certain spaces.

6.20 Dressing

Visual privacy is wanted when changing clothes.

Dressing is an activity which is experienced differently by each person. One will grab something out of the closet and put this on, another will spend some time to think about what they want to wear and will maybe redress a couple of times before being satisfied with their choice. Furthermore, the number of clothes and the needed storage space varies per person. Dressing is an activity that takes place in-between other activities. One dresses after sleeping and showering and always before leaving the house. It is often done in the bedroom, as this room facilitates different activities. When dressing takes place in a dressing room it is seen as an isolated activity. Such a room should offer enough space for a person to dress and should offer enough visual privacy, whereas acoustical privacy is not necessary. Such a separate room should be directly adjacent to the bath- and bedroom, especially in a more collective environment, as one needs visual privacy when walking from the bath- to the dressing room for example.

People tend to turn away when dressing. They seek for privacy as being naked makes the person feel vulnerable. So, dressing needs visual privacy.

The storage of clothes is an important part of the activity dressing. Not enough storage space will cause a messy room with clothes everywhere. Nevertheless, I think that this also has to do with personal habits; a closet in a bedroom does not necessarily mean that clothes are spread across the entire room. However, when solely focussing on the activity of dressing, a small room for dressing and storing clothes is sufficient. One dresses only two times a day; when getting out of bed and before going to bed. The rest of the day this place is unused.

Dressing is an activity done in between other activities. The space where one dresses should be situated close by the rooms where those other activities are performed; bathing and sleeping for example. The dressing room should contain enough storage space for someone's clothes. Visual privacy is needed as people feel vulnerable when being naked, while the other levels of privacy can be much lower.



Moveable closet in G27 student housing in Berlin.

6.21 Personal care

People demand a high level of privacy when being naked.

There are many activities part of 'personal care'. Doing your hair and brushing your teeth have a different desired level of privacy than taking a shower has. People do not feel comfortable being naked, as it is directly linked to sexuality. People hide their body from others, as it is the most private of every human being. However, this is also caused by our society and the unreachable 'perfect body' that is projected.

Children are not yet aware of the shame of being naked. While growing older and puberty strikes, one gets to feel uncomfortable when naked. This makes bathing and showering activities that need a high level of privacy. Visual interaction is completely unwanted and one should be unseen when showering.

The meanings the respondents of Meesters' (2009) research gave to personal care are 'hygiene', 'peace and quiet', 'relaxation', 'time to yourself' and 'privacy'. All these associations imply that a high level of privacy is desired.

Most activities that can be clustered by 'personal care', take place in the bathroom. The bathroom is appointed shareable by only a small number of people. A bathroom is rarely used during the day, most of the time it is occupied right before or after sleeping. Sharing a bathroom seems like an efficient decision. However, the high level of desired privacy requires a good design with enough subdivisions to offer enough privacy, both in the bathroom itself and on the way to.

Only a small amount of the respondents found it no problem to shower with others present, this amount is so small that it can be concluded that showering is an activity that needs absolute privacy.

Nevertheless, experience with sharing a bathroom did increase the willingness to do so again.

Sharing a bathroom is possible, although, even in quite a few types of student housing each room have their own private bathroom and none of the single respondents wanted to share a bathroom.

Personal care is much more than only showering or taking a bath. The room for these activities should provide enough space to accommodate a whole range of activities and should offer the highest possible level of visual privacy.



Sink in one of the private units of G27 student housing in Berlin.



Haven Pods by Mark Gabbertas.

6.22 Being alone

Every person needs a place to be alone.

Being alone already points out that no interaction with others is wanted. It needs a high level of physical, acoustical, olfactory and visual privacy. The essence of being alone is that you can do whatever you want, without being interfered or seen by any other person. Even when living together with others, every member of the household should have its own place to be alone. When a dwelling is occupied by two persons, it should at least have two rooms; for example a living- and a bedroom. Whenever the entire dwelling consists out of only one space, it forces its residents to be together and makes it impossible for them to be alone in their dwelling. The difference with families is that each family member needs a place to be alone. This means that, in a collective-oriented living environment, the private units should contain enough rooms or spaces where individuals can withdraw themselves from their family members.

For those living alone, the living room is most of the times the place where they can be alone. The own survey also showed the reluctance to sharing a living room; less than six percent was positive.

Every individual in a community needs a place to retreat. All levels of privacy need to be high and every person should be able to adapt the place to its own need.

6.23 Sleeping

It are the activities before and after sleeping that need privacy the most.

Sleeping itself does not request a lot of privacy, although, it demands trust in the surrounding and its people. The activities before and after sleeping that need privacy the most. It is the intimacy, both the sexual and social interaction, between two people that asks for the security of privacy. These activities, or moments, were already described by Chermayeff and Alexander (1965, pp. 648-650) as 'the couple's realm'. The bedroom is the place where a couple can retreat together and can have a private talk before going to sleep. They only mention the interference of the children in the couple's privacy but this can easily be extended to the entire community.

Twenty-two percent of the respondents of the research of Meesters (2009) mentioned sleeping as an important dwelling activity. The activity sleeping was more often mentioned by people aged between 18 and 39 than by people over 55. Meesters (2009) explains this by the assumption that younger people have more obligations during the day and therefore find a good night rest more important. Personally, I think that younger people indeed have more activities during the day and are away from home more often. They are only returning home at the end of the day, which makes sleeping one of the few activities they perform at home. Also, the level of education influences the number of people mentioning sleeping. People with a university degree mentioned sleeping more often than those with a low level of education. This could possibly also have to do with the actual time spent at home. Also, the own survey showed that sleeping demands a high level of privacy. When asking if sleeping could take place when people from outside the nuclear family are present, only less than four percent said that this was not a problem. Even fewer people, nearly two percent, are willing to share their bedroom with others. This difference could be explained by the activities in the bedroom besides sleeping. Sharing your bedroom with others is a bigger issue than occasionally sleeping in a situation where others are present. The activity of sleeping always takes place in the bedroom of a dwelling but a bedroom is much more than only a place to sleep.

Thus, the activity of sleeping only needs a bed and could be limited to a bed alcove. Also, because sleeping mainly takes place during the night and therefore the bedroom is unused during the rest of the day. As using it for completely different activities is hard. When the bed is placed in another room than the bedroom, as a sleeping couch in the living room, for example, this room can be used for another activity during the day. This is something that particularly works for single households. As annoyance may occur when two people or more live in the same house and one wants to use the couch and the other already wants to go to bed.

The activity of sleeping could be limited to a bed. This bed should offer a high level of privacy and be separated from the room it is in, if this room is used for other activities at the same time.



7

Conclusion

*“Privacy is essential in a communal situation,
especially in a society that values it so high.”
from Williams, 2003, p.212*

This research started with a fascination for, and the aim to design a residential environment with, a more collectively oriented way of living, where sharing with others is an important part of everyday life. This led to the following main question:

**How can we emphasise on collectivity in a residential building and
at the same time comply with the desired level of privacy of every individual?**

To get an answer to this question, six sub-questions have been raised. The first and second chapter gave answers on what privacy and collectivity are. Privacy is the ability to control the interaction with others. It is both a dialectic and optimisation process; for every situation, the desired level of contact with others can be different. Although, there is always an optimum; when the desired level of contact matches the achieved (or actual) contact with others. A lack of privacy will result in crowding and intrusion and too little contact will cause social isolation.

The social benefits derived from common functions, spaces and activities, help individuals to gain their desired level of social interaction. It is now clear that individuals benefit from collectivity, however, it is of vital importance that every individual can retreat from the collective. As Chermayeff and Alexander (1965, p. 16) said: *“A large share of man’s activities are social, but they ultimately, however practical and outgoing, have their source in privacy.”* In order to experience the true advantages of living in a community, the presence of private spaces is essential.

Whenever the perception of individuals on sharing is negative, this is mainly caused by ignorance and the associations with messy places and alternative people. Furthermore, the lack of possession is something that causes reluctance with some people; they attach a lot of value to property. However, younger people are more willing to share; they are more focused on experiences and less on

property. This makes collective housing more attractive to and suitable for this generation. Although, it is not only a matter of age. One's current situation also influences their willingness: those who do not possess a certain facility or object, are more willing to share, as well as those who already have experience with sharing.

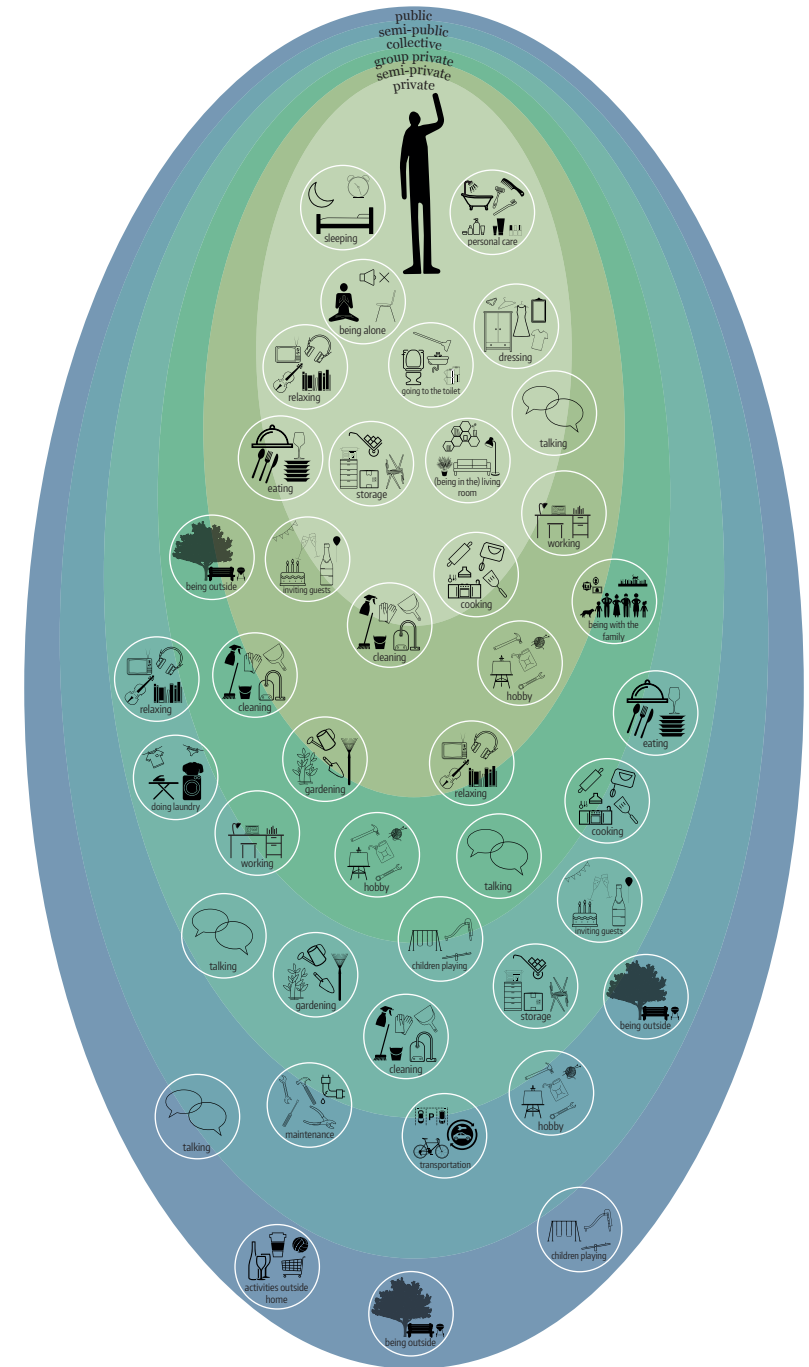
The behaviour of individuals is influenced by four factors. First of all, personal factors are very important for someone's behaviour. These are factors that are not easily changed, as it is about someone's background; their personality, attitude, values and preferences. Nevertheless, positive experiences can change their attitude towards sharing. Both the informal and formal social factors can cause these positive experiences. The informal social factors are the relationships between the residents; these relationships emerge from spontaneous meetings and can develop into a strong relation. This development can be encouraged by the formal social factors; the organisation of activities and events in order to create intentional meetings and social interaction. The fourth factor is the one where architecture comes around; the physical factors which influence the behaviour. The layout of a building, the available facilities and spaces and the design of the private units greatly influence the behaviour of its residents. All these factors should influence the behaviour of residents in such a way that the created communal living is more like a way of living than only a spatial concept. How architecture can contribute to this aim, is discussed and described in chapter four and five.

The living environment must provide opportunities for *"all degrees of privacy and all degrees of community living, ranging from the most intimately private to the most intensely communal"* (Chermayeff & Alexander, 1965, p. 37). These domains need to be separated from each other and at the same time be connected. Chapter four and five give guidelines how architectural elements can regulate privacy, encourage interaction and influence the behaviour of residents.

The most important aspect a residential building should offer is the choice between private and collective. It is crucial that the residents are never forced into common spaces. Secondly, aside from a common place where all residents can come together, the building should accommodate various places for spontaneous encounters between residents. Which are ideally situated in the 'in-between spaces' of the different zones, ranging from private to public. The third design decision, which is also essential to make a community work, is a gradual transition between those zones.

Concerning the regulation of the level of privacy and interaction, chapter five elaborated on which architectural elements can be used to achieve the desired level. This pattern language can be used to decide which elements are the most convenient, for either offering privacy or encouraging interaction, in a specific situation.

This desired level of privacy is dynamic, nevertheless, the research on various dwelling activities resulted in a division, regarding the desired level of privacy, of activities in different domains; which is shown on the next page. However, as you can see, some activities are placed in more than one domain. A collective oriented building should offer spaces for these activities in more than one domain, as the desired level of privacy can extremely differ for those specific activities. Which does not mean that the other activities should be limited to one domain. This scheme, and the rest of the research, should be used as starting point and as guidance when designing a residential building which emphasises on collectivity and at the same time complies with the desired level of privacy of every individual.



8

Discussion

*“Provision for voluntary communality
rather than inescapable togetherness is essential”
from Chermayeff and Alexander, 1965, p.215*

There are some points of discussion that need to be taken into account. Throughout the entire research, it is essential to realise that the desired level of privacy, behaviour and perception varies per person, per activity, per situation and can change over time. This also points out that one outcome will never be suitable for everyone. It indicates that the possibility to choose, between having interaction and avoiding this interaction, is crucial and should always be available. When taking the average of a group, none of the individuals belonging to this group will resemble this exact average. Yet, there is ‘common ground’ and there are basic needs. A design should fulfil these basics and, next to this, offer possibilities for variations per person, per activity, per situation and over time.

Both for the dwelling activities and the architectural elements applies that not all possibilities are described. There are many more activities that are performed in the living environment and some of the described activities can be divided into many more separate activities. ‘Relaxing’ for example, can be ‘reading a book’, ‘watching television’ and ‘listening to music’.

The same counts for the described architectural elements. For those elements, as already mentioned, it should not be forgotten that the conclusions are not scientifically substantiated. The elements are described from own observation. However, in combination with chapter four, which has ‘scientific proof’, the research can be used as a basis and gives guidelines for the design. The design, which follows as a result of this research, can also be seen as a test case. The various architectural elements, if implemented in the design, can somewhat be tested. These results can be used as feedback on the research. However, a real test case with 1:1 testing should be done in order to get more reliable conclusions, instead of the given hypothesis.

Another discussion point is the survey itself. There were actually many respondents (246) from all over the Netherlands and from all ages, yet not enough to state what ‘the people in the Netherlands’ are thinking about sharing. In order to get a more reliable insight into the perception of and willingness to share, the survey should be spread among more people.

Whenever this will be done, the survey itself needs some improvement as well. Some of the respondents gave conflicting answers. They, for example, checked the box ‘I do not want to share any of the above mentioned spaces’ but also answered they were willing to share their garden for example. Or they said they had no experience with sharing and at the same time answered they had shared their bicycle storage. The questions should be improved, and may be divided into more than one question, to get better answers. At the end of the survey, they had the possibility to give comments on the survey or ask questions. A few responded that the questionnaire contained some questions that were difficult to understand, while others said that the questions were clear and good to answer. Nevertheless, with the current knowledge, the questions could definitely be improved.

There are also some points that should be taken into account for further research, or should be researched in the future.

Whenever individuals are willing to share certain spaces or facilities, it greatly depends on the number of people they have to share it with. Sharing a room with four others might be no problem, whereas sharing it with ten people could be unpleasant. It also depends on the advantages one retrieves from the action of sharing.

Besides the mentioned benefits collective living can bring, there are many problems that could (or did) occur in communities, which are not yet discussed in this research. Besides plenty of benefits derived from a strong community, there are also disadvantages attached to sharing. It is better to see these disadvantages as factors that could be limiting, but with the right approach could be avoided. Nevertheless, it is important to mention these obstacles in order to be aware of them and tackle the problem to avoid the negative effects they could have. Some of these conflicts are:

There happened to be a mismatch between the interests of the various residents. Can this be avoided, for example with a certain selection procedure for future residents? As is already done by various collective living projects in the Netherlands.

‘Living with like-minded others’ is many times mentioned as a good basis for a community. However, mixing different groups brings advantages as well. Collective living is a good solution for retired persons, as they can meet others for social interaction and help each other when needed. Yet, a community with both retired persons and family could bring even more (social) benefits. Both for the parents of the children and the retired persons.

The downsides of collective living are not extensively discussed in this research. Some aspects that need further research are indicated (in literature) by residents of collective housing. Users might experience a lack of privacy, or a lack of space in the private unit and people might feel excluded from common activities.

At the very start of a co-living initiative the future residents could start community-led planning (CPO). Which has resulted in stronger communities, as only those who are willing to put an effort, are eventually going to live there. (EVA-Lanxmeer and Zonnespreng are only two of the successful CPO examples in the Netherlands).

This also raises the question how a community should arrange the financial part of sharing. As the costs are shared, they should be divided according to some arrangements, which have to be made beforehand. Which also counts for the use of services: usage at the same time might not be possible for some facilities. This needs some kind of planning or reservation. Research needs to be done on these topics.

9

Reflection

“Architects can’t force people to connect, it can only plan the crossing points, remove the barriers, and make the meeting places useful and attractive.”
from Denise Scott Brown, date unknown

The relation between the theme of the studio and the subject chosen by the student

In order to graduate with a project based on my own fascination, I joined the ExploreLab graduation studio. This gave me the opportunity to research this interest and create a graduation project out of this. It also enables you to choose your own mentors, topic, location and direction. This freedom helped to bring my project to a higher level, as extensive research was done on the topic. However, the freedom also made it harder to find a clear focus point in the beginning of the research and eventually the research took longer than planned. The (extra) time I used to continue working on my research, was also needed for the design. The lack of time for the design was the main reason I did not apply for the first P4 possibility in December. I finished the research in the beginning of January and applied for the next P4 period. However, with the P4 coming closer, I had the feeling that to get a GO, I had to rush too much and make decisions too fast. This would definitely not improve my design and I decided to do my P4 presentation but did not want to receive a GO. The extra time gave me the opportunity to investigate several aspects of my design. To my opinion, this did improve my design on several aspects.

The relationship between the methodical line of approach of the studio and the method chosen *And the relationship between research and design*

The chosen methods for the research have helped to make a lot of decisions during the design process. The conclusions I retrieved from my research could be implemented in the design. The design functioned as a kind of ‘test case’ for the posed hypotheses. Also, the other way around, the design helped to clarify some facets and uncertainties in the research. To my opinion, the research and the design project can be seen as one. However, the research could also be read as a separate piece of work.

The design goal was to design ‘a residential building with the maximum achievable communal space and the minimum needed amount of private spaces for every individual. To meet this goal, it was necessary to question ‘how far we could go with collectivising activities and facilities’. Collectivity has everything to do with privacy and is actually a certain level of privacy. This realisation lead to the main question of the research ‘how can we emphasise on collectivity in a residential building and at the same time comply with the desired level of privacy of every individual?’.

The focus of the research, and herewith the design project, lies on the perception and behaviour of the eventual users of the building. I think this is an underexposed topic in this faculty. My own research helped me to understand the users and/or inhabitants better and to make design decisions that result in a more pleasant living environment for its users.

The relationship between the project and the wider social context

The project meets the demands of growing cities nowadays. It is a solution to the different problems cities are coping with. The number of city dwellers is still increasing, as well as the number of single households. These two trends make the total number of households grow even more rapid. Housing prices are increasing and it becomes more and more difficult to find a house, especially when one is single. A lot of these singles are coping, from time to time, with loneliness. We, as society, are too focused on the individual and our new way of living should focus more on the collective. However, we should never forget the private.



Section of the design project



10

Bibliography

- Alexander, C., & Center for Environmental, S. (1969). Houses generated by patterns. [Berkeley, California] : Center for Environmental Structure.
- Alexander, C., Davis, H., Martinez, J., & Corner, D. (1985). The production of houses. New York : Oxford University Press.
- Ali, H. M., Dom, M. M., & Sahrum, M. S. (2012). Self-Sufficient Community through the Concepts of Collective Living and Universal Housing. *Procedia-Social and Behavioral Sciences*, 68, 615-627.
- Altés Arlandis, A. (2011). Living together: on the role of architecture in the production of habitable collective spaces. Paper presented at the Oikodomos - Sint-Lucas School of Architecture (ed.), *Innovating, Housing, Learning: Oikodomos International Conference 2011*, 24-43. Brussels: Sint-Lucas School of Architecture.
- Altman, I. (1975). The environment and social behavior. Belmont, California.
- Botsman, R., & Rogers, R. (2011). What's mine is yours: how collaborative consumption is changing the way we live: Collins London.
- Canter, D. V. (1974). Psychology for architects. London : Applied Science.
- Centraal Bureau voor de Statistiek (2009). Gemeente op maat, Amsterdam.
- Centraal Bureau voor de Statistiek (2012). De Nederlandse Samenleving 2012: Den Haag: CBS.
- Chermayeff, S., & Alexander, C. (1965). Community and privacy; toward a new architecture of humanism ([Anchor books ed.]. ed.). Garden City, N.Y.: Anchor Books.
- Christie, E. (2009). A bookstore-café: An exploration of the blurring of the public and private spheres. *Kaleidoscope: A Graduate Journal of Qualitative Communication Research*, 8(1), 2.
- Cuba, L., & Hummon, D. M. (1993). A place to call home: Identification with dwelling, community, and region. *The sociological quarterly*, 34(1), 111-131.
- De Jong-Gierveld, J., & Van Tilburg, T. (2006). A 6-Item Scale for Overall, Emotional, and Social Loneliness: Confirmatory Tests on Survey Data. *Research on Aging*, 28(5), 582-598. doi:10.1177/0164027506289723
- Denters, B., Rijnaarts, H. H. M., & Linde, M. A. J. (2015). Leefbaarheid grote steden. *Agenda voor Nederland*, 21-25.
- Duin, M. (2014, 10-04). Solo, het nieuwe normaal. *de Volkskrant*, Vonk.
- Fairs, M. (2015). Student-style accommodation for adults "is going to be the next market" says Naomi Cleaver. Retrieved from <https://www.dezeen.com/2015/09/11/student-style-accommodation-adults-next-market-london-uk-naomi-cleaver/>

Fox-O'Mahony, L. (2012). Meanings of home. *International Encyclopedia of Housing and Home*, 2, 231-239.

Fromm, D. (2012). Seeding Community: Collaborative Housing as a Strategy for Social and Neighbourhood Repair. *Built Environment*, 38(3), 364-394.

Gaitsch, S. (2016, 02-11). Een woongroep voor 1200 man. *360 Magazine*.

Gehl, J. (2011). *Life between buildings: using public space*: Island Press, (first published in Danish in 1980).

Gemeente Amsterdam (2011). *Structuurvisie Amsterdam 2040: Economisch sterk en duurzaam*: Gemeente Amsterdam.

Hernan, C., & Fatima, B. (2012). *The role of place identity in the perception, understanding, and design of built environments*: Bentham Science Publishers.

Hertzberger, H. (2000). *Space and the architect: lessons in architecture 2* (Vol. 2): 010 Publishers.

Hidalgo, M. C., & Hernandez, B. (2001). Place attachment: Conceptual and empirical questions. *Journal of environmental psychology*, 21(3), 273-281.

Hoogland, C. (2000). *Semi-private Zones as a Facilitator of Social Cohesion*. Nijmegen: Katholieke Universiteit Nijmegen.

Jacobs, J. (1961). *The death and life of great american cities*. New York: Random House.

Jacobson, J. (2012). Philosophical perspectives on home. *International Encyclopedia of Housing and Home*, 2, 178-182.

Jarvis, H. (2011). Saving space, sharing time: integrated infrastructures of daily life in cohousing. *Environment and Planning A*, 43(3), 560-577.

Kala, L. (2015). The Environmental Impact of Singles' Consumer Behaviour: Is the Lifestyle of Singles Inevitably Environmentally More Damaging? *Sociální studia*, Department of Sociology FSS MU, 3, 53-69.

Krantz, B., & Palm Lindén, K. (1994). Forms of collective housing, forms of living alternatives. Paper presented at the XIIIth World Congress of Sociology Bielefeld, Germany, Session 'Quality of Life and Housing', 22 July.

Laufer, R. S., & Wolfe, M. (1977). Privacy as a concept and a social issue: A multidimensional developmental theory. *Journal of Social Issues*, 33(3), 22-42.

Living in a community; from the idea to the joint home (2012). Berlin: Stattbau GmbH, Netzwerkagentur GenerationenWohnen.

Lofland, L. H. (1998). *The public realm: Exploring the city's quintessential social territory*: Transaction Publishers.

Mairs, J. (2016). "In the future we will all be homeless" says co-living entrepreneur. Retrieved from <https://www.dezeen.com/2016/07/15/in-the-future-we-will-all-be-homeless-says-co-living-entrepreneur-the-collective-james-scott-housing/>

Margulis, S. T. (2003). On the status and contribution of Westin's and Altman's theories of privacy. *Journal of Social Issues*, 59(2), 411-429.

Maslow, A. H. (1970). *Motivation and personality*. New York: Harper and Row.

McCamant, K., & Durrett, C. (1988). *Cohousing : a contemporary approach to housing ourselves* (1st ed. ed.). Berkeley, Calif. : Habitat Press.

Mee, K., Vaughan, N., Smith, S., Elsinga, M., Fox-O'Mahony, L., Ong, S., & Wachter, S. (2012). Experiencing home. *International Encyclopedia of Housing and Home*, 2, 146-151.

Meesters, J. (2009). *The meaning of activities in the dwelling and residential environment: A structural approach in people-environment relations* (Vol. 27): IOS Press.

Mozas, J., & Per, A. F. (2006). *Densida : nueva vivienda colectiva* (Ed. condensada/Condensed ed. ed.). Vitoria-Gasteiz : A plus T Ediciones.

Murphy, L., & Levy, D. (2012). Emotions at home. *International Encyclopedia of Housing and Home*, 2, 75-79.

Palm Lindén, K. (1992). *Community and privacy in the swedish collective house*. Lund: University of Lund.

Per, A. F., Mozas, J., Ollero, A. S., & A+T Research Group (2013). *10 Stories of Collective Housing: Graphical Analysis of Inspiring Masterpieces: a+ t architecture publishers*.

Proshansky, H. M., Ittelson, W. H., & Rivlin, L. G. (1976). *Environmental psychology : people and their physical settings* (2d ed. ed.). New York : Holt, Rinehart and Winston.

Rothbaum, F., Weisz, J. R., & Snyder, S. S. (1982). Changing the world and changing the self: a two-process model of perceived control. *Journal of Personality and Social Psychology*, 42(1), 5-37.

Saegert, S., & Winkel, G. H. (1990). Environmental psychology. *Annual review of psychology*, 41(1), 441-477.

ScottHanson, C., & ScottHanson, K. (2005). *The cohousing handbook: Building a place for community*: New Society Pub.

Silva, S. C., & Coch, H. (2010). *Collective dwellings. Central Europe towards sustainable building: Advanced Building Design*.

Tomah, A. N., Ismail, H. B., & Abed, A. (2016). The concept of privacy and its effects on residential layout and design: Amman as a case study. *Habitat International*, 53, 1-7.

van de Wal, H., & van Dorst, M. (2014). Privacy scripting; De impact van architectuur op sociale interactie in woongebouwen. *de Architect*, 28-37.

van de Woude, H., & van Dorst, M. (2012). *Community architecture in Nederland*. Bussum : Uitgeverij Thoth.

van Dorst, M. (2005). Een duurzaam leefbare woonomgeving: Eburon Uitgeverij BV.

van Dorst, M. J. (2010). Sustainable liveability: Privacy zoning as a physical condition for social sustainability. *Environment, Health, and Sustainable Development*, 111-126.

van Gameren, D., ten Cate, G., Camp, D. L., & van Tol, M. (2014). *Studentenhuisvesting = Housing the student*. Rotterdam : nai010.

van Haaren, W. (2014). *The private house and the collective home*. (MSc), Delft University of Technology, Delft.

Vestbro, D. U. (2012). Saving by Sharing—Collective Housing for Sustainable Lifestyles in the Swedish Context. Paper presented at the 3rd International Conference on Degrowth for Ecological Sustainability and Social Equity, Venice, 19–23 September 2012.

Williams, J. (2003). Homes for the future: a means for managing the singletons' consumption crisis?, University College London (University of London).

Williams, J. (2005a). Designing neighbourhoods for social interaction: The case of cohousing. *Journal of Urban Design*, 10(2), 195-227.

Williams, J. (2005b). Homes for the future—accommodating one-person households the sustainable way. *WIT Transactions on Ecology and the Environment*, 84, 161-170.

Photos, pictures and figures

Preface

- pg. 6 http://maxdwork.blogspot.nl/2012/09/a-day-in-life-of-bench.html?view=mosaic&utm_source=DesignTAXI&utm_medium=DesignTAXI&utm_term=DesignTAXI&utm_content=DesignTAXI&utm_campaign=DesignTAXI

Chapter 0

- pg. 12 <http://www.designboom.com/art/jean-francois-rauziers-babels-03-26-2016/>
 pg. 15 www.peerby.com
 pg. 16 <http://inhabitat.com/the-elysorum-is-a-former-factory-turned-into-a-community-space-for-shared-resources/>
 pg. 17 <https://www.dezeen.com/2016/04/28/collective-old-oak-common-co-living-plp-architecture-willesden-junction-london-housing/>
 pg. 19 www.180amsterdamers.nl

Chapter 1

- pg. 22 <http://www.magyaradam.com/>
 pg. 26 https://www.researchgate.net/figure/264310287_fig1_Figure-1-Westin's-conception-of-privacy-1967-the-four-functions-and-states-of-privacy
 pg. 29 https://en.wikipedia.org/wiki/Beer_festival
 pg. 30 <http://alcalde.texasexes.org/2012/02/cruel-to-be-kind-lbj-behind-the-scenes/>

Chapter 2

- pg. 34 <http://www.edlodewijksfotografie.com/Amsterdam/index.html>
 pg. 36 <http://www.simplypsychology.org/maslow.html>

Chapter 3

- pg. 42 <http://www.magyaradam.com/>
 pg. 44 <https://www.flickr.com/photos/111454223@N05/16342243825/in/photostream/>
 pg. 44 <http://www.woonstadrotterdam.nl/Home/Justuskwartier>
 pg. 49 <http://menzelphoto.photoshelter.com/gallery-collection/Material-World-A-Global-Family-Portrait-by-Country/C0000d0DI3dBy4mQ>
 pg. 52 http://www.masslive.com/bestofmass/index.ssf/2015/11/best_of_mass_coffee_shop_contest_western_mass_and_worcester_results_videos.html

Chapter 4

- pg. 56 <http://www.archdaily.com/642612/living-staircase-paul-cocksedge>
 pg. 59 <http://www.woonstadrotterdam.nl/Home/Justuskwartier>
 pg. 61 <http://www.itarkitektur.dk/tietgenkollegiet/cfknyqnb09evrjrcxxqznw5gcpud>
 pg. 63 http://www.architectenweb.nl/aweb/redactie/redactie_detail.asp?iNID=39054
 pg. 64 http://www.architectenweb.nl/aweb/redactie/redactie_detail.asp?iNID=39054
 pg. 67 <http://www.improvistos.org/en/home/>

Chapter 5

- pg. 68 <https://www.dezeen.com/2016/11/23/gitta-gschwendtner-furniture-design-rogers-stirk-harbour-guys-hospital-london-cancer-treatment-centre/>
 pg. 70 <http://www.archdaily.com/402437/house-in-chayagasaka-tetsuo-kondo-architects>
 pg. 72 <http://www.kossmanndejong.nl/project/bk-city-tu-delft/>
 pg. 73 own images; the figures of the persons are retrieved from the Noun Project and created by Daniel Natoli Rojo
 pg. 74 <http://www.trendir.com/urban-glass-walled-house-with-platform-living-spaces/urban-glass-walled-house-with-platform-living-spaces-6-main-space/>
 pg. 76 <https://www.dezeen.com/2016/10/23/amsterdam-enterprise-community-centre-moving-retractable-doors-offices-amsterdam-netherlands>
 pg. 78 www.archstorage.com 24
 pg. 80 http://www.guiddoo.com/berlin-travel-guide/top-6-historical-sites-in-berlin/?utm_source=NewPinterest&utm_medium=Newpin&utm_content=Historical%20Sites%20Berlin&utm_campaign=DIA_PIN_DEA
 pg. 82 <https://www.dezeen.com/2016/08/12/10-most-popular-bedrooms-interiors-dezeen-pinterest-boards>
 pg. 84 <http://www.home-designing.com/2014/10/2-simple-super-beautiful-studio-apartment-concepts-for-a-young-couple-includes-floor-plans>
 pg. 86 <http://www.landezine.com/index.php/2015/06/uts-alumni-green-by-aspect-studios/>
 pg. 88 <http://www.archdaily.com/248310/ant-house-ma-style-architects>
 pg. 90 <http://www.archdaily.com/574334/decerto-moko-architects-mfmg>
 pg. 92 hertzbergers half door
 pg. 94 <https://www.dezeen.com/2016/11/28/effekt-architecture-thurohus-apartment-block-frederiksberg-copenhagen-brick-facade/>
 pg. 96 own photo, made in Beijing, China, 2015
 pg. 98 <http://www.archdaily.com/527293/brasilia-national-stadium-gmp-architekten>
 pg. 100 <http://petapixel.com/2011/11/07/living-pictures-photo-collages-of-windows-in-cities-around-the-world>
 pg. 102 <https://www.dezeen.com/2016/06/26/belus-henocq-architectes-maison-education-legion-honneur-school-dormitory-paris-france-timber-clad/>
 pg. 104 <http://www.archdaily.com/784811/creo-and-jaja-to-design-home-for-children-with-autism-near-copenhagen>
 pg. 106 <http://www.archdaily.com/802442/polak-building-paul-de-ruiter-architects>
 pg. 108 <http://www.archdaily.com/570664/children-s-home-cebra>
 pg. 110 <https://www.dezeen.com/2016/11/23/gitta-gschwendtner-furniture-design-rogers-stirk-harbour-guys-hospital-london-cancer-treatment-centre/>
 pg. 112 <http://www.archdaily.com/784811/creo-and-jaja-to-design-home-for-children-with-autism-near-copenhagen>
 pg. 114 <https://www.dezeen.com/2016/12/08/clive-wilkinson-creates-cubicle-free-publicis-office-manchester-cosy-nooks-communal-tables/>
 pg. 116 <http://www.rawcolor.nl/project/?id=411&type=ownProduction>
 pg. 118 <http://www.archdaily.com/802442/polak-building-paul-de-ruiter-architects>

pg. 120 <https://www.dezeen.com/2016/11/21/dn-co-signage-design-wayfinding-orange-graphics-here-east-london-tech-hub-quee-elizabeth-olympic-park>

Chapter 6

pg. 124 <https://www.flickr.com/photos/elsa11/16221192871/in/photostream/>
pg. 128 <http://johnsteinmetz.net/blog/using-html5-local-storage-vs-cookies-for-user-tracking/>
pg. 132 <http://cohousing-cultures.net/projects/vrijburcht/?lang=en>
pg. 134 <https://www.dezeen.com/2016/02/05/cobe-frederiksvej-kindergarten-based-on-childrens-drawings-houses-copenhagen-denmark/>
pg. 136 <http://cohousing-cultures.net/projects/vrijburcht/?lang=en>
pg. 140 <http://twistedstifter.com/2012/07/worlds-coolest-university-dorm-tietgenkollegiet-circular-interior-courtyard-residence/>
pg. 148 https://www.flickr.com/photos/the_warfield/4992453984
pg. 150 <http://www.curbed.com/2016/4/29/11531884/millennial-cooperative-housing-coliving-london-old-oak-the-collective>
pg. 152 <http://cohousing-cultures.net/projects/vrijburcht/?lang=en>
pg. 154 <https://redshift.autodesk.com/live-work-spaces/>
pg. 156 <http://www.eekhoutbouw.nl/expertise/bedrijfsruimten/tu-delft-bouwkunde-delft/>
pg. 158 <http://homeworlddesign.com/cabin-interior-design-toronto/>
pg. 160 <http://www.cohousingprojects.be/index.php/cohousing/gluren-bij-de-buren/165-menzo-in-het-amsterdamse-vrijburcht>
pg. 162 <http://www.archdaily.com/772841/g27-ciee-global-institute-macro-sea>
pg. 164 <http://www.archdaily.com/772841/g27-ciee-global-institute-macro-sea>
pg. 166 http://www.novateurdesign.net/furniture?lightbox=image_1asr
pg. 168 <https://www.dezeen.com/2016/04/06/wework-welive-co-working-company-co-living-apartments-new-york/>

Chapter 7

pg. 170 <http://www.peace-matters.com/blog-native/2015/10/1/the-puzzle>

Chapter 10

pg. 178 <http://weheartit.com/entry/196681605>

11

Appendix

“More is more.”

from Robert Venturi, date unknown

Appendix 1 is a template, made to structure the description of the elements. Appendix 2 is a template to structure the description and research of the various activities.

Appendix 3 to 5 contain information about the own survey. The entire survey is added in appendix 3 and the results are added in appendix 4. The fifth appendix contains graphs and figures, which are made with the information retrieved from the survey and support the conclusions derived from the outcomes of the survey.

Appendix 1 - Template elements

Photo of the general element

5.1

General element

General meaning and/or statement about the element and whether it is bounding or connecting

'sub' element 1

'sub' element 2

'sub' element 3

'sub' element 4

Explanation of the 'general' element(s) and discussing the different possibilities.

Photo of the element

5.1.1

Element

Statement about the specific element and its bounding or connecting function.

Figure 1

Figure 2

Figure 3

Figure 4

General description of the element, based on the research of Warner van Haaren (2014). Objective description of the element.

Element as boundary
When and how does the element function as a boundary?

Element as connecting
When and how does the element function as connecting?

< Scheme's to explain different options and its consequences.

Implementation of the element in the design (example)

Appendix 2 - Template activities

6.0
Activity

General meaning of the activity and/or desired level of privacy.

Meaning of the activity and the needed privacy
What is the meaning of this activity and how does the activity relate to the desired level of privacy?
How do the respondents of Meesters' (2009) research experience this activity? What did van Haaren (2014) conclude about the privacy?

Activity as an important dwelling activity
Who found this activity the most important in the research of Meesters (2009)? What are the feelings people feel towards this activity? Which smaller activities are part of this activity?

Own survey demanded privacy for activity
What are the outcomes of the own survey concerning the sharing of this activity and how does this relate to the findings of other researchers?

Room versus activity
In which room(s) is the activity, usually/nowadays, performed? Are there other activities done in the same room? How is this room organised and is it possible to change this setting? What did van Haaren (2014) conclude about the needed privacy for an activity in relation to the room?

Own survey; sharing room?
What did the respondents of the own survey answered to the question 'which rooms can be shared with others'? Is there a difference between the sharing of a room and the sharing of an activity that takes place in that same room (and is therefore actually the same)? Are there exceptions?

Time?
When does this activity take place? Is it possible to combine the space for this activity with another activity? Are there other factors that influence the sharing of a room or activity?

Other outcomes survey?
Is there a strong link with other activities? Does current possession influence the willingness to share? Does experience with sharing influence the willingness?

Own statement/conclusion about the desired privacy and the room/space that is needed for the activity. This will be of help when designing a residential building and deciding which activity can be organised collectively and which activity should be done and situated in the private realm.

Vragenlijst over wonen

Voor het afstuderen van mijn master Architectuur aan de Technische Universiteit Delft doe ik onderzoek naar de woonwensen van mensen. Het gaat hier vooral over de mogelijkheid om functies en activiteiten met anderen in de woonomgeving te delen.

Met het invullen van de onderstaande vragenlijst zou u een belangrijke bijdrage leveren aan mijn onderzoek.

Uiteraard worden de antwoorden anoniem verwerkt.

Het invullen kost slechts 5 minuten.

Alvast bedankt!

Met hoeveel mensen woont u samen? (u zelf niet meegerekend)

*

- ☐ 0 ☐ 2 ☐ 4 of meer
☐ 1 ☐ 3

Huidige gezinssamenstelling *

- ☐ Alleenstaand
☐ Samenwonend met partner
☐ Samenwonend met partner en kind(eren)
☐ Samenwonend met kind(eren)
☐ Samenwonend met ouder(s)
☐ Samenwonend met huisgenoten (keuken en badkamer gedeeld)
☐ Samenwonend met huisgenoten (keuken gedeeld, eigen badkamer)
☐ Other: _____

Huidige woonsituatie *

- ☐ Studentenkamer ☐ Rijthuis
☐ Studio (alle voorzieningen in één ruimte) ☐ Appartement
☐ Vrijstaand huis ☐ Flat
☐ Twee-onder-een kap woning ☐ Other: _____

NEXT

Page 1 of 12

Vragenlijst over wonen

Wat zou de volgende stap in uw wooncarrière zijn? (als u gaat verhuizen, waar zou u dan logischerwijs gaan wonen?) *

- ☐ Een zelfde soort huis
☐ Studentenkamer ☐ Rijthuis
☐ Studio (alle voorzieningen in één ruimte) ☐ Appartement
☐ Vrijstaand huis ☐ Flat
☐ Twee-onder-een kap woning ☐ Other: _____

BACK

NEXT

Page 2 of 12

Hoeveelheid kamers huidige woning *

- ☐ 1 ☐ 5
☐ 2 ☐ 6
☐ 3 ☐ 7 of meer
☐ 4

Grootte van de woonkamer *

- ☐ Beschik op dit moment niet over een woonkamer
☐ minder dan 30 vierkante meters
☐ 30-50 vierkante meters

Is het huis waar u nu woont een huur- of koopwoning *

- ☐ Huurwoning
☐ Koopwoning

BACK

NEXT

Page 3 of 12

Appendix 3 - Questionnaire questions

Vragenlijst over wonen

Over welke ruimtes of functies beschikt uw huidige woning?
(meerdere antwoorden mogelijk) *

- | | | |
|---------------------------------------|---|--|
| <input type="checkbox"/> Slaapkamer | <input type="checkbox"/> Eetkamer | <input type="checkbox"/> Tuin |
| <input type="checkbox"/> Apart toilet | <input type="checkbox"/> Keuken | <input type="checkbox"/> Plek om gasten te ontvangen |
| <input type="checkbox"/> Badkamer | <input type="checkbox"/> Werkplek | <input type="checkbox"/> Fietsenstalling |
| <input type="checkbox"/> Wasmachine | <input type="checkbox"/> Hobby werkplaats | <input type="checkbox"/> Auto (vink dit antwoord aan als u een eigen auto heeft) |
| <input type="checkbox"/> Droger | <input type="checkbox"/> Buitenruimte | <input type="checkbox"/> Other: |
| <input type="checkbox"/> Berging | | |

BACK

NEXT

Page 4 of 12

In welke ruimte of op welke plek, in de eigen woning, bent u het liefst? *

- | | | |
|----------------------------------|--|--------------------------------------|
| <input type="radio"/> Slaapkamer | <input type="radio"/> Keuken | <input type="radio"/> Buitenruimte |
| <input type="radio"/> Toilet | <input type="radio"/> Woonkamer | <input type="radio"/> Tuin |
| <input type="radio"/> Badkamer | <input type="radio"/> Werkplek | <input type="radio"/> Garage/berging |
| <input type="radio"/> Eetkamer | <input type="radio"/> Hobby werkplaats | <input type="radio"/> Other: |

BACK

NEXT

Page 5 of 12

Ervaring met gemeenschappelijke voorzieningen

Ervaring met gemeenschappelijke voorzieningen; Dit zijn voorzieningen die gedeeld worden met personen van buiten het gezin.

Met welke van de onderstaande voorzieningen heeft u deze gemeenschappelijke ervaring? (meerdere antwoorden mogelijk)

*

- | | | |
|--|--|--|
| <input type="checkbox"/> Toilet | <input type="checkbox"/> Woonkamer | <input type="checkbox"/> Plek om gasten te ontvangen |
| <input type="checkbox"/> Badkamer | <input type="checkbox"/> Slaapkamer | <input type="checkbox"/> Auto |
| <input type="checkbox"/> Wasmachine en/of droger | <input type="checkbox"/> Flexibele werkplek dichtbij woning | <input type="checkbox"/> Fietsenstalling |
| <input type="checkbox"/> Berging | <input type="checkbox"/> Hobby werkplaats met alle voorzieningen | <input type="checkbox"/> Helemaal geen ervaring met gedeelde voorzieningen |
| <input type="checkbox"/> Eettafel | <input type="checkbox"/> Buitenruimte | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Keuken | <input type="checkbox"/> Tuin | |

Heeft u ooit gewoond in de volgende situaties? (meerdere antwoorden mogelijk)

- ☐ Studentenhuis
- ☐ Woongroep (iedere bewoner heeft een eigen slaapkamer, de rest van de voorzieningen worden gedeeld)
- ☐ Eenpersoonshuishouden
- ☐ Ik heb nooit in één van de bovenstaande situaties gewoond

BACK

NEXT

Page 6 of 12

Appendix 3 - Questionnaire questions

Vragenlijst over wonen

Welke plekken of functies zou u met andere mensen (buiten gezinsleden) willen delen (nu of in de toekomst)? (meerdere antwoorden mogelijk) *

- | | | |
|--|--|---|
| <input type="checkbox"/> Flexibele werkplek dichtbij woning | <input type="checkbox"/> Fietsenstalling | <input type="checkbox"/> Slaapkamer |
| <input type="checkbox"/> Hobby werkplaats met alle voorzieningen | <input type="checkbox"/> Wasmachine en/of droger | <input type="checkbox"/> Badkamer |
| <input type="checkbox"/> Buitenruimte | <input type="checkbox"/> Berging | <input type="checkbox"/> Toilet |
| <input type="checkbox"/> Tuin | <input type="checkbox"/> Eettafel | <input type="checkbox"/> Geen van deze antwoorden |
| <input type="checkbox"/> Plek om gasten te ontvangen | <input type="checkbox"/> Keuken | <input type="checkbox"/> Other: |
| <input type="checkbox"/> Een gemeenschappelijk auto | <input type="checkbox"/> Woonkamer | |

[BACK](#)[NEXT](#) Page 7 of 12

Vragenlijst over wonen

Welke activiteiten kunnen voor u plaatsvinden in een ruimte waar andere mensen (buiten gezinsleden) aanwezig zijn? (meerdere antwoorden mogelijk) *

- | | | |
|---|--------------------------------------|---|
| <input type="checkbox"/> Muziek luisteren | <input type="checkbox"/> Klussen | <input type="checkbox"/> Eigen privé producten opbergen |
| <input type="checkbox"/> Televisie kijken | <input type="checkbox"/> Schoonmaken | <input type="checkbox"/> Wassen van kleding |
| <input type="checkbox"/> Praten | <input type="checkbox"/> Lezen | <input type="checkbox"/> Douchen |
| <input type="checkbox"/> Studeren | <input type="checkbox"/> Relaxen | <input type="checkbox"/> Slapen |
| <input type="checkbox"/> Kinderen laten spelen | <input type="checkbox"/> Werken | <input type="checkbox"/> Naar het toilet gaan |
| <input type="checkbox"/> Gasten ontvangen | <input type="checkbox"/> Koken | <input type="checkbox"/> Geen van deze activiteiten |
| <input type="checkbox"/> Gebruiken van computer | <input type="checkbox"/> Eten | <input type="checkbox"/> Other: |
| <input type="checkbox"/> Sporten | | |

[BACK](#)[NEXT](#) Page 8 of 12

Vragenlijst over wonen

Wat zou u op dit moment aan uw woonsituatie willen veranderen? (meerdere antwoorden mogelijk) *

- ☐ Ander soort huis
- ☐ Andere plek
- ☐ Andere burens
- ☐ Grotere woning
- ☐ Beschikken over buitenruimte
- ☐ Other:

[BACK](#)[NEXT](#) Page 9 of 12

Vragenlijst over wonen

Geslacht *

☐ vrouw

☐ man

Leeftijd *

Your answer

Waar woont u op dit moment? (woonplaats) *

Your answer

Hoogste afgeronde opleiding

☐ Basisschool

☐ Middelbare school

☐ MBO

☐ HBO

☐ WO bachelor

☐ WO master

☐ Other: _____

Op dit moment ben ik vooral *

☐ scholier

☐ student

☐ aan het werk

☐ werkzoekend

☐ ik werk niet (en ben ook niet op zoek naar werk)

☐ met pensioen

BACK

NEXT

Page 10 of 12

Vragenlijst over wonen

Vragenlijst over wonen

Dit is bijna het einde van deze vragenlijst

Heeft u nog vragen aan mij?

Your answer

Heeft u nog suggesties naar aanleiding van deze vragenlijst?

Your answer

BACK

NEXT

Page 11 of 12

Laatste vraag:

Mag ik u benaderen voor enkele vervolgvragen? Zo ja; voer dan hieronder uw emailadres in:

Your answer

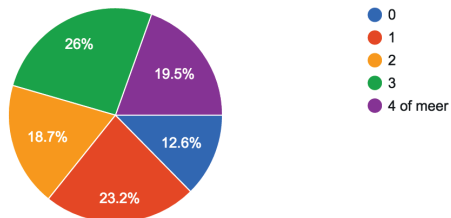
BACK

SUBMIT

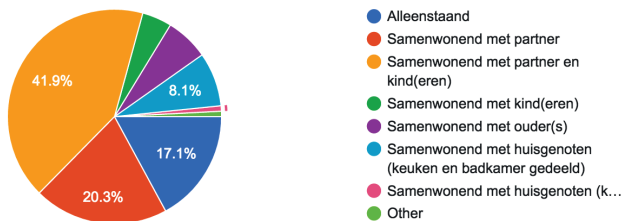
Page 12 of 12

Appendix 4 - Questionnaire results

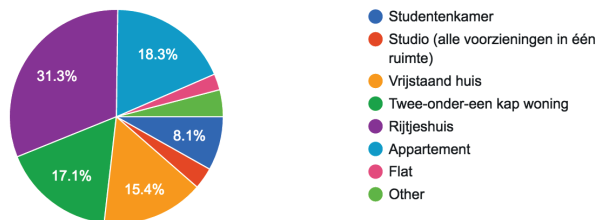
Met hoeveel mensen woont u samen? (uzelf niet meegerekend) (246 responses)



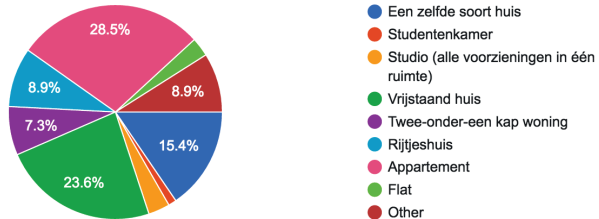
Huidige gezinssamenstelling (246 responses)



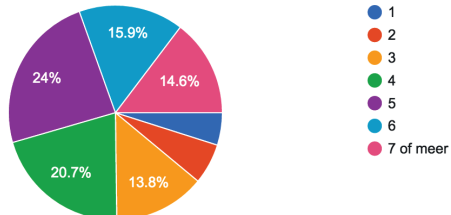
Huidige woonsituatie (246 responses)



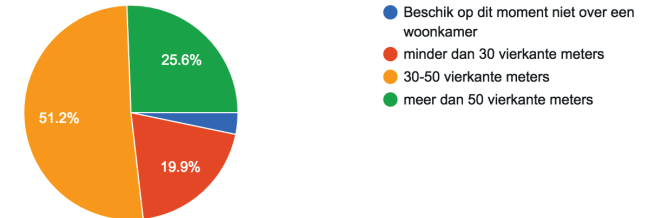
Wat zou de volgende stap in uw wooncarrière zijn? (als u gaat verhuizen, waar zou u dan logischerwijs gaan wonen?) (246 responses)



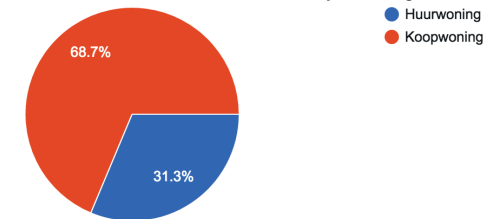
Hoeveelheid kamers huidige woning (246 responses)



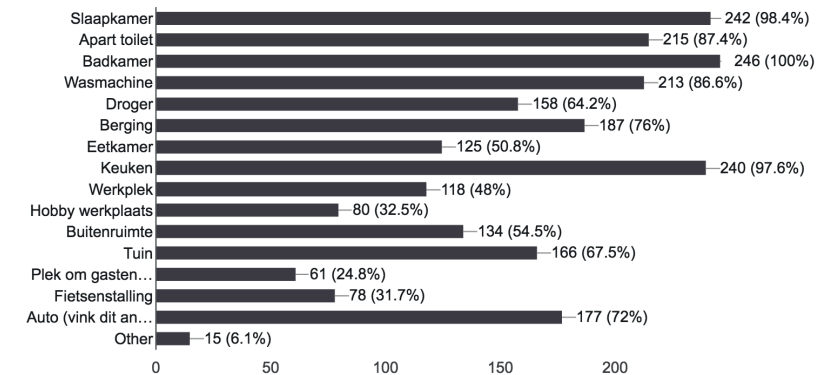
Grootte van de woonkamer (246 responses)



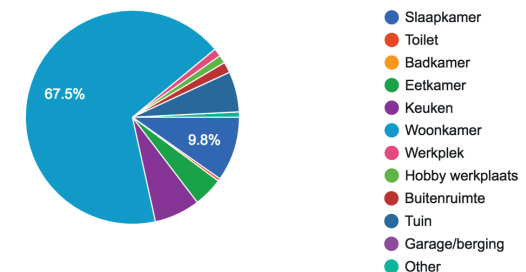
Is het huis waar u nu woont een huur- of koopwoning (246 responses)



Over welke ruimtes of functies beschikt uw huidige woning? (meerdere antwoorden mogelijk) (246 responses)

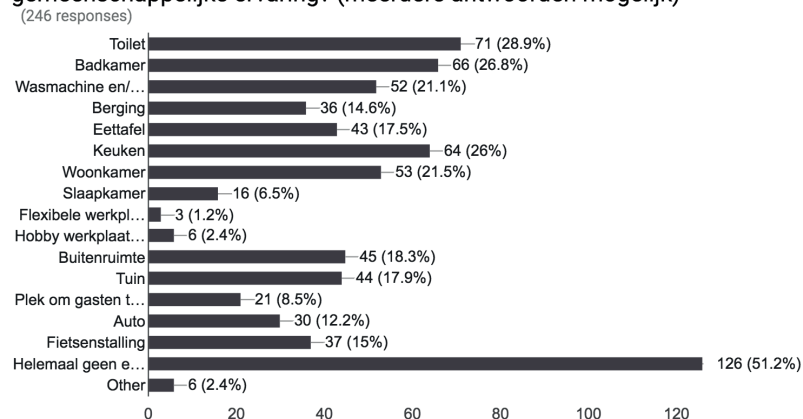


In welke ruimte of op welke plek, in de eigen woning, bent u het liefst? (246 responses)

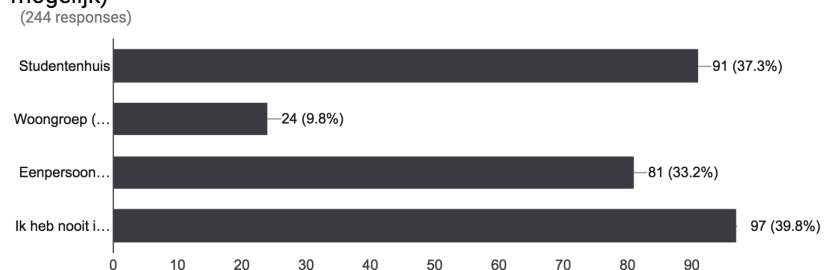


Appendix 4 - Questionnaire results

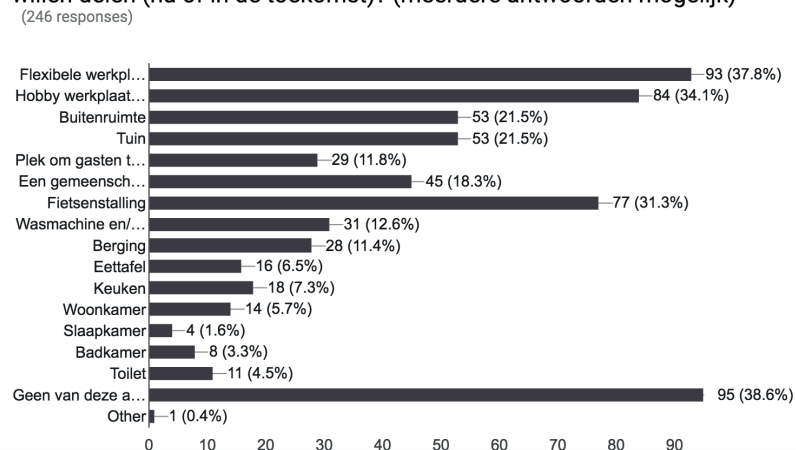
Met welke van de onderstaande voorzieningen heeft u deze gemeenschappelijke ervaring? (meerdere antwoorden mogelijk)



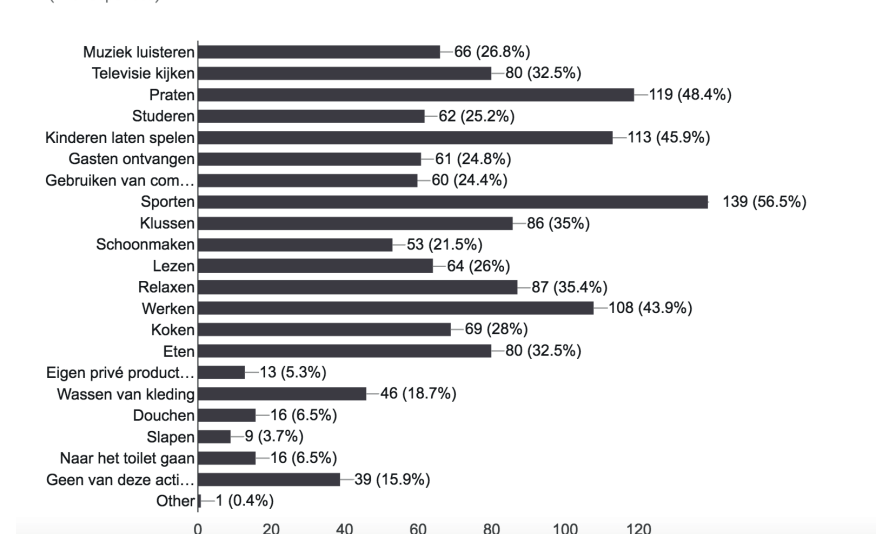
Heeft u ooit gewoond in de volgende situaties? (meerdere antwoorden mogelijk)



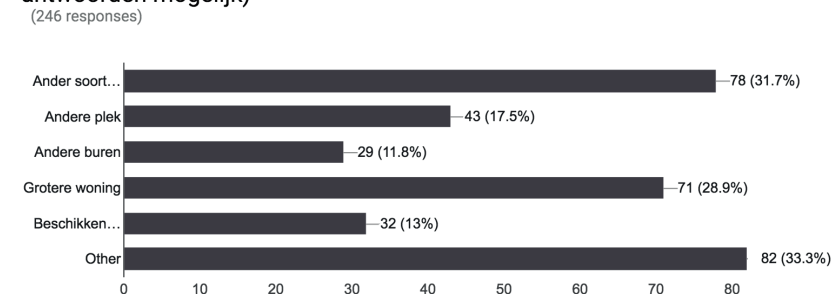
Welke plekken of functies zou u met andere mensen (buiten gezinsleden) willen delen (nu of in de toekomst)? (meerdere antwoorden mogelijk)



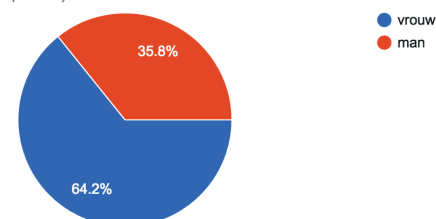
Welke activiteiten kunnen voor u plaatsvinden in een ruimte waar andere mensen (buiten gezinsleden) aanwezig zijn? (meerdere antwoorden mogelijk)



Wat zou u op dit moment aan uw woonsituatie willen veranderen? (meerdere antwoorden mogelijk)



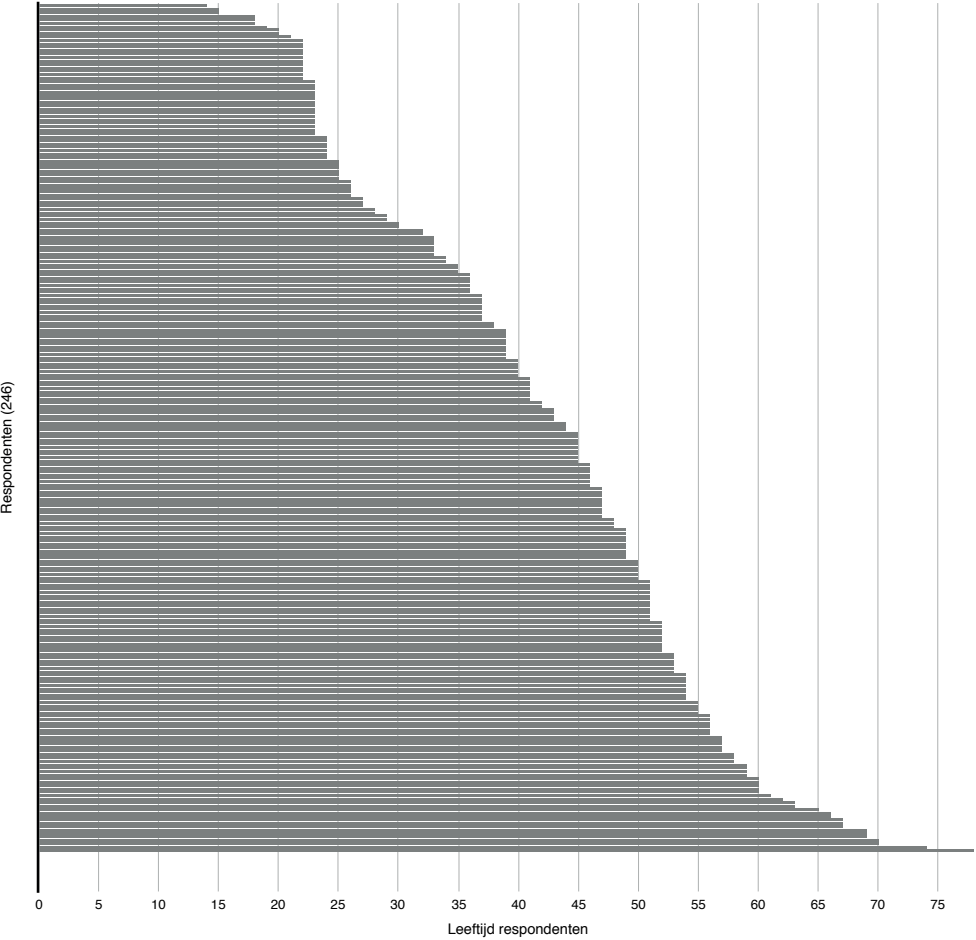
Geslacht (246 responses)



Appendix 4 - Questionnaire results

Leeftijd (246 responses)

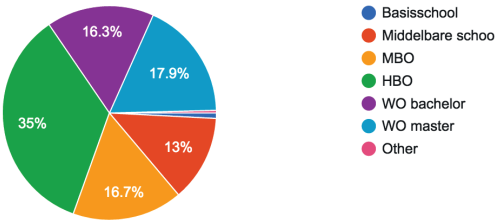
| | | |
|---------------------|-------|------|
| Gemiddelde leeftijd | 41,93 | jaar |
| Minimale leeftijd | 14 | jaar |
| Maximale leeftijd | 78 | jaar |



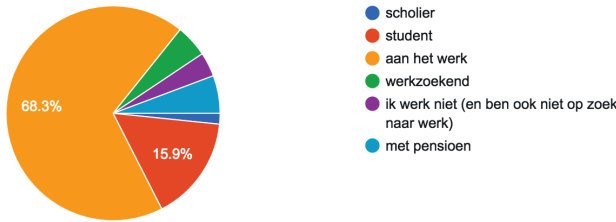
Waar woont u op dit moment? (woonplaats) (246 responses)

| Woonplaats | | | | | | | |
|--------------------------|---|---------------------|---|----------------------------|---|----------------|---|
| Aalsmeer | 1 | Etten-Leur | 1 | Liempde | 1 | Vlaardingen | 1 |
| Abbekerk | 1 | Franeke | 1 | Lienden | 1 | Vleuten | 1 |
| Abbenes | 1 | Genève, Zwitserland | 1 | Lutjebroek | 1 | Volendam | 1 |
| Almelo | 1 | Gorinchem | 1 | Medemblik | 1 | Waarland | 1 |
| Alphen aan den rijn | 1 | Groningen | 1 | Middelie | 1 | Wageningen | 1 |
| Avenhorn | 1 | Haarlem | 1 | Monnickendam | 1 | Whitby, Canada | 1 |
| Baarlo | 1 | Hardenberg | 1 | Monster | 1 | Winschoten | 1 |
| Beemster | 1 | Heerlen | 1 | Nieuwerkerk aan den IJssel | 1 | Woerden | 1 |
| Bennebroek | 1 | Helvoirt | 1 | Oisterwijk | 1 | Wolthaze | 1 |
| Berkhout | 1 | Hillegom | 1 | Oosterhout NB | 1 | Workum | 1 |
| Berlicum | 1 | Hilversum | 1 | Oss | 1 | Zwaag | 1 |
| Best | 1 | Hoogvliet | 1 | Oud-Beijerland | 1 | Zwanenburg | 1 |
| Blokker (gemeente Hoorn) | 1 | Hoogwoud | 1 | Oudorp | 1 | Zwijndrecht | 1 |
| Capelle aan de IJssel | 1 | Houten | 1 | Purmerend | 1 | Zwolle | 1 |
| Culik | 1 | Huizen | 1 | Puth | 1 | Boxtel | 2 |
| Culemborg | 1 | Hulsberg | 1 | Putten | 1 | Breda | 2 |
| Culemborg | 1 | Julianadorp N-H | 1 | Son en Breugel | 1 | Den Haag | 2 |
| De Lutte | 1 | Kampen | 1 | Steenbergen | 1 | Den helder | 2 |
| Den Bosch | 1 | Kerkrade | 1 | Tiel | 1 | Heerhugowaard | 2 |
| Deventer | 1 | Langedijk | 1 | Tilburg | 1 | Henegou | 2 |
| Didam | 1 | Leersum | 1 | Tokyo | 1 | Maastricht | 2 |
| Diemen | 1 | Leiderdorp | 1 | Ullared, Zweden | 1 | Meppel | 2 |
| Dordrecht | 1 | Lelystad | 1 | Velsen zuid | 1 | Nieuw Vennep | 2 |
| Enschede | 1 | Lent | 1 | Vianen | 1 | Nijmegen | 2 |

Hoogste afgeronde opleiding (246 responses)



Op dit moment ben ik vooral (246 responses)



Appendix 5 - Questionnaire conclusions

5.1 Relation between the 'shareability' of different functions

| | | geen | Naar het toilet gaan | Muziek luisteren | Televisie kijken | Praten | Studeren | Kinderen laten spelen | Gasten ontvangen | Gebruiken van computer | Sporten |
|--|-----|------|----------------------|------------------|------------------|--------|----------|-----------------------|------------------|------------------------|---------|
| | | 39 | 16 | 66 | 80 | 119 | 62 | 113 | 61 | 60 | 139 |
| geen | 39 | | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Naar het toilet gaan | 16 | 0 | | 13 | 15 | 16 | 11 | 9 | 15 | 12 | 5 |
| Muziek luisteren | 66 | 1 | 13 | | 47 | 56 | 31 | 36 | 32 | 38 | 43 |
| Televisie kijken | 80 | 0 | 15 | 47 | | 69 | 34 | 44 | 40 | 43 | 44 |
| Praten | 119 | 1 | 16 | 56 | 69 | | 48 | 69 | 51 | 45 | 75 |
| Studeren | 62 | 0 | 11 | 31 | 34 | 48 | | 36 | 29 | 30 | 42 |
| Kinderen laten spelen | 113 | 0 | 9 | 36 | 44 | 69 | 36 | | 42 | 40 | 87 |
| Gasten ontvangen | 61 | 0 | 15 | 32 | 40 | 51 | 29 | 42 | | 32 | 36 |
| Gebruiken van computer | 60 | 0 | 12 | 38 | 43 | 45 | 30 | 40 | 32 | | 38 |
| Sporten | 139 | 1 | 5 | 43 | 44 | 75 | 42 | 87 | 36 | 38 | |
| Klussen | 86 | 0 | 8 | 33 | 42 | 57 | 31 | 59 | 34 | 32 | 70 |
| Schoonmaken | 53 | 0 | 14 | 30 | 40 | 45 | 30 | 35 | 36 | 33 | 28 |
| Lezen | 64 | 0 | 9 | 32 | 38 | 51 | 35 | 37 | 33 | 33 | 38 |
| Relaxen | 87 | 0 | 13 | 40 | 46 | 66 | 40 | 45 | 40 | 39 | 48 |
| Werken | 108 | 0 | 9 | 42 | 41 | 63 | 36 | 70 | 32 | 39 | 89 |
| Koken | 69 | 0 | 16 | 35 | 52 | 58 | 29 | 43 | 42 | 35 | 40 |
| Eten | 80 | 1 | 16 | 44 | 53 | 64 | 31 | 44 | 43 | 39 | 45 |
| Eigen privé producten opbergen | 13 | 0 | 8 | 9 | 11 | 12 | 11 | 8 | 12 | 10 | 6 |
| Wassen van kleding | 46 | 0 | 14 | 20 | 26 | 34 | 27 | 32 | 24 | 21 | 30 |
| Douchen | 16 | 0 | 12 | 14 | 14 | 14 | 13 | 8 | 13 | 12 | 6 |
| Slapen | 9 | 0 | 7 | 8 | 7 | 8 | 8 | 6 | 9 | 7 | 4 |
| Percentage van hieronder heeft OOK hiernaast gekozen | | geen | Naar het toilet gaan | Muziek luisteren | Televisie kijken | Praten | Studeren | Kinderen laten spelen | Gasten ontvangen | Gebruiken van computer | Sporten |
| geen | 39 | | 0,0 | 2,6 | 0,0 | 2,6 | 0,0 | 0,0 | 0,0 | 0,0 | 2,6 |
| Naar het toilet gaan | 16 | 0,0 | | 81,3 | 93,8 | 100,0 | 68,8 | 56,3 | 93,8 | 75,0 | 31,3 |
| Muziek luisteren | 66 | 1,5 | 19,7 | | 71,2 | 84,8 | 47,0 | 54,5 | 48,5 | 57,6 | 65,2 |
| Televisie kijken | 80 | 0,0 | 18,8 | 58,8 | | 86,3 | 42,5 | 55,0 | 53,8 | 57,6 | 55,0 |
| Praten | 119 | 0,8 | 13,4 | 47,1 | 58,0 | | 40,3 | 58,0 | 42,9 | 37,8 | 63,0 |
| Studeren | 62 | 0,0 | 17,7 | 50,0 | 54,8 | 77,4 | | 58,1 | 46,8 | 48,4 | 67,7 |
| Kinderen laten spelen | 113 | 0,0 | 8,0 | 31,9 | 38,9 | 61,1 | 31,9 | | 37,2 | 35,4 | 77,0 |
| Gasten ontvangen | 61 | 0,0 | 24,6 | 52,5 | 65,6 | 83,6 | 47,5 | 68,9 | | 52,5 | 59,0 |
| Gebruiken van computer | 60 | 0,0 | 20,0 | 63,3 | 71,7 | 75,0 | 50,0 | 66,7 | 53,3 | | 63,3 |
| Sporten | 139 | 0,7 | 3,6 | 30,9 | 31,7 | 54,0 | 30,2 | 62,6 | 25,9 | 27,3 | |
| Klussen | 86 | 0,0 | 9,3 | 38,4 | 48,8 | 66,3 | 36,0 | 68,8 | 39,5 | 37,2 | 81,4 |
| Schoonmaken | 53 | 0,0 | 26,4 | 56,6 | 75,5 | 84,9 | 56,6 | 66,0 | 67,9 | 62,3 | 52,8 |
| Lezen | 64 | 0,0 | 14,1 | 50,0 | 59,4 | 79,7 | 54,7 | 57,8 | 51,6 | 51,6 | 59,4 |
| Relaxen | 87 | 0,0 | 14,9 | 46,0 | 52,9 | 75,9 | 46,0 | 51,7 | 46,0 | 44,8 | 55,2 |
| Werken | 108 | 0,0 | 8,3 | 38,9 | 38,0 | 58,3 | 33,3 | 64,8 | 29,6 | 36,1 | 82,4 |
| Koken | 69 | 0,0 | 23,2 | 50,7 | 75,4 | 84,1 | 42,0 | 62,3 | 60,9 | 50,7 | 58,0 |
| Eten | 80 | 1,3 | 20,0 | 55,0 | 66,3 | 80,0 | 36,8 | 55,0 | 53,8 | 48,8 | 56,3 |
| Eigen privé producten opbergen | 13 | 0,0 | 61,5 | 69,2 | 84,6 | 92,3 | 84,8 | 61,5 | 92,3 | 76,9 | 46,2 |
| Wassen van kleding | 46 | 0,0 | 30,4 | 43,5 | 56,5 | 73,9 | 58,7 | 69,6 | 52,2 | 45,7 | 65,2 |
| Douchen | 16 | 0,0 | 75,0 | 87,5 | 87,5 | 87,5 | 81,3 | 50,0 | 81,3 | 75,0 | 37,5 |
| Slapen | 9 | 0,0 | 77,8 | 88,9 | 77,8 | 88,9 | 88,9 | 66,7 | 100,0 | 77,8 | 44,4 |
| Percentage van hiernaast heeft OOK hieronder gekozen | | geen | Naar het toilet gaan | Muziek luisteren | Televisie kijken | Praten | Studeren | Kinderen laten spelen | Gasten ontvangen | Gebruiken van computer | Sporten |
| geen | 39 | | 0 | 1,5 | 0,0 | 0,8 | 0,0 | 0,0 | 0,0 | 0,0 | 0,7 |
| Naar het toilet gaan | 16 | 0,0 | | 19,7 | 18,8 | 13,4 | 17,7 | 8,0 | 24,6 | 20,0 | 3,6 |
| Muziek luisteren | 66 | 2,6 | 81,3 | | 58,8 | 47,1 | 50,0 | 31,9 | 52,5 | 63,3 | 30,9 |
| Televisie kijken | 80 | 0,0 | 93,8 | 71,2 | | 58,0 | 54,8 | 38,9 | 65,6 | 71,7 | 31,7 |
| Praten | 119 | 2,6 | 100,0 | 84,8 | 86,3 | | 77,4 | 61,1 | 83,6 | 75,0 | 54,0 |
| Studeren | 62 | 0,0 | 68,8 | 47,0 | 42,5 | 40,3 | | 31,9 | 47,5 | 50,0 | 30,2 |
| Kinderen laten spelen | 113 | 0,0 | 56,3 | 54,5 | 55,0 | 58,0 | 58,1 | | 68,9 | 66,7 | 62,6 |
| Gasten ontvangen | 61 | 0,0 | 93,8 | 48,5 | 50,0 | 42,9 | 46,8 | 37,2 | | 53,3 | 25,9 |
| Gebruiken van computer | 60 | 0,0 | 75,0 | 57,6 | 53,8 | 37,8 | 48,4 | 35,4 | 52,5 | | 27,3 |
| Sporten | 139 | 2,6 | 31,3 | 65,2 | 55,0 | 63,0 | 67,7 | 77,8 | 59,0 | 63,3 | |
| Klussen | 86 | 0,0 | 50,0 | 50,0 | 52,5 | 47,9 | 50,0 | 52,2 | 55,7 | 43,8 | 50,4 |
| Schoonmaken | 53 | 0,0 | 87,8 | 45,5 | 50,0 | 37,8 | 48,4 | 31,0 | 59,0 | 55,0 | 20,1 |
| Lezen | 64 | 0,0 | 56,3 | 48,5 | 47,5 | 42,9 | 56,5 | 32,7 | 54,1 | 55,0 | 27,3 |
| Relaxen | 87 | 0,0 | 81,3 | 60,6 | 57,5 | 65,5 | 39,8 | 65,6 | 65,0 | 34,5 | |
| Werken | 108 | 0,0 | 56,3 | 63,6 | 51,3 | 52,9 | 58,1 | 61,9 | 52,5 | 65,0 | 64,0 |
| Koken | 69 | 0,0 | 100,0 | 53,0 | 65,0 | 48,7 | 46,8 | 38,1 | 68,9 | 38,3 | 28,8 |
| Eten | 80 | 2,6 | 100,0 | 66,7 | 66,3 | 53,8 | 50,0 | 38,9 | 70,5 | 65,0 | 32,4 |
| Eigen privé producten opbergen | 13 | 0,0 | 50,0 | 13,6 | 13,8 | 10,1 | 17,7 | 7,1 | 19,7 | 16,7 | 4,3 |
| Wassen van kleding | 46 | 0,0 | 87,5 | 30,3 | 32,5 | 28,6 | 43,5 | 28,3 | 39,3 | 30,0 | 21,6 |
| Douchen | 16 | 0,0 | 75,0 | 21,2 | 17,5 | 11,8 | 21,0 | 7,1 | 21,3 | 25,0 | 4,3 |
| Slapen | 9 | 0,0 | 43,8 | 12,1 | 8,8 | 6,7 | 12,9 | 5,3 | 14,8 | 11,7 | 2,9 |
| Hoogste percentage | | | | | | | | | | | |
| Een na hoogste | | | | | | | | | | | |
| Twee na hoogste | | | | | | | | | | | |

| Klussen | Schoonmaken | Lezen | Relaxen | Werken | Koken | Eten | Eigen privé producten opbergen | Wassen van kleding | Douchen | Slapen | |
|---------|-------------|-------|---------|--------|-------|-------|--------------------------------|--------------------|---------|--------|--------------------------------|
| 86 | 53 | 64 | 87 | 108 | 69 | 80 | 13 | 46 | 16 | 9 | |
| 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | geen |
| 8 | 14 | 9 | 13 | 9 | 16 | 16 | 8 | 14 | 12 | 7 | Naar het toilet gaan |
| 33 | 30 | 32 | 40 | 42 | 35 | 44 | 9 | 20 | 14 | 8 | Muziek luisteren |
| 42 | 40 | 38 | 46 | 41 | 52 | 53 | 11 | 26 | 14 | 7 | Televisie kijken |
| 57 | 45 | 51 | 66 | 63 | 58 | 64 | 12 | 34 | 14 | 8 | Praten |
| 31 | 30 | 35 | 40 | 36 | 29 | 31 | 11 | 27 | 13 | 8 | Studeren |
| 59 | 35 | 37 | 45 | 70 | 43 | 44 | 8 | 32 | 8 | 6 | Kinderen laten spelen |
| 34 | 36 | 33 | 40 | 32 | 42 | 43 | 12 | 24 | 13 | 9 | Gasten ontvangen |
| 32 | 33 | 33 | 39 | 39 | 35 | 39 | 10 | 21 | 12 | 7 | Gebruiken van computer |
| 70 | 28 | 38 | 48 | 89 | 40 | 45 | 6 | 30 | 6 | 4 | Klussen |
| | 33 | 28 | 37 | 55 | 37 | 33 | 7 | 31 | 8 | 5 | Schoonmaken |
| 33 | | 33 | 38 | 31 | 38 | 35 | 10 | 29 | 15 | 8 | Lezen |
| 28 | 33 | | 52 | 44 | 31 | 38 | 8 | 23 | 11 | 8 | Relaxen |
| 37 | 38 | 52 | | 52 | 42 | 49 | 11 | 27 | 13 | 7 | Werken |
| 55 | 31 | 44 | 52 | | 33 | 42 | 7 | 26 | 9 | 6 | Koken |
| 37 | 38 | 31 | 42 | 33 | | 55 | 11 | 27 | 15 | 8 | Eten |
| 33 | 35 | 38 | 49 | 42 | 55 | | 11 | 24 | 15 | 8 | Eigen privé producten opbergen |
| 7 | 10 | 8 | 11 | 7 | 11 | 11 | | 10 | 8 | 5 | Wassen van kleding |
| 31 | 29 | 23 | 27 | 26 | 27 | 24 | 10 | | 15 | 8 | Douchen |
| 8 | 15 | 11 | 13 | 9 | 15 | 15 | 8 | 15 | | 8 | Slapen |
| 5 | 8 | 8 | 7 | 6 | 8 | 8 | 5 | 8 | 8 | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| Klussen | Schoonmaken | Lezen | Relaxen | Werken | Koken | Eten | Eigen privé producten opbergen | Wassen van kleding | Douchen | Slapen | |
| 0,0 | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 | 2,6 | 0,0 | 0,0 | 0,0 | 0,0 | geen |
| 50,0 | 87,5 | 56,3 | 81,3 | 56,3 | 100,0 | 100,0 | 50,0 | 87,5 | 75,0 | 43,8 | Naar het toilet gaan |
| 50,0 | 45,5 | 48,5 | 60,6 | 63,6 | 53,0 | 66,7 | 13,6 | 30,3 | 21,2 | 12,1 | Muziek luisteren |
| 52,5 | 50,0 | 47,5 | 57,5 | 51,3 | 65,0 | 66,3 | 13,8 | 32,5 | 17,5 | 8,8 | Televisie kijken |
| 47,9 | 37,8 | 42,9 | 55,5 | 52,9 | 48,7 | 53,8 | 10,1 | 28,6 | 11,8 | 6,7 | Praten |
| 50,0 | 48,4 | 56,5 | 64,5 | 58,1 | 46,8 | 50,0 | 17,7 | 43,5 | 21,0 | 12,9 | Studeren |
| 52,2 | 31,0 | 32,7 | 39,8 | 61,9 | 38,1 | 38,9 | 7,1 | 28,3 | 7,1 | 5,3 | Kinderen laten spelen |
| 55,7 | 59,0 | 54,1 | 65,6 | 52,5 | 68,9 | 70,5 | 19,7 | 39,3 | 21,3 | 14,8 | Gasten ontvangen |
| 53,3 | 55,0 | 55,0 | 65,0 | 65,0 | 58,3 | 65,0 | 16,7 | 35,0 | 20,0 | 11,7 | Gebruiken van computer |
| 50,4 | 20,1 | 27,3 | 34,5 | 84,8 | 28,8 | 32,4 | 4,3 | 21,6 | 4,3 | 2,9 | Klussen |
| | 38,4 | 32,6 | 43,0 | 64,0 | 43,0 | 38,4 | 8,1 | 36,0 | 9,3 | 5,8 | Schoonmaken |
| 62,3 | | 62,3 | 71,7 | 58,5 | 71,7 | 66,0 | 18,9 | 54,7 | 28,3 | 15,1 | Lezen |
| 43,8 | 51,6 | | 81,3 | 68,8 | 48,4 | 59,4 | 12,5 | 35,9 | 17,2 | 12,5 | Relaxen |
| 42,5 | 43,7 | 59,8 | | 59,8 | 48,3 | 56,3 | 12,6 | 31,0 | 14,9 | 8,0 | Werken |
| 50,9 | 28,7 | 40,7 | 48,1 | | 30,6 | 38,9 | 6,5 | 24,1 | 8,3 | 5,6 | Koken |
| 53,6 | 55,1 | 44,9 | 60,9 | 47,8 | | 79,7 | 15,9 | 39,1 | 21,7 | 11,8 | Eten |
| 41,3 | 43,8 | 47,5 | 61,3 | 52,5 | 68,8 | | 13,8 | 30,0 | 18,8 | 10,0 | Eigen privé producten opbergen |
| 53,8 | 76,9 | 61,5 | 84,6 | 53,8 | 84,6 | 84,6 | | 76,9 | 61,5 | 38,5 | Wassen van kleding |
| 67,4 | 63,0 | 50,0 | 58,7 | 56,5 | 58,7 | 52,2 | 21,7 | | 32,6 | 17,4 | Douchen |
| 50,0 | 93,8 | 68,8 | 81,3 | 56,3 | 93,8 | 93,8 | 50,0 | 93,8 | | 50,0 | Slapen |
| 55,6 | 88,9 | 88,9 | 77,8 | 66,7 | 88,9 | 88,9 | 55,6 | 88,9 | 88,9 | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| Klussen | Schoonmaken | Lezen | Relaxen | Werken | Koken | Eten | Eigen privé producten opbergen | Wassen van kleding | Douchen | Slapen | |
| 0,0 | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 | 1,3 | 0,0 | 0,0 | 0,0 | 0,0 | geen |
| 9,3 | 26,4 | 14,1 | 14,9 | 8,3 | 23,2 | 20,0 | 61,5 | 30,4 | 75,0 | 77,8 | Naar het toilet gaan |
| 38,4 | 56,6 | 50,0 | 63,0 | 38,9 | 50,7 | 55,0 | 69,2 | 43,5 | 87,5 | 88,9 | Muziek luisteren |
| 48,8 | 75,5 | 59,4 | 52,9 | 38,0 | 75,4 | 66,3 | 84,6 | 56,5 | 87,5 | 77,8 | Televisie kijken |
| 66,3 | 84,9 | 79,7 | 75,9 | 58,3 | 84,1 | 80,0 | 92,3 | 73,9 | 87,5 | 88,9 | Praten |
| 36,0 | 56,6 | 54,7 | 46,0 | 33,3 | 42,0 | 38,8 | 84,6 | 58,7 | 81,3 | 88,9 | Studeren |
| 68,6 | 66,0 | 57,8 | 51,7 | 64,8 | 62,3 | 55,0 | 61,5 | 69,6 | 50,0 | 66,7 | Kinderen laten spelen |
| 39,5 | 67,9 | 51,6 | 46,0 | 29,6 | 60,9 | 53,8 | 92,3 | 52,2 | 81,3 | 100,0 | Gasten ontvangen |
| 37,2 | 62,3 | 51,6 | 44,8 | 36,1 | 50,7 | 48,8 | 76,9 | 45,7 | 75,0 | 77,8 | Gebruiken van computer |
| 81,4 | 52,8 | 59,4 | 55,2 | 80,8 | 58,0 | 56,3 | 46,2 | 65,2 | 37,5 | 44,4 | Klussen |
| | 62,3 | 43,8 | 42,5 | 50,9 | 53,6 | 41,3 | 53,8 | 67,4 | 50,0 | 55,6 | Schoonmaken |
| 38,4 | | 51,6 | 43,7 | 28,7 | 55,1 | 43,8 | 76,9 | 63,0 | 93,8 | 88,9 | Lezen |
| 32,6 | 62,3 | | 59,8 | 40,7 | 44,9 | 47,5 | 61,5 | 50,0 | 68,8 | 88,9 | Relaxen |
| 43,0 | 71,7 | 81,3 | | 48,1 | 60,9 | 61,3 | 84,8 | 58,7 | 81,3 | 77,8 | Werken |
| 64,0 | 58,5 | 68,8 | 59,8 | | 47,8 | 52,5 | 53,8 | 56,5 | 56,3 | 66,7 | Koken |
| 43,0 | 71,7 | 48,4 | 48,3 | 30,6 | | 68,8 | 84,6 | 58,7 | 93,8 | 88,9 | Eten |
| 38,4 | 66,0 | 59,4 | 56,3 | 38,9 | 79,7 | | 84,6 | 52,2 | 93,8 | 88,9 | Eigen privé producten opbergen |
| 8,1 | 18,9 | 12,5 | 12,6 | 6,5 | 15,9 | 13,8 | | 21,7 | 50,0 | 55,6 | Wassen van kleding |
| 36,0 | 54,7 | 35,9 | 31,0 | 24,1 | 39,1 | 30,0 | 76,9 | | 93,8 | 88,9 | Douchen |
| 9,3 | 28,3 | 17,2 | 14,9 | 8,3 | 21,7 | 18,8 | 61,5 | 32,6 | | 88,9 | Slapen |
| 5,8 | 15,1 | 12,5 | 8,0 | 5,6 | 11,6 | 10,0 | 38,5 | 17,4 | 50,0 | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

Appendix 5 - Questionnaire conclusions

5.2 Relation between the 'shareability' of functions and places

| | | geen | Naar het toilet gaan | Muziek luisteren | Televisie kijken | Praten | Studeren | Kinderen laten spelen | Gasten ontvangen | Gebruiken van computer | Sporten |
|--|----|------|----------------------|------------------|------------------|--------|----------|-----------------------|------------------|------------------------|---------|
| | | 37 | 16 | 63 | 76 | 112 | 56 | 109 | 59 | 59 | 129 |
| Flexibele werkplek dichtbij woning | 87 | 3 | 8 | 29 | 33 | 51 | 28 | 48 | 25 | 29 | 63 |
| Hobby werkplaats met alle voorzieningen | 81 | 3 | 7 | 24 | 34 | 48 | 27 | 49 | 26 | 27 | 57 |
| Buitenruimte | 53 | 1 | 7 | 19 | 28 | 39 | 23 | 31 | 22 | 22 | 34 |
| Tuin | 54 | 1 | 5 | 16 | 29 | 36 | 23 | 28 | 20 | 22 | 31 |
| Plek om gasten te ontvangen | 28 | 0 | 2 | 7 | 14 | 17 | 10 | 22 | 12 | 13 | 19 |
| Een gemeenschappelijke auto | 45 | 1 | 4 | 15 | 22 | 33 | 17 | 33 | 16 | 20 | 35 |
| Fietsenstalling | 75 | 2 | 8 | 24 | 32 | 52 | 24 | 43 | 25 | 22 | 51 |
| Wasmachine en/of droger | 31 | 1 | 6 | 9 | 18 | 24 | 15 | 14 | 13 | 15 | 15 |
| Berging | 28 | 0 | 4 | 11 | 17 | 21 | 15 | 19 | 10 | 12 | 18 |
| Eettafel | 16 | 0 | 4 | 8 | 12 | 13 | 9 | 11 | 6 | 9 | 6 |
| Keuken | 18 | 0 | 5 | 6 | 11 | 16 | 9 | 10 | 11 | 5 | 7 |
| Woonkamer | 14 | 0 | 3 | 5 | 7 | 11 | 7 | 7 | 8 | 5 | 3 |
| Slaapkamer | 4 | 0 | 1 | 2 | 1 | 3 | 2 | 1 | 1 | 1 | 0 |
| Badkamer | 8 | 0 | 3 | 5 | 5 | 6 | 6 | 4 | 4 | 4 | 3 |
| Toilet | 11 | 0 | 4 | 5 | 8 | 10 | 6 | 6 | 6 | 5 | 4 |
| Niets | 89 | 30 | 4 | 21 | 21 | 28 | 16 | 35 | 20 | 13 | 37 |
| Percentage van hieronder heeft OOK hiernaast gekozen | | geen | Naar het toilet gaan | Muziek luisteren | Televisie kijken | Praten | Studeren | Kinderen laten spelen | Gasten ontvangen | Gebruiken van computer | Sporten |
| Flexibele werkplek dichtbij woning | | 3.4 | 9.2 | 33.3 | 37.9 | 58.6 | 32.2 | 55.2 | 28.7 | 33.3 | 72.4 |
| Hobby werkplaats met alle voorzieningen | | 3.7 | 8.6 | 29.6 | 42 | 59.3 | 33.3 | 60.5 | 32.1 | 33.3 | 70.4 |
| Buitenruimte | | 1.9 | 13.2 | 35.8 | 52.8 | 73.6 | 43.4 | 58.8 | 41.5 | 41.5 | 64.2 |
| Tuin | | 1.9 | 9.3 | 29.6 | 53.7 | 66.7 | 42.6 | 51.9 | 37 | 40.7 | 57.4 |
| Plek om gasten te ontvangen | | 0 | 7.1 | 25 | 50 | 60.7 | 35.7 | 78.8 | 42.9 | 46.4 | 67.9 |
| Een gemeenschappelijke auto | | 2.2 | 8.9 | 33.3 | 46.9 | 73.3 | 37.8 | 73.3 | 35.6 | 44.4 | 77.8 |
| Fietsenstalling | | 2.7 | 10.7 | 32 | 42.7 | 69.3 | 32 | 57.8 | 33.3 | 29.3 | 88 |
| Wasmachine en/of droger | | 3.2 | 19.4 | 29 | 58.1 | 77.4 | 48.4 | 51.6 | 45.2 | 41.9 | 48.4 |
| Berging | | 0 | 14.3 | 39.3 | 60.7 | 75 | 53.6 | 67.9 | 35.7 | 42.9 | 64.3 |
| Eettafel | | 0 | 25 | 50 | 75 | 81.3 | 56.3 | 68.8 | 35.7 | 56.3 | 37.5 |
| Keuken | | 0 | 27.8 | 33.3 | 61.1 | 88.9 | 50 | 55.6 | 61.1 | 27.8 | 38.9 |
| Woonkamer | | 0 | 21.4 | 35.7 | 50 | 78.6 | 50 | 50 | 57.1 | 35.7 | 21.4 |
| Slaapkamer | | 0 | 25 | 50 | 25 | 75 | 50 | 25 | 25 | 25 | 0 |
| Badkamer | | 0 | 37.5 | 62.5 | 62.5 | 75 | 75 | 50 | 50 | 50 | 37.5 |
| Toilet | | 0 | 36.4 | 45.5 | 72.7 | 90.9 | 54.5 | 54.5 | 54.5 | 45.5 | 36.4 |
| Niets | | 33.7 | 4.5 | 23.6 | 23.6 | 31.5 | 18 | 39.3 | 22.5 | 14.6 | 41.6 |
| Percentage van hiernaast heeft OOK hieronder gekozen | | geen | Naar het toilet gaan | Muziek luisteren | Televisie kijken | Praten | Studeren | Kinderen laten spelen | Gasten ontvangen | Gebruiken van computer | Sporten |
| Flexibele werkplek dichtbij woning | | 8.1 | 50 | 46 | 43.4 | 45.5 | 50 | 44 | 42.4 | 49.2 | 48.8 |
| Hobby werkplaats met alle voorzieningen | | 8.1 | 43.8 | 38.1 | 44.7 | 42.9 | 48.2 | 45 | 44.1 | 45.8 | 44.2 |
| Buitenruimte | | 2.7 | 43.8 | 30.2 | 36.8 | 34.8 | 41.1 | 28.4 | 37.3 | 37.3 | 26.4 |
| Tuin | | 2.7 | 31.3 | 25.4 | 38.2 | 32.1 | 41.1 | 25.7 | 33.9 | 37.3 | 24 |
| Plek om gasten te ontvangen | | 0 | 12.5 | 11.1 | 18.4 | 15.2 | 17.9 | 20.2 | 20.3 | 22 | 14.7 |
| Een gemeenschappelijke auto | | 2.7 | 25 | 23.8 | 28.9 | 29.5 | 30.4 | 30.3 | 27.1 | 33.9 | 27.1 |
| Fietsenstalling | | 5.4 | 39 | 38.1 | 42.1 | 46.4 | 42.9 | 39.4 | 42.4 | 37.3 | 39.5 |
| Wasmachine en/of droger | | 2.7 | 37.5 | 14.3 | 23.7 | 21.4 | 26.8 | 14.7 | 23.7 | 22 | 11.6 |
| Berging | | 0 | 25 | 17.5 | 22.4 | 18.7 | 28.8 | 17.4 | 16.9 | 20.3 | 14 |
| Eettafel | | 0 | 25 | 12.7 | 15.8 | 11.6 | 16.1 | 10.1 | 10.2 | 15.3 | 4.7 |
| Keuken | | 0 | 31.3 | 9.5 | 14.5 | 14.3 | 16.1 | 9.2 | 18.6 | 8.5 | 5.4 |
| Woonkamer | | 0 | 18.8 | 7.9 | 9.2 | 9.8 | 12.5 | 6.4 | 13.6 | 8.5 | 2.3 |
| Slaapkamer | | 0 | 6.3 | 3.2 | 1.3 | 2.7 | 3.6 | 0.9 | 1.7 | 1.7 | 0 |
| Badkamer | | 0 | 18.8 | 7.9 | 6.6 | 5.4 | 10.7 | 3.7 | 6.8 | 6.8 | 2.3 |
| Toilet | | 0 | 25 | 7.9 | 10.5 | 8.9 | 10.7 | 5.5 | 10.2 | 8.5 | 3.1 |
| Niets | | 81.1 | 25 | 33.3 | 27.6 | 25 | 28.6 | 32.1 | 33.9 | 22 | 28.7 |
| Hoogste percentage Een na hoogste | | | | | | | | | | | |
| Laagste percentage Een na laagste percentage | | | | | | | | | | | |

| Klussen | Schoonmaken | Lezen | Relaxen | Werken | Koken | Eten | Eigen privé producten opbergen | Wassen van kleding | Douchen | Slapen | |
|---------|-------------|-------|---------|--------|-------|------|--------------------------------|--------------------|---------|--------|------------------------------------|
| 81 | 52 | 62 | 84 | 101 | 65 | 76 | 13 | 46 | 16 | 9 | |
| 45 | 29 | 24 | 40 | 53 | 31 | 29 | 4 | 32 | 10 | 4 | Flexibele werkplek dichtbij woning |
| 51 | 29 | 24 | 32 | 47 | 29 | 28 | 5 | 32 | 8 | 4 | Hobby werkplaats met alle voorzie |
| 29 | 25 | 24 | 29 | 27 | 25 | 25 | 5 | 23 | 8 | 3 | Buitenruimte |
| 30 | 24 | 25 | 28 | 28 | 26 | 28 | 5 | 22 | 8 | 5 | Tuin |
| 16 | 13 | 7 | 12 | 15 | 14 | 10 | 3 | 10 | 4 | 2 | Plek om gasten te ontvangen |
| 28 | 21 | 17 | 19 | 26 | 21 | 19 | 2 | 22 | 5 | 2 | Een gemeenschappelijke auto |
| 41 | 26 | 25 | 28 | 35 | 30 | 29 | 5 | 30 | 10 | 5 | Fietsenstalling |
| 12 | 21 | 14 | 17 | 14 | 17 | 14 | 4 | 20 | 8 | 3 | Wasmachine en/of droger |
| 18 | 19 | 12 | 15 | 15 | 14 | 11 | 3 | 18 | 5 | 2 | Berging |
| 8 | 13 | 8 | 10 | 8 | 11 | 11 | 2 | 9 | 5 | 3 | Eettafel |
| 7 | 13 | 9 | 12 | 7 | 14 | 13 | 2 | 10 | 7 | 3 | Keuken |
| 3 | 10 | 7 | 10 | 5 | 9 | 9 | 2 | 5 | 5 | 2 | Woonkamer |
| 0 | 3 | 2 | 4 | 2 | 2 | 2 | 0 | 1 | 2 | 1 | Slaapkamer |
| 3 | 7 | 4 | 5 | 4 | 7 | 5 | 2 | 5 | 6 | 3 | Badkamer |
| 5 | 10 | 6 | 7 | 5 | 8 | 8 | 2 | 7 | 5 | 3 | Toilet |
| 12 | 13 | 20 | 25 | 32 | 17 | 26 | 5 | 6 | 2 | 2 | Niets |
| 51.7 | 33.3 | 27.6 | 46 | 60.9 | 35.6 | 33.3 | 4.6 | 36.8 | 11.5 | 4.6 | Flexibele werkplek dichtbij woning |
| 63 | 35.8 | 29.6 | 39.5 | 58 | 35.8 | 34.6 | 6.2 | 39.5 | 9.9 | 4.9 | Hobby werkplaats met alle voorzie |
| 54.7 | 47.2 | 45.3 | 54.7 | 50.9 | 47.2 | 47.2 | 9.4 | 43.4 | 15.1 | 5.7 | Buitenruimte |
| 55.6 | 44.4 | 46.3 | 51.9 | 51.9 | 48.1 | 51.9 | 9.3 | 40.7 | 14.8 | 9.3 | Tuin |
| 57.1 | 46.4 | 25 | 42.9 | 53.6 | 50 | 35.7 | 10.7 | 35.7 | 14.3 | 7.1 | Plek om gasten te ontvangen |
| 62.2 | 46.7 | 37.8 | 42.2 | 57.8 | 46.7 | 42.2 | 4.4 | 48.9 | 11.1 | 4.4 | Een gemeenschappelijke auto |
| 54.7 | 34.7 | 33.3 | 37.3 | 46.7 | 40 | 38.7 | 6.7 | 40 | 13.3 | 6.7 | Fietsenstalling |
| 38.7 | 67.7 | 45.2 | 54.8 | 45.2 | 54.8 | 45.2 | 12.9 | 64.5 | 25.8 | 9.7 | Wasmachine en/of droger |
| 64.3 | 67.9 | 42.9 | 53.6 | 53.6 | 50 | 39.3 | 10.7 | 64.3 | 17.9 | 7.1 | Berging |
| 50 | 81.3 | 50 | 62.5 | 50 | 68.8 | 68.8 | 12.5 | 56.3 | 31.3 | 18.8 | Eettafel |
| 38.9 | 72.2 | 50 | 66.7 | 38.9 | 77.8 | 72.2 | 11.1 | 55.6 | 38.9 | 16.7 | Keuken |
| 21.4 | 71.4 | 50 | 71.4 | 35.7 | 64.3 | 64.3 | 14.3 | 35.7 | 35.7 | 14.3 | Woonkamer |
| 0 | 75 | 50 | 100 | 50 | 50 | 50 | 0 | 25 | 50 | 25 | Slaapkamer |
| 37.5 | 87.5 | 50 | 62.5 | 50 | 87.5 | 62.5 | 25 | 62.5 | 75 | 37.5 | Badkamer |
| 45.5 | 90.9 | 54.5 | 63.6 | 45.5 | 72.7 | 72.7 | 18.2 | 63.6 | 45.5 | 27.3 | Toilet |
| 13.5 | 14.6 | 22.5 | 28.1 | 36 | 19.1 | 29.2 | 5.6 | 6.7 | 2.2 | 2.2 | Niets |
| 55.6 | 55.8 | 38.7 | 47.6 | 52.5 | 47.7 | 38.2 | 30.8 | 69.6 | 62.5 | 44.4 | Flexibele werkplek dichtbij woning |
| 63 | 55.8 | 38.7 | 38.1 | 46.5 | 44.6 | 36.8 | 38.5 | 69.6 | 50 | 44.4 | Hobby werkplaats met alle voorzie |
| 35.8 | 48.1 | 38.7 | 34.5 | 26.7 | 38.5 | 32.9 | 38.5 | 50 | 50 | 33.3 | Buitenruimte |
| 37 | 46.2 | 40.3 | 33.3 | 27.7 | 40 | 36.8 | 38.6 | 47.8 | 50 | 55.6 | Tuin |
| 19.8 | 25 | 11.3 | 14.3 | 14.9 | 21.5 | 13.2 | 23.1 | 21.7 | 25 | 22.2 | Plek om gasten te ontvangen |
| 34.6 | 40.4 | 27.4 | 22.6 | 25.7 | 32.3 | 25 | 15.4 | 47.8 | 31.3 | 22.2 | Een gemeenschappelijke auto |
| 50.6 | 50 | 48.8 | 33.3 | 34.7 | 46.2 | 38.2 | 38.5 | 65.2 | 62.5 | 55.6 | Fietsenstalling |
| 14.8 | 40.4 | 22.6 | 20.2 | 13.9 | 26.2 | 18.4 | 30.8 | 43.5 | 50 | 33.3 | Wasmachine en/of droger |
| 22.2 | 36.5 | 19.4 | 17.9 | 14.9 | 21.5 | 14.5 | 23.1 | 39.1 | 31.3 | 22.2 | Berging |
| 9.9 | 25 | 12.9 | 11.9 | 7.9 | 16.9 | 14.5 | 15.4 | 19.6 | 31.3 | 33.3 | Eettafel |
| 8.6 | 25 | 14.5 | 14.3 | 6.9 | 21.5 | 17.1 | 15.4 | 21.7 | 43.8 | 33.3 | Keuken |
| 3.7 | 19.2 | 11.3 | 11.9 | 5 | 13.8 | 11.8 | 15.4 | 10.9 | 31.3 | 22.2 | Woonkamer |
| 0 | 5.8 | 3.2 | 4.8 | 2 | 3.1 | 2.6 | 0 | 2.2 | 12.5 | 11.1 | Slaapkamer |
| 3.7 | 13.5 | 6.5 | 6 | 4 | 10.8 | 6.6 | 15.4 | 10.9 | 37.5 | 33.3 | Badkamer |
| 6.2 | 19.2 | 9.7 | 8.3 | 5 | 12.3 | 10.5 | 15.4 | 15.2 | 31.3 | 33.3 | Toilet |
| 14.8 | 25 | 32.3 | 29.8 | 31.7 | 26.2 | 34.2 | 38.5 | 13 | 12.5 | 22.2 | Niets |

Appendix 5 - Questionnaire conclusions

5.3 Where do the respondents currently live?

| | Waar wonen alleenstaanden? | | Waar wonen stellen? | |
|-----------------|--------------------------------------|---------|--|---------|
| | 43 alleenstaanden / 246 respondenten | | 50 stellen / 246 respondenten | |
| | 30x vrouw | 13x man | 28x vrouw | 22x man |
| Studentenkamer | | 2 | | 0 |
| Studio | | 7 | | 1 |
| vrijstaand huis | | 0 | | 8 |
| 2-onder-1 kap | | 4 | | 12 |
| rijtjeshuis | | 9 | | 11 |
| appartement | | 19 | | 13 |
| flat | | 1 | | 2 |
| anders; ... | 1x maisonette | | 3x ; maisonette 55+ woning multi-functionele semi bungalow | |

| | Wie wonen er in studio's? | | Wie wonen er in appartementen? | |
|---------------------|------------------------------|--------|-------------------------------------|---------|
| | 8 studios / 246 repsondenten | | 45 appartementen / 246 respondenten | |
| | 7x vrouw | 1x man | 31x vrouw | 14x man |
| alleenstaand | | 7 | | 19 |
| +partner | | 1 | | 13 |
| +kinderen | | 0 | | 2 |
| +partner & kinderen | | 0 | | 9 |
| +huisgenoten | | 0 | | 2 |
| leeftijd span | 20-26 (+43 jaar) | | 22-69 jaar | |
| leeftijd gemiddelde | | | 39,7 jaar | |
| aan het werk | | 2 | | 29 |
| student | | 5 | | 7 |
| scholier | | 1 | | 0 |
| pensioen | | | | 5 |
| werkzoekend | | | | 4 |
| | 6 willen een grotere woning | | | |
| | 4 willen buitenruimte | | | |

5.4 Do singles want to share more?

| | Iedereen | | Alleenstaanden | | Alleenstaanden willen meer delen van |
|---|----------|-----------|----------------|-----------|--|
| | aantal | procenten | aantal | procenten | |
| | 246 | 100% | 43 | 17,5% | |
| Flexibele werkplek dichtbij woning | 93 | 37,8 | 16 | 37,2 | -0,6 |
| Hobby werkplaats met alle voorzieningen | 84 | 34,1 | 18 | 41,9 | 7,7 |
| Buitenruimte | 53 | 21,5 | 11 | 25,6 | 4,0 |
| Tuin | 53 | 21,5 | 11 | 25,6 | 4,0 |
| Plek om gasten te ontvangen | 29 | 11,8 | 3 | 7,0 | -4,8 |
| Een gemeenschappelijke auto | 45 | 18,3 | 10 | 23,3 | 5,0 |
| Fietsenstalling | 77 | 31,3 | 15 | 34,9 | 3,6 |
| Wasmachine en/of droger | 31 | 12,6 | 6 | 14,0 | 1,4 |
| Berging | 28 | 11,4 | 5 | 11,6 | 0,2 |
| Eettafel | 16 | 6,5 | 0 | 0,0 | -6,5 |
| Keuken | 18 | 7,3 | 3 | 7,0 | -0,3 |
| Woonkamer | 14 | 5,7 | 3 | 7,0 | 1,3 |
| Slaapkamer | 4 | 1,6 | 0 | 0,0 | -1,6 |
| Badkamer | 8 | 3,3 | 0 | 0,0 | -3,3 |
| Toilet | 11 | 4,5 | 1 | 2,3 | -2,1 |
| Niets | 85 | 34,6 | 13 | 30,2 | -4,3 |
| | | | | | Minder alleenstaanden willen 'niets' delen |

5.5 Does possession influence the 'willingness to share'?

| | Beschikken over | | Willen delen | | Niet willen delen | | Het 'niet bezitten' zorgt voor hogere bereidheid om te delen: |
|-----------------------------|----------------------|-----------|--------------|-----------|-------------------|-----------|---|
| | aantal | procenten | aantal | procenten | aantal | procenten | |
| Wasmachine | 202 | 86,7 | 25 | 12,4 | 177 | 87,6 | 7 |
| Droger | 150 | 64,4 | 14 | 9,3 | 136 | 90,7 | 11,2 |
| Berging | 176 | 75,5 | 17 | 9,7 | 159 | 90,3 | 11,4 |
| Werkplek | 110 | 47,2 | 42 | 38,2 | 68 | 61,8 | -1,6 |
| Hobby werkplaats | 74 | 31,8 | 53 | 71,6 | 21 | 28,4 | -33,9 |
| Buitenruimte | 126 | 54,1 | 37 | 29,4 | 89 | 70,6 | -14,5 |
| Tuin | 156 | 66,9 | 29 | 18,6 | 127 | 81,4 | 13,9 |
| Plek om gasten te ontvangen | 60 | 25,8 | 10 | 16,7 | 50 | 83,3 | -6,3 |
| Fietsenstalling | 75 | 32,2 | 34 | 45,3 | 41 | 54,7 | -19,4 |
| Auto | 167 | 71,7 | 26 | 15,6 | 141 | 84,4 | 13,2 |
| | | | | | | | |
| | | | | | | | |
| | NIET beschikken over | | Willen delen | | Niet willen delen | | |
| | aantal | procenten | aantal | procenten | aantal | procenten | |
| Wasmachine | 31 | 13,3 | 6 | 19,4 | 25 | 80,6 | |
| Droger | 83 | 35,6 | 17 | 20,5 | 66 | 79,5 | |
| Berging | 57 | 24,5 | 12 | 21,1 | 46 | 78,9 | |
| Werkplek | 123 | 52,8 | 45 | 36,6 | 78 | 63,4 | |
| Hobby werkplaats | 159 | 68,2 | 60 | 37,7 | 99 | 62,3 | |
| Buitenruimte | 107 | 45,9 | 16 | 14,9 | 91 | 85,1 | |
| Tuin | 77 | 33,1 | 25 | 32,5 | 52 | 67,5 | |
| Plek om gasten te ontvangen | 173 | 74,2 | 18 | 10,4 | 155 | 89,6 | |
| Fietsenstalling | 158 | 67,8 | 41 | 25,9 | 117 | 74,1 | |
| Auto | 66 | 28,3 | 19 | 28,8 | 47 | 71,2 | |

5.6 Does experience influence the willingness to do so again?

| | Gemeenschappelijke ervaring | | Willen delen | | Niet willen delen | | ervaring zorgt voor hogere bereidheid om te delen... |
|---|----------------------------------|-----------|--------------|-----------|-------------------|-----------|--|
| | aantal | procenten | aantal | procenten | aantal | procenten | |
| Toilet | 69 | 29,6 | 10 | 14,5 | 59 | 85,5 | 13,9 |
| Badkamer | 64 | 27,5 | 7 | 10,9 | 57 | 89,1 | 10,3 |
| Wasmachine en/of droger | 51 | 21,9 | 16 | 31,4 | 35 | 68,6 | 23,2 |
| Berging | 36 | 15,5 | 11 | 30,6 | 25 | 69,4 | 22,3 |
| Eettafel | 41 | 17,6 | 9 | 22,0 | 32 | 88 | 18,4 |
| Keuken | 62 | 26,6 | 12 | 19,4 | 50 | 80,6 | 15,3 |
| Woonkamer | 50 | 21,5 | 6 | 12 | 44 | 88,0 | 7,1 |
| Slaapkamer | 15 | 6,4 | 1 | 6,7 | 14 | 93,3 | 5,3 |
| Flexibele werkplek dichtbij woning | 3 | 1,3 | 2 | 66,7 | 1 | 33,3 | 29,7 |
| Hobby werkplaats met alle voorzieningen | 6 | 2,6 | 4 | 66,7 | 2 | 33,3 | 32,8 |
| Buitenruimte | 43 | 18,5 | 20 | 46,5 | 23 | 53,5 | 29,1 |
| Tuin | 43 | 18,5 | 19 | 44,2 | 24 | 55,8 | 25,3 |
| Plek om gasten te ontvangen | 21 | 9,0 | 7 | 33,3 | 15 | 66,7 | 23,4 |
| Gemeenschappelijke auto | 28 | 12,0 | 10 | 35,7 | 18 | 64,3 | 18,6 |
| Fietsenstalling | 36 | 15,5 | 25 | 69,4 | 11 | 30,6 | 44 |
| | | | | | | | |
| | GEEN Gemeenschappelijke ervaring | | Willen delen | | Niet willen delen | | |
| | aantal | procenten | aantal | procenten | aantal | procenten | |
| Toilet | 164 | 70,4 | 1 | 0,6 | 163 | 99,4 | |
| Badkamer | 169 | 72,5 | 1 | 0,6 | 168 | 99,4 | |
| Wasmachine en/of droger | 182 | 78,1 | 15 | 8,2 | 167 | 91,8 | |
| Berging | 197 | 84,5 | 17 | 8,3 | 180 | 91,7 | |
| Eettafel | 192 | 82,4 | 7 | 3,6 | 185 | 96,4 | |
| Keuken | 171 | 73,4 | 7 | 4,1 | 165 | 95,9 | |
| Woonkamer | 183 | 78,5 | 9 | 4,9 | 175 | 95,1 | |
| Slaapkamer | 218 | 93,6 | 3 | 1,4 | 215 | 98,6 | |
| Flexibele werkplek dichtbij woning | 230 | 98,7 | 85 | 37,0 | 145 | 63,0 | |
| Hobby werkplaats met alle voorzieningen | 227 | 97,4 | 77 | 33,9 | 150 | 66,1 | |
| Buitenruimte | 190 | 81,5 | 33 | 17,4 | 157 | 82,6 | |
| Tuin | 190 | 81,5 | 36 | 18,9 | 155 | 81,1 | |
| Plek om gasten te ontvangen | 212 | 91,0 | 21 | 9,9 | 191 | 90,1 | |
| Gemeenschappelijke auto | 205 | 88,0 | 35 | 17,1 | 171 | 82,9 | |
| Fietsenstalling | 197 | 84,5 | 50 | 25,4 | 147 | 74,6 | |
| | | | | | | | |
| wel ervaring met delen | 116 | 49,8 | 85 | 73,3 | 31 | 26,7 | |
| geen ervaring met delen | 117 | 50,2 | 59 | 50,0 | 59 | 50,0 | |
| bereidheid om te delen, MET ervaring | | | | 23,3 | | | |

