

# **Trapphuset**

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**Introducing the space in between  
A-to-B**

Master Thesis 2019  
Olga Peterson & Ellen Ugglå  
Chalmers School of Architecture  
Department of Architecture and Civil Engineering

Examiner: Ola Nylander  
Supervisor: Kaj Granath

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**CHALMERS**  
UNIVERSITY OF TECHNOLOGY

Olga Peterson & Ellen Uggla

olga.peterson@telia.com  
ellen.uggla@hotmail.com

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Department of Architecture and Civil Engineering  
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# Abstract

## Can a stairwell be more than communication from A to B?

Stress has become a global issue in modern society. We work more, sleep less, and when the workday ends we celebrate our free time seated with our phone. The gains of our access to everyday technology and social media are many, but the con is that our 'old school' physical movement and social interaction is being lost. Human beings are social beings and social synergy is a cornerstone for our experience of happiness.

"The demand for innovative housing has been on the agenda for years, but the primary focus has been on the economy and cutting costs, and space, as much as possible" (Nilsson, pg 33, 2007). Answering the question of what innovative building really is is not easily done. Yet asking it starts the discussing of what housing could be. This master thesis will move beyond that initial focus and its economical 'truths' to find new ways of designing for housing. In every multi-family house one soon encounter the stairwell. We dare to claim that this is the space of the least design quality in modern residential building. It has the intriguing duality of being used by all residents, and yet belonging

to no one. The stairwell is a rational communication area of a design that hardly encourages interaction between neighbors. It's a dark and crowded space, and the elevator minimizes contact even more.

This thesis examines design solutions for public space together with studies of health and social behavior to pinpoint how the stair could benefit the residents' social experience and make collective well-being thrive. Three different design concepts are formulated from the theory and taken further into a design proposal.

The thesis presents seven different floor plans of different social intensity to the common stairwell. It explores the possibility to nudge the residents to choices that benefit their well-being and what space is needed for a social and functional stairwell. A synergy of design between buildings and design for well-being is presented, to make designers aware of the importance of common space in the residential building and what happens within it.

Keywords: nudge, behavior, well-being, atmosphere, residential building.

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# Glossary

## Atmosphere

The interplay between human and built environment.

## Body Systems

Groups of organs and tissues that work together to perform important jobs for the human body.

## Choice Architect

To influence choice by organizing the context in which people make decisions.

## Flourishing

A word that describe that you experience good mental health and that life treats you well.

## High Speed Society

The acceleration of modern society.

## Neuroscience

Study of human nervous system. Focus on the brain and how it influence cognitive function and behaviour.

## Nudge

To gently nudge individuals so they easier can make decisions that promote their well-being without restricting their freedom of action.

## Social Sustainability

Preserve and improve the quality of human life.

## Well-being

The state of being comfortable, happy and functioning well.

# Reading Guide

The thesis is divided into 5 chapters: The first part describes the background of the thesis, and why architects should look at the stairs. In section two, a background to how we can design for well-being in residential stairwells is formulated. Section three shows the conceptual aim of the design proposal. Part four presenting design ideas of what the stairwell could be. The Last chapter discussing the process, results and conclude.

## 1. INTRODUCTION

Describes the aim, purpose, and background of why architects should look at the stairwells.

## 2. BACKGROUND

Present a background of how the thesis design for well-being in residential stairwells.

## 3. CONCEPTUAL DESIGN

Introducing the aim of the design proposal.

## 4. DESIGN PROPOSAL

A catalog of ideas for what the stairwell and landings could be.

## 5. DEFINING

Discussion, analyze and conclusion of the thesis.

# Introduction

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## Background

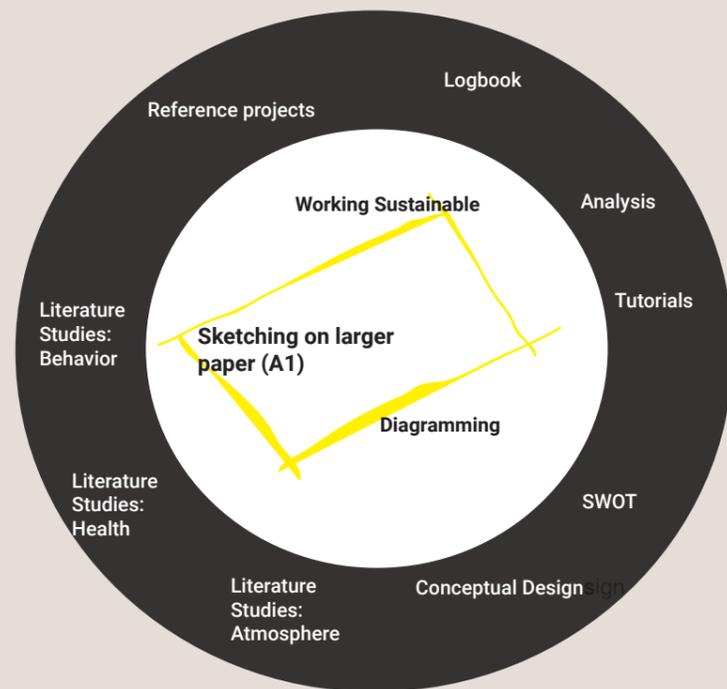
There is a lack of meeting space in residential building. The stairwell has developed from the airy and daylight space of representation into a tight and dark space of transport. It compels the residents to close physical contact without giving actual space to meet. Social synergies are of crucial importance for our experienced well-being. Today more people than ever suffer from depression, and studies show that stressed-out parents transfer a vulnerability for depression to the next generation. Thus, the issue of the absence of well-being will be even worse in the future (Hjärnfonden, 2017).

There is an opportunity to make the stairwell into a common space of interaction and movement. When people are physically present in shared spaces, social interaction between neighbors are possible (Gehl, 2011). By designing to boost social behavior and physical movement, the residents' well-being could be improved already when walking through the front door (Steemers, 2015).

## Research Questions

How can communication areas in residential building create well-being?

How could the stairwell be used for other activities than bringing people from A to B?



## Purpose and Aim

The aim of this master project is to nudge residents within the sequence of coming home to choices that benefit their well-being. The purpose of the thesis is to show that the design of shared residential space can make an effort for a happier and healthier urban population to come. When

the environment boosts social connections, physical movement and spatial presence it actualizes a neighborhood of social synergies.

## Methods

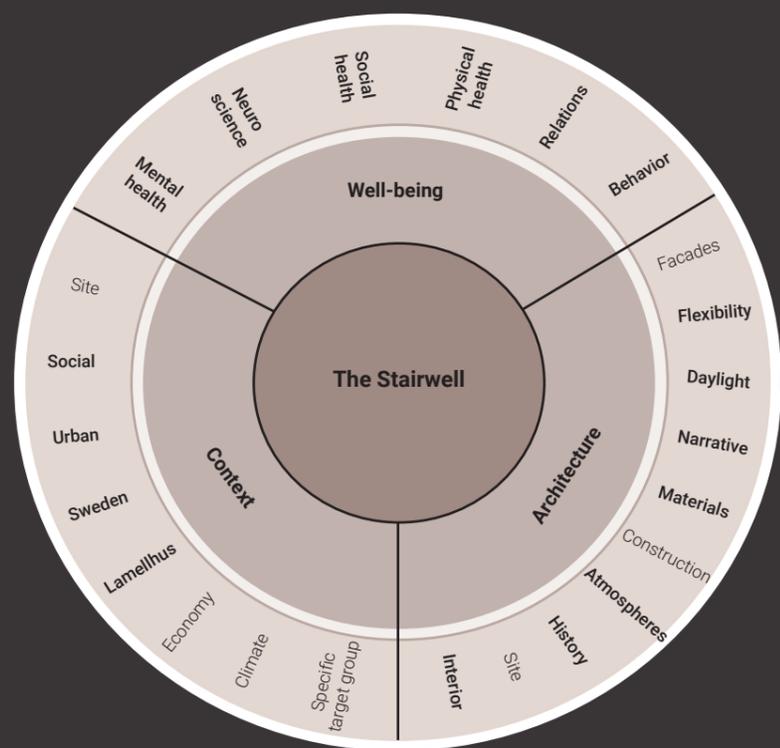
As a team, we have discovered our way of working. The main method used throughout the thesis is extensive literature studies alongside conceptual drawings on A1 format. It works as a common sketchbook, where we gather impressions from theory with design ideas, and has enabled us to share our creativity, communicate better and gain inspiration from each other's ideas. When designing for well-being, we found

it important to also work sustainably. Therefore we have kept our thesis to office hours with a goal of cutting down on late nights at the drawing table and encouraged breaks of social and physical activity.

This thesis is built up for research for and research on design.

DISCOURSE DIAGRAM:

The discourse diagram shows our framework in themes.



## Delimitation

The focus of the project has been to create a stairwell that contributes to strengthening three factors important for well-being; social interaction, physical activity, and presence. Can the space of the stairs provide something more than communication from A to B?

What it is:

**An idea and discussion base for what the stairwell could be.** The thesis shows what a stairwell in an apartment building be, and aims to raise discussion about how we design our shared communication areas in residential buildings today. It provides different possibilities and could be used as a catalog of ideas to make stairwells into more social spaces.

**A sequence from the entrance to the apartment door.** The architectural delimitation is framed within the sequence from the entrance hall to the private apartment door. The project highlight the importance of defined spaces, good atmospheres, and rich materiality of the communication space.

**Research for and on design.** The thesis has a foundation of relevant theory, that is followed by a design proposal that incorporates findings of social, health and atmosphere theory.

**A target group that use the stairs.** Since the residential stairwell is a space that all pass by when going to work, school, or other activities, the target group is people that live in an apartment building of an urban setting in Sweden.

**Three main pillars.** The project is framed around three main pillars; social context, well-being, and architectural qualities. The discourse diagram on the left side shows the specific themes the thesis touch upon.

# Theory

The subject of architecture, health and behavior is an interdisciplinary subject. We have tried to limit ourselves to the themes of behavior science/behavior architecture, medical science, and architecture and atmosphere.

## **BEHAVIOUR SCIENCE & BEHAVIOR ARCHITECTURE**

*(Interplay between people)*

This literature study is based on how people behave in relation to each other and to the built environment.

(Thaler, 2009; Steemers, 2015; Gehl, 2011; Olsson 1997).

## **HEALTH SCIENCE**

*(The human body)*

The literature study is based on the relation between the human body, health and built environment.

(Gospic & Sjövall, 2016; Nada et al., 2013; Hjärnfonden, 2017; Sternberg & Wilson, 2006).

## **ARCHITECTURE & ATMOSPHERE**

*(Architecture and the user)*

The literature study is based on how architecture can influence our emotions and well-being.

(Böhme, 2017; Channon, 2018; Gehl, 2011; Griffero, 2010; Lupton & Lipps, 2018; Sternberg, 2010; Sussman & Hollander, 2015; Banaei et al, 2017; Havik et al., 2013; Shemesh et al, 2016; WELL, 2014).

**“Although it is entirely possible to design a research study without aligning it with a particular school of thought, virtually every research study is framed by a system of inquiry, wheter explicitly stated or not, that implies basic assumptions about the nature of reality and knowledge.”**

(Wang & Groat, 2013)

# Main Theory

## **Nudge: Improving Decisions About Health, Wealth, and Happiness**

By Richard J. Thaler and Cass Sunstein, 2009.  
Thaler won the Nobel Prize in economics 2017.

### **PURPOSE OF THE ARTICLE**

Thaler and Sunstein introduces *Nudging* as a way to make it easier to make choices that are beneficial for the user. It could be understood as 'choice architecture' that alters people's behavior in a predictable way without forbidding any options. The freedom to choose does remain, as it is the best safeguard against bad choice architecture. (Thaler & Sunstein, 2009)

### **WHY IT IS RELEVANT TO OUR THESIS**

The notion of nudging guides the user to experience the architecture that benefits your well-being and by that adds a dimension to the design. Because even though we may foster the false assumption that almost all people, almost all of the time make choices that are in their best interests, or at least are better than the choices made by someone else, that is not the case. Nudging is a way to guide to a higher form of well-being, without shutting off the choice to continue your usual routine. And in that way, it makes our design even stronger.

## **Architecture for Wellbeing and Health**

Research Article by Professor Koen Steemers, 2015.

### **PURPOSE OF THE ARTICLE**

The author outlines the definitions of well-being and health, and determine both potential and opportunities for a housing design that benefits its user's well-being. Steemers introduces "5 ways to well-being" and establish design examples that work proactively to reduce stressful environments and make them into health and creative spaces. (Steemers, 2015).

### **WHY IT IS RELEVANT FOR OUR THESIS**

The article discuss the relation between architecture and residents well-being. The author describes health as a societal matter. Prevention is therefore as important as cure, and the built environment is a long-term solution that makes us stay healthy in our homes and communities. Steemers argue that "design should 'nudge' users into positive behaviors by providing a range of suitable stimuli for behaviour change." (Steemers, 2015). Though, there is an issue of the quantitative and qualitative research on well-being. Steemers points out good example on how to design both at housing and neighbourhood scale.

## About the authors

During our first year of the Master program "Architecture and Planning Beyond Sustainability" we worked together on a housing project for Orust Municipality. We came to realize that we make a good team with the same goal for a humanistic and sustainable architecture. With this common core but with different ways of addressing architecture, we aim to have a broad and complex design proposal that touch upon the user, the artistic experience and social sustainability.



*I am passionate about architecture that puts the human at the focus. I believe in architecture that is accessible for all, local and sustainable.*

### Olga Peterson

**Masterprogram MPDSD**  
Chalmers University

**Internship**  
Tirsén & Aili Arkitekter  
2016-2017

**Bachelor of fine arts**  
main field of study: architecture  
at Umeå School of Architecture  
2013-2016



*Architectural value to me is designing space with a social starting point for a better community and a better tomorrow. I believe this to be the true power of architecture - the way architecture can be the game changer.*

### Ellen Uggla

**Masterprogram MPDSD**  
Chalmers University

**Internship**  
Brunnberg & Forshed Arkitektkontor  
2016-2017

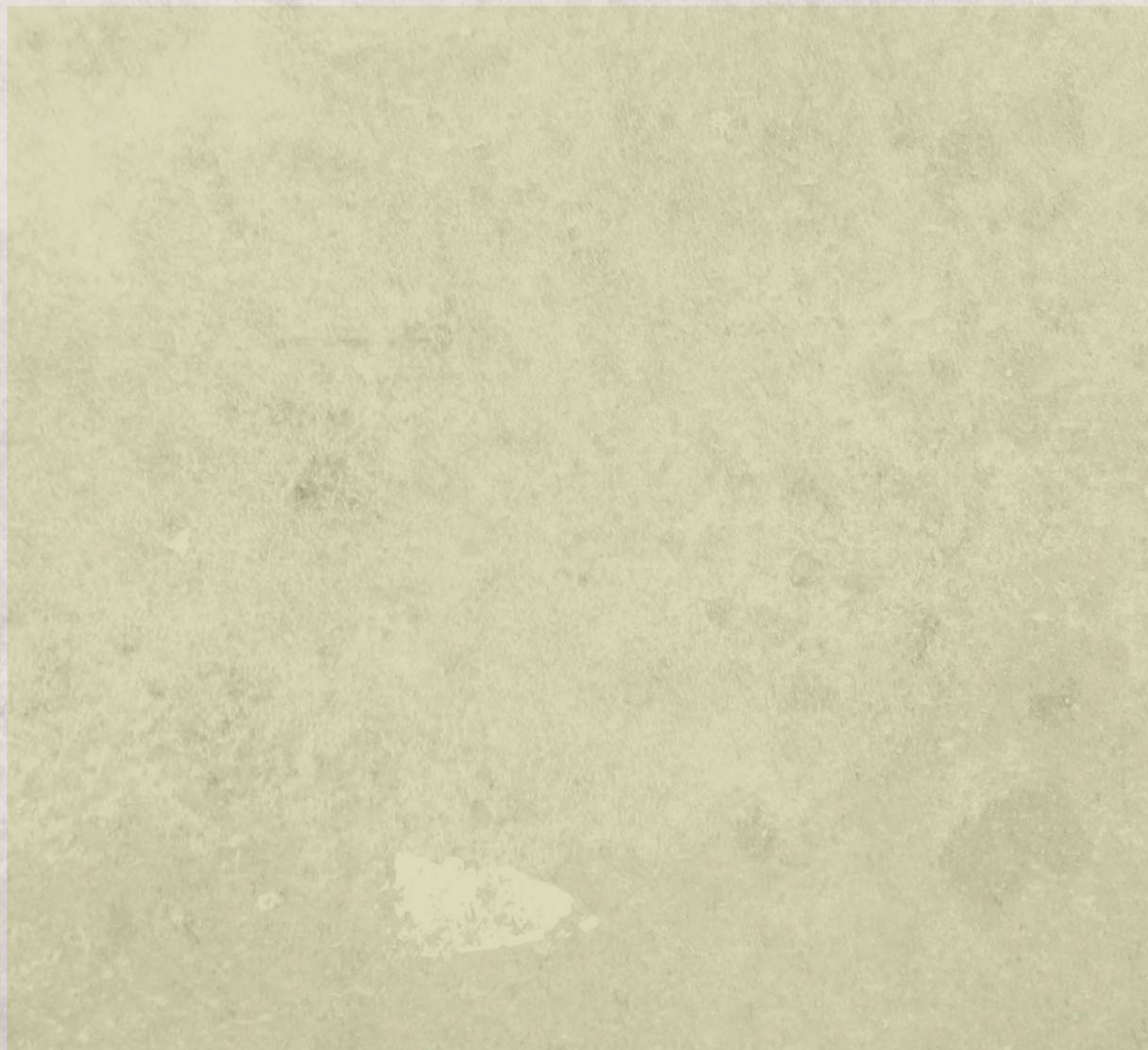
**Bachelor of fine arts**  
main field of study: architecture  
at Umeå School of Architecture  
2013-2016

## Context

The thesis put its emphasis on the social context. The stairwell is a space of movement. Neighbors meet here on a daily basis, but note that the space is focused on 'passing by' and not 'meeting'. The stairwell is a natural meeting point but is not treated as such in contemporary design. The thesis will show how social connections can make residential building a better space for its users.

The physical context derives from an urban setting in Sweden. The framework is the Swedish "lamellhus", an apartment building of 12 meters depth and 6 floors tall. The stairwell serves two apartments in each direction/floor and is repeated throughout the building. The building has two facades of a different character, one to an active street setting and one to an enclosed courtyard of calmer character. At ground level, the facade facing the street holds shops and stores, while the ground level to the yard holds apartments.

The thesis analyses how we can combine function and shared space in residential housing today to meet the social needs of the dweller. Despite the fact that the stairwell is the natural meeting point, it is passing us by.



## Why stairs?

The stairwell belongs to no one, yet it is used by all countless times throughout the day. Each morning it marks the beginning and of the workday, each night the end. It is a space that is present in all residential architecture, but where the least design are put into it. The space is primarily dimensioned for transport, and often lacks quality and thought of informal meetings between the neighbors. On the same time, the cutback of square meters compel the users to close physical contact, without giving space to meet. (Olsson, 1997)

In spite of the poor conditions, some interaction manages to occur in the stairwell. In between activities, on the way to something else, is where residents meet (Gehl, 2011). Brief small talk between two neighbors waiting for the elevator is an example. Encounters of such a character may seem like empty phrases, but in fact, it is what gives the dwellers a sense of belonging to a community. It gives the safety of knowing your neighbors, getting help when needed,

and a daily share of social interaction. It provides a sense of safety and well-being to the neighbors. And the brief encounters is one important cornerstone in the foundation of the social neighborhood (Olsson, 1997).

What would happen if ambition was put into the stairwell? If the design meant for the residents to meet, feel better, and appreciate their stairwell as a space that extends outside their apartment and adds quality to their home environment? Today the space for social interaction of residential buildings are assigned to the courtyard. There are many good examples of yards with outdoor furniture, sun decks, and urban gardening. It works perfectly well from the spring into early autumn, but for dark and cold months in Scandinavia, there is a gaping void for spaces of interaction between residents. What if the stairwell was to fill that void with sheltered spaces where the meeting between the neighbors was given space. Could we reach social sustainability by climbing the stairs?

# A Brief History of Stairs

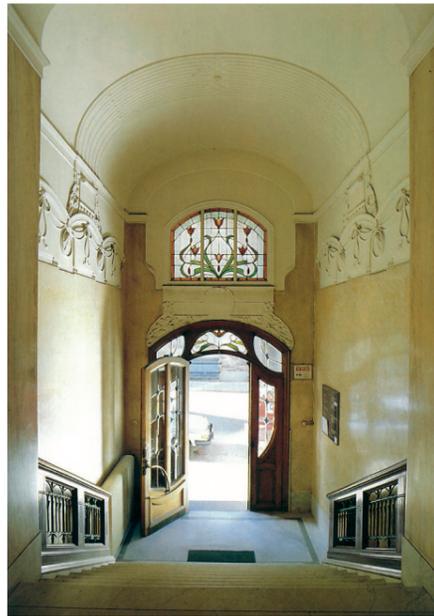


Figure nr 2: "Wallingatan 37, Stockholm" (Innanför Portarna, 1997).

## 1890-1910

The residential housings became taller, with more floors and a wider dimension than before. The landings held one or two apartments on each floor, and tall windows provided light into the apartments' windowless hall. An additional staircase going from the yard to the kitchen were common for servants and suppliers. Because of the tall ceiling height, these stairs were not only narrow but also steep (Antell, Cramér, Mandén-Örn, Wisth, 1997).

The design of different staircases for different people resulted in a great deal of the buildings being communication areas. The stairwell and entrance hall were representative spaces, with expensive materials, ornaments, and painting. The level of decoration indicated the wealth of the house. (Ohlsson, 1997; Antell et al, 1997).



Figure nr 3: "Skånegatan 107, Södermalm" (Innanför Portarna, 1997).

## 1930

The functionalism arrived at the stairwell. The materials became lighter, the windows bigger, and the decorative wall paintings and ornament disappeared (Olsson, 1997).

The architecture should no longer differentiate between the different social classes. Stairwells without windows start to appear at this time and became more common in the '40s and '50s (Antell et al, 1997).

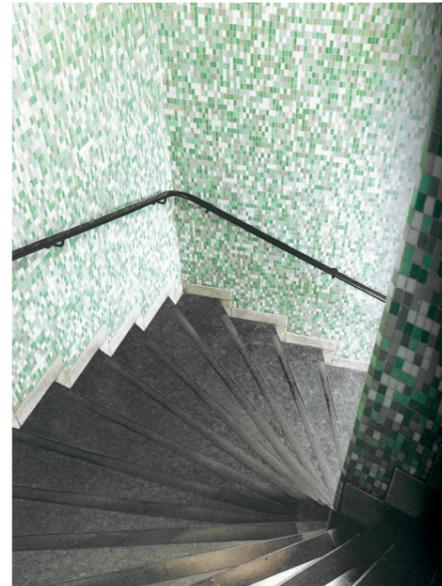


Figure nr 4: "Trapphus 1 (Byggnadsvård för lägenheter, Myrehed, 2018).

## 1940-1950

The Swedish Welfare state came to influence the stairwell too. Originally, the housings built during these years held a light and airy stairwell, where the residents passed the apartments on each floor to reach the highest floor. As the most architecture of the '50s, the stairwells were playfully designed, with more color and decor than the ones before. The floorings were marble or cement terrazzo (Olsson, 1997; Antell et al, 1997).

With the new Planning and Building regulation in 1987, the demand for accessibility became stronger. Many housing companies needed to add elevators when refurbishing the buildings to gain favorably loans, and the stairs were cut to fit the elevators. Though it indeed enabled the accessibility at one end, the accessibility of the stairs was impoverished and spanned 60 cm across, which means the neighbors could not pass it two at a time, or carry goods in each hand when walking the stair. The elevator was the priority, and the stairwell was cut back as a social space (Olsson, 1997).



Figure nr 5: "Trapphus 2" (Byggnadsvård för lägenheter, Myrehed, 2018).

## 1960-1970

The dark era of the stair begins. During the years of the Million Programme (1965-1975) 100.000 dwellings were to be built each year. Most of them held a narrow, standardized stairwell of scarce architectural quality. The elevator was the main means of transportation. The entrances were still lit by daylight, but the spaces often deep and dark.

The landings became closed spaces between elevator and staircase, and the neighbors of different floors lacked a common meeting space in the stairwell (Olsson, 2007; Antell et al, 1997).



Figure nr 6: "Trapphus 3" (Byggnadsvård för lägenheter, Myrehed, 2018).

## 1980-1990

The stairwell and entrance regain its role as a representative for the building. More care is put into it, with the daylight factor increasing and the function as a semi-private space for the residents resulting (Olsson, 1997).

# Paimio Sanatorium

1933 - Finland - Alvar Aalto

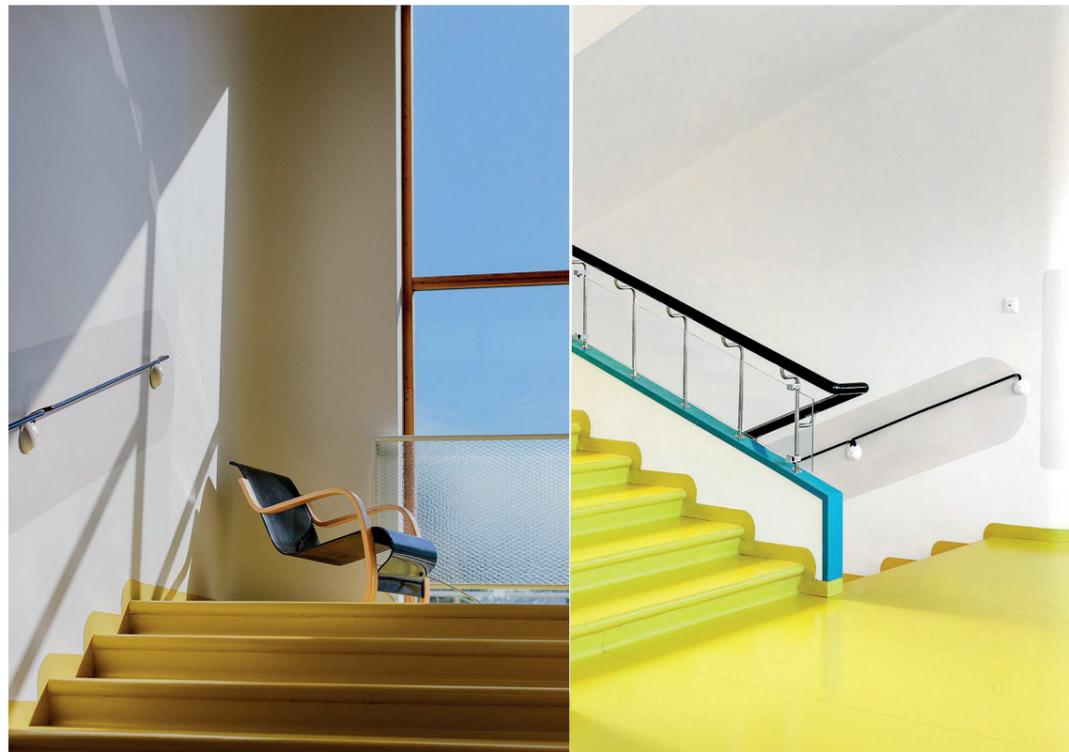


Figure nr 7: "Stairwell in Paimio Sanatorium" (Kesäläinen, 2018).

Figure nr 8: "Stairwell in Paimio Sanatorium" (Kesäläinen, 2018).

The architect Alvar Aalto knew how to activate the staircase. In his way of working with volume, daylight, color, and functionalistic simplicity, a defined stairwell is created. The project shows how just a few architectural qualities can activate a space. With its tall windows, contrast-colored window frames, and verticality, the Paimio Sanatorium is an inspirational reference of stairwells where architectural ambition are put into the often neglected space. When done so, architecture has the power to activate a communication area, making it something more than mere transportation.

# Chichu Art Museum

2004 - Naoshima - Tadao Ando

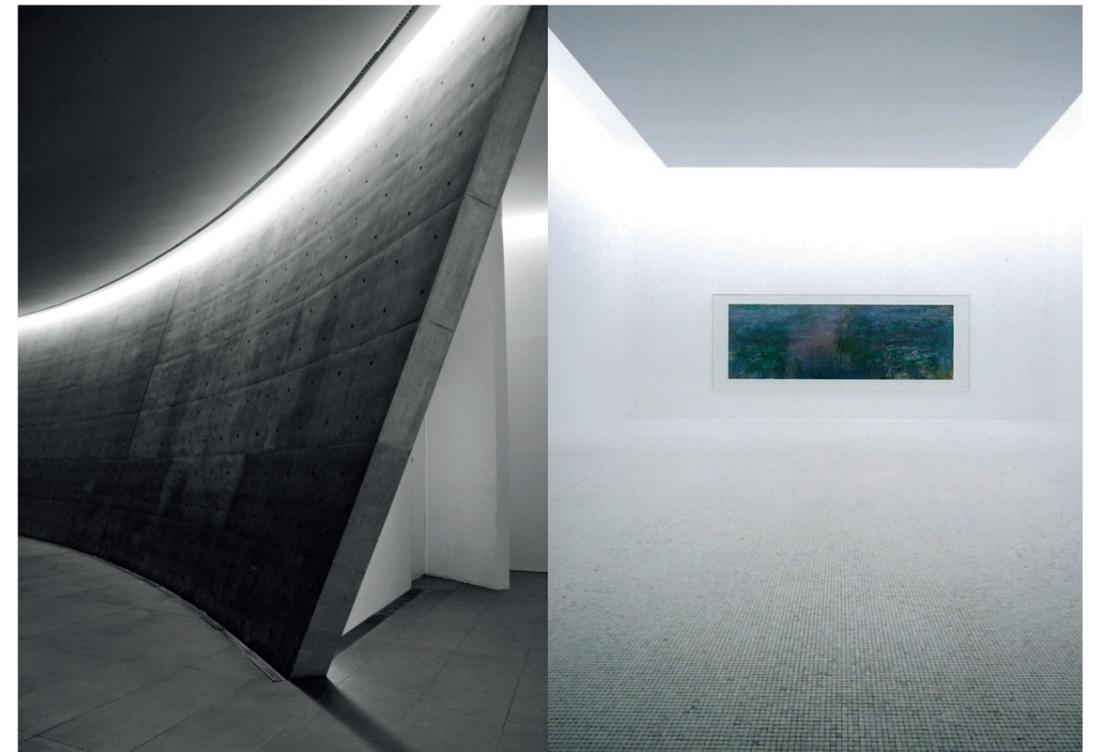


Figure nr 9: "Curved Wall" (Corbetta, 2013).

Figure nr 10: "Exhibition Space" (Benesse Art Site Naoshima, 2018).

Chichu Art Museum is an exhibition space of the highest architectural quality. The architect has done beautiful work in making the communication areas a narrative to remember. By adding views, light, and curvature, the interior atmosphere starts to become like art. The simplicity of architecture works hand in hand with the natural environment outdoors. Tadao Ando inspires us in his way of combining architecture and art in order to create an essential experience for the visitors.

# HSB Studio 1

2016 - Göteborg - Johannes Norlander Arkitektur

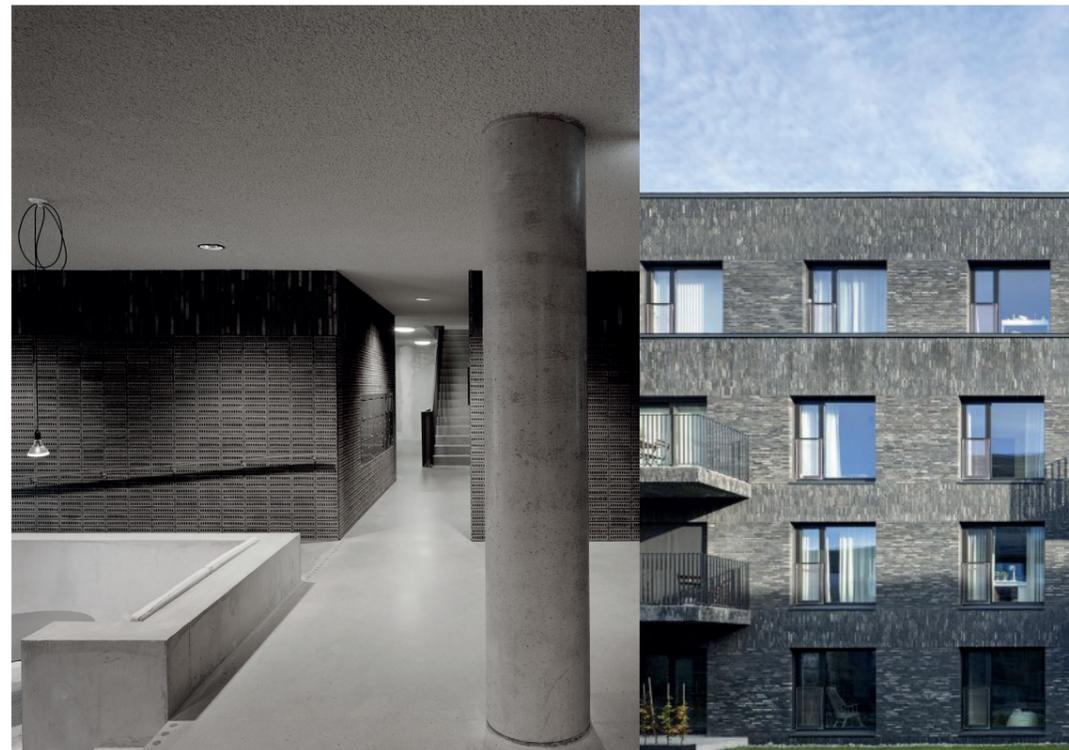


Figure nr 11: "HSB Studio 1 Örgryte Torp" (Norlander, 2016).

Figure nr 12: "HSB Studio 1" (Celandar, 2016).

In this modern housing, the entrance hall becomes the first architectural impression. The entrance is a solid space with great volume, tactile materials, views, finesse and classic features like seating areas and a common room. The more toned down tones and well-thought material choices make the entrance hall feel exclusive. However, the staircases do not appear until you enter further into the room, then the staircase becomes visible before the elevator. The architect has emphasized the entrance hall in a beautiful way.

# Solhusen in Gårdsten

2000 - Göteborg - Nordström Kelly Arkitekter



Figure nr 13: "Social odling i tvättstuga" (Byggkontakt magazine, 2017).

Figure nr 14: "Trygghetsgruppen i Gårdsten" (Byggkontakt magazine, 2017).

"Solhusen" is a renovation project of four million program houses in Gårdsten and was completed in the year 2000. These houses were retrofitted with sustainable energy solutions that were largely based on solar heat. The laundry room was moved to the ground floor and large windows were installed. Large windows created heat and the laundry room is now also used as a greenhouse. All apartments have a small gardening area and the laundry room becomes a gathering point in the house. This project shows that a necessary activity (laundry) can turn into something of a more social character.

# **Background**

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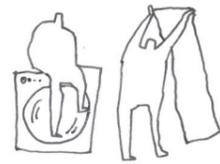
## Necessary activities



come home



run errands



do laundry



vertical transport from A to B



pick up the mail



park the bike

## Optional activities



enjoy a view



read a book



choose the stair over the elevator



fix the bike



be outdoors



do yoga

The architect Jan Gehl describes different activities that take place in public space as a concept of three components (Gehl, 2011).

The first component is the necessary activities. These are activities of functional character that takes place regardless of the quality of the space. Activities of such are for instance waiting for the bus or running errands.

The second component is the optional activities. These activities depend to a degree on what the place offers, how it makes the user feel and behave. This could be understood as activities of recreational character. An example is enjoying the sun on a bench or taking a walk to get some fresh air.

The third and final component is the social activities. These activities are resulting from the other two activities. It occurs spontaneously when people meet in a space. Examples of these activities are greetings, seeing and hearing other people, conversations, communal activities and kids playing.

Thus, the key for a social space is that the better the space is, the more optional activity will occur, and the longer the necessary activities will last. That combination gives bigger opportunities for the resulting social activities to occur in the public space (Gehl, 2011).

## Social activities



meeting neighbors



have a fika



relax & be mindful



throw a party



discuss books



help a neighbor out

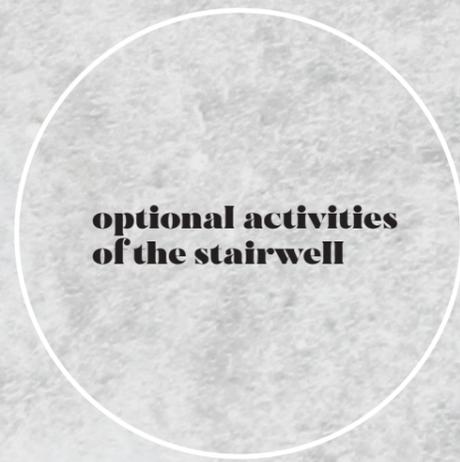


share knowledge & tools

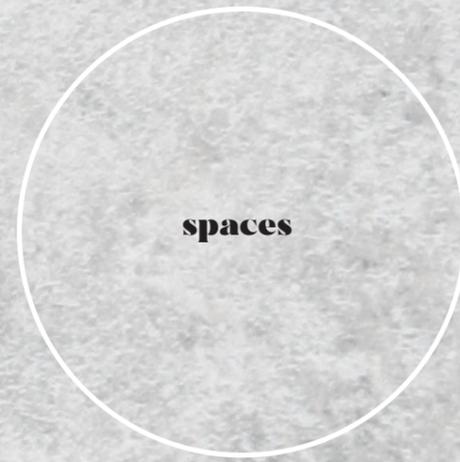
## defining spaces



Come home  
Vertical transport from A to B  
Pick up the mail  
Park the bike  
Run errands  
Do laundry



Choose the stair over the elevator  
Read a book  
Fix the bike  
Be outdoors  
Enjoy a view  
Work by the stairs  
Do sports

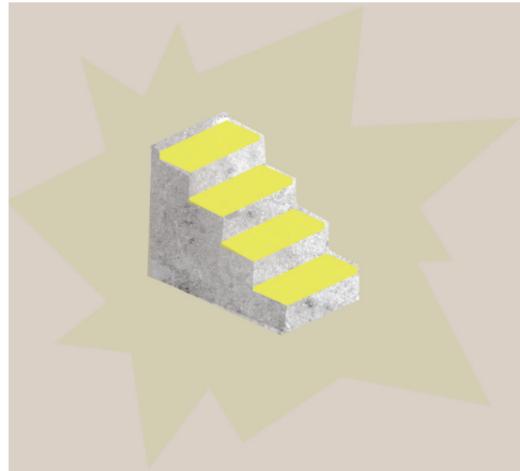


Common Entrance  
Workshop  
Post Hall  
Pass-By-Library  
Office  
Wintergarden  
Laundry Room  
Common Studio



A. Meeting neighbors  
B. Sharing knowledge & tools  
C. Having a fika together  
D. Relaxing & being mindful  
E. Discussing books  
F. Throwing a party  
G. Helping a neighbor out  
H. Linger in shared / semi-private spaces

## Common Entrance



**Aim:** Instantly, make the stairs the center of attention.

**Space:** A beautiful entrance hall that guides the residents to the stairs, to promote walking and make the residents leave the stress from the day behind.

### Necessary activities

Come home  
Vertical transport  
Park the bike

### Optional activities

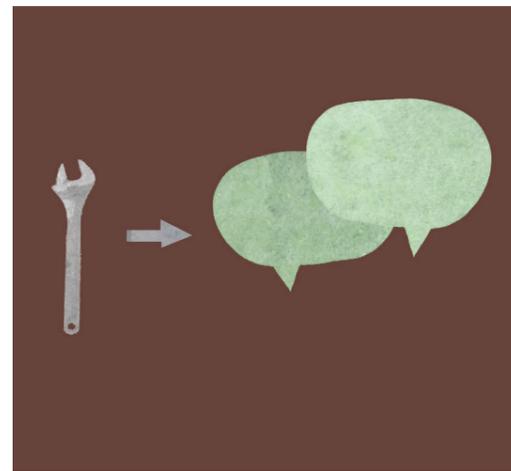
Choose the stair over the elevator

### Social activities

A. Meeting neighbors  
D. Relaxing and being mindful

H. Linger in shared / semi-private spaces

## Workshop



**Aim:** Add practical experience to the staircase.

**Space:** Make the entrance extend into a workshop of functional and social qualities.

### Optional activities

Fix the bike  
Work by the stairs  
Enjoy a view

### Social activities

A. Meeting neighbors  
B. Sharing knowledge and tools  
D. Relaxing and being mindful  
G. Helping a neighbor out  
H. Linger in shared / semi-private spaces

## Post Hall



**Aim:** Propose the mail delivery as the natural meeting point.

**Space:** A daylit space where getting the mail is the perfect subterfuge for a lingering conversation.

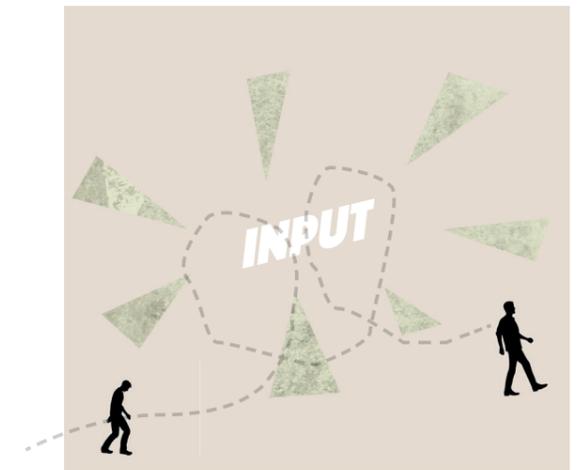
### Necessary activities

Pick up mail

### Social activities

A. Meeting neighbors  
H. Linger in shared / semi-private spaces

## Pass-By-Library



**Aim:** Make the staircase a place of input of things that benefits well-being.

**Space:** A library that gives input of culture and discussion in closeness to the staircase.

### Optional activities

Read a book  
Stair > elevator  
Enjoy a view

### Social activities

A. Meeting neighbors  
B. Sharing knowledge and tools  
D. Relaxing & being mindful  
E. Discuss books  
H. Linger in shared / semi-private spaces

## Office



Aim: Opportunity to work from the staircase.

Space: A share and semi-private workspace in the stairwell.

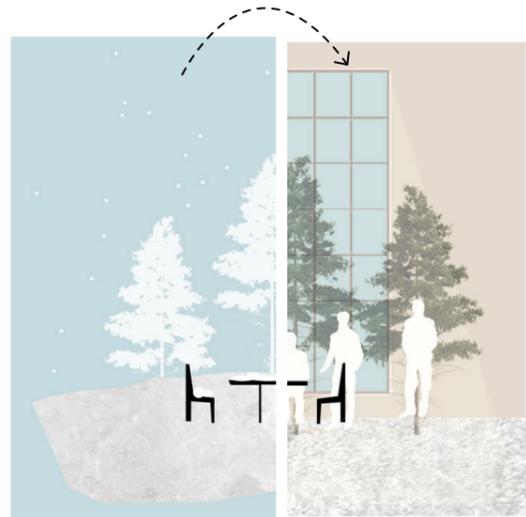
### Optional activities

Work by the stairs  
Read a book  
Enjoy a view  
Be outdoors

### Social activities

A. Meeting neighbors  
B. Sharing knowledge & tools  
H. Linger in shared / semi-private spaces

## Wintergarden



Aim: Add a calm refuge to the staircase

Space: A space that replace the courtyard during the winter season. Height, maximum daylight, gardening and space to reboot.

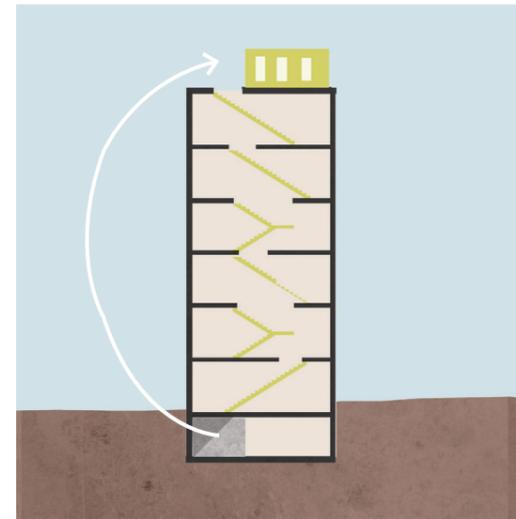
### Optional activities

Enjoy a view  
Be outdoors  
Do sports

### Social activities

A. Meeting neighbors  
D. Relaxing & being mindful  
H. Linger in shared / semi-private spaces

## Laundry Room



Aim: Celebrating a necessary activity!

Space: A daylit laundry space with a view and great indoor and outdoor qualities.

### Necessary activity

Do laundry

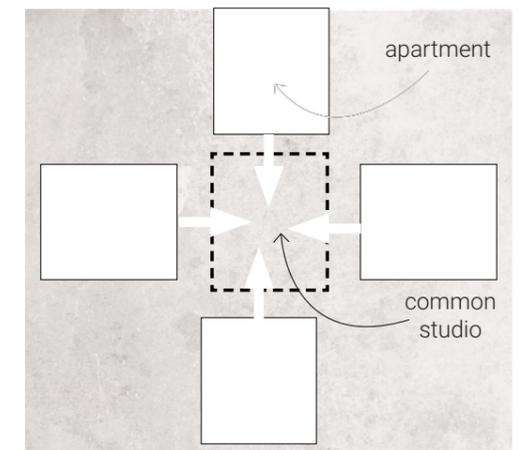
### Optional activities

Enjoy a view  
Be outdoors

### Social activities

A. Meeting neighbors  
D. Being mindful  
H. Linger in shared / semi-private spaces

## Common Studio



Aim: Extending the apartments private & social zone to the staircase.

Space: A shared studio that forms an extended livingroom.

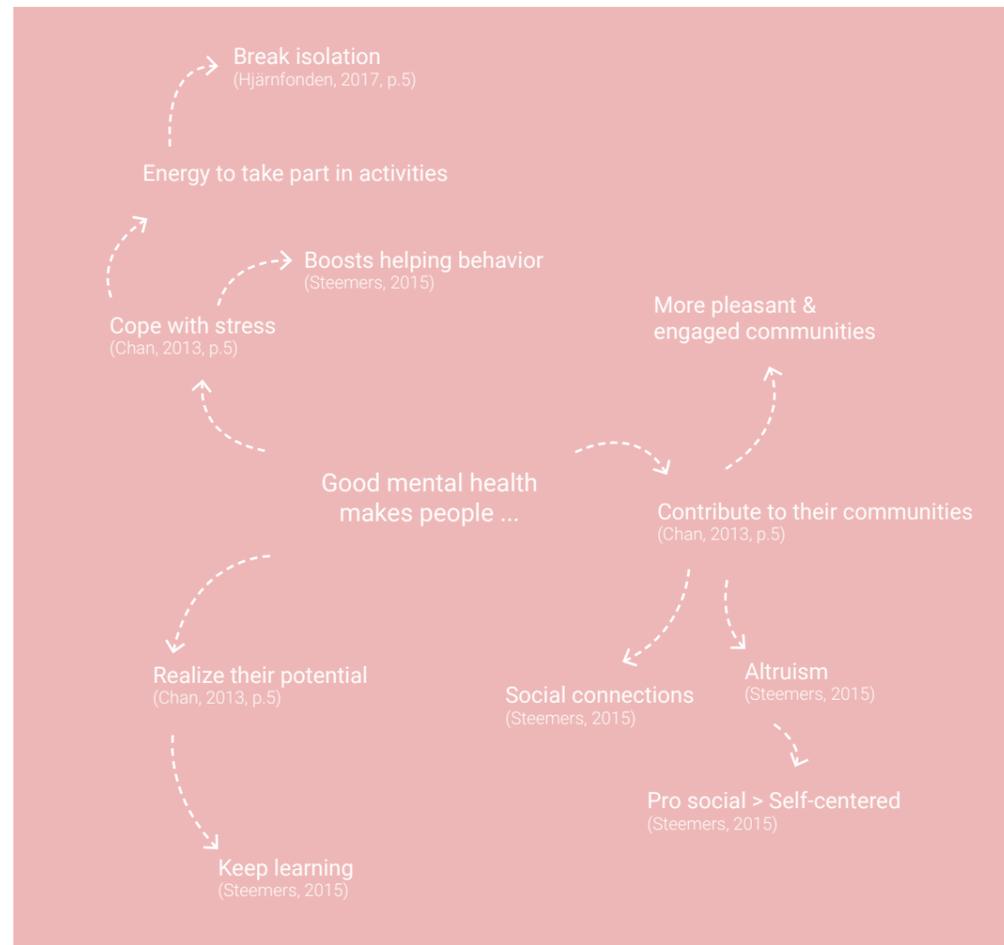
### Optional activities

Enjoy a view  
Be outdoors

### Social activities

A. Meeting neighbors  
C. Having a fika  
F. Throw a party

# Social Sustainability



As we want a design that nudge the users into a lifestyle of more well-being we need to find out where the opportunities are to offer people the possibility to improve their well-being.

The architect and professor of Sustainable Design Koen Steemers has defined five ways to attain well-being by design.

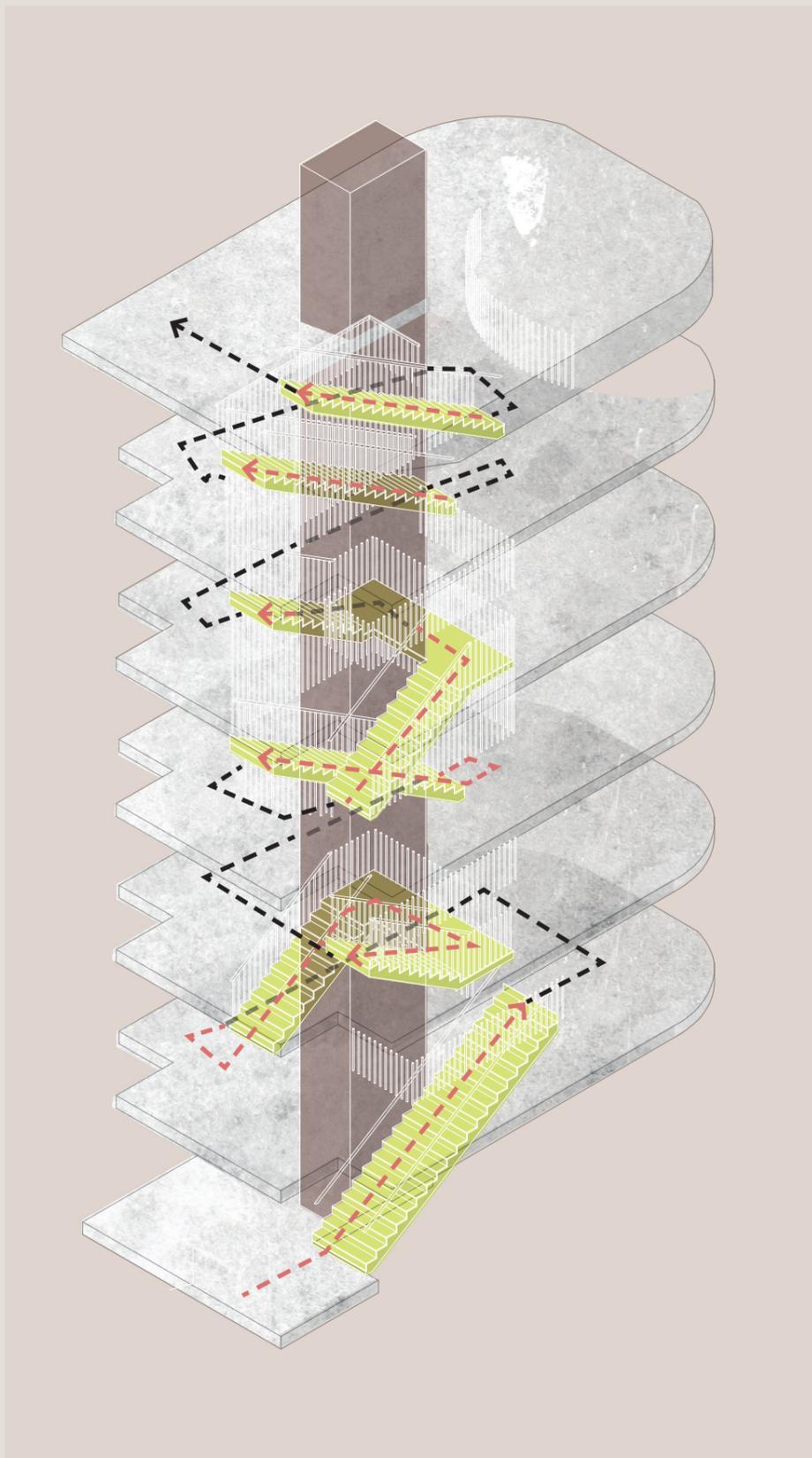
- 1. Connect.** Social connections are an important factor for our experienced well-being.
- 2. Keep Active.** Physical activity reduces mental and physical ill health.
- 3. Take notice.** Being mindful and paying attention to the present reduces stress, anxiety, and depression.
- 4. Keep learning.** Aspiration is something that starts early in life and gives better well-being later in life. It is important to keep learning new things and challenge your cognitive skill.
- 5. Give.** Altruism, and boosting a pro-social behavior rather than a self-centered one (Steemers, 2015).

## Happiness, behavior and social interaction

Good mental health is beneficial not only for the individual but for our society at small and big scale. For instance, it makes people better at coping with stress and to contribute to their communities. These behaviors, in turn, trigger multiple positive behaviors. For example, we can enjoy more pleasant and engaged neighborhoods when we experience well-being that gives us the energy to contribute to our community (Steemers, 2015).

There is a connection between happiness and environments that guide encounters and movement (Steemers, 2015). Environments of this quality boost social capital, social responsibility, and health equity. When tied to residential housing we can start positive circles of social sustainability every time we walk through the front door.

The knowledge about sustainable building is expanding and today we have a strong development on housing that is built with sustainable materials, transports, and operation. But humanity focus has not kept up with this development (International WELL Building Institute, 2014). By applying a holistic design approach instead of focusing on single parameters, we can support human behavior that benefits well-being (Steemers, 2015). Thus, this thesis' design focus lies on how the built environment makes us feel, express and behave.



Axonometry of the stairwell

## How Can Architecture Nudge Behaviour?

**“People can be greatly influenced by small changes in the context.”**

(Thaler & Sunstein, 2009, p. 2)

**As architects we know that there is no such thing as a ‘neutral design’. But it doesn’t stop at building scale; when we design buildings we are in fact designing choice too.**

The term nudge was introduced by Richard Thaler and Cass Sunstein in 2008. It can be described as libertarian paternalism, where a choice architect designs the context to alter people’s behavior in a predictable way without forbidding any options or changing the economic incentives drastically. An example of nudge is arranging a store with fruit at eye level and junk food higher up on the shelves. Significantly more (up to 25 %) will choose fruit over junk food by this arrangement. The freedom to choose by oneself is still there, but takes conscious action to make that choice. This is nudging (Thaler & Sunstein, 2009).

Once we have made a decision we tend to keep that decision and its behavior. And if there is a default option, we are far more likely to stick with that than even make a decision of our own. Thus, the power of inertia can be used. By choosing the best option as the default option we have ourselves a nudge (Thaler & Sunstein,

**“Never underestimate the power of inertia.”**

(Thaler & Sunstein, 2009, p. 8)

2009). Humans are easily influenced by the behavior and statements of others. We mainly learn from each other. As choice architects we therefore need to appreciate social influence as the most effective way to nudge, and encourage socially beneficial behavior and avoid behavior that conflict with this. The social nudge benefits from being a positive and injunctive norm rather than a negative and informational one (Thaler & Sunstein, 2009).

### When do we need a nudge?

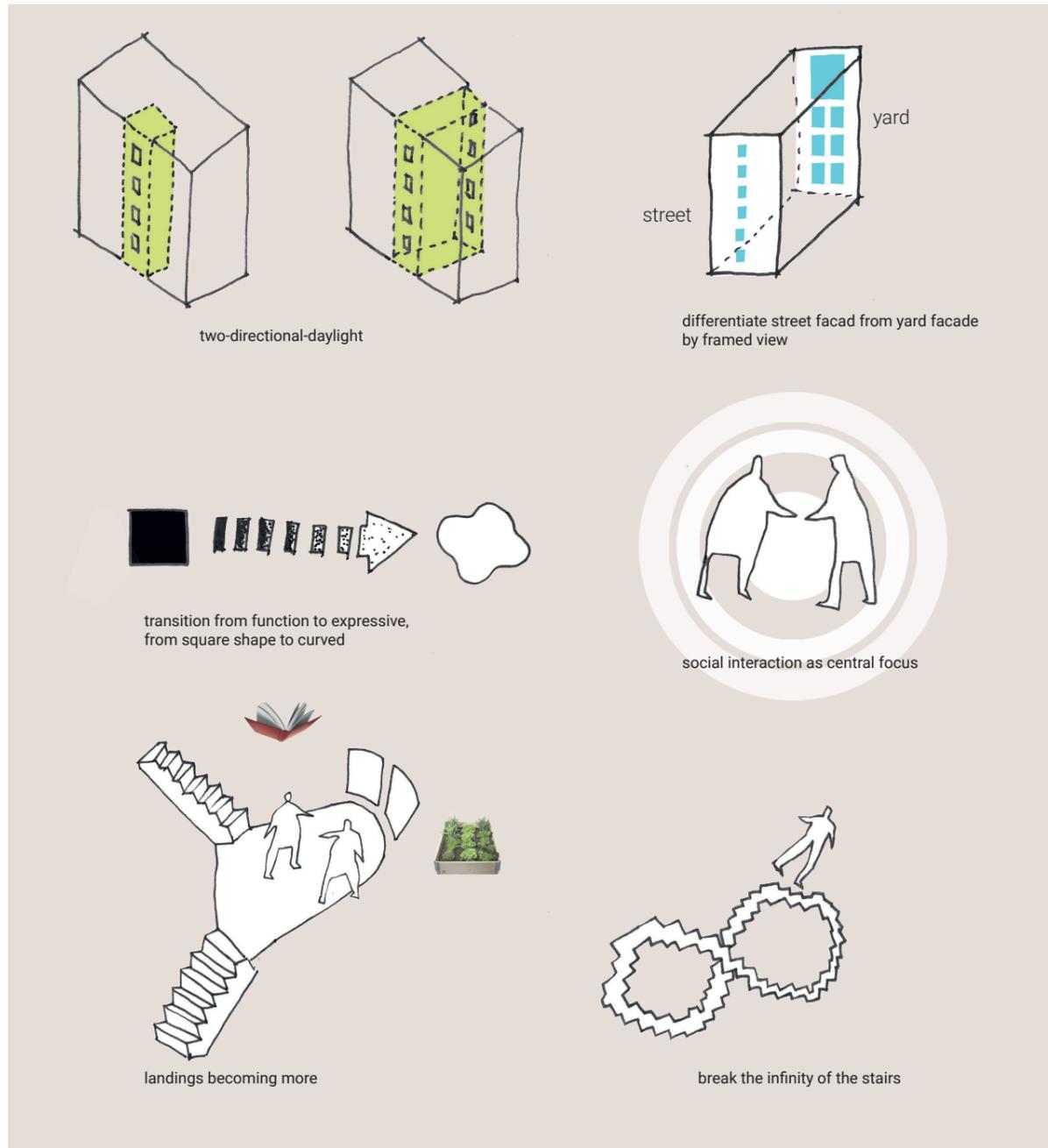
Thaler and Sunstein states the short answer to be “offer nudges that are most likely to help and least likely to inflict harm.” (Thaler & Sunstein, 2009, p. 74). They press on the importance that the architecture reflect a good understanding on how humans behave with its two different brain systems: autonomic and reflective. The automatic system is intuitive, rapid and feels instinctive. You use it when you smile from seeing a puppy or duck when a ball is thrown to your face. The reflective system on the other hand is rational and deliberate. You use it when you decide on what university to apply for, or where to go on vacation. For architects it is important not to confuse the autonomic system in particular. The user need to be able to read its context with her intuitive system, and gently be guided by the design.

By conscious choice architecture we can nudge people into a behavior that benefits their social, physical and psychological behavior (Thaler & Sunstein, 2009).

## **Conceptual design**

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**Concept # 1: Spatial Design**



Humanity has some things in common: we eat, drink and experience a set of emotions. Buildings influence us in a general way too. Light, comfort and control are some elements of architecture that universally affect how people feel within a space (Channon, 2018.) The light around us can change our mood, our stress response and the efficiency of our immune system (Sternberg, 2010). When experiencing a space as cramped the amygdala is triggered and the feeling of being trapped makes us want to flee, and we experience a strong feeling of stress (Gospic & Sjövall, 2016). In the opposite way, we experience calmness in beautiful settings. Interestingly enough, we are not only safety junkies, but also appreciate the curiosity of an environment that does not give itself away at the very first instant. Environments that stimulate the brains the proper amount are the ones preferred by the user. (Gospic & Sjövall, 2016).

The conceptual design could be described in three categories being spatial design, activity design and nudge design. First, we start with the concepts for spatial design.

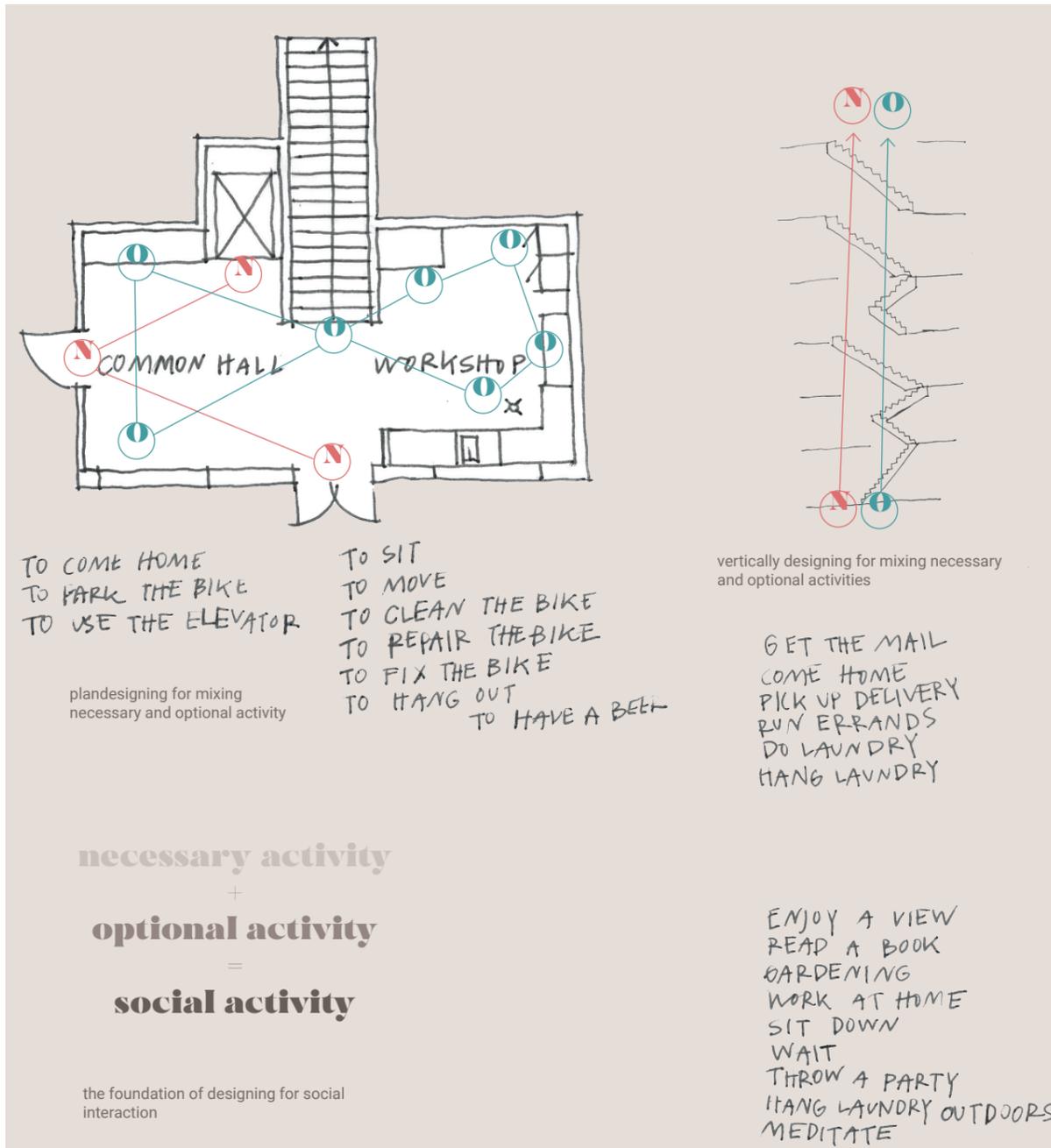
The framework of the stairwell is a 6x12 meter space that cuts through the building. It enables daylight from two directions and takes a step back from the contemporary design's dark corners. It also gives two different views, one to the urban street and one to the enclosed courtyard. The view of the courtyard connects to the semi-private nature space, displaying trees waving in the wind, birds, and grass. Nevertheless, the view of the street is an important attraction too. To get an active stairwell, one must comprehend that people in fact attract us

more than much else. Activities begin in the vicinity of activities that are already taking place. Therefore, people often choose to sit down at a view of the street before sitting down at a private backyard. A well-designed lookout of urban life is, therefore, an interesting view (Gehl, 2011).

The spatial design transitions as its activities from functional to expressive, big to small. By adding curved elements to the design the sense of well-being can be influenced. Research shows that the amygdala is significantly more active when experiencing sharp objects than curved ones (Shesmesh et Al, 2016). A curved corner is perceived as more relaxing and is therefore preferred (Gospic & Sjövall, 2016). By combining square and curved shapes in the design, a space is perceived as more safe, pleasant and pretty by the user (Shesmesh et Al, 2016).

The social interaction is at the center of the design. By designing for interaction already at an early stage the thesis will show that the stairwell could be a space of meetings. Today many people live in single households in Sweden, and the necessary interaction we once had with our neighbors are at a minimum. We used to need the collective for basic needs as doing laundry and keeping the house warm. With the modern society's comfort we're enjoying the ease of the old tasks, but lack of interaction with our neighborhood (Olsson, 1997). Social interaction is about varying degrees of contact intensity and requires a different kind of space. But more about that in the following design concept (Gehl, 2011).

**Concept #2: The Necessary and the Optional Stairwell**



The better the design of the space is, the more optional activity will take place and the longer the necessary activity lasts. The combination of that space gives better opportunities for the social activity to take place in the shared space (Gehl, 2011). At an early stage of design, this basic understanding of social space has taken a prominent role at both horizontal and vertical dimension. Placement of necessary and optional activities are meant to build on one another and try out playful ways for bringing social space into the communication area.

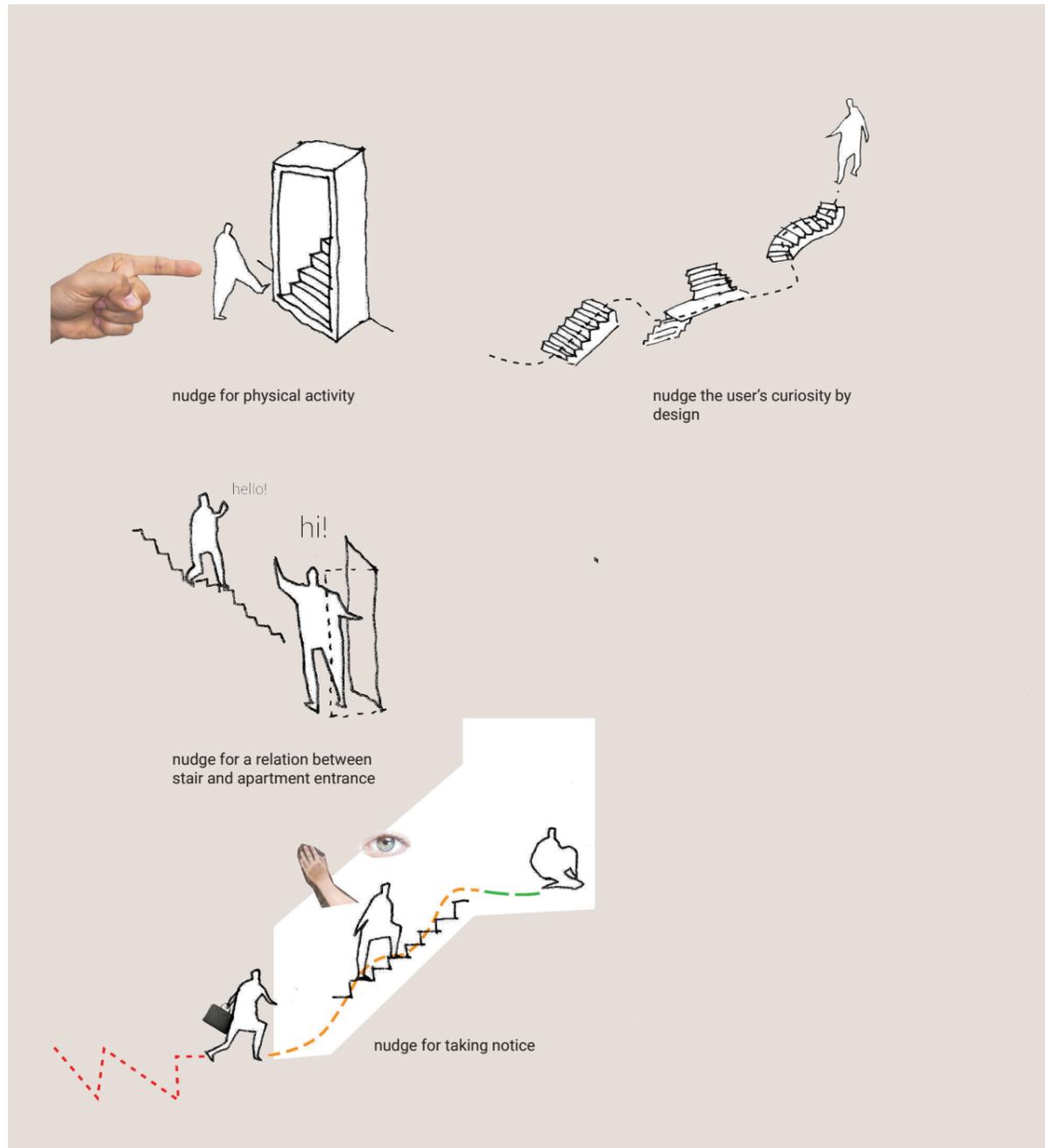
Just to see and hear each other is in itself a form of contact. Brief interactions are in that sense the foundation of more comprehensive forms of social activity. The design may not have an influence on the content or quality of it, but by understanding the connection between foundation and possibility, architecture can influence the opportunity for social activity (Gehl, 2011).

There are varying degrees of contact intensity. Example of high intensity is close relationships and friendships. On the lower end of intensity, we find acquaintances, chance contacts and passive contacts (seeing and hearing). These form of contact may appear as insignificant but are in fact valuable. Humans are social beings, and we need contact of varying intensity. When activity outside the apartment is missing, the bottom scale of intensity disappears with it. Gehl describes a situation of such as "the varied transitional forms between being alone and being together have disappeared. The boundaries between isolation and contact become sharper." (Gehl, 2011, pg 13).

**"First life, then space, then buildings – the other way around never works."**

- Jan Gehl

## Concept #5: Nudge



How could the design help the users to a higher sense of well-being? This is where the conscious choice architecture Nudging comes in handy. The conceptual design took off from a few specific nudges: nudge for activity, nudge for taking notice and nudge for interaction between the apartment to the stairwell in line with Steemers' and Gehl's thoughts (Steemers 2015; Gehl, 2011).

Nudging for activity could be carried out both by addressing the user's autonomic system and her reflective one. The framed stairwell in the entrance hall is an example of the prior. Here the staircase is given the most prominent design. It is literally sticking out, the elevator hiding in its shadow. The choice to go by the elevator is still there, but the design guides the user to the daylit staircase. When appealing to the reflective system of the user, the nudge design address the curiosity of spatial investigation (Gospic & Sjövall, 2016). It balances between clear wayfinding and playful placement and design of the stairs.

Nudging for taking notice is a means for bringing down the speed from the stressful day. Light, materiality, and shape appeals to our senses and make a walk through the stairwell an active transition space that lowers the level of stress.

To nudge for activity to happen not only when two individuals run into each other, the relation between stair and apartment becomes relevant. The front door is placed in closeness to the stair, and the design of the stair makes the users pass each floor. This means that neighbors pass by one another's fronts door often, and it is easy to drop by or pop your head out (Gehl, 2011; Ohlsson, 2007).

Alongside the actual design strategies, the aim of raising discussion on what a stairwell is was formulated. We all are familiar with the concept of the stairwell of today. But what could it be? This master thesis is nudging for its readers to take that question with them after finishing this rapport.

## **Design proposal**

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**Section**

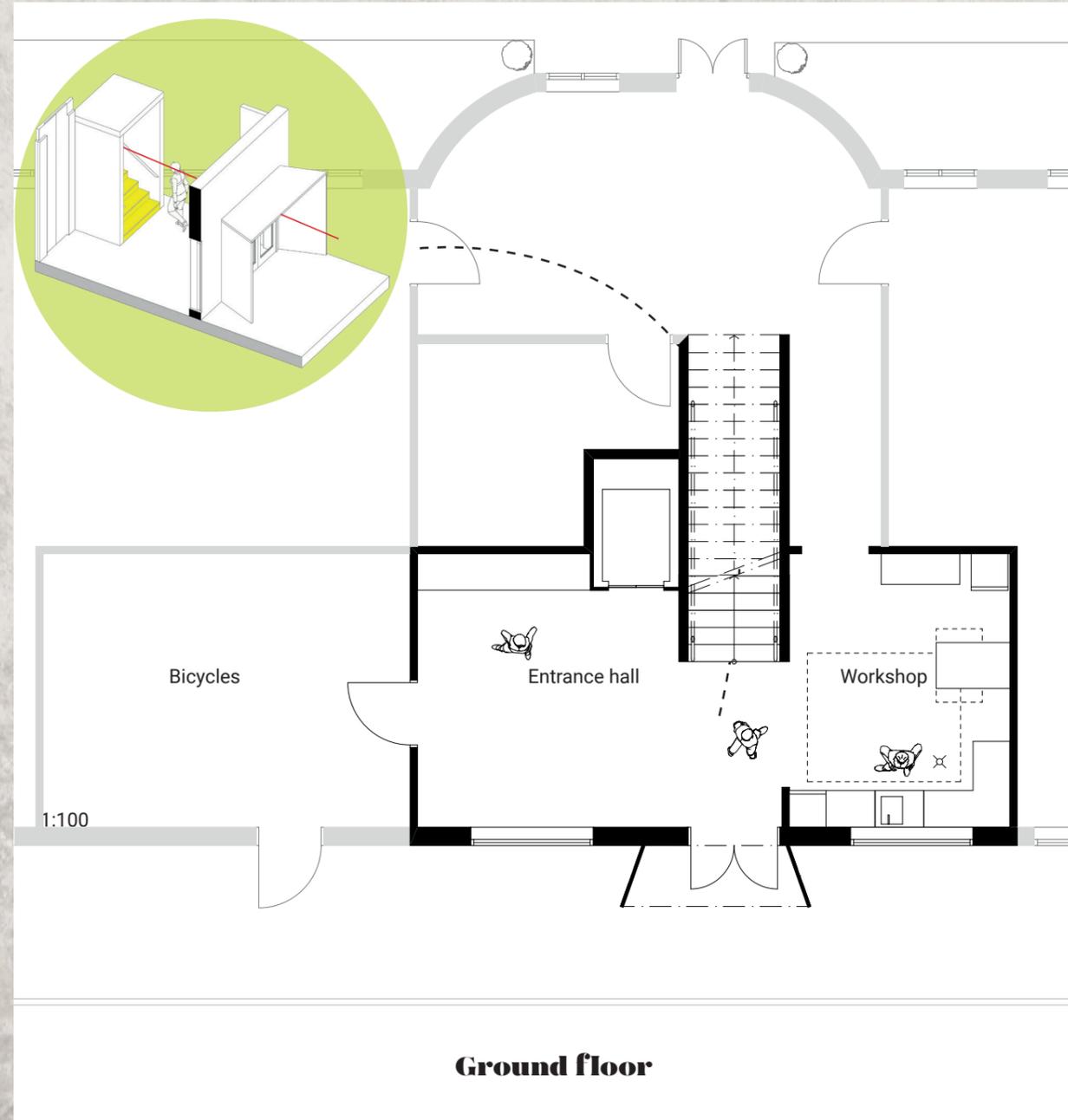
# Introducing the Stairwell

Today, the social interaction of the residential building is commonly assigned to the courtyard. It works well for year's months of nice weather, but during the cold and dark months in Scandinavia, there is a gaping void for spaces of social interaction between residents (Olsson, 1997). What if the stairwell was to fill that void?

This thesis research by design if the stairwell could be a space that adds quality to the residents. To make the stairwell into a space that has qualities of public space, one strategy is to activate the stairwell on its whole vertical depth. Therefore, the necessary activities (entrance, bicycle parking, mail delivery, and laundry) together with optional activity (library, meditation, home office) weaves the different floors of the stairwell to a coherent experience. There is no 'general user' - we all prefer different things. This design proposal shows a catalog of activities that nudge the user to walk one floor up or down, to get to a space that adds quality to their own apartment. By both having necessary and optional activities distributed throughout the stairwell and adding activities that span from levels of low intimacy to a higher level of interaction, a broader set of space is provided.

**“Memory of place is not composed of isolated locations but rather sequences of connected locations”**  
(Sternberg & Wilson, p.241, 2006)

**First Impression**



As architects, we design atmospheres from the first instant the user enters a room. An atmosphere is an example of the interplay between human and architecture (Böhme, 2017, Lupton & Lips, 2018). If we as designers want people to take the stairs before the elevator, we need to place the staircase in a qualitative position in the common entrance area. That means that we need to frame and highlight the stair in terms of an eye-catching position. Adding active and pleasant materiality that also have a sense of tactile experience than increase the curiosity from the user. We have learned that yellow is a color that

stimulates activity, enhances movement and can influence that people start to communicate with each other. If we then add sunlight to the staircase, we create a tool for wayfinding that fosters attention (Sternberg, 2010).

The stair is the first impression. By simply placing a frame around the entrance door, we can enhance that architectural quality.

"When a user sets foot on the threshold to space the atmosphere starts to take form. The initial moment is therefore of crucial importance since it will affect how the user experiences the architecture and color the memory of it for a long time". (Griffero, 2014, p.29-31).

**Nudge for...**

- Physical Activity
- Curiosity by Design
- Social Relations
- Taking Notice

**Room**

0 - Entrance

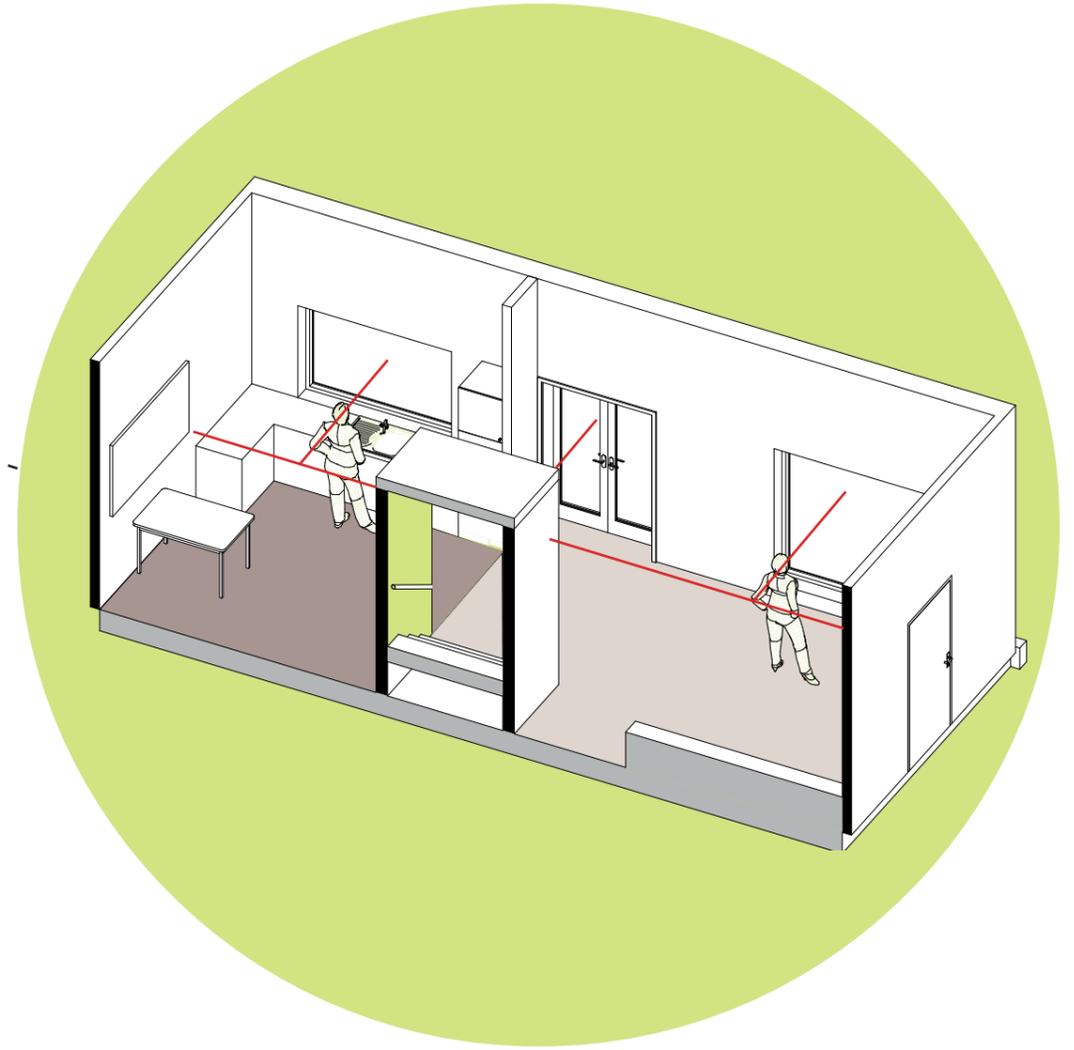
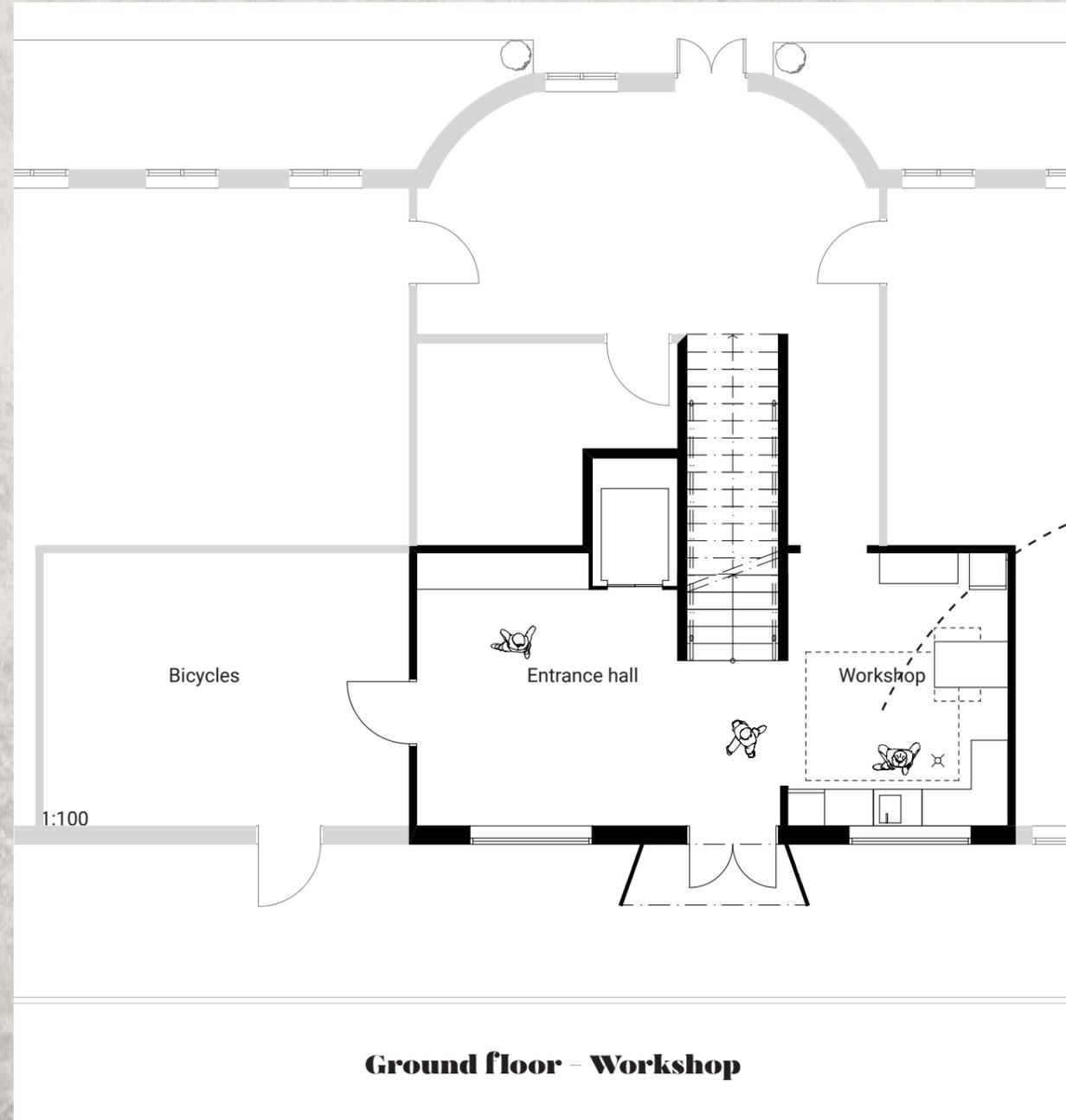
**Architecture**

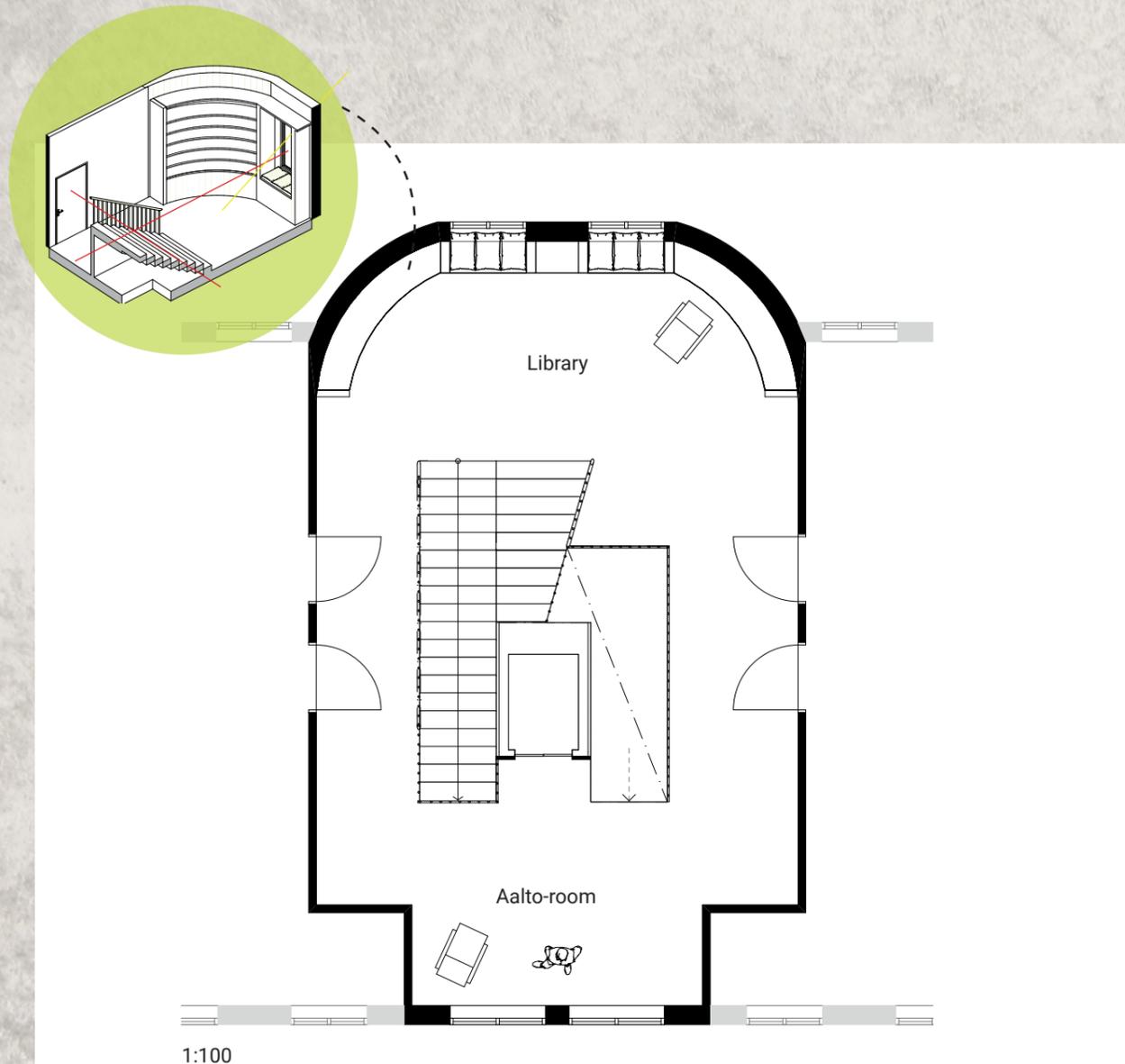
- Position of staircase
- Yellow stair
- Open floorplan to workshop
- View and seating areas

**Well-being**

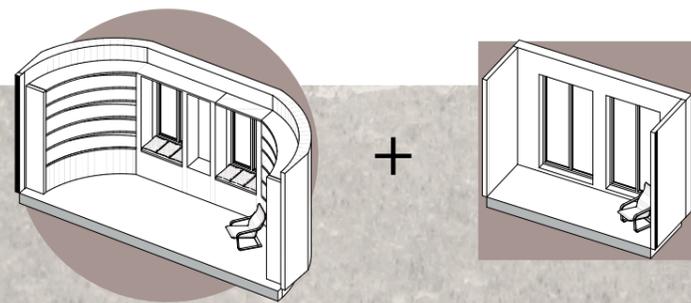
- Physical Activity
- Social Connections
- Presence

**The Workshop**

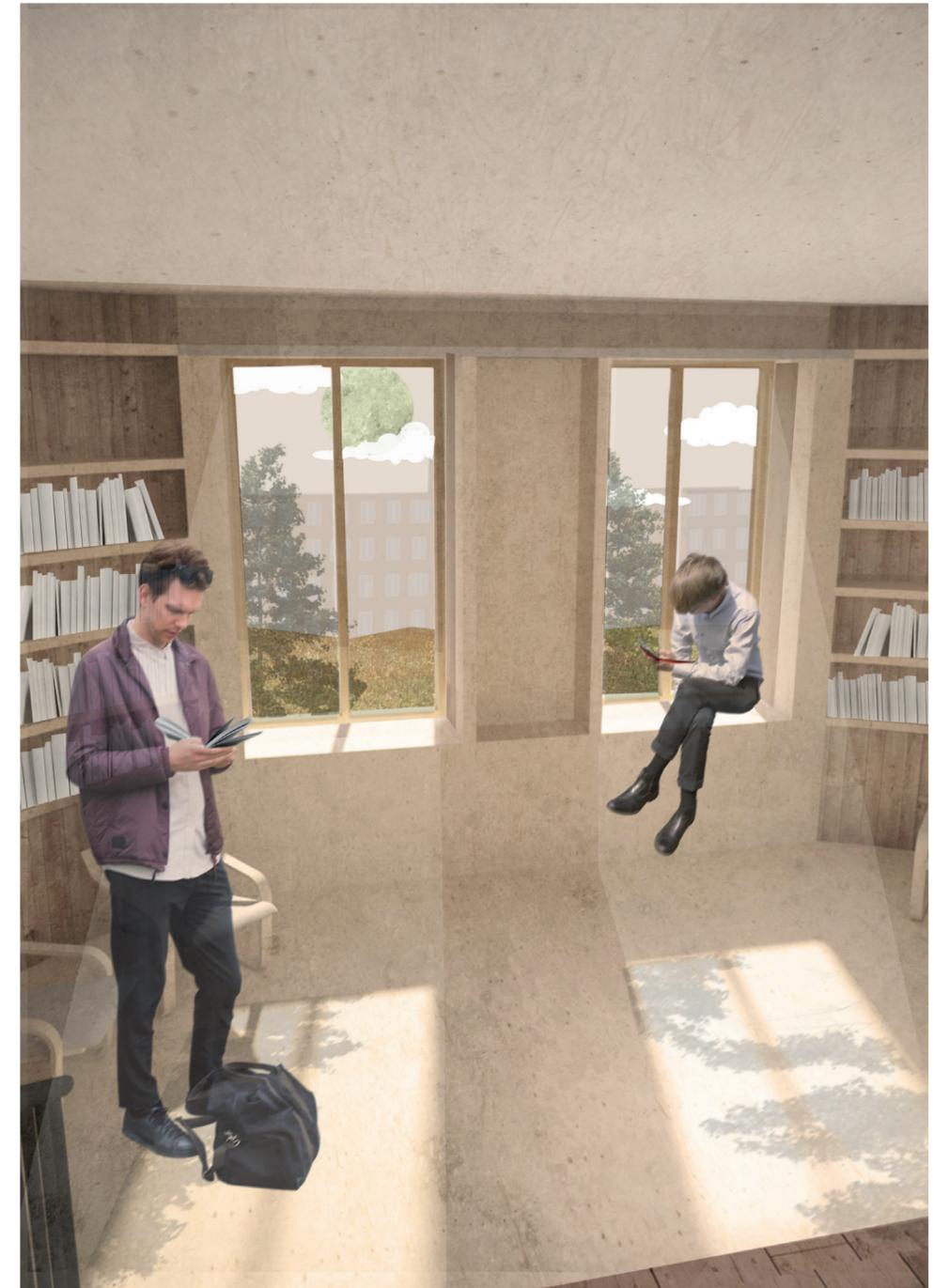




**Floor 2 - Pass-By-Library**



Physical Activity	2 - Library	Wider staircase	Physical Activity Social Connections Presence
Curiosity by Design		Relation stair and apartment	
Social Relations		Seating in window, view	
Taking Notice		Curved walls - privacy	

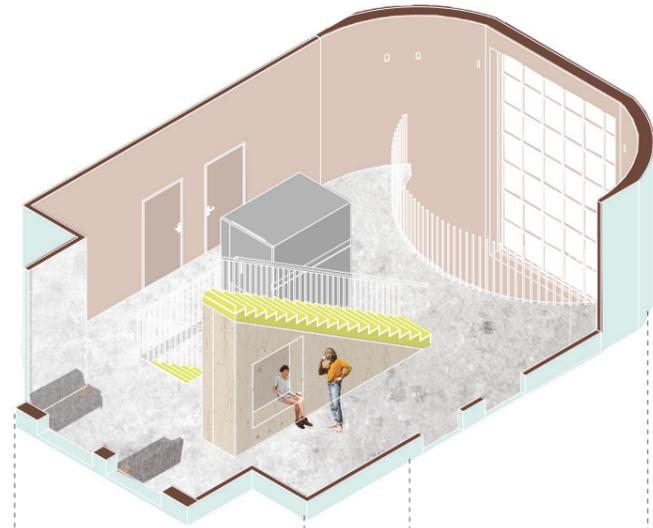
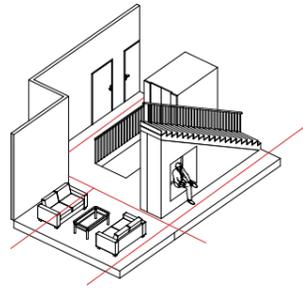


Adding curved forms in a residential interior can strengthen the user's experience of well-being. Because, the curvature is being perceived as a calming form like tactile materials can create a better feeling of being in the present (Channon, 2018). Curvature is something that is experienced as pleasant and joyful, and also adds a sense of privacy to the room (Nanda, Pati, Ghamari, & Bajema, 2013).

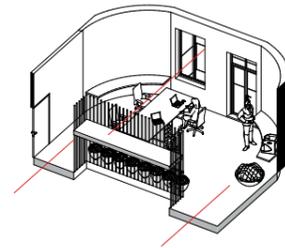
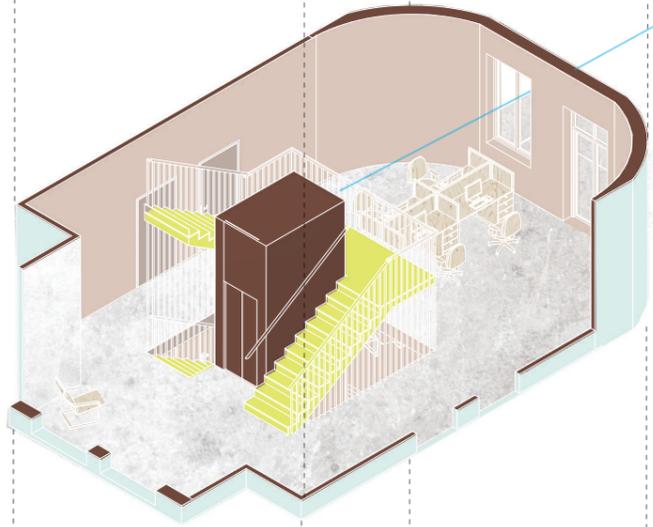
Curvature on its own can be too much of an experience. It is the combination with a square shape that gives the optimal spatial event for the user and than can benefit the well-being (Banaei et al., 2017. Shemesh et al., 2016).

The two short sided facades in this thesis are a result of this theory. Placing the library in the curved corner together with wooden material could then enhance a pleasant, relaxing and private feeling.

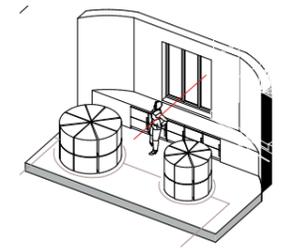
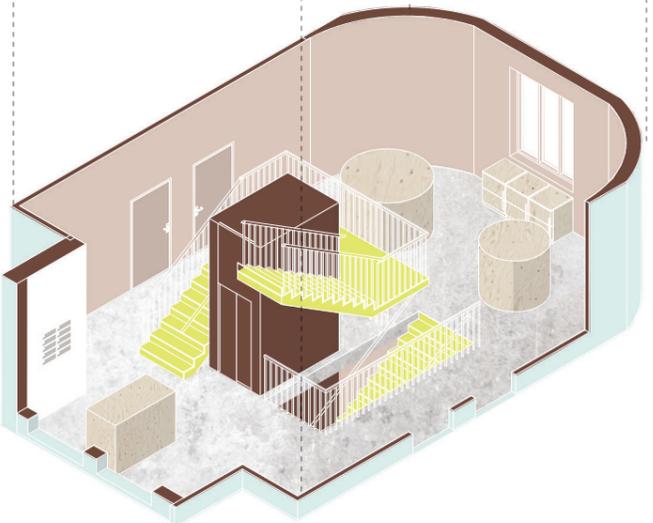
Isometric view of Floor #5:  
Livingroom with a view



Isometric view of Floor #3:  
Home Office



Isometric view of Floor #1:  
Post and Delivery



## Defining spaces around the staircase

Proposal of defined spaces around the staircase of different levels of interaction.

The top isometry shows the 'Living room'. It is situated at the top of the building, its stair leading to the rooftop laundry space. To make the users climb the stairs, we need to make them enjoyable (Steemers, 2015). The view is framed by a large window with a balcony over the underlying space. To nudge the users to take notice, the wooden sculptured ceiling is the strongest feature of the space. The light from the window enhances its shapes. The seating outside the apartment doors enables a brief encounter with a neighbor to linger. We seldom invite our neighbors to our home, not even if we know them and like their company. But we do enjoy the meetings in the semi-private sphere (Olsson, 1997).

Below, the 'Home Office' is displayed. It benefits from the U-shape of the stairs that gives the space different levels of intimacy. The office has the mere basics for a workday at home; desks, seating, and a coffeemaker. The balcony gives the user a connection to the surroundings and the neighborhood that is important for our sense of belonging (Channon, 2018).

The bottom isometry shows the 'Mail and Delivery'-floor. The staircase guides the user to the center of it, where deposit boxes hold deliveries and fridges store groceries bought online. Having the mail collected in a room makes the residents see each other when they get their mail during the day (Olsson, 1997). It is a clear example of when a necessary activity could result in something else from design.

### Quality of the physical environment

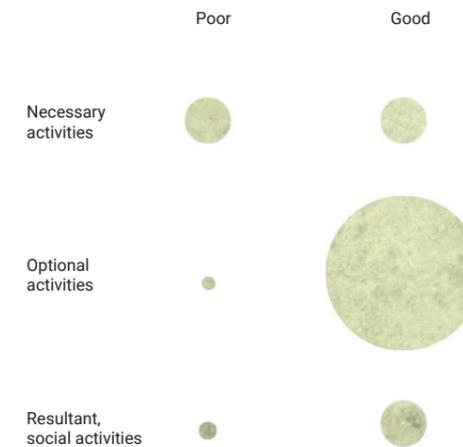
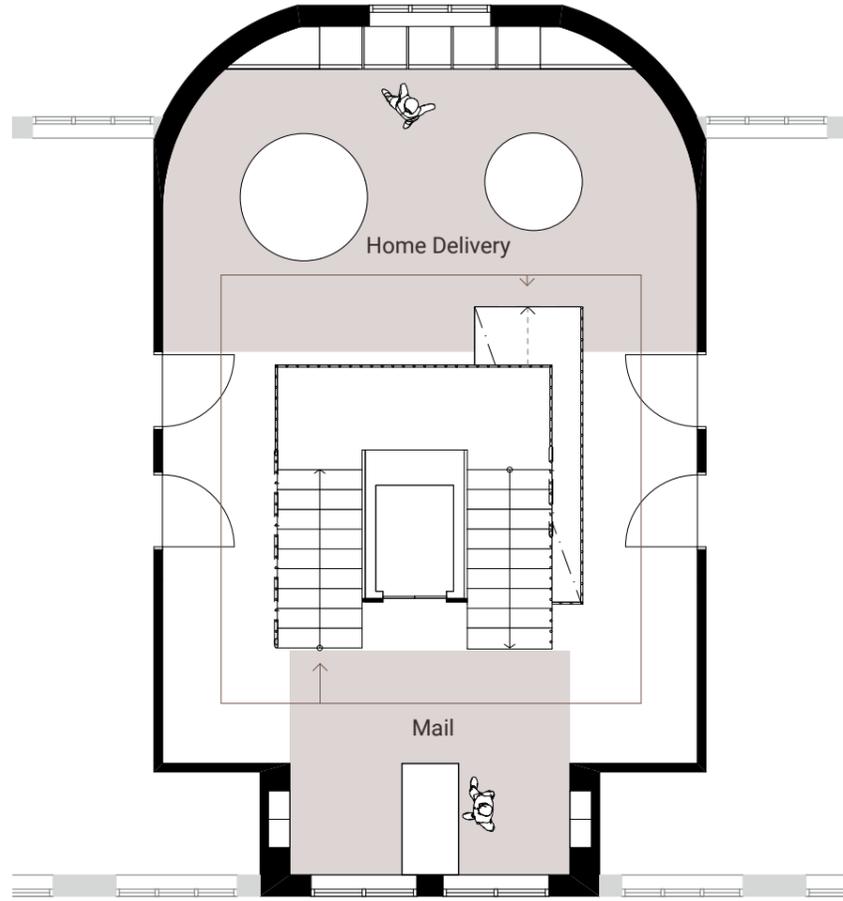
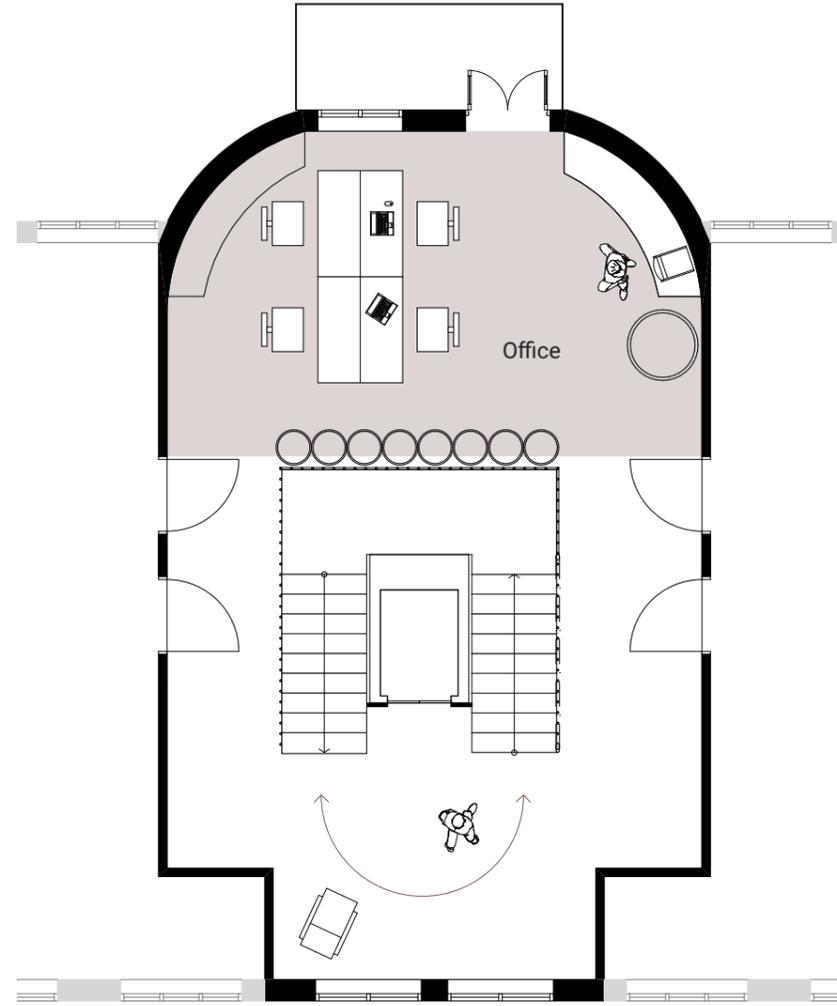


Figure nr X: "Quality of physical environment", pg 11, (Gehl, 2007)



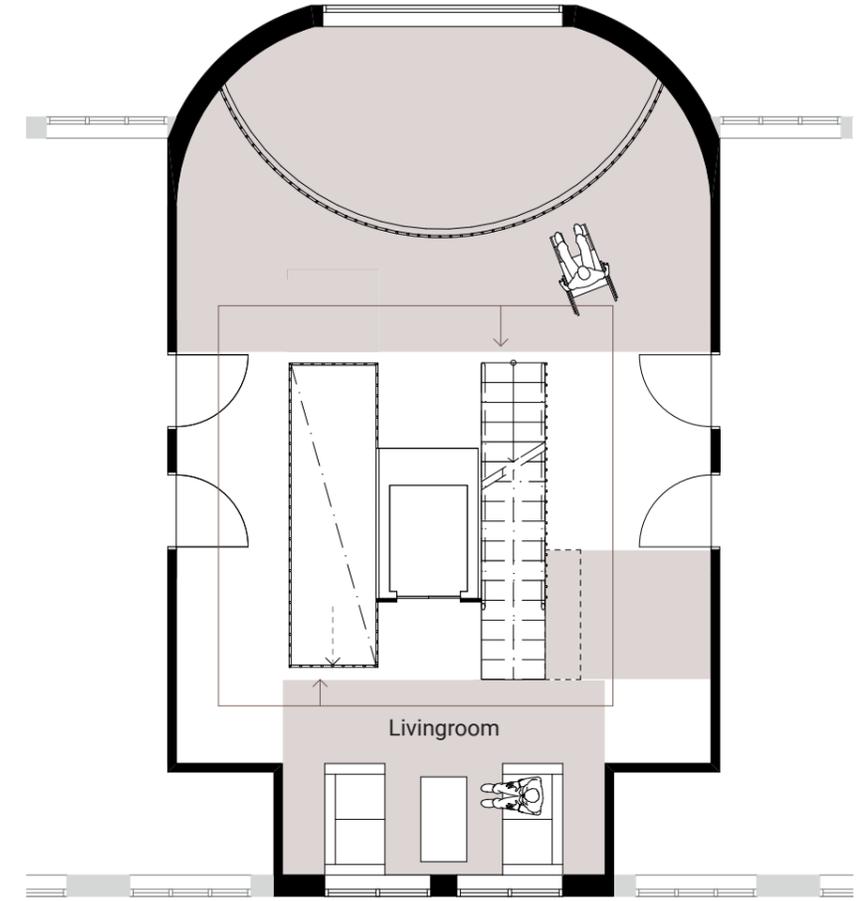
1:100

**Floor 1**



1:100

**Floor 5**



1:100

**Floor 5**

**Nudge for...**

- Physical Activity
- Curiosity by Design
- Social Relations
- Taking Notice

**Room**

- 1 - Mail & Home Delivery

**Architecture**

- Delivery on second floor
- Relation stair and apartment
- Curved interiors
- Daylight and view

**Well-being**

- Physical Activity
- Social Connections
- Presence

**Nudge for...**

- Physical Activity
- Curiosity by Design
- Social Relations
- Taking Notice

**Room**

- 3 - Office

**Architecture**

- U-shape and shorter stair
- Balcony - nature
- Common work space
- Office in the stairwell

**Well-being**

- Physical Activity
- Social Connections
- Presence

**Nudge for...**

- Physical Activity
- Curiosity by Design
- Social Relations
- Taking Notice

**Room**

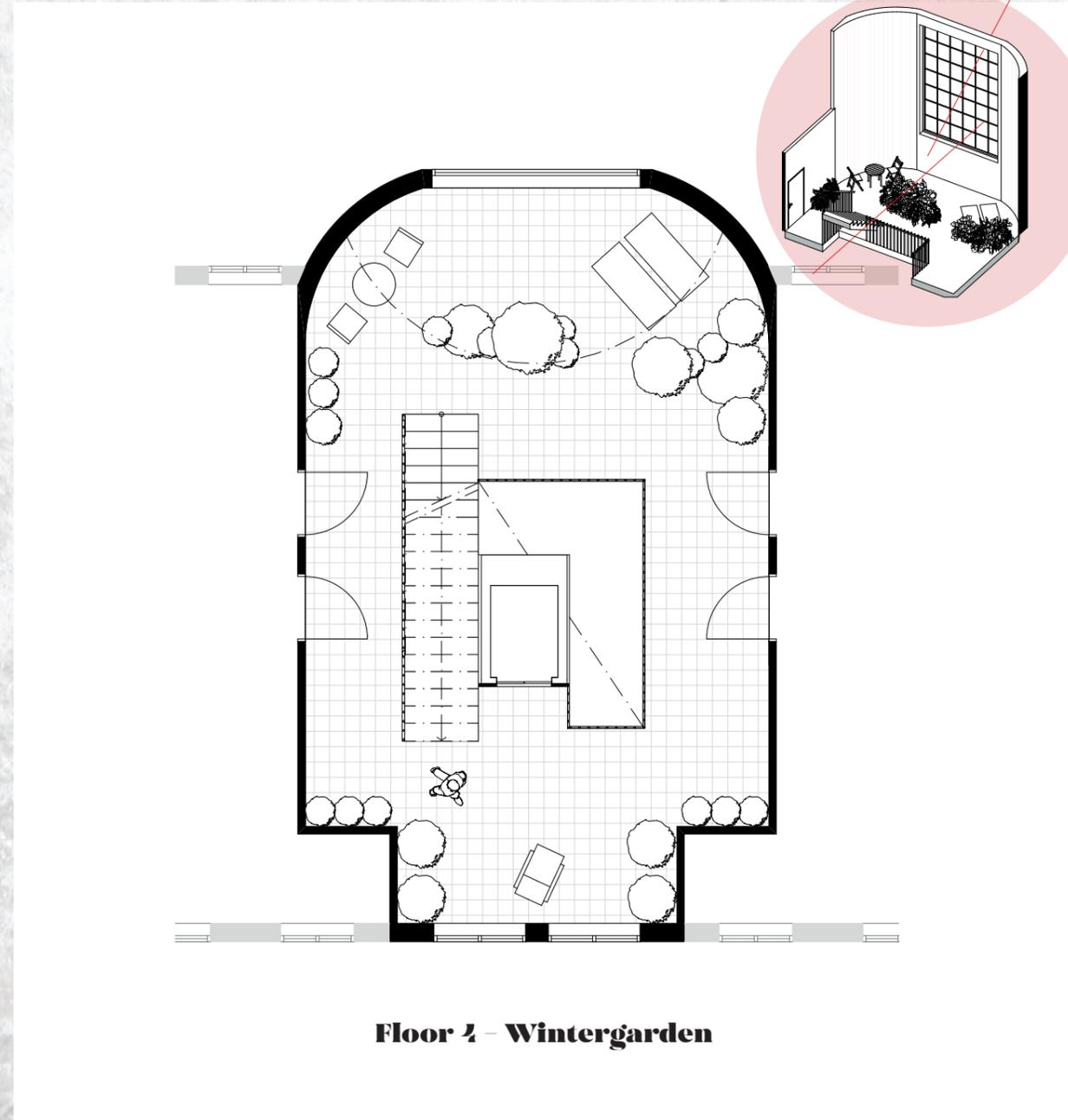
- 5 - Common Living Room

**Architecture**

- Semi private seating
- Special roof
- Closeness to apartment

**Well-being**

- Physical Activity
- Social Connections
- Presence



**Floor 4 – Wintergarden**



When arriving at the Wintergarden the nudging for taking notice continues. The room grows to doubled ceiling height to one of the facades. The connection to the outdoors is enhanced by the large windows displaying the courtyard. The need for natural daylight is a common one, and

daylit space has a huge positive impact on our well-being (Channon, 2018). The space replaces the yard as a shared space for a shared plant group, interaction, or individual stillness under the sculptural wooden ceiling.

**Nudge for...**

- Physical Activity
- Curiosity by Design
- Social Relations
- Taking Notice

**Room**

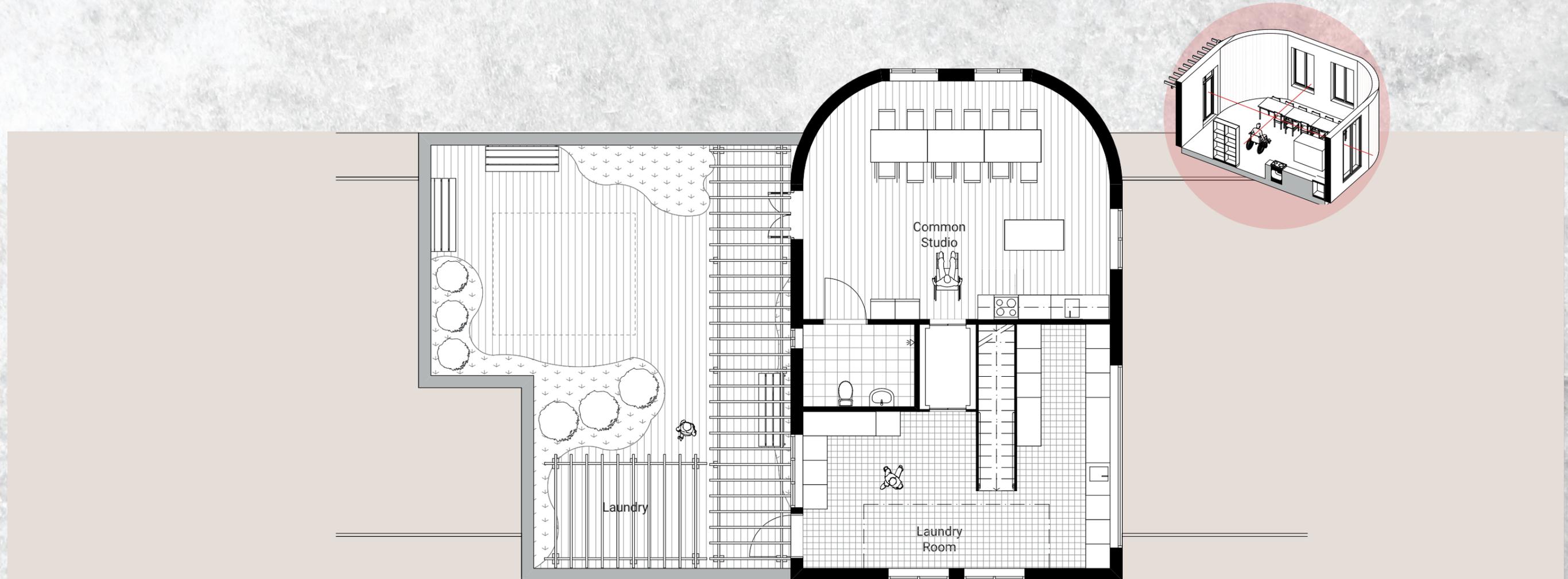
4 - Winter Garden

**Architecture**

- Room for Yoga
- Relation stair and apartment
- High ceiling and special roof
- Skyview

**Well-being**

- Physical Activity
- Social Connections
- Presence



**Floor 6 – Laundry Room / Common Room / Terrace**

The laundry room is an important place in residential buildings. In today's society, the laundry room has both a practical and social meaning. Although more people have their own washing machine, the laundry room acts as a social room and enable you for example to dry your laundry outdoors. All residents have access to this kind of space. Hanging the laundry outdoors is not only fantastic for the soul, but it is also a national gain as the sun and the wind are as we know free of charge and sustainable. Back in time, the yard was the place you wiped your laundry on. Today, the yard is a problem due to integrity and safety. Placing the laundry

room on the roof would then enable you to hang your laundry in peacefulness, still in connection with nature. Placing the laundry room in connection to a studio and roof terrace also provides social connections and safety. A necessary activity on the top floor creates a better movement throughout the whole stairwell. It also provides fantastic views, access to be outdoors and social relations. This thesis highlight where we are placing our laundry room today, and what a fantastic room in to could be on the rooftop! Think about relaxing on the terrace while waiting for your laundry to dry? (Gehl, 2011. Olsson, 1997).

**Nudge for...**

- Physical Activity
- Curiosity by Design
- Social Relations
- Taking Notice

**Room**

6 - Laundry / Studio / Terrace

**Architecture**

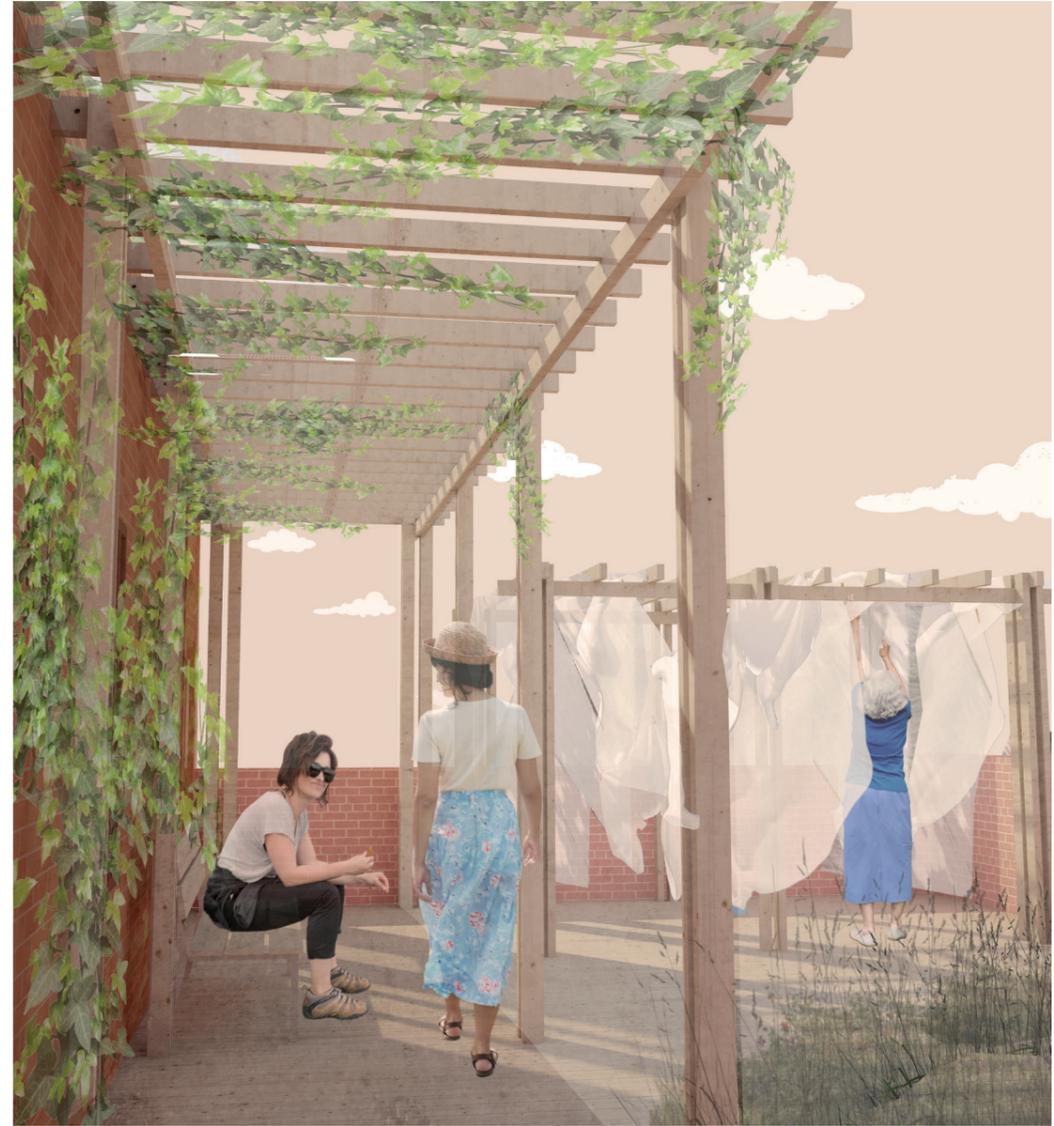
- Skylight and views
- Laundry on roof
- Relation Laundry - Studio
- Outdoor access

**Well-being**

- Physical Activity
- Social Connections
- Presence



**Laundry Room**



**Terrace / Drying laundry**

# Defining

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## The Stairwell and the Fire Regulations

Today's society has great demands on fire safety. In this proposal, the apartments have only the stairwell as the escape route. Thus, the stairwell needs to go up one level in safety and become a fire cell on its own. Normally, buildings up to eight floors, are not required to have a fire-protected stairwell if the residence is provided with access to two escape routes. If that is not the case, a fire protected stairwell needs to have a passage between entrance and staircase, such as safety doors.

This stairwell fulfill the demand for a free escape route. In reality, high demands are made on which materials that can be used in a stairwell. And the best is if the stairwell can be kept free from storage. Because of these fire regulations, we have chosen to place our interior along the walls (Myndigheten för samhällskydd och beredskap, 2009. & Boverket, 2006).

"Om praktiska förvaringsalternativ inte kan uppbringas, kan sådant som innehåller väldigt lite brännbart material få finnas i trapphuset, under förutsättning att det inte hindrar eller försvårar en utrymning" (Myndigheten för samhällsskydd och beredskap, 2006).

Regulations are important but also static, and one should see it in a more creative way. Using sprinkler could be a solution for more innovative stairwells in the future.



Figure nr 15: "Utrymning till utrymning vid bran" (Boverket / Tictac, 2017).

## Discussion

This thesis began its process in a theoretical exploration of how architects could design for well-being. Health is an interdisciplinary subject and requires a broader theory base, both on architecture and neuroscience. However, in order to achieve a result with the thesis, we had to set up a delimitation. On the theme of health, the three main pillars of well-being was formulated; physical activity, social connections, and presence. Participating in a health symposium on Chalmers made us understand that there is a need for multidisciplinary health research in the future. We hope that this thesis can inspire for that development.

A broad analysis of how we design for well-being in apartments led to an awakening that the stairwell is the room that is used by all residents. Today, the stairwell is not often described as a room, rather only a communication area. With this thesis, we analyze the design of the residential building stairwell. How can we create well-being? What can a stairwell be? Who owns it?

The stairwell does not belong to any specific person, it is the common room all the residents have to pass by at any time. It is the area that can be considered as a passage between leisure (home) and work (work or school). When you move through the stairwell you prepare for the day or

depress off after a working day, something we residents rarely notice. Maybe you look down on the phone, or listen to music? The stairwell, therefore, has tremendous importance for well-being, and what could take away the attention from a stressful day or being on your telephone. We question in this thesis if the stairwell could have more spaciousness and perhaps a higher status? Can the stairwell be an extension of the apartment? Maybe a new social room?

With the rooms we are creating in this proposal, we contribute with the idea that it is possible to create a functional and social stairwell that promote well-being. That these kinds of rooms can be more than communication from a to b. Increasing its size could benefit both all aspects of well-being and become an extension of one's apartment.

In reality, building this kind of stairwell would be a different story. Both the space of the stairwell and the practicality would need to be explored further. This thesis introduces new ideas about what a residential stairwell can be, a real-life situation would have to take a lot more into account, like fire regulations.

## Conclusion

This thesis started from two questions, the first one being "how can communication areas in residential building create well-being?", and the latter "how could the stairwell be used for other activities than bringing people from A to B?" Three cornerstones for well-being were conceptualized from the theory: social interaction, physical movement, and presence. When designing shared spaces of residential building with them in mind, the architectural space starts to be a positive agent in nudging for well-being. The gains of such a design could be further developed into these seven points:

### **Social interaction**

By conscious design for necessary, optional and social activities, interaction becomes real. When more people are in a public space, the chance of interaction is at its best potential. To get people to linger in the shared space of the residential building, thoughtful placement of necessary activities and good design for optional activities is of great importance (Gehl, 2011). It makes the users want to be there, and interaction follows. It might seem like a very basic conclusion, but still, it is far from how the shared spaces in residential buildings are designed today.

### **Different levels of interaction**

By defining rooms of varying levels of interaction, the interaction can flourish (Gehl, 2011). There is a need for spaces of shared and stillness, along with social place where neighbors meet, and social space of extended private space.

### **Physical activity**

By nudging for the stairs over the elevator the users' well-being will be improved (Steemers, 2015). Our need for daily physical activity in our contemporary society is critical (Hjärnfonden, 2017). To make the effort of designing the stairs to become the natural choice and an experience in itself is one way of conscious choice architecture. The users will then benefit from it on a daily basis since we tend to stick to a choice once we have made it.

### **Presence**

By making the residents take notice, the stairwell can improve well-being (Steemers, 2015). As an architect one should therefore keep views, materiality, daylight and intimate spaces close to heart when designing. Thus, a stimulating and user-centered design that makes the residents aware of their surroundings is realized.

### **More than transport**

Make the stairwell a room between workday and leisure-time that matters. When design appeal to the users' curiosity, the architecture can engage us to climb the stair and discover the spatial quality in between front door and apartment (Gospic & Sjövall, 2016).

### **Celebrate the necessary activity**

By designing high-qualitative space for the necessary activity, we create space that the users want to be in. Social activities then follow, which is key for a good shared space.

### **Catalogue of inspiration**

This thesis aims to be a catalog of inspiration. It means to make designers aware that when we move beyond the economical 'truths' we can find new ways of designing for housing (Nilsson, 2007).

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