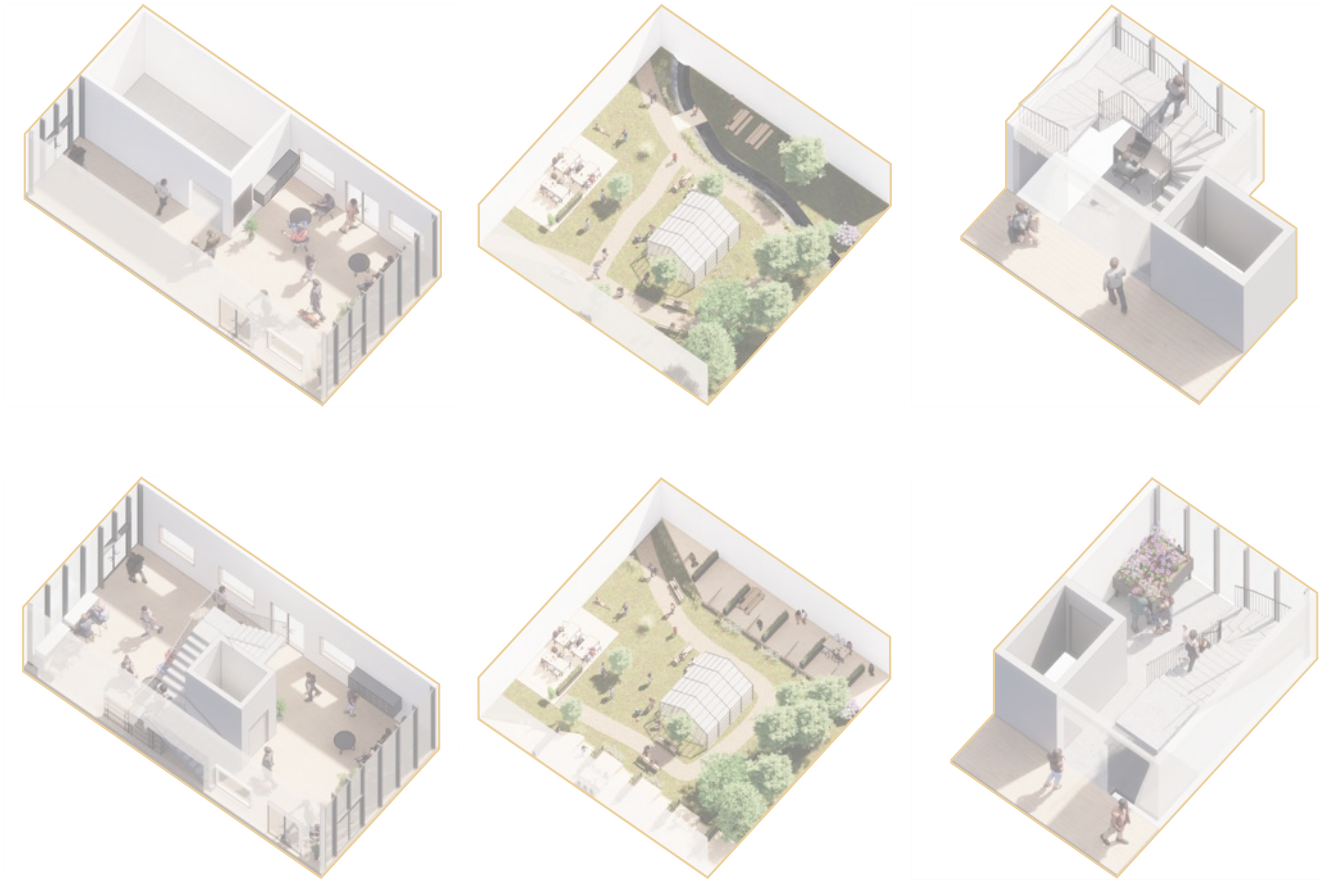
LONELINESS PREVENTIVE DESIGN

A DESIGN GUIDEBOOK TO PREVENT LONELINESS WITH COMMUNITY LIVING



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Master's thesis in Architecture and Planning Beyond Sustainability
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ABSTRACT

"NO MAN IS AN ISLAND, ENTIRE OF ITSELF; EVERY MAN IS A PIECE OF THE CONTINENT, A PART OF THE MAIN." JOHN DONNE, 1624

The race for independence is blinding us. The world's population is rising and densifying however humans are more individualist than ever. The effect on society can already be seen, around 80% of people under 18 years old and 40% of those over 65 years old reported feeling lonely at least sometimes. After all, as humans, we are striving for a sense of belonging and connectedness for survival. Loneliness is a social phenomenon that might afflict any of us in life. In parallel, there is a growing interest in community-led housing with solutions as co-housing or co-living. These are about community living and therefore common interaction. This thesis is drawing a line between loneliness and community living and develops a design guidebook for enhancing social interactions and a sense of belonging in housing. The preliminary research on loneliness and community living revealed theoretical interventions methods to prevent loneliness and crucial elements to consider when designing for community living. All the learnings are constantly considered through an architect's perspective. The studied projects come from different countries, in and outside Europe. Nevertheless, the Swedish context is important to consider as it is the European country most threatened by loneliness. Through literature and case studies, design strategies are extracted. They are the parameters that need to be addressed in projects aiming to prevent loneliness. They are tested by being attributed to test spaces which are the design components. These components are elaborated by turning standard common places in buildings into social hubs encouraging interactions. They are exemplary spatial prototypes reflected on separately and then all synthesized within a design proposal. It is an implementation example where the building is developed from the combination of some components. The proposal is meant to be a testbed for the components to see how the components can work together. This guidebook is meant to be a source of inspiration for architects and planners but also future communities. As Bowes defended, "dwellings become more compact, the implications on lifestyle must be considered" so preventing loneliness by the design of community housing is a solution that needs to be explored.

PREFACE

Reading instructions

Introduction → Preliminary Research → Case Studies → Design Guide → Design Strategies → Design Components → Design Proposal

Acknowledgment

I would like to extend my sincere thanks to those who with your help, input, and time during the process made it possible to carry out this thesis. To Walter Unterrainer for support, tutoring, and being committed to the supervisions till the end. To Liane Thuvander for advice and critique. To Lisa Wistrand and Bruno Manrique Carrera for contributing with a professional practice perspective. To my friends and family for support in many ways. I would also like to express my deepest gratitude to Leeloo Ghigo, who helped and supported me through the whole process, and brought valuable inputs.

Educational background

B. Arch.
ENSA Lyon I 2015-2018

1st year:
Housing and cultural program
2nd year:
Housing and institution program
3rd year:
Urban planning and cultural center

MPDSD: M. Sc. In Architecture
Chalmers University of technology I 2018-2021

1st year:
ARK 650 Sustainable Development and the Design Professions
ARK 126 Architecture and Urban Space Design
ARK630 Managing Design Projects
ARK466 Sustainable Architectural Design
ARK600 Emergent Media and Representation
2nd year:
ARK636 Master's Thesis Preparation course 1
ARK174 Planning and Design for Sustainable Development in a Local Context
ARK 641 Master's Thesis Preparation course 2

Professional background

2 months internship:
V+, Brussels
Housing, mixed-use building and heritage building

1 month internship:
DDAANN, Prague
Housing, cultural building, interior design and landscape design

2 months internship:
ZESO architects, Copenhagen
Housing, infrastructure building and heritage building refurbishment

6 months internship:
Lendager Group, Copenhagen
Interior design, kindergarten and ecological design

6 months internship:
ZESO architects, Copenhagen
Housing, airport and office design

Part-time design assistant:
ZESO architects, Copenhagen
Housing, retail and office design

Personal motivation

Since my childhood, I have always lived surrounded by people. For me, being surrounded by people in the house is a necessity. Therefore, in Scandinavia, I chose to live in shared accommodations with a collective. Coming from France to the country seen as the most individualistic one in Europe has not been easy. Considering my need for social interactions, the discovery of the importance of loneliness in our modern society triggered me. I wanted to explore how architecture could prevent loneliness in my thesis to hopefully increase awareness and show that every domain can help to prevent it. Community living being probably the type of housing that enhances the most social connection, developing a connection between this and loneliness seemed essential to me.

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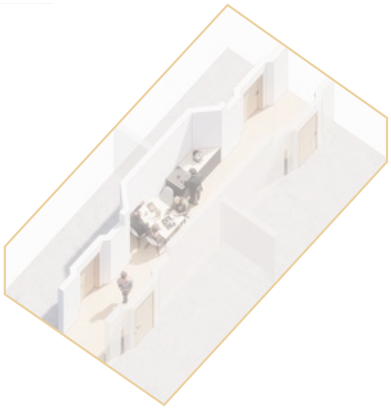
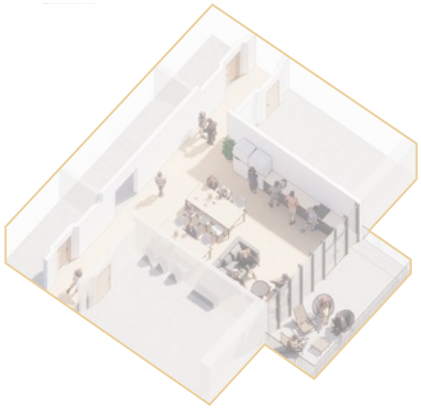
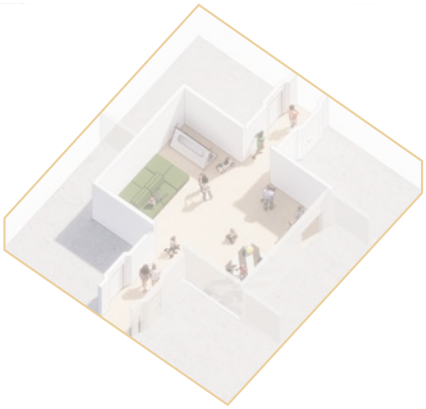
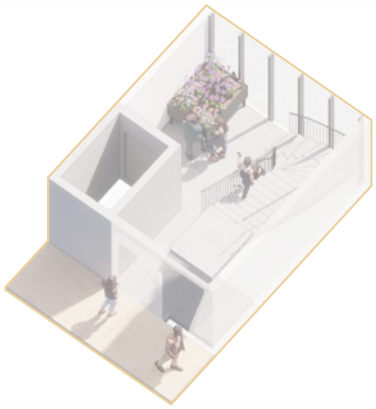
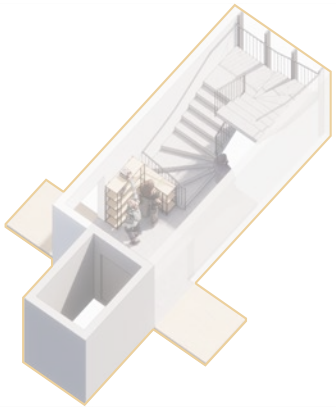
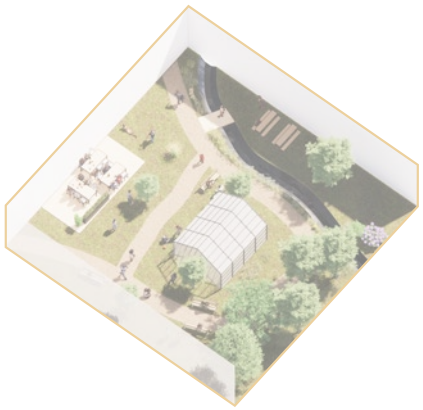
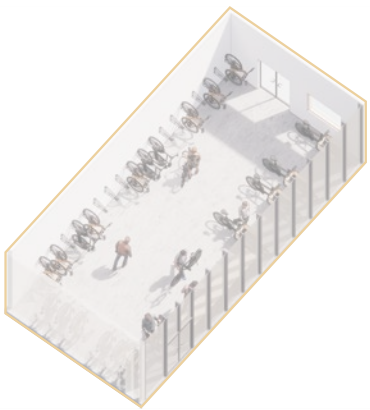




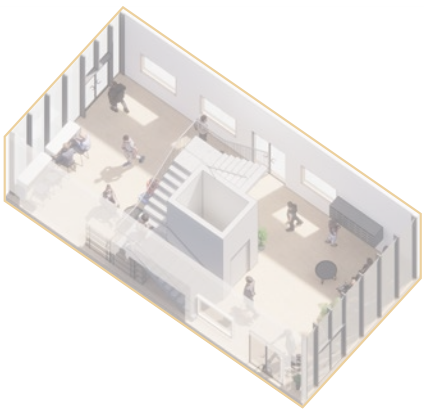



INTRODUCTION

Background and method





THESIS BACKGROUND

The loneliness epidemic is one of the most threatening social issues. As defined by the architect Grace Kim, "loneliness is not about being alone but it's a matter of how socially connected, you are to the world around you" (Clasper [Podcast], 2018). Olle Johnsson (2019, p13, 14) explained that people of all ages are concerned but in different forms (see Figure 1). Elderlies are alone in their social bubble, disconnected from the people around them. Instead, the youth are several in their social bubble, but they are isolated as a group.

Tackling loneliness is much more complex than bringing the people's private space physically closer. Interventions need to consider all the aspects of loneliness, "its attentional, confirmatory, and memorial biases as well as its social and behavioral effects." (Hawkley, Cacioppo, 2010, p1). Housing needs to be designed around social interaction and interdependence. According to sociologist Zygmunt Bauman, even in the most independent society, there is one thing that nothing else than yourself can provide, it is being among other people, being one of a company (Gandini, 2015). In that case, it is interesting to reflect on Sweden which is the world's most independent country as stated in the World Value Survey. It is a globalizing problem, the world has embraced "a culture of individualism, and traditional sources of solidarity – labor unions, civic associations, neighborhood organizations, and religious groups – are in decline" (Pagh et al., 2018, p20) In a world of increasing levels of loneliness shared living models are becoming relevant. Alternative ideas for living more densely and sustainable are to be developed (Ahn et al., 2018, p6).

Figure 1: Lonely youth and lonely elderlies.

Community living isn't new, already in middle age most of the people were living collectively. With the first industrial revolution, housing became individualistic and community living emerged as a utopia where all the tasks would be collectively done. Then people developed new collective ways of living like serviced houses so women could work. The origins of the modern form of co-housing are in Denmark in the 1960s (Coldwell, 2019). A system for resident associations gave power to people and made the housing market more reactive to the contemporary crucial societal changes. But from the 1980s, with the rise of privacy, community living became obsolete. It is only recently, with the development of solutions for elderlies and the younger generation, that community living attracted interest again.

Community living can take many different forms but the most commons are co-living and co-housing. The "co" stands for collective but a distinction is to be made between housing and living. Co-housing concerns the type of settlement, and co-living is a way of life (McIntosh, 2013). Yet, the difference isn't as arbitrary because the two notions are often intertwined in situations where a community living scheme is a co-housing building where residents are living collectively. In architecture, co-housing and co-living are often distinguished on another focus. The CoHousing Association defines co-housing as "an intentional community of private homes clustered around shared space". In this kind of settlement, the residents share common spaces where they can cook, eat, or have a meeting together, and do their hobbies. On the opposite, co-living is a term used for single buildings with shared facilities that are targeted at urban audiences and that involves more sharing of spaces like living rooms for example. It allows for more frequent interactions. Another distinction is also that co-living residents rarely own their dwelling wherein co-housing schemes they mostly do.

This thesis is contributing to fill the existing gap between social and architectural research. As Egerö mentioned, "Social science research on co-housing is not a common theme in the academic world." (Egerö, 2014, p2) and loneliness is not common in architectural research. Here, a line is drawn between a hot topic in social sciences and a trend in architecture.

PURPOSE

The key aim of this work is to provide fellow architects and communities with a guidebook with the tools to tackle loneliness through the design of a community living building. The goal is also to answer if the belief that shared living could tackle the phenomenon of loneliness and improve the quality of life. The research is aiming to reduce involuntary loneliness through the design of community living. Considering that loneliness is an extreme form of independence, the ambition is to increase interdependency among inhabitants and explore how the design can help in this regard. The design strategies are objectives to give people more opportunities for interaction. The components are the tools meant to be used to prevent loneliness with community living. The design proposal is an ideal example of the implementation of the tools to inspire architects and communities.

RESEARCH QUESTION

HOW COULD DESIGN FOR COMMUNITY LIVING TACKLE LONELINESS?

By working on this main question, the thesis has been elaborated around the following interrogations.

How to design for social interaction and sense of belonging?

How to make places more social?

What is community living?

What is loneliness?

What in community living can prevent loneliness?

What is the impact of loneliness on mental and physical health?

What characterizes community living?

DELIMITATIONS

This thesis intends to deal with loneliness rather than solitude. The discourse is on social closeness enhanced by interactions. In this thesis, it is mostly the term community living that is used to incorporate co-living and co-housing. In the case studies, the criteria are only on the design. The organization of the community is described but not analyzed. In that sense, the projects are not classified regarding the way residents live but rather on the number of residents and the proportion of common and private spaces.

Concerning the design strategies, they stay as general as possible to be the most universal. They concern crucial areas that are specifically interesting when designing a community living building like entrances and other common areas. They are guiding the spatial design and arrangement but not the furniture design. They define what activities and configurations are possible in a particular space. Each design component and scenario's building parts are imagined to be part of a bigger system made of several elements assembled.

These delimitations make the guidebook being focused on stimulating social interaction and developing a sense of belonging, two things that are prerequisites for social contact and interaction (Montgomery, 2013, p.126-140). This work provides speculative design solutions to loneliness.

EXPLORED	NOT EXPLORED
Loneliness	Furniture design
Social interaction	Physical closeness
Community living	Scheme organization
Speculative design	Participatory design
Social closeness	Site specific design
Adaptive design	Solitude

THEORETICAL FRAMEWORK

Looking first at the scholars on loneliness, the article *Loneliness Matters: A Theoretical and Empirical Review of Consequences and Mechanisms* by Hawkley and Cacioppo (2010) is used to understand the phenomenon. The documentary *The Swedish theory of love* is complementing on the Swedish context.

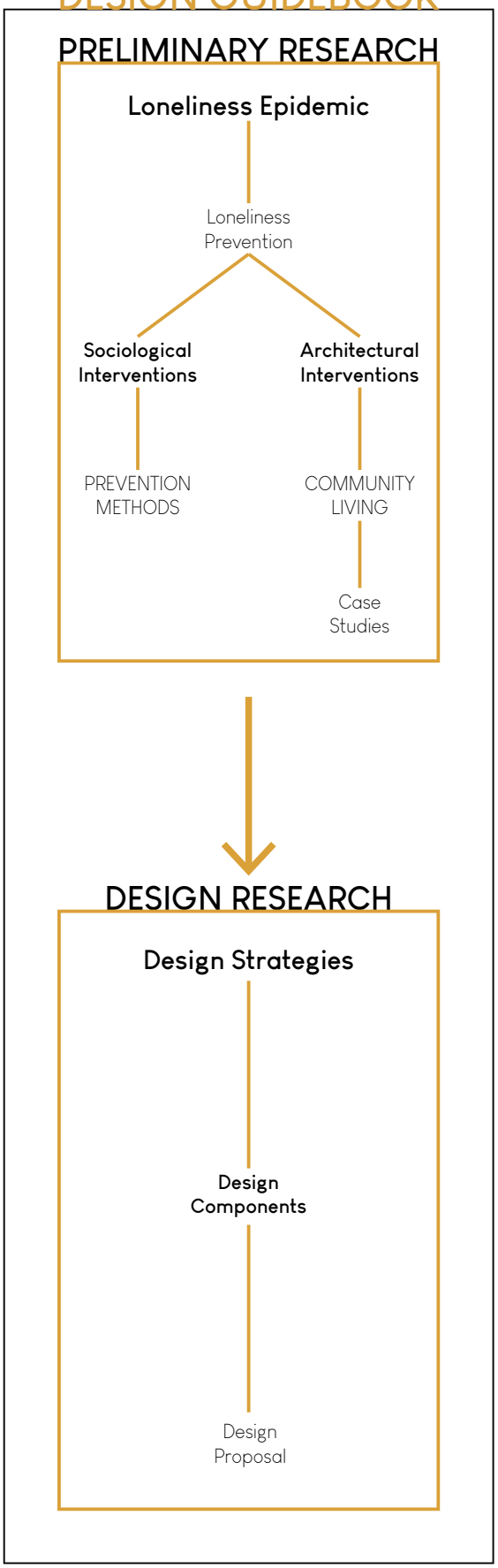
Concerning the design for social interaction theories, the research *The Social Logic of Space* by Hillier and Hanson is the knowledge base in combination with the work of the researcher Erin Peavey. As additional references, the thesis *Designing for Improving Social Relationship with Interaction Design Approach* by Mamaghania, Azadeh Asadollahib, and Mortezaei is complete and closely related to the article *Positive Social Interaction by Spatial Design* written by Ferdous.

The selection of publications for community living is composed of articles from Egerö and Vestbro for the history and definition of this type of housing. They title *Puzzling patterns of co-housing in Scandinavia, History of Cohousing - Internationally* and *Sweden and Four decades of Swedish cohousing - what chances of a real take-off?* As an analysis reference, the book *A History of Collective Living - Forms of shared housing* from Schmid et al. is the main support *IMAGINE, Exploring the brave new world of the shared living* by Space10 and Urgent.Agency, and *LIVING CLOSER - The many faces of co-housing* by Studio Weave are full of reference projects and residents' feedback.

In terms of architecture references, the case studies are on projects from different countries and different community living schemes. Share House LT from Japan is the only one from outside Europe. The other ones are Older Women's CoHousing and The Collective Old Oak from the United Kingdom, Sargfabrik from Austria, Vindmøllebakken from Norway, and Stacken from Sweden.

METHOD / PROCESS

DESIGN GUIDEBOOK



Theory

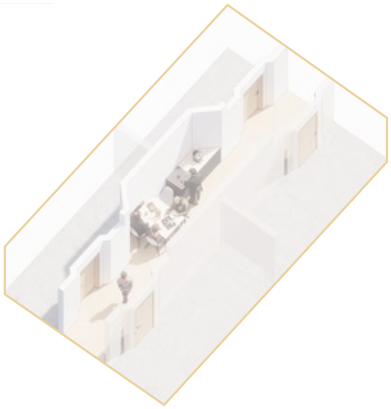
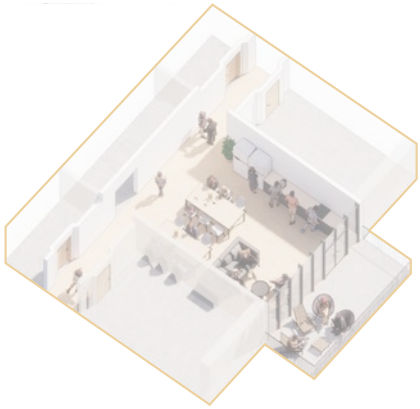
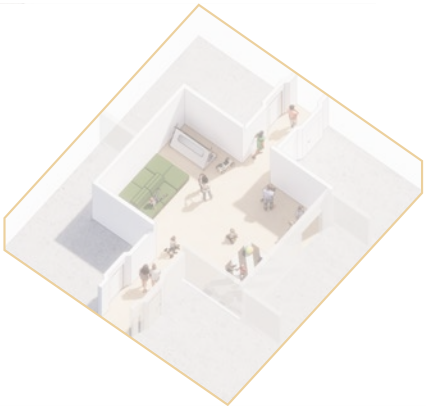
Through literature studies, scientific articles are used to define loneliness and understand its consequences and mechanisms. They are also used to explore the different methods described by social scientists to prevent this feeling. The methods are connected through the theories on design for social interaction. Community living is researched through history book publications and architecture studios publications on the topic. The research falls under two angles: the community which provides common interaction and the living which concerns everyday life. Both are then connected for everyday interaction. Overall, this phase is based on studies on sociology and architecture. It works as a backbone for the design to prove that architecture can solve sociological issues.

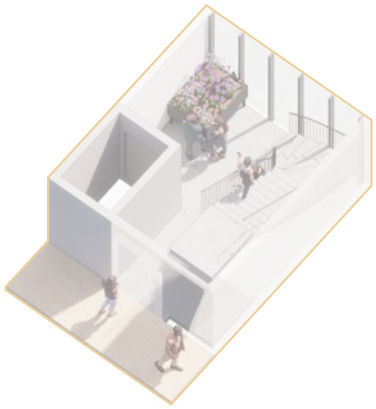
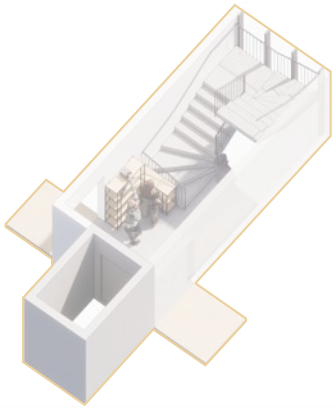
Case studies

Analyzing existing community living projects is the base to extract design strategies on how to build for a community to grow. The case study projects have been chosen for their referencing in several community living publications. For accuracy and relevance of the case studies, the chosen buildings represent different types of community living and are from diverse countries in and outside Europe. The criteria established from the case studies are crucial for the following phase as they define which aspects of the building have the most positive impact on loneliness and the community.

Design

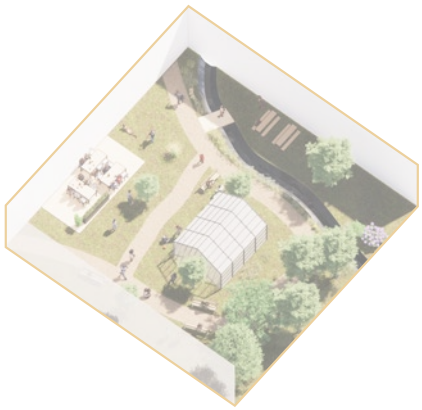
At this point, the design strategies established earlier are used to develop design components and the design proposal. The components are socially designed spaces that can be found even in standard residential buildings. They are then implemented in a design proposal which is seen as a speculative testbed for the components. t is one of many ideal combinations to prevent loneliness with community living where the design strategies and components are implemented into a unique context. It is on example of how the components could be combined and work together.

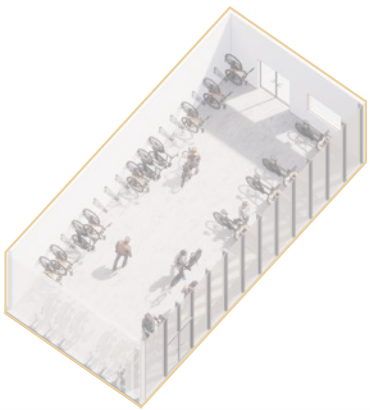




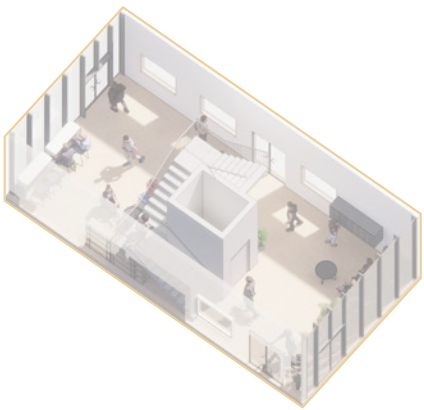



PRELIMINARY RESEARCH

Literature studies and case studies





THEORIES ON COMMUNITY LIVING

Definition

The term community living can be decomposed to be defined. At first, "community" is a group of people united around shared common interests (McIntosh, 2013). Sharing is a term that can be understood from two angles. There is the tangible and practical resource sharing and there is the less tangible value sharing which is developing a sense of togetherness and involvement in each other's lives (Ahn, et al., 2018, p44). Yet both senses are taking place in community living schemes. The community is sharing spaces, and by living together they also share values and convictions.

The "living unit" in this kind of housing is important as it is the only getaway from the community for the residents. The sociologists Hartmut Häussermann and Walter Siebel (1996, p15) researched the characteristics a living space should have, they established four characteristics.

The functional home

The home is the place of production, reproduction, and regeneration. It should support those functions to fulfill the needs for vitality and work capacity and work as a personal refuge (Schmid, 2019, p12).

The social home

It is the relationship existing between the residents. The house must facilitate interaction for residents to feel at home and fulfill their need for recognition and appreciation (Schmid, 2019, p12)

The socio-psychological home

It is the feeling of being protected within a private space. The home is the place of emotional freedom and intimacy (Schmid, 2019, p12).

The legal and economic home

These parameters are fulfilling the need for security and control over personal space. The ownership situation is influencing the power that one's can have on his own house (Schmid, 2019, p12).

The difference in the definitions between co-living and co-housing is sensitive. By confronting diverse explanations, here are the description of the terms.

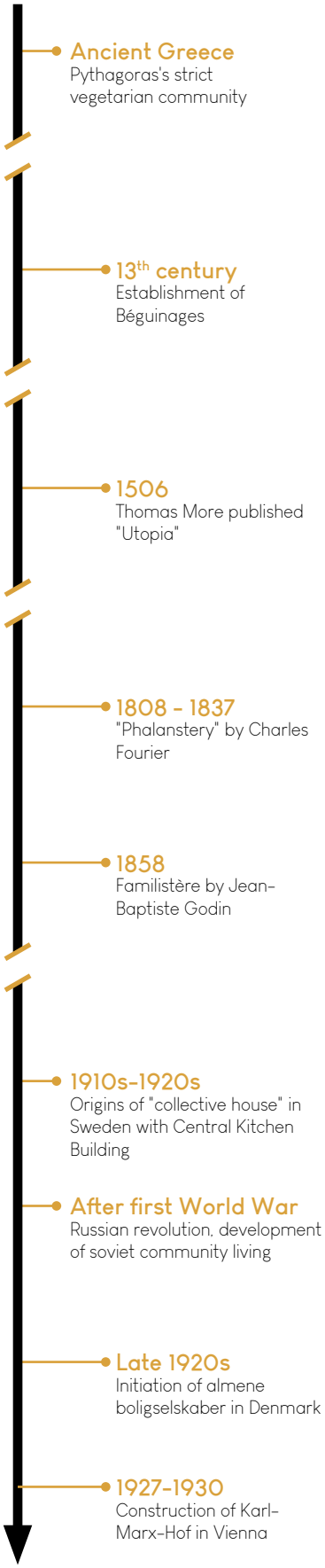
Co-living:

Co-living is a settlement with the community at its core where residents are intentionally living together surrounded by shared spaces (Ahn, et al., 2018, p105). It is described as a modern take on collective living ideas targeting Millenials where the residents "share living space and a set of interests, values, and/or intentions" (Bowes, J. et al., 2018, p19). The notion of sharing living space is the core value and the most distinctive point from co-housing where residents are mostly sharing more leisure space. In co-living schemes, the private units are minimal so they are fully functional only once combined with the communal. The units are connected by shared kitchens, dining, and living spaces, and complemented by extra shared amenities such as workspaces, spas, and laundromats (Bowes, J. et al., 2018, p19). Considering the target group, co-living is mostly developed in urban areas (Pagh, et al., 2018, p48) and is often associated with co-working spaces (Bowes, J. et al., 2018, p17). As a top-down initiative, the governance is in private developers' hands who with the rent provides cleaning and maintenance services (Bowes, J. et al., 2018, p17).

Co-housing:

The term co-housing became popular in Denmark in the 1960s (Fond, 2013, p16). It is defined by the UK's Cohousing Association as "an intentional community of private homes clustered around shared space" (Pagh, et al., 2018, p48). It is the most common form of community-led housing, often self-built, self-organized, self-financed, and self-initiated (Bowes, J. et al., 2018, p17). The governance aspect is important for the residents. This housing type tailored to the residents' needs is composed of units that are functional independently (Bowes, J. et al., 2018, p17). The shared amenities are supporting communal leisure time instead of living time as the units are functional on their own. As a community-led housing, the maintaining tasks are shared between the residents. The bottom-up process reflects the non-hierarchical community structure, and the collective management execution (Bowes, J. et al., 2018, p17).

History



Community living as an utopia

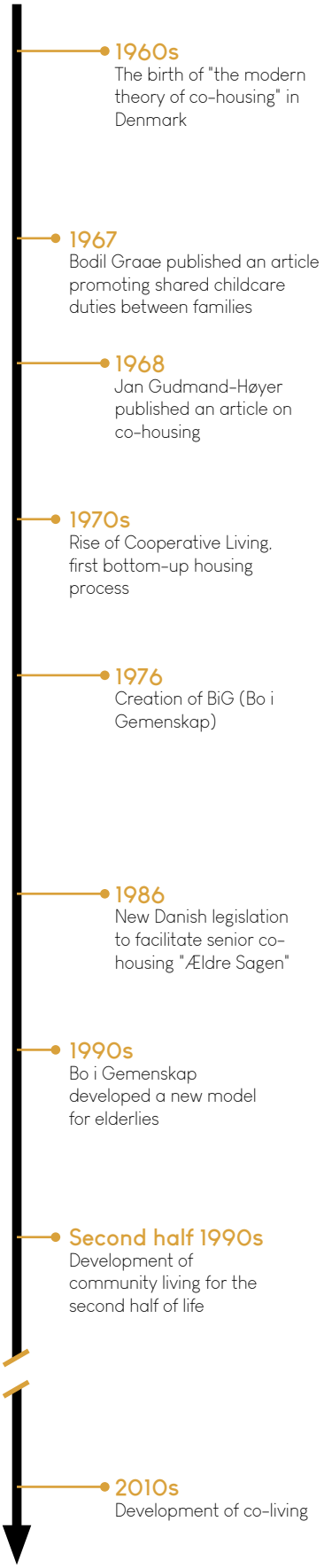
Community living is not a new way of living. Nowadays, community living is considered a distinct and unique form of living but historically it was the first form of all (Schmid, 2019, p10). Already in Ancient Greece, the Pythagoras aspired to a community of strict vegetarians (Ahn, et al., 2018, p12). It was about providing places for people ignored by the current society. Until the 17th century, community living was a viable housing solution for outcasts. For example with the single women communities called "béguinages" in the 13th century. Inspired by the book "Utopia" by Thomas More in 1506, the idea of an unrelated community gathered around common shared amenities appeared (Vestbro, 2010, p43).

In the first half of the 19th century, from the massive urban migration and the changes provoked by the first industrial revolution, emerged visions of a society where working and living were collectively organized (Vestbro, 2010, p43). One of the utopian-socialists pioneers was Charles Fourier. From 1808, he envisioned "Phalanstery", the worker's palace where 1620 residents would be sharing kitchens, schools, kindergartens, a theatre, and other collective facilities (Vestbro, 2010, p43). This concept has been realized in 1858 by Godin in the "Familistère". Initiated later in the century, the Garden-Cities addressed the lack of community living and the unhygienic context through the sharing of outdoor areas, laundromats, daycare, and meeting facilities (Schmid, 2019, p113, 123).

The early 20th century is considered as the origin of today's Swedish "collective houses" with the Central Kitchen model (Egerö, 2014, p1). The apartments didn't have any kitchen, they had their food delivered from the central basement kitchen (Vestbro, 2010, p46). This model was later associated with the women's movement (Schmid, 2019, p81). After World War I, some community living settlements, inspired by utopian-socialists, were created in the Soviet Union. They developed a concept where the families were dissolved for the profit of the community. Each room had a specific function, and the residents were organized into age groups and were sharing sleeping rooms (Schmid, 2019, p103). In parallel, the Danish government initiated a collective ownership solution to give power to the people and produce a lot of affordable housing (Egerö, 2014, p7).

In the inter-war period, the functionalists wanted a new type of housing to shape people's behavior (Vestbro, 2010, p46). A trend for community living encouraged by the development of cooperative housing associations started in Sweden. Meanwhile, in Austria, the government was massively rebuilding the country with new hygienic units. An example of this policy is Karl-Marx-Hof in Vienna. Home for 5000 residents, the units were organized around courtyards concentrating the shared amenities. In addition to the regularly shared spaces, residents had workshops, café, fitness rooms, and a kindergarten (Schmid, 2019, p137). After the Second World War, the conservative policies for the nuclear family came back. The trend of serviced houses slowed down but a new model of housing emerged. The Community Settlement was designed for more sharing and to encourage interaction, a thing some families were missing with the new standards (Schmid, 2019, p146).

Community living as a modern housing solution



The 1960s are considered as the decade of birth of "the modern form of co-housing" in Denmark (Egerö, 2014, p1). When the population increased after WWII, the housing associations were crucial and this system became an institution (Egerö, 2014, p8). People were allowed to create new "counter-cultural" housing (Egerö, 2014, p8). It led to urban collectives and the development of the "intentional community" concept (Egerö, 2014, p3). In 1967 and 1968, two Danish journalists published articles arguing for co-housing as the ideal modern solution. In the 1970s, was developed Cooperative Living, the first bottom-up housing process (Schmid, 2019, p113). In Sweden, the group BiG (Live in Community) was created in 1976. The group of women elaborated the "Kollektivhus" where the housework was collectivized to foster the sense of community and free the women (Vestbro, 2010, p51). Cooperative Living was the first bottom-up housing process.

During the 1980s, Denmark kept on facilitating the creation of community with new financial legislations (Egerö, 2014, p4), and the idea of multi-generational community living started to grow. Made possible by the system of "Baugruppen" in the Germanic countries, a model of Housing and Culture Projects emerged. It is a type of housing where work and living spaces were all combined in one settlement with shared amenities as office space and art studio. The common areas had recreational functions like cultural facilities and workshops (Schmid, 2019, p206). In parallel was developed the Cluster Apartments model. The concept is to have a minimal private space that is only functional once combined with the shared facilities around (Schmid, 2019, p193). In some cases, the units had a bathroom and a kitchenette, but the objective was that residents would only sleep in their room. In the two previous models, the benefits of sharing diversity are towards social interaction, security, and a sense of community (Schmid, 2019, p193).

In the recent decades, there has been a strong development of community living for people in their second half of life. In the 1990s, BiG developed a model based on mutual support to be less dependent on professional care (Egerö, 2014, p6). The households are diversifying with non-family living becoming a standard and the rise of single households (Schmid, 2019, p32). As a reaction, the community living catalog is diversifying too. Targeting the working digital Millenials, the model of Co-living has been developed so the shared functions are not even necessarily in the same building as the private units (Schmid, 2019, p272). In line with the targeted group, it is often combined with co-working spaces to follow the trend of increasing freelancing and digitalization. Run by private companies, this model is the return of serviced housing as the rent includes cleaning, laundry, and a community manager (Schmid, 2019, p273).

In pre-modern times, community living was the norm. It is only from the first industrial revolution that it was considered as an exception to the standard. The different forms it took throughout history are reflecting the contemporary conditions and interconnections between people. Interconnections which translated into spatial forms (Schmid, 2019, p28).

THEORIES ON LONELINESS

Definition

Loneliness is a feeling, it is not a physical state. It can come from being alone but also while surrounded by people. As explained by Gazová (2014, p13), it is a personal void that can take two forms. It either is a literal emptiness (see Figure 2) - a physical space - or a consequence of disconnectedness with the surrounding (see Figure 2). The feeling comes from social needs unmet by the quality of one's social connections (Peplau, Perlman, 1982; Pinquart, Sorensen, 2001; Hawkley et al., 2008; Wheeler et al., 1983 in Hawkley, Cacioppo, 2010, p1).

At its core, loneliness is a primitive instinct. It is the feeling resulting from our brain reacting to the absence of people around us (VOX Media Studios, 2020). Until recently, we have always settled in the will to live surrounded by others, so this reaction wasn't a problem. It was rather motivating us to get out of this situation. In that sense, according to Cacioppo and Hawkley (2010, p1), loneliness is the social parallel of physical pain, hunger, and thirst, it is the pain of social disconnection that drives our hunger and thirst for social connection. This instinct is sufficient for 15 to 30% of the people to abolish social isolation (Hawkley, Cacioppo, 2010, p2).

Like all sentimental feelings, loneliness is as complex to understand as to measure. Researchers from the University of California in Los Angeles developed a tool that led to the discovery that about 80% of people under 18 and 40% of those over 65 years old reported feeling lonely sometimes (Berguno et al., 2004; Pinquart, Sorensen, 2001; Weeks, 1994 in Hawkley, Cacioppo, 2010, p1). The same studies proved that through lifetime people are feeling a lot lonely in young adult ages, then it diminishes when they start a family, and once the children leave, the loneliness increases again (after 70 years old).

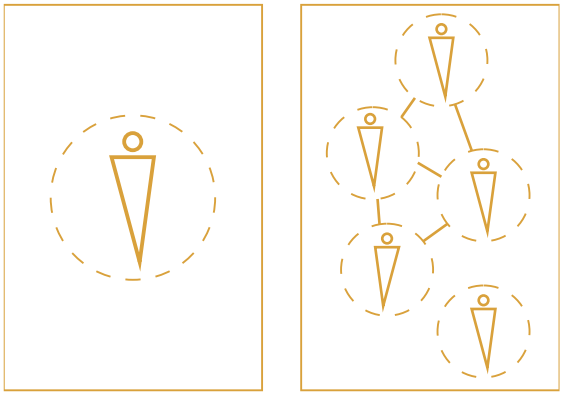


Figure 2: Lonely emptiness / disconnectedness.

There are two kinds of loneliness, voluntary and involuntary. For some people, the feeling of social isolation is worth it as they can invest time in personal and professional growth (Klinenberg, 2012). As voluntary loneliness is a way of living, this thesis only addresses the "perceived social isolation, not with objective isolation" (Hawkley, Cacioppo, 2010, p1). Besides, involuntary loneliness is the most impactful as it is a situation that people are suffering from. For this loneliness, the sense of belonging is crucial. It is the feeling of security and support coming with acceptance and inclusion. It allows a person to identify with a group and therefore bringing their authentic self to the open.

Finally, loneliness depends a lot on one's social network, a net of social ties interlinked together. Depending on the time spent, the emotional intensity, the intimacy, and the reciprocal services, the ties can be characterized as strong, weak, or absent (Granovetter, 1973, p1361). All kinds of ties are necessary to fulfill one's social needs and sense of belonging. The effect of strong ties on these notions seems evident (Granovetter, 1973, p1362). Even though it only represents 21% of people's interactions, weak ties are important regarding well-being and sense of belonging (see Figure 3) (Berry & Hansen, 1996 in Sandstrom & Dunn, 2014, p910). In the end, weak ties are diversifying one's social network. Diversity is an essential factor as it makes people less vulnerable to variation in their network (Berkman, 1995; Cohen & Janicki-Deverts, 2009, in Sandstrom & Dunn, 2014, p920)

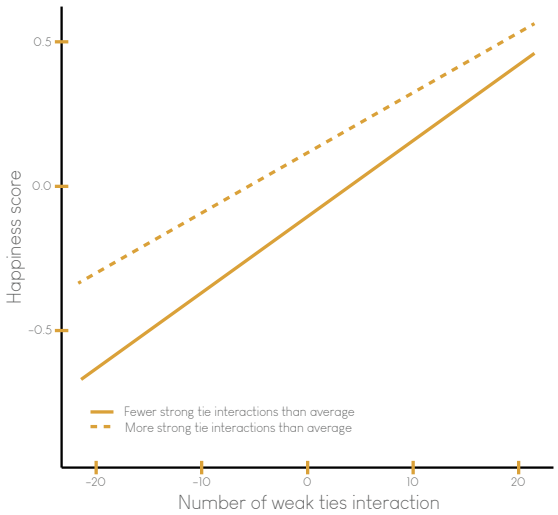


Figure 3: Table of happiness on number of weak ties interactions (Adapted from Sandstrom & Dunn, 2014, p917)

Mechanics and impacts

To be able to elaborate a solution to the major issue that represents loneliness it is important to understand its mechanics. The most referenced theory on the topic is the one developed by John T. Cacioppo and Louise C. Hawkley from the University of Chicago. It is considering loneliness as an instinctive feeling which often turns into a self-fulfilling prophecy (Hawkley, Cacioppo, 2010, p3,4). The feeling of loneliness makes individuals feel unsafe and hyper-vigilant of their surroundings. It leads to cognitive biases that give disconnected people a more threatening perception of any interaction. They then tend to expect more negative interactions, an expectation that draws out other's behaviors. This expectation causes lonely people to distance themselves from any social interaction. Also, taking into account the current sanitary situation, the recommendation of social distancing and self-isolation isn't preventing people from feeling lonely.

Loneliness has first been addressed as, a feeling that seriously affects many people at the same time, an epidemic in the 1970s (VOX Media Studios, 2020). Since then, research has multiplied to discover the impacts of the loneliness loop on health. As social interactions and positive aspect has been proven to be mutually reinforcing (Sandstrom & Dunn, 2014, p910), it seems natural to say that the lack of social connection brings negative aspect. A lot of the consequences of this feeling come from the low motivation to engage in health-promoting behaviors (Hawkley, Cacioppo, 2010, p4). In that sense, loneliness can be as impactful as smoking, or obesity for older people (Landeiro et al., 2017, in Ahn et al., 2018, p48). Most of the physical issues of lonely people are similar to the ones obese people are suffering from. The instinct reaction to loneliness heightens the feeling of vulnerability and affects psychological processes. It is influencing physiological and mental health (Hawkley, Cacioppo, 2010, p1). Lonely patients are more likely to develop depression symptoms (Landeiro et al., 2017, in Ahn et al., 2018, p47, 48). So, the mental issues are consequences of this correlation between loneliness and depression.

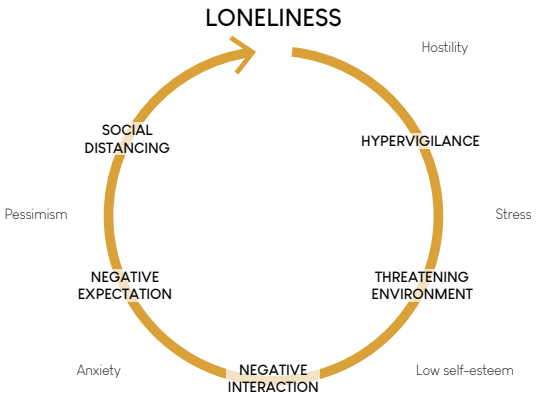


Figure 4: The loneliness loop.

Interventions

There are different ways to tackle loneliness, there are top-down solutions as appointing a minister for loneliness like in the United Kingdom, and there are bottom-up ones like the Swedish Red Cross hug campaign to strive for loneliness among elderlies (Gandini, 2015). The interventions to reduce the phenomenon need to deal with its whole complexity. According to the reviews of different experiences of interventions to reduce loneliness made by Hawkley and Cacioppo (2010, p8), "it exists globally four types of interventions to strive against loneliness: enhancing social skills, providing social support, increasing opportunities for social interaction, and addressing maladaptive social cognition". Even if much of the research concluded that the most successful one was "increasing opportunities for social interaction" (Hawkley, Cacioppo, 2010, p8), the four types need to be addressed in every probable solution for loneliness.

Enhancing people's social skills would help them overcome the negative interactions that can occur. It would prevent them from entering the distancing phase which is the next step in the loneliness loop.

The focus for a solution to increase social opportunities is the sense of belonging that lonely people are losing as they are distancing themselves from their social network.

It is important for the person suffering from loneliness to be provided with social support. It would help people who realized they are already in the loneliness loop to get out of it.

Addressing the maladaptive social cognition means focusing on the hypervigilance that comes with loneliness and its influences on perceptions and cognitions (Hawkley, Cacioppo, 2010, p8, 9).

LEARNINGS FROM LITERATURES

Community living

Community living is a type of housing that can have many facets, which makes it easily adaptable to the changing social norms of our time. It results in more complex and complete ways of living than standard individual dwelling (Schmid, 2019, p10). As globally the dwellings are becoming more compact (Bowes, J. et al., 2018, p17), the place we are living in can have an impact that should be considered. Isn't a personal minimal dwelling extended by complementary use option the right balance between compactness and flexibility? For seniors, living in a community can be a solution to improve the last years of many while reducing the demand for care services (Pagh, et al., 2018, p31).

Sharing spheres

The general idea of community living being the reduction of private areas in the profit of the community is contradictory to the conception of living being the highest form of privacy (Schmid, 2019, p5). Therefore, a lot of attention needs to be put on how and where to draw the line between private and common. As Schmid said, "a system of shared spaces with different functions, varied infrastructure, and a diverse user group ensures a balance between appropriation and utilization" (2019, p115). So the diversity of the common areas matters. To establish a transition from common to private with diversity, there is the concept of sharing spheres that is interesting to follow (see Figure 5). There are 4 spheres and each with a different level of privacy. (Ahn, et al., 2018, p33). The bedroom is the most intimate and the outdoor spaces are the most open. Before designing a communal space it is important to define in which sphere it belongs. Their place in the transition needs to be established wisely for the space to play the expected role. The symbol of the sphere also shows that each of the common areas has to be considered with equal importance to result in a smooth and natural transition from public openness to private intimacy. This diagram is the support to define the openness of the different programs that the design proposal contains.

The importance of the common areas

The common spaces must be designed to allow flexibility and interactivity so, they can be used individually or in common, permanently, or temporarily. The space, by its design, defines degrees of privacy or publicness (Schmid, 2019, p11). A common room is a living space that hasn't been assigned to any individual but is instead "available to and supported by a defined community" (Schmid, 2019, p114). Communal space can serve a residential purpose but most of the time it is leisure or work areas that add considerable value to a housing building as it encourages coexistence and interaction within the community (Schmid, 2019, p115). To foster interaction in the access areas, they need to be larger and have distinctive characteristics from the standard access areas.

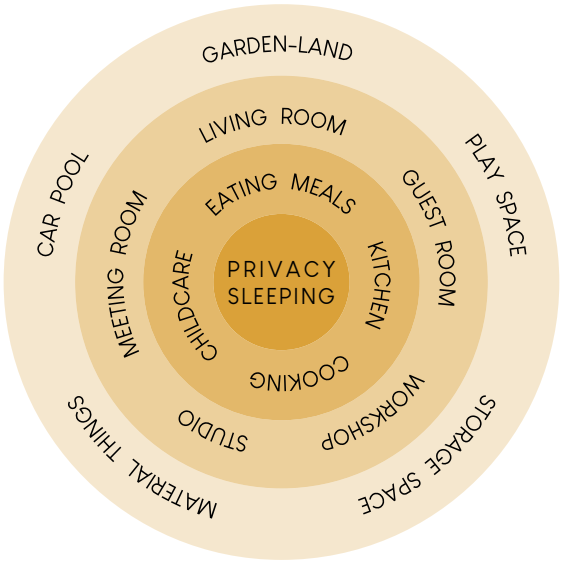


Figure 5: Sharing spheres (Adapted from Ahn, et al., 2018, p43

The characteristics of a living space

The living space is supporting characteristics required to be understood to design an as complex housing type as community living. By spreading those characteristics through the whole settlement, the sense of belonging will concern the community and not just the private individual space of each resident. The definition of those characteristics below needs to be brought further in the process to create a design with a high community feeling.

The socio-psychological home

It is the shelter function of a house. The feeling of being protected within the private space. It enhances the sentiment of retreat and security from the public space. The home is the place of emotional freedom and intimacy, it insulates from the public space (Schmid, 2019, p12).

The legal and economic home

These parameters are fulfilling the need for security and control over personal space. The ownership situation is what influences the potential power that one's can have on his own house. From that, there are different levels of security and autonomy (Schmid, 2019, p12).

The social home

It is the relationship existing between the residents, relatives or not. The living unit must be integrative for occupants to develop a sense of belonging to a community. As a social unit, the house must facilitate social interaction for residents to feel at home and fulfill their need for recognition and appreciation (Schmid, 2019, p12)

The functional home

The home is the place of production, reproduction, and regeneration, it should support those functions. Production and reproduction are functions like cooking, care for the family members but also procreation. It fulfills the needs for vitality and work capacity (Schmid, 2019, p12). Regeneration is about retreatment and relaxation, the private unit should work as a personal refuge (Schmid, 2019, p12).

Loneliness

Loneliness is a feeling anchored in the human that can be experienced by anyone. Its epidemic state enhances the fact that solutions need to be found urgently. Its mental and health consequences have a massive impact on our society. For example, it has an impact on the economy as people are unhealthier and are taking more sick leave (Landeiro et al., 2017, in Ahn et al., 2018, p47, 48).

Humans are social creatures and even in the modern individualistic society, we spent most of our time (80%) with others (Emler, 1994; Kahneman et al., in Hawkley, Cacioppo, 2010, p10). So, to help to reconnect with surrounding individuals in community living, some important notions need to be considered. They are the parameters studied in the development of the design components.

Safety

A secure environment where individuals can interact freely is primordial to prevent loneliness as altruism increases with the feeling of safety (Ahn, et al., 2018, p10). The right balance between sheltering and openness is to be found to encourage socializing and therefore develop the sense of belonging of the community.

Strength of weak ties

Diversity within the community is setting the stage for "weak ties" among residents to be developed. Some of the ties might even become stronger with time. It will easily create a global sense of belonging and improve the well-being of residents.

Enhance social skills

Enhancing people's social skills would help them overcome the negative interactions that can occur with loneliness. It would prevent them from entering the distancing phase of the loneliness loop. An intervention of this kind in architecture would be working on the diversity of spaces. As the diversity of residents, the diversity of shared spaces, and their spatial organization are important factors for inhabitants to find a space to socialize according to their skills. This way their confidence and self-esteem increase. Such diversity can also help residents to develop new skills and expand their weak ties network.

Increase opportunity for interaction

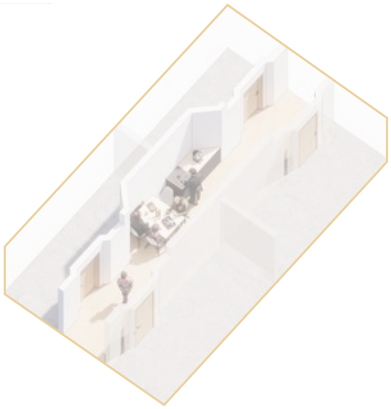
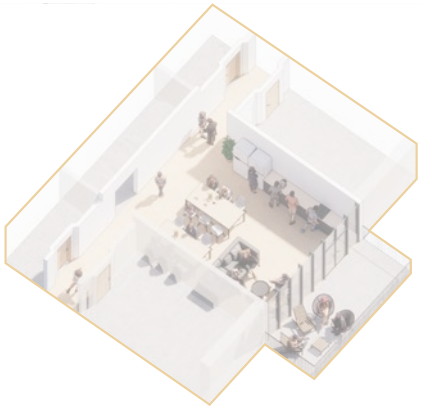
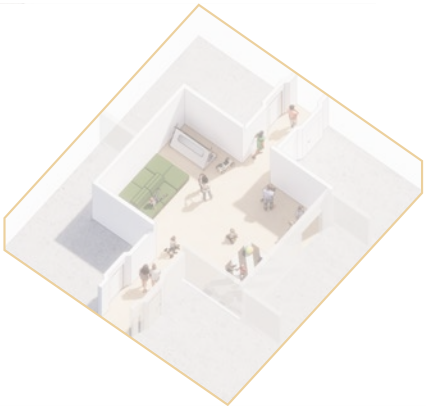
The focus for a solution to increase social opportunities is the sense of belonging that lonely people are losing as they are distancing themselves from their social network. In that sense, community living seems a solution to explore as it enables people to live their private life while being in a community which is sharing amenities and values. Therefore, the building must be considered as the interaction enabler. The social connection needs to be possible in every corner, each in a different setting. Making people pass by each other before going their separate ways can be a simple solution but with a big impact. On the other hand, it shouldn't force residents to interact, the intervention must be smooth. It shouldn't alter the intimacy or the feeling of safety of the residents.

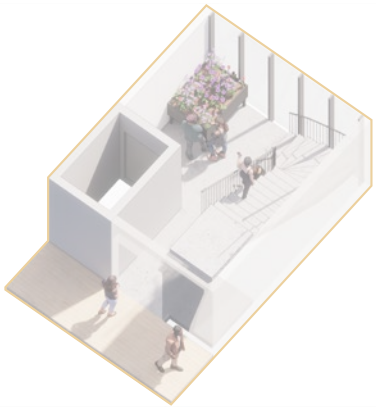
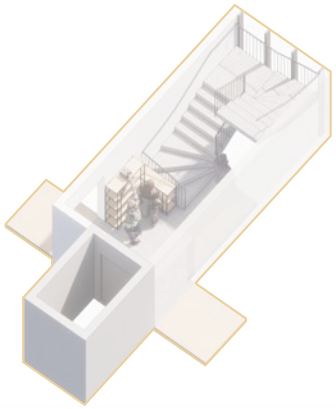
Provide social support

As loneliness is considered an illness, it is important for the person suffering from it to be provided with support, in that case, social support. It would help people who realized they are already in the loneliness loop to get out of it. For a community living building, support must be found within the community itself. It is crucial to prevent people from going into the loneliness loop by providing a space where privacy freedom meets communal support. It will benefit the sense of belonging, the community self-sufficiency, and the development of a coexistent connection between the residents. Mutual support and interdependency would make the community only stronger.

Address maladaptive social cognition

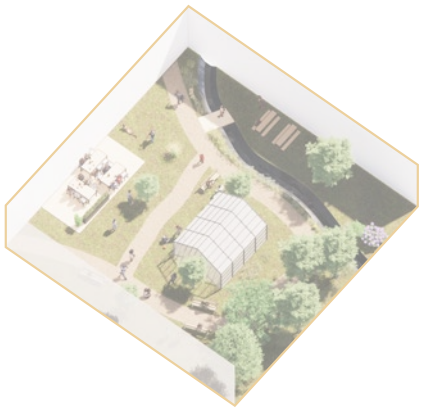
An intervention addressing the maladaptive social cognition would focus on the fact that the hypervigilance that comes with loneliness influences perceptions and cognitions (Hawkley, Cacioppo, 2010, p8, 9). By designing an architecture that offers social life, the aim is to prevent residents from reaching the hypervigilant stage of the loneliness loop. The prevention can be spatial by creating a peaceful place with diverse social settings options. This way, residents who don't feel confident in a certain setting can just go into another room instead of locking them up in their private rooms, the transitional spaces are crucial in this situation.

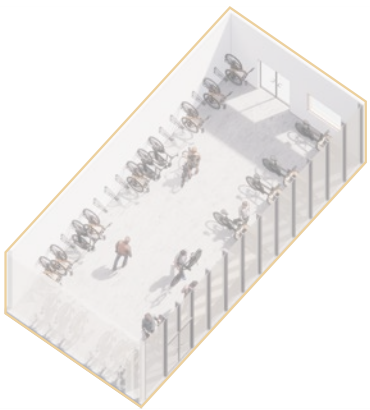




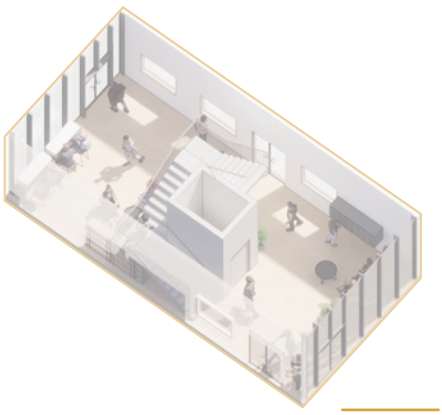



CASE STUDIES

Community living case studies





METHOD

Comparison residents / open areas

There is a long list of community living settlements to choose from when doing case studies. The six analyzed projects have been chosen as they were pioneers by the time they were built and because they represent different forms of community living. There are two projects from Scandinavia – Stacken (Sweden) and Vindmøllebakken (Norway), two projects from the UK – Older Women's CoHousing and The Collective Old Oak, one project from a Germanic country – Sargfabrik (Austria), and one from outside Europe – Share House LT (Japan). The diversity of the culture they are from is reflected in their typologies and spatial organizations. In this regard, some features would only work locally and can't be generalized. Nevertheless, analyzing existing projects from various countries is enriching as things must be learned from others' cultures. An important figure to compare for community living is the common spaces. Therefore, each case starts with an area table including the total floor area and the part of it which is public, common, or private. These numbers are then correlated with the number of residents to compare the projects. The Figure 6 below is the result of this comparison. The average line shows that the projects have a similar proportion of common and public areas,

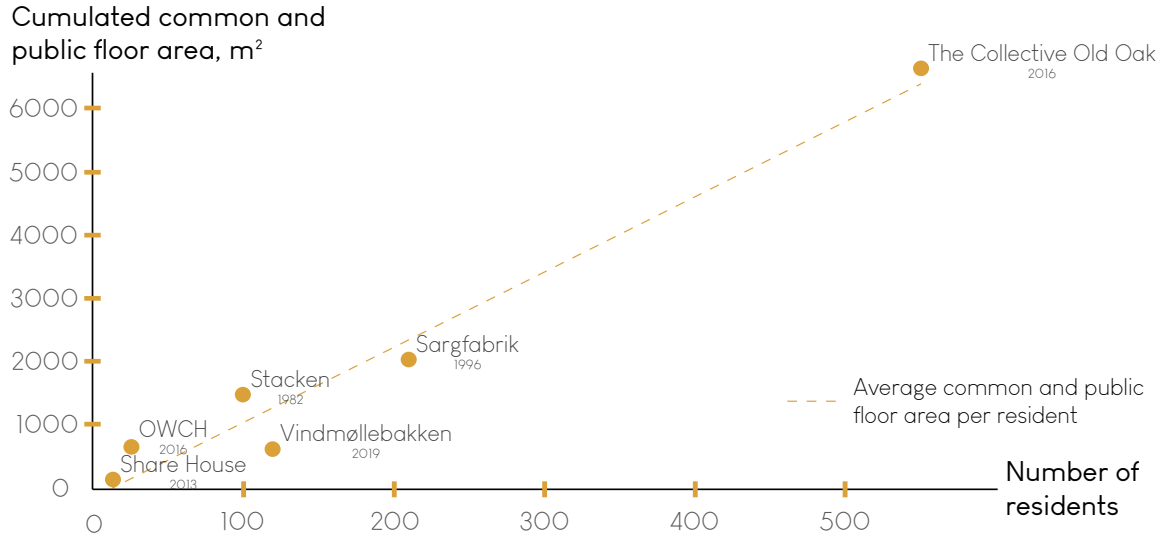


Figure 6: Number of residents in relation to the floor area of common and public spaces

	The Collective United Kingdom 2016	**OWCH** United Kingdom 2009 – 2016	**Share House LT** Japan 2013	**Stacken** Sweden 1961 – 1982 – 2018	**Vindmøllebakken** Norway 2019	**Sargfabrik** Austria 1982 – 1996
Residents number	550	26	13	100	120	210
Common + Public floor area m²	6635	530	152	1485	500	2050
Common + public floor area / res. m²	12.1	20.4	11.7	14.9	4.2	9.8

Each project is described by general specifications and its background. Then only the takeaways from the analysis are shown. The complete analysis and extra graphic documents on the projects can be found in the appendix. The analysis deepens on the different transitional spaces from the most public to the most private area. Public and private are two opposite poles which by their attraction and repulsion creates a multitude of transitional spaces. In this matter, the analysis is following the 6 transitional spaces concept explained below that have been theorized by the English architect Serge Chermanyeff (Alexander & Chermanyeff, 1971, p109). From these analysis has been extracted takeaways that are important elements to consider and learn from for the development of a community living building preventing loneliness. For each case study, there is a sum-up of which element is present in the project. They are icons for which the glossary is in the following part.

The six transitional steps from Alexander and Chermanyeff

PUBLIC

Urban public

This is the space open to everyone. It usually a continuation of the street, without any gate to pass. In this space, the building interacts with the street and is either open or closed. In this category of transitional spaces are visually and physically open spaces courtyards and lobby.

Urban semi-public

After a sensorial or physical first threshold, the urban semi-public space open. Only a restricted part of the everyday public can access, therefore the threshold. It can be public functions open for members only or visually disconnected from the street public spaces such as hidden gardens or entrance hall.

Group public

Accessible only by the community, this space is physically closed to restrain access but is usually visually open to attract people from the community to come in. From there the freedom of the community expresses freely. It often is where residents start to feel at home. In this category are the open common spaces as the common room, the wide corridors, and stairwells.

Group private

Slightly apart from the communal core are shared spaces for a smaller group gathering. In these areas the individual freedom and communal freedom overlap. They are more intimate rooms like a guest room, workshop, or laundromat. Also, some more disconnected corridors can be considered as group private spaces.

Family private

Shared between the family or a cluster, the family private space is composed of family members or socially close people. It rarely exceeds five people. This transitional space can consist of a family apartment or an intimate shared outdoor space.

Individual private

The private room is the most private interior space, the domain of freedom with the most distance from any societal rules (Nierhaus & Nierhaus, 2014, p16). It is also the room with the biggest threshold and is therefore visually and physically closed. Bedrooms or single-person units are to be found in this category or transitional space.

PRIVATE

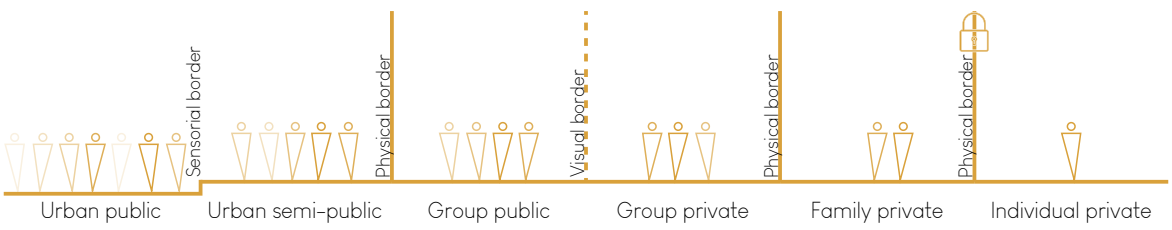


Figure 7: Transitional diagram from urban public to individual private.

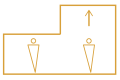
Takeaways icons glossary

Visual connections

The connection between the circulations and the common core is crucial for giving residents the feeling of being in the common room right at their doorstep. It enhances the sense of belonging. Such a connection also brings spontaneity in the interaction residents could have there.

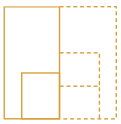
Flexible guest room

The guest rooms designed to allow flexibility are a more efficient use of space as it is the kind of space that is not always occupied. Also, it offers another socializing setting and diversity for the residents.



Variation of space significance

The variation of space proportions such as the ceiling height between the public, common, and private spaces emphasis the privacy and openness feelings. The physical proportions can serve as a sensorial border which is useful for defining soft borders like in between two group spaces.

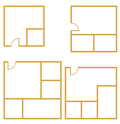


Private unit adaptability

The high personalization possibilities are an important factor to make the residents feel at home quicker. The modularity in a community living building facilitates the transition when residents change their living situation. In some cases, there is even a module swapping organization.

Public functions

The public functions allow the whole neighborhood and residents to get together and to enlarge their social network of "weak ties". It can also give the community a meaning as the whole neighborhood benefits from the facilities.



Private unit diversity

The dwelling diversity in a project reflects on the community. It makes the community broader and helps residents to develop their "weak ties" relationships. People from different economical, cultural or political backgrounds are brought together which results in a much richer community.

Interactive spaces diversity

The broad variety of shared spaces plays a major role in the integration and diversifies social interaction. Residents can find the social area where they feel the most comfortable. The diversity, as for the private units, enhances the sense of belonging by providing the opportunity to find a space where residents can identify to.

Spatial quality of access spaces

The access spaces are the ideal place for spontaneous interaction. Bringing daylight in it would turn these usually dark areas into social spaces ideal for interaction with a view on greeneries or the common core. The proportion and the irregular layout of the accesses are parameters that encourage residents to stop and talk without disturbing others' passing. The spontaneity of the interactions is supporting the development of a sense of belonging.

Spatial quality of private room

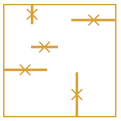
The private units are the only get away from the community. Therefore they need as much care as the common spaces. They must support the functions of a living space that can't be found in the common areas. A small room doesn't necessarily make people interacting more. The comfort of the residents is primordial for them to develop a sense of belonging and then get involved in community life.

Outdoor space qualities

The outdoor space has to follow the same reflections as the indoor space. Its proportions could allow more social activities and gatherings with all the residents. Also, the arrangement of the units around the courtyard would bring spontaneity to the outdoor interactions. The connection between indoor and outdoor common spaces is also crucial to facilitate socialization and integration. A gradient from open to intimate is applied also outside.

Buffer zone design

Buffer zones are primordial especially between the group spaces and the individual private space. Their design needs to reflect security and intimacy. The bigger the community is the more important this buffer zone is. It is about supporting the residents in their transition from public to private



Common areas openness

The open plan layout allows freedom in movement and therefore interaction. The absence of a physical border enhances the sense of belonging of the whole place for residents. It also softens the border to not block any possible way of interacting.

Interactive laundromat

The laundromat is the kind of place that can easily be turned into a social space. By playing with its location and size other activities than laundering could happen there. Having it close to the common core could facilitate its use as a social space.

Interactive workshop

A large workshop provides room for knowledge sharing. Another socializing setting that can help to connect different generations in the community around a common project.

Common core

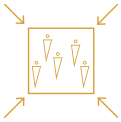
The concentration of shared spaces creates more spontaneous social opportunities. It brings residents all together in the same spot. It is a social hub the residents can easily identify to. For that, it is interesting to place the common core close to the entrance for more spontaneity.

Wheelchair accessibility

The wheelchair accessibility of the building is essential for the residents to not feel discriminated against and help people developing a sense of belonging. Such accessibility diversifies the community and enhances the development of the "weak ties" network of the residents.

Public openness

The publicness of the spaces could be felt as insecure sometimes. The residents need to feel secure for interacting. A not well-managed public openness impacts the residents well being and safety feeling. Also, the borders between public and common spaces must be clear to limit the duality with the non-residents feeling that all the floors are accessible and the residents feeling it is communal.



Spatial quality of common room

The common room is the core of the community so its proportions must be according to the size of the community gathering in the space. It is a matter of comfort, safety, and home feeling. A crowded space is not ideal for social interaction. A wide-open common space with different zones and different socializing settings is more beneficial.

VINDMØLLEBAKKEN

Figure 8: View from the outside (Augenstein, 2019)

Specifications

Location: Stavanger, Norway
Architect: Helen & Hard
Date: 2019
Typology: Intergenerational co-living
Number of units: 52
Number of residents: 120

	Outdoor areas	Indoor areas	Total
Public	0 m^2 - 0%	0 m^2 - 0%	0%
Common	1219 m^2 - 84%	500 m^2 - 10%	27%
Private	239 m^2 - 16%	4450 m^2 - 90%	73%
Total	1458 m^2 - 100%	4950 m^2 - 100%	100%

Background

Initiated by Helen & Hard themselves, this project is located on the plot of their former office building. It is part of the concept Gaining by Sharing that the architecture firm together with Kruse Smith Eiendom and Indigo Vekst. Completely built out of wood, Vindmøllebakken consists of 40 co-living units, 4 townhouses, and 8 rental apartments, all clustered around a single courtyard, the core of the plot. The building is home for residents of different generations, it is all about sharing between generations as everyone is complimentary. Welcomed by a double-height amphitheater, the residents are then encouraged by the design to interact with each other. The common greenhouse on the roof is making people collaborate to do better together. This housing solution is embracing all the domains of sustainability to show that a solution is possible. The main goals were to reduce the carbon footprint while increasing the quality of life and solving social challenges. So it is creating social, environmental, economic, and architectural gains through co-living. (Pagh, et al., 2018, p132)

Shared amenities

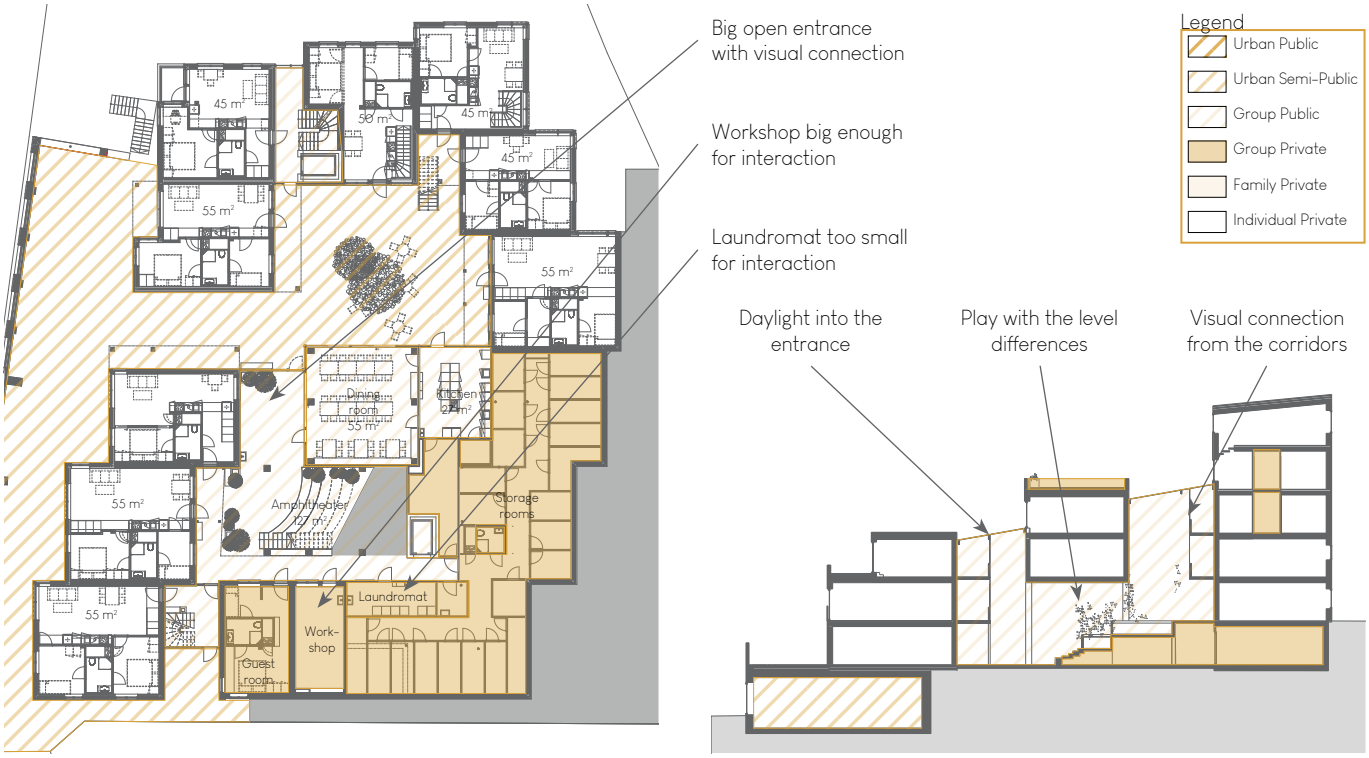
PUBLIC

Garden
Assembly room
Amphitheater
Workshop
Greenhouse
Laundromat

PRIVATE

Kitchen
Storage room
Dining room
Guest rooms
Lounge

Figure 9: View of the common space from outside (Augenstein, 2019)

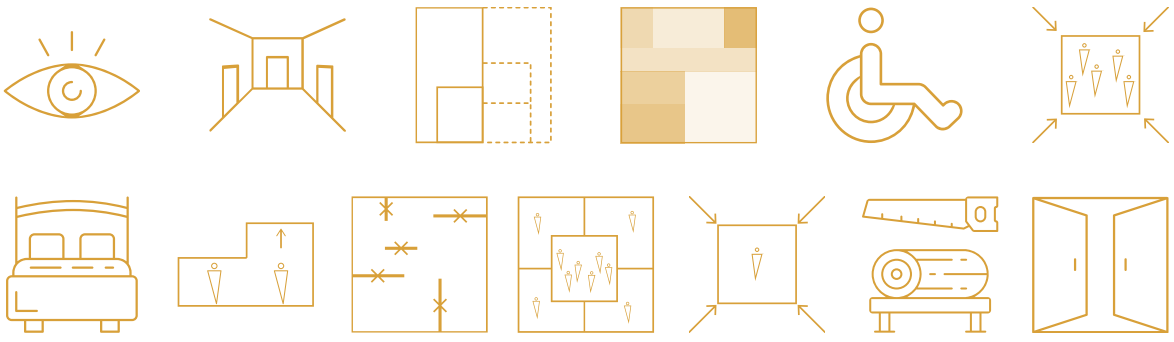


Ground floor plan

Cross section

Takeaways

+ Qualities



— Weaknesses

SARGFABRIK

Figure 10: View from an outside corridor (BBK-3, 2018)

Specifications

Location: Vienna, Austria
Architect: BBK-3
Date: 1982-1996
Typology: Refurbishment mixed-use co-housing
Number of units: 73
Number of residents: 210

	Outdoor areas	Indoor areas	Total
Public	2565 m² - 86%	1700 m² - 22%	40%
Common	380 m² - 12%	350 m² - 5%	7%
Private	55 m² - 2%	5510 m² - 73%	53%
Total	3000 m² - 100%	7560 m² - 100%	100%

Background

Initiated by 20 residents willing to have a flexible housing solution, the refurbishment of the Sargfabrik (Coffin factory) was conducted by the "Verein fuer integrative Lebensgestaltung" (Association for integrative lifestyles) and the firm BKK-3 architects in 1982 (Jahan, Baig, 2013, p8). The association bought the building in 1989 so that residents don't own their apartment but more a share of the project. The aims were to integrate a cultural center to boost the community spirit, realize an ecological design to reduce energy consumption, and create flexible housing to support the heterogeneity of residents' lifestyles, cultures, family structures, and ages. In the end, it is Austria's biggest residential and cultural project conceived by residents themselves (Jahan, Baig, 2013, p8). The architects manipulated the regulation to create multiple privacy steps. The minimum ceiling height required was 2.5m but they went down to 2.25 in the bedrooms and bathrooms, so they had to go up to 5m in the living rooms to balance the calculation (Jahan & Baig, 2013, p8).

Shared amenities

PUBLIC

PRIVATE

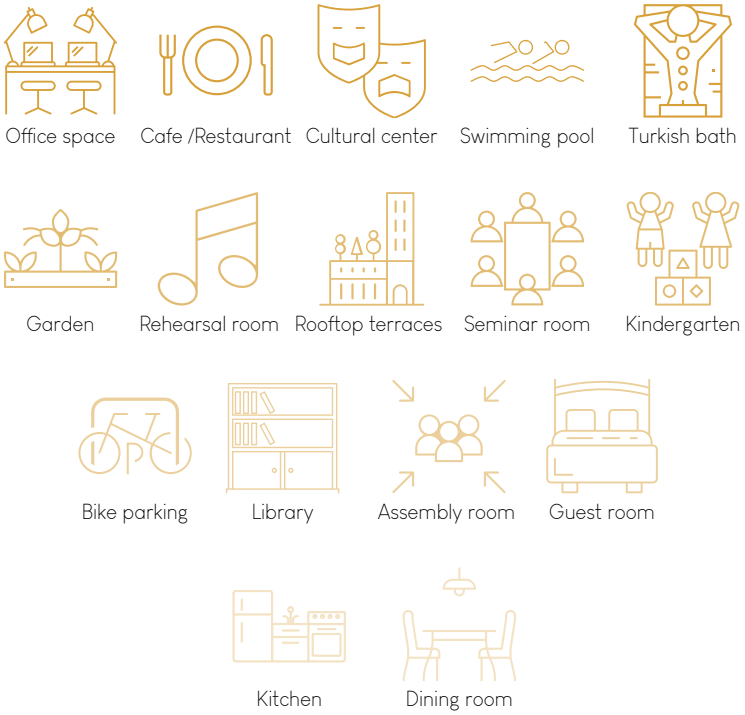
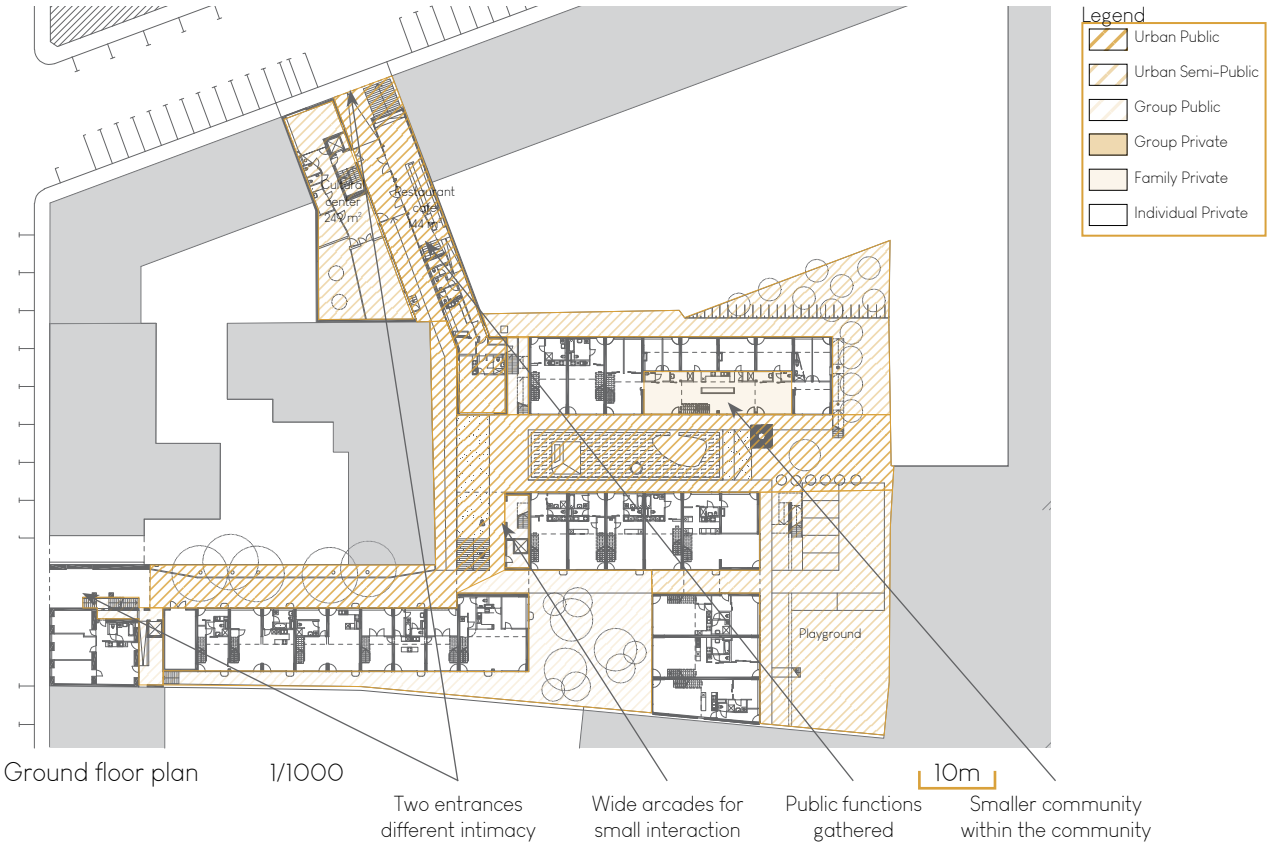
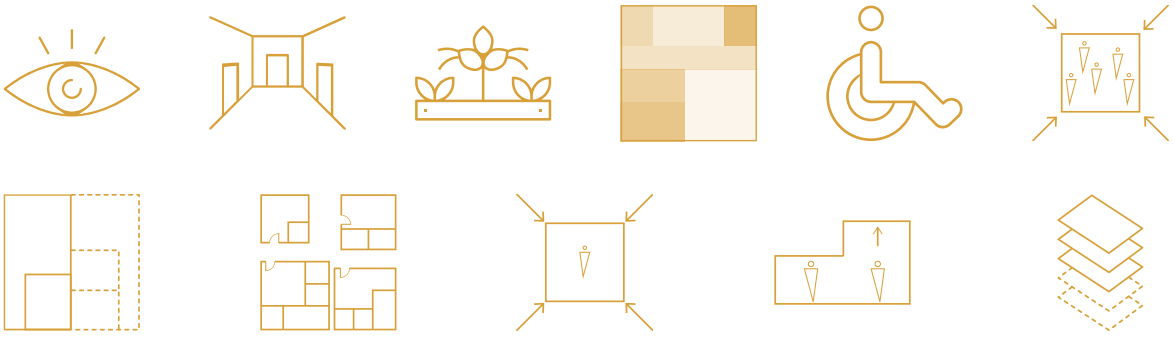


Figure 11: View of an apartment (BBK-3, 2018)



Takeaways

+ Qualities



— Weaknesses

SHARE HOUSE LT

Figure 12: View from the first floor living room (Nishikawa, 2014)

Specifications

Location: Nagoya, Japan
Architect: Naruse Inokuma Architects
Date: 2013
Typology: Share house
Number of units: 13
Number of residents: 13

	Outdoor areas	Indoor areas	Total
Public	0 m^2 - 0%	0 m^2 - 0%	0%
Common	286 m^2 - 100%	152 m^2 - 47%	72%
Private	0 m^2 - 0%	169 m^2 - 53%	28%
Total	286 m^2 - 100%	321 m^2 - 100%	100%

Background

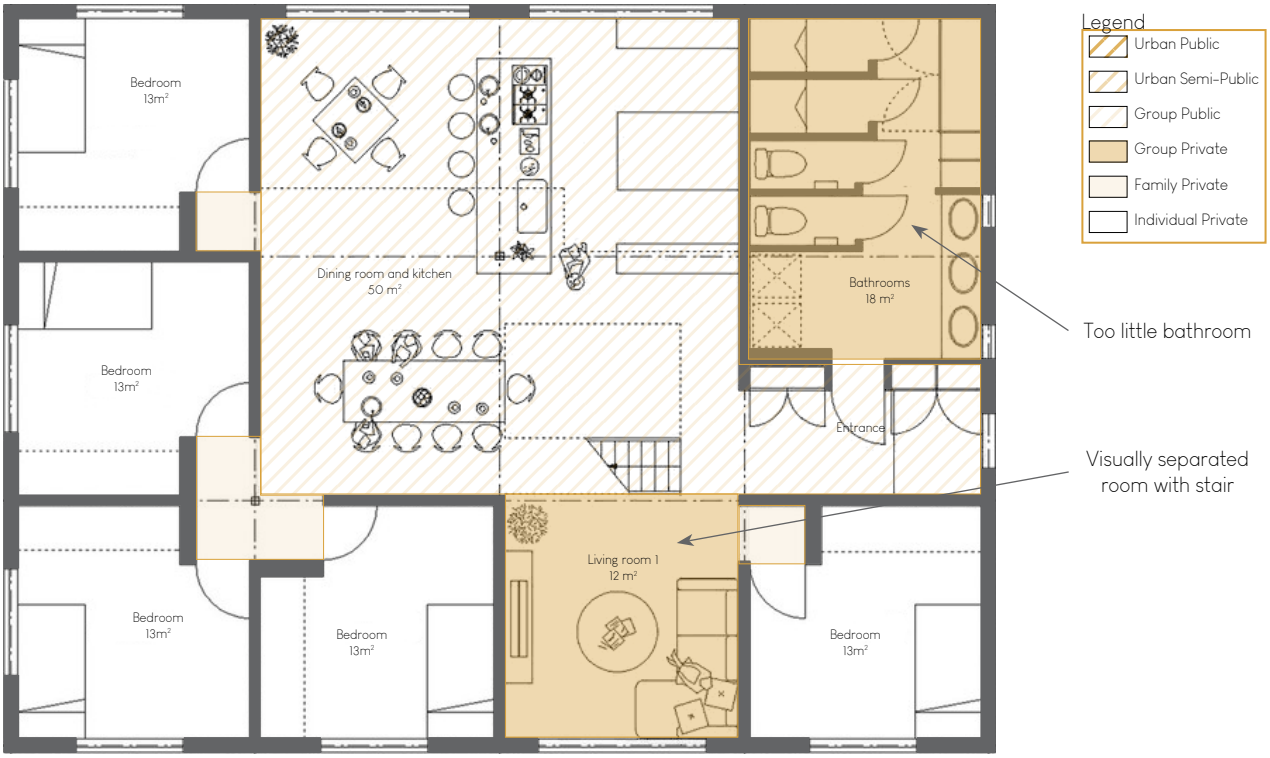
The concept of a share house is a model where unrelated people share kitchens, bathrooms, and living rooms (Bowes, et al., 2018, p76). In Japan, there is a growing demand from single adults in their 20s and 30s for this kind of housing (Griffiths, 2013). This type requires special techniques in the design of spaces to make perfect strangers sharing the space (Griffiths, 2013). In this example, the 13 residents have their 13m^2 bedrooms and a share of the common space. Overall, it gives around 23m^2 per resident which according to the architect is "so efficient and rich that the countless number of one-room apartments in the world seems to make less sense in comparison" (Griffiths, 2013). Naruse Inokuma Architects arranged the private rooms across the three levels connected by the common shared space in the core. This principle makes communal areas feel like an extension of the bedrooms. This building is interesting for its open-plan layout of the shared spaces which creates diversity within a unique central shared area and connections between the floors.

Shared amenities

COMMON

PRIVATE

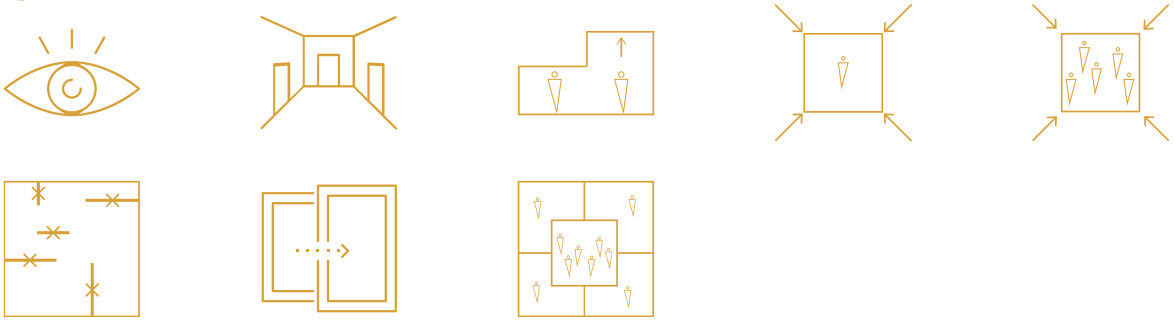
Figure 13: View of the level differences (Nishikawa, 2014)



Ground floor plan

Takeaways

+ Qualities



— Weaknesses

THE COLLECTIVE OLD OAK

Figure 14: View from the canal (Guttridge, 2017)

Specifications

Location: London, United Kingdom
Architect: PLP Architects
Date: 2016
Typology: Commercial co-living
Number of units: 546
Number of residents: 550

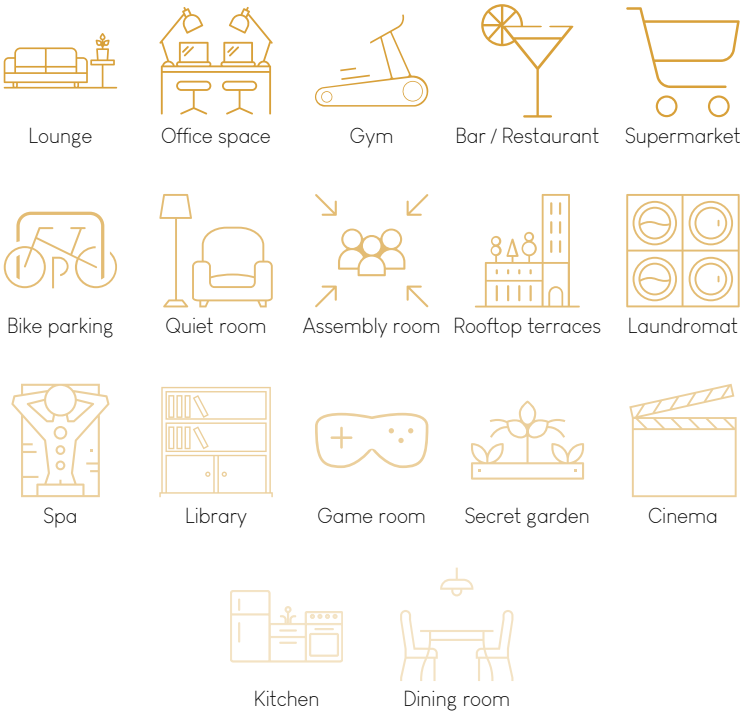
	Outdoor areas	Indoor areas	Total
Public	0 m² - 0%	1915 m² - 16%	15%
Common	830 m² - 100%	4720 m² - 40%	44%
Private	0 m² - 0%	5245 m² - 44%	41%
Total	830 m² - 100%	11880 m² - 100%	100%

Background

The Collective Old Oak was the world's largest co-living building when it was built (Architect Magazine, 2017). The creators took inspiration from the co-working companies and business models and applied them to housing building. It is a unique building targeting the Millennials with many activities possible in the house. Residents can access many amenities such as a game room, a spa, co-working spaces, and so on. All those complimentary amenities are concentrated in a central hub which is the core of the building. The rent includes all sort of services as cleaning. A characteristic that triggered a lot of criticism regarding the absence of community feeling. Residents have their private room with a bathroom. In most of the units, a kitchenette is shared between two, but they also have access to a common kitchen per floor. This concept aims to create a new way of living, working, and spending leisure time (Schmid, 2019, p284). It is described as "a cross between a Silicon Valley start-up, a worker's soviet and the Polyphonic Spree," (Ahn, et al. 2018, p104)

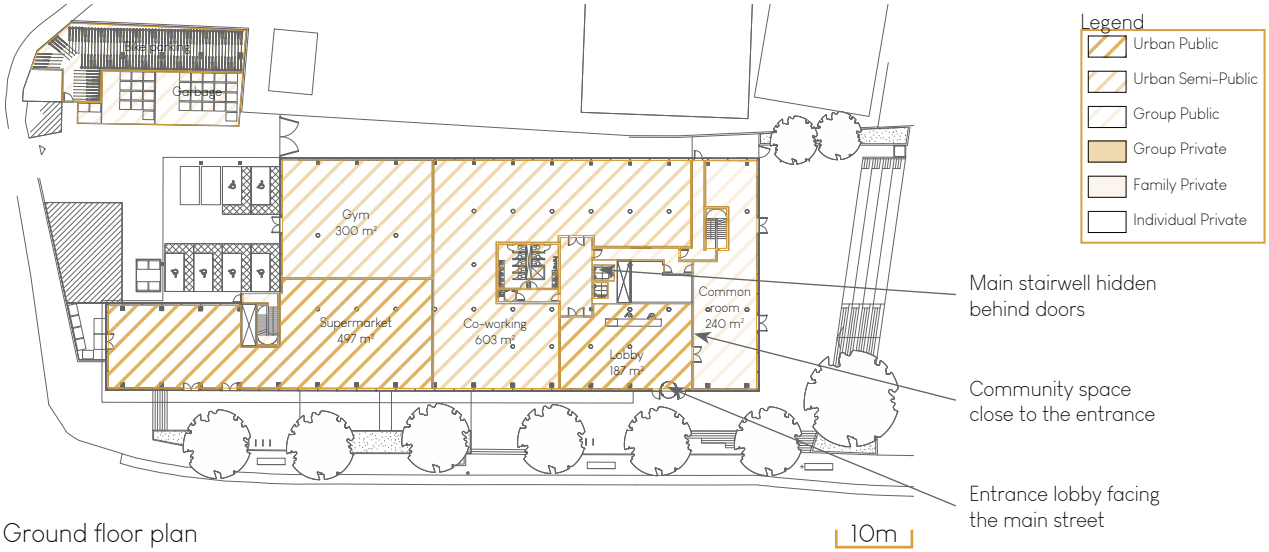
Shared amenities

PUBLIC

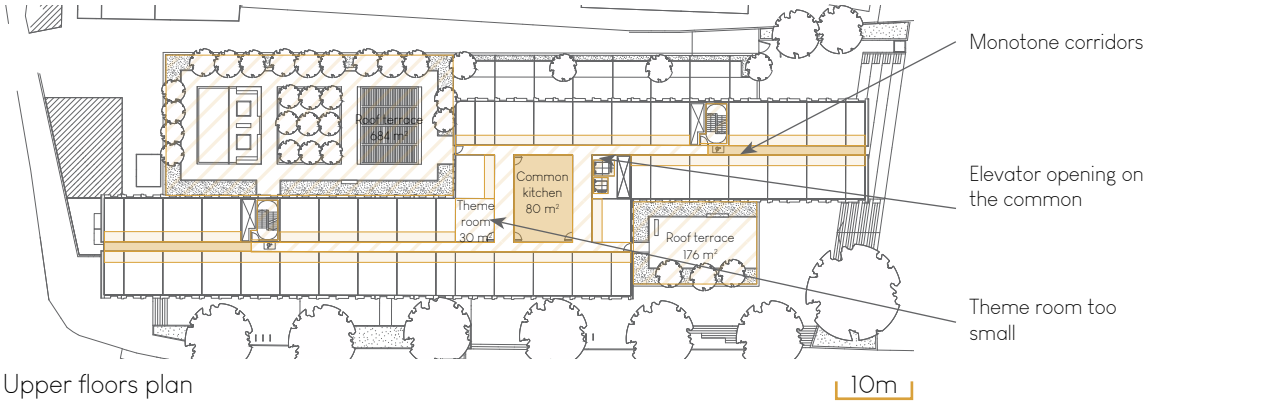


PRIVATE

Figure 15: View from the lobby (Guttridge, 2017)



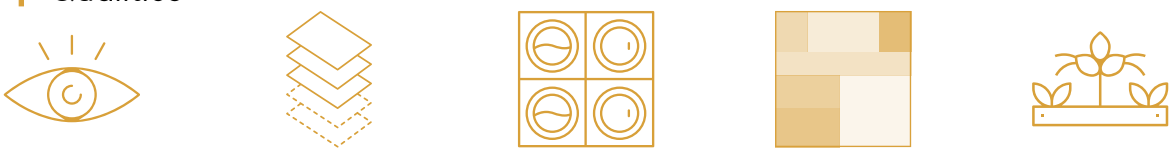
Ground floor plan



Upper floors plan

Takeaways

+ Qualities



— Weaknesses

STACKEN

Figure 16: View from the outside (Leandersson, 2018)

Specifications

Location: Gothenburg, Sweden
Architect: Lars Argen
Date: 1961 - 1982 - 2018
Typology: Renovation co-housing
Number of units: 33
Number of residents: 100

	Outdoor areas	Indoor areas	Total
Public	0 m² - 0%	620 m² - 11%	11%
Common	95 m² - 39%	865 m² - 16%	17%
Private	150 m² - 61%	4015 m² - 73%	72%
Total	245 m² - 100%	5500 m² - 100%	100%

Background

This conventional 9 story building from the Million Homes program has been turned into a self-managed collective residence by the architect Lars Argen in 1982 as it was rather empty since the 1970s (Schmid, 2019, p179). Together with a project in Denmark, it is considered one of the first conversion projects of collective living. This building is interesting as it evolved. The original Lars Argen idea was to bring diversity and collectivity. He turned the original identical 3 room apartments into 33 two or four-room ones. He designed common spaces on the ground floor and on the fifth floor to spread them across the building. He created various collective rooms: sauna, large kitchen, dining room, cafe, photo lab, sewing room, laundromat, workshop. A public daycare was even established on the fifth floor. Recently, the building has been refurbished again, but this time initiated by the community. The facades have been covered with PVs, the windows changed so the building became more energy-efficient, and the functions that didn't age well were changed.

Shared amenities

PUBLIC

PRIVATE

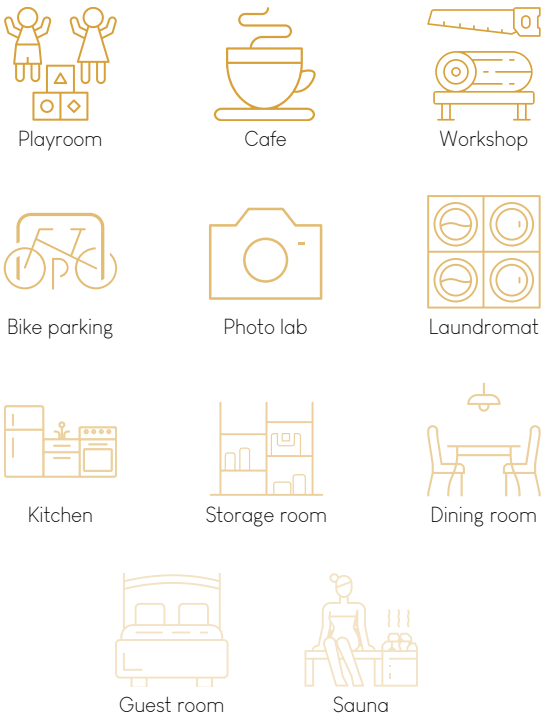
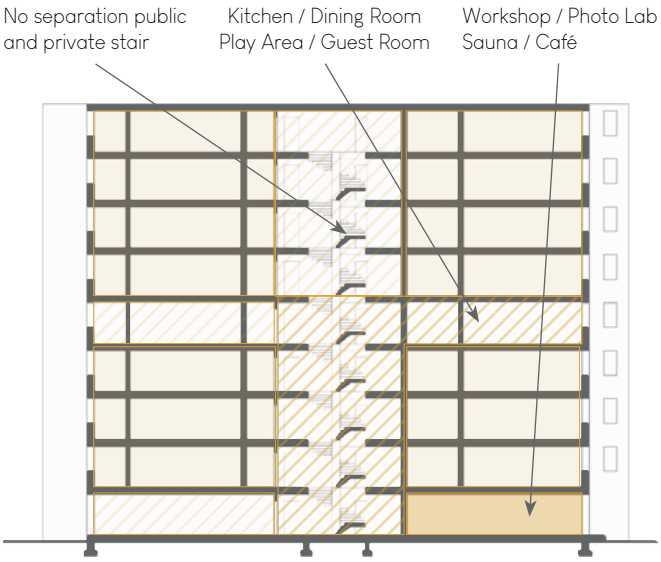


Figure 17: View of the first residents of Stacken (Petterson, 2019)

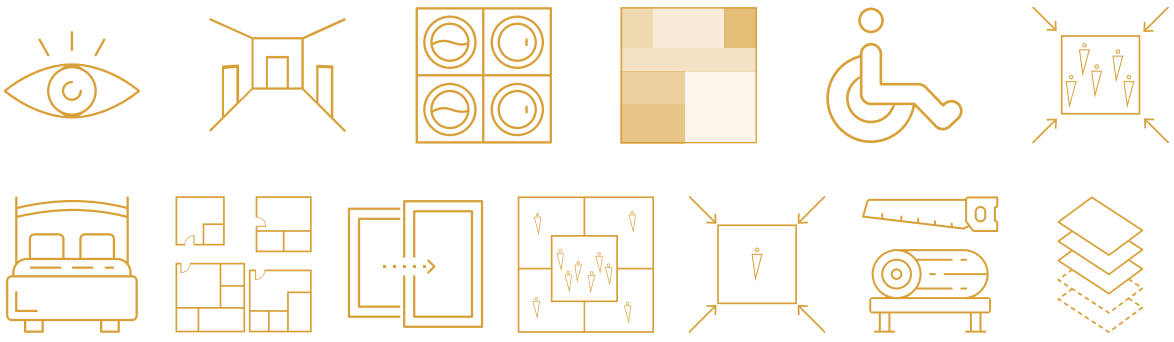
Fifth floor plan 5m



Cross section 5m

Takeaways

+ Qualities



— Weaknesses

OLDER WOMEN'S COHOUSING

Figure 18: View from the courtyard (Mairs, 2016)

Specifications

Location: High Barnet, London, United Kingdom
Architect: Pollard Thomas Edwards Architects
Date: 2009-2016
Typology: Co-designed senior co-housing
Number of units: 25
Number of residents: 26

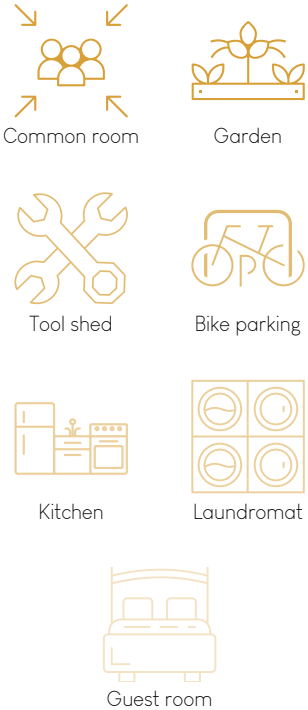
	Outdoor areas	Indoor areas	Total
Public	0 m^2 - 0%	0 m^2 - 0%	0%
Common	1423 m^2 - 87%	530 m^2 - 24%	51%
Private	211 m^2 - 13%	1648 m^2 - 76%	49%
Total	1634 m^2 - 100%	2214 m^2 - 100%	100%

Background

The UK's first senior cohousing community was driven by a group of all ladies who decided to take control over their lives (Brenton, 2017, p2). They created a community to look to each other to develop and share their social capital (Brenton, 2017, p1). The 26 souls who call this place home are all between 50 and 80 years old. Together they share the responsibility for the building, but they also give each other mutual support. Co-designed with PTE Architects, the building enhances a sense of neighborliness for comfortable aging (Brenton, 2017, p3). Located on the plot of a former school, the project is arranged in a T shape with all the apartments overlooking the common garden. With the common room at its core and the view of the garden, residents can constantly see and join any gathering. This project took many years and many women from the group came and left. In the end, it has been awarded for its age-proofed architecture (Brenton, 2017, p3). The whole creation process of the project strengthened the community as they had to overpass many obstacles.

Shared amenities

COMMON



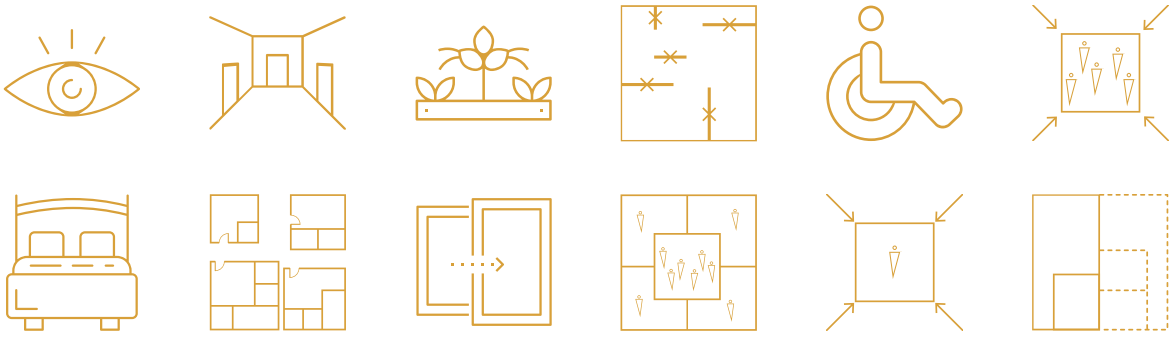
PRIVATE

Figure 19: The residents (Crocker, 2016)

Ground floor plan

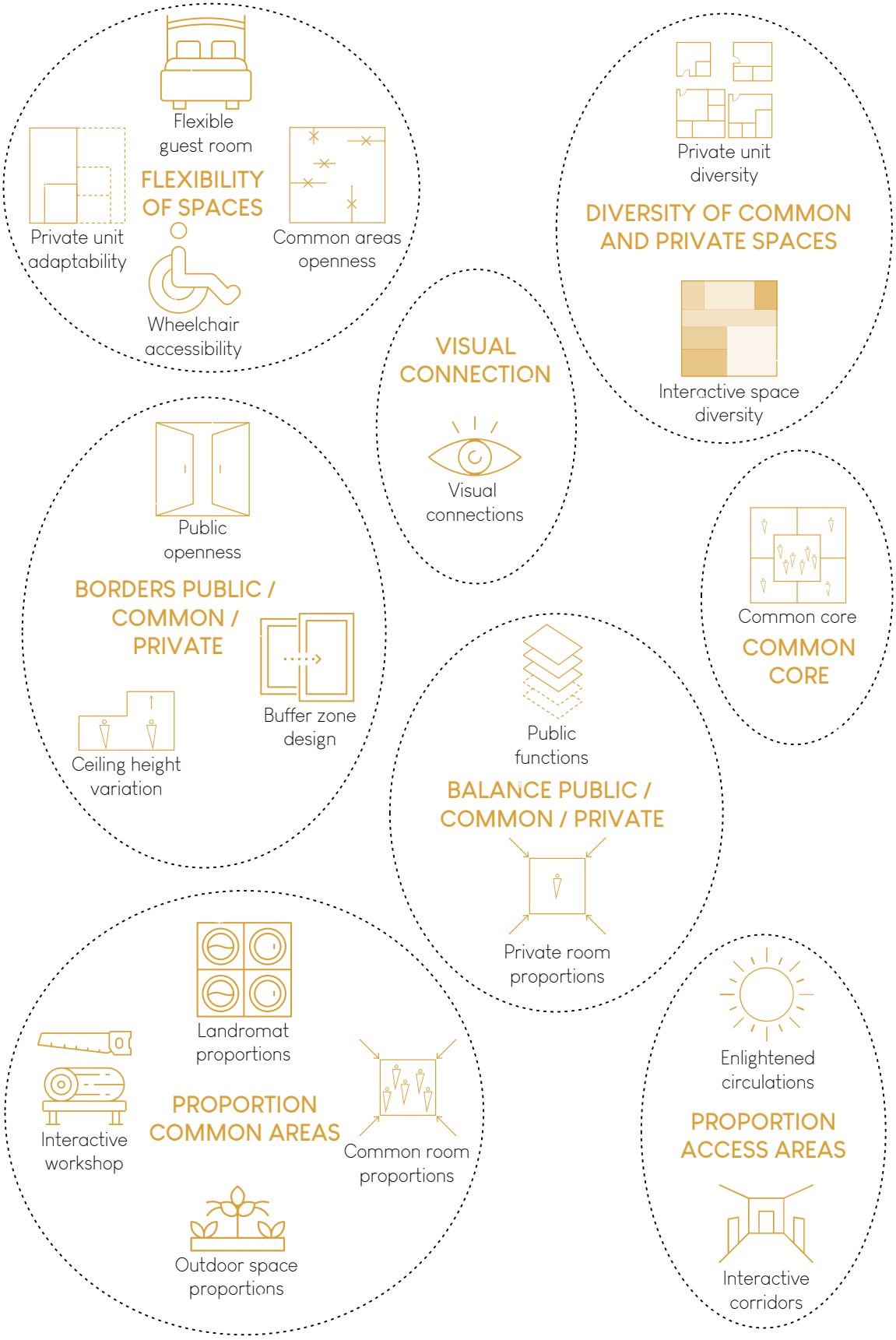
Takeaways

+ Qualities



— Weaknesses

LEARNINGS FROM CASE STUDIES



Learnings from case studies

Flexibility of spaces

In the case of community living, keeping flexibility in the commons ease the development of a sense of belonging from the residents and has therefore a positive impact on preventing their loneliness. Besides, not having any walls in the common like in Share House LT or making the guest room flexible is allowing residents to find the common space they desire and where they feel the most comfortable to interact. Architecturally, an adaptive design results in a longer-lasting building and gives the residents possibility to stay within the community longer.

Diversity of common and private spaces

Diversity at all points is beneficial for a community. In the private space, it leads to a broader community which is important to develop "weak ties". In the common spaces, the residents have the choice of where they want to interact. It is complementary to the flexibility of the spaces.

Proportion common areas

In every building, proportions are important, even more, when space is meant to enhance socialization. The case studies revealed how important the proportion of the common areas is to make them work. Too small, the area won't be used and if it is too big, residents might feel uncomfortable. In that sense, it is connected to the diversity of those spaces.

Common in the core

Having the commons in one place or all closely connected is increasing the potential use of them. The more people pass by, the higher the chance is for interaction. In the case of a multi-story building, the ground floor plays a big role but it is also crucial to have common spaces close to the units. In the case of The Collective Old Oak, all the circulations pass through the commons which connect the different spaces and encourage interaction at every moment outside the private space.

Balance public / common / private

In publicly opened settlements, the right balance between public, common, and private needs to be found. Common spaces need to be welcoming and attractive to residents only. So, it is better to concentrate public in one place and common in another. It is about providing spaces to the neighborhood but without forgetting the community. On average in the buildings studied, 68% of the floor area is private spaces, 24% is common and 8% is open to the public. So the priority goes from private to public.

Visual connection

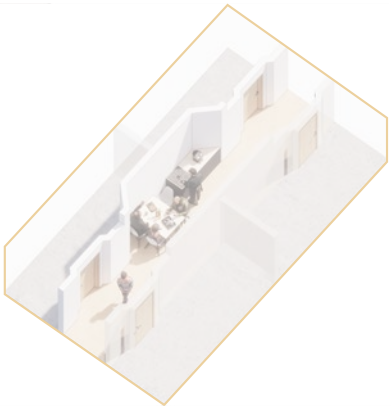
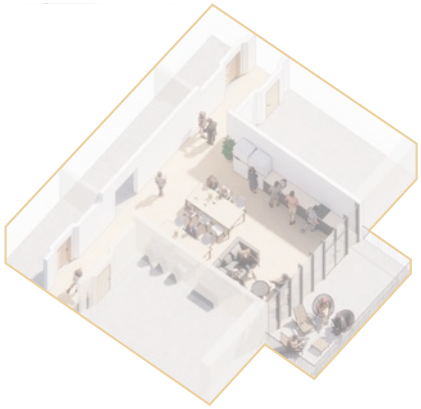
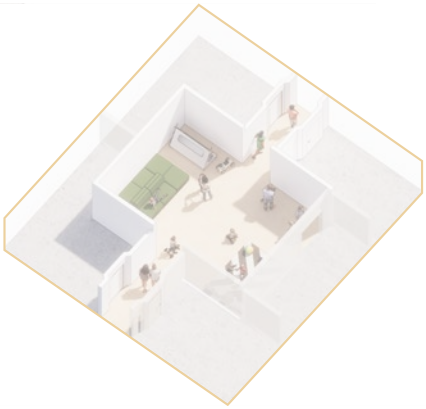
To encourage interaction, visual connection to the outdoor and indoor common is a crucial factor. By seeing the activity residents could easily join it. It is a constant reminder that things are happening in the house. The visual connection makes it feel easier to go to the room and gather. Also, a connection to the circulation is increasing the chance for passing people to enter the common space.

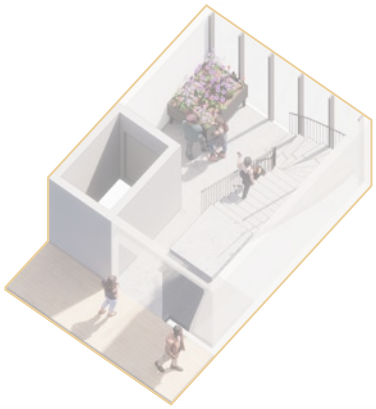
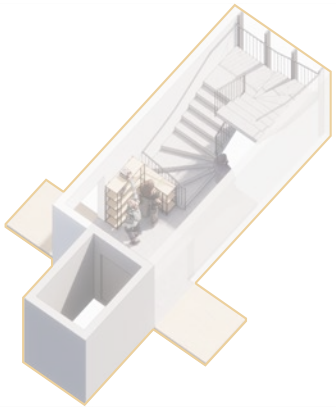
Proportion access areas

Access areas could be the perfect place for spontaneous talks while going from A to B. They need to be designed so people could stop and talk without blocking the way for others. Placing sittings or giving daylight in these otherwise passage areas can make them feel like an integral room.

Borders public / common / private

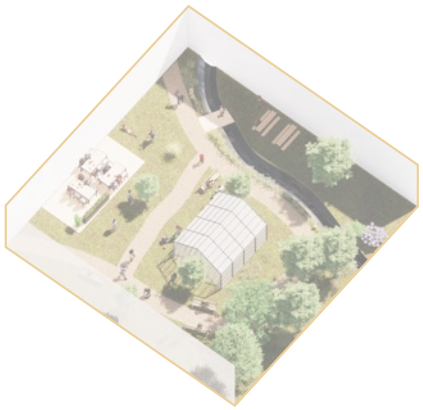
Between each transitional space, the threshold is important, it can be sensorial, physical, or visual but needs to let pass only the allowed person. Playing with the ceiling height is an intuitive border between two kinds of group spaces or semi-private spaces. Still, some physical borders are necessary as they could impact the security of the resident. Security is a big factor to make people comfortable, increase their sense of belonging and ease the possibility for spontaneous interaction.

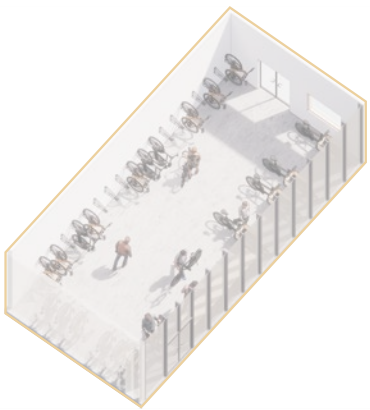




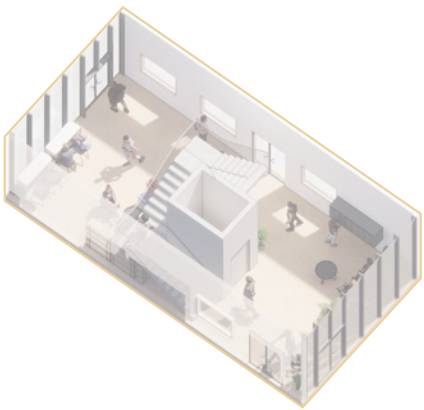



DESIGN GUIDE

Design strategies, components and scenario





DESIGN STRATEGIES

Process

The design strategies are the first step of the thesis's design phase. The principle is to establish the strategies by confronting theoretical learnings on loneliness and community living to the learnings from the case studies. The line from theory to design drawn, the strategies are then used as the base to develop the design guidebook. The guide is composed of the components crucial to implement in a loneliness preventive community living scheme. The components, out of any contextualization, are exemplary spatial prototypes turning standard spaces social. Ultimately, all the components are synthesized together in a community living proposal. They are placed into a certain context. This proposal is meant to serve as a speculative example of an ideal components implementation.

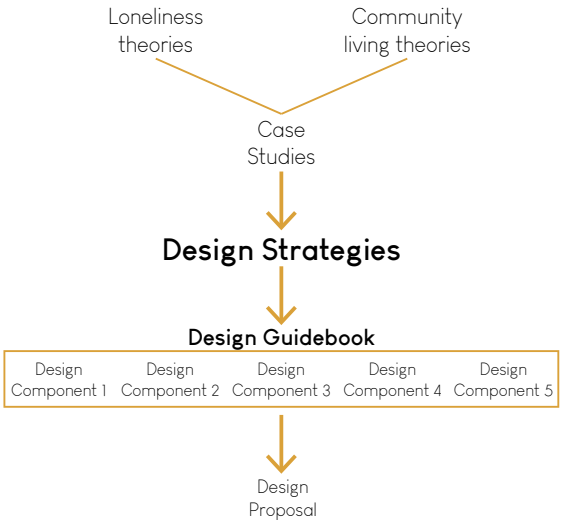


Figure 21: Process of the design research.

Confrontation

In Figure 20, the theoretical learnings on loneliness and community living are confronted with the main learnings from the case studies. To discover how those learnings have been collected, refer to the "Preliminary research" on page 6. The confrontation between case studies learning and literature learnings resulted in the highlight of an inherent cause and effect relation between community living design elements and loneliness.

Therefore, the case studies' learnings have been developed into design strategies. The strategies are meant to be part of a system, implemented altogether at a building scale. It is only by considering all of them that a community living building can prevent loneliness. On the following pages, each strategy is explained and represented with the learnings from loneliness and community living theories they are connected to.

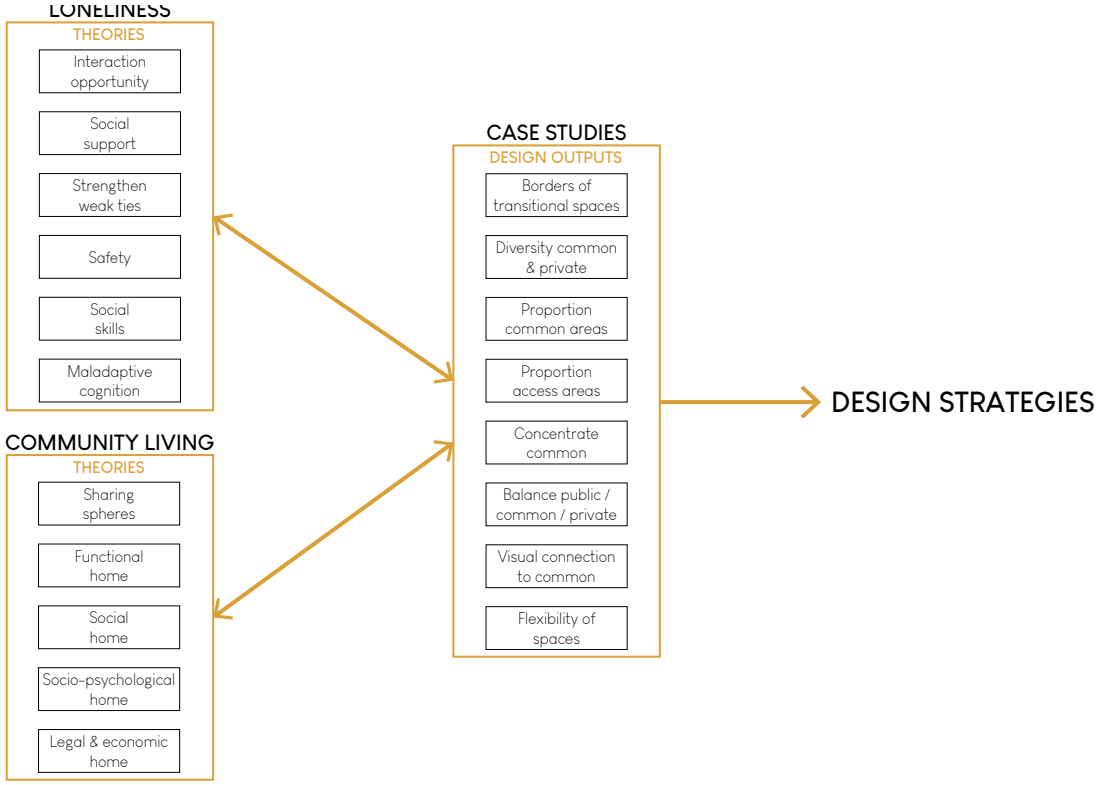
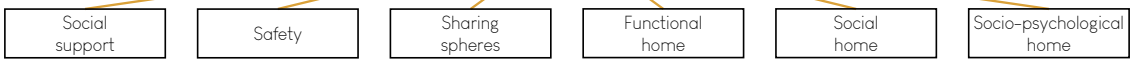


Figure 20: Translation of theories into architectural elements.

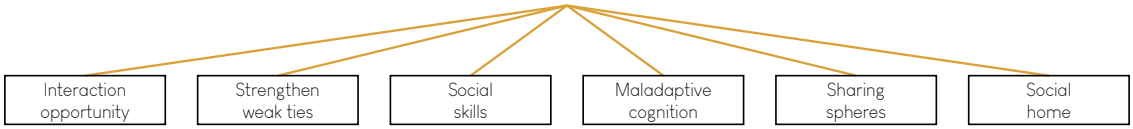
Definition of the strategies

1. ADDRESSING BORDERS OF TRANSITIONAL SPACES



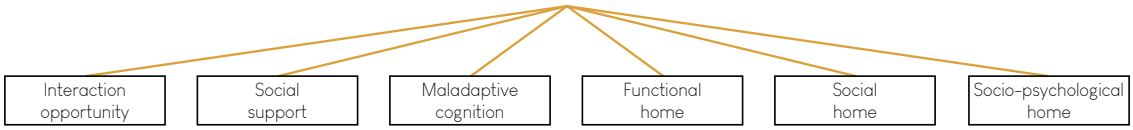
The borders between each transitional space need to be carefully considered as each transitional space is serving a particular social, psychological, and functional purposes. If the borders are unclear or inexistent it can affect the feeling of safety of the residents and therefore their willingness to socialize. There are different types of borders, visual, sensorial, or physical but for each transition a certain type is preferable. For example, from Urban Semi-Public to Group Public (see "Case Studies" on page 15 for more detail on the notion) a strong border such as a wall is needed to restrict the access of the public to group spaces. On the other hand, only a soft border such as a lower ceiling is possible from Group Public to group private and from Urban Public to Urban Semi-Public. In the same way that no transitional space should be skipped, no borders should be omitted for all the sharing spheres to be respected and the well-being of residents.

2. DIVERSIFYING COMMON & PRIVATE SPACES



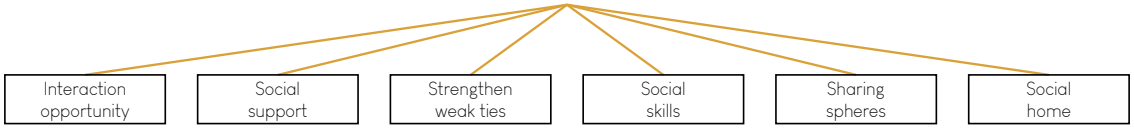
The offer of private and common spaces needs to be broad as diversity is as crucial in community living as it is in society. In the common spaces, it allows the resident to always find space where he feels comfortable to be to practice his social skills. In the private spaces, it diversifies the composition of the community. Having people from different horizons around is strengthening the weak ties, a type of relationship necessary for social well-being. A wide catalog of shared spaces reduces the impact of maladaptive cognition because there is a higher chance that a person finds a spatial context where he/she doesn't feel any negative social interaction. The type of common or private spaces integrated into a project depends on the group targeted by the settlement. So there isn't any minimum of different spaces, but as an idea, from the average on all the case studies, it is good to aim for 11 different types of shared spaces and 6 different types of private units.

3. DIMENSIONING COMMON & CIRCULATION AREAS



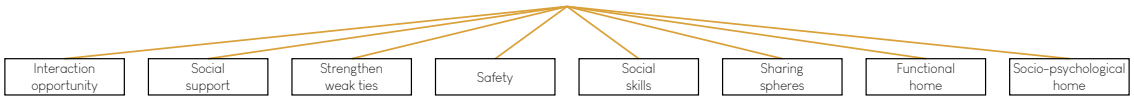
The circulation and common areas need to be dimensioned conscientiously as it is where most of the social interaction happens in a community living scheme. The spaces need to be appropriately sized for the prospective usage of the room. The right dimension makes the space serving its intentional purposes and therefore increases interaction opportunities. In that sense, a too-small space can prevent the room to be used so it affects the ability of the scheme to fulfill the need for a social, functional, and socio-psychological home. For the common spaces, their size depends on the wanted function but also on the aimed level of privacy. An intimate room is physically smaller than a common one. The ceiling height has a big importance in this regard. As seen in the case studies, it is good to have a high ceiling in the most public parts of the building. Concerning the circulations, it is interesting to create small pockets to break the monotony and create occasions to stop and talk. The width of those spaces need to allow people to spontaneously stop to socialize without blocking the way of others passing by, from the case studies, a comfortable width would be 1,6m.

4. CONCENTRATING COMMON AREAS



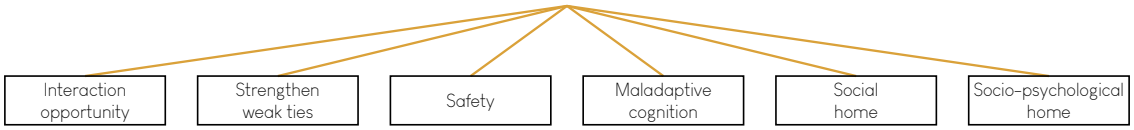
The common functions need to be concentrated to create a social hub where all the residents are socializing in the same area. This concentration allows the different shared functions to be interconnected. The residents have then an increasing opportunity for social interaction as all the movement is happening around a single core. Thanks to the centralization of the diversity of common spaces, the residents can easily train different social skills by going from one space to another one. The same factor is also strengthening the development of a weak ties network. In the case of a settlement on several floors, it is also interesting to spread the common functions across the floors so the common is closed to the private units. In that case, the common areas serve also a circulation purpose and concentrate the access to private areas in one core. The units are then pushed on the edges and the common space stands in the middle as the core on each floor.

5. BALANCING PUBLIC / COMMON / PRIVATE SPACES



The balance between public, common, and private spaces need to be handled thoughtfully as every kind of space must fulfill the residents need. As a general rule, the priority order goes from private to public. Public openness benefits the development of weak ties and the social skills of the residents but too much openness can also lead to a feeling of insecurity among the residents and therefore a misuse of the space. In the same way, common spaces can be designed considering that a living unit is the private combined with the common but enough space needs to be allocated to privacy for the residents to feel at home and for the living unit to have all the characteristics listed earlier on (Functional, Social, Socio-Psychological home). On the other extreme, too much privacy will limit the effect of the rest of the spaces on the prevention of loneliness. So it is all about finding the right balance. Looking at the 6 settlements studied earlier in the thesis, on average 8% of the indoor space is public, 24% is common, and 68% is private. By taking the outdoor space into account the numbers are drastically changing as there isn't a lot of private outdoor space in community living. It gives 11% of combined outdoor and indoor public, 36% of common, and 53% of private areas.

6. ESTABLISHING VISUAL CONNECTION TO COMMON AREAS



Visual contact to the common areas is essential as it is one of the factors to encourage people to use those spaces. The connection makes the residents feeling part of the community even if they are maybe not physically in the common space. It benefits the sense of belonging and also the feeling of safety. Besides, it is limiting the effect of maladaptive cognition as less negative social interactions are perceived through only visual connection. Also, the social and psychological aspects of a home have in that case a higher chance to be fulfilled. The connection concerns the indoor as much as the outdoor common spaces. It is also important to have a look at the potential activities happening outside. Certain visual connections are specifics to a certain user group, for example, it is important in senior housing to establish a connection into the private space too for safety.

DESIGN COMPONENTS

Specifications

To design for everyday social interaction, the design strategies need to be implemented from the start of the building process. Nevertheless, only putting a common room won't solve loneliness, the design of some spaces need to be rethought, so the spaces designed as components are standard elements that are turned into social spaces. These elements are called necessary spaces. They are spaces that can be found in community living buildings but also in regular housing buildings. So the components can also be used in regular housing buildings. As they are aiming to improve the social well-being of community living residents, they can make regular housing schemes more social. In this phase, areas of a building are isolated to be able to create elements that work independently. One area corresponds to one design component. Each of them is seen as part of a bigger system but their independence allows for a future, more flexible implementation. They are exemplary and out of any context because there is an abundance of variations possible depending on the situation in which they are implemented. The 5 chosen necessary spaces developed as components are; the staircase, the corridor, the bike parking, the entrance, and the courtyard.

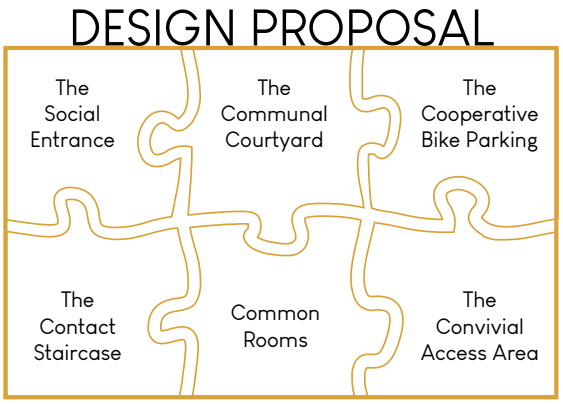
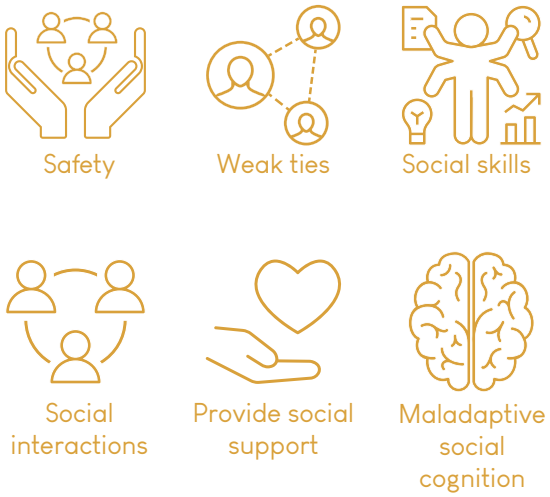


Figure 22: Principle of the components and design proposal.

With the research, they are turned into the contact staircase, the convivial corridor, the cooperative bike parking, the social entrance, and the communal courtyard. These different places provide various social settings. The components are then all synthesized into a contextualized design proposal to show an ideal implementation. It is similar to a puzzle, the box is the guidebook, the pieces are the components and the artwork is the design proposal.

For each component, there are different types of solutions each with its advantages and disadvantages. A single component can't incorporate all the interventions to prevent loneliness explained earlier (see "Preliminary research" on page 6). It is altogether that they compose a consistent solution. For each type, the pros and cons, and its contribution to prevent loneliness are explained based on the intervention methods listed below..



To show the solutions' universality, each component's section starts with a diagrammatic explanation of how each type could be implemented according to a non-exhaustive list of standard cases (see Figure 23). They represent different possible interventions on one standard. This table page is compiling the variants of a single type of solution to be able to compare them to each other. In some cases, a component's type can't be applied, it is then explained why. Among all, only one case is detailed to show an exemplary architectural development of each type. The features in place in the detailed part could easily be adapted to each case.

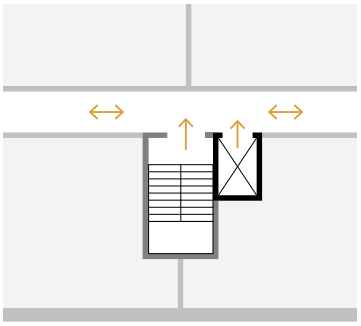
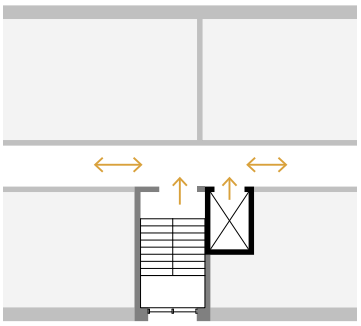
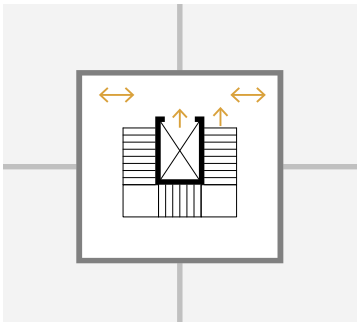
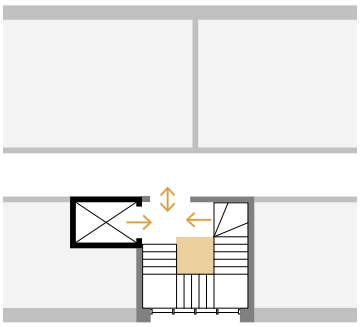
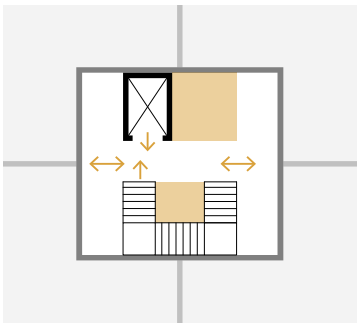
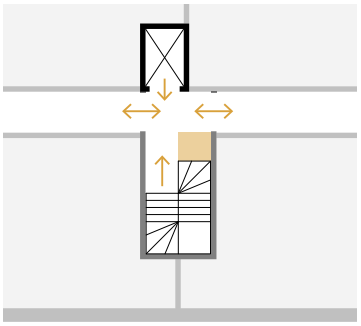
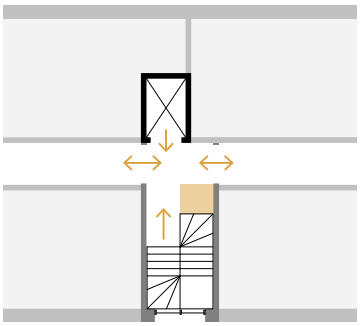
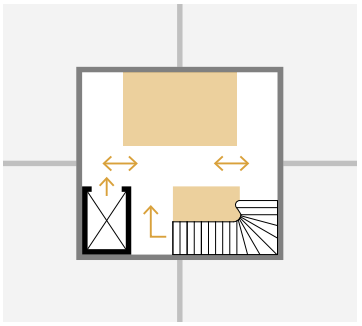
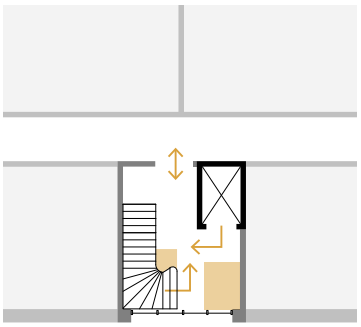
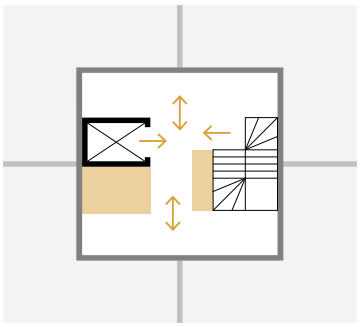
	Case 1	Case 2	Case 3	Case 4
Standard				
Type 1				
Type 2				
Type 3				

Architecturally detailed solutions

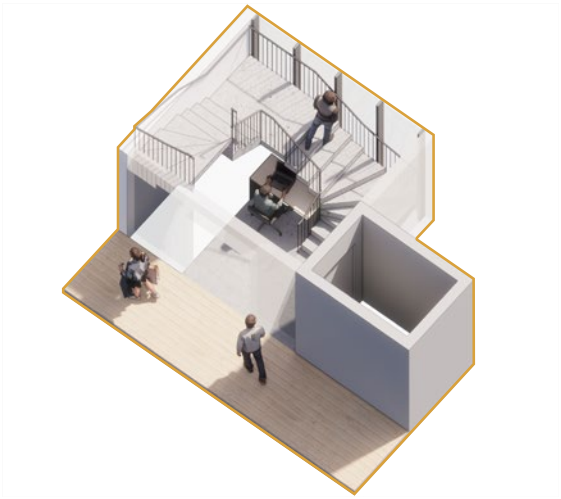
Figure 23: Table of the principle of component variants.

THE CONTACT STAIRCASE

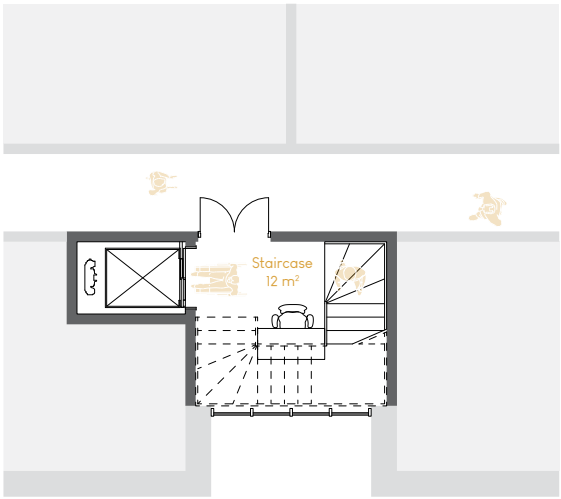
Comparison of variants

Case 1 Closed	Case 2 Semi-closed Detailed solutions	Case 3 Open
Standard		
		
Type 1 Border This type can't be applied here because the social space created would be small and without daylight so it won't be appreciable to interact there. Also, the connection with the corridor is not smooth so the room isn't a continuation of the corridor's activity.		
Type 2 Part of the corridor		
		
Type 3 Unique social space This type can't be applied here because the social space created would be small and without daylight so it won't be appreciable to interact there. Also, the connection with the corridor is not smooth so the room isn't a continuation of the corridor's activity.		

Type 1: Border - Case 2



Axonometry



Floor plan 1m

Common possible functions

- Vegetable garden
- Home-office desk
- Seating space
- Reading space
- Goods lending shelf

Advantages

- The elevator and stair users are connected with social space in between.
- The space is used efficiently.
- The intervention doesn't need to be on every floor, it can be an event to strike interest.
- The inter-floor connections are emphasized by the punctuality of the intervention.
- The social space is apart from the bigger common spaces so it is more intimate
- The abundant daylight in the "Semi-closed" case opens for unique activity such as gardening.
- The first steps can be flared out to make them pleasant to sit on (Alexander, et al., 1977, p639).

Disadvantages

- The attractiveness is dependent on daylight.
- The location tangent to the walkway is affecting the possible activities that could happen.
- The strong connection to the corridor in the "Core" case reduces the intimacy of the social space.
- The area is small so it is limiting the diversity of possible activity.
- The sound can become an issue due to the shape of the space so it can disturb some uses.

Preventive features

Safety

- Reaches out for daylight and the doors can stay open to the corridor, they only close for an emergency.

Weak ties

- Facilitates the development of a sense of belonging as people are passing it every day.

Social skills

- Small intimate activity such as lounge or home-office can happen so it diversifies the social setting, and increases fact to face contacts.

Social interactions

- Connects elevator and stair user with a social space to enhance spontaneous interactions.

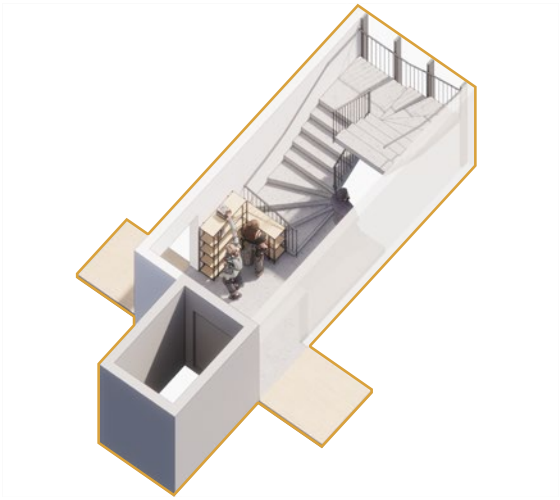
Provide social support

- The community is present in every space for people to reach out for help when they need it.

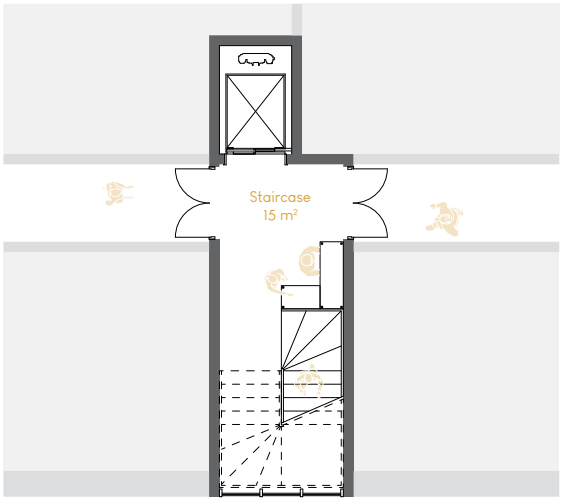
Maladaptive social cognition

- Makes people connect to the community on each floor and along their way down.

Type 2: Part of the corridor - Case 2



Axonometry



Floor plan 1m

Common possible functions

- Seating space
- Goods lending shelf

Advantages

- The flow of people is more integrated so more potential use and attractiveness.
- The elevator and stair users are connected with social space in between.
- The integration in the access area space is enhanced by keeping the fire doors opened.
- The connection with the corridor reduces the impact of not having daylight.
- The landing is benefiting the corridor space so there is more room for broader interaction.
- The social space is fully integrated into the common access area space in the "Core" case.
- The first steps can be flared out to make them pleasant to sit on (Alexander, et al., 1977, p639).

Disadvantages

- The intervention has to be present on every floor, it can be overwhelming.
- The social space is deep in the building so it doesn't have a lot of daylight.
- The location in the walkway makes it impossible to host an intimate function.
- The sound can become an issue due to the shape of the space so it can disturb some uses
- The area is small so it is limiting the diversity of possible activity.

Preventive features

Safety

- Reaches out for daylight and the doors can stay open to the corridor, they only close for an emergency.

Weak ties

- Facilitates the development of a sense of belonging as people are passing it every day.

Social skills

- Encourages to join the socializing in the corridor by keeping the doors opened, and increases face to face contacts.

Social interactions

- Connects elevator and stair users with a social space to enhance spontaneous interactions.

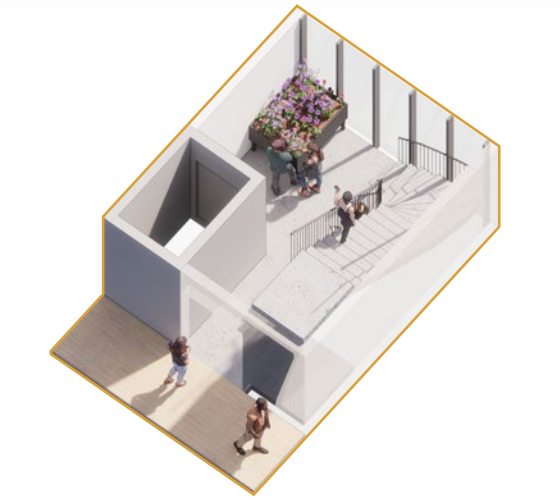
Provide social support

- The community is present in every space for people to reach out for help when they need it.

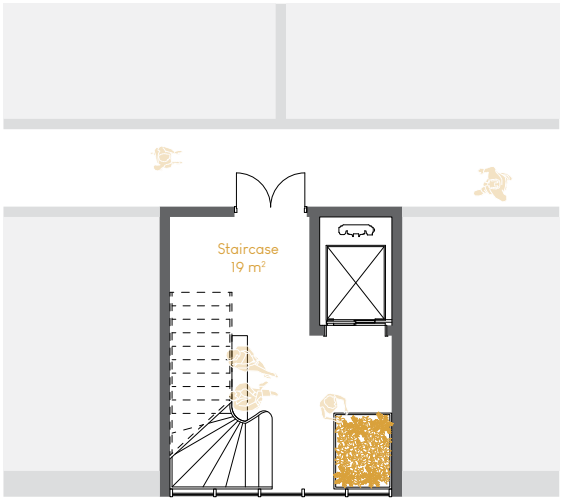
Maladaptive social cognition

- Makes people connect to the community on each floor and along their way down.

Type 3: Unique social space - Case 2



Axonometry



Floor plan 1m

Common possible functions

- Seating space
- Goods lending shelf
- Vegetable garden
- Reading space

Advantages

- The elevator and stair users are connected with social space in between.
- The flow of people is more integrated so more potential use and attractiveness.
- The intervention doesn't need to be on every floor, it can be an event to strike interest.
- The inter-floor connections are emphasized by the punctuality of the intervention.
- The abundant daylight in the "Semi-closed" case opens for unique activity such as gardening.
- The social space is fully integrated into the corridor so the people are arriving directly into a generous common social space in the "Core" case.
- The first steps can be flared out to make them pleasant to sit on (Alexander, et al., 1977, p639).

Disadvantages

- The attractiveness is dependent on daylight.
- The location in the walkway makes it impossible to host an intimate function.
- The sound can become an issue due to the shape of the space so it can disturb some uses.
- The area is small so it is limiting the diversity of possible activity in the "Semi-closed" case.
- The strong connection to the corridor in the "Core" case reduces the intimacy of the social space.

Preventive features

Safety

- Reaches out for daylight and the doors can stay open to the corridor, they only close for an emergency.

Weak ties

- Facilitates the development of a sense of belonging as people are passing it every day.

Social skills

- Creates a unique social space to support the diversification of interaction settings, and increases face to face contacts.

Social interactions

- Connects elevator and stair users with a social space to enhance spontaneous interactions.

Provide social support

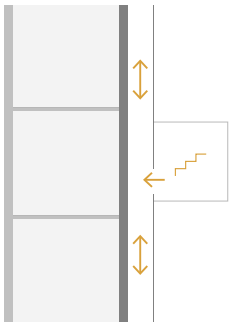
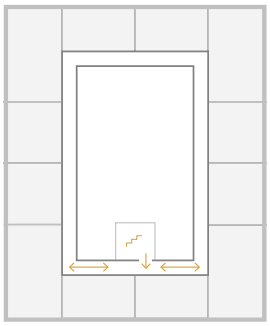
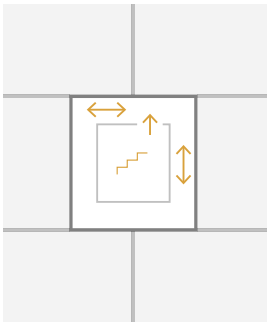
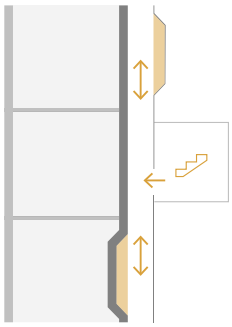
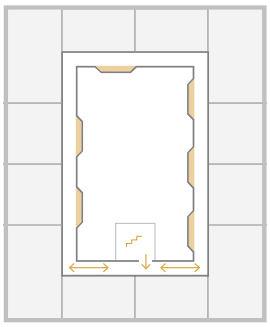
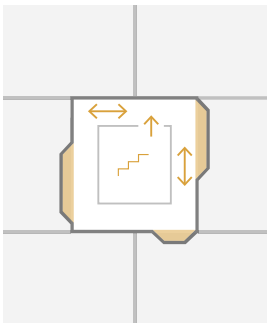
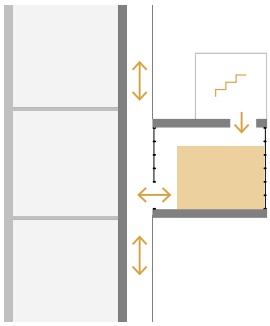
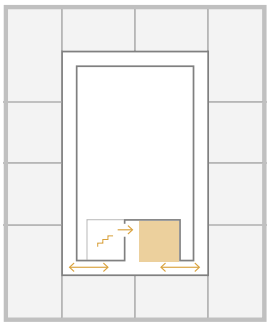
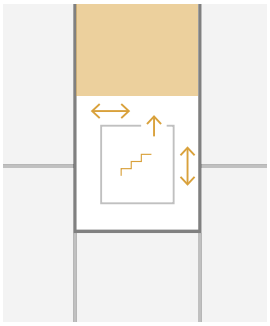
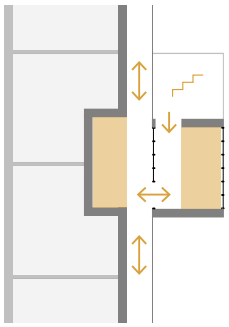
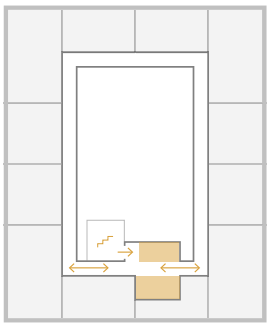
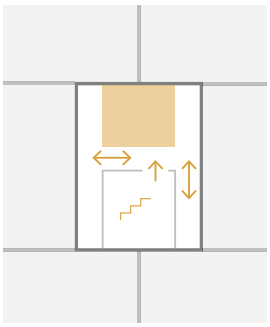
- The community is present in every space for people to reach out for help when they need it.

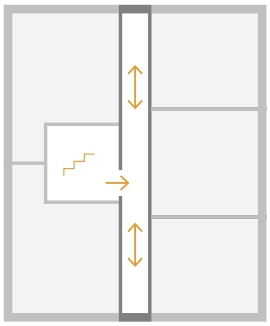
Maladaptive social cognition

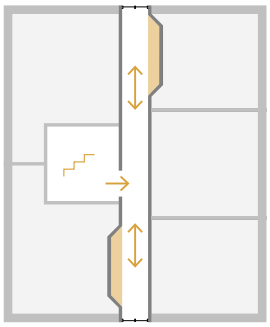
- Makes people connect to the community on each floor and along their way down.

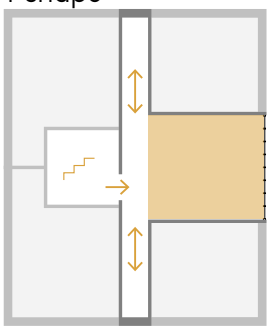
THE CONVIVIAL ACCESS AREA

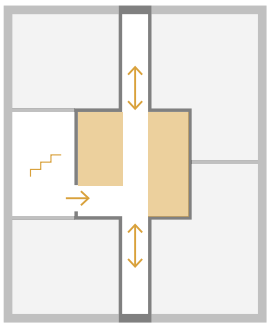
Comparison of variants

Case 1 Long Detailed solutions	Case 2 Outdoor	Case 3 Atrium	Case 4 Core
Standard			
Type 1 Pockets			
Type 2 T shape			
Type 3 Core			



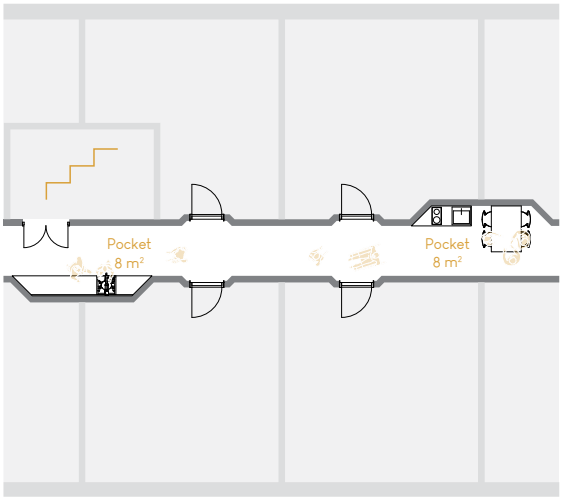






Type 1: Pockets - Case 1

Axonometry



Floor plan 2m

Common possible functions

- Workshop
- Kitchen
- Lounge area
- Meeting space
- Play room
- Library
- Goods lending room
- Light shaft

Advantages

- The intervention can be spread along long corridors.
- The space can be designed so furniture unfolds or can be moved and then the area becomes a patch of living space (Alexander, et al., 1977, p634).
- The impact on the rearrangement of the living unit is minimal.
- The monotony of long straight corridors is broken (Alexander, et al., 1977, p635).
- The attractiveness isn't dependent on daylight.
- The possible functions are various, depending on the daylight, the location, or the target group.
- The location tangent to the walkway that people daily pass (Alexander, et al., 1977, p613).
- The ceiling height can define a soft border.
- The inter-floor connections are emphasized in the "Atrium" case.

Disadvantages

- The space is minimal so are the kind of activity.
- The noise can become an issue as it is spread along the corridor.
- The proportions define the feasible activities.
- The daylight can be hard to get in some cases.

Preventive features

Safety

- Breaks the monotony with social activity and reaches out for daylight when possible.

Weak ties

- Facilitates the development of a sense of belonging as people are passing it every day.

Social skills

- Creates social space in every corner with various settings enhancing interaction diversity and spontaneity.

Social interactions

- Encourages interaction right outside the door.

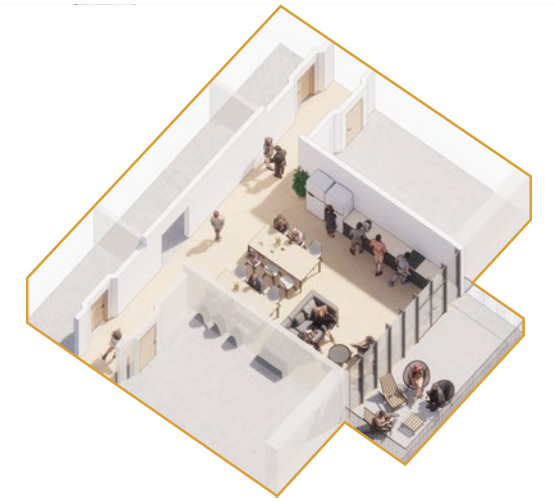
Provide social support

- The community is present in every space for people to reach out for help when they need it.

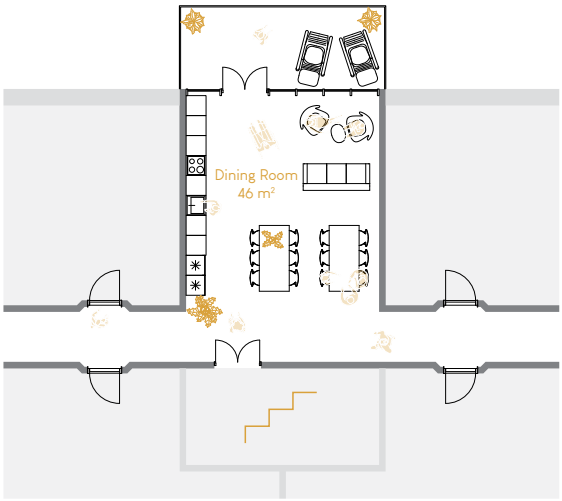
Maladaptive social cognition

- Provides the community with flexible space open to appropriation.

Type 2: T shape - Case 1



Axonometry



Floor plan 2m

Common possible functions

- Workshop
- Indoor gym
- Kitchen
- Lounge area
- Meeting space
- Play room
- Library
- Office space
- Café
- Goods lending room

Advantages

- The interactions between floors are encouraged as the function can vary.
- The social spaces are concentrated all in one.
- The location tangent to the walkway that people daily pass (Alexander, et al., 1977, p613)..
- The daylight in the social space is crucial as a " passage that is generously lit by the sun is almost always pleasant" (Alexander, et al., 1977, p634).
- The space is equally far from every living unit.
- The noise is gathered in one place.
- The monotony of long straight corridors is broken (Alexander, et al., 1977, p635).
- The ceiling height can define a soft border.
- The inter-floor connections are emphasized in the "Atrium" case.

Disadvantages

- The uniqueness of the space reduces the possibility of a diversity of functions on one floor.
- The area can be skipped easily so people can decide to not socialize.
- The area is the same size as a living unit in the "Long" and "Core" cases.

Preventive features

Safety

- Breaks the monotony with social activity and reaches out for daylight when possible.

Weak ties

- Facilitates the sense of belonging as people are passing every day and obliges people from the whole floor to expand their "weak ties" network.

Social skills

- Provides a unique cooperative space for intentional and spontaneous interaction.

Social interactions

- Encourages interaction right outside the door.

Provide social support

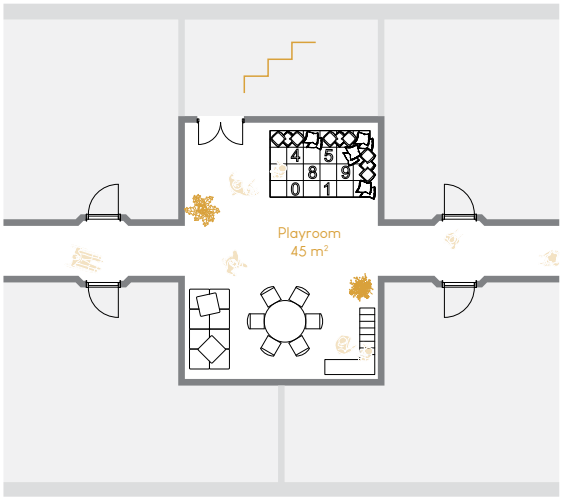
- The community is present in every space for people to reach out for help when they need it.

Maladaptive social cognition

- Provides a flexible space open to appropriation and unites the floor community in a unique space.

Type 3: Core - Case 1

Axonometry



Floor plan 2m

Common possible functions

- Workshop
- Indoor gym
- Kitchen
- Lounge area
- Meeting space
- Play room
- Library
- Café
- Goods lending room

Advantages

- The walkway is interrupted which facilitates the act of joining the socialization.
- The social spaces are concentrated all in one.
- The ceiling height can define a soft border.
- The interactions between floors are encouraged as the function can vary.
- The possible functions are various, depending on the daylight, the location, or the target group.
- The inter-floor connections are emphasized in the "Atrium" case.
- The monotony of long straight corridors is broken (Alexander, et al., 1977, p635).
- The attractiveness isn't dependent on daylight.
- The space is equally far from every living unit.
- Gathers the noise in one place.

Disadvantages

- The daylight can be hard to get in some cases.
- The uniqueness of the space reduces the possibility of a diversity of functions on one floor.
- The path shouldn't cut too deeply the common area otherwise the space can be perceived as exposed (Alexander, et al., 1977, p619).

Preventive features

Safety

- Breaks the monotony with social activity incorporating the walkway.

Weak ties

- Facilitates the sense of belonging as people are passing every day and obliges people from the whole floor to expand their "weak ties" network.

Social skills

- Provides a unique cooperative space for intentional and spontaneous interaction.

Social interactions

- Encourages interaction right outside the door.

Provide social support

- The community is present in every space for people to reach out for help when they need it.

Maladaptive social cognition

- Provides a flexible space open to appropriation and unites the floor community in a unique space.

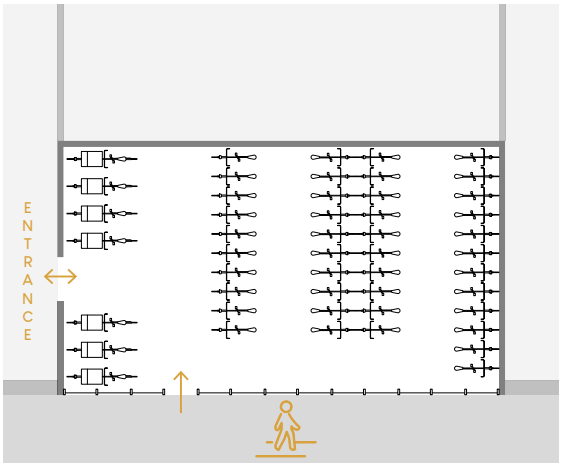
THE COOPERATIVE BIKE PARKING

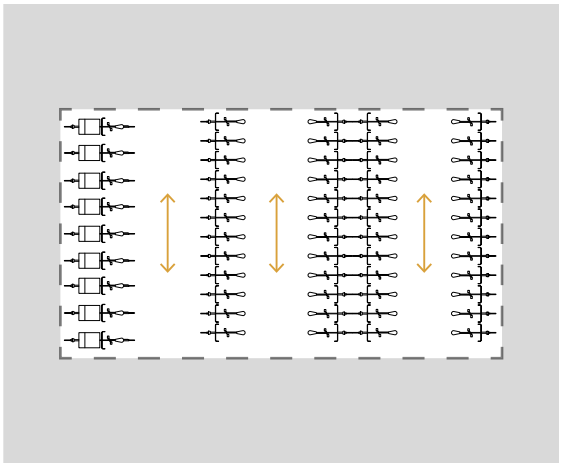
Comparison of variants

Case 1
In the building
Detailed solutions

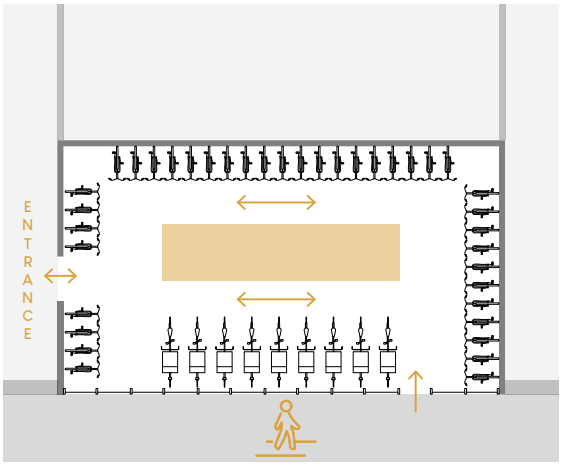
Case 2
Outdoor shelter

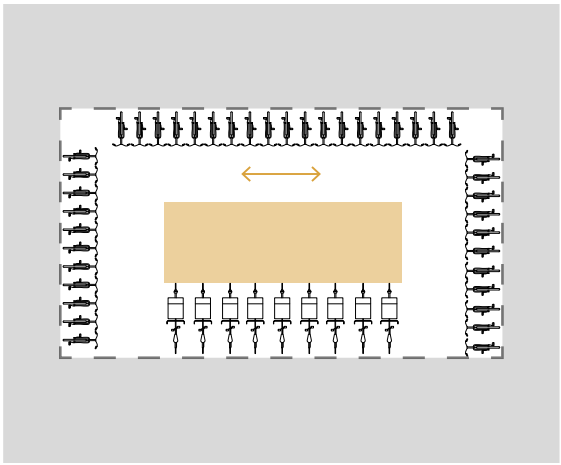
Standard



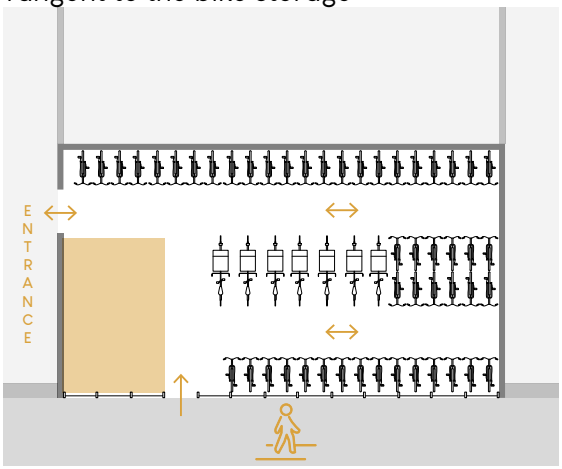


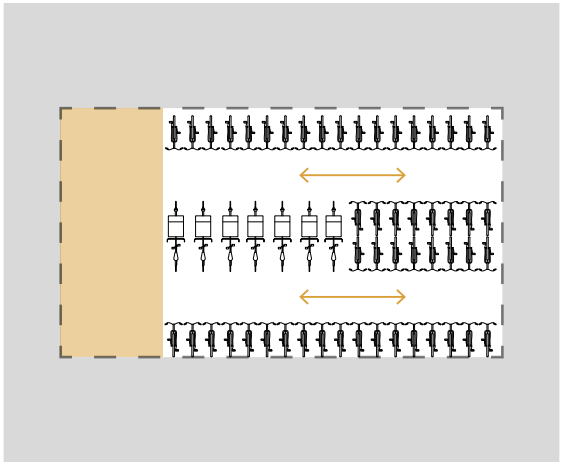
Type 1
Social in the core





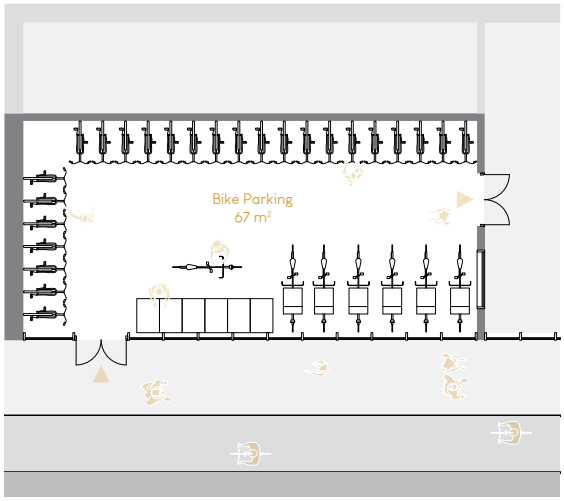
Type 2
Tangent to the bike storage





Type 1: Social in the core - Case 1

Axonometry



Floor plan

1m

Common possible functions

- Repair workshop
- Bike pooling

Advantages

- The centrality of the space gives it importance and connection to all around it.
- The daylight makes it a comfortable place to work on a bike.
- The bike pooling can bring a new dimension of interaction to the community. The bikes would be the community's property and they will have to organize on their own to take care of them.
- The space is used efficiently by parking the bikes vertically.
- The usually empty space during the day is becoming lively.
- The visual connection to the entrance in the "In the building" case emphasizes the connection between the different social spaces.
- The workshop and the storage are one unique space that facilitates the spontaneous interactions without borders in the "In the building" case.

Disadvantages

- The variety of functions is limited in a bike parking.
- The daylight is crucial for the space to be safe but it must not be visible from outside.
- The workshop space in the "Outdoor" case will have to be carefully sheltered from the wind and visually connected to the outside.

Preventive features

Safety

- Reduces insecurity of this kind of space by reaching out for daylight.

Weak ties

- Increases the sense of belonging by providing a technical support space.

Social skills

- Provides a unique cooperative space for intentional and spontaneous interaction.

Social interactions

- A workshop brings diversity in the interaction possibilities.

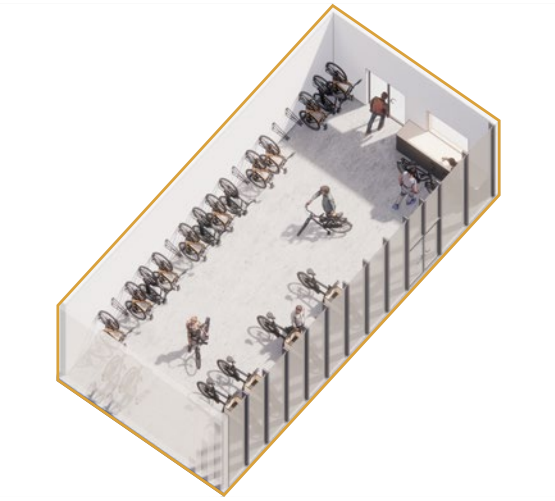
Provide social support

- The community is present in every space for people to reach out for help when they need it.

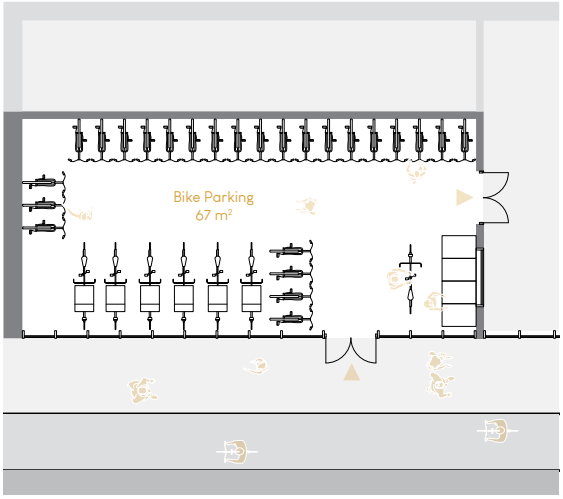
Maladaptive social cognition

- Encourages people to help each other.

Type 2: Tangent to the bike storage - Case 1



Axonometry



Floor plan 1m

Common possible functions

- Repair workshop
- Bike pooling

Advantages

- The people have to pass the social space before parking no matter which entrance they took. It increases the chance for interaction.
- The daylight makes it a comfortable place to work on a bike.
- The bike pooling can bring a new dimension of interaction to the community. The bikes would be the community's property.
- The space is used efficiently by parking the bikes vertically.
- The usually empty space during the day is becoming lively.
- The visual connection to the entrance is stronger with the workshop facing the entrance in the "In the building" case.
- The workshop and the storage are one unique space that facilitates the spontaneous interactions without borders in the "In the building" case.

Disadvantages

- The variety of functions is limited in a bike parking.
- The daylight is crucial for the space to be safe but it must not be visible from outside.
- The workshop space in the "Outdoor" case will have to be carefully sheltered from the wind and visually connected to the outside.

Preventive features

Safety

- Reduces insecurity of this kind of space by reaching out for daylight.

Weak ties

- Increases the sense of belonging by providing a technical support space.

Social skills

- Provides a unique cooperative space for intentional and spontaneous interaction.

Social interactions

- A workshop brings diversity in the interaction possibilities.

Provide social support

- The community is present in every space for people to reach out for help when they need it.

Maladaptive social cognition

- Encourages people to help each other.

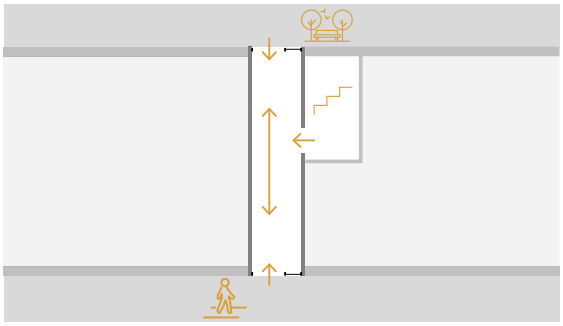
THE SOCIAL ENTRANCE HALL

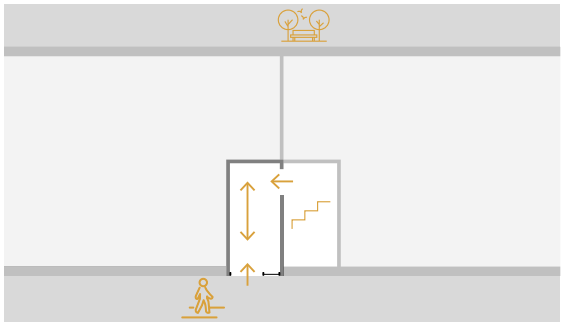
Comparison of variants

Case 1
Two sides open
Detailed solutions

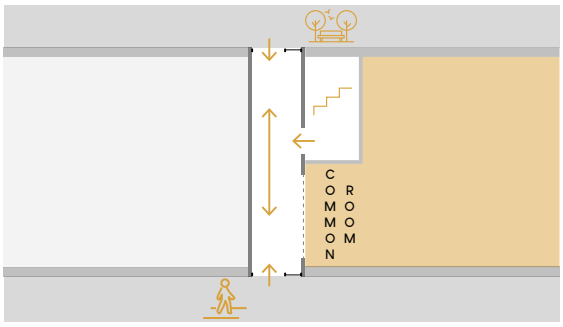
Case 2
One side

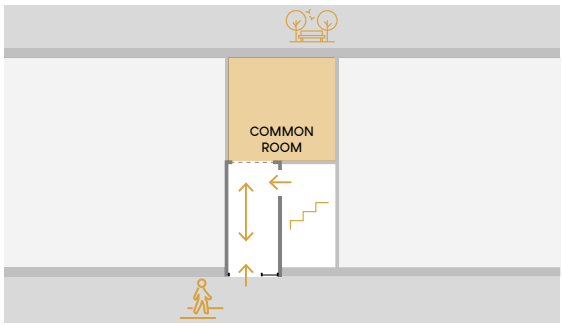
Standard



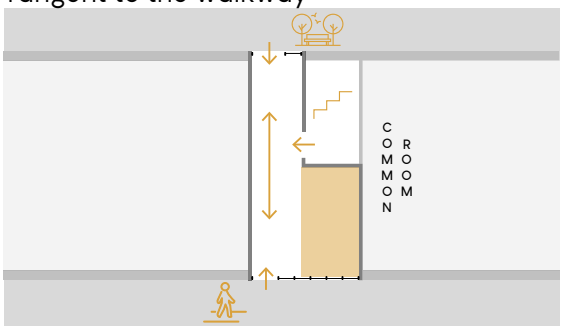


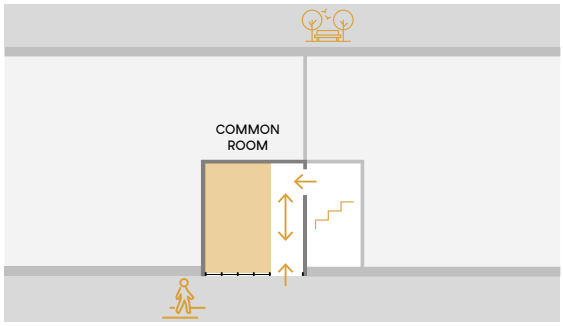
Type 1
Connected to common room



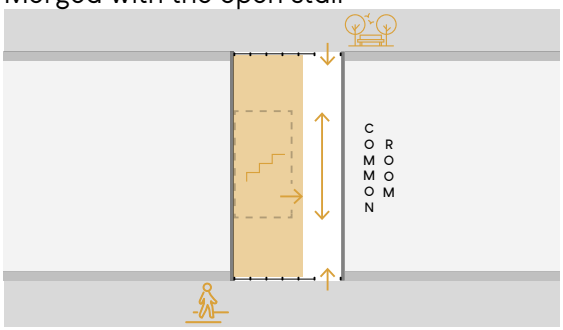


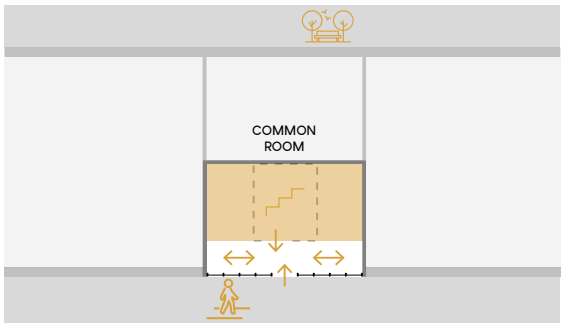
Type 2
Tangent to the walkway



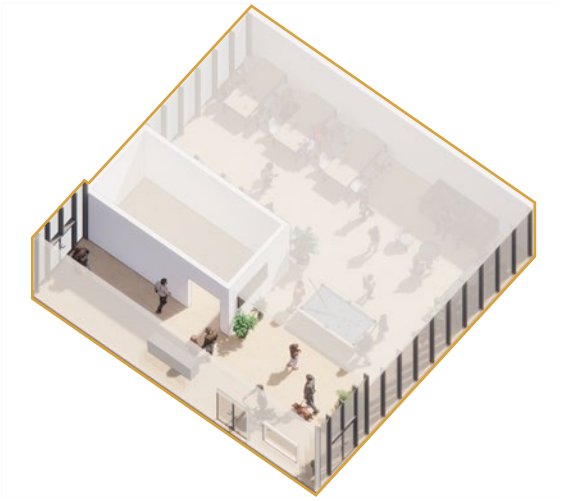


Type 3
Merged with the open stair

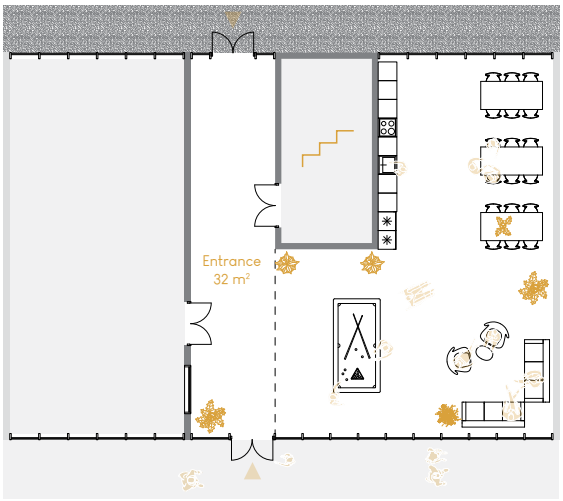




Type 1: Connected to common room - Case 1



Axonometry



Floor plan 2m

Common possible functions

- Information board

Advantages

- The common room is given more importance.
- The entrance plays as the entrance part of the common room so more room can be dedicated to social activity in the common room.
- The connection to the common room seems natural which encourages people to go into it.
- The entrance can become an extension of the common room on a special occasion so every person who enters is welcome to socialize.
- The community information board can be places on one of the walls. It is where people can put some information like the laundry planning or the planned activities. This can help to break the ice and start a conversation.
- The openness can be designed flexible.

Disadvantages

- The socialization in the common room can easily be skipped and people can go straight to the stair.
- The border between the common and the entrance needs to be as open as possible but still be closeable for when the postman is coming for example.
- The entrance doesn't have any social space.
- There isn't any transition before getting into the big social common room.

Preventive features

Safety

- Reduces the hostility of a closed narrow entrance by reaching out for daylight.

Weak ties

- Increases the sense of belonging by bringing the common room closer to the entrance.

Social skills

- Provides a flexible space that can be very social on occasion but also straightforward sometimes.

Social interactions

- Encourages people to take part in the socializing in the common room.

Provide social support

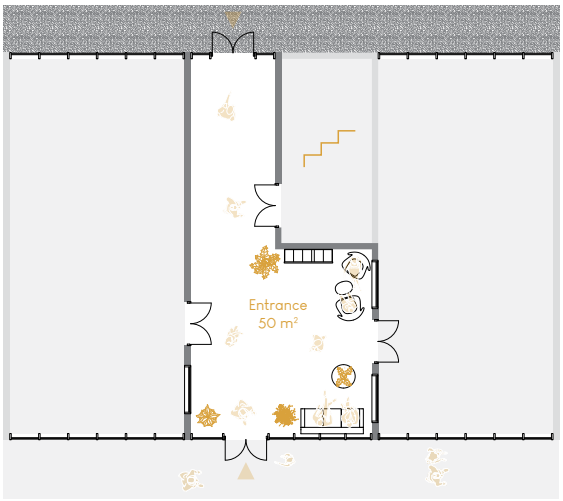
- The community is present from the doorstep for people to reach out for help when they need it.

Maladaptive social cognition

- Reduces the possibility of stress by bringing social space at the doorstep.

Type 2: Tangent to the walkway - Case 1

Axonometry



Floor plan 2m

Common possible functions

- Information board
- Library
- Lounge area
- Community desk

Advantages

- The entrance door and staircase are at the opposite ends of the social space which is forcing people to interact and take part in a conversation before going up.
- The community information board can be places on one of the walls. It is where people can put some information like the laundry planning or the planned activities. This can help to break the ice and start a conversation.
- The social space is facing the mailboxes, the place where people are slowing down their pace and probably the most willing to interact.
- The social space plays as a transition from the entrance walkway to the common room.
- The social part of the entrance can become an extension of the common room on a special occasion and then every person that enters is welcome to socialize.
- The connection to the bike parking is stronger.

Disadvantages

- The flow of people passing makes it impossible to implement intimate activities.
- There is a physical border to the common room which makes the transition from entrance to common room less natural.

Preventive features

Safety

- Reduces the hostility of a closed narrow entrance by reaching out for daylight and bringing social in.

Weak ties

- Increases the sense of belonging by providing an interactive space right at the doorstep.

Social skills

- The diversity of interactive spaces is increased and works as a transition to the common room.

Social interactions

- Encourages people to take part in the socializing in the common room.

Provide social support

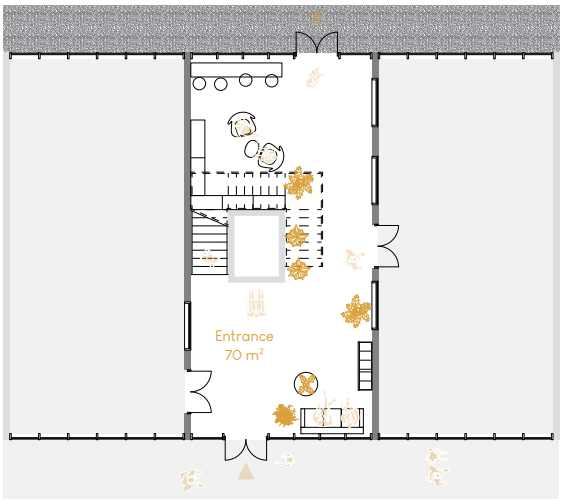
- Plays as a conversation starter space and the community is present from the doorstep for people to reach out for help when they need it.

Maladaptive social cognition

- Reduces the possibility of stress by bringing social space at the doorstep.

Type 3: Merged with the open stair - Case 1

Axonometry



Floor plan 2m

Common possible functions

- Information board
- Library
- Lounge area
- Community desk

Advantages

- The physical border to the common can be made foldable for more flexibility.
- The entrance door and staircase are separated by the social space which is forcing people to interact and take part in a conversation before going up.
- The common room can take over the space of the entrance easily and then people are directly entering the main social space.
- The community information board can be places on one of the walls. It is where people can put some information like the laundry planning or the planned activities. This can help to break the ice and start a conversation.
- The social space plays as a transition from the entrance walkway to the common room.

Disadvantages

- The flow of people passing makes it impossible to implement intimate activity.
- The diversity of function is limited considering the amount of people passing.
- There is a need for division with such an open social space and a corner for a space around the mailboxes.
- The stair needs to be opened to work.

Preventive features

Safety

- Reduces the hostility of a closed narrow entrance by reaching out for daylight and bringing social in.

Weak ties

- Increases the sense of belonging by providing an interactive space right at the doorstep.

Social skills

- The diversity of interactive spaces is increased and works as an extension of the common room.

Social interactions

- Encourages people to take part in the socializing in the common room.

Provide social support

- Plays as a conversation starter space and the community is present from the doorstep for people to reach out for help when they need it.

Maladaptive social cognition

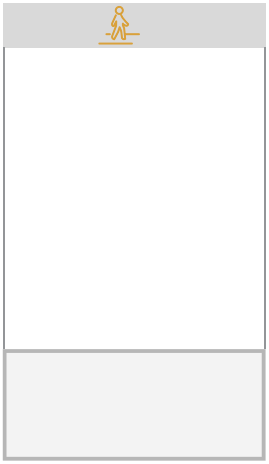
- Reduces the possibility of stress by having a wide-open social space at the doorstep.

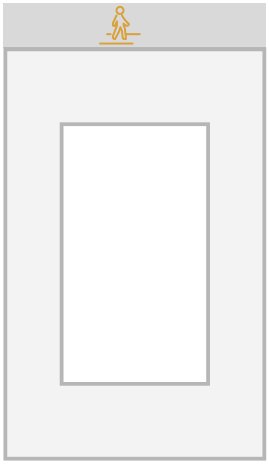
THE COMMUNAL COURTYARD

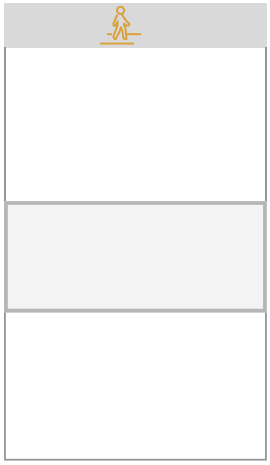
Comparison of variants

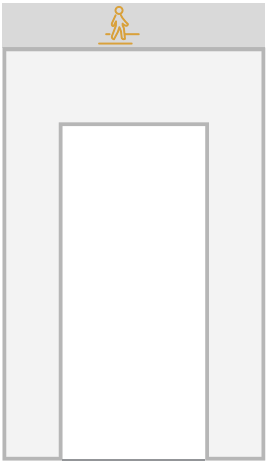
Case 1 Front yard	Case 2 Closed	Case 3 Split	Case 4 Semi-closed Detailed solutions

Standard



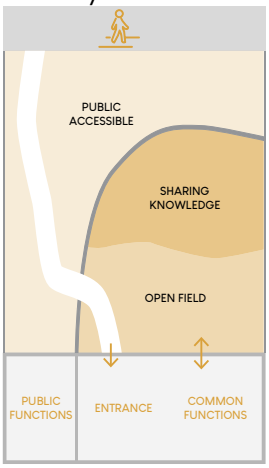


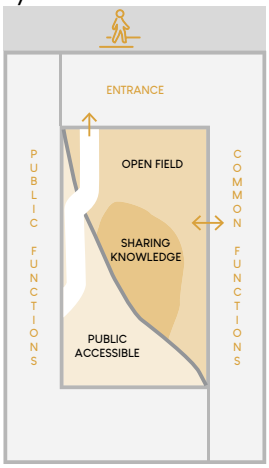


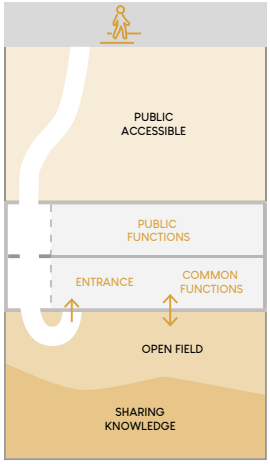


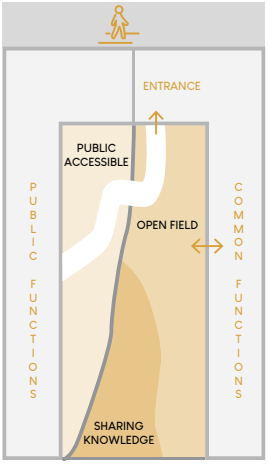
Type 1

Publicly accessible courtyard



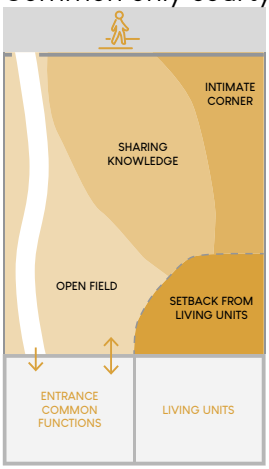


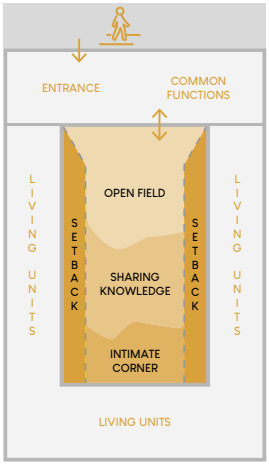


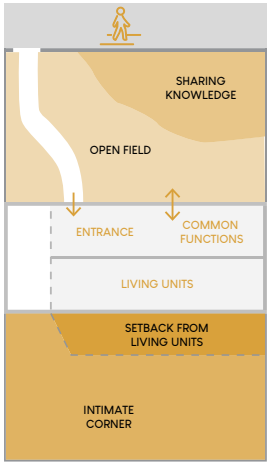


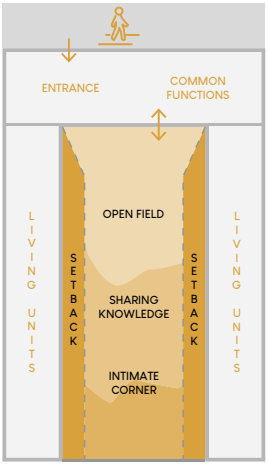
Type 2

Common only courtyard



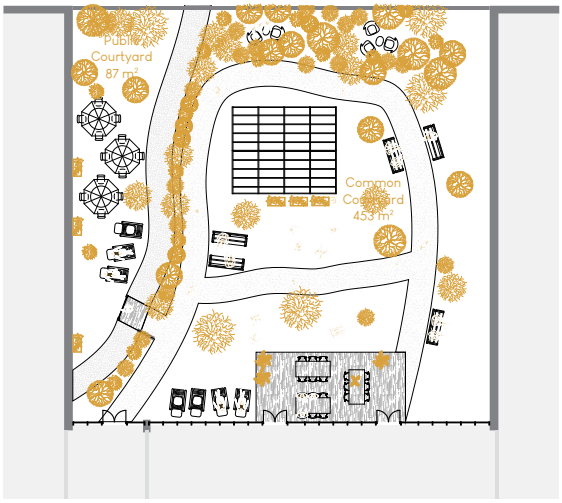






Type 1: Publicly accessible courtyard - Case 4

Axonometry



Floor plan 5m

Public functions

- Outdoor gym
- Child playground
- Cafe's terrace
- Vegetable garden
- Seating space

Common functions

- Greenhouse
- Terrace
- Seating space
- Outdoor workshop
- Barbecue space

Advantages

- The public openness allows the residents to meet people from the whole neighborhood.
- The attractiveness can raise awareness about community living and bring interest to it. The diversity of social settings on the whole courtyard is wider because with a public courtyard comes different programs and there is also public functions on the ground floor of the building.
- The courtyard is overlooked from the living units so the residents are always aware of what is happening and it easily attracts them.

Disadvantages

- The border must be physical between public and common.
- The mix of public and common in a closed courtyard like in the "Closed" or "Semi-closed" cases can create an access and noise problem .
- The intimate corner is hard to create in the common courtyard. For that reason, the "Split" case is perfect.
- The area can be perceived as unsafe if the border is not done properly.

Preventive features

Safety

- Provides a clear border between public and common parts.

Weak ties

- Gives the opportunity to interact with more people than just the community.

Social skills

- Trains a wide range of social skills of the residents by offering diverse social settings.

Social interactions

- Encourages people to interact differently than inside.

Provide social support

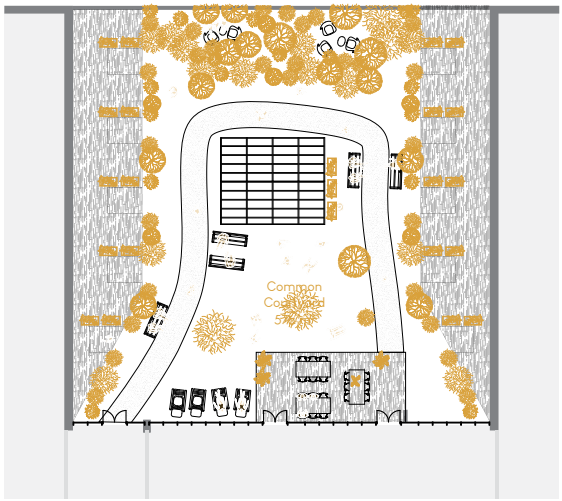
- The community is present in different settings for people to reach out for help when they need it.

Maladaptive social cognition

- Reduces the possibility of stress by having different social settings.

Type 2: Common only courtyard - Case 4

Axonometry



Floor plan

Common possible functions

- Greenhouse
- Terrace
- Seating space
- Outdoor workshop
- Barbecue space
- Intimate corner
- Outdoor gym
- Child playground
- Vegetable garden
- Botanic garden

Advantages

- The residents are provided with an intimate outdoor space that they could use as their own private garden.
- The intervention offers more freedom than in the type 1 as the whole courtyard is accessible without any border.
- The whole courtyard can be considered as an extension of the common space.
- The insecurity problem are minor as there isn't any public accessibility.
- The transition from the front common to the intimate back allows people to give each space different meanings (Alexander, et al., 1977, p610).

Disadvantages

- The "Split" case is ideal to do a clear separation between the common and the intimate space.
- The variety of functions is limited since some are only viable when a wider group of people can access them.
- The community is enclosed to the neighborhood it limits the diversity of people the residents are interacting with.

Preventive features

Safety

- Provides intimates outdoor settings to fulfill all the needs of the residents.

Weak ties

- Facilitates the integration of residents.

Social skills

- Trains a wide range of social skills of the residents by offering diverse social settings.

Social interactions

- Encourages people to interact differently than inside.

Provide social support

- The community is present in different settings for people to reach out for help when they need it.

Maladaptive social cognition

- Reduces the possibility of stress by having different social settings.

DESIGN PROPOSAL

Aim

The proposal is a fictional and generic building without a specific urban context. It shows one example of how the components could be combined and work together. The combination can take many forms but this particular proposal is seen as a speculative testbed for the components. It is one of many ideal combinations to prevent loneliness with community living where the design strategies and components are implemented into a unique settlement context. The focus is on the common social areas; the facades and the organization of the living units are subordinated. The parameters of the community size and the environment are brought into the design process. The aim is to show an example for the most lonely environment, the urban one (Brülde & Fors, 2015, p. 58). The design is a proposal for a certain number of residents from the most lonely target groups, youth and elderlies. In terms of process, the concepts of this fictional proposal have been elaborated on from the specifications defined. They concern the general shape and organization of the building. From them and the specifications, is decided which components to use and where. Finally, the explanation goes more into details concerning the social common areas and their design.

Background

The parameters of this scenario are based on the case studies but also the literature studies. The number of residents is one of the factors that have a lot of impact on the design of a community living building. It influences the organization of the community as well as the program and the variety of common areas. As no study is stipulating what would be the exact appropriate size of a community, the number of residents in the proposal (110) is a value retrieved from the average of the 6 earlier case studies. Considering the size of the community, there are different levels of sharing, communal sharing or storey sharing. Each living unit is succinctly designed with a balcony. Among the units in this proposal, some are exclusively for elderlies and some for youth. There are also units where elderlies and youth are sharing a flat to elaborate generational cohabitation. The generations are mixed on every floor with the same proportion of the two age groups.

Shared amenities

PUBLIC

PRIVATE

Unit types

2 exclusively for elderlies:

- One-bedroom apartment for single or couple with own bathroom and kitchen
- Two-bedrooms apartment for the elderlies still working who would like a separate room for office or guests with own bathroom and kitchen

2 exclusively for youth:

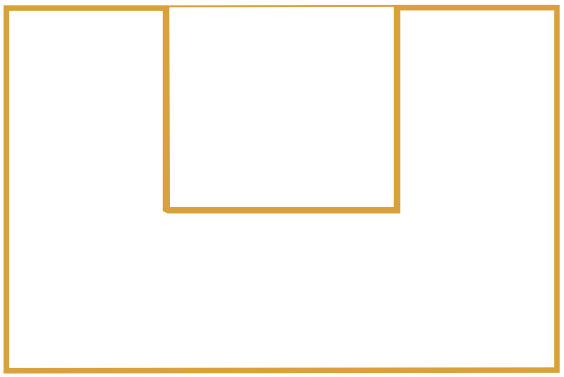
- Single studios with their own bathroom and small kitchenette
- One-bedroom apartments for couples with own kitchenette and bathroom

2 for youth and elderlies:

- Small shared flat units of 3 bedrooms sharing a kitchen living/dining room core and a bathroom
- Big shared flat unit of 4 bedrooms sharing a kitchen living/dining room core and 2 bathrooms

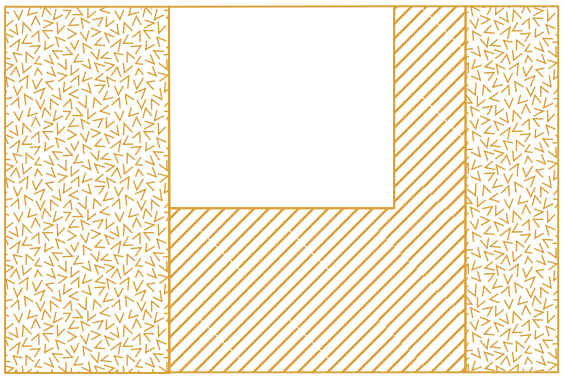
Concept

Ground floor



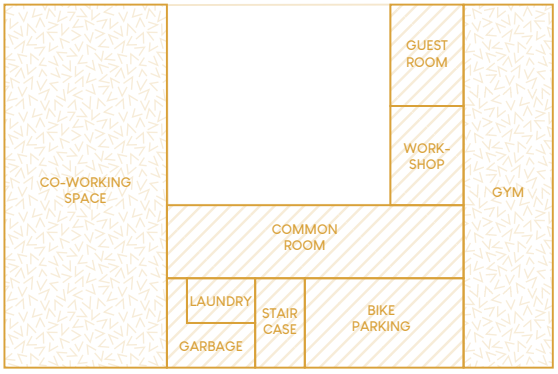
U shape

This shape is chosen for circling the courtyard to protect it from the street. It also allows dividing the building into wings with the common in the middle.



From public to common

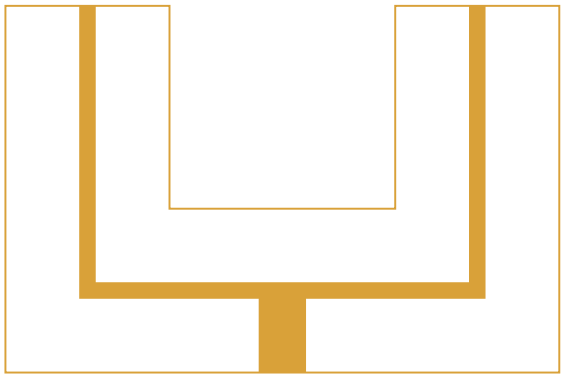
The organization supports a transition from public to common. The majority of the courtyard facade is given to the common.



Program

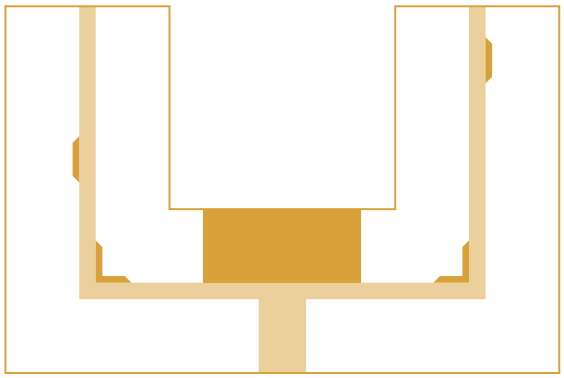
The two public programs are directly accessible from the street. The unique staircase is centered on the facade to be equidistant from both wings.

Upper floors



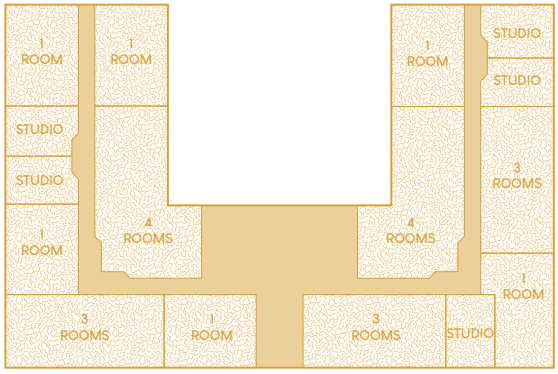
Symmetrical access

The living units are equidistant from the stair. The circulation path is broken into sections of less than 15 meters to follow Alexander et al. (1977, p635)



Diversity of social space

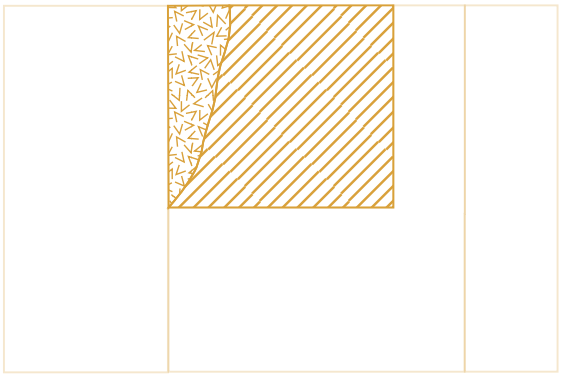
Along the circulation are combined the T shape and Pocket components. The corner pockets are made to create a visual connection from the common room. Also, the emergency stairs are made social.



Living unit organization

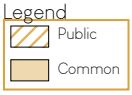
Different types of units are spread to fulfill the needs of the two target groups and provide different social settings.

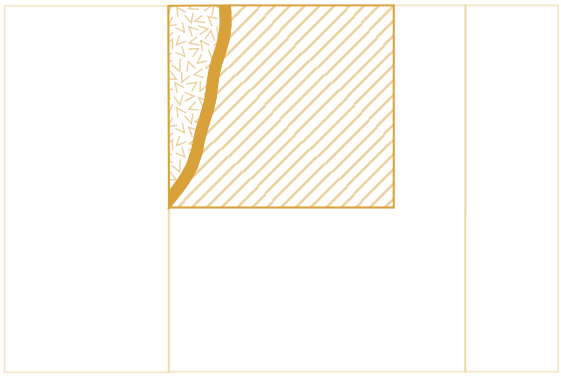
Courtyard



Access organization

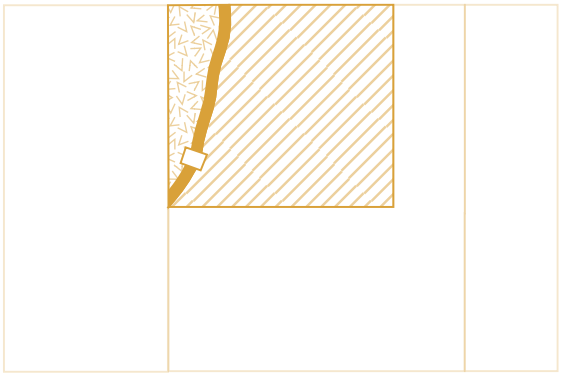
The courtyard is split in two with most of it only for the common and another part for the co-working space.





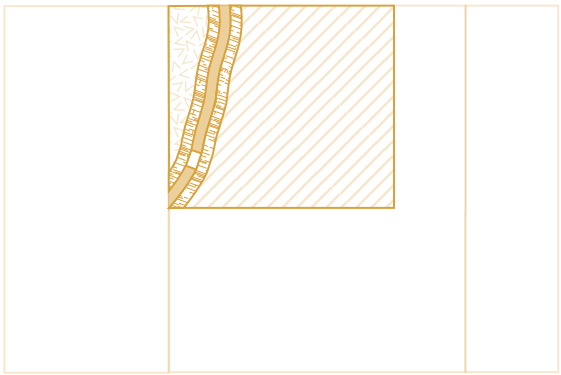
Clear border

The border between the public and the common parts is a trench that handles also the rainwater at the same time



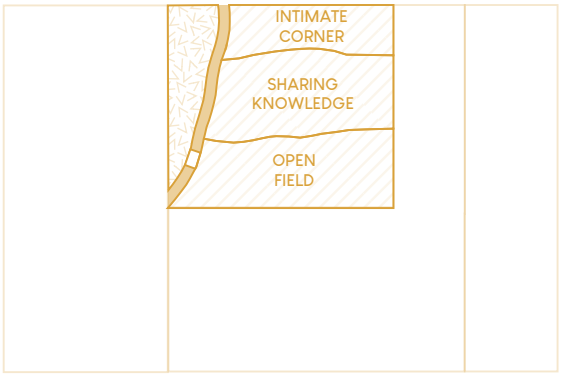
Unique connection

The security feeling of the community is kept, there is only one connection between the public and common parts which is a gate to limit the access.



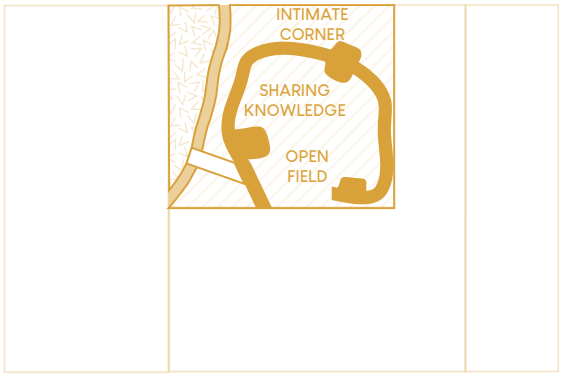
Visual connection blocked

The visual connection along the trench is blocked, also for security, by the planting of high plants on the banks of the watercourse.



Intimacy gradient

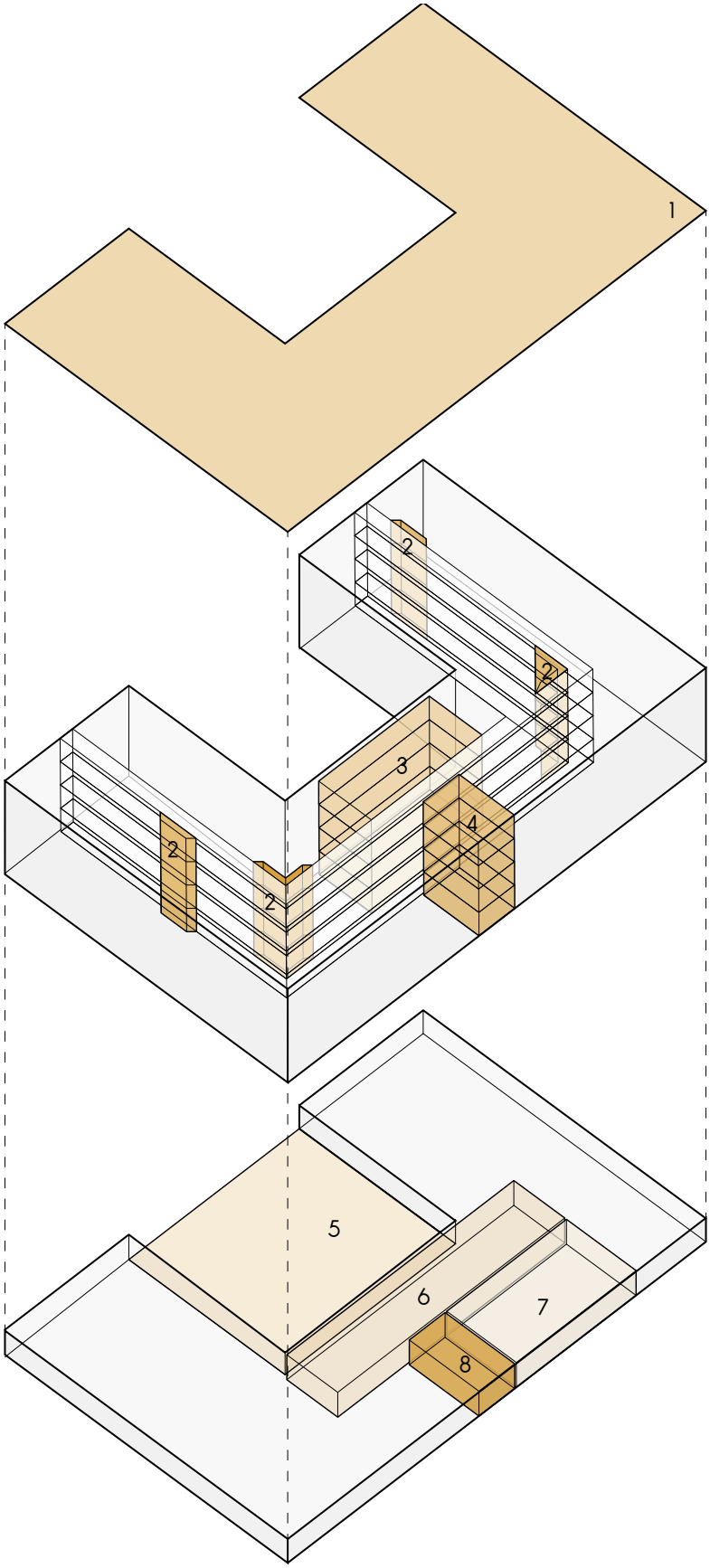
The spaces are organized to gradually become more intimate the further people go from the common spaces. It provides the residents with a diversity of social settings



Main circulation

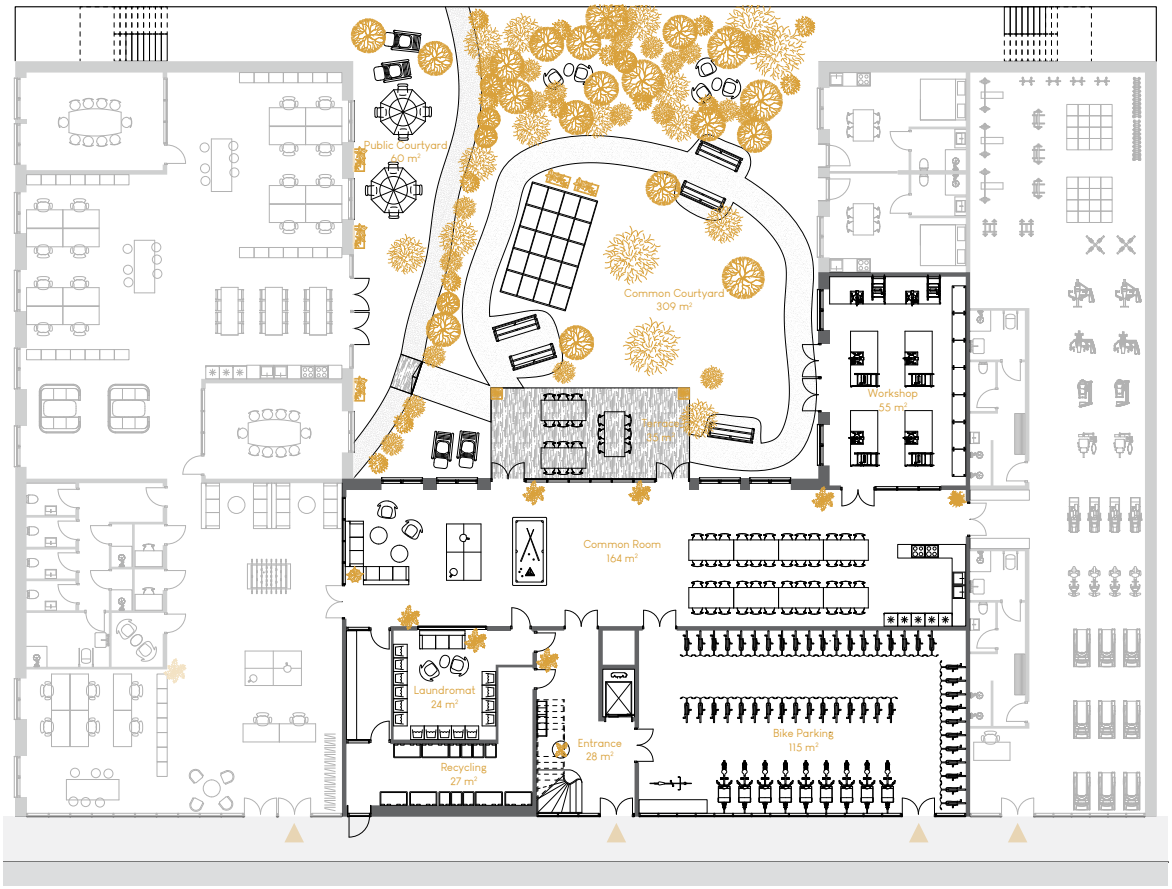
The path is drawn to support the intimacy gradient and softly define the border between the spaces. It goes as a loop for people to always connect to the common room.

Components implemented



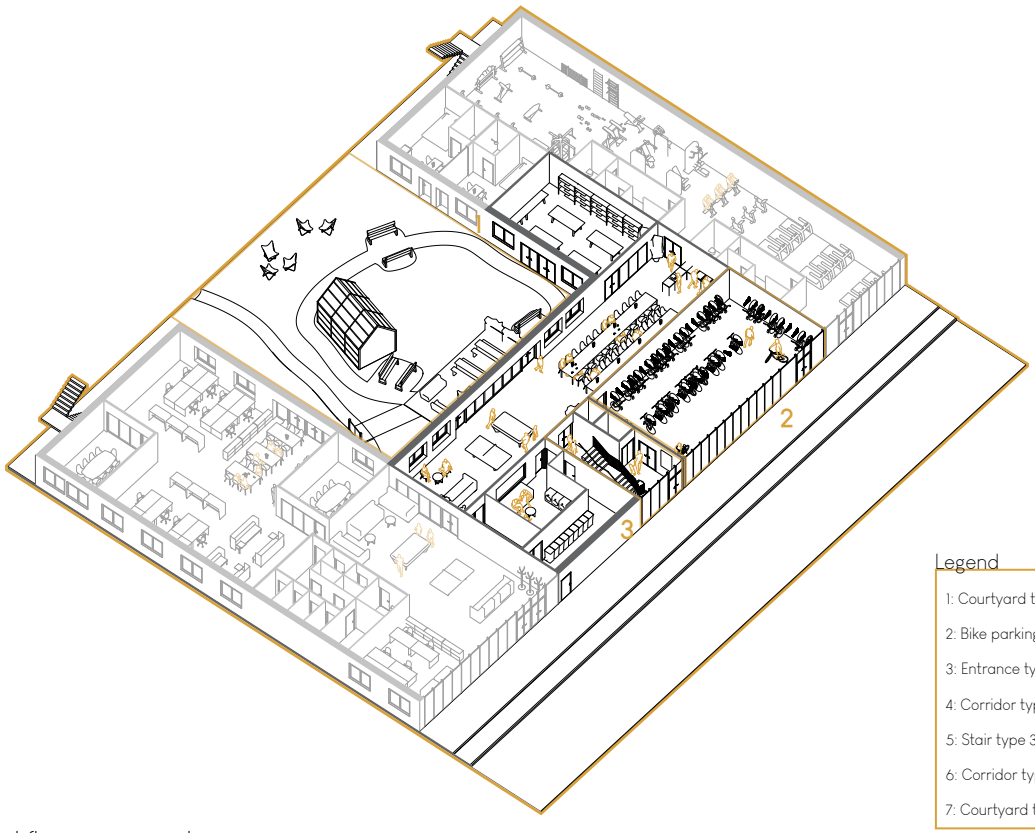
Legend

1: Courtyard type 2
2: Access area type 1
3: Access area type 2
4: Stair type 3
5: Courtyard type 1
6: Common room
7: Bike parking type 2
8: Entrance type 2



Ground floor plan

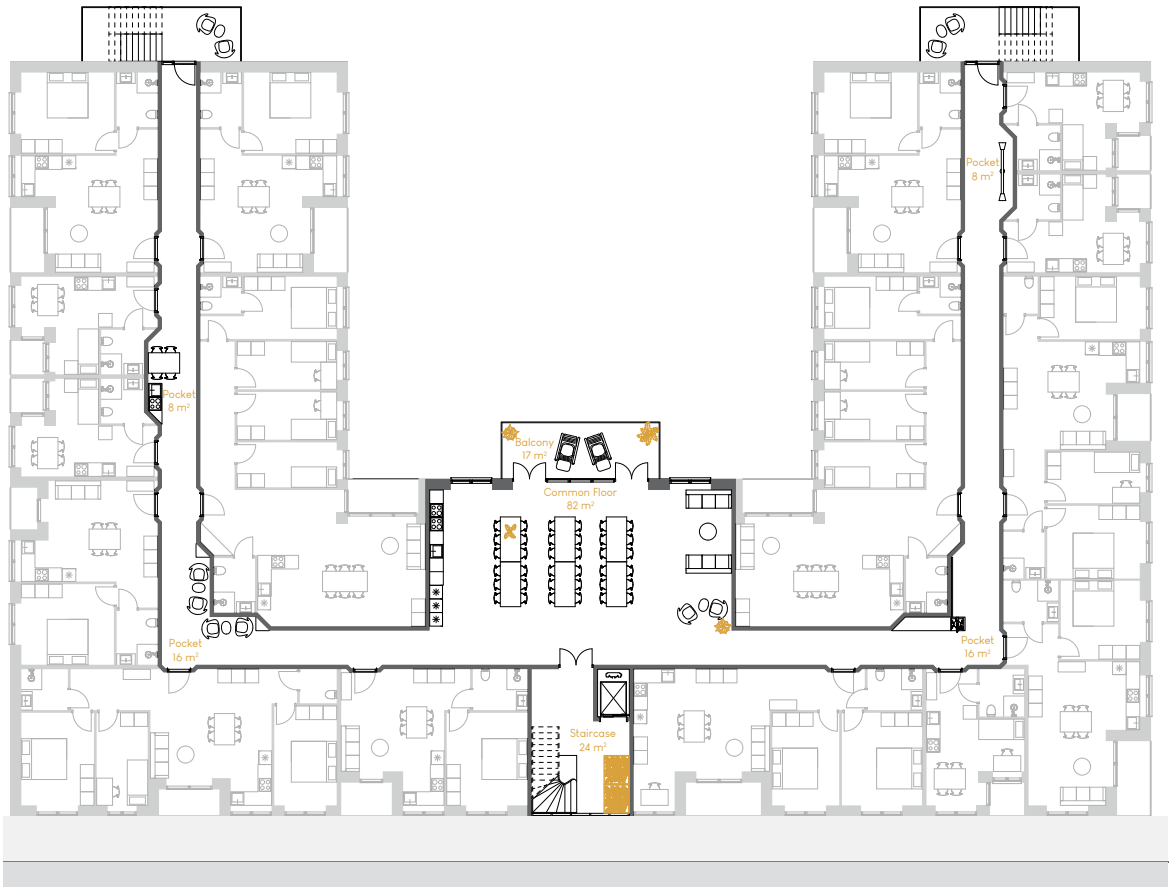
2m



Legend

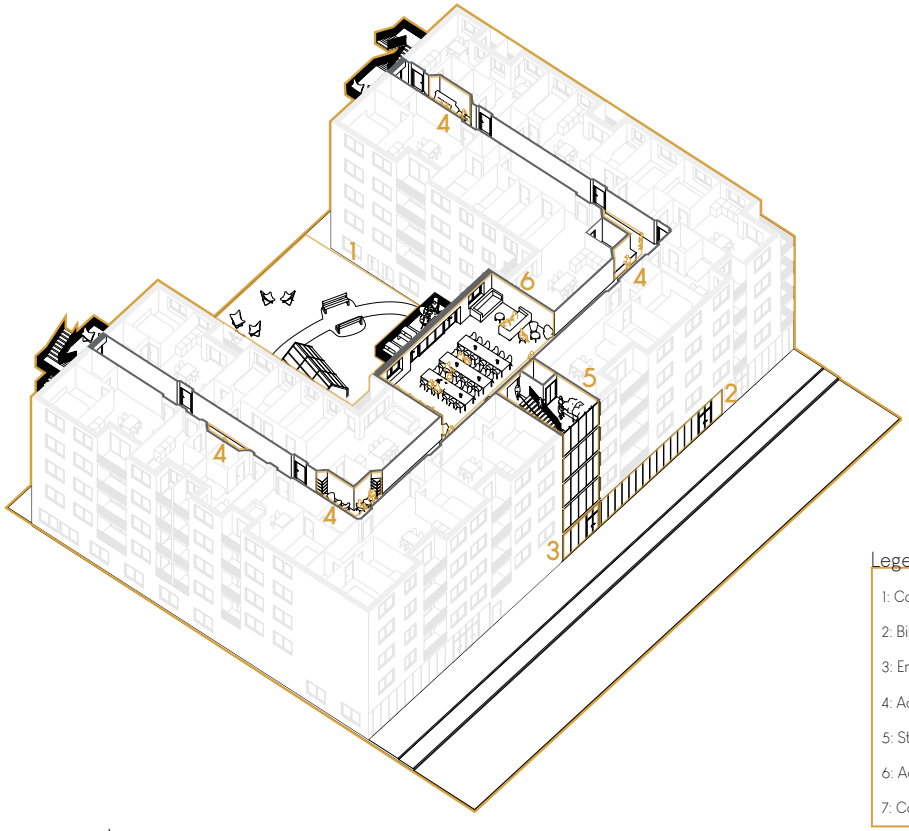
1: Courtyard type 1
2: Bike parking type 2
3: Entrance type 2
4: Corridor type 1
5: Stair type 3
6: Corridor type 2
7: Courtyard type 2

Ground floor axonometry



Upper floor plan

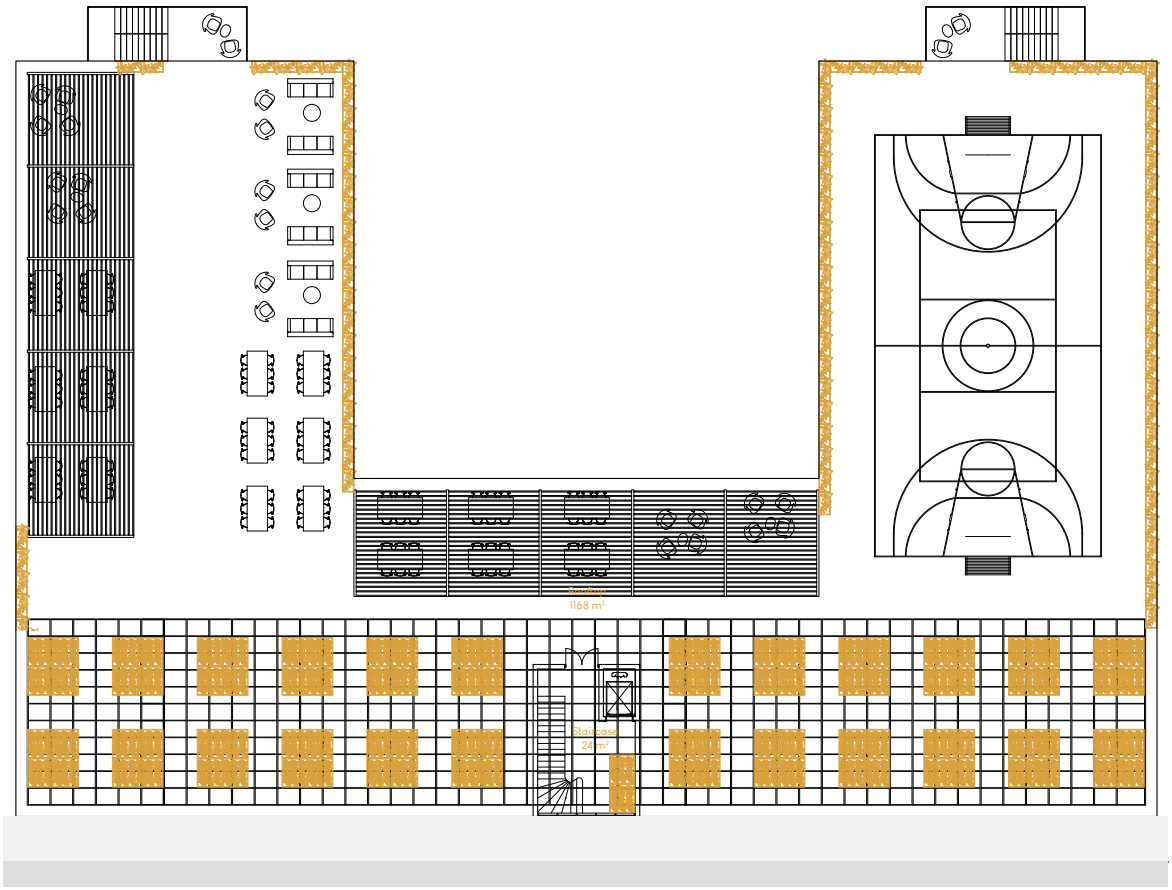
2m



Legend

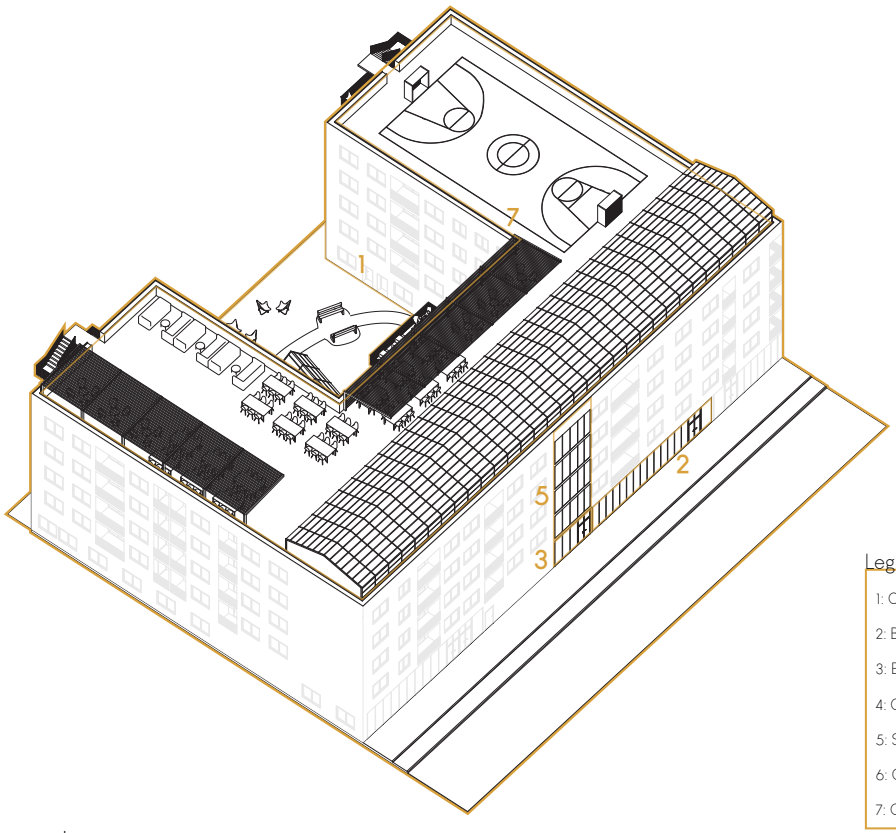
1: Courtyard type 1
2: Bike parking type 2
3: Entrance type 2
4: Access area type 1
5: Stair type 3
6: Access area type 2
7: Courtyard type 2

Upper floor axonometry



Rooftop plan

2m

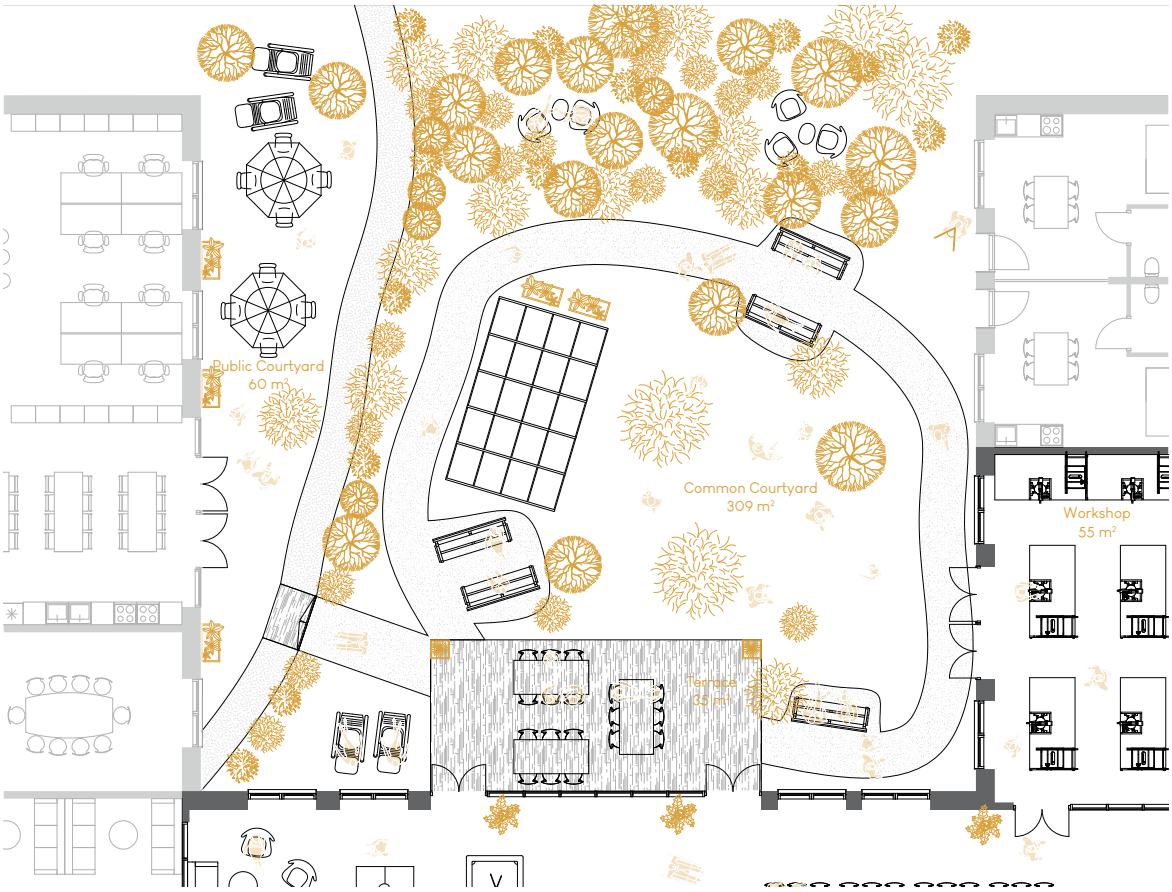


Legend

1: Courtyard type 1
2: Bike parking type 2
3: Entrance type 2
4: Corridor type 1
5: Stair type 3
6: Corridor type 2
7: Courtyard type 2

Rooftop axonometry

Zoom on courtyard

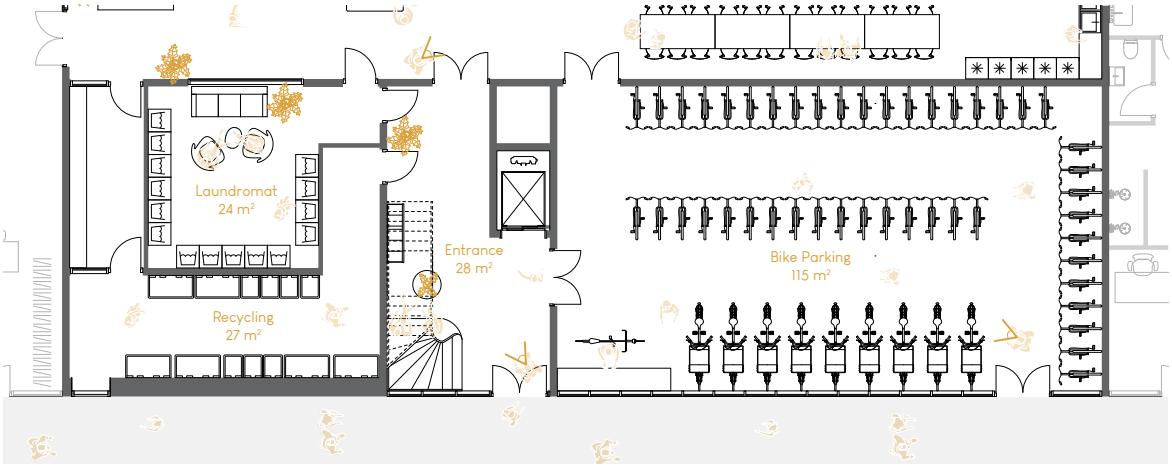


Courtyard plan

For the courtyard, type 2: publicly accessible has been used. Here is a clear border between the public and the common parts in the form of a water trench. The space is following the gradient concept and playing with the path to delineate the intimate corner. That feature is organized in a loop to orientate people to always come back to the common room. Also, a unique path means a higher chance for interaction. As for the indoor access areas, the outdoor path has implemented some pockets where benches are places differently each time to provide different ways to interact from bench to bench or from bench to path. In the heart of this path is the common greenhouse used by the community to cooperate and learn from each other. A strong connection is established between the common room and the outdoor space with a large glass surface opening on a terrace. The doors can stay open on warm days to even emphasize that connection. The intimate corner is voluntary wilder to differentiate it from the other spaces.

Perspective of the courtyard

Zoom on entrance and bike parking



Entrance hall plan

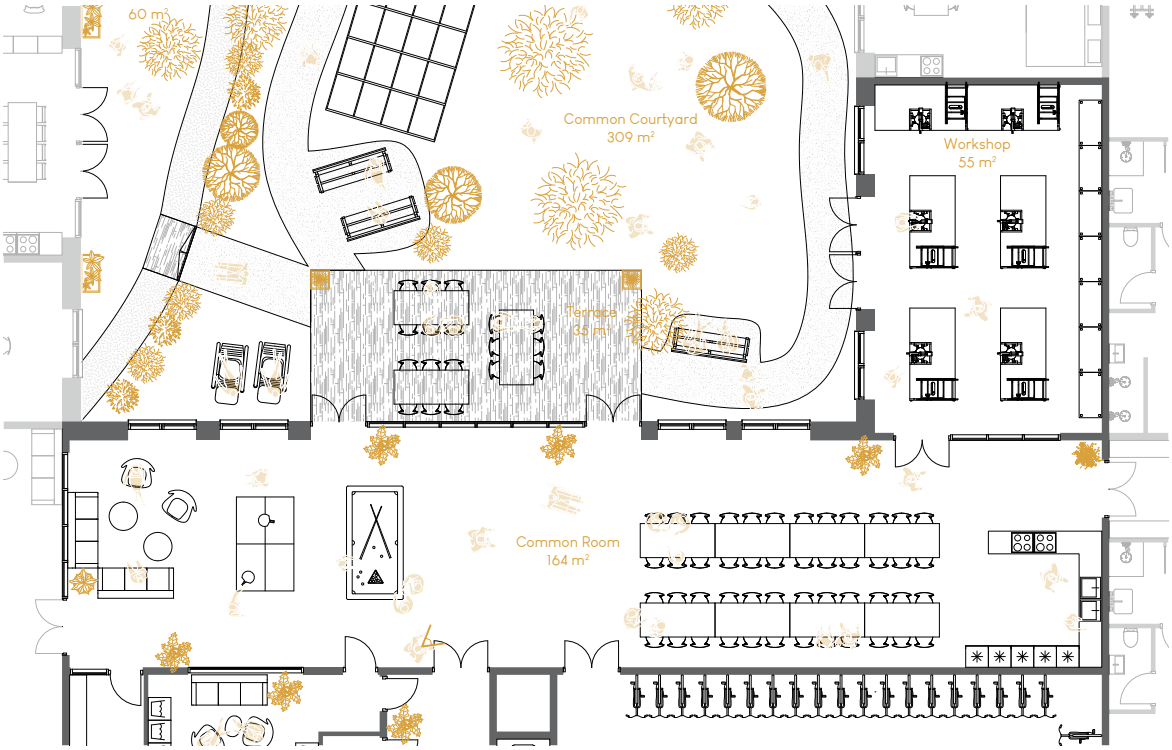
2m

Perspective of the entrance

For the entrance, type 2: tangent to the walkway has been used. A sitting corner is located under the stair close to the mailboxes, the place where people are slowing down in the entrance. This lobby has a straight visual and physical connection to the common room right in front of the people when they enter. Even through the street the activities in the common room can be seen. The first steps of the stair are flared to more people to use it and to physically open up on the entrance space. From the entrance, the residents can also access the bike parking from the repair workshop side. For the latter, the type 2: tangent to the bike storage has been used. The workshop has been ideally placed aside the walkway from the street to the entrance or the common room. It was also important to offer the possibility to get into the common room from the bike parking to facilitate access to this area and limit the curbs from entering the common space.

Perspective of the bike parking

Zoom on ground floor common room



Common room plan

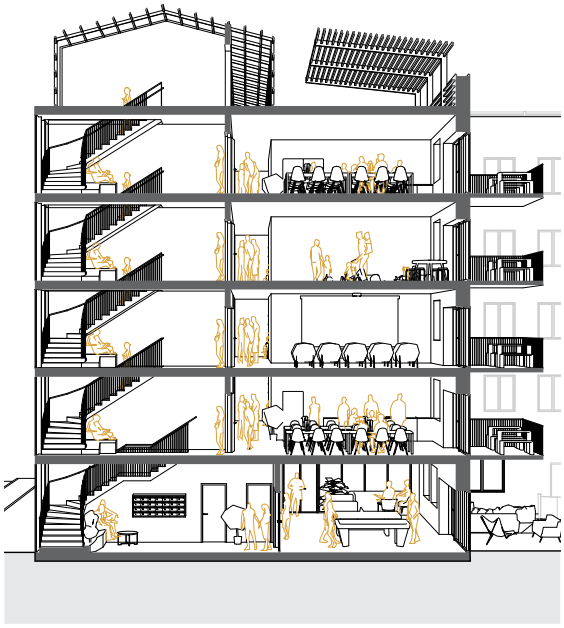
The common room of the ground floor is located according to the concept of Alexander et al. (1977, p621). Having a single community core is crucial for a social group. It is the gravity center of all the spaces residents can come from. It is placed so the ins and outs of the building pass tangent to it. It is the heart of the community and is therefore connected to all the different common programs on that floor. The laundromat, the donation room, the workshop, and the courtyard are accessible from it. Strong visual connections to the laundromat and the workshop are established to make the combination of those rooms feel like one unique interaction space. The laundromat has also been designed so people can interact while waiting. The common room incorporates various activities along a lounge area, a dining and a cooking area, and game area. All the pieces of furnitures are chosen and placed to make that room the most flexible as possible so its configuration can change depending on the events in the community. From that room, residents can also directly access the two public programs, the co-working space and the gym for more convenience.

Perspective of the common room

Zoom on staircase

Staircase plan

1m

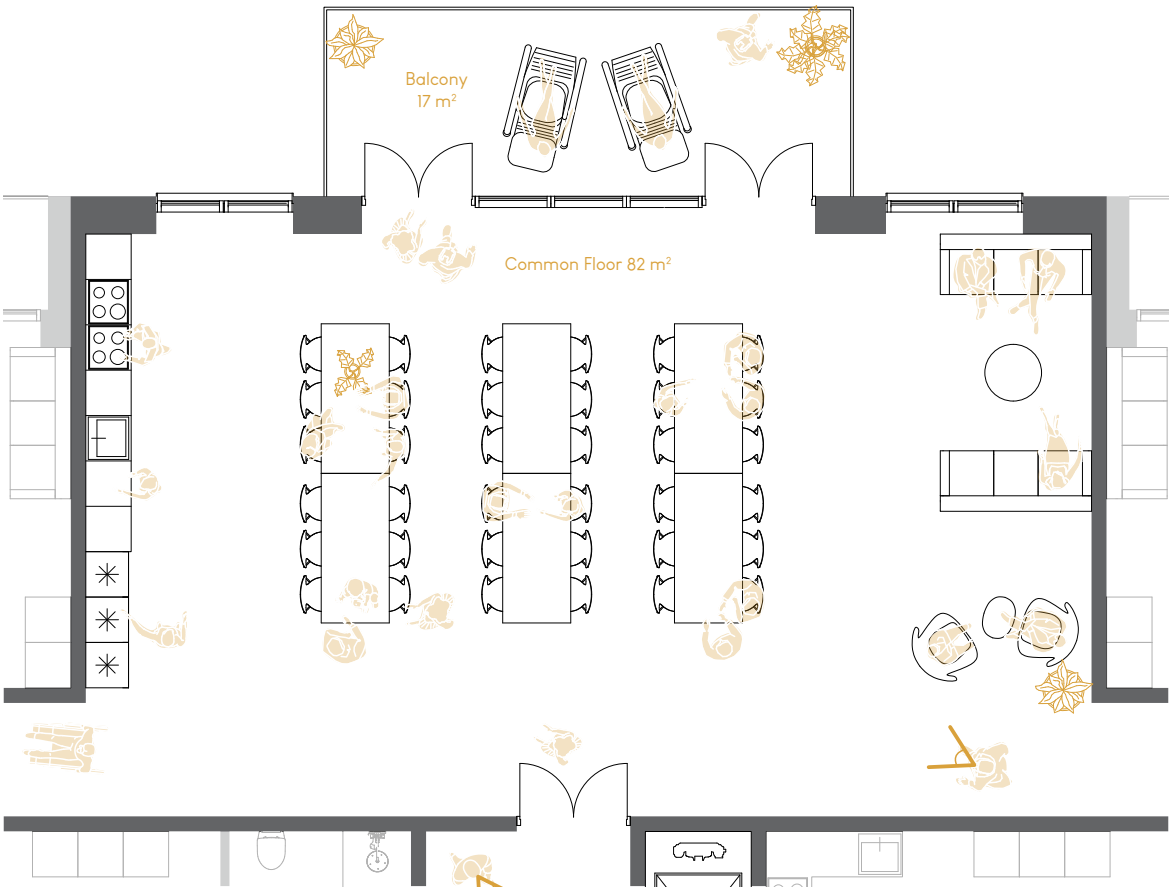


Perspective section

For the staircase, type 3: staircase as a unique social space has been used. There is only one staircase in the building to connect everyone through one vertical connection and then increase interactions. With its glass curtain wall, the landing is lit by the sun and turns it into an interesting social space. The flared stair, inviting for sitting is prolonged into a small bench tangent to the walkway. On the other side of the walkway and facing the elevator exit are some flower patches which bring vitality to the room. They are taken care of by the community and play as an ice breaker to start a conversation. The duality between the two social corners is crucial since it is crossing the main walkway. For a staircase, what is important is what it is opening onto. Here, it opens on the common area that can be found on each floor. With the doors that can stay open, there is a strong connection that is established between the stair and the common area.

Perspective of the staircase

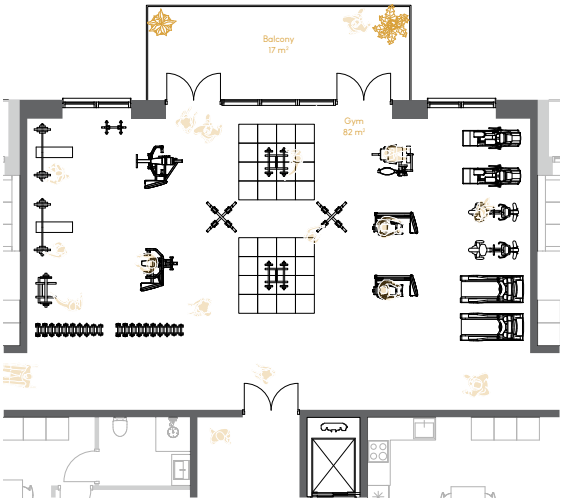
Zoom on upper floor common room



Dining and lounge common room plan

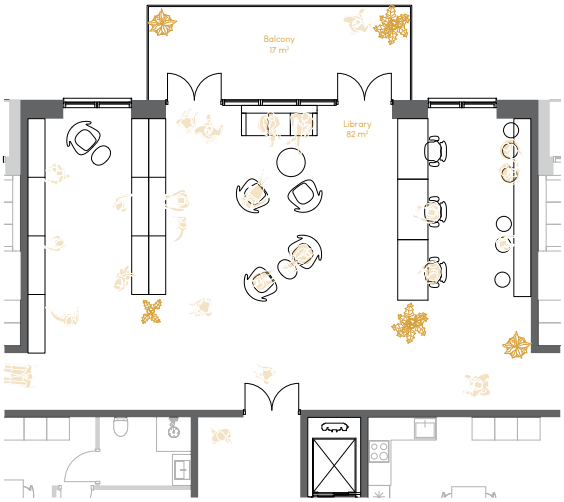
For the common room on each floor, the access area type 2: T shape has been used. It is a complement to the common room on the ground floor. Its location right outside the staircase and along the walkway makes it the center of gravity of each floor. By having the walkway tangent to it, all the residents pass by every day and are encouraged to interact on their way in and out of the building. As seen on the next page, it is a space that can incorporate different activities on each floor and therefore increase inter-floor interactions. There can be a home office area, a game room, a movie room, or a playroom for kids. In the same concept as the common room on the ground floor, the pieces of furniture have been chosen and placed to allow the residents to appropriate the place and change its purpose for a special occasion. The balcony which overlooks the courtyard provides the community with an outdoor space for smaller groups. In addition, it is the only balcony that sticks out of the building to put more emphasis on the common outdoor space than the private ones.

Perspective of the dining common room



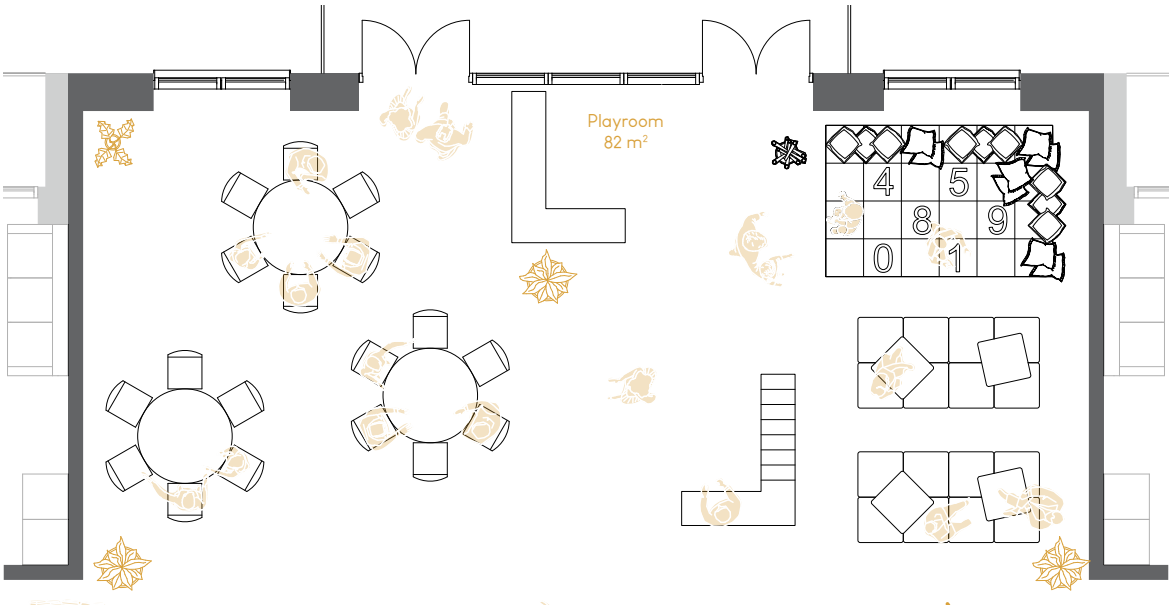
Gym common room plan

2m



Library common room plan

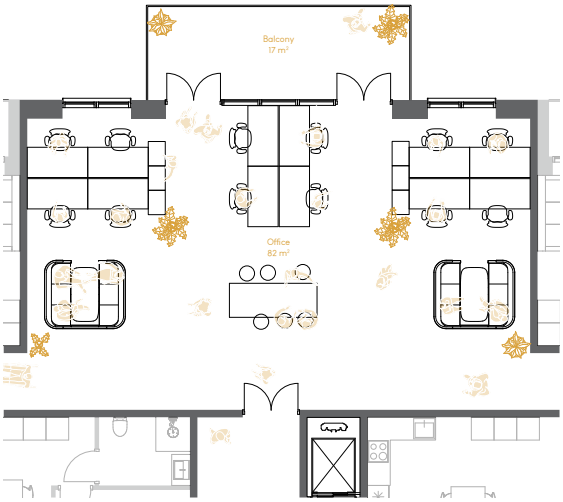
2m



Playground common room plan

1m

Perspective of the playground common room

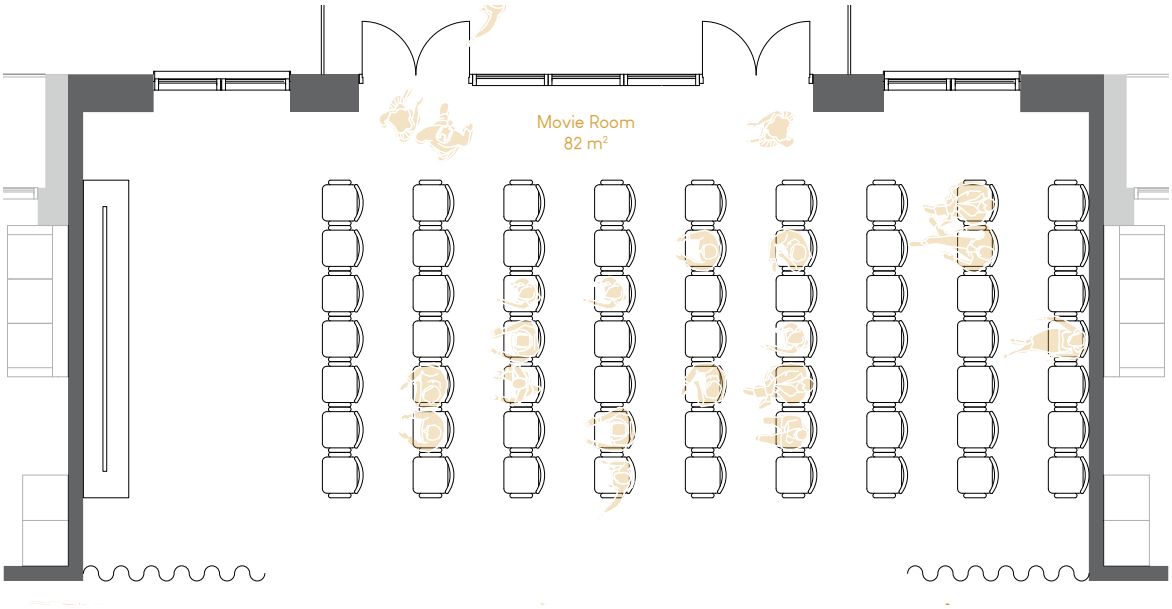


Home office common room plan

2m

Workshop common room plan

2m

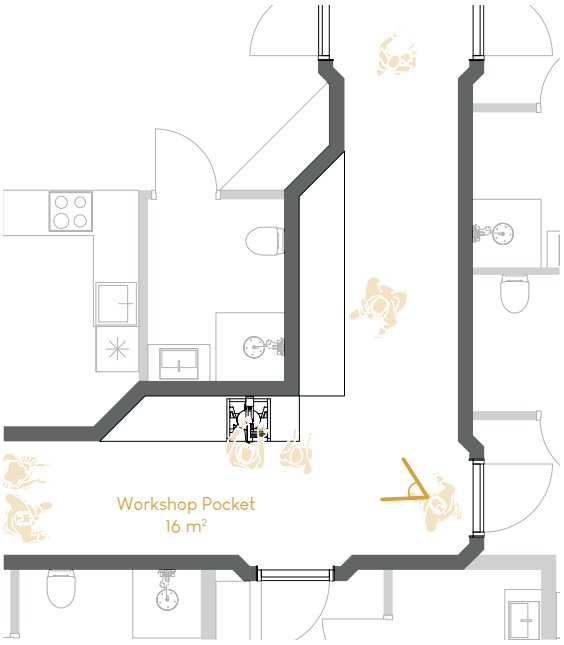


Movie common room plan

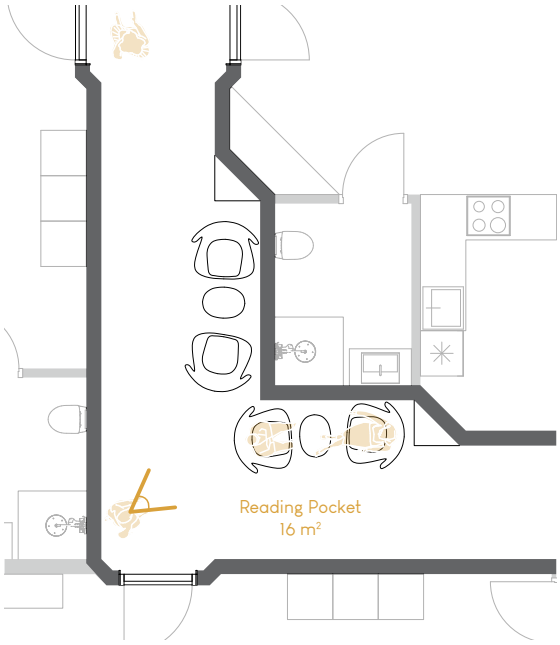
1m

Perspective of the movie common room

Zoom on access area pockets



Workshop pocket plan 1m

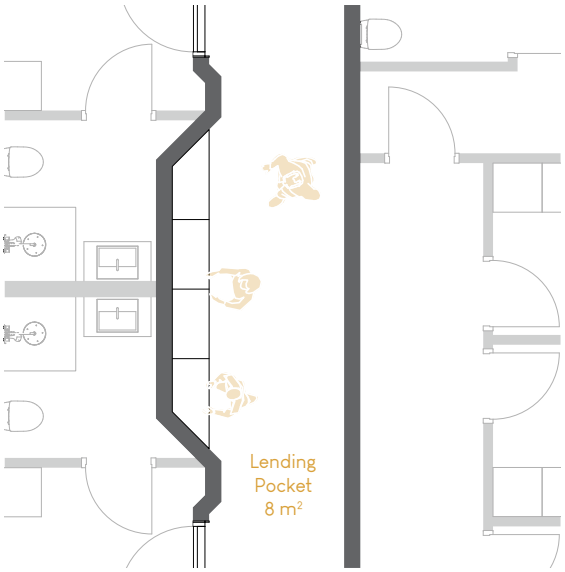


Reading pocket plan 1m

Perspective of the workshop pocket

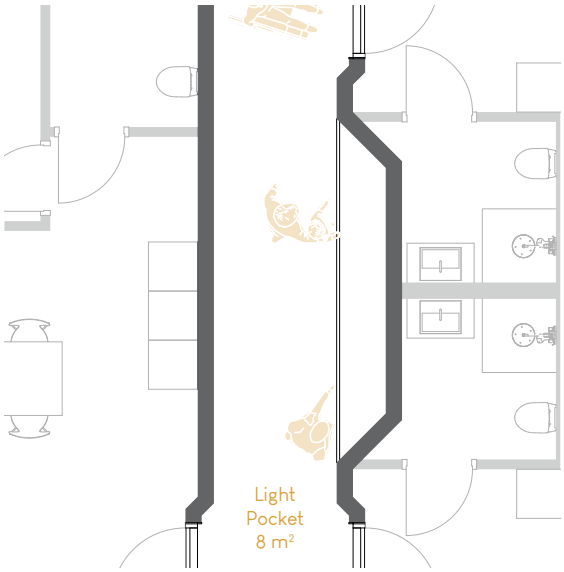
For the access area, type 1: Pockets has been used. Along the circulations, the pockets are breaking the monotony by providing space for people to stop and talk. It is crucial to distinguish the pockets from the rest of the circulation to create sort of a rhythm. The choice of furniture and material is important to make those spaces felt like an integral room. Here, placing some pockets in the corners of the access area allows a visual connection to those spaces. As the common room, the pockets can incorporate different activities, a play corner, a workshop, an object lending shelf, and a reading area. The dining option is much more invasive on the access which makes it more attractive but it is only possible to have it temporarily.

Perspective of the reading pocket



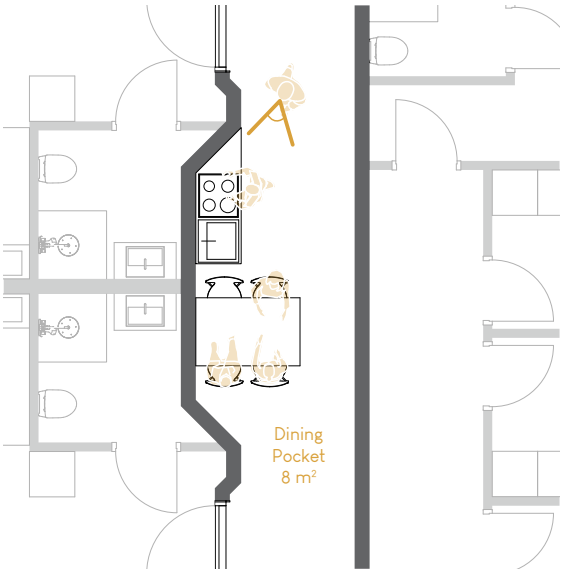
Goods lending pocket plan

1m



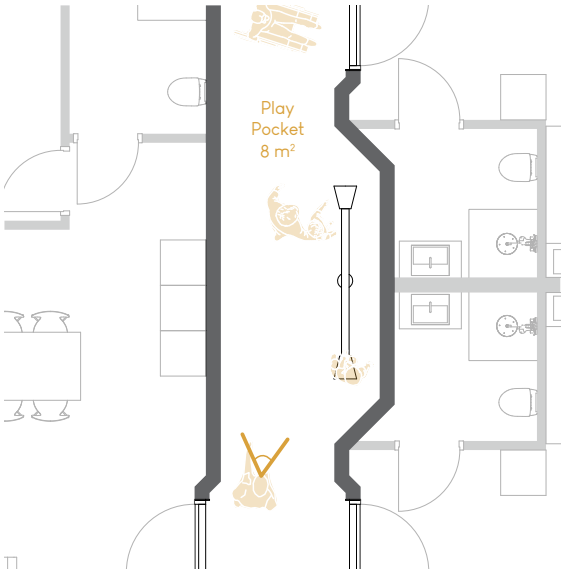
Light shaft pocket plan

1m



Dining pocket plan

1m

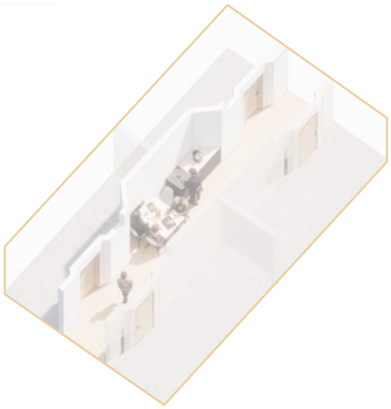
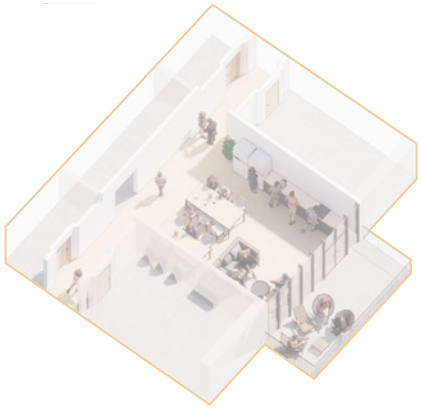
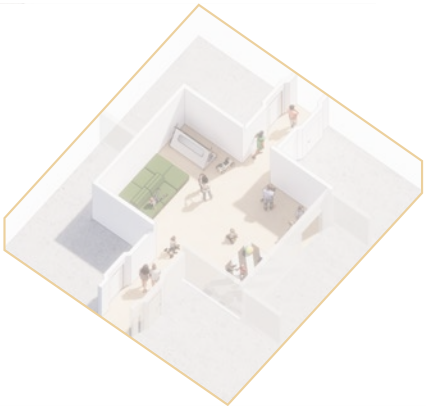


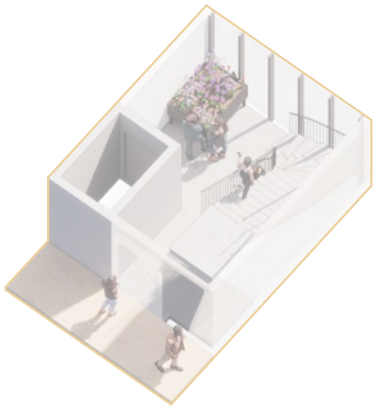
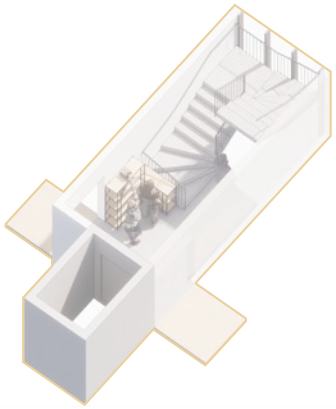
Playground pocket plan

1m

Perspective of the dining pocket

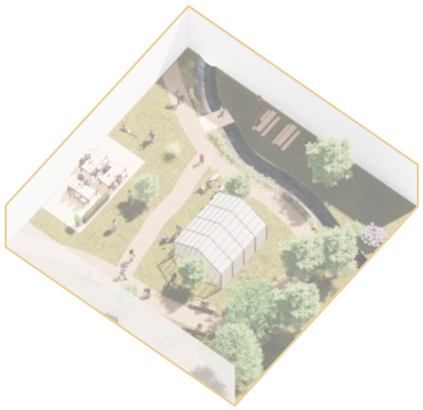
Perspective of the playground pocket

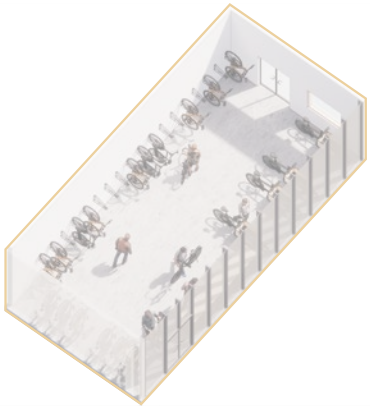




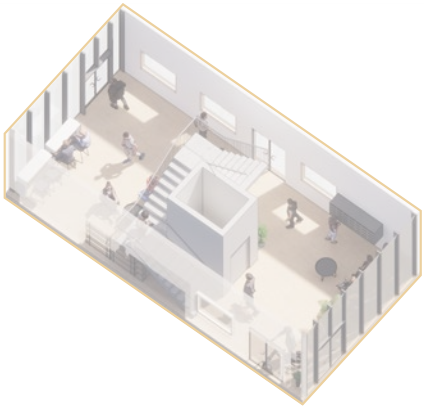



REFLECTIONS

Discussion and conclusion





DISCUSSION

This master's thesis is raising important societal questions and is contributing to making more social architectural design. The process of starting from theoretical research to then confront it with case research allowed the development of a speculative answer to the problem of loneliness in society. The components and the design proposal created are exemplary solutions. Therefore, as a conclusion discussion, it is interesting to do a throwback on the projects used in the case studies. In this section, the plans of the case studies are marked with places where a certain component of this thesis could have been used to potentially improve the loneliness preventive character of these projects. This discussion is only a prospection, they are subjective further enhancement of already remarkably qualitative projects. That subjectivity is due to the actual research limitations. Moreover, there are a lot of parameters that influenced the result of those projects and they can't all be considered in this discussion. The reflections are meant to be directives, hints for potentially improve loneliness prevention. The success or failure of such interventions also depends on factors beyond the scope of this section. Nevertheless, the possible benefits to prevent the loneliness of the residents are explained in each case.

Vindmøllebakken

Ground floor plan

5m

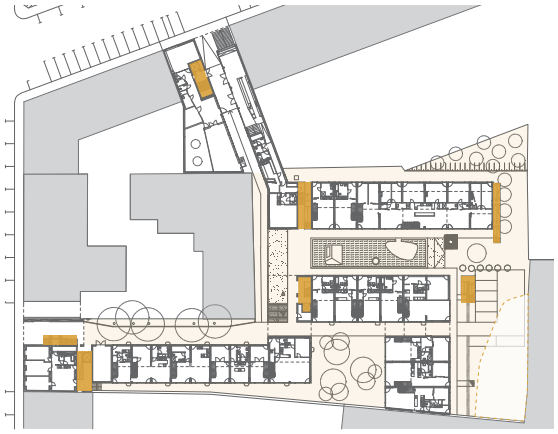
Staircase type 3:

The staircases could be turned into unique social spaces following the principle of the staircase component type 3. Except for the stair tangent to the amphitheater, all the other stairs are apart from the common core. The space would be more intimate than the other common space and would therefore prevent maladaptive cognition and offers an ideal setting for social support in smaller groups within the community. Also, there is a possibility of being lit by the sun so doing this intervention would benefit the residents' sense of belonging and social skills by increasing the social space diversity.

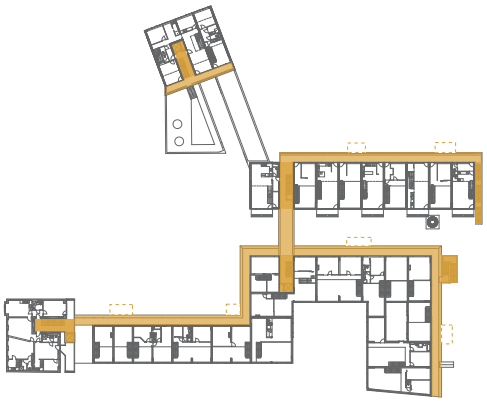
Courtyard type 2:

The courtyard could be redesigned to provide the residents with a variety of outdoor social settings. The actual space is shaded most of the day and doesn't offer a variety of social settings. By working with a transition from common to intimate areas, the courtyard would fulfill both the community and intimacy needs of the residents. This diversity would also train a broader range of the residents' social skills and facilitates the integration of all. The building would also need to be rearranged to bring daylight in the courtyard and being able to turn it into a core social space.

Sargfabrik



Ground floor plan 15m



First floor plan 15m

Staircase type 3:

The staircases could be turned into unique social spaces following the principle of the staircase component type 3. As it is right now, they are only vertical circulations that connect a social space to another. Also, by doing such an intervention, it would be profitable to put a physical border to the stairs to reinforce residents' feeling of security. Doing so would benefit the residents' sense of belonging and social skills as people are passing every day.

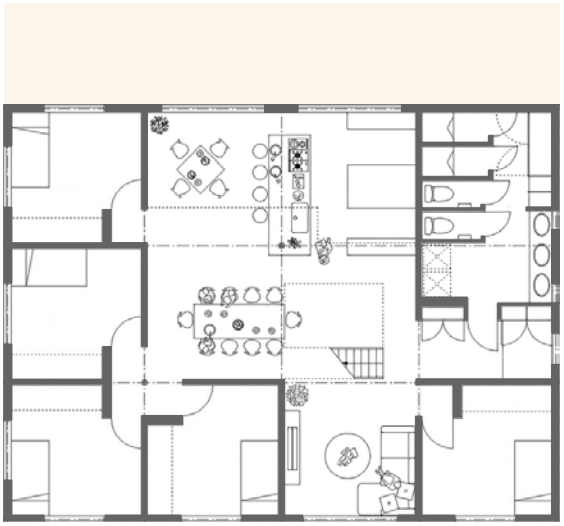
Access area type 1:

The outdoor access areas could be redesigned by integrating small pockets to support spontaneous social interaction. The actual circulations are well thought, they create inter-floor connection and they are lit by the sun but they can be long and monotone. Widening those spaces from time to time would break the monotony and bring the social life closer to the people. Even if in winter it is not ideal, in summer they can be a great space to linger.

Courtyard type 1:

The complex system of courtyard could be rethought to support a transition from public to common with a clear border in between. The existing courtyards are a complex system where all are publicly accessible but with different levels of privacy. Implementing a clearer border would have a positive impact on residents' safety feeling and therefore would help their integration and development of a sense of belonging.

Share House LT

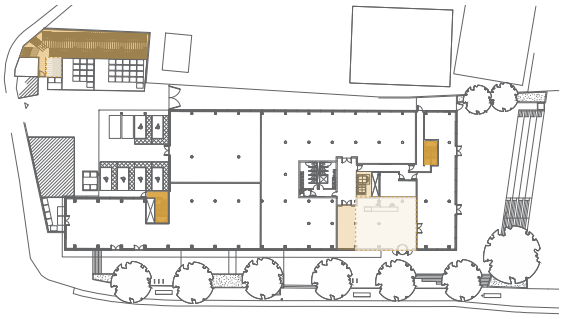


Ground floor plan 2m

Courtyard type 2:

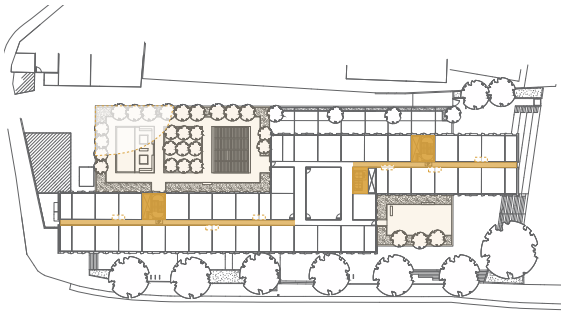
The courtyard could be redesigned to have a stronger connection with the common room and provide the residents with spaces from an open field to an intimate corner. The courtyard is actually oversight by the residents. It needs to become more attractive and incorporate a variety of social settings. This diversity would train a broader range of the residents' social skills and facilitates their integration into the community. Providing also intimate outdoor space is crucial to limit maladaptive cognition. In this project, the roof terraces and the courtyard could complement each other by including specifically different spatial arrangements. The courtyard could become a major feature of the shared spaces.

The Collective Old Oak



Ground floor plan

20m



Upper floor plan

20m

Staircase type 1:

The staircases could be turned into a social space surrounded by the stair and with a strong connection between elevator and stair users. The staircases are separated from the elevator and behind the closed doors. The typology of the building emphasizes the elevator so they need to be thought of as part of the social network system. This would create the possibility of a more intimate social setting and benefit residents' sense of belonging and social network.

Access area type 1:

The outdoor access areas could be redesigned by integrating small pockets to support spontaneous social interaction. They are now long, dark, and monotone. Trying to bring daylight inside would be a too big intervention but widening the circulations here and there would already have a substantial impact. Furnishing them would turn the areas into integral social rooms benefiting the residents' social skills and limiting maladaptive cognition.

Entrance type 1:

The entrance lobby could be turned into a minimal space with a strong connection to the common room. The public opening of the large lobby is problematic for the feeling of safety of the residents. Reducing that space for the benefit of the common room could solve the issue and at the same time give more importance to the community space. It would encourage more people to take part in the social activities in that space.

Bike parking type 1:

The bike parking could be changed into a cooperative space with a repair workshop at its core. The space is actually at the back of the building but it can become more attractive by providing a place where the resident can cooperate and share knowledge with each other. Moreover, considering the age group, a lot of the residents are riding a bike so it makes even more sense to make this space a social hub. The specific social setting in such a space strengthens the social ties between the residents and increases the sense of belonging.

Courtyard type 2:

The rooftop terraces could be arranged to provide the residents with intimate outdoor space and other social settings. The terraces are only open fields so bringing diversity would benefit residents' social skills and sense of belonging. Also, the shape is naturally defining one of the two terraces as more intimate but it is facing the main street so it can be noisy. It might be more interesting to create an intimate corner on the other courtyard protected from the street.

Stacken

Ground floor plan 5m

Fifth floor plan 5m

Staircase type 2:

The staircases could be turned into a space of social contact with the stair integrated into the social activity happening on every floor. In the current situation, the stair is in the middle of the corridor and is then splitting it. It would be more beneficial to put in on one of the edges of the circulation core to then open up on the potential social activity in connection with the corridor (Alexander, et al., 1977, p638). The design of the building has a great potential for a strong connection between convivial access areas and a contact staircase. Exploiting this feature would benefit residents' "weak ties" network and sense of belonging.

Access area type 2:

The access areas could be redesigned to emphasize the singularity of the common areas. On the fifth floor, the corridor is identical to every other one so rearranging it according to the concept of the component would bring singularity to that floor and it would be clear where the common areas are. By breaking the border from the circulation to the common room, some daylight could even be brought into the access area and integrate it more into the social activities happening. This stronger connection would encourage people to take part in the action and would benefit residents' social skills and limit maladaptive cognition.

Courtyard type 1:

The courtyard could be turned into a mix of common and public spaces. As it is right now, it is all publicly accessible but it is then limiting the residents' appropriation of the space. There is a need for a common outdoor space separated from the public part. A physical border like a trench or some hedges can be done to assure a safe feeling. A common only space would have a positive impact on the sense of belonging and the diversity of social interaction possible.

Older Women's CoHousing

Ground floor plan 10m

First floor plan 10m

Staircase type 3:

The staircases could be turned into unique social spaces following the principle of the staircase component type 3. On the ground floor, it could emphasize the existing connection between the stair, the entrance, and the common room. The entrance component type 1 is already implemented so the aim is to complement it by continuing the social life of the ground floor. Even if the community doesn't have a lot of residents, it is crucial to bring social life in every space, even the smallest. The social space created on the upper floors could be more intimate and would therefore prevent maladaptive cognition and offers an ideal setting for social support in smaller groups within the community. Considering the age group, more attention would need to be put on the connection with the elevator.

Bike parking type 2:

The outdoor bike parking could be turned into a shelter where the community is cooperating and technically support each other. The actual bike parking space is in the back of the courtyard, shaded and not sheltered. Even if the elderlies of this residence might not use the bike a lot, it is interesting to create social attraction to that space. There a different kind of socializing can occur and the social relationship between the residents would strengthen. They would share a different kind of moment and therefore develop more connections between each other.

Access area type 1:

The outdoor access areas could be redesigned by integrating small pockets to support spontaneous social interaction. The existing circulations have a lot of design qualities and are important for the residents' feeling of safety with the visual connection inside the living unit but they could be supporting the social life more. Breaking the monotony with social spaces would bring the social life closer to the people. Residents' sense of belonging and social skills would be improved. Considering the location, such space in the winter might not be used a lot but in the summer, this kind of place could be ideal to linger in a smaller group by the sun.

Courtyard type 2:

The courtyard could be modified to create a transition from common to intimate outdoor space. The actual garden is mainly an open field and it would benefit the residents' well-being to diversify the offer of outdoor space. An intimate corner would be ideal to provide social support to the residents. The community would be able to socially support itself. The open field configuration is important to be kept next to the common room to emphasize the connection between the two spaces. The diversity of outdoor social settings would also facilitate the integration of residents as they could find the social environment they are the most comfortable in.

CONCLUSION

Loneliness is a social epidemic considered as one of the major issues of modern society. At an individual level, it has serious consequences on both physical and mental health. Loneliness is indirectly increasing mortality on a global scale. This state of emergency is the driving force that initiated this thesis. Architecture alone can't solve this issue but it seemed necessary to explore how architecture could support loneliness prevention. It is with the idea of architecture having the ability to shape behavior that a solution could be implemented in a building.

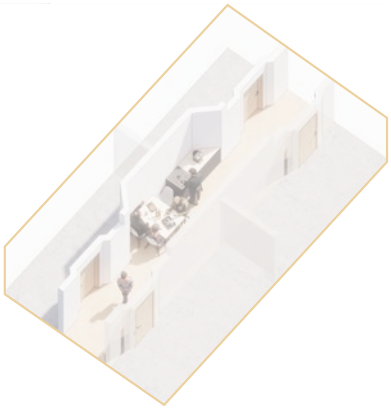
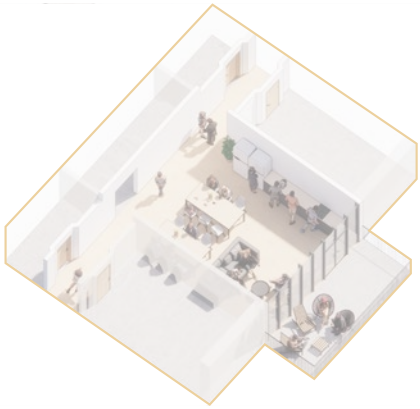
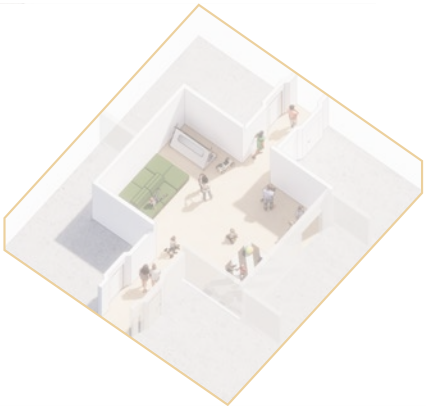
In parallel to this epidemic state of loneliness, there has been recently a growing interest in community living type of housing. People are looking into this kind of housing seeking more sharing and social life in their housing. In relation, the main feature discovered in this thesis is that it doesn't take a lot to turn a regular housing project into a more socially interactive housing. Even if some of the components developed concern spaces that are not in every building, the majority of them have been elaborated to be implementable in community living projects as well as in regular housing projects.

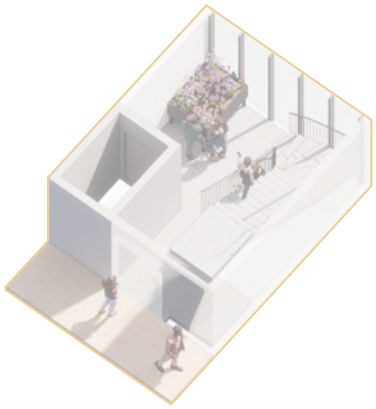
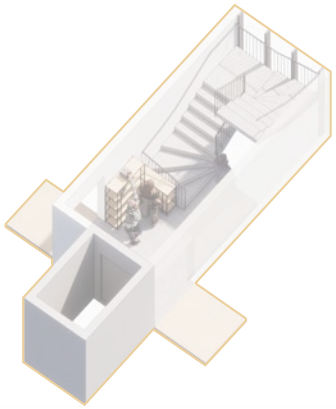
Therefore, the aim is to answer the question of how a community living design could tackle loneliness. To do so, a design guidebook has been developed. Based on theoretical research on loneliness and community living, and case research, the guide is answering the main question by providing readers with a set of information, advice, and instructions to enhance the social life in a housing building. This manual is also meant to raise the awareness of architects and planners on the major issue that loneliness represents.

The tools are helping to prevent loneliness by bringing communal life to places that are usually standardized. A contact staircase, a convivial corridor, a cooperative bike parking, a social entrance, and a communal courtyard component have been conceptualized to bring the community into every space of a building. They are exemplary spatial design concepts preventing loneliness focusing on safety, the strength of weak ties, enhancing social skills, increasing social interactions providing social support, and addressing maladaptive social cognition.

The design proposal is complementing the answer to the main question provided by the components by synthesizing them into an ideal community living building. A proposal was contextualized and designed around the idea of maximizing the social interaction within the community.

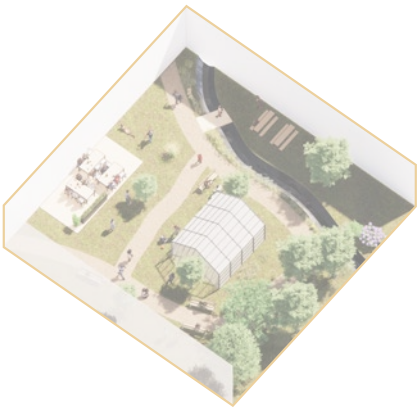
The process of this thesis has supported the development of innovative architectural prototypes to prevent loneliness and as speculative solutions, it would be interesting to do empirical research on the prototypes' impact to complement the findings. The design components could be experienced at a real scale and then a conclusion on their effect could be drawn from questioning the residents on how their behaviors changed. Conducting such research in a real situation where some spaces of a building would be modified according to the components and see the effect of those changes would make a substantive impact on how life in a building is designed. It would potentially qualify the developed components as real solutions to prevent loneliness with community living. Community living can be the exchange of a look, a smile, the teaching of a new skill, the hearing of laughter or a conversation, the sharing of opinions and values, or the contemplation of strangers passing by. All those gestures and impressions are things that rhythm life and that can prevent the feeling of isolation and initiate a sense of belonging. A sense of togetherness.

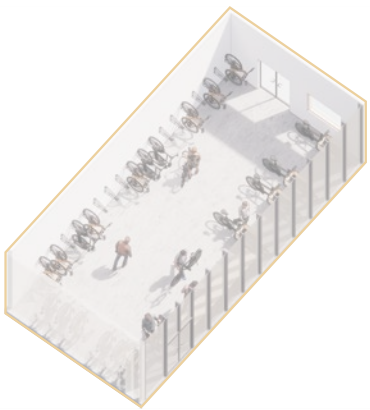




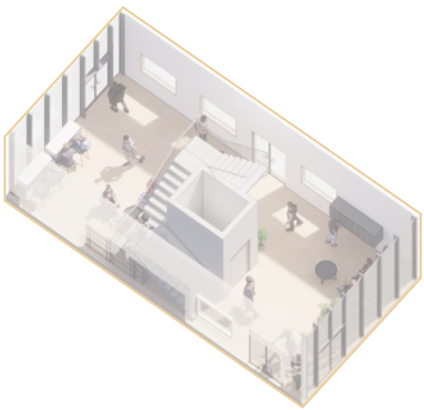



REFERENCE LIST

Books, articles, documentaries and figures





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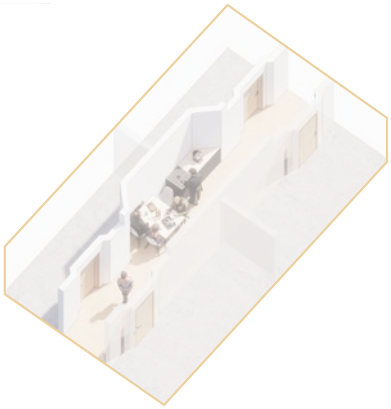
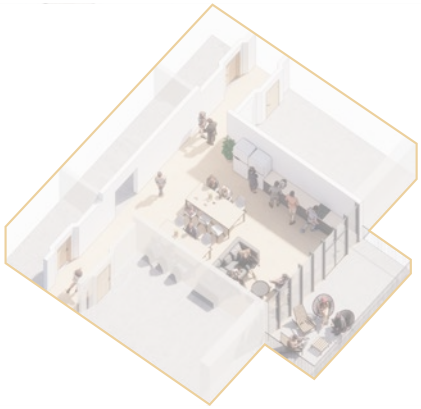
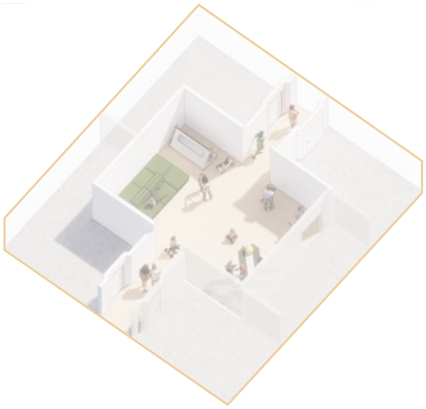
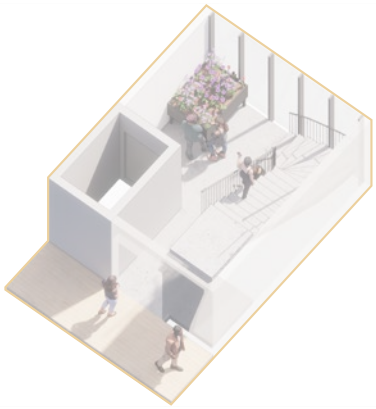
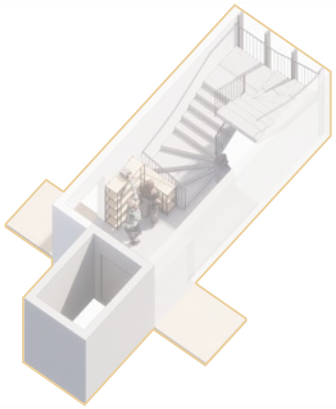
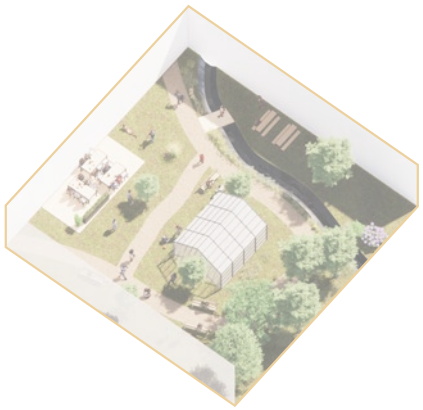
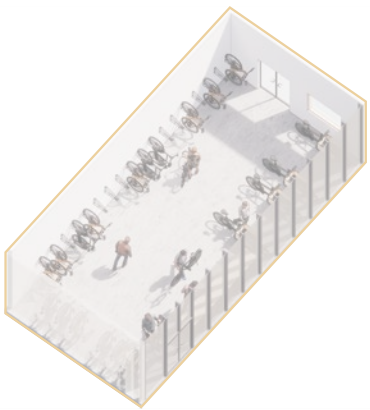




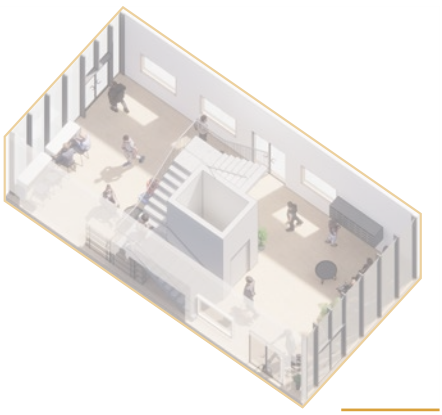



APPENDIX

Complementary Informations





CASE STUDIES

Vindmøllebakken

PUBLIC

From Public to Private

Urban Semi-public

The project mostly interacts with the public through the courtyard surrounded by all the housing units. It is also what connects the co-living units to the rental apartments and the townhouses on the north side of the plot. In the courtyard, the sitting area is more hidden from the streets to give the residents privacy. Facing the street in the basement, the office of the Union Canning company can also be consider as an entrance point to the site for some public.

Group public

All the co-living apartments are gathered around the central communal space which includes the main entrance, the common room, and the kitchen. Most of the corridors are overlooking down on this space for a direct visual connection between the common room and the circulations (see Figure 11). The hallway is spacious with a big skylight and the amphitheater is the meeting point of the whole community. Having sittings next to the entrance is inviting people passing by to stop and socialize with others. The common room is constantly visually open to the courtyard and the hallway to encourage the use of it and informal activities to happen. Considering that the community is multi-generational, all residents must have a view on the common space so no one feels left out. For the same reason, it was important that a person in a wheelchair could access every room of the building. The circulations are designed for interaction with the skylights bringing a lot of daylight and their comfortable width. The generous proportion of the communal space was crucial for the community to adapt to the COVID-19 situation (LAB 3 Radical Sustainable Architecture, 2021).

Group private

There are rooms for socializing in a smaller group, in the workshop for example where people can gather to realize projects together. On the other hand, spaces like the laundromat could have been designed roomier for interaction to happen there too. The two guestrooms are considered flexible spaces depending on the number of guests. The wide range of communal space is completed by the common greenhouse on the rooftop where residents interact while gardening and can supply themselves with vegetables.

Figure 24: View of the common room from a corridor (Augenstein, 2019)

Family private

Even if the circulations are made to overlook the communal core, there are some more intimate corridors. They are shared between fewer apartments and are leading to hidden small outdoor spaces where the residents have a view of Stavanger.

PRIVATE

Individual private

The apartments are all generated from the same module of 65 m2 which has been then arranged differently depending on the future residents' needs. Small design modification has been done but it was crucial to keep the adaptability of the modular system to change the organization in the future if needed. They for example lowered a window for a resident to have it at the same level as her sewing machine (LAB 3 Radical Sustainable Architecture, 2021).

Second floor plan

Sargfabrik

PUBLIC

From Public to Private

Urban public

The public functions of Sargfabrik are bringing new programs to the area with a cultural center, office spaces, and a restaurant. The latter is also used as the common dining room for the community. It is a choice the residents made instead of having a "closed" common kitchen and dining room (Schmid, 2019, p221). But four years after the project was completed, they built an extension MISS Sargfabrik which includes the shared spaces they were lacking such as a common room, a kitchen, and a youth club (Schmid, 2019, p221). One of the reasons why the cohabitation between public and private works is the "willingness of the residents for active house community" (Brombach & Holl, 2009, p93). Nevertheless, openness in co-housing is not always easy, for instance, a new gate was put after the swimming pool entrance to prevent from stealing inside the courtyard (Brombach & Holl, 2009, p93)

Urban semi-public

Sargfabrik is composed of different semi-public courtyards with diverse characters so residents and the public can interact in multiple ways (Jahan, Baig, 2013, p9). Also, the arcades between the courtyards are wide enough so informal communication can happen (Brombach & Holl, 2009, p93). Open for non-residents, the Turkish bath and swimming pool are programs where the community and the neighborhood get to interact.

Group public

The hallways are actually wider than the units to give more opportunity for interaction in the circulations. In correspondence, the outdoor corridors to access the apartments are all overlooking the courtyard to create visual connection between the residents "open for socialization". For the community it was important to be integrative possible so all the spaces are wheelchair accessible but there is also a sort of communal social housing organization to offer to anyone the chance to integrate the community (Dworschak, et al. 2013). Nowadays, about one fourth of the residents are immigrants (Brombach & Holl, 2009, p87). Integrating such a community is crucial for new comers.

Group private

The roof terraces are only accessible by the residents which provides them with an intimate private space non related to the public. The shared spaces between the two buildings of Sargfabrik doesn't always work, the inhabitants of MISS are not interacting as often as the one from the original building.

Family private

The building was design with a modular unit of 45 m^2 open on both sides (Schmid, 2019, p220). Residents could decide to buy one or several units and arrange their own apartment, this gives them opportunity for customization while keeping enough adaptability to potentially change it back. Some inhabitants even decided to create a small collective within the community by merging 4 modules and sharing the kitchen, living room and bathroom. It highlights the diversity of dwelling there is in this property with flats from 30 to 130 m^2 (Brombach & Holl, 2009, p91). The adaptability is so easy than residents are swapping apartment when their life situation changes (Brombach & Holl, 2009, p91)

PRIVATE

Individual private

Bedrooms and bathrooms are 2.2m high which wasn't following the regulations requirements at that time but then by compensation, the living room is 5m high. That ceiling distinction enhance the intimacy feeling while entering the bedroom.

Second floor plan

COMMON

Share House LT

From Public to Private

Urban Semi-public

The entrance slightly, hidden from the main street, is where the public can get to see the building. From there the whole building opens up and astonishes with its material unity, only wood and white paint for homogeneity.

Group public

As seen on Figure 16, the void created by pushing the private rooms on the edges of the cube, concentrates the common areas in the center and unify the volume. This principal keep the relation between private and common spaces balanced. The core is lay-outed as an open plan playing on the level differences to generate grades of privacy. The most open spaces are the common kitchen and dining room. Even if there is no physical separation in between, the two rooms feel different. The dining area is oriented for large group gathering as it is the highest space (7m) and the closest area to the entrance. Instead, the kitchen counter is the alternative for smaller groups. Even if there are big openings to the garden, it feels as this space haven't been considered as much as the rest of the design. Nevertheless, the roof terraces cleverly placed at the end of two stair runs appears to be much more used than the garden. Another important feature of the common core is the single stairwell from where you can overlook every common spaces in the building. By using it, the residents have to pass through almost all the shared spaces which increases the chance for interaction. This particular parameter might no be appreciated by everyone, it could be felt to wide open for some person.

Group private

Thanks to the level differences, some shared spaces are more intimate such as the relaxing area and a living room. They a bit apart from the common core and have a lower ceiling which increases the feeling of privacy. But they have no doors or walls closing them so they still seem physically open. The only shared room closed by walls is the shared bathroom. Sharing that so intimate space wasn't a problem for the residents but it is lacking some extra showers as there are only two for thirteen people.

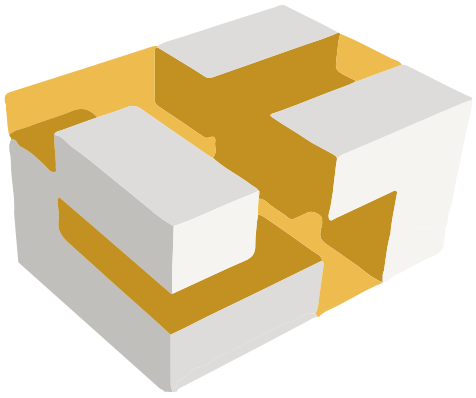


Figure 25: Schematic axonometry (Nishikawa, 2014)

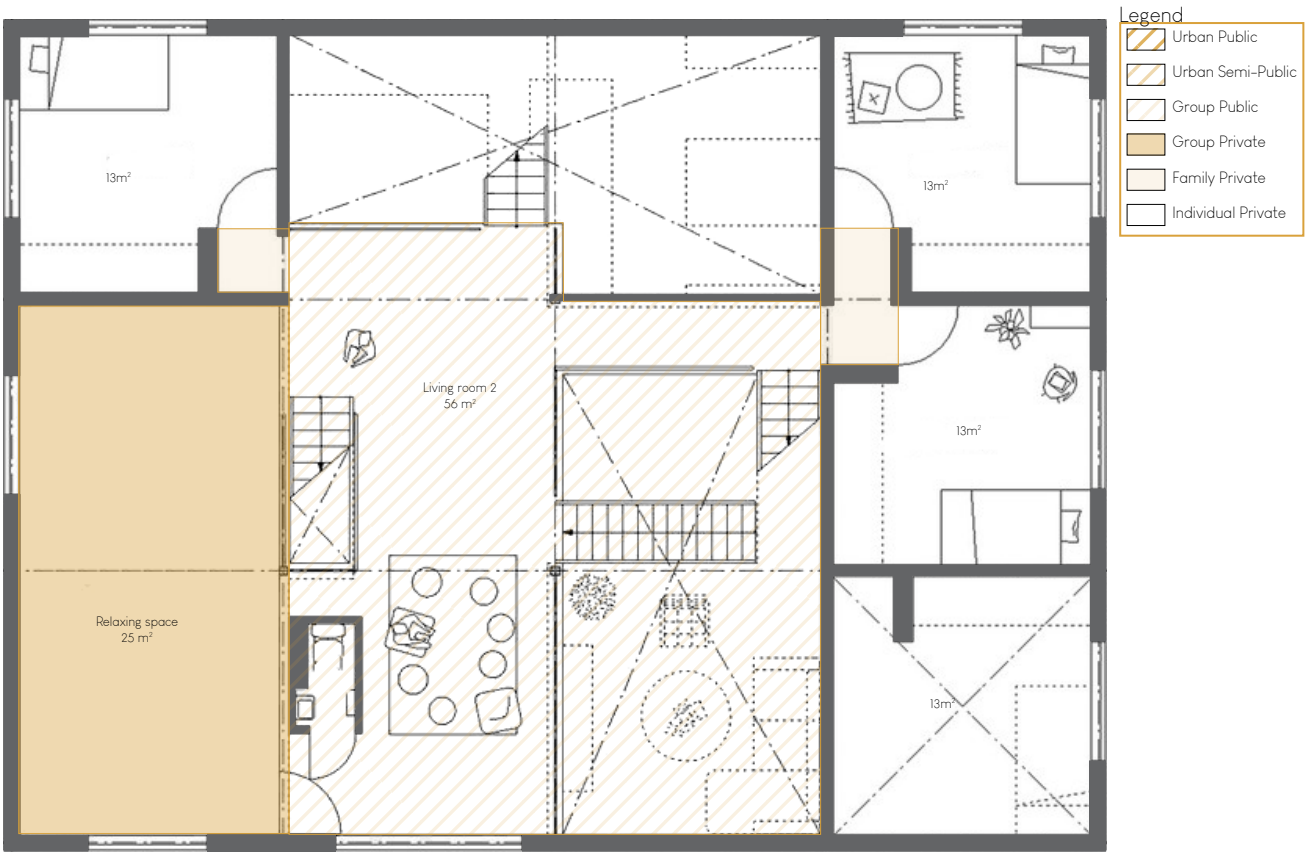
Family private

The singularity of this project is that the bedroom is all identical but each has a different relationship with the central shared space. The "family" private space is the little inset in the wall the architect did as the last buffer between private and common. Also so bedrooms have a height different from the common so the stairs play the role of the private barrier. Despite the design solutions to prevent it, there is still a feeling of exposure from the residents as they are approaching their bedroom door. (Bowes, J. et al. 2018)

Individual private

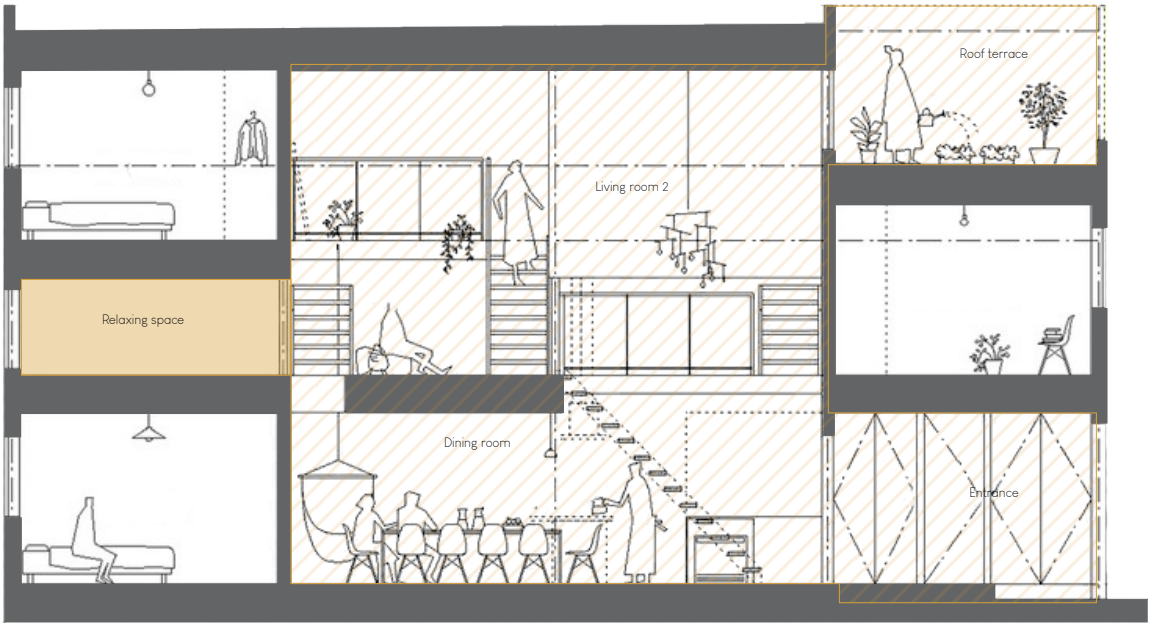
The private rooms are the only getaway of interaction. All identical by their proportion, there is a feeling of equality within the community. As bedroom, they are large (13m2) but considering it is the only private space, it can be considered as too small by some residents. It might even feel like a hotel maybe as visitors are not allowed to stay (O., Shihori, personal communication, February 18, 2021)

PRIVATE



First floor plan

1m



Cross section

1m

The Collective Old Oak

PUBLIC

From Public to Private

Urban public

The building has a unique main entrance (see Figure 20) which enhances the possibility for interaction but its public openness means there aren't only familiar faces in this area. On the ground floor, all the most public amenities are concentrated for a bigger transition from the most public to the most private part. The public lobby isn't appreciated by everyone because of its decoration and furniture making the entrance look like a hotel front desk (Timko, 2018, p48). Even if there is a front desk, there are still "outsiders" who manage to go to the upper floors which are felt as unsafe by some residents.

Urban semi-public

The co-working space and the gym are open to the public under membership. It is interesting to mix outsiders and residents in such spaces where a lot of interaction could happen.

Group public

The facilities opened for residents only are the common room, a theme room per floor, roof terraces and laundromat. The latter is large to give space for things to happen like a disco laundromat event while waiting for the laundry. As the building is 9 floor high, the elevators are the main floor entrance point. Therefore they are placed towards the common spaces in the core of each floor. Even if they can be considered as too small, the diversity of the theme rooms encourages people from different levels to meet. The access to the roof terraces is direct from the common core to attract and ease the possibility to use them. At the end, all those amenities doesn't necessarily improve the community feeling, for some residents it is a too big, "it wasn't the communal I imagined" (Coldwell, 2019).

Group private

The facilities opened for residents only are the common room, a theme room per floor, roof terraces, and laundromat. The latter is large to give space for things to happen like a disco laundromat event while waiting for the laundry. As the building is 9 floors high, the elevators are the main floor entrance point. Therefore they are placed towards the common spaces in the core of each floor. Even if they can be considered as too small, the diversity of the theme rooms encourages people from different levels to meet. The access to the roof terraces is direct from the common core to attract and ease the possibility to use them. In the end, all those amenities don't necessarily improve the community feeling, for some residents, it is too big, "it wasn't the communal I imagined" (Coldwell, 2019).

Family private

The area shared only by "family" is the small yet impractical kitchenette used by two studio units (twodios). It plays the role of the last buffer zone between the community and the individual.

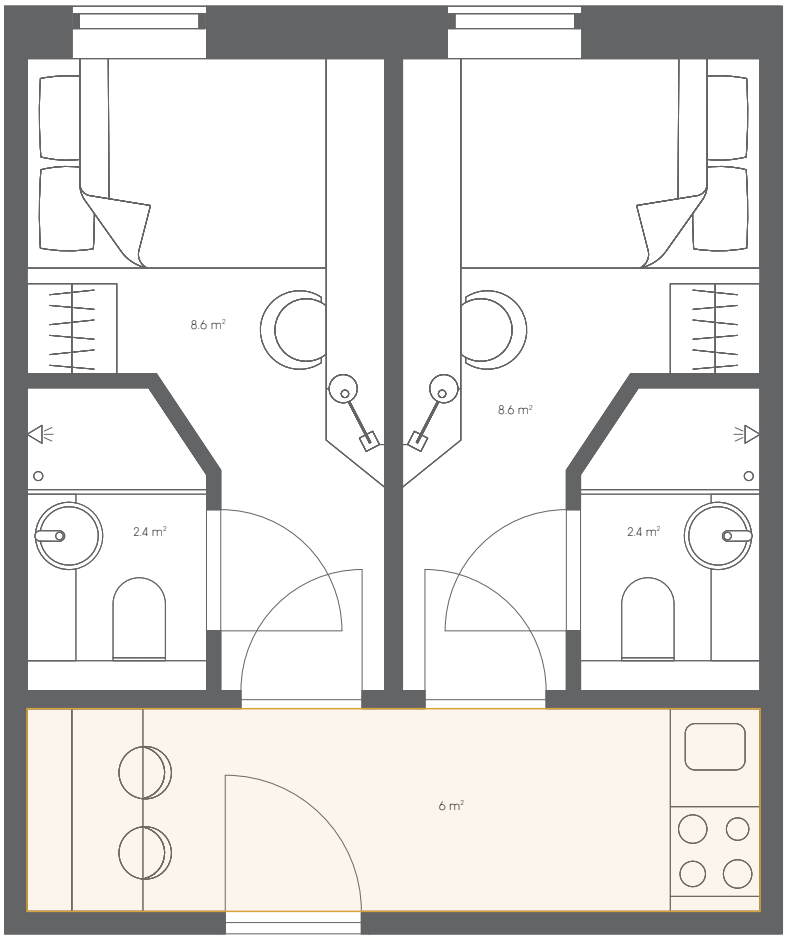
Individual private

The private rooms have been designed to their minimal, they contain all you need to live but nothing more. As in private apartments, visitors are allowed but within the limit of 14 days (K. Julika, personal communication, February 17, 2021). Also, there is no social space neither handicap adaptation. The compactness is to encourages residents to go outside but they feel that it can't contain all the usual activities for a balanced lifestyle The room is boosting the interaction but also making people stay in bed as it is the only space (Timko, 2018, p62). Furnishing the rooms is a benefit from the founder's perspective, "everything is taken care of" (Ahn, et al., 2018, p107). On the other hand, it is limiting the customization from residents which aren't helping them to feel at home (Ahn, et al., 2018, p110).

PRIVATE

Legend

- Urban Public
- Urban Semi-Public
- Group Public
- Group Private
- Family Private
- Individual Private



Twodios unit plan

0,5m

Stacken

PUBLIC

From Public to Private

Urban public

When it first got renovated, the intention was to make the ground floor all publicly accessible. In reality, only the cafe is open to the public nowadays. The main entrance was made wide and open to attract the whole neighborhood and make the community interact with the surrounding.

Urban semi-public

The restricted public can access the stairwell and go up to the original kindergarten on the fifth floor. Even if the openness of the stairwell changes after that floor as there are just apartments above, there isn't any difference in the stair which then could lead to having publics on floors where there is just housing. There is a lack of transition from the family private to the urban semi-public space.

Group public

The shared facilities are concentrated on the ground floor and the fifth floor. Even if it wasn't done intentionally (Hagbert, 2020, p48), in this way the common activities are more spread across the whole building. The kitchen and dining space is large as it was originally designed to prepare the food for the whole community but already in 1989, only 20% of the residents were eating there (Schmid, 2019, p179). Nowadays, the residents gather there for a common dinner five times a week voluntarily. Considering that the residents don't all eat together regularly and the tree-like structure of the building, not having all the communal spaces concentrated in one place is challenging for creating internal solidarity and spontaneous interaction (Hagbert, 2020, p175). Also the border urban public - group public has created issues in the past (Hagbert, 2020, p175)

Group private

The more closed shared amenities consist of a guest room on the fifth floor and a workshop, a photo lab, storage spaces, a laundromat, and a sauna on the ground floor. The building hosts many functions but the inconvenience is that when it has been renovated, each room has been assigned a specific function which made it hard to change the program. For example, the sewing room changed into a guest room and the original kindergarten became then a playroom but it had to be locked as children weren't taking enough responsibility for keeping it in shape (Hagbert, 2020, p174). So defining the functions of common rooms is limiting the freedom of the residents and can lead to unused space in the future. Even if it was the residents who chose the program at the renovation, they moved out since then so new people arrive with new ideology and hobbies so the unadaptability on those rooms is criticized.

Family private

With the first renovation, the diversity of units has increased, they range from two to four bedrooms. The community is then essentially composed of families but with different backgrounds. This diversity is crucial for Stacken (ant hill) considering the area it is located in the city, a former Million homes program district All the units have an "entrance" corner which works as the last buffer zone from the semi-public circulations and the most intimate family private space.

Figure 26: View of an apartment (Soderlund, 2016)

PRIVATE

Basic floor plan

Older Women's CoHousing

COMMON

From Public to Private

Urban semi-public

This building doesn't have any functions open to the public. The main entrance is where the public and common realm overlap. It is strategically placed in the center and opens to the common garden. The facility is handicap accessible as the residents are meant to live their last days here.

Group public

The building is composed of many different typologies of apartments from one-bedroom to three-bedroom units with two-thirds privately owned and on third social housing. So the community is composed of women from different horizons (NaCSBA, 2017). The garden is located in the center with all the flats overlooking. Even if there are sometimes issues with the waterlogged ground it is well appreciated by the community (NaCSBA, 2017). The circulations are important in this community as their proportions are inviting and each unit has openings towards the corridor to allow everyone passing by to say hello and to check up on each other frequently, a necessity for senior housing.

Group private

In general, the common facilities are well used by the community (Brenton, 2017, p3). The large common room and kitchen (82 m2) are the center of the community. Their placement near the main entrance encourages residence to interact as soon as they pass the threshold. Besides, the glass doors to the hallway can stand open so the room can expand. As the project has got a lot of media coverage, some under development communities come to visit the settlement. But visits are limited as on those occasions, the common room becomes more public which can make residents feel uncomfortable. The laundromat is small, which added to the fact that it is detached from the main building, makes it hard for socializing while waiting for the laundry. Also, the tool shed in the garden is just a storage space. It could be a bit larger and become a workshop instead. Regarding the guestroom on the top floor, it is designed as a separate apartment that can operate as a more private meeting room when not occupied. Having that flexible space is a key feature so the residents can gather in different sizes of groups depending on the activity or their willingness to interact.

Individual private

A lot of attention in the design has been place on the private spaces. They all have a large balcony or a semi-private garden toward the central courtyard. The visual connection to both the corridor and the garden was important for safety also for people to overlook the garden and seeing the activity happening downstairs to potentially join. With the wide window all around, the residents describe the units as "plenty of light, personal space, and storage" (Brenton, 2017, p2). As the project is the result of a co-design process, the residents had the opportunity to apply minor changes to their units such as the flooring material or the color of the walls so it would instantly make them feel at home (NaCSBA, 2017)

Figure 27: Resident's apartment (PTE Architects, 2017)

PRIVATE

First floor plan

10m

Second floor plan

10m

LONELINESS PREVENTIVE DESIGN

A design guidebook to tackle loneliness with community living

Master's thesis in Architecture and Planning Beyond Sustainability
Spring 2021
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Department of Architecture and Civil Engineering
Building Design for Sustainability
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