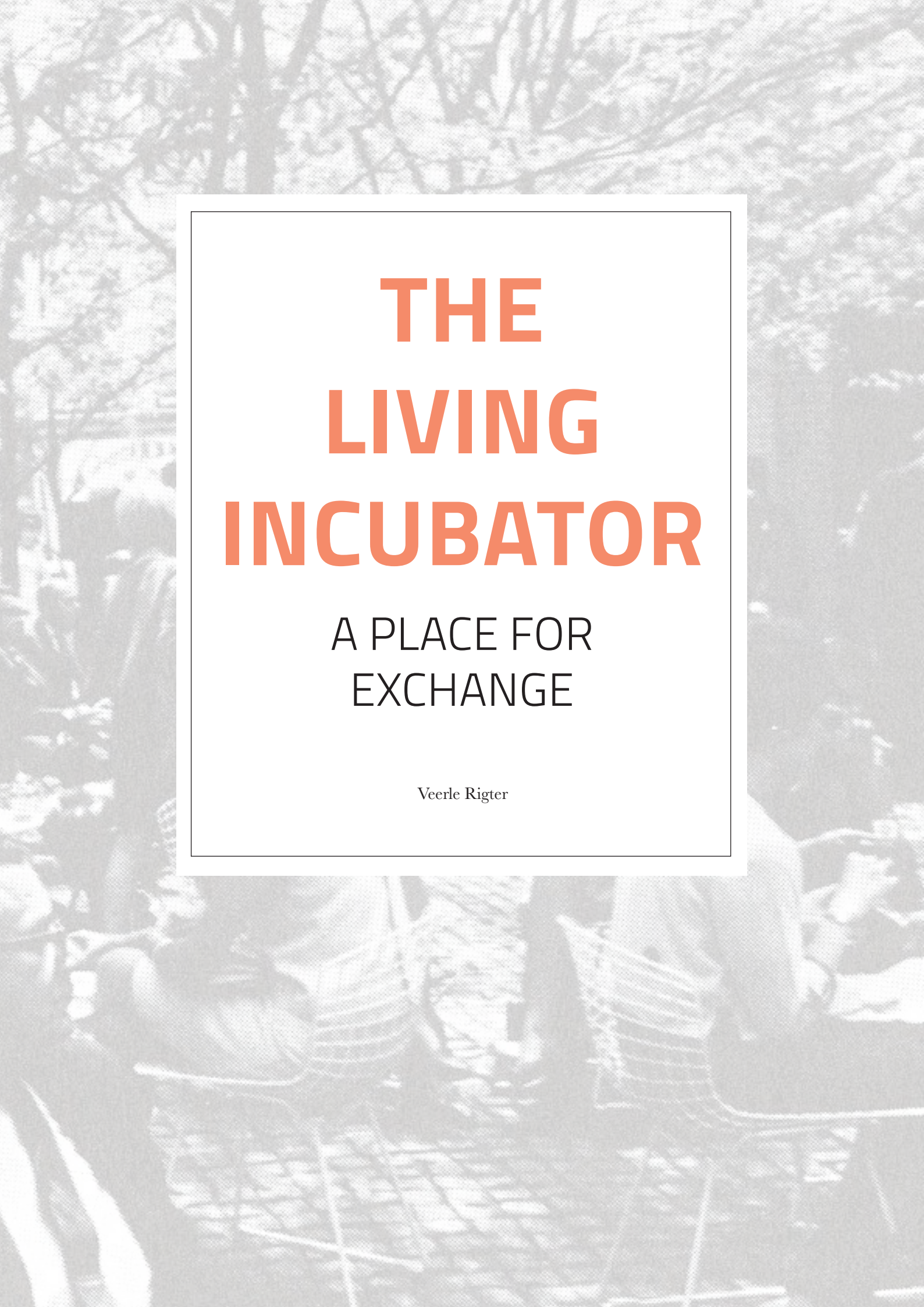

THE LIVING INCUBATOR

A PLACE FOR EXCHANGE

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April 2016

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Image front cover: Public life in Paley Park, New York (building-good.com)

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by
Veerle Rigter
2016

PREFACE

During my studies I spent multiple semesters abroad, in Italy, Sweden and Australia. By diving into a foreign culture, these experiences really provided me with a new perspective on my own culture and society. Even though all the cultures named above are quite similar, western cultures, they also differentiate significantly enough and lots can be learned. It made me re-evaluate certain aspects of my own culture, some more positively, others more negatively. One of these is our social behaviour. Although we Dutchmen are quite social chaps, we are still very individualistically orientated, specifically in the cities.

Already during my stay in Italy and Sweden certain social aspects drew my attention. The way in which piazzas were used in Italy as meeting places, the manner in which strangers greeted each other, the way an outsider was welcomed for dinner or drinks. In Sweden it may not be so visible in the public life, but it is in their way of social organisation. When involved, in a business, a housing block or an allotment garden group, you have a certain social duty and responsibility. It goes without saying that you help to maintain the building, clean the gardens, stand in for communal issues and help solve these, together. Generally, no outside parties are involved or paid to solve these problems ('why on earth would you?'), in Sweden they take care of their issues themselves personally, together, nurturing the sense of community. This can be very clearly seen in their Bostadsförening (cooperative housing association) and their Koloniträdgårdsföreningen (cooperative allotment garden association). Their culture requires a certain social engagement which is seen as obvious and the standard. Not ,as in our case often, seen as noble when someone takes these responsibilities on, in favour of others, of the communal. Obviously, these examples are all my personal experiences and interpretations of the named aspects.

My stay in Australia really showed me how social people can be and changed my point of reference, it provided me with a different option of how we could treat each other. The chance encounters and conversations I have had there were endless. Yes they start with the superficial 'Hi, how are you? Good, how are you?', which we Dutch often detest, but it does function as the start or opening for a conversation. I have had wonderful talks with people at the bus stop, supermarket, beach or even joined their picnic. And this does happen all the time, not only with enthusiastic foreign students like me. Also, I lived in a communal house where everyone was always welcome. We had many different friends, travellers and couchsurfers stay over, which always led to interesting conversations and the exchange of experiences and knowledge. This made me realise how inspiring these encounters were and how important these

places are for people to meet to be able to exchange. And that made me wonder; which places facilitate these encounters and exchange and how can architectural design contribute to the creation and stimulation of these?

Now relating these thoughts to our current society, in which urban density is ever increasing, while at the same time loneliness and social integration are grave issues. Combined with our economical and environmental crisis, I could not help but think these social places are even more relevant when looking at the bigger picture. In a day and age where our lives are becoming more digitalised and 'connected', an urge for 'real' experiences can be seen, which can be shared with like-minded people. The need for community is increasing, and for it good physical spaces.

In this era of omnipresent media, constant stimuli and complex social and societal networks, presence is no longer directly connected to our physical environment only. Technology keeps developing new ways to mediate our presence, making it possible for us to 'be' somewhere else. But still natural presence is significantly distinct from mediated presence. Mediated presence makes easy communication and social networks possible, but does not supply a worthy substitute for the experience of natural presence. When we are physically present, we can literally care for each other. Fierce emotions such as love and sadness, are more strongly communicated in natural presence. Mediated presence then does not suffice and lacks to cover the meaningful tension expressed. It is therefore of great importance to design for this natural presence and create places where people can meet in a physical environment.

I strongly believe that we can achieve more together than alone, and that we can learn so much from one another, if we only open our minds to it and give it a chance. And if architecture could stimulate this chance, then that is what I would like to strive for. Because I have experienced the beauty of spontaneity, of unplanned encounters and conversations that inspired me and I hope to be able to help others have similar experiences by designing places where these can occur. Because in the world we live in with its current social, economical and environmental crisis, we need to be more open-minded, listen to each other, learn from one another, and share our experiences and happiness. Because in the end, as Christopher McCandless expresses beautifully:

'Happiness is only real when shared'

- Christopher McCandless

CONTENT

1.

CONTEXT

1.1 Project motivation

I am fascinated by
the potential of architecture to connect people

I would like to know how to
create an inviting place for exchange

With which I hope to
inspire people to see the potential in each other

Because I believe that
together we can achieve more than alone

Fig. 1: *Mexico City. Photo: Pablo Lopez Luz*

Fig. 2: *Apartments, Hong Kong. Photo: Michael Wolf*

1.2 Problem statement

In the EU **individualisation** and **social integration** are main topics in the discussion about societal changes (Beck et al., 1997). Over 40% of the Dutch population is feeling lonely (Savelkoul et al, 2014) and 71% sees **loneliness** as a big problem for our society (Plantinga et al., 2012). This while in the coming years we will encounter an **increase of population density** in the cities which is leading to a **shortage of space**. In the Netherlands both the built area and the number of people in the city have increased over the past few decades (PBL, 2010). During the 20th century the **growing world population** has been using more materials with an increase of a factor 34 (Jaar van de Ruimte, 2015). The extent to which humanity is **draining natural resources** such as water, energy and raw materials is still rising rapidly. As a result, there is **increasing scarcity** and **rising prices** of fuels, raw materials and minerals (Jaar van de Ruimte, 2015).

Sharing could offer a solution.

Especially in an urban environment with a high density where all facilities are closely located, we do not need to have everything for ourselves if we don't use it consecutively. The economy of sharing and collaborative lifestyles are not new, but they are making a comeback due to the combined effect of several crises (economic, financial, environmental and social) and the democratisation of digital practices (Grosclaude et al., 2014). I believe an overall spatial, material, ecological, financial and social advantage can be achieved by mixing people, activities, materials and spaces. By joining forces individuals could achieve a higher level of comfort and satisfaction within their personal (financial) limits. Lets optimise our usage together and inspire each other!

'There is no doubt that our future will be shared; with the increasing population on the planet of finite resources, there is simply no alternative.'

- Beth Buczynski (2013)

Due to the democratisation of digital practices an increasing interest in the sharing economy can been seen, on a big scale. Not only in a digital environment but also in people's direct living environments, a shift towards the shared is apparent. There are multiple examples of digital initiatives, but a physical realisation is still missing. Some projects are pioneering towards this new demand for a more collective environment, but it has not reached the main market yet, although the demand can not be denied any longer. Groups like Crowdbuilding (Fig. 3), XS Deluxe and Zoku are quite different initiatives, yet all are striving to foster a more collective living environment. These are some of the many projects that show the growing interest and demand for collective environments.

Fig. 3: *Crowdbuilding (crowdbuilding.nl)*

Crowdbuilding.nl

Crowdbuilding.nl is a digital platform where 'crowds' and 'buildings' meet and match up. The concept is simple and clear: develop your dreamhouse together with likeminded others in an available vacant building. People can express their interest for a certain way of living on the website, which others can like and join, resulting into a crowd. Crowdbuilding collects vacant buildings and lists these on their website. Here each person within a crowd can also express their interest in the availble buildings. When crowd and building interests start to overlap considerably, a meet-up is organised where crowd participants can brainstorm with professionals about the future of the buiding and how to incorporate their collective dream. Their shared preferences and interests form the base for a community that fits into the existing social structure.

1.3 The incubator

One type of building that fascinates and inspires me is the incubator. The concept of incubating consists of putting individuals of different backgrounds, but with a certain degree of common interest, together in a shared environment to nurture development, clustering, knowledge exchange and creation of new ideas, to benefit all.

Right now, the incubating model is used as business model, in work environments. The concept has gained popularity over the years, showed positive effects for the ones involved and has now generally been accepted by professionals. Different incubator models have been developed, such as the innovation incubator, creative incubator, entrepreneurial incubator or even education incubator.

Now my question is, could we apply this concept of incubating to our daily living environment? Instead of only a working environment. People with different backgrounds but with a certain degree of common ground could exchange knowledge and skills and so create a sharing community, in a nurturing and inspiring environment. My proposal is to investigate the potential of such a 'social incubator' or 'living incubator', and this is one of the underlying motives for my research.

In the last couple of years many 'hybrid' projects have been developed where this idea of incubating is taken further than only the business model, like the 'ACTA Broedplaats' or 'De Ceuvel' in Amsterdam (Fig. 4). There are multiple examples that show a search for a new type of shared environments, of which some are mentioned in the previous chapter. Their existence and the increase of these type of projects in the recent years, combined with the groups and initiatives that can be found on the internet, support the statement that there is a demand for more shared environment nowadays.

1.4 Small living

At the same time renewed interest in the small house has been sparked - mainly in Europe and other western cultures - due to various reasons, such as the recent economic downfall, rising housing and heating costs, decrease of household sizes and sustainable awareness. The projected population growth will run parallel to a continuing trend towards smaller households, resulting in even more homes. Young people stay single longer, more couples divorce and the amount of elderly is growing, causing the emergence of a non-traditional small household. According to Statistics Netherlands, the amount of one-person households will increase from 2.8 to 3.3 million in the upcoming twelve years (Heijmans, 2015). This means there will be a greater demand for a diversity of single-person housing forms to match the needs of changing household structures, particularly this increase in one and two person households across all adult ages (Foth et al., 2005).

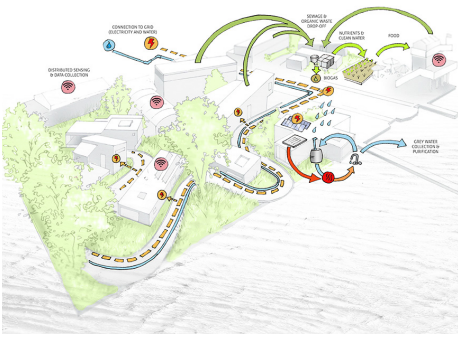


Fig. 4: *Sustainability scheme (deceuvel.tumblr.nl)*

De Ceuvel

De Ceuvel is a sustainable, closed-loop incubator that hosts a thriving community of creative and social enterprises. By recycling houseboats, cleaning the soil with plants, and using low-cost clean technologies to improve the sustainability of the development, the former shipyard is an example of creative, circular, urban community.

"Zoku believes that 'amazing things can happen when people come together.' Our mission is to mix together like-minded individuals under one roof – aligning our international guests with internationally minded locals. We expanded the definition of a hotel to make it a platform where knowledge, ideas and people can mingle on a daily basis."

– Zoku (livezoku.com)

Zoku

Zoku facilitates global living and working for the traveling professional. Zoku is a new category in the hotel industry: a flexible home/office hybrid, also suitable for long stays, with the services of a hotel and the social buzz of a thriving neighbourhood. You can live, work, relax and socialize with like-minded people – while getting wired into the city.

Fig. 5: *Tiny House (rowdykittens.com)*

Tiny House

The Tiny House Movement is an architectural and social movement that advocates a simple lifestyle in (mobile) small homes and is a reaction to the ever increasing need for more. Tiny houses enable simpler living in a smaller, more efficient space. Most popular reasons include environmental concerns, financial concerns, and the desire for more time and freedom.

Generally speaking, small houses can be arbitrarily defined as dwellings with a floor area not exceeding 56 square metres (Friedman, 2013). But there are various types and names for small houses: tiny houses, micro-apartments, compact living spaces. The Tiny House (see Fig. 5) has gained popularity over the recent years and is defined as a dwelling smaller than 200-250 square feet (18-23 m2) (Schenk, 2015). The Tiny House Movement is a famous description for the architectural and social movement that advocates a simple lifestyle in small homes and is a reaction to the ever increasing need for more in the United States. Its origin can be found in the context that the size of a new single family house in the U.S.A. increased to an average of 2400 square foot (223 m2) nowadays, while the average size of families decreased over the years (Schenk, 2015). In the U.S.A, an increasing group of people radically adjust their lifestyles and convert to their new 'American dream' of a Tiny House. Also in European an increasing number of people choose to downsize the space they live in and with that, their whole lifestyle. What motivates these people to change the course of their lives and move from an average of 120 m2 in the Netherlands (CBS, 2012) to a significantly smaller home of approximately 56 to 10 m2? There are many reasons for this change, but the most popular ones include environmental concerns, financial concerns and the desire for more time and freedom.

Tiny or small houses provide a solution to a number of growing issues such as urban density, affordable housing, sustainability and wastefulness (Schenk, 2015). If you live in a small home, you use less space; an important advantage for our continuous overcrowding society. Less materials are needed to build the house and less resources are used to heat and cool the place. These result in a smaller ecological footprint and lower costs in general, leaving more money to save for yourself. Other advantages that contribute to your personal finances are less maintenance and restoration costs, and the fact that you will have to rethink and reducing your shopping habits since you will have less space to store unnecessary things. The dual advantage of this is that you spend less time on cleaning your house and shopping, leaving more time to spend on things you like. Due to the compact size you have to decrease your amount of belongings, live with the things you actually use and liberate yourself from all the "stuff that is cluttering your life", as tiny house owner Malissa Tack states on her blog thetinytackhouse.com. Everything in the house has to be (re)considered and evaluated, making you more aware of the way you live, creating a more conscious lifestyle and connecting you with your direct environment. With a small house as your home, you will most likely spend more time outside of the house and, depending on where you live, this results in a closer relationship with nature and/or society.

Due to the reasons above, small house inhabitants live a more conscious and ecological lifestyle, with more time and money left to spend on the things that are important to them. Most of the tiny house inhabitants say that for them the advantage of the tiny life is the financial and material freedom, while at the same time contributing to a better future. It relieves you from the pressure to work to be able to pay for your fixed expenses (rent, mortgage, utility costs etc.) and instead enables you to feel free to enjoy your life.

A variation of the small house is the micro apartment, of which the recently launched digital initiative XS Deluxe is an example (in development but at this point without physical result yet). On their website they also promote the more financial and environmentally friendly advantages of this compact way of living and aim to combine them with other shared spaces: "The most important and specific form of sustainability that the micro-apartment building offers is sustainability through density and sharing. It is evident that high-density compact homes consume less space, material and energy than large houses do in low density. However, density and its related collectivity have additional advantages in terms of (social) sustainability." Here they point out the potential of small living in combination with a shared living environment. The interest in this type of living can be seen in the increasing (online) popularity, as well as on Crowdbuilding, where the 'The Smart Loft' is the most popular crowd.

1.5 The Living Incubator

My proposal is to combine the notion of incubating with the advantages of small living into what I like to call 'The Living Incubator'; a physical (architectural) environment that facilitates sharing, exchange and interaction in the everyday life.

Living small has many advantages as we have seen before, but might not provide space for all desired activities. That is why small living is the perfect companion for the notion of incubation as shared living environment. The minimal home will provide for all private activities, while the collective (and public) spaces will foster communal needs and interests, fulfilling its role as a place for exchange.

I propose to create a building with a mixed program containing residential, recreational, commercial and office spaces. A 'living incubator' for a diverse group of people with a similar mindset and a positive attitude towards a shared working and living environment. A place that facilitates idea exchange and stimulates cross-fertilisation between different people and disciplines.

I would like to investigate how architectural design can contribute to the optimisation of space, finance, resources, time and social possibilities through sharing. My aim is to create minimal private (residential) space, complemented with collective and public spaces which provide room and flexibility for exchange, in which a social and open-minded community can flourish and where also non-residents can visit to indulge and participate in this inviting environment.

I believe that together we can achieve more than alone, and I would like to explore the potential of architectural design to inspire and hopefully convince people to agree with me.

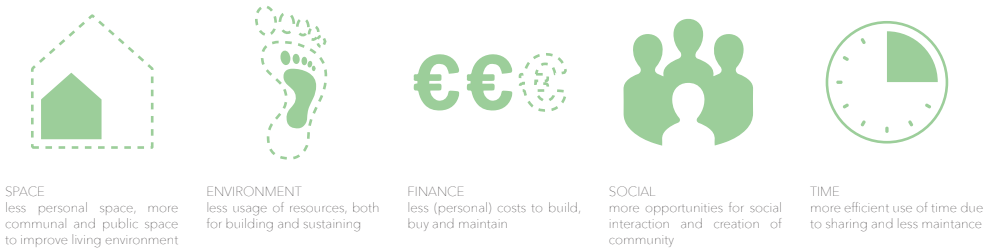


Fig. 6: *The Living Incubator: optimisation of space, environmental impact, finance, social opportunities and time through small and shared living.*

1.6 Research approach

After a brief introduction into the social context and relevance of the discussion of this topic, it is time to ask some questions that will structure the research. In this chapter the research approach is determined and discussed. Literature review has been the main research method, complemented by the use of precedents to illustrate the theories. In a broader sense a survey, personal interviews, case visits and empirical research have been used to gain a greater understanding of the social context, the problem statement, the mentioned different ways of living and their success.

This thesis explores how architectural design can stimulate social interaction and how this can contribute to the creation of social space in shared living environments. To be able to inspire people to collaborate and develop a (more) positive association concerning shared living environments, I will need to understand how architecture can influence this mindset. Therefore my research question is:

HOW CAN ARCHITECTURAL DESIGN CONTRIBUTE TO THE CREATION OF SOCIAL SPACE IN A SHARED LIVING ENVIRONMENT?

And in its context sub questions such as: **What is social space? How are social behaviour and built environment related? How are social and architectural borders defined and how do we 'read' these? And what does this entail for its architectural design?**

The next chapter, *Architecture as a means for social space*, elaborates on the investigation of this question and its topics and sub questions related. The theoretically grounded research will be set forth in chapter 2, accompanied by illustrative examples, and followed by a conclusion of the research findings in chapter 3.

Chapter 2.1 includes an introduction of this investigation, followed by chapter 2.2 that starts off with the sub question *What is space?* and deals with the various interpretations of this definition through time. With Forty's (2000) text as source, the various understandings of space by amongst others Semper, Moholy-Nagy, Heidegger and

most importantly Lefebvre are discussed, leading us to the sub question *What is social space?* and an understanding of this social space and its relevance. By addressing the 'lived' space, it illustrates the importance of understanding the temporal character of architecture.

The next chapter investigates the relationship between built environment and social behaviour and its importance. Authors such as Habraken, Pallasmaa and Hertzberger address the paramount relation of space to man and underline the importance of the interchange between physical space and the activities within - the use of it and how it is 'lived' - and the task of architecture to accommodate and facilitate this. Or as Maurice Merleau-Ponty concludes; "the task of architecture is to make visible how the world touches us".

Chapter 2.4 elaborates on the most known and accessible variant of social space, namely public space. Foth & Sanders, Jan Gehl and Jane Jacobs address the importance of fostering social interaction in public space. Jane Jacobs argues for an architecture and city planning that embrace and stimulate *public life*; that encompass all the various human activities that take place within the public space, which are essential for one's understanding of life and the creation of culture and identity. Jan Gehl states that; "only architecture that considers human scale and interaction is successful architecture". By starting with public life and the places in which it happens, the design of buildings becomes a way to facilitate this goal, instead of being the goal in itself. It concludes with the essential characteristics a public space needs to have to become successful, according to the authors.

Next is the investigation of the difference between space and place, as well as time and occasion, due to their understanding in relation to man. The theories of Van Eyck and Hertzberger on this topic are set out and the notion of place is explained through appreciation of space as well as appropriation of space. According to Van Eyck it is the energy of people who give body to space through their appreciation of the place and the value it affords, while Hertzberger understands place as the ultimate emotional appropriation of space. It explains how space and place are interdependent phenomena which cannot exist without each other and elaborates on these *twin-phenomena* and how their reconciliation takes place at the borderline, at the in-between, which is part of a multiple in-between realm where transition takes place. Consequently, architecture and urban planning should be concerned with designing this in-between as a common ground for unification, that can be conceived as a built counter form of the more complete and complex human reality that constitutes life. The importance to design the conditions that trigger the right sense of appropriation, facilitate the transition with clear articulation and also leave space for interpretation are underlined.

Chapter 2.6 deals with the sub question *How are social and architectural borders defined and how do we read these?* and looks at this borderline and the scope between public and private space. It investigates territoriality and the readability of these territories,

aided by the texts of primarily Van Dorst, but also Altman, Sohn et al., Borret and Lofland. It elaborates on our current trichotomy of territories - public, collective, private - that is lacking the experienced nuances and thus there is a demand for a more elaborated architectural vocabulary to be able to describe and define these various in-betweens. *Privacy scripting* is discussed, the field of studies that researches the readability of spaces in regard to the experiences of its users. Additionally, Van Dorst's research into privacy zoning is explained, with which he analysed the impact of architecture on the social interaction in buildings. Here, Van Dorst states that architecture can not be determinant, but should be facilitating and readable. In his research he analysed which factors are of importance for the readability of a space and concluded that accessibility and routing as well as territoriality and familiarity are universally essential characteristics.

Lastly in chapter 2.7, previously elaborated statements are reflected upon and analysed to find out which role architectural design can play in the creation of social space. It deals with questions such as: *How can the design of a space facilitate possibilities for social interaction? Which aspects are of importance to consider when designing and what are the tools the architect can use?* Specifically the theories of Hertzberger, Van Haaren and Gibson are elaborated upon. It clarifies the importance to leave space for interpretation and appropriation. The theory of affordances is explained and the significance of the polyvalent character of a space - its multiplicity - is emphasised by the named authors.

The concluding chapter (3) recapitulates the discussed subjects and the acquired insights. Chapter 3.1 summarises these into understandings an architect should have to be able to contribute to the creation of social space through architectural design and in doing so answers the research question *How can architectural design contribute to the creation of social space in a shared living environment?* Chapter 3.2 elaborates on additional investigations made to gain understanding of the topic in a broader sense, such as the survey, personal interviews and empirical research. The findings of both 3.1 and 3.2 form the base for my design goal and design proposal, described in chapter 3.3.

2.

ARCHITECTURE AS A MEANS FOR SOCIAL SPACE

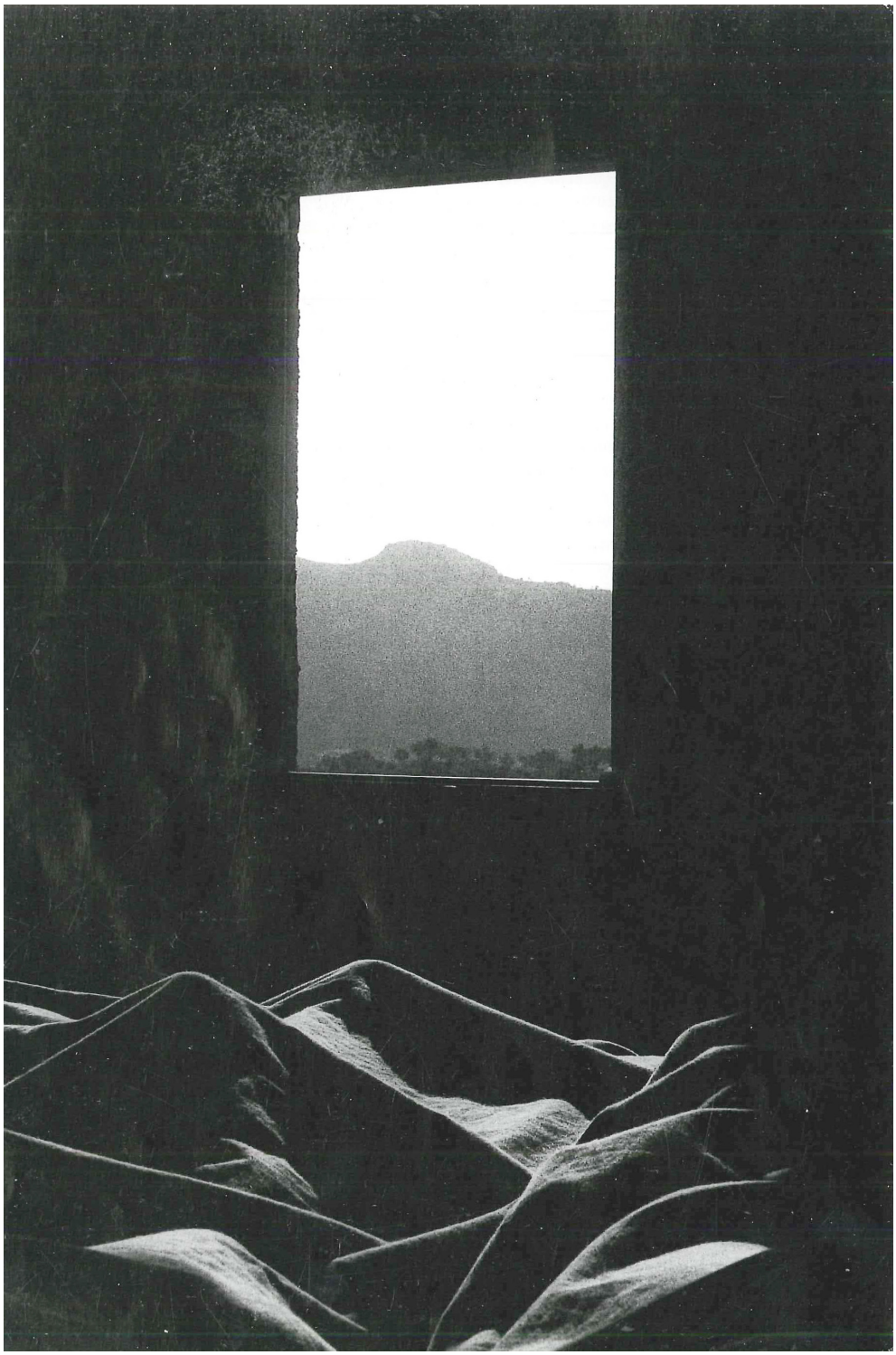


Fig. 7: *'Bergen buiten, bergen binnen'. Photo: Johan van der Keuken*

2.1 Introduction

All around us we are confronted with our built environment: our cities, streets, parks, buildings, houses. Even nature is man-made here in the Netherlands. It is (almost) impossible to find a place that has not been interfered with through human design. Life and built environment are interwoven, but we often seem not aware of its significant role as influencer of our behaviour. It can not be denied that our physical surroundings affect our way of behaviour and thus how we interact with each other within these spaces. At the same time, the behaviour of people affects the design of the built environment. Van Haaren explains that through this relationship between the environment and our behaviour, our common behaviour in this sense can define rules for the design of the built environment (2014). Architecture is thus a reflection of these societal rules and can then radiate rules for social behaviour within its spaces. Certain spaces require a certain behaviour. Almost everyone 'feels' that you are required to be silent in a museum, but how? The types of required behaviour can be instituted by culture and society, but how do we read this relation between the spaces that surround us and the way we are supposed to behave? And how can architectural design influence this? Can architectural design be used as a societal tool? In a world where a more shared lifestyle is inevitable, due to the economical, environmental and social crisis it is currently in (Grosclaude et al., 2014), how can architecture contribute to social cohesion and integration? How can it bring people together, not only in a physical sense but also in a sense of social understanding?

'Architectural space is one of the means to which social space is produced'
– Henri Lefebvre (Forty, 2000, p.272)

This research investigates how and to what extent architecture can contribute to the creation of social space. First, our understanding of space and its relation to our social behaviour is analysed. The importance of the social space and the paramount relation of space to man are addressed. Subsequently, our behaviour in and experience of public and privates spaces is discussed, specifically the ambiguous spaces in between these defined domains. This highlights the importance of readability of the different domains or territories and its implications for design of the built environment. Furthermore, it concludes with the key characteristics that need to be kept in mind when designing for the creation of social space. Architecture can not determine the social behaviour, but should facilitate and provide for the possibility - of various activities and interpretations - to occur. The user's way of interpretation, appropriation and inhabitation gives value to the physical structures; without it would have no purpose. The architect needs to understand the importance of these key characteristics that contribute to the creation of social space and should strive to design spaces that foster social interaction and liveliness, where exchange of knowledge, ideas and experience can take place and community can flourish, in a harmonious shared living environment.

2.2 An understanding of space

As stated above, our built environment and our social environment are interrelated. It is in this relationship that social space finds it origin. Architects can design a space, comprising of physical forms, but it is the people acting in and on this space that make it into a 'place'. But what do we mean with 'space', and what is its difference with 'place'? Let's start off with a small introduction into the genesis of what we call 'space', a word that is used often without true scrutiny to what is actually meant with it. Which more than once has led to miscommunications, since there are various interpretations of 'space' possible, as we will soon find out. Architectural historian Adrian Forty takes us onto the journey of the development and usage of the word and concept of 'space' in his book *Words and Buildings; A Vocabulary of Modern Architecture* (2000). But beforehand it is important to understand a few things. Firstly, the fact that 'space' is both a physical property of dimension or extent as well as a property of the mind, through which we perceive the world. Adrian Forty explains:

"It is thus simultaneously a thing within the world, that architects can manipulate, and a mental construct through which the mind knows the world, and thus entirely outside the realm of architectural practice."

- Forty, 2000, p.256

Much of the ambiguity of the term 'space' in modern architectural use comes from the confusion between these two. This confusion is expressed amongst others in the common belief that architects 'produce' space - an assumption which philosopher Henri Lefebvre radically criticises in his book *The Production of Space* (1974). Here he exposes the problem created by this confusion between the different understandings of 'space'. We will return to his enlightening theories later in this chapter. Secondly, the fact that until the 1890's, 'space' as a term simply did not exist in the architectural vocabulary. Architects in the eighteenth century spoke of 'volumes' and 'voids', with only the sporadic use of the word 'space' as a synonym. Only a small group of German philosophers were at that stage engaged in the development of space as an architectural category and it is in Germany where we should start our quest for the origin of 'space'. This immediately leads to the problem of language and translation, since the German word 'Raum' implies both a material enclosure as a philosophical concept. This is not the case in the English translation of the word into 'space', which lacks the dual suggestiveness of the original. Furthermore, even though most speakers have a habit of assuming they are talking about a fixed definition, 'space' is as a term no less transient than any other term used in the architectural vocabulary and its meanings change over time according to their context.

Having understood that, we proceed. The first to introduce 'space' to the architectural vocabulary as a principal theme for modern architecture was German architect Gottfried Semper. He suggested that the first motive for architecture was the enclosure of space and that material properties were secondary to this spatial enclosure. He even presented spatial enclosure as the fundamental property of architecture. This

perception of 'space as enclosure' was the most popular use of the term for a long time and one which architects found easiest to apply to their architectural practice. But where others saw enclosed space solely as applicable to the architecture of the interior, Austrian architect Camillo Sitte converted this notion to the architecture of the exterior, an insight which was of great influence during the 1920's. He saw urban design as 'an art of space' and modelled cities by creating enclosed exterior spaces. A different perspective was presented by German sculptor Adolf Hildebrand is his essay *The Problem of Form in the Fine Arts* (1893). He states that "by a spatial continuum we mean space as three-dimensional extension and as a three-dimensional mobility or kinaesthetic activity of our imagination. Its most essential attribute is continuity. Let us therefore imagine the spatial continuum as a body of water in which we can submerge containers and thus define individual volumes as specifically formed individual bodies without losing the conception of the whole as one continuous body of water." (as cited in Forty, 2000, p.259-260). In his essay *The Essence of Architectural Creation* published in that same year, art historian August Schmarsow focusses on our bodily encounter with 'space'. He introduced the idea that we obtain an intuited sense of space by our bodily experience in the world, through our various muscular and optical perceptions. For him, space exists because of we have a body, and because of this human presence we experience a 'spatial construct', which is a property of the mind and should not be confound with the physical variant of space. This led to the introduction of the term 'spatiality'; the space-perceiving and space-sensing ability of the human mind.

But it was not until after 1900 that the discourse about architectural space actually became a theme of discussion for architects, which up until then had been left to philosophers and intellectuals so far. From here on, some of these ideas about space were translated into the everyday language of architecture and by the 1920's 'space' as a term was well established in the architectural vocabulary. At that point, it was agreed that architecture was 'an art of space', not of materials. Forty concludes that during the 1920's there were generally understood three different senses in which 'space' was used; space as enclosure (the most commonly understood sense of space amongst architects), space as a continuum (the notion that inside and outside space are continuous and infinite) and space as extension of the body (the notion that space was perceived in terms of the body's activity, formed by the biological sensibility of man) (2000). Interesting was the point of view advocated by László Moholy-Nagy in his book *The New Vision* (1928), namely that "the task of architecture was to bring to mankind awareness of the present consciousness of space" (Forty, 2000, p.266-267) and said that "it will not be long before […] architecture will be understood, as an organic component in living, as a creating in the mastery of space experience" (as cited in Forty, 2000, p.267). Here he shifts the discourse of space towards the 'space experience' and in doing so, rejects the notion of space as enclosure. And by focus on the experience, it addresses the temporal aspect related to architecture. In his *Being and Time* (1927), German philosopher Martin Heidegger added to this that spatiality

is a significant element of our encounters with things in the world. And that there is no space without one's being in it, since space, as such, can only be known by its relation to other things. This 'space experience' is again supported by architect Bernard Tschumi's in his first essay published in 1975, by his personal reflection:

"space is real, for it seems to affect my senses long before my reason."
- Tschumi as cited in Forty, 2000, p.270

In this essay he, as seemingly the first within the field of architecture, grasped the notion that 'space' was both a concept and something experienced. Architectural morphologist Bill Hillier focusses on this 'space experience' by his investigation on the relationships between buildings and the life that takes place within and around them. He notes that buildings need to be approached as spatial configurations, contributing to the understanding of 'space as experience' instead of space as a fixed physical environment. Aldo van Eyck elaborates on this space experience and Moholy-Nagy's earlier mentioned awareness of conscious space with his conversion from 'space' and 'time', to 'place' and 'occasion'. Since these two words carry a more specific meaning in them, by relating the more generic space and time to the person in them, resulting in place and occasion. In doing so, he relates it to Heidegger's idea that space can only be known by its relation to other things. Looking at the development of ideas above, we can see a transition in the discourse about space, from space as form and matter ('tangible') towards space in relation to the activity within; life ('intangible'). This points out the importance of the temporal influence on architecture, related to the ephemeral nature of an experience and of life itself.

Returning to the French philosopher Henri Lefebvre and his comprehensive critique of 'space' in *The Production of Space*, published in 1974. The base for his critique is the misconception of what 'space' is: "the mind thinks of space, but it does so within a space, a space that is at once both conceptual, but also physical, a space that is the embodiment of social relations, and of ideology" (Forty, 2000, p.271). At the core of this work lies the concept of 'social space'. "Social space is what the cultural life of societies takes place within, what 'incorporates' the social actions of individuals; yet it is not to be understood as a mere 'frame'…nor a form or container of a virtuality neutral kind, designed simply to receive whatever is poured into it. Nor is social space a 'thing', to be treated 'in itself'; and although it is a product, it is never produced in the sense that a kilogram of sugar or a yard of cloth is produced, but rather is to be understood as at once both work and product - a materialisation of 'social being' " (as cited in Forty, 2000, p.272). There is a complexity to this space, since it is perceived (as matter/physical environment), conceived (as faculty of the mind) and lived (as bodily experience) all at once. According to Lefebvre, the problem was that modern societies reduce this complex space to an abstraction. This abstracted space is what is defined as 'mental space', which has completely been removed from its social space. When relating this to architecture, he makes a differentiation between 'architectural space' and 'space of architects'. Due to the fact that people have an experience of it, 'architectural space' is one of the means through which social space is produced.

By the way architectural space is produced, it facilitates its use. The users are the ones animating the space in question, within their lived experience, identified by its temporal character. By contrast, 'space of architects' is the space that has been taken control of and abstracted by architects and their practice. Due to the tendency within the field to privilege the image as substitution for reality, this space has been deprived of its lived experience. Lefebvre points out that "..the apparatus employed by architects - such as their techniques of drawing - are not transparent, neutral mediators, but are themselves part of the discourse of power", and adds:

"Moreover, the practice of drawing is itself one of the prime means through which social space is turned into an abstraction, homogenised for the purposes of exchange, and drained of lived experience."

- Lefebvre as cited in Forty, 2000, 274

He elaborates on this more clearly, "The eye tends to relegate objects to the distance, to render them passive. That which is merely seen is reduced to an image - and to an icy coldness. […] By the time this process is complete, space has no social existence independently of an intense, aggressive and repressive visualisation." (ibid). Due to this abstraction a disconnection between mental and social space is constituted. This 'abstract space' is the result of the fracture between mental space and 'lived' space, alienating the subject completely from their experience of everyday life. It culminates into the fact that consciousness of space is not experienced through its being lived, but only through the representation of it (provided by society, by capitalism). This relates to Heideggers later developed notion that we are not connected to the act of being, and that we should refocus on our senses, our 'being-in-the-world', instead of the abstraction of experience through representation via image. Lefebvre's aim was to restore true consciousness of this 'lived' space and to pursue that social space would fuse on the one hand with mental space (conceived space), as well as with physical space(perceived space) on the other hand. Through his work he initiated an awareness of our experience of space and the importance of the social 'lived' space as a crucial element within the discourse of architectural space. Architectural space is not static but dynamic due to its temporal character, interwoven with the actions and experiences within this social space. He showed that architecture does not exist as a self-determining practice, with its own objectives and principles as often assumed, but as one of the many social practices and should co-exist as such. Forty leaves us with a hopeful statement that "by realising both physical space, and a discourse about space, architects might be said to be fulfilling their traditional role of finding the means to represent what otherwise existed only in ideology." (2000, p.275).

2.3 Social behaviour and the built environment

As pointed out in the previous chapter, there are first of all multiple ways to interpret space and secondly, there is more to space than just its physical appearance. The aim of Lefebvre to fade out the borders between physical space, mental space and lived

space, has been shared by others, but again the discourse is open to interpretation and discussion. An important aspect is the interchange between physical space and the activities within; the use of it and how it is 'lived'. Many architects have underlined the importance of the relationship between built environment and social behaviour. Dutch architect John Habraken is intrigued by the intimate and unceasing interaction between people and the forms they inhabit and sees this as a fundamental and fascinating aspect of built environment. According to him, people and the built matter are inseparable and we need to look afresh at the intricate ongoing symbiosis between the two (1998). Finnish architect Juhani Pallasmaa sees this symbiosis as a schismatic bond between the inner space of the mind and the external space of the world. This 'lived space' is where the worlds of the material and that of the mental - the experienced, remembered and imagined - fuse together. In his book *The Eyes of the Skin* he uses the beautiful quote of Maurice Merleau-Ponty; "the task of architecture is to make visible how the world touches us". He declares that "the impact of the art of architecture drives from the ontology of inhabiting space; architecture's task is to frame, structure and give meaning to our being-in-the-world. We inhabit our world, and our particular way of inhabitation obtains its fundamental sense through construction of architecture" (2005). Recently, in the architectural journal OASE's volume titled *What is good architecture?*, Herman Hertzberger called out to all architects to not underestimate the importance of spatial conditions for our social structures. He advocates that the architect is responsible for the creation of social space, which he defines as "the equally great importance of what is necessary for people to come in contact with one another, of space to promote collective interests, exchange ideas and give expression to a communal sense of being in one's 'own' domain —in short for social space" (2013).

Due to the increase in social media in our current society, some future predictions expect concrete social space to become superfluous. Communication between individuals will occur via digital means, making physical meeting places obsolete. An impression of this future lifestyle can be seen in the futuristic movie *Her*, where digital communication and relationships between human beings and their digital operating systems are taken to the next level, affecting our now known social space. But in a day and age where the gossip is that social media is making concrete social space redundant, it can also be seen that this digitally increasing need for contacts and networks actually displays a need for community. As being part of a digitally or physical community is a different experience. This development shows an off balance relationship between private life and social life. According to Hertzberger, this comes forth from a need of social cohesion. Social cohesion arises when people gather for communal purposes, which take place without exception in a spatial setting. He states that:

"An important origin of architecture lies in accommodating the coming together and keeping together of people in enclosed and covered structures and making communication possible through physical presence, in order to reinforce the sense of community"

- Hertzberger, 2013, p.20

He urges architects to pay more attention to the elaboration of the communal public area within a building, which has the potential to be much more than a simple circulation space and can be transformed into a place of communal abode. It should be the intent to create places where people, accidentally or on purpose, can meet and where activities of communal interest can take place. The architect is the one who has to fight for these square metres to create social space within this (public) space, since often individual space demands are given priority. Architecture should create space that unites and keeps people together, a space for shared interests that allows for openness and understanding of one another (2013). An example where these qualities can be seen is the Justus van Effencomplex, designed by Michiel Brinkman and realised in 1922 in Rotterdam. It is a social housing project that was ground breaking at that time due to its communal facilities and revolutionary 'street in the air'. The public street was reinterpreted and this additional 'street in the air' was used to access the homes on the second level of the building block. Here the street is transformed into more than just circulation space, since its design facilitates circulation but also leaves space for interpretation, appropriation, chance encounters and social interactions. The whole complex was orientated towards the various inner courtyards, facilitating social control and interaction as well as creating a sense of intimacy and enclosure (see Fig. 8 - Fig. 10).

A principal, elemental and conscious approach to social space is needed, that can only be obtained through a greater insight into social structures as they play an important role in our society. According to Habraken control is the answer to the relation between the environment and its users, which provides the ability to transform a part of the environment. Every time a physical element is moved, removed or inserted from the environment, this is done by a controlling agent. This controlling agent can be a person, a group of persons or even an organisation or institution. Control thus defines the central operational relationship between user(s) and their built environment (1998). Hertzberger gravitates more to approach linked to structuralism. He stresses that structure encompasses construction in a material sense, but structuralism keeps the people it encompasses together. Exactly with this he points out the concrete means through which spatial design shapes the shelter of the social structure (2013). He even declares that good architecture depends on the degree to which social space has been developed through architectural means, which refers back to Lefebvre's statement as mentioned above.

French architect Patrick Bouchain also penned down his view of good architecture in OASE's *What is good architecture?*. He states that good architecture should always be architecture that is close so its inhabitants. It is the people themselves, by their way of inhabitation of a place, that produce it in the way they know how, by appropriation. Today, architecture follows a dominant form and mode of production, which does not allow for appropriation by the people who inhabit it. This way, personal expression is stifled en thus the existence of the inhabitant's individual culture. According to him, we need to re-enable the appropriation of space by inhabitants and their participation in the creation and production of these spaces (2013). And

Fig. 8: *The 'street in the air' that connects the houses on the second level, more than just circulation space and full of liveliness (pinterest.com)*

Fig. 9: *Liveliness and social interaction as well as appropriation nowadays in the complex (siemgoede.nl)*

Justus van Effencomplex, Rotterdam

Due to its design - shape, orientation, communal facilities and its revolutionary 'street in the air' - the complex facilitates social interaction and contributes to the creation of community. The 'street in the air' is an example of circulation space that does not only facilitate transport but also a place to linger, to interact, to appropriate. This way, by its design it contributes to the creation of social space. This was also one of the first projects with communal facilities such as a bath house, wash and dry house, gardens and central heating.

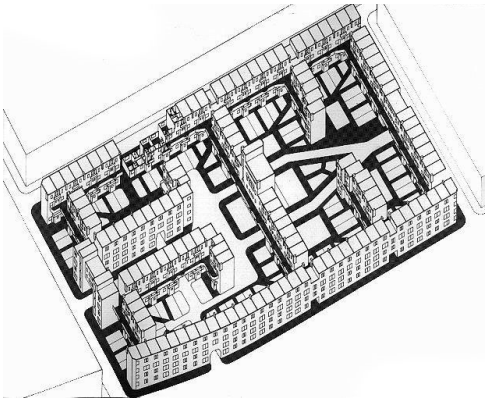


Fig. 10: *The Justus van Effencomplex, seen in birdseye perspective (pinterest.com)*

this connection between building and users is indeed exactly what is lacking in architecture nowadays, if we listen to Changfang Luo from the initiative Architecture in Development (A.I.D) which addresses the importance of people and community focussed architecture. She points out that we architects used to design buildings for people, but nowadays we mostly just talk about concepts, technologies, sustainability and the like, instead of discussing the concerning people or communities and their relationship with architecture. From A.I.D's point of perspective, architecture is more of a phenomenon; "a solidified result of human activities within a community" (Verhoeven, 2015). The people and their usage make the space, if a space is not used it has no relevance. As long as the users are actively engaged and appreciate their built environment, they will find it worth renewing and transforming, thus it endures. Without occupation and appreciation it will die off and decay, as Habraken states (1980). Therefore it is of utmost importance to design for use and thus its users. And so, it becomes clear that there is a need for a built environment that accommodates the use (activities) and users, their lives and their way of inhabitation. To create a physical space which humans can appropriate, bring to life and vice versa.

2.4 Public life

The most known and accessible variant where social space can be found is within the public space; the space that is for everyone. In Bouchain's essay in OASE he states that "public space is the quintessential place where the communal is manifested: no one has any more rights to it than anyone else". He believes that reducing or disregarding it threatens the richness of expressions, words, ways and acts of human solidarity and hospitality (2013). As mentioned by Hertzberger before, it is this communal space the architect has to fight for, since often the private space is prioritised by its owner. Bouchain asks us, is it possible to produce public space and thus communal space in a form of living that sets aside property in favour of the common use of things?

The importance of public space is stressed by Marcus Foth and Paul Sanders in their studies of social networks regarding inner-city apartments. They state that public spaces are the most prominent building blocks, after the home and the workplace. Their value lies in the fact that they act as 'social catalysts', "places where urban residents and members of neighbourhood communities meet to create and maintain social ties and friendships and engage in discussion and debate. They are paramount in establishing the identity and culture of a city and a sense of cohesion and belonging" (Foth et al., 2005). According to them, to study urban public space cross-disciplinary approach is needed from three main fields: the people dimension (sociology, communication studies), the place dimension (architecture, urban design and planning) and the technology dimension (computer science, communication informatics, interaction design). They add that due to the 'digital revolution', networked information and communication technologies have added a new variety of online public spaces that provide opportunities for citizens to meet. This participation in online public spaces can extend the social connections to work, education, neighbourhood and thus a

health social fabric. Because of these developments, social connections can be more easily made and maintained, and support the preparations for actually meeting up in physical environments. In this sense, they reject the fear of physical public space becoming obsolete, but conversely acknowledge that digital means will actually add to our development of physical social space.

According to renowned urban rethinker Jan Gehl, architects and urban planners have been too focussed on how to handle space, but have forgotten to include the other important aspect within this space: life. He continues along the path of thought initiated by Lefebvre and his aim to restore the connection between physical space and 'lived' space. Gehl's work focusses on life between buildings and he has dedicated his career to the research of public space and public life, starting off in Copenhagen but soon enough spreading his ideas all over the world. To him and his company Gehl Architects, the approach is "first life, then spaces, then buildings – the other way around never works" and adds that "only architecture that considers human scale and interaction is successful architecture". By starting with public life and the places in which it happens, the design of buildings becomes a way to facilitate this end, instead of being an end in itself. Gehl explains that it is here, in these places where social interaction and the sensory experience of the city takes place. Public life encompasses all the various human activities that take place within the public space, which are essential for one's understanding of life and the creation of culture and identity. These topics are often intangible and complex, and thus harder to work with. Maybe the prioritisation of the physical within architecture and urban design is due to the fact that form and space are easier to deal with, in comparison to life which is ephemeral and difficult to comprehend and communicate. Gehl understands that there are many excellent reasons why it is difficult to integrate the diverse nature of public life into urban planning and architecture, but that does not mean we should not try. This is vital if we are to create worthy environments for the people who daily transverse between buildings in cities. He advocates the need for the development of contemporary tools, that can be used to once again to forge an alliance between life and spaces in cities (Gehl et al., 2013). For this it is important to define and record social activities within these spaces in order to support the notion and function of public space as meeting place. It is here where people meet others from their block, neighbourhood, community or city, which influences one's understanding of the social context of life, and can as well be stimulating and inspiring.

The city is a model for our society and it is within its spaces that we show ourselves and inspect others, asses social situations, construct our social context that add to our understanding and development of identity and culture. It should thus be the aim of urban design to provide opportunities for its users to do so, to see and be seen, to inspect, asses, surveil and encounter, according to Hertzberger (2000). An example in which the public space provides in all these, is Piazzale Michelangelo in Florence, Italy (see Fig. 11 - Fig. 12). This is a prime example of a public space that serves as a quality meeting place, between friends as well as strangers.

Fig. 11: *The view of Florence from Piazzale Michelangelo (fotocommunity.de)*

Fig. 12: *Picknicking on the steps (trover.com)*

Piazzale Michelangelo

Piazzale Michelangelo is a square on top of a hill in Florence with a bronze copy of Michelangelo's statue *David* in its middle. Due to its beautiful view over the city, perfect orientation for the afternoon sun and easy access and parking for cars, it attracts many visitors, locals as well as tourists. It is close to the city and on your way up the hill multiple café's or other public enterprises are located. Additionally small food carts can be found on top of the hill to provide drinks and snacks. All sorts of people strike down on the steps to enjoy a picnic, glass of wine and a chat with friends. The design of the stairs - its orientation, width and basic sitting places - facilitates accidental encounters and social interactions amongst the users of this enjoyable public space.

According to urban sociologist and activist Jane Jacobs, an understanding of the relevance of this type of social space was sincerely lacking in the 1950's. In her book *The Death and Life of Great American Cities* published in 1961, she criticizes the urban planning policy of those 'modern' times. According to her, their way of urban planning did not respect the needs of most city-dwellers and even rejects humans living in a community characterised by layered complexity and seeming chaos. Alternatively, she proposed a new appreciation for organic city developments that stimulate vibrant urban communities. She argued for an architecture and city planning that embrace and stimulate public life; the diverse social activities that take place within public spaces. In an interesting passage in her book, Jacobs bitterly describes the approach of city planning at that time: "The street is bad as an environment for humans; houses should be turned away from it and faced inwards, toward sheltered greens. Frequent streets are wasteful, of advantage only to real estate speculators who measure value by the front foot. The basic unit of the city design is not the street, but the block and more particularly the super-block. Commerce should be segregated from residences and greens. A neighbourhood's demand for goods should be calculated 'scientifically', and this much and no more commercial space allocated. The presence of many other people is, at best, a necessary evil, and good city planning must aim for at least an illusion of isolation and suburban privacy" (Jacobs, 1992). This is completely contradictory with Jacobs' personal point of view. She mentions that streets and their sidewalks, as main public spaces within a city, are like its most vital organs. "Think of a city and what comes to mind? Its streets. If a city's streets looks interesting, the city looks interesting; if they look dull, the city looks dull', states Jacobs (1992). Life should be orientated towards the streets and these streets should be designed as inviting public spaces that encourage social activities to take place within them. She points out that public peace is generally not kept by the police, but by the people who use the space, by their almost unconscious network of voluntary controls and codes that they enforce upon the space and other users. "A well-used city street is apt to be a safe street. A deserted city street is apt to be unsafe", Jacobs concludes (1992). Moreover, it is impossible to not use the streets and it is the streets' task to handle strangers, since this is where people, stranger or not, go.

It is thus important - and not only for this reason - to have people use these places frequently to maintain this sense of social security. But how to do so? Jacobs lists three qualities a city street should have to be able to handle strangers and use their presence as an asset for its quality, which are: a clear demarcation between public and private space, 'eyes on the street' (orientation towards the street) and a fairly continuous use of street and sidewalk, adding to the number of effective eyes. But you can not make people use places they have no need to use or watch these places if they don't feel like it. So for this reason, a substantial amount of public enterprises and spaces needs to be located along the streets, as a fundamental base for social surveillance. Jacobs explains that firstly, they give people an actual reason to use the street. Secondly, they draw their users along the streets and sidewalks past other places they have no need to visit, making them travelled as a route to other places. A diversity of public places adds to the use of the streets, since they enhance crisscrossing. Additionally,

the owners of these public enterprises often feel a strong responsibility for the peace in their streets, to ensure the attraction of costumers, since broken shop windows do not add to this attractiveness. And last, activity attracts activity. People walking around, doing their errands and parading along the sidewalks are an attraction on their own. Jacobs shares a recognisable truth with us;

"The sight of people attracts still other people. People's love of watching activity and other people is constantly evident in cities everywhere"

- Jacobs, 1992, p.37

She concludes that "once a street is well equipped to handle strangers, once it has both a good, effective demarcation between private and public spaces and has a basic supply of activity and eyes, the more strangers the merrier" (Jacobs, 1992).

Marcus Foth and Paul Sanders agree and state that urban design that fails to keep spaces under public surveillance abates the sense of security for its users. They add that incorporation of various amenities within an urban plan are vital to its society. "Citizens demand different business activities such as supermarkets, retail shops and café´s because these areas support daily life operations and provide gathering places for various social groups. In addition, open spaces and green areas provide buffer zones in crowded areas to facilitate social gathering and public interaction" (Foth et al., 2005).

The importance of public space as a meeting place, as the main social space, is emphasised by all authors previously named in this chapter. Regarding this notion, Hertzberger makes the comparison between city and building. He explains that social space is more durable, since private space is temporary, local and therefore subject to constant alterations. Within a city, the public space is created in between the buildings, by parks, streets and squares. They form the continuous and lasting infrastructure, "vital organs" as Jacobs dubbed them, while buildings are replaced or transformed over time. In a building, the communal area - the social space - can be seen as the public space - social space - within the city. Communal spaces like corridors and halls can be seen as streets or squares and form the more durable infrastructure of the building. Architects need to develop these spaces into more than traffic spaces, and use its spatial potential to create space that offers possibilities for social contact (2013), as shown in the Justus van Effencomplex. He states that "the city as a spatial model for society is about social space", and so should its buildings (2000).

2.5 Space versus place

The city as a big building and the building as a small city is a notion repetitively advocated by Dutch architect Aldo van Eyck, one of the founders of Team10 and influential structuralist. In his writings, collected in the book *The child, the city and the*

artist: an essay on architecture, the in-between realm, Van Eyck also blames the architects of modernism of draining cities and buildings from the life that takes place within and around them, by their 'hygienic architecture' that leads to ultimate boredom. He detests their loathsome habit of ostracising all human meaning from place, where there is no room for the imponderable, the spontaneous, and no place to nestle. During his visit to the Unites States, he saw buildings that, as he describes it, were turned into "an additive sequence of pretty surfaces with nothing but emptiness on both sides", and adds "To think that such architects are given to talking devotedly about space whilst they are actually emasculating it into a void" (Van Eyck et al., 2008). He addresses the importance of the interaction between human and environment, and so the difference between space and place, with a comparison:

"Just as a skeleton is not a person - a human being - unless it has one alive in and around it, so a building is not a building, a place not a place, until it has people in and around it experiencing its positive meaning-potential. They, not the construction, form or materials are the body of space. If space allows people to be alive in it, it will 'become' place. Conversely if we succeed in allowing construction, form or material to 'become' place - an act of poetry and magic - people will know they are alive there and really appreciate 'space' as such."

- Van Eyck, 2008, p.67

Van Eyck understands place as the appreciation of space. It is the energy of people who give body to space through their appreciation of the place, and the value it affords. This meaning of space is not something predefined in its form, but its place value should be found in the sense in which this space it able to gather and transmit and sets out to affect humans. Place embraces its meaning in the sense that its components, elements and objects are physically tangible and accessible for a direct human use. Van Eyck explain; "A wall, a seat or some steps on which to repose, talk, wait or watch; a table around which people gather for an occasion; a balustrade, wall or lamppost against which one can lean and smoke a pipe, a door which allows one to tarry with dignity. All these things are not spaces as such but they constitute place in the most direct physical sense. They are tangible points of focus from which space is appreciated. Their experience value belongs to the body of space - to its place potential - but they are not space as such, although they impart a feeling of belonging, of being somewhere specifically" (Van Eyck et al., 2008).

Van Eyck's pupil, Herman Hertzberger continues along this train of thought, but adds a slightly different perspective to the understanding of space and place. He agrees that human use is the key catalyst; "The thing that turns space into place is the infill given it by its occupants/users. When we say we are making a place, we in fact mean making the space in such a way that the conditions for its infill endow it with the quality of place." But place, according to him, is a special added value to space and has to do with appropriation. He states that we as human beings have an urge for space that is aimed outwards, centrifugal by nature. We always try to grasp more, explore more, to finally make it our own. When we find this new space, we familiarise

ourselves with it, and make it emotionally and physically accessible, appropriated. Hertzberger explains:

"If space-accessing desire has centrifugal directionality, once that space is colonised our attention turns to ever more drastically opening it up and exploiting it in our minds, our focus in time becomes increasingly more inward-looking, concentrated on the mentally and emotionally newly accessible areas. This is how our centrifugal desire makes the switch to centripetal attraction; space, appropriated and familiar, becomes place."

- Hertzberger, 2000, p.24

Place implies a particular meaning of a space for an individual or even a number of people, a feeling of attachment. Place is in that sense the special added signifier, or actually the signifié of the space. According to Hertzberger, place is the ultimate emotional appropriation of space. Space can be seen as a quality that contains the new, but can be filled in to become a place. "Space and place are interdependent in that each brings the other to awareness, enables to other to exist as phenomenon", he clarifies. The one can not exist without the other, there is always an interplay, making space and leaving space, open for interpretation and appropriation, for place. He ends with the metaphor: "If place is heat, fire, then space is the fuel" (2000).

And it is within the balance of contradictory phenomena where value lies, and thus the skill of the designer. The architects of modernism had the ignoble habit of splitting up balanced contradictories into abstracted antonyms. Van Eyck was very interested in these 'twin phenomena' as he calls them, such as individual and collective, outside and inside, unity and diversity, part and whole, small and large, many and few, simplicity and complexity, change and constancy, order and chaos. As isolated halves, they lose their meaning. He sees these twin phenomena in a similar way as breathing; you can not breath out without breathing in. Small does not exist without the reference of large. Outside can not be defined without an inside. It is a continuous relation in which these phenomena can exist, as abstracted halves they are rendered futile.

"It is up to architecture to provide a built framework- to set the stage as it were - for the twin phenomenon of the individual and the collective without resorting to arbitrary accentuation of either one at the expense of the other, i.e.without warping the meaning of either, since no basic twin phenomenon can be split into incompatible polarities without the halves forfeiting whatever they stand for."

- Van Eyck, 2008, p.60

Continuing with the notions earlier presented in this chapter, the difference between space and place and the balance of twin phenomena. Van Eyck links back to the human being as key to valuate space, and concludes that space in the image of man is place and time in the image of man is occasion. Space and time are mere abstractions, as for all the other halves mentioned, isolated and split from their intrinsic relation. But place and occasion imply a relation with the human being, place and occasion

constitute each other's realisation in human terms. "Since, furthermore, place and occasion imply participation in what exists, lack of place - and thus of occasion - will cause loss of identity, isolation and frustration", Van Eyck states. Place and its twin phenomenon occasion imply an awareness and an intention, the specific 'fill in'. And it is at the in-between where these conflicting polarities can meet, and again be reunited to become twin phenomena, instead of abstracted halves. Consequently, architecture and urban planning should be concerned with designing this in-between as a common ground for unification, that can be conceived as a built counter form of the more complete and complex human reality that constitutes life. It should evoke an awareness of place and occasion, referring to Lefebre's wish for a more aware and conscious approach of space. A beautiful example that explains this awareness is Van Eyck's quote; "When I speak of house or city as a bunch of places, I also imply that you cannot leave a real place without entering another - if it's a real 'bunch'. Departure must mean entry" (Van Eyck et al., 2008).

The reconciliation of twin-phenomena takes place at the borderline, at the in-between, which is part of a multiple in-between realm where transition takes place. Van Eyck says; "I am concerned with a multiple in-between realm - the extended borderline - which leads the trail in stages, helping to mitigate the anxiety abrupt transition causes. Today, leaving and going home are difficult matters both ways. Both house and city, therefore, should impart a feeling of going (coming) home whichever way you go. To go in or out, to enter, leave or stay, are often difficult alternatives", and adds that "the job of the planner is to provide built homecoming for all, to sustain a feeling of belonging - hence to evolve an architecture of place - setting for each subsequent occasion - determined or spontaneous" (2008). He sees it as architecture's task to elaborate this narrow borderline into an articulated in-between realm, in its built form. A 'bunch of' real places with real things for real people, not meaningless abstractions. Awareness of this in-between is essential. And thus the places within this in-between realm should be clearly defined. Again using van Eyck words, since he explains it so well: "A houselike city and a citylike house should, I think, be thought of as a configuration of intermediary places clearly defined. This does not imply continual transition or endless postponement with respect to place and occasion. On the contrary, it implies a break away from the contemporary concept (call it sickness) of spatial continuity and the tendency to erase every articulation between spaces, i.e. between outside and inside, between one space and another. Instead I suggest articulation of transition by means of defined in-between places which induce simultaneous awareness of what is significant on either side. An in-between place in this sense provides the common ground where conflicting polarities can again become twin phenomena" (Van Eyck et al., 2008). In his opinion, a house should be a bunch of places and a city a bunch of places no less, which need to provide the right configuration of places for each occasion, for an urban environment to become liveable again. The city is the mirror of society and should translate society's reciprocally individual and collective reality. It is here where your task as an architect and urban designer lies. Hertzberger adds that it is the architect's task to design the conditions that can make a space become a place,

by providing the right dimensions to facilitate for the occasion, and by articulating for situations that "bring about the right sense of appropriateness and recognitions" (Hertzberger, 2000). By creating a space that can facilitate multiple interpretations of place and occasion, by clear articulation of the in-between realm. It is as an architect essential to understand the difference between structure - the built environment - and filling - what people bring to that environment. In his words: "if an architect is capable of fully grasping the implications of the distinction between structure and filling, or in other words between 'competence' and 'performance', he can arrive at solutions with a greater potential value as regards applicability - i.e. with more space for interpretation" (1991). Structure in this sense stands for what is collective, but the way in which it can be interpreted represents the individual needs. In this way, individual and collective, as twin phenomena, are reconciled in the in-between.

2.6 The scope between public and private

As mentioned before, there is an interrelation between our social behaviour and the built environment. When we indeed focus on the borderline between twin phenomena, the in-between realm, we should also regard the notion of territoriality and privacy. For instance, if we look at the twin phenomena inside & outside and its borderline defined by a physical environment (like a wall), this borderline often also defines the private (inside) and the public (outside). This makes the design of the in-between extra complex in the sense that the architectural articulation should communicate both these aspects and facilitate the transition through the different environments.

Like Hertzberger stated, it is of great importance to design the conditions that trigger the right sense of appropriation, to facilitate this transition with clear articulation, but also leave space for interpretation. But how can a user 'read' these transitions and borderlines? Environmental-behaviour studies focus on this interaction between a person and his or her environment and the 'readability' of the environment. Environmental psychologist and architect Machiel Van Dorst points out that it is important to understand that in this field of studies, these environment-behaviour relations are assumed as interrelations (2005). This indicates that the (built) environment influences the activities and thus behaviour within, but the activities and behaviour can also lead to alteration of this (built) environment. The interesting thing is that people behave differently in different places. But how do we know in which way to behave at what place? This is where design comes in. Since environment and behaviour are interrelated, the architecture can not be determinant, but it should be facilitative and readable to its users to be successful, according to Van Dorst et al. (2014). The way in which a place is shaped - its design - provides the users with a certain readability to understand which behaviour is appropriate. The design of places influences our behaviour and makes a place 'readable'. An important aspect within this design is the borders of spaces. In the general architectural practice, a trichotomy is made between private, collective (or common) and public spaces. This

is only a simplification of reality. Because in real life, the divisions and transitions are not so limited and this verbal trichotomy is lacking the experienced nuances. And because of this, there is a demand for a more elaborated architectural vocabulary to be able to describe and define these transition zones in between the private, common and public space (Van Dorst et al., 2014, Sohn et al. 2015). Sohn states that "the notions of the public and the private, as well as the practices conventionally associated with them, need to be rethought and problematized from a position that examines the relations between social activities and spatial (urban) concerns" to generate a more comprehensive vocabulary. Since the failure of the public as a relevant critical category in present discussions has affirmed, Sohn et al. advises to consider a more nuanced understanding of the private and the public, an understanding that provides a plural account of their various 'in-betweens' as differentiations of degree rather than of kind. (Sohn et al., 2015).

It is interesting to look at the origin and development of this trichotomy. In his book *Human Behavior and the Environment,* the American social psychologist Irwin Altman describes the importance of maintaining borders for the individual. Each individual has a natural tendency to keep others at a distance, which is defined as 'personal space'. This 'personal space' enables people to reflect on their own activities and behaviour. This contributes to an essential skill of developing and controlling one's own personality (1977). Altman concluded that not only people, but also groups of people tend to appropriate a space. In this way, a group also has its 'personal space' in which each individual maintains their own 'personal space'. He defined the individual 'personal space' as the primary territory, which is now known as private, and defined the 'group personal space' as the secondary territory, which developed to the name 'semi-private' or in this case 'collective'. The adopted trichotomy is easily applicable to a simple house; here the road is public, the front garden semi-private and the house private. But in the complex structure of a modern apartment block, these divisions are not as easily made. From the public road to the personal apartment there are various transition areas to pass through, such as the main entrance hall, the stairways or elevator, another hall and the gallery on which the entrance to the apartment can be found. These 'in-between' zones are now all gathered under the definition of 'semi-private', even though they obviously differentiate. The term 'semi-private' has hence become an umbrella term for all spaces between public and private spaces with a lack of nuances.

Sociologist Lynn Lofland differentiates between what she call the public and parochial domain. In contrast to the public domain, the parochial domain is characterised by a sense of togetherness or even solidarity, in which social control is easily integrated. According to her, the public domain is typified by a greater tolerance than the parochial domain. To explain: in a bustling street people distance themselves from each other and make their own way, adapting their routes to the expected paths of strangers. To be able to accommodate unexpected moves, a certain amount of space is required. More space than if one would move around strangers at a birthday party. This examples the parochial domain with a smaller spacial tolerance. Lofland

Fig. 13: *Vondelpark; public space as meeting place, as social space (kalden.home.xs4all.nl)*

Fig. 14: *Multiple parochial domains within the public domain (hartvannederland.nl/2013/de-zomer-komt-eraan/)*

Het Vondelpark, Amsterdam.

The Vondelpark in Amsterdam is a great example of quality public space, where every visitor feels welcome and in doing so the place really communicates its publicness. While at the same time within its public domain, it accommodates the (temporarily) appropriation of space. Within the public domain, multiple parochial groups are facilitated, often in high density as seen above. By laying out a plaid, parking a bike or laying out the picnic, a territory is claimed for an individual or a group.

Fig. 15: *The natural ambiance in Paley Park, one of New York's 'pocket parks'*

Fig. 16: *The park in full use, accomodating various prochial domains within a public domain (tclf.org)*

Paley Park, New York.

Paley Park is one of New York's 'pocket parks', located within the dense inner-city. It provides a buffer zone and resting place amidst the bustling city life. Through its design it creates a sense of intimacy and calmness, by amongst others its shape, way of entering and the natural elements within. Exceptional for a public space, it almost feels like entering a city room, in which multiple parochial domains are facilitated within the public domain.

states that an aspect of a successful public space is the ability to accommodate multiple parochial domains within it (1998). A park for instance, in which groups of people can enjoy a summer day, illustrates this statement, accommodating different parochial domains within a public domain. But the design or articulation of such a park can be quite different. The Vondelpark in Amsterdam is an example of a park in a more conventional sense, that accommodates appropriation by various groups, facilitating multiple parochial domains within the public domain (see Fig. 13 - Fig. 14). Paley Park in New York on the other hand is a different type of park. Through its design - its shape, materiality, way of entering, use of natural elements, sounds - a very different atmosphere is evoked. A resting room within the city. It creates a sense of place and occasion, accommodating various activities as well as users and facilitating multiple private and/or parochial domains within the public domain (see Fig. 15 - Fig. 16).

Different domains are compatible with different social behaviour. So not only the physical environment but also the social context determines how people interact. The degree to which an environment is more or less public, is dependent upon the connections between people, how well they know each other and how they relate to each other, as for instance at the birthday party earlier mentioned. Machiel van Dorst et al. stresses that communication and privacy are thus interrelated concepts (2014). He is one of the researchers in the field of privacy scripting: the field of studies that researches the readability of spaces, in regards to the experiences of its users. In his research, Van Dorst focusses on what is called 'privacy zoning' with which he tries to identify the impact of architecture on the social interaction in buildings. Van Dorst demonstrated through his work that the principal of a transitional change of publicness differs per place and has an influence on how people value their living environment. His privacy zoning model assumes an endless succession of levels of publicness; your house belongs more to you than to others, but the street belongs more to the neighbourhood or city, and the windmill more to the Dutch than to the French. To be able to analyse the readability of a space, Van Dorst has tried to discover which factors are of great importance and which are trivial. Since every behaviour has different spacial needs, the physical requirements to facilitate this behaviour can be determined (Van Dorst et al., 2014). His division of publicness builds upon that of Lofland, but adds an extra domain: he differentiates between the private, collective, parochial and public domain. The models of privacy zoning are easily compatible with the domains, since these are collections of privacy zones. But architecture alone cannot prescribe the level of publicness, since - if it is indeed done correctly - it can facilitate various uses with different degrees of publicness within it. For instance, when a public hall of a museum of monument is rented out for a 'private party', making it fit for a collective use. Van Dorst states that because of this reason, architecture can not be determinant, but should be facilitating and readable. In his research he analysed which factors are of importance for the readability of a space and concluded that accessibility and routing as well as territoriality and familiarity are universally essential characteristics.

Fig. 17: *The 'Street', with its display of educational information and student models (archined.nl)*

Fig. 18: *Liveliness within the street and the services located along it (secontwerpers.nl)*

The 'Street' within the Faculty of Architecture, Delft University of Technology

Centrally located within the Faculty of Architecture at Delft University of Technology, a corridor called the 'street' connects the building from the west wing (entrance) to the east wing (entrance). Along this street most services are located, such as the Espressobar, information desk, IT help desk, material & bookshop, the print shop, the faculty's newspaper as well as the student association. Additionally it connects the more public places such as the BK Expo, Orange Hall, Model workshop and so canteen, stairs, elevators and lockers. Its walls are used for display of students work, educational information and news of upcoming events.

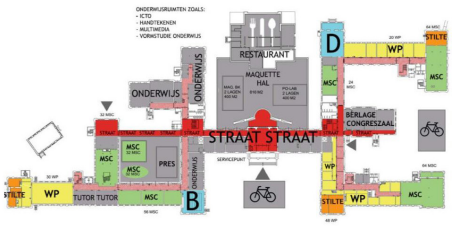


Fig. 19: *The 'street' visible in red within the plan of the faculty (slideplayer.nl)*

He explains that the degree of which a space is accessible is by all means an architectural design task. And the way in which this route from public - along all the diverse privacy zones - to private is shaped, establishes the chance of encounter (Van Dorst et al., 2014). A road with much car traffic has a low potential for facilitating social interaction, as opposed to a car-free street with a high potential for social interaction, corresponding if so to say with the public domain and the parochial or even collective domain. Also, by leading users along a route the design defines where people go and where there is potential for a chance encounter. This obviously is of great importance for the creation of social space. The 'street' within the Faculty of Architecture is an example of how the routing within a building connects its users and functions and facilitates a multitude of possibilities for chance encounters (see Fig. 17 - Fig. 18). The accessibility of a place and thus its design (routing), define the dimensions between its users and so the transition between different privacy zones and their different degrees of publicness.

Territoriality and familiarity have to do both with ownership - to truly possess - as well as appropriation - to claim it as yours. For instance, you rent a house and have appropriated it as 'yours', but actually your landlord is the true owner. But then who is responsible for what? In an urban apartment block, the entrance, elevator, stairs, corridor, hallway cannot be private property since they are part of the essential entry for its users. But your hallway belongs more to you and your neighbours along this hallway, than the ones above and below. The degree of publicness shifts, and this can express itself in the physical appropriation of a space by marking this territory with personal attributes, such as plants and doormats. By appropriating and familiarising a space, its users make it into a place, as Hertzberger explained. The same goes for the transition from the public street into the private home. In the Netherlands, houses in the city centre are often directly connected to the sidewalk, resulting in an abrupt transition from private to public. Still, a transition area is preferable and thus a diversity of alternatives can be seen, from the use of planter pots in front of the house to distance passersby, to the use of (extensive) front gardens or even fences. An example in which this transition is shaped masterly, if I may say, is the entry of a typical Amsterdam canal house (see Fig. 20 - Fig. 22). Here, a transition can be seen from public, via various in-betweens, to private within a very small amount of space. There is a clear readable distinction between the various layers, and the top of the stairs often functions as appropriated 'private' outdoor space, facilitating easy social interaction with the closeby public space.

To make a space readable, the above named variables need to communicate the same degree of publicness and thus its domain. The next requisite is that the space indeed facilitates the requirements of this domain. Van Dorst affirms that if the privacy script is in order, i.e. the spaces are well readable and facilitative, than it has met all the privacy scripting conditions. Which would lead, according to him, to a well functioning environment, both physically and socially. For his research the 'public' routes within 7 residential buildings were severely analysed (see Fig. 23 - Fig. 24). Eighty percent of these spaces turned out to be hard to read, ambiguous, resulting

Fig. 20: *The canal house entrance as semi-public space (ftp.ruimtelijkeplannen.amsterdam.nl)*

Fig. 21: *Appropriation and usage of the transition space (edlodewijksfotografie.com)*

Fig. 22: *The semi-public space as social space (amsterdamsebinnenstad.nl/binnen- stad/192/dialezing/dialezing.html)*

The Canal house Entrance, Amsterdam.

Due to the dimensioning of the canals and their quite narrow streets alongside, the houses in the canal district of Amsterdam are located directly on the street. There is not much space for a transition zone from public to private but the typical design of the small stairs leading to the entrance of the private house provides a perfect solution. It facilitates a transition from public street via the sidewalk, the staircase, the outside entrance platform to the actual entrance door. Residents often appropriate this in-between zone by use of objects and plants, as well as by residing on the stairs and platform, inspecting and enjoying their surrounding. Due to its simplicity and openness it has a clear readability and facilitates easy social interaction.

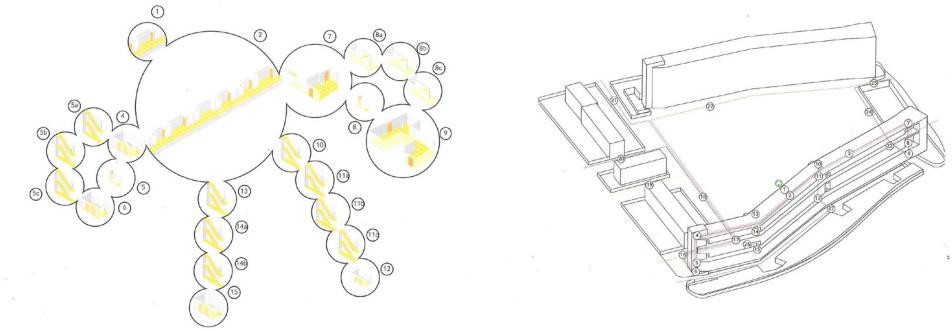


Fig. 23: *The different privacy zones within the accessibility structure of the Robin Hood Gardens (left), including 8 different ways to reach the street (Van Dorst et al., 2014,p.31)*

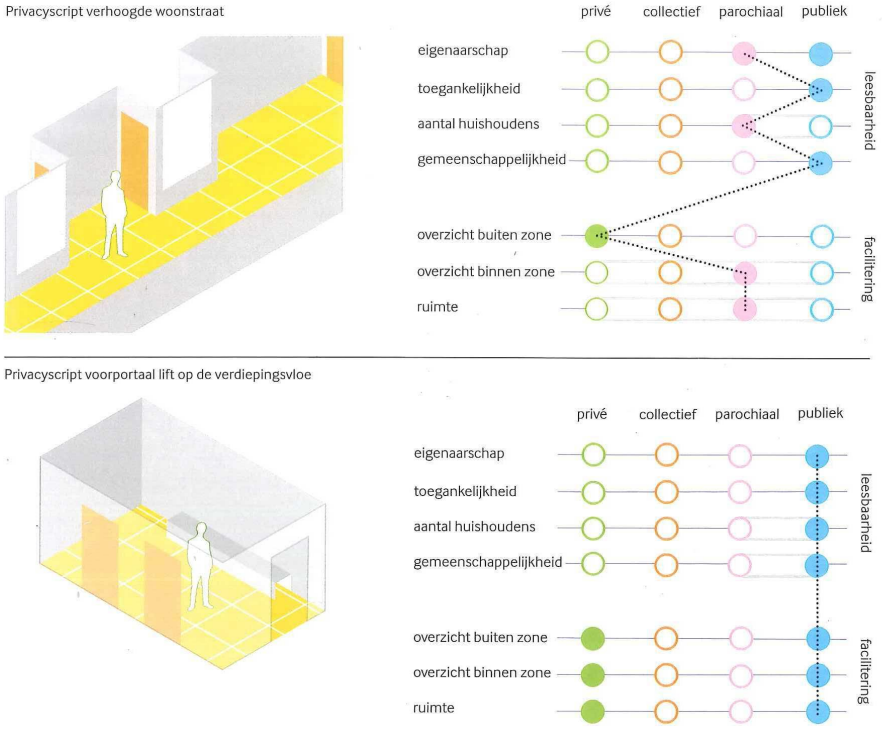


Fig. 24: *Example of a privacy script analysis; testing the readability and facilitation of the raised street and the evelator hall within the Robin Hood Gardens. (Van Dorst et al., 2014,p.33)*

Privacyscripting

Machiel van Dorst analysed 7 residential buildings for his research on privacy scripting, including the Smithson's Robin Hood Garden Complex. Its accessibility routes include 15 different spaces from street to home, with divers privacy scripts. These spaces are often not even visually connected and are generally hard to read due to their ambiguous privacy script. Van Dorst analysed these privacy scripts per space and tested their readability and facilitation. This since his research concluded that if spaces are well readable and facilitative, they will result in a pleasant environment. As seen above, the privacy script of the raised street is very ambiguous and hard to read, while the elevator hall's readability and facilitation correspond.

indeed in unpleasant experiences of these spaces. Van Dorst stresses the importance of designing the access routes to be more than just circulation spaces, by paying attention to privacy scripting. The research showed that the scale of a building or the style in which it is built are merely relative affecters and do not constitute the social potential of a building. The relevance of good architecture lies in its power to clarify and maintain readability though its design, states Van Dorst (2014).

2.7 Architectural translation

So now the question is, what does this entail for the designer? In the previous chapters the relevance of social space has been addressed and elaborated upon. The need for social space is made clear, but how can architecture contribute to the creation of it? How can the design of a space facilitate possibilities for social interaction? Which aspects are of importance to consider when designing and what are the tools the architect can use? To be able to answer these questions, previously elaborated statements will be reflected upon and analysed to find out which role architectural design can play.

First of all, it was agreed upon that space is more than a physical enclosure. As Lefebvre explained, 'space' is a complex phenomenon that consists of the perceived space; as physical environment, the conceived space; as faculty of the mind and lived space; as bodily experience, all at once. Architects should be conscious of the importance of this lived space and not render it obsolete by their abstracted drawings. Since architectural space is one of the means through which social space is produced, and by the way this architectural space is shaped, the design, it facilitates its use. The users are the ones animating the space in question, within their lived experience. This lived experience concerns the dynamic, the movement, in which time plays an essential factor. Architectural design is not a static practice, limited to the three-dimensional, but should include the four dimensional to which the lived space belongs.

But lived space can only be 'created' through people, only people can bring a space 'alive'. The people and their usage make the space, if a space is not used it has no relevance. As long as the users are actively engaged and appreciate their built environment, they will find it worth renewing and transforming, hence it endures. Therefore it is of utmost importance to design for use and thus its users. In this sense, the architect will need to have an understanding of the users' activities and the way in which these are carried out. Subsequently, the architectural design needs to meet the functional requirements to facilitate these activities and entice the users to engage in their environment. A balance needs to be sought, between facilitating and accommodating the aimed-for activities and social behaviour, as well as leaving space for interpretation and appropriation, so that the activities and social behaviour can influence their environment.

In the design for appropriation and interpretation, time again plays an important role, or better said the accommodative potential of a space. Since the users and their activities change over time, the built environment should be designed in such a way that it can accommodate this change. Some might call this 'design for flexibility', but it is actually the polyvalent character of a space the designer should search for, according to Hertzberger. The buzz-word flexibility led to the believe that all buildings should be neutral so they could be put to different uses. But when designing for all, the result is actually a design for no one. By its lack of distinct features, the neutral architecture of flexibility consists of the absence of identity. The issue with this modern approach is its uniformity, in the way that the spaces tolerate only one specific function in one prescribed standardised concept. Hertzberger elucidates that the uniform urban plan and the uniform floor plan are based on the separation of functions, resulting in a schism between activities (1991). This alienation then becomes the starting point for creating the spaces for these specific purposes in different ways, on the grounds that different activities make different specific demands on the spaces in which they are to take place. But actually a change of perspective is needed. Considering the fact that for an activity to happen within a space, this still does not mean the activity makes specific demands on the space in which it takes place. Hertzberger stresses that it is the people who perform these activities that actually make the specific demands, "because they wish to interpret one and the same function in their own specific ways, according to their own specific tastes". He explains that there is not one specific perfect form that fits one specific purpose. A space can be designed in such a way that it can be interpreted in various ways and hence can accommodate various activities. There are multiple forms that can not only foster various interpretations, but can actually stimulate these interpretations under changing situations. An example of such a design is the Orange Hall within the Faculty of Architecture at Delft University of Technology (see Fig. 25 - Fig. 31). In his response to flexibility, Hertzberger argues we should strive for a form that can be put to different uses without having to undergo changes itself; "the form is capable of adapting itself to a variety of functions and of assuming a variety of appearances, while remaining essentially the same" (1991).

"What we need is a diversity of space in which the different function can be sublimated to become archetypal forms, which make individual interpretation of the communal living pattern possible by virtue of their ability to accommodate and absorb, and indeed to induce every desired function and alteration thereof."

- Hertzberger, 1991, p.147

Here again, the focus is on the difference between the creation of the environmental conditions and the life that actually takes place within. The architect should have the skill to understand the implications of the distinction between these. Or along the structuralist thinking of Hertzberger, to be aware of the difference between structure and filling, i.e between 'competence' and 'performance'. And with this understanding should be able to implement solutions with a greater potential value,

Fig. 25: *As auditorium (bk.tudelft.nl)*

Fig. 26: *As room divider with another lecture room inside (eduardoperez.de)*

Fig. 27: *As informal meeting place and workspace (managingtheuniversitycampus.files.wordpress.com)*

Fig. 28: *As office workspace (architizer.com)*

Fig. 29: *As lounge (sc4aqp.weebly.com)*

Fig. 30: *As event and exhibition space (indesem.nl)*

The Orange Hall within the Faculty of Architecture, Delft University of Technology

The element designed by MVRDV for the Orange Hall within the Faculty of Architecture at Delft University of Technology is an example of multiplicity within design. By their way of design it hosts a tribune, lecture room and offices, but affords many different uses, such as illustrated in Fig. 25 - Fig. 31.

Fig. 31: *As theatre (dearchitect.nl)*

in a sense of accommodation, applicability and interpretation. This is also where the twin phenomena collective and individual come together, since the structure can be interpreted as both facilitator of the accommodation of the collective, as well as representative of individual demands and tastes. In his essay in *What is good architecture?*, Hertzberger concludes:

"It cannot be emphasised enough: structure keeps a construction together in a material sense; structuralism is about keeping the people it encompasses together, and it is doubtful whether more concrete means can be conceived to achieve this than precisely those of spatial design that shape the shelter of the social structure"

- Hertzberger, 2013, p.21

Relating this to what has been said before in the previous chapters, the built environment can and should indeed facilitate this social structure and all its activities. Seen from an urban design perspective, the designer should be aware of the aspects that trigger liveliness within public space, since public space is eminently the place where the communal and social in manifested. Life should be orientated towards the streets and these streets should be designed as inviting public spaces that encourage social activities to take place within them. To be successful according to Jacobs, these spaces need to have a clear demarcation between the public and private, 'eyes on the street' and a frequent usage. Therefore, a substantial amount of public enterprises and spaces needs to be located along the streets, as a fundamental base for social surveillance and usage (1992). Hertzberger (1991), Foth et al. (2005), and Jacobs (1992) all agree that functions should not be segregated, but mixed to stimulate the creation of social opportunities and liveliness. Because it is in the public space par excellence where social space arises and hence chance encounters occur.

For both urban design and architectural design, the relation with and to the human being is paramount. As said before, design without user has no relevance, as well as the fact that space without user cannot be experienced, therefore it does not contribute to its lived space. Additionally to these conceptions, it is the human being that adds value to a space by appreciation, that brings out the value a space affords. As Van Eyck set forth; "I arrived at the conclusion that whatever space and time mean, place and occasion mean more, for space in the image of man is place, and time in the image of man is occasion. Split apart by the schizophrenic mechanism of determinist thinking, time and space remain frozen abstractions" and he so defines place as the appreciation of space. He sees it as the designer's - planner or architect - task to "provide built homecoming for all, to sustain a feeling of belonging - hence to evolve an architecture of place - setting for each subsequent occasion - determined or spontaneous" (2008). Hertzberger addresses that it is the architect's task to design the conditions that can make a space become a place, by providing the right dimensions to facilitate for the occasion, and by articulating for situations that "bring about the right sense of appropriateness and recognitions" (2000). He adds that is it the infill, the 'performance', given by its users that turns space into place. Space, once appropriated and familiarised, becomes place (2013).

Familiarisation is one of the key aspects to consider when designing for a readable environment, which is of great importance if you want this environment to be successful according to Van Dorst. In his research he concludes that accessibility & routing and territoriality & familiarity are to be handled with great consideration when designing for a clear readability of a space (2014). The way in which a space is shaped - its design - provides the users with a certain readability to understand which behaviour is appropriate. All these key aspects have to do with transition and appropriation. These occur at borders, between public and private, and all the various in-betweens. From the previous chapters it can be concluded that the borderlines should become the place of focus, since this is often where the complexity of space and life meet. Van Eyck (2008), Hertzberger (1991, 2000), Jacobs (1992) and Van Dorst (2014) have all addressed the importance of clear articulation of borderlines and of exploration of the potential of these borderlines to be more than just a line. Van Eyck has stated that he sees it as architecture's task to elaborate the narrow borderline into an articulated in-between realm, in its built form. The creation should be thought of as a configuration of intermediary places that are clearly defined. He suggests: "an articulation of transition by means of defined in-between places which induce simultaneous awareness of what is significant on either side. An in-between place in this sense provides the common ground where conflicting polarities can again become twin phenomena" (2008). It is here where social behaviour and built environment meet, life and space, infill and structure.

The relation between activities, their privacy and the (architectural) environment has been researched by Warner van Haaren in his graduation project *The private house & the collective home; in search of privacy in dwelling* (2014). His research focusses on people's privacy behaviour, since it is the most central process of people's individual and social behaviour, which also defines the social interaction individuals have with one another. When designing a collective space, it is therefore of importance to understand the privacy needs of the different users and the way in which they control their desired level of social interaction. In his research he addresses the importance of the interrelation between built environment and social behaviour and to do so makes use of the theory of affordances. The theory of affordances shows that the built environment affords certain behaviour to take place and the perception of a space influences how people make use of the space and whether they feel comfortable. Psychologist James Gibson first introduced the theory of affordances in his book *The ecological approach to visual perception* in 1979. Here, Gibson addressed the importance of connecting a person, his activity and his environment with each other, creating the concept of affordance. "The affordances of the environment are what it offers the animal, what it provides or furnishes, either for good or ill" (Gibson, 1979). It illustrates that people perceive their (built) environment differently, determined by their behaviour and activity and that the qualities an environment provides are relative to its user. Therefore Gibson states that:

"What we perceive when we look at objects are their affordances, not their qualities"
- Gibson, 1979, p.135

Fig. 32: *The End of Sitting illustrates a design open for interpretation, affording various uses (raaaf.nl)*

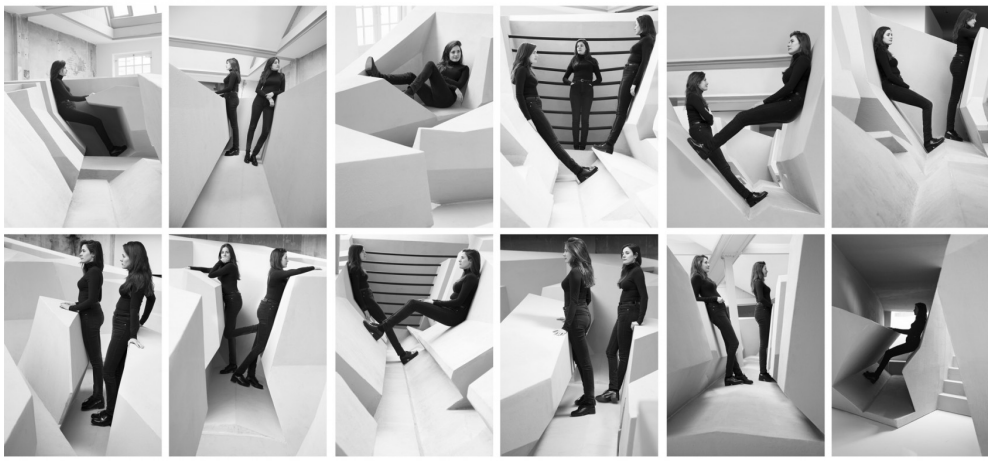


Fig. 33: *The innovative office design has a high multiplicity, inviting the user to re-think their activity, environment and usage of it (raaaf.nl)*

The End Of Sitting, RAAAF [Rietveld Architecture-Art-Affordances], Amsterdam

The End of Sitting is an installation at the intersection of visual art, architecture, philosophy and empirical science. It challenges the stigma of the office desk, with the concept in which chair and desk are transformed in a merging landscape. In our society almost the entirety of our surroundings have been designed for sitting, while evidence from medical research suggests that too much sitting has adverse health effects. This installation's various affordances solicit visitors to explore different positions in an experimental work landscape and trigger a different mindset and consciousness of their environment and the activity performed.

A horizontal surface can for instance be interpreted in various ways to serve its user, dependent on his or her needs. For sitting, laying, leaning, walking, climbing, etc. If a person wants to sit, this surface can be sit-able, thus the user perceives it as a sit-able object. Even if its shape can be very different, if its function can be to sit on, this is what it affords the person who wants to sit. The affordance all depends on the user and his or her need and activity. Van Haaren thus defines affordances as "the properties and qualities (features) of objects and environment that are perceived by its observer according to his or her needs" (2014). Objects or spaces have many affordances in them, without physically changing their appearance. This relates to the polyvalent character Hertzberger desires of a space, to be able to accommodate various interpretations and various needs without adapting physically. The use of objects or environments is often culturally defined, but they generally contain multiple affordances. It is for instance culturally accustomed to sit at a table, but its appearance also affords to lay on, stand on or shelter under. As an architect it is important to be aware of the affordances your design may provide, to consciously take this polyvalent characteristics into consideration and make use of the multiplicity this enhances. The End of Sitting is an installation that challenges our cultural defined interpretation of sitting, in our working environment. The installation's various affordances stimulate its users to explore the innovative work landscape and rethink their environment as well as usage (see Fig. 32 - Fig. 33).

For people to establish the desired level of privacy, there are two guidelines that need to be followed in the design of the built environment, according to Van Haaren. Firstly, for users to be able to choose their privacy settings, the built environment needs to have a high multiplicity and variety to afford this. Secondly, the users need to be able to control their personal privacy levels and to communicate these to others, thus defining the boundaries they need (2014). For instance by the use of openable curtains or planter boxes between street and window, people control their desired privacy level towards the public street. These can be seen as boundary elements, some are highly controllable - such as curtains - others less and define a more specific privacy level - such as doors. Van Haaren developed a pattern language of boundary elements that influence people's privacy behaviour and the way they articulate physical boundaries (see Fig. 34). He adds that this collection of boundary elements is merely an investigation and not complete, but gives and understanding of the influence of physical and architectural boundary elements on people's privacy behaviour. They show that physical and architectural elements are therefore very important elements for people's privacy behaviour (Van Haaren, 2014).

In his research he concludes with three statements. First, that privacy is a matter of choice. Users choose and change their environment based on their (inconstant) privacy needs. This requires the built environment to be able to respond to this and hence to be polyvalent and/or various. Secondly, privacy is a matter of boundaries. Physical and architectural elements play an important role in articulating spaces and places and communicate the level of privacy. Their design communicates the readability of the space. And lastly, every performed activity includes a desired

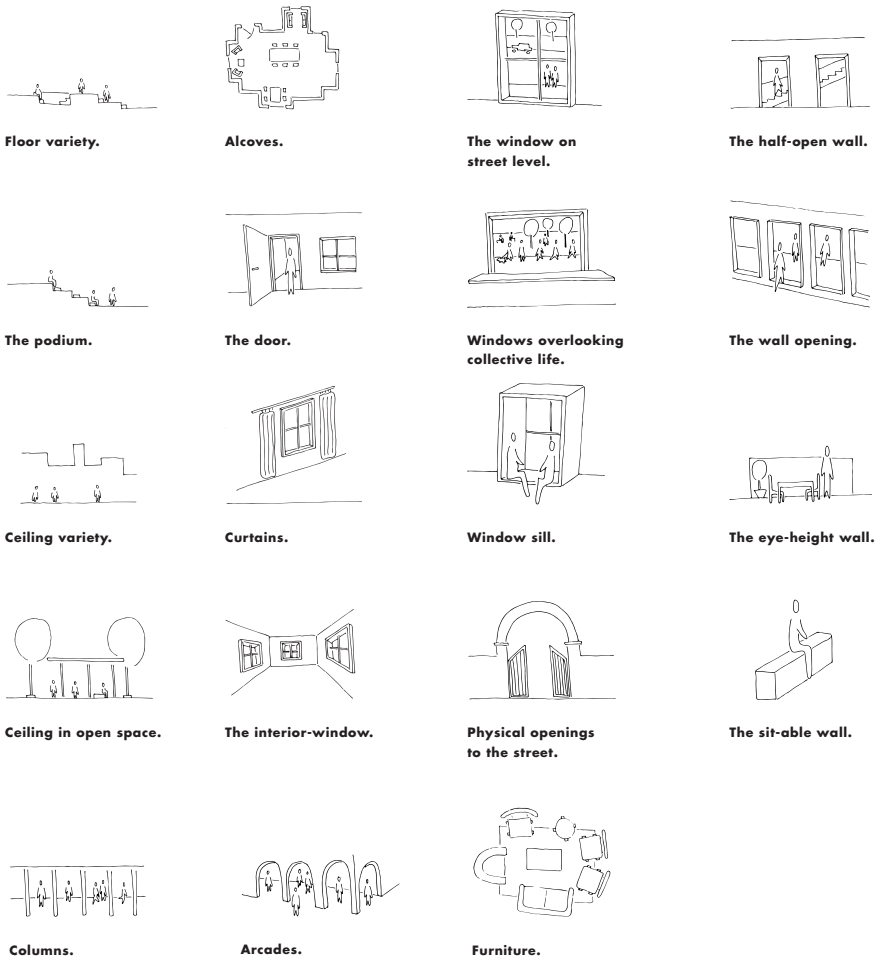


Fig. 34: *Boundary elements (Warner van Haaren, 2014, p.136-137)*

Boundary elements, Warner van Haaren

The built environment shows a great diversity of architectural and physical elements that can be investigated on their influence on privacy behaviour. In his research, Van Haaren made a selection of these boundary elements based on the probability of usage in his personal design, but stresses that this investigation is not complete. It merely shows how architectural elements signal the boundaries they afford and how its users can read these borders. It illustrates the different senses of privacy that can be achieved through design and their controllability by the users themselves. It is within the play of these boundaries that the architect can influence the readability of its design and in doing so, the desired behaviour (and feeling) to be achieved through it. An comprehensive elaboration per boundary elements can be found in the research of Van Haaren (2014).

privacy level. This means the environment should also be defined according to the privacy level of the activities it facilitates, from highly private to completely public (in the broader sense, not only regarding the collective residential environment as in Van Haaren's research). Van Haaren concludes:

"Thus, the residential building needs to have a multiplicity of spaces that are clearly demarcated by physical and architectural boundaries and range from the most intimately private domain to the most communally collective domain."

- Van Haaren, 2014, p177

While concluding his research, he stresses the importance of designing spaces according to the activities they facilitate, and not only to their functional setting. Architects need to design spaces with multiple affordances, instead of one fixed function. This is where the great value of design lies, in the degree to which the spaces can accommodate the various needs of their users.

3.

CONCLUSIONS

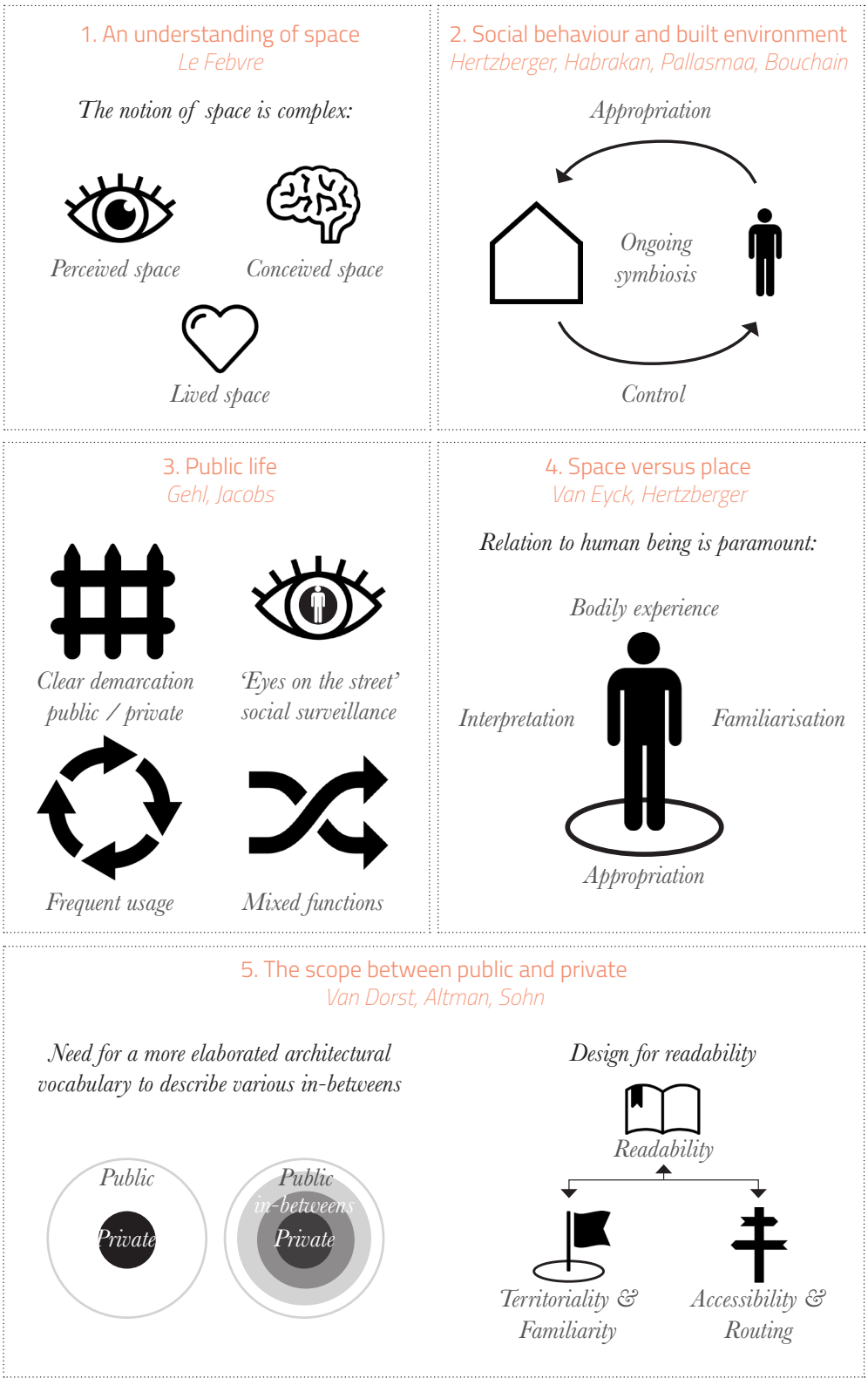


Fig. 35: *Conclusions per chapter (own illustration, 2015)*

3.1 Research conclusion

This research investigates the potential of architecture to contribute to our social environment. Its aim was to analyse in which way and to what extend architectural design can influence the social behaviour of its users. This due to the fact that, as stated at the beginning of this research, we are currently in an economical, environmental and social crisis (Grosclaude et al., 2014). Our society is dealing with increasing individualisation as well as the problems of loneliness and social integration, while our urban population density is ever growing. Scarcity of (natural) resources as well as space is increasing, causing prises to rise. It is apparent we need to change our lifestyles. Due to the democratisation of digital practices an increasing interest in the sharing economy can been seen, on a big scale. Not only in a digital environment but also in people's direct living environments, a shift towards the shared is apparent. Sharing could offer a solution to the problems stated above. Or as Beth Buczynski concludes:

"There is no doubt that our future will be shared; with the increasing population on the planet of finite resources, there is simply no alternative."

- Beth Buczynski (2013)

The relevance of this research lies in the investigation of the role of architecture in our shift to a new lifestyle in a more shared living environment. When it is to be done right, the architectural design includes a lot more than just the provision of some square meters. Architecture entails more than just the creation of space as physical enclosure, but also sparks the imagination and interpretation - the mental space - as well as the bodily experience of this space - the lived space. If we are to share our environment, this entails multiple users which results in a more complex social situation. Its architecture should regard this social complexity and the implications this inflicts on its users. In a shared environment, architecture should contribute to the social integration of its multiple users and the creation of a harmonious co-existence, facilitate social interaction and leave space for interpretation, exchange and understanding, on top of the functional requirements it should suffice. Therefore, it is of importance to understand not only the physical, but also the social and behavioural complexity of the design task and the ways and extent to which architecture can influence this shared environment. The central research question therefore was:

How can architectural design contribute to the creation of social space in a shared living environment?

The previous chapters have reflected upon this question and have elaborated upon its sub questions, such as what social space is, how social behaviour and built environment are related, how the borders are defined within and how we 'read' these, and what this entails for its architectural design. There are many aspects an architect should be aware of when designing, since his or her choices do have a substantial influence on the users.

In Fig. 35 - Fig. 36 the conclusions per chapter are visualised. Various authors and their visions and theories have been discussed, of which the architectural translations have been set out in chapter 2.7. Even though different words have been used, an overlap between topics in these theories can be seen and their architectural importance for the contribution to social space. These can be summarised in three key characteristics: territoriality, multiplicity and accessibility. These characteristics represent and comprise multiple components, as discussed beneath.

Firstly, all featured authors address the significance of clear demarcation between public and private space, and its various in-betweens. The boundaries of the diverse territories or domains need to be clearly architecturally articulated to communicate their desired sense of privacy and ensure a good readability of the environment. By their way of design, they can facilitate possibilities of appropriation along the transitions of territories, adding to their readability and identity, familiarisation and appreciation.

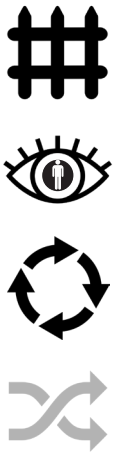
Additionally, the importance of multiplicity of a space has been highlighted. A significant value of a space lies in its potential to accommodate various usages and uses. This requires a polyvalent character of a space, so it can host different functions and activities, resulting in frequent and mixed use, without physically transforming to do so. The built environment needs to have a high multiplicity and variety to afford this. By regarding the various affordances a space can have during its design, it remains open for interpretation. Due to its multiplicity it can achieve a high potential for optimisation - in terms of space, time, finance, environment and social opportunities - en thus is a powerful aspect to consider when designing for a shared living environment.

And lastly, the significance of accessibility. This characteristic entails physical accessibility as well as optical accessibility, and thus routing. Physical accessibility comprises the possibility to enter a space and its way of entering. Optical accessibility encompasses the visual links and views that draw a visitor in or communicate what is happening in the building or street to its passerby. In this sense, optical accessibility enables the communication between spaces, ‘eyes on the street’ and so social security. Additionally, visual links or sequences of views are instrumental for routing, since they draw people in. These connections can also foster social opportunities and can be used as a strong tool to bring people together, physically or optically.

Fundamental to architectural design is its relation to man. The people and their usage make the space, if a space is not used it has no relevance. As long as the users are actively engaged and appreciate their built environment, they will find it worth renewing and transforming, thus it endures. In this sense, the temporal character of architecture plays an important role. Without occupation and appreciation it will die off and decay, as Habraken states (1980). Therefore it is of utmost importance to design for use and thus its users. And so, it becomes clear that there is a need for a built environment that accommodates the use (activities) and users, their lives and their

6. Architectural translations

Van Haaren, Hertzberger, Van Dorst, Jacobs

Jacobs	*Hertzberger*	*Van Dorst*	*Van Haaren*
			
> Clear demarcations *> Eyes on the street* *> Frequent usage* *> Mixed functions*	*> Clear demarcations* *> Relation to man* *> Polyvalence* *> Mixed functions*	*> Clear demarcations* *> Accessibility & Routing* *> Territoriality & Familiarity*	*> Clear demarcations* *> Privacy* *> Multiplicity*

Research conclusion

Understanding and importance of:

1. Territoriality	*2. Multiplicity*	*3. Accessibility*
		
Clear demarcations *Privacy zoning* *Boundaries* *Appropriation* *Familiarisation*	*Polyvalence* *Interpretation* *Affordances* *Accomodative potential* *Usage*	*Physically* *Optically* *Communication* *Social sequrity* *Routing*

Fig. 36: *Conclusions (own illustration, 2015)*

way of inhabitation. Architecture can not be determinant, but should be facilitative and provide for the possibility - of various activities and interpretations - to occur. It should leave space for the users to give 'infill' to the physical structures designed, by their way of interpretation, appropriation and inhabitation. The architect needs to understand the importance of these key characteristics that contribute to the creation of social space and should strive to design spaces that foster social interaction and liveliness, where exchange of knowledge, ideas and experience can take place and community can flourish, in a harmonious shared living environment.

3.2 Research to design

As mentioned in chapter 1.6 concerning the research approach, other research methods were used to gain a broader understanding of subjects involved. This includes casestudy visits, personal interviews, empirical research and a survey,.

Firstly, I investigated the incubator typology, in all its diversity, and made a selection of projects that I then visited. These include Het Gele Gebouw, Schieblock, Fenix Food Factory (all in Rotterdam), NDSM werf, De Ceuvel, Het Volkskrant gebouw, ACTA broedplaats en A-Lab (all in Amsterdam) (see Fig. 37 - Fig. 44). Aspects of interest and investigation were the user group(s), provided facilities, activities and spaces, the division between public/collective and private, its organisation, architectural articulation, sense of community, motivation, benefits and disadvantages. Obviously, not all can be grasped and measured as easily, therefore I tried to conduct interviews with the various parties involved. I was specifically interested in ACTA and De Ceuvel due to their hybrid composition of functions.

The ACTA incubator hosts workspace for 170 creative entrepreneurs, housing for 460 students, a collective inner courtyard and a public program at hotspot Radion. I conducted a personal interview with Marijke Eckhart of Urban Resort, the initiator of the project, as well as with Staas Lucassen, owner of Radion. Urban Resort acts as a link between the large amount of vacant buildings in Amsterdam and the creative sector looking for workspace and is now the largest incubator developer of Amsterdam. Radion is the cafe/restaurant/club within the ACTA building that functions as meeting place and cultural platform for a wide range of disciplines, hosting club nights, exhibitions, theatre, music and dance performances, symposia and debates, but also yoga classes, indoor markets, poetry, art and game nights.

De Ceuvel is a sustainable, closed-loop incubator that hosts a thriving community of creative and social enterprises. By recycling houseboats, cleaning the soil with plants, and using low-cost clean technologies to improve the sustainability of the development, the former shipyard is an example of creative, circular, urban community. Here I attended a symposium about sustainable businesses and got the possibility to question one of the young initiators as well as the person in charge of

Fig. 37: *Het Gele Gebouw (hetgelegebouw.nl)*

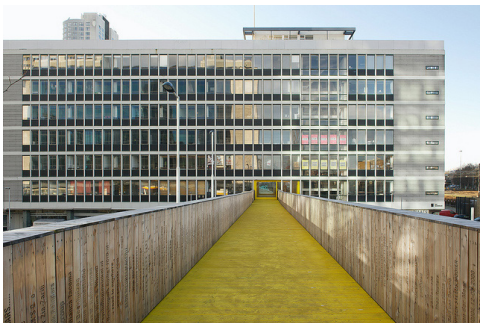


Fig. 38: *Schieblok (arch-lokaal.nl)*

Fig. 39: *Fenix Food Factory (d66rotterdam.nl)*

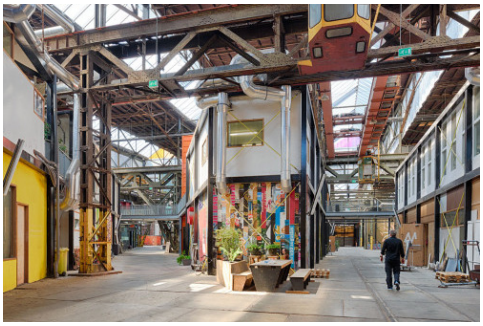


Fig. 40: *NDSM werf (evadeklerk.nl)*

Fig. 41: *De Ceuvel (modernehippies.nl)*

Fig. 42: *Het Volkskrantgebouw (arcam.nl)*

Fig. 43: *ACTA broedplaats (de-alliantie.nl)*

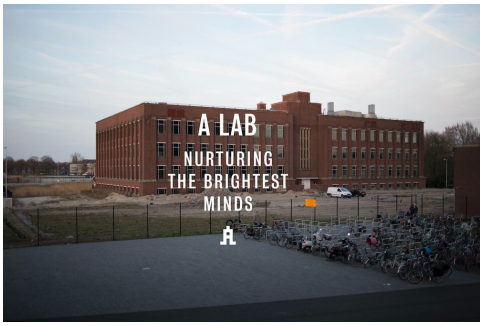


Fig. 44: *A-Lab (qoorts.nl)*

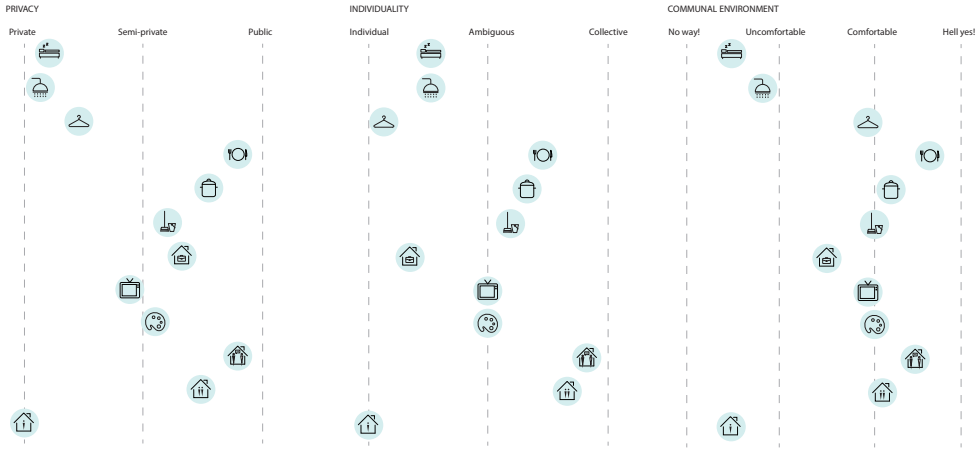
Cafe de Ceuvel. It was very interesting and inspiring to hear their stories, ambitions and motives for activating these abandoned physical environments to indeed bring people together, and their ways of achieving this goal.

As an investigation of shared small living I visited the Student Hotel in Rotterdam and questioned the staff about their facilities, activities, organisation, meeting places etc. Additionally I conducted an in depth interview with Veerle Donders of Zoku (to be completed in May 2016). Zoku is a new category in the hotel industry: a flexible home/office hybrid, also suitable for long stays, with the services of a hotel and the social buzz of a thriving neighbourhood. It facilitates global living and working for the traveling professional while also providing facilities and events for the local community. It combines small private space with communal social spaces that stimulate interaction and the creation of liveliness and community. With both examples I was specifically interested in their choice of facilities, design, organisation and financial considerations. For instance the choice to include a hotel owned gym or not, or to outsource this but provide space for it within the building. Furthermore I have attended a symposium about small living and investigated the tiny house movement, as well as looked into co-housing, specifically of Scandinavia, and various types of student housing and multigenerational housing.

To understand to what extent people are actually interested in sharing and which activities and spaces they prioritise and their degree of publicness, I composed a survey. This survey was specified at the target group - starters - suitable for the chosen project and location, Baankwartier in Rotterdam. This target group is selected since it has a limited budget, prefers a central location, consists of a 1 or 2 person household, is more open/accustomed to the sharing economy and is desired by the city of Rotterdam. The survey was aimed to find out which activities are carried out (in the dwelling environment as well as in the residential environment), if those activities are individual or collective, their degree of privacy and their priority. In addition, it questions which activities or facilities are desired by the target group and their willingness to share these. The results provide insight into the different daily life activities and desires of the target group. This knowledge forms the base for my program and informs me of the overlap in spaces and activities and their degree of publicness. I also adapted the survey to question a second target group - empty nesters (small household, still attracted by city liveliness and facilities) - to see to what extent these different groups could merge in my proposed project. Unfortunately, these target groups are not ideally compatible in the project aimed at small living combined with an incubator environment. When it comes to the preferred way of living, there is a certain overlap in interests between the targets groups, but the survey showed that in relation to starters, empty nesters have a stronger need for privacy and with it for more space. Through an additional in depth interview with one example of my target group I tried to gain more insight into the daily life routine and living wishes, complementary to the survey. The most interesting results of the survey can be seen in Fig. 45.

Survey results

Privacy



'Wishlist'

- Carsharing
- Workshop
- Roofterrace
- Garden
- Vegetable garden
- BBQ
- Library
- Recyclepoint
- Waste management point
- Multipurposeroom
- Studio / Atelier / Workspace
- Guestroom
- Home cinema
- Pool
- Sauna
- Creche

Input for program of requirements

Interest in contributing activities

−	+
	BBQ's with neighbours
	Babysit plants&pets
	Maintaining collective library
	Weekly neighbour coffeedate
	Exchange of knowledge & skills
	Collective tools in workshop
	Organising events (BBQ's, coffe's etc)
	Seperating personal waste
	Recycle your hand-me-downs
Babysit kids	
Be in charge of guestroom	
Be in charge of recyclepoint	

Fig. 45: *Survey infographics (own illustration, 2015)*

One question in the survey was: "Individually, it is not always possible to get everything you want. But as a group, this might be (financially) possible. Which communal facilities would you like to have in your dwelling or residential environment?" of which the answers resulted in the 'wishlist'. It surprised me how sustainable aware my target group is and the extent to which they prefer to have sustainable facilities (recycle point and management, veggie garden, workshop) rather than luxury facilities (home cinema, pool, sauna). Also, their interest to participate and contribute to a communal environment pointed out their social engagement, such as weekly coffees with your neighbours and regular BBQ's or events. It would however, be recommendable to outsource some tasks, such as maintenance of the recycle and waste management point, due to a lack of interest from the residents. The results of the survey have been a great input for my program of requirements that laid the base for my design.

As I see it, the investigations mentioned above combined with the examples used in chapter 2 to illustrate the set out theories form the link between my research and my design. As shown in Fig. 46, an architectural translation and interpretation of the research results was made as a framework of tools for the design. In the next chapter I will explain my design goal and proposal.

3.3 Design goal

I propose to design 'The Living Incubator'; a physical (architectural) environment that facilitates sharing, exchange and interaction in the everyday life. The aim is to create a building with a mixed program containing residential, recreational, commercial and office spaces. Minimal private (residential) space will be complimented with collective and public spaces, which provide room and flexibility for exchange to a diverse group of people with a similar mindset and a positive attitude towards a shared working and living environment. A place that facilitates social interaction, idea exchange and cross-fertilisation between different people and disciplines. The creation of social space and the optimisation of space, finance, resources, time and social possibilities through architectural design are the focal points. The knowledge gained by the research will function as my starting point and underlying framework for the design.

The design involves the transformation of two existing vacant buildings located within the Baankwartier, Rotterdam. Originally destined for demolition, the neighbourhood has been in decay since these plans were cancelled due to the economical crisis. The post-industrial neighbourhood now hosts an interesting variety of functions and people, but due to its introvert character and lack of public spaces and functions, these are disconnected and the place has accumulated a desolate atmosphere, attracting criminality. Densification of this inner-city location is desired and could add a boost to the neighbourhood. The 'Living Incubator' could act as a catalyst for its direct environment and create a place where the neighbourhood and its people come together.

Research to design translation

Research	*Design*	
Goals	***Tools***	
1. Territoriality	Materialisation	*Boundaries*
	Hierarchy	*Privacy zoning / Constrast*
	Intimacy	*Sense of belonging / Familiarity / Appropriation*
2. Multiplicity	Program	*Activities / Users*
	Time	*Usage / Organisation*
	Form	*Accommodative potential / Affordances*
3. Accessibility	Transparency	*Visual connections / Views*
	Apertures	*Physical connections / Transition / Interaction*
	Routing	*Guidance / Sequence / Encounters*

Fig. 46: *Translation from research to design*

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