



BRIDGING THE GAP BETWEEN YOUNG AND OLD

Being, Caring, Playing, and Learning Together in an
Intergenerational Environment in Tarwewijk, Rotterdam

RESEARCH REPORT

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Designing for a Care in an Inclusive Environment
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Abstract

The number of elderly people in the Netherlands is growing significantly, and by 2070, one-quarter of the Dutch population will be aged 65 or older. However, loneliness among this expanding demographic is a major concern in the Netherlands. The housing in the Tarwewijk neighborhood is unsuitable for elderly residents, resulting in their minimal presence in the area. Conversely, the neighborhood is home to a large number of children. Creating an intergenerational environment for both young and old contributes to the mental, social, and physical well-being of both age groups. This paper explores how such an intergenerational environment can be designed to encourage planned activities and spontaneous encounters. The themes of togetherness, play, learning, and caregiving serve as guiding principles for designing an intergenerational space.

Keywords: Intergenerational, Children, Elderly, Tarwewijk, Spontaneous Encounters, Planned Activities, Well-being, Health

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01

**Research
Plan**

Introduction

The research plan outlines the structure of the study. It highlights the issues present in the Tarwewijk neighborhood. Additionally, the theoretical framework is used to present the existing literature and identify gaps that warrant further research. Based on this foundation, research questions have been formulated and will be examined using the appropriate methodology. The results of this investigation will be presented in the next chapter, titled Research Outcomes.

These findings have been clustered and categorized based on related results. Four overarching themes were identified—togetherness, caregiving, play, and learning—that are valued by both older adults and children in an intergenerational environment. Furthermore, these themes contribute to the physical, social, and mental well-being of both age groups. Each theme has been associated with a corresponding space: the heart, the animal park, the play park, and the studio, respectively.

1.1 - Problem Statement

The Tarwewijk, an urban neighborhood in Rotterdam, faces several challenges that strain its livability and social cohesion. The neighborhood struggles with a growing divide among its residents, including elderly individuals increasingly facing isolation, youth lacking sufficient educational opportunities, and inhabitants who not comfortable in their surroundings. The three core issues emerging in this neighborhood are the inaccessibility of housing for the aging population, the presence of a significant number of low-educated youth, and the lack of social safety and cohesion.

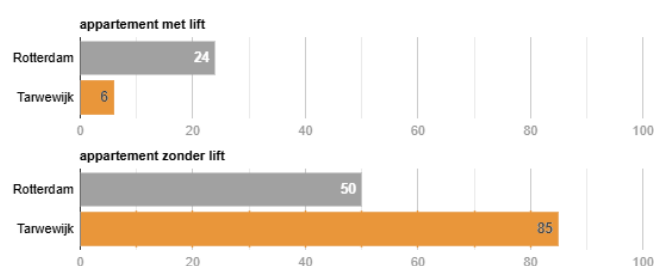
1.1.1 Increasing Number of (Lonely) Elderly in the Tarwewijk

In the Tarwewijk, there are relatively few elderly residents. Many homes are apartments with high thresholds at the front door or are accessed through staircases with steep steps. Despite the prevalence of apartment buildings in the Tarwewijk, only 6% of the homes are accessible by elevator (Figure 1). However, the elderly population is growing rapidly, and by 2070, more than 25% of the Dutch population will be 65 years or older (Figure 2). Statistics show that the Netherlands ranks fourth globally in the number of elderly individuals living alone (Beta Office, 2023), a trend also evident in the Tarwewijk, where more than 50% of households consist of single-person dwellings (Kadastralekaart, 2023). Data from the municipality of Rotterdam indicate that loneliness is particularly prevalent among those living alone (Gemeente Rotterdam, 2022). According to a neighborhood profile created by the municipality of Rotterdam in 2024, 55% of residents aged 65 and older feel lonely, with 15% reporting severe loneliness (Figure 3).

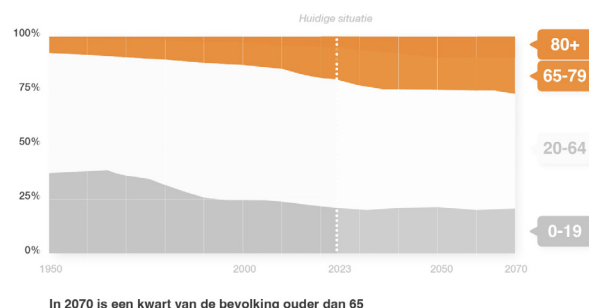
1.1.2 No Place for High Number of (Low-Educated) Youth

The primary demographic in the Tarwewijk consists of young people up to the age of 24. Nearly 1 in 3 residents (32%) falls within this age group, with half of them being under the age of 14 (Figure 4). Although the neighborhood features a lot of schools for children, there is a significant need for additional volunteers in these areas, the teacher shortage is also evident in the district and the percentage of low-educated people (Figure 5) in the Tar-

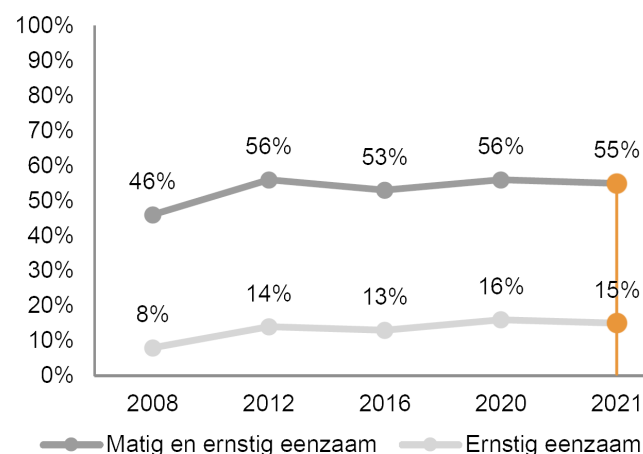
1 Figure 1: Accessibility Elevators
Source: Gemeente Rotterdam (2024)



2 Figure 2: Growing Number of Elderly
Source: CBS (2024)



3 Figure 3: Loneliness in Rotterdam
Source: Gemeente Rotterdam (2022)



wewijk is relatively high (40% in the Tarwewijk compared to the national average of 25% in the Netherlands. (Van Der Mooren & De Vries, 2022)). In a study conducted in the Tarwewijk young people expressed feeling unwelcome in the remaining community centers and reported that there are insufficient indoor and outdoor facilities available to them (Doff et al., 2024). Due to budget cuts, there are fewer meeting spaces available for youth in the Tarwewijk.

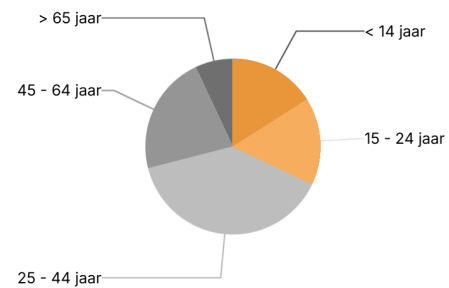
1.1.3 Lack of Social Safety and Cohesion

During visits to the Tarwewijk, it became evident that social cohesion in the neighborhood is limited. Many people walk alone on the streets, and there are few spaces where different generations can gather. Additionally, some residents mentioned that they prefer not to walk outside at night because they do not feel comfortable. Statistics also show that 75% of residents do not allow their children to play outside unsupervised (Figure 6). Therefore, the sense of safety and social cohesion in the neighborhood could be significantly improved.

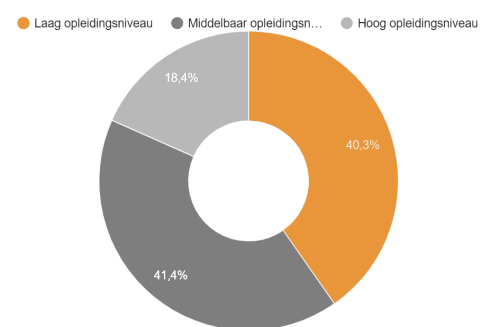
1.1.4 Conclusion

In conclusion, addressing the well-being of elderly and children in the Tarwewijk requires targeted research into the specific physical, mental, and social challenges facing these groups (Figure 7 & 10). Strengthening a sense of belonging and enhancing social cohesion and safety within the neighborhood is essential.

4 **Figure 4: Age and number of households in the Tarwewijk**
Source: KadastraleKaart (z.d.)

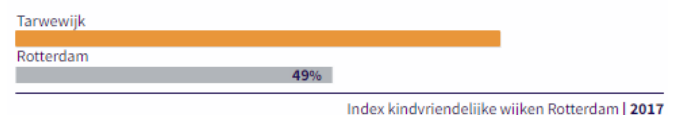


5 **Figure 5: Level of Education inhabitants**
Source: AlleCijfers (2024)

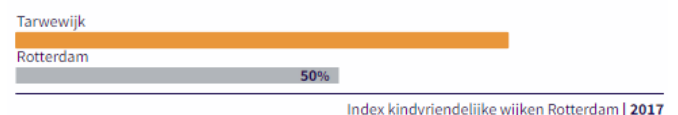


6 **Figure 6: Safety in the Tarwewijk**
Source: Gemeente Rotterdam (2024)

Niet alleen buiten spelen in de buurt



Onveilige plekken in de buurt om te spelen



7 **Figure 7: Physical, mental and social Challenges**
Conclusion Problemstatement

	Physical	Mental	Social
Elderly	No suitable and accessible houses	Living alone creates high level of loneliness	No offer for this growing population to live in the neighborhood.
Children	Unsafe environment to play alone outside	Feeling unwelcome and unsafe	No place for social interaction in the neighborhood

1.2 - Theoretical Framework

In light of the pressing demographic and social challenges faced by the Tarwewijk neighborhood, it is crucial to explore innovative approaches that can foster a sense of belonging and enhance social cohesion among its residents.

1.2.1 An Intergenerational Program

Policy scientist Julia O'Hanlon studies issues related to older adults, including mobility, aging in place, demographics, emergency preparedness and social isolation. She emphasizes that intergenerational interactions promote physical health by exercising both small and large muscles, stimulating blood flow to the brain, and practicing motor skills (O'Hanlon, 2017). Furthermore, this interaction provides opportunities for expressing emotions, exercising cognitive abilities, and enhancing self-esteem. Her research (O'Hanlon, 2017) has shown how interactions between elderly and youth can foster positive emotions and coping, strengthen social bonds, and increase personal growth and development. Children provide a form of companionship to elderly (Bradley et al., 2013). When seniors interact and play with children, they are less at risk for social isolation, which improves overall quality of life and life satisfaction and allows them to learn new skills. Intergenerational interaction also helps seniors recall memories from their own childhood and replay nurturing roles (Davis et al., 2002). Intergenerational environments for both young and old are therefore an interesting approach to addressing the mental, physical and social challenges in the Tarwewijk.

1.2.2 Foundation of the Intergenerational Programs

To understand the foundations of intergenerational engagement, it is essential to recognize the work of Sally Newman (1997), who laid the groundwork for intergenerational programs as a legitimate and academically supported practice. Newman was a visionary and pioneer in the early days of the emerging intergenerational field. She was determined to set the standards and develop the framework to take intergenerational programs from a soft practice to a legitimate approach supported by academic research. She emphasize that older adults have a desire to pass on knowledge and values, while children and youth require care, education, and positive role models (figure 8). Intergenerational programs foster care, communication, and collaboration, benefiting both individuals and the broader community. (Newman, 1997).

1.2.3 Planned Intergenerational Programs

In 2007, gerontologist Shannon Eileen Jarrott conducted research on shared site intergenerational programs (SSIP). Her findings revealed that SSIPs promote valuable interactions between generations, contributing to the development of both older adults and children. Additionally, she developed a daily schedule of

Older adults' needs	Children's needs
To nurture	To be nurtured
To teach	To be taught
To have a successful life review	To learn from and about the past
To share cultural mores	To have a cultural identity
To communicate positive values	To have positive role models
To leave a legacy	To be connected to preceding generations

8 **Figure 7: Elderly and Children's needs**
Source: Newman (1997)

Time	Activity	Age of Children Involved
10:15	Fall collage	18 months to 2 years
10:15	Loteria (bingo)	4 years
11:00	Making bread	5 to 6 years
11:30	Lunch helpers (adults help in children's room)	18 months to 3 years
12:00	Lunch with neighbors	5 to 6 years
2:00	Infant helpers (adults rock and play with infants)	6 weeks to 18 months
3:30	Music and movement with Molly	2 to 3 years

9 **Figure 9: Intergenerational Activities**
Source: Jarrot & Bruno (2007)

intergenerational activities (Figure 9) tailored to the needs of different age groups, providing opportunities for learning, increasing social engagement, enhancing sensory stimulation, self-esteem, and socialization (Jarrott & Bruno, 2007). Jarrott also collaborated with Neda Norouzi, a healthcare facilities planner and designer for intergenerational centers, on further research. Together, they demonstrated that older adults in intergenerational environments can share their knowledge through activities such as cooking, science experiments, and storytelling, while children benefit from a nurturing and familial environment (Norouzi, Chen & Jarrott, 2015).

1.2.4 Spontaneous Meetings in an Intergenerational Environment

This prompted Norouzi to conduct further research on designing intergenerational living environments, providing insights into how inviting common spaces, carefully designed with attention to the proximity of different age groups, can positively influence relationships between them. This is a crucial aspect of design in the built environment, as it directly impacts participant outcomes (Norouzi et al., 2015, 2019). Norouzi's research also demonstrated that a centrally located multifunctional space, equipped with observation windows, creates a welcoming atmosphere for individuals of all ages and abilities (Norouzi et al., 2023). These spaces offer participants various options for engagement: they can observe from outside, make visual contact through the windows, or enter the space to actively participate in intergenerational interactions. Such flexible designs foster meaningful interaction between generations by allowing individuals to engage at their own pace and in a manner that suits them (Norouzi et al., 2015, 2019).

1.2.5 Spontaneous Meetings in an the Build Environment

The built environment significantly influences spontaneous intergenerational interactions. Amsterdam-based architecture firm Beta Office explores this through research and design, including their multigenerational housing project and the book *'Meergeneratiewonen'* (Beta Office, 2023), which examines spatial

strategies for fostering resident interaction. Similarly, Platform31, a network of policymakers, professionals, residents, and entrepreneurs, addresses these issues in their book *'Ontwerpen voor Ontmoeten'* (Platform31, 2021), aligning with Beta Office's focus on promoting community through design. A existing design that fosters interactions between elderly and children is the first integrated child and elderly center (IKOC) in the Netherlands, located in Noord-Scharwoude. This project, designed by LIAG Architects, is currently still in the design phase but can be very interesting to analyse.

1.2.6 Stimulating Social Cohesion in the City

On the more urban scale, the Danish architect and urban planner Jan Gehl began to rethink cities differently, influenced by his wife Ingrid, a behavioral psychologist. In his books, Gehl emphasizes the human experience in cities, offering design principles and recommendations on how urban areas can be designed at a more human scale (Gehl, 1987, 2010). David Sim, partner and creative director at Gehl, further explores these ideas in his book *'Soft City'* (Sim, 2019), illustrating how cities can be designed to be more people-friendly—places where people feel at home and part of a community. Urban sociologist Wenda Doff (2024) conducted research on the needs of young people in the Tarwewijk to feel more at home in their neighborhood. The findings indicate that young people primarily desire an outdoor space (19%), a sports area (16%), and a place with organized activities (12%).

1.2.7 Research Gap

This theoretical framework demonstrates that substantial research has already been conducted on intergenerational environments for the elderly and children. This research primarily focuses on how these target groups can live together and what activities and programs can be organized to promote intergenerational interaction. However, relatively little attention has been given to how these intergenerational environments can also contribute to the physical, mental and social wellbeing, architectural design.

1.3 - Research Question(s)

There is a research question formulated to test this hypothesis. The main research question is: ***“How can an intergenerational environment in the Tarwewijk be designed to promote planned activities and spontaneous meetings between very young and old people to improve their physical, mental, and social well-being?”*** To answer this primary question, the research is divided into several sub-questions (Figure 10).

1.3.1 Sub-question 1: Spontaneous Meetings in an Intergenerational Environment

The first sub-question focuses on the ‘intergenerational environment’, ‘designing’, ‘spontaneous meetings’ and ‘improving physical, mental and social well-being’ parts of the main research question. That leads to the question: ***“How can the built environment be designed to promote the types of spontaneous meetings in an intergenerational setting to enhance physical, mental, and social well-being?”*** This question first aims to determine how the built environment influences spontaneous interactions among residents. The study explores these various influences across different spatial scales (Figure 10). Additionally, it examines which of these interactions contribute to the physical, mental, and social well-being of residents. By understanding these aspects, potential adjustments or additions to the built environment in the Tarwewijk can be identified to encourage spontaneous interactions and improve the well-being of the residents.

1.3.2 Sub-question 2: Planned Activities

The second sub-question focuses on the ‘planned activities’, ‘very young and old people’, and ‘improving physical, mental and social well-being’ parts of the main research question. The aim is to answer the following question: ***“In what ways do elderly and children prefer to have planned activities in an intergenerational environment to enhance physical, mental, and social well-being in the Tarwewijk?”*** This section explores the activities that each age group envisions doing together and how these should be shaped and structured. In addition to identifying their needs, the study examines how each group

can contribute to enhancing physical, mental, and social well-being within this environment. By approaching the age groups separately, the results can then be compared side by side. Additionally, sociological research has already been conducted on the needs of young people in the Tarwewijk. These findings will help define what an intergenerational living environment should look like for both young and older residents in the Tarwewijk.

10 Figure 10: Scales to investigate the stimulation of spontaneous encounters Source: Platform31, 2021



1.3.3 Sub-question 3: Case Study

The last sub-question focuses on a case study that addresses the ‘designing’, ‘very young and old people’, and ‘improving physical, mental and social well-being’ parts of the main research question. The last sub-question will be: ***“What can be learned from a case study to promote activities between very young and old people to enhance their physical, mental, and social well-being?”*** The first Integral Child

and Elderly Center (IKOC) in the Netherlands is currently being designed in Noord-Scharwoude by LIAG Architects. This project is interesting to investigate and to compare with the results of the first two research questions in order to identify similarities and differences.

1.3.4 Conclusion

With the answers to these sub-questions, a conclusion can be drawn in response to the main research question: ***“How can an intergenerational environment in the Tarwewijk be designed to promote planned activities and spontaneous meetings between very young and old people to improve their physical, mental, and social well-being?”*** All the sub-conclusions should contribute to a clear overall conclusion to the main research question. This conclusion will provide essential design principles and guidelines for an intergenerational environment focused on elderly and children. This can be used by the designer in the next phase of the research: the research by design phase.

1.4 - Methodology

This chapter outlines the research methodology employed to address the main research question and its subcomponents. Each sub-question focuses on a specific aspect of the study, necessitating distinct research methods tailored to the target groups and the built environment. A combination different approaches will be applied (Figure 10). The following sections will elaborate on the methodology used for each sub-question, providing a detailed description of how the data will be collected, analyzed, and interpreted to generate meaningful conclusions.

1.4.1 Sub-question 1: Literature Research

The first sub-question involves a literature review to address the following question: ***“How can the build environment be designed to promote the types of spontaneous meetings in an intergenerational setting to enhance physical, mental, and social well-being?”*** To address this question, a **literature research** will be conducted. This provides insights from various perspectives (see Figure 11). Each spatial scale will be examined to understand how the physical, mental, and social well-being of individuals can be improved through the (re)design of the urban environment. This analysis will help identify key elements and design principles that can foster better interactions and enhance the quality of life for different age groups within the community.

1.4.2 Sub-question 2: Qualitative Research and Mapping

The second sub-question focuses on understanding the target groups. The aim is to answer the following question: ***“In what ways do elderly and children prefer to have planned activities in an intergenerational environment to enhance physical, mental, and social well-being in the Tarwewijk?”***. Literature from gerontologists and designers provides valuable insights that can be utilized for activities involving elderly and children. Literature from a sociologist provides insights into the needs of young people in the Tarwewijk. Additionally, **qualitative research** will be conducted through visits to a primary school in Nijmegen (de Verbinding) and an elderly center in Hilversum (Liv Inn). At both locations, **interviews**

will be conducted, and a **workshop** will be held to identify the activities participants envision for collaboration with the other target group, aiming to uncover overlapping preferences (See setup in Appendix 1). The target groups will also be **observed** to understand their daily activities and habits, which will be **mapped** out, illustrating their daily routes through the building and the time schedules of the day. All these outcomes can be compared and analyzed to assess whether they can potentially be integrated with the other target group.

1.4.3 Sub-question 3: Case Study

There is a interesting case study that can help address the question: ***“What can be learned from a case study to promote activities between very young and old people to enhance their physical, mental, and social well-being?”*** This case study from LIAG Architects will incorporate two research methods. Initially, **qualitative research** will be conducted to explore the thought processes and design philosophy of the architects. Following this, the focus will shift to the **case study** itself, examining how the design of this integrated child and elderly center has been established.

	Physical	Mental	Social
Elderly	No suitable and accessible houses	Living alone creates high level of loneliness	No offer for this growing population to live in the neighborhood.
Children	Unsafe environment to play alone outside	Feeling unwelcome and unsafe	No place for social interaction in the neighborhood

O'Hanlon, 2017

Newman, 1997

Bradley et al., 2013

Davis et al., 2002

Research question

Intergenerational Environment

"How can an intergenerational environment be designed to promote planned activities and spontaneous meetings between very young and old people to improve their physical, mental, and social well-being?"

Research

1. Spontaneous meetings

"How can the build environment be designed to promote the types of spontaneous meetings in an intergenerational setting to enhance physical, mental, and social well-being?"

Literature by:

Urban Planners

Architects

Behavioral Psychologists

Visionairs

Multigenerational Architectural Offices

Interdisciplinary Research Platform

2. Planned Activities

"In what ways do elderly and children prefer to have planned activities in an intergenerational environment to enhance physical, mental, and social well-being in the Tarwewijk?"

Literature by:

Gerontologist

Designer

Fieldwork at the Live-Inn and Primary school

Qualitative

Interviews

Workshops

Observations

Habits

Daily activities

Mapping

Timeschedules

Daily routing

Evaluated

3. Case study of Child and Elderly Center

"What can be learned from a case study to promote activities between very young and old people to enhance their physical, mental, and social well-being?"

Fieldwork at LIAG Architecten

Qualitative

Interviews

Expertise

Case Study

Child and Elderly Center in Noord-Scharwoude

Conclusion

"How can spaces within and around a care facility be designed to promote daily activities and spontaneous meetings between very young and old people to improve their physical, mental, and social well-being?"

Gives guidelines for a intergenerational environment wich promotes spontaneous meetings

Comparing the children fieldwork and the elderly fieldwork

02

**Research
outcomes**

Be



Care



Play



Learn



T O G E T H E R

2.1 - Being Together

The Central Hub as a Space for Shared Meals, Cooking, and Connection

According to the problem statement (see 1.1.1), a significant proportion of older adults in Rotterdam experience feelings of loneliness. Facilitating interactions between older adults and children can help reduce loneliness (Davis et al., 2002). Moreover, such interactions may enhance the self-esteem of older adults (Jarrot & Bruno, 2007) and provide them with a renewed sense of meaningful participation in society (Newman, 1997). To foster interaction between young and old, this chapter explores the design guidelines for creating a central, intergenerational meeting space for older adults and children.

2.1.1 Seeing and Being Seen

The Liv-Inn building in Hilversum is designed to reduce loneliness among older adults and promote interaction, thereby encouraging them to remain mentally, socially, and physically active. Research (Appendix B) indicates that the large open kitchen, located at *'the heart of the building'* (Figure 12), has the greatest impact on bringing residents together. This place serves as a central meeting point where residents connect with one another on a daily basis. To support this, organized activities such as communal meals, coffee gatherings, game sessions, and creative afternoons are regularly held in this space.

Beyond these planned events, spontaneous encounters are equally significant. The strategic placement of the large open kitchen near the entrance ensures that residents see their neighbors upon arrival, fostering immediate interaction and reducing anonymity within the building. This design approach creates an environment where residents can both see and be seen.

2.1.2 The Entrance as a Key Meeting Point

Platform31 (2021) highlights that the mailboxes near the entrance play a significant role as a social interaction point within the building. This area should provide residents with sufficient space to engage in casual conversations. To accommodate this, it

is recommended to incorporate a small amount of extra space and possibly seating in these locations. This allows residents to linger briefly when collecting their mail, increasing the likelihood of meeting others without obstructing the flow of movement. Additionally, attention must be given to environmental factors. Ideally, these areas should be free from drafts, sheltered from rain, and feature good acoustics. These design considerations are crucial for creating a comfortable environment that fosters social interaction.

2.1.3 Cooking Together in the Central Space

Conversations with the residents of Liv-Inn (Appendix B) in the central hub reveal that older adults are open to the idea of children visiting regularly. One resident, referred to as Elderly W, who often prepares lunches and dinners at Liv-Inn, expressed enthusiasm about collaborating with children in the future, stating:

"It gives me the chance to share my cooking knowledge while enjoying the company of younger generations." – Elderly W (Liv-Inn Resident)

The resident also emphasized the importance of having a space where they can spend time away from the children when needed.



12 *Figure 12: Communal Open Kitchen*
 Source: Appendix B - Fieldwork Booklet - The Liv-Inn



13 Figure 15: Cooking with Elderly
Source: Appendix C - Fieldwork Booklet - Workshop Children

During the workshop with children were asked to design an intergenerational living environment, they indicated that cooking, baking, and eating together with older adults (Figure 13) were the most enjoyable activities to include in such a space (for more details on the workshop, see Appendix C).

2.1.4 Design

Designing a centralized space intended for all age groups can help eliminate age-based hierarchies and reduce intimidation, fostering positive and comfortable intergenerational interactions (Norouzi et al., 2023). Such a centralized intergenerational space should be accessible and inviting to individuals of diverse ages, abilities, and backgrounds, facilitating various forms and levels of interaction.

Architects should approach the design of this space with social sensitivity, ensuring it provides comfort and a sense of familiarity, promotes independence and assertiveness, and guarantees a safe and equitable group status. Additionally, the space should encourage relationship-building through collaborative efforts and shared intergroup goals (Brookfield et al., 2020).

Examples of Centralized Spaces (Norouzi et al., 2023):

- A kitchen for intergenerational cooking activities.
- A room spacious enough to accommodate multiple small groups, featuring windows that connect to outdoor areas and other activity spaces.
- Small alcoves for individual seating, reading spaces, and lounges that allow for relaxation and promote spontaneous interactions beyond planned activities.

2.1.5 Interior Design

An interior design solution to promote spontaneous interaction is the incorporation of artwork created by both children and older adults into the design (Norouzi et al., 2023) (Figure 14). Artwork produced through intergenerational programs can serve as a catalyst for comfortable, positive interactions and friendships among participants (Lokon, Li, & Parajuli, 2017).



14 *Figure 14: Interior stimulates interaction*
Source: Norouzi et al., (2023)

CASE STUDY: INTEGRAL CHILD- AND ELDERLY CENTER - LIAG ARCHITECTS

LIAG Architects emphasizes the importance of a shared dining space. In the design of the IKC, this space is strategically located at the common main entrance of both the school and the senior housing.

As a result, the area not only serves as a central meeting point but also functions as a waiting area for parents picking up their children from school (figure 15). This layout promotes informal interactions and conversations between parents and residents, contributing to a sense of community and connectedness.



15 *Figure 15: Multifunctional Entrance Space*
Source: Appendix C - Fieldwork Booklet - LIAG Architekten

2.1.6 Boundaries

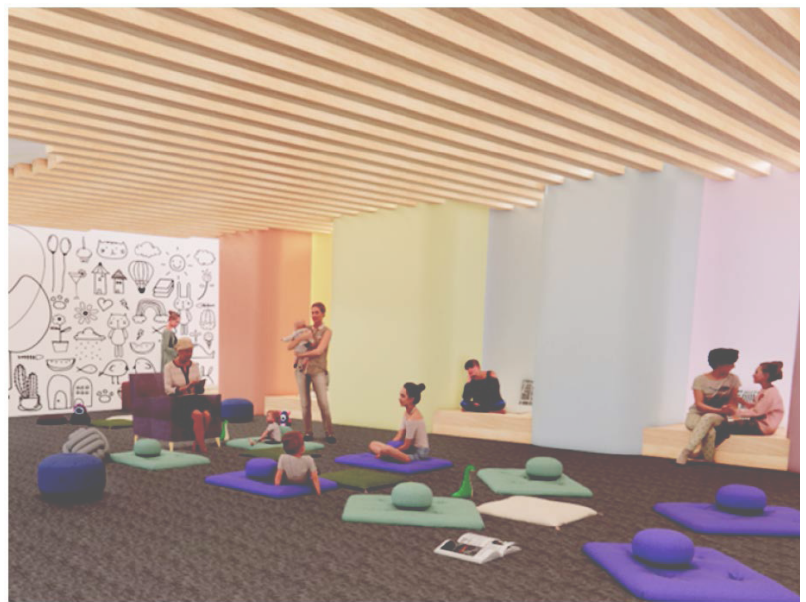
Boundaries are “physical or social indicators of the intended or perceived experiences of a space” (Norouzi et al., 2019). These boundaries can provide opportunities for various types and levels of interaction. The design of an intergenerational shared space should include the following elements (Norouzi et al., 2023):

- Opportunities for observation: Spaces where individuals can observe intergenerational activities before choosing to participate (Figure 16).

- Private spaces within public areas: Areas where individuals can be alone or gather in smaller groups (Figure 17).
- Glass walls, doors, and perforated partitions: Features that create separation while allowing different levels of interaction, such as observation (indirect interaction) or conversation and physical engagement (direct interaction) (Figure 18).



16 *Figure 16: Multifunctional Entrance Space*
Source: Norouzi et al., (2023)



17 *Figure 17: Private Spaces in Public Space*
Source: Norouzi et al., (2023)



18 *Figure 18: Direct Interaction*
Source: Norouzi et al., (2023)

2.1.6 The veins of the Building

From the heart of the building, older adults flow toward their homes via “the veins.” It is beneficial if the group of people using the same “vein” gradually diminishes along the route from the central hub to the residential units, leaving a smaller group of individuals whom one might call neighbors. The journey from the heart of the building to the individual homes should feel increasingly familiar, encouraging residents to greet one another more naturally along the way (Platform31, 2021).

2.1.7 In-Between Spaces

Throughout the veins, “in-between spaces” are strategically positioned to provide opportunities for meaningful and intimate intergenerational interactions beyond the planned activity areas (Norouzi et al., 2022). Examples of such spaces include porches overlooking playgrounds, walking paths adjacent to children’s play areas (Figure 19), indoor and outdoor gardens with raised beds designed for accessibility by both children and older adults (Figure 20), and open

seating areas that encourage spontaneous interaction.

The inclusion of these indoor and outdoor spaces enables individuals or small groups from one generation to observe and seamlessly join another generation in ongoing activities, fostering organic connections and



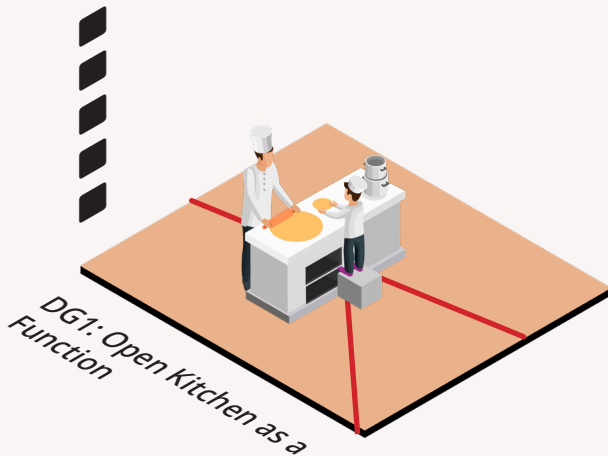
19 *Figure 18: Walking Paths adjacent to Gardens*
Source: Norouzi et al., (2023)



20 *Figure 19: Walking Paths adjacent to Raised Beds*
Source: Norouzi et al., (2023)

Design Guidelines for the Central Space: The Heart and Its Connecting Veins

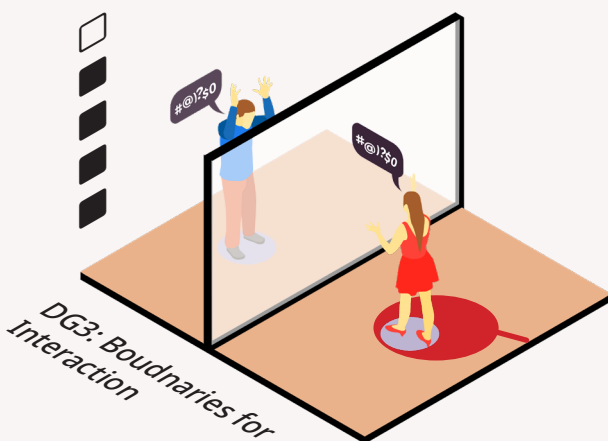
To stimulate interaction between young and old in an intergenerational building is the design of a central heart of great value. When designed according to the correct guidelines, it will contribute to planned activities within the building and also facilitate spontaneous encounters. The heart of the building must adhere to the following design principles.



DG1: Open Kitchen as a Function: Design a well-thought-out kitchen where older adults can gather for coffee and meals, and where children can join in cooking with the elderly.



DG2 Veins and In-Between Spaces: A well-designed layout that radiates from the central heart, encouraging interaction in an accessible manner, complemented by in-between spaces for spontaneous encounters.



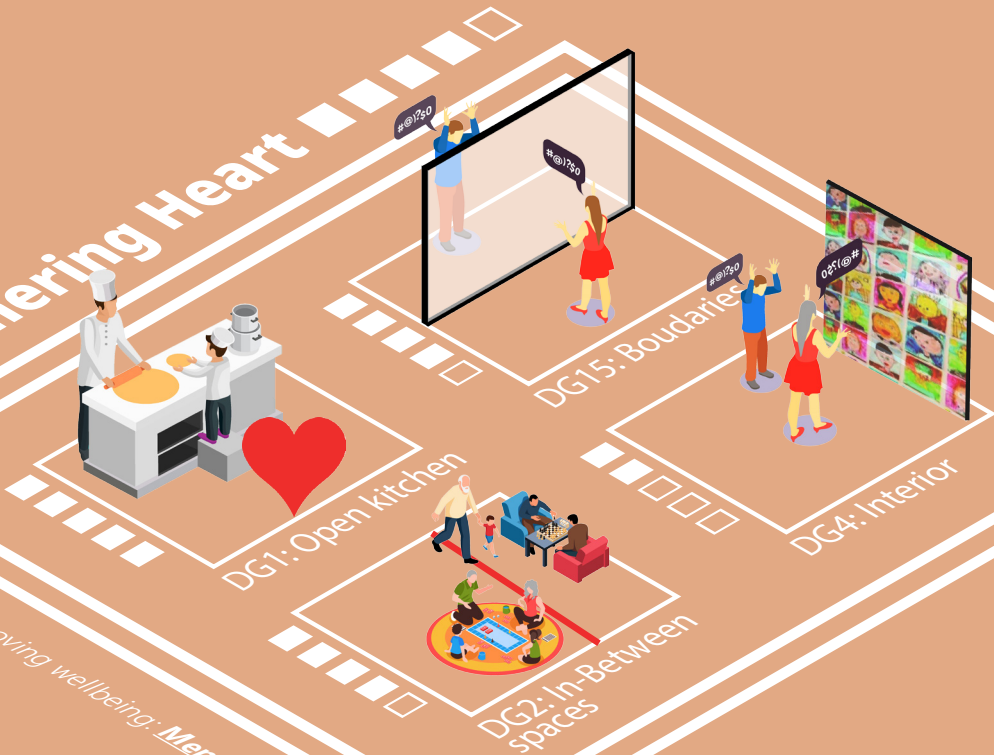
DG3: Well-Designed Boundaries of the Heart: Design private spaces within the public heart and provide opportunities for observation towards the central area.



DG4: Interior: Design interior elements that encourage conversation between young and old, such as spaces to display work created by residents, fostering intergenerational dialogue.

The Gathering Heart

2 Levels of improving wellbeing: Mental and Social



Be



Care



Play



Learn



T O G E T H E R

2.2 - Caring Together

The transformed dog park encourages meaningful engagement, social interaction, and supports mental well-being

For vulnerable older adults, an environment with animals provides a way to find peace and relaxation. Green spaces combined with animals and children bring smiles to their faces, evoke memories, and foster a sense of belonging (Stolvoort, 2022). Currently, there is a dog park located in the Tarwewijk, but it appears to be underutilized (Appendix A). Transforming this dog park into a renewed, accessible animal park would be a valuable addition for children, older adults, and the neighborhood.

2.1.1 Animals and Elderly

Many residents at the Liv-Inn had pets, and they reported that their pets helped reduce feelings of loneliness and provided additional motivation to go outside daily (Appendix B). According to Anne W. Ekdahl (TV4, 2019), Chief Geriatric Physician at Helsingborg Hospital, animals can have a calming effect and provide mental relief for older adults. Being around animals often evokes positive emotions, offering comfort and joy through physical interaction such as petting or cuddling. Additionally, it has been observed that many older, inactive seniors who typically show little engagement become noticeably more lively when interacting with animals like dogs or cats, as these encounters often trigger associations with meaningful past experiences. She states:

“The benefit of being close to animals is that it evokes many positive emotions. It feels good to pet and cuddle them.” - Anne W. Ekdahl, Chief Geriatric Physician at Helsingborg Hospital

Moreover, older adults can share their knowledge about caring for animals with children. According to Newman (1997), older adults highly value opportunities to share their accumulated knowledge within society. This sense of contribution fosters social connectedness and reinforces their feeling of being valuable members of the community.

2.1.2 Animals and Children

Many children enjoy being around animals, and interacting with them can help boost their self-confidence (GGD, 2023). During a workshop on intergenerational spaces with children, animals emerged as a recurring theme (Figure 21). Interacting with animals also provides children with opportunities to learn about their diets, care requirements, and behaviors. Children enjoy learning new things, and this can be one of the key components in bringing older adults and children together (Davis et al., 2002; Jarrott & Bruno, 2007). To ensure the safety and enjoyment of these interactions, it is essential that the animals involved are child-friendly (Ferwerda, 2010). For instance, goats can become aggressive, and sheep may grow too large and cumbersome for children. Suitable options include dwarf sheep, alpacas, and small hobby animals. Examples of small hobby animals include chickens, rabbits, guinea pigs, cats, pigeons, and birds in an aviary.



Figure 21: Intergenerational spaces drew by othe children
Source: Appendix C - Fieldwork Booklet - Workshop Children

CASE STUDY: DE SCHARRELBOEDERIJ OSS

De Scharrelboerderij in Oss is a childcare organization that combines a daycare, preschool, and after-school care with life on a farm. However, what truly sets this place apart is its integration of elder care. At De Scharrelboerderij, the care for young and old, development and rest, and mutual care for each other and nature are seamlessly intertwined in an inspiring way (Figure 22).

The setting is characterized by a spacious garden surrounding the buildings and a central courtyard with an open veranda where older adults relax in chairs while children freely play, run, and bike around. An old barn has been repurposed for activities and houses enclosures for rabbits. Large open doors blur the boundaries between indoors and outdoors, fostering a natural, harmonious atmosphere.

The integration of indoor and outdoor spaces is also evident in the daycare area. Large ground-level windows provide children with direct views of the barn, allowing them to watch the sheep throughout the day. Inside, a small pen with heat lamps hosts baby chicks. Another group room features large windows overlooking the fields, and the playground extends along the back and sides of the building, further connecting the children to nature.

Children in the after-school care program can venture into the farmland under supervision, assisting with animal care and farm chores. They witness lambs being born, collect eggs, and climb hay bales. They also engage in activities like playing games with older adults.

A hallway (which can be closed off if necessary) leads to the area designated for elder day care. Here, older adults can retreat to a quiet room to rest, refresh, or take a nap. They can also gather around a large kitchen table to read, play games, or participate in daily activities. Elderly participants contribute meaningfully, for instance, by folding laundry for the childcare groups, reinforcing their sense of purpose and belonging.

De Scharrelboerderij exemplifies how shared spaces and meaningful activities can promote intergenerational interaction while addressing the needs of different age groups, fostering a sense of community and mutual care.



22

Figure 22: Day Care Farm for Elderly and Children in Oss
Source: Ferwerda (2010)

2.2.3 Animals for the Community

According to Roe and McCay (2021), the presence of animal parks and other animal-related facilities enhances social interaction among neighborhood residents by serving as informal meeting places. Encounters and interactions involving animals increase the likelihood of spontaneous social interactions among community members. As such, animal parks can play a vital role in strengthening community bonds by providing a space where residents of all ages can come together, fostering social connections and a sense of belonging.

2.2.3 (Re)Design of the Park in the Tarwewijk

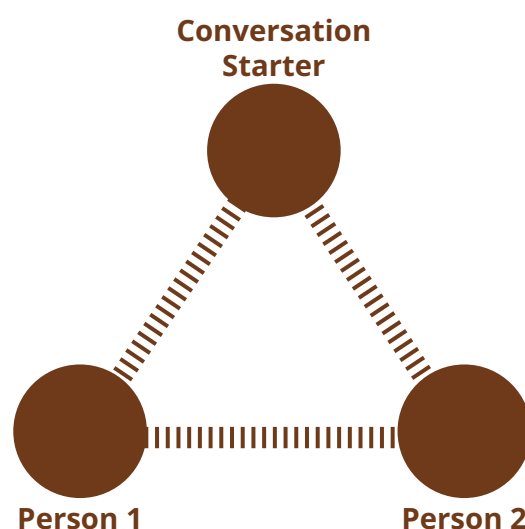
The current dog park in the Tarwewijk sees minimal use for various reasons (Appendix). By redesigning the park to accommodate not only dogs but also smaller farm animals, the park could play a significant social role in the neighborhood. To create a space suitable for all ages, Stolvoort (2011) outlines several key considerations for the design of a animal park for elderly and Platform31 (2021) outlines some key aspects that stimulates interaction in a park:

- The park should be located near a nursing home, petting zoo, school, senior housing, or community center, offering amenities such as food and drink options and accessible restrooms (Stolvoort, 2011).
- Outdoor areas should provide shelter and comfort, with sunny spots during key times of the day. These features should attract both young and old, from energetic children to more vulnerable elderly individuals (Stolvoort, 2011).
- Integration of Play and Rest Areas The park should offer engaging activities for children, such as play areas, while ensuring comfortable seating for seniors (Stolvoort, 2011). These semi-public private spaces foster casual encounters and social interaction (Platform31, 2021).
- Triangulation in Spatial Design: Spatial designer William Whyte's concept of "triangulation" highlights the importance

of conversation starters within the built environment (Figure 23). These can include art installations, scenic views, play areas for children, or animals in the park. These features act as focal points that encourage dialogue between visitors (Platform31, 2021).

- Optimal Placement of Seating: The arrangement of benches is crucial for encouraging interaction. Standard side-by-side placement often leads to individuals sitting separately without engaging in conversation. Instead, benches should be arranged at angles or in semi-circular configurations. Overly close seating can feel intimidating, while seats placed too far apart discourage interaction. Thoughtful placement—such as angled or semi-circular benches—can strike the right balance and promote social engagement (Platform31, 2021).

A redesigned park that incorporates these principles could become a vibrant hub for intergenerational interaction, enhancing social cohesion in the Tarwewijk.



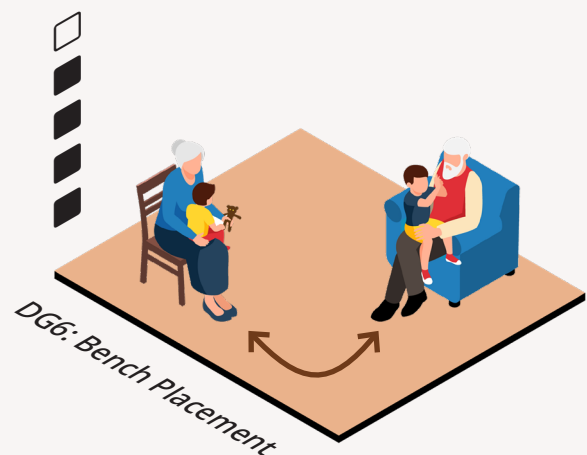
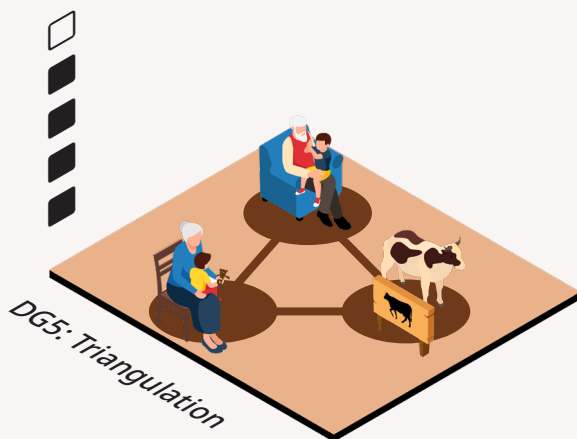
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Figure 23: Triangulation

Source: Figure by Author (inspired on the concept of William Whyte's concept (Platform31, 2021))

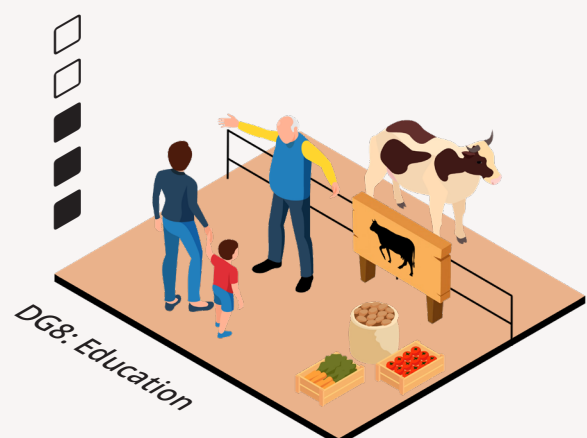
Design Guidelines for this Intergenerational Animal Park: Fostering Connections Through Care and Community

An animal park designed for children and older adults strengthens intergenerational connections. Caring for animals provides a valuable opportunity to remain physically, mentally, and socially active. Interaction with animals offers emotional support, reduces stress, fosters a sense of connection, and combats loneliness. Additionally, working together with others enhances collaboration. Children enjoy these activities, which also contribute to their self-confidence. The design of the animal park can play a vital role in bringing the community together. Key design principles for this include:



DG5 Triangulation: Foster spontaneous interactions in the animal park through triangulation. Provide conversation starters for visitors, such as an animal, an informational sign about the animal, or a feeding station.

DG6 Bench Placement: Benches in the park should be positioned at an angle and not too far apart. This arrangement encourages casual conversations between visitors.



DG7 Inclusion of Small Farm Animals, Not Just Dogs: The dog park should accommodate a variety of animals. Depending on the available space, the transformed park in Tarwewijk will feature several small farm animals.

DG8 Education: Older adults can share their knowledge with children while caring for the animals. Older adults enjoy passing on their expertise and staying active, while children delight in learning new things and interacting with animals.



Be



Care



Play



Learn



T O G E T H E R

2.3 - Playing Together

In the Age-Friendly Play Spaces, different generations come together through fun and shared experiences.

As Irish playwright George Bernard Shaw famously said, “We don’t stop playing because we grow older; we grow older because we stop playing.” Play is not only beneficial but essential for people of all ages. Today, there is increasing interest in the benefits of not only play itself, but specifically people from younger and older generations playing together. The built environment in our communities plays a critical role in facilitating this intergenerational engagement and play (Firestone & Glassman, 2023).

2.3.1 Playing keeps you young

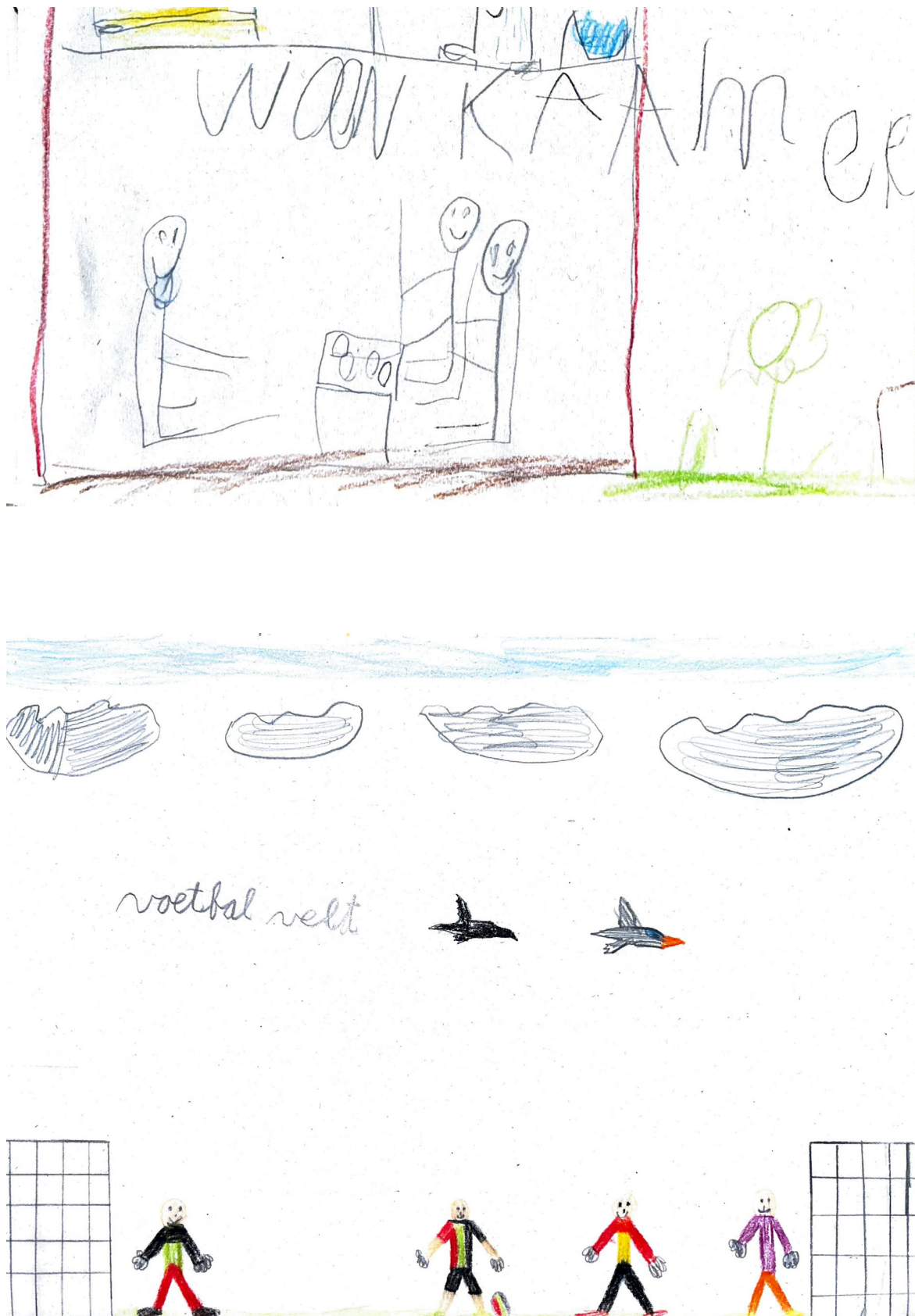
Dr. Stuart Brown, NIFP founder, “Play is a basic human need as essential to our well-being as sleep” (Firestone & Glassman, 2023). Play offers numerous benefits to both older adults and children. For older adults, it reduces loneliness, improves cognitive function and memory, and enhances mobility (Age UK, 2018). For children, it supports language development, social skills, and reduces age-related biases (United for All Ages, 2019). The improved mental alertness, problem-solving abilities, and creativity associated with play at any age contribute to strong cognitive function. These benefits can enhance the learning capacity of younger participants while reducing the risk of dementia among older individuals.

“We don’t stop playing because we grow older; we grow older because we stop playing.” - playwright George Bernard Shaw

“Play is a basic human need as essential to our well-being as sleep” - Dr. Stuart Brown

2.3.2 Children in the Tarwewijk

Children enjoy movement and play, as evidenced by the workshop on intergenerational spaces with children (Appendix C). Nearly one in four children described a play activity shared with older adults (Figure 24). Additionally, the largest group of surveyed children in the Tarwewijk neighborhood expressed that they feel the absence of a free outdoor sports area in their community (Doff et al., 2024). Therefore, the addition of a sports and play area in the neighborhood would be a valuable contribution, both to the community and to the intergenerational living environment, from the perspective of children.



24 Figure 24: Intergenerational play spaces drew by the childrens
Source: Appendix C - Fieldwork Booklet - Workshop Children

2.3.3 Intergenerational Outdoor Play Spaces

A study by Norouzi et al. (2023) on intergenerational outdoor play spaces reveals that play areas designed for different age groups can foster interaction on three distinct levels: (1) visual, (2) visual and auditory, and (3) being together in the same space. For instance, visual interaction can be facilitated through observation windows outside children's classrooms, allowing older adults the opportunity to watch the children play. An outdoor fitness center for older adults, located adjacent to the children's playground, offers the potential for both visual and auditory interaction (Figure 25). Observing the energy of children in the playground can encourage older adults to spend more time outdoors, engaging with the exercise equipment while listening to and watching the children play.

2.3.4 The Appropriate Exercise Equipment

In the Tarwewijk neighborhood, outdoor exercise equipment is available beneath the Trambaan, but it is not designed to

accommodate individuals with limited motor skills, such as children and older adults (Figure 26). The existing equipment tends to be too heavy or not specifically tailored to the needs of both younger and older users. In China, outdoor fitness equipment for older adults (Figure 27) in public parks is ubiquitous and extensively used, with older individuals often waiting in line for their turn (Chow, 2013). These devices have also been found to be highly suitable for children, as demonstrated by an interview with architect Carina Norregaard from LIAG Architecten. She explained, "The motor skills of children and older adults are remarkably similar." This insight enabled the design of an intergenerational playground at the IKC in Schaarnwoude, where equipment is specifically chosen to be accessible and beneficial for both older adults and children.

"The motor skills of children and older adults are remarkably similar." - Carina Norregaard



25 Figure 25: Observing the energy of children can encourage older adults to spend more time outdoors
Source: Norzouzi et al., (2023)



26 *Figure 26: Not suitable for individuals with limited motorskills*
Source: Gemeente Rotterdam (2022b)

Dongning Park



(a) Double-Arm Stretch



(b) Shoulder Wheel



(c) Double Air Walker



(d) Multiple Waist Twister



(e) Leg Pliability Developer



(f) Double Surfboard

Xihu park



(g) Triple Arm Stretch



(h) Shoulder Wheel



(i) Air Walker



(j) Triple Waist Twister

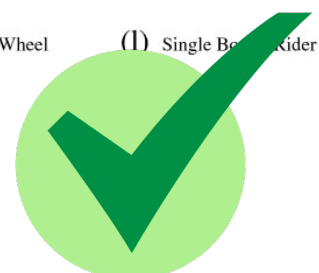


(k) Arm Wheel



(l) Single Back Rider

27 *Figure 27: Intergenerational Playing Space*
Source: Fitness equipment for older adults

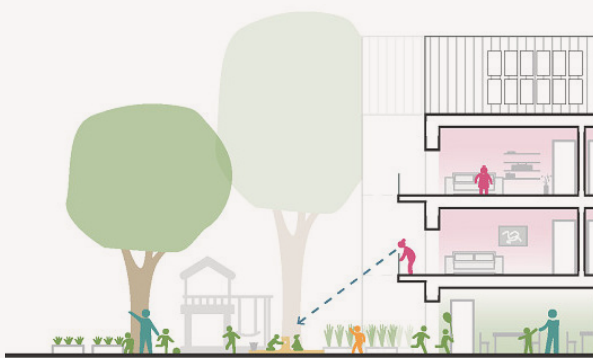


2.3.5 Eyes on the street

Jane Jacobs' concept of 'eyes on the street' (1961) emphasizes the importance of social control and safety through the presence of people around public spaces. This principle is also relevant when designing playgrounds adjacent to residential areas, where children can be closely monitored by local residents. In the case of the Tarwewijk neighborhood, this is a crucial consideration, as there is a high perception of insecurity on the streets (see section 1.1.3). By designing transparent facades around the playground, the visual connection between residents and the play area is strengthened, which not only fosters interaction but also enhances the sense of safety for the children.

CASE STUDY: INTEGRAL CHILD- AND ELDERLY CENTER - LIAG ARCHITECTS

In the design by LIAG Architects, the concept introduced by Jane Jacobs is effectively integrated. The elderly residents have a clear view of the children's outdoor play areas directly from their homes, fostering a sense of safety and community oversight (Figure 28).



28 *Figure 28: Eyes on the Playground*
Source: Appendix C - Fieldwork Booklet - LIAG Architecten

2.3.6 Play Everywhere

A few initiatives (Firestone & Glassman, 2023) are focusing on making play a crucial element of public spaces beyond traditional parks and playgrounds. This "Play Everywhere" approach creates spontaneous opportunities for play in everyday, unexpected locations such as bus stops, laundromats, and supermarkets. The idea is to identify spaces where people of all ages naturally gather and spend extended periods of time without childcare, and where everyone is somewhat bound by circumstance and has limited activities to engage in. For example, laundromats, where people are often waiting for their laundry to finish (Figure 29), present an ideal setting for such playful interventions. By integrating elements of play in these common spaces, the environment is transformed, offering opportunities for fun and connection while also enhancing the social fabric of the neighborhood.



29 *Figure 29: Intergenerational Playing Space*
Source: Firestone & Glassman (2023)

CASE STUDY: DAS NETZ, A MULTI-FUNCTIONAL URBAN PLAY SPACE

Das Netz (The Net) in Berlin is an expansive urban sculpture – a suspended rope structure that creates an elevated public square offering a range of functions for all ages. It serves as an “urban hammock,” a trampoline, and a climbing structure for both children and adults (Figure 30). Additionally, it functions as an informal auditorium for film or theater screenings.

The space hosts social events, picnics, and celebrations, with the adjacent café extending into the area. It also features a belvedere with elevated views of the city, providing an ideal setting for relaxation and a temporary escape.

Symbolically and visually, it connects and bridges a public square, standing as a rare example of a multifunctional play space designed to cater to all age groups.



30 *Figure 30: Intergenerational Playing Space*
Source: NL Architects (2007)

Design Guidelines for this Intergenerational Play Space where different generations come together through fun

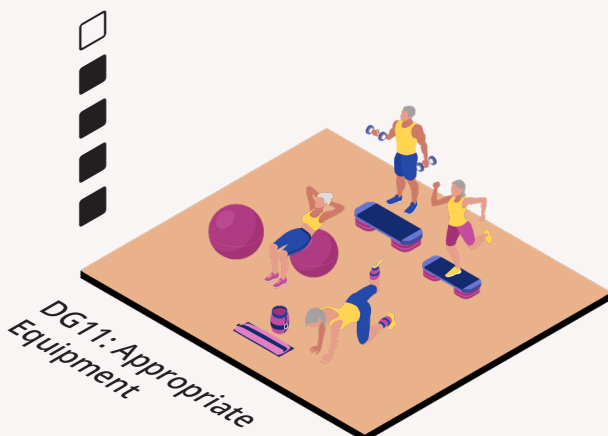
Play is essential for people of all ages, offering numerous benefits such as improved cognitive function and social connections. Encouraging intergenerational play, where children and older adults engage together, can foster well-being and community. This conclusion outlines design principles that can promote such interaction, including incorporating play into waiting areas, positioning fitness equipment near play spaces, and ensuring visibility to enhance safety and social connection. These strategies aim to create inclusive, age-friendly public spaces for all generations.



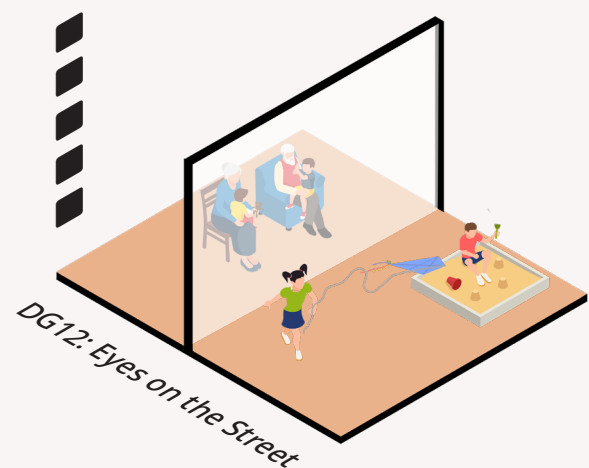
DG9 Indoor Play Spaces: Intergenerational play can be encouraged indoors by placing games in areas where people are required to wait. This could include waiting rooms for elderly individuals picking up their children or laundry rooms.



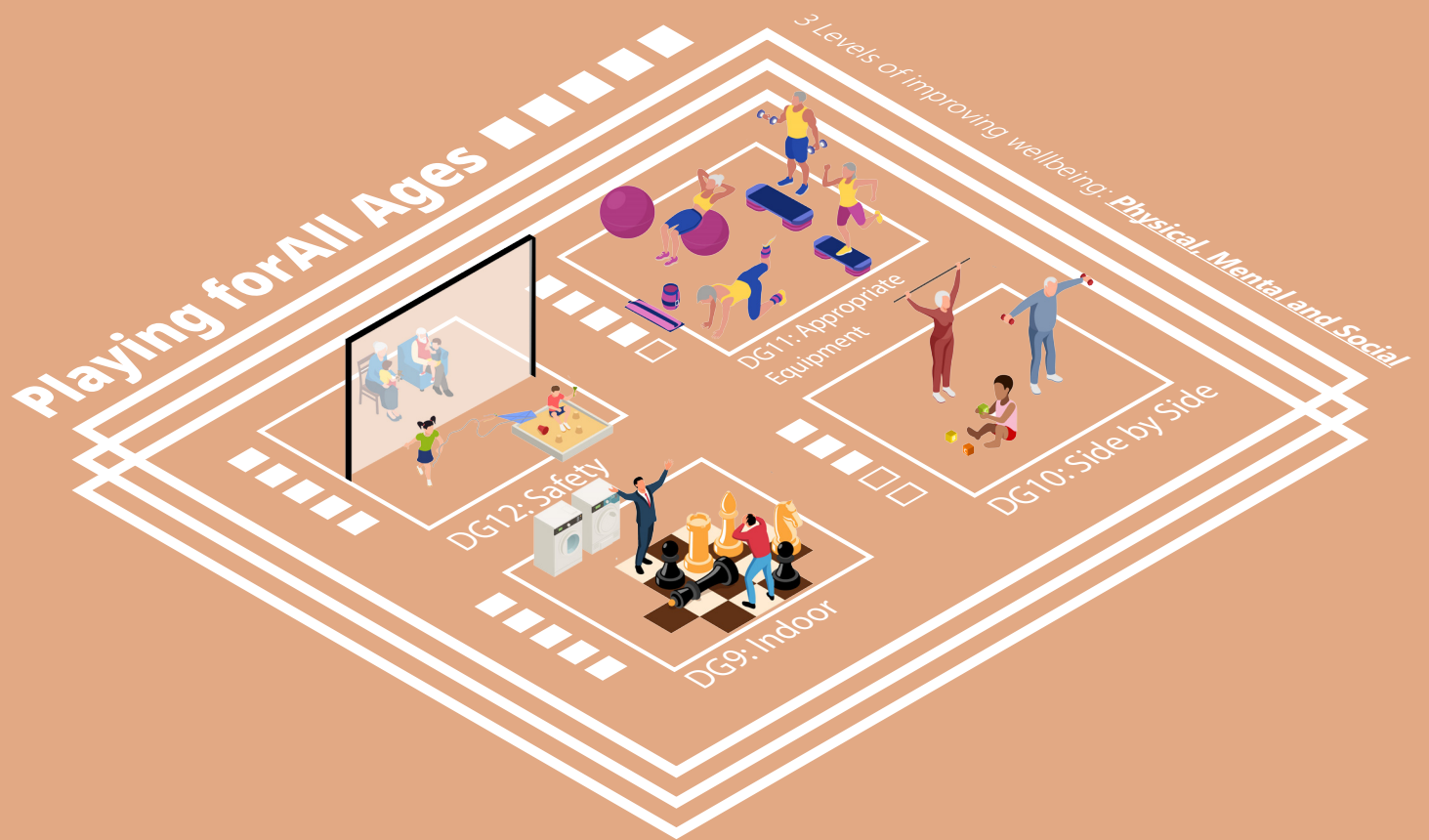
DG10 Fitness and Play Spaces Side by Side: By placing fitness equipment for older adults next to children's play areas, visual, auditory, and physical interactions are promoted.



DG11 Appropriate Equipment: Inappropriate fitness equipment should be replaced, or additional suitable equipment should be introduced to better cater to the needs of both older adults and children.



DG12 Eyes on the Street: Residential units should be located around the play area so that residents can supervise the children playing, fostering a sense of safety and community engagement.



Be



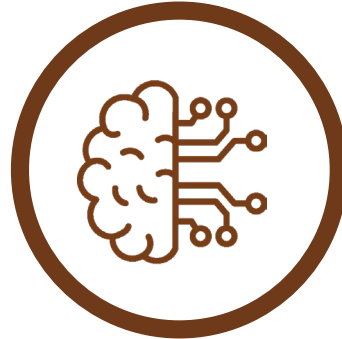
Care



Play



Learn



T O G E T H E R

2.4 - Learning Together

A Multifunctional Studio Focused on Learning, Making, and Connecting

The Tarwewijk is a multicultural neighborhood (Appendix A), which brings with it a diverse range of languages spoken within the community. According to an interview with the principal of two schools in the area (Appendix A), children often struggle to concentrate in class, and educational attainment levels are relatively low (1.1.2). A space dedicated to providing supplementary language and tutoring support would be a valuable addition to the neighborhood. This space could also serve the schools for practical lessons and offer residents opportunities for creative workshops during the day. In the evenings, the venue could host community events, enabling residents to connect in various ways and at different times. Such a multifunctional space would contribute significantly to enhancing social cohesion within the Tarwewijk.

2.4.1 Space for the School

In the Tarwewijk, the number of children with low educational attainment is relatively high (see 1.1.2). Research on local schools indicates that children often struggle to concentrate in class. This challenge has led schools in the area to focus more on practical education, joining the “Werkstad” initiative. This initiative consists of practice-based lessons structured around five teaching methods: Sports, Health, Action, Technology, and Thinking. Integrating classes (of 25-30 children) into the intergenerational environment adds significant value, as it allows for engagement with a large number of children. Providing space for practical lessons aligned with the Werkstad initiative enables children from schools to actively participate in activities within the building.

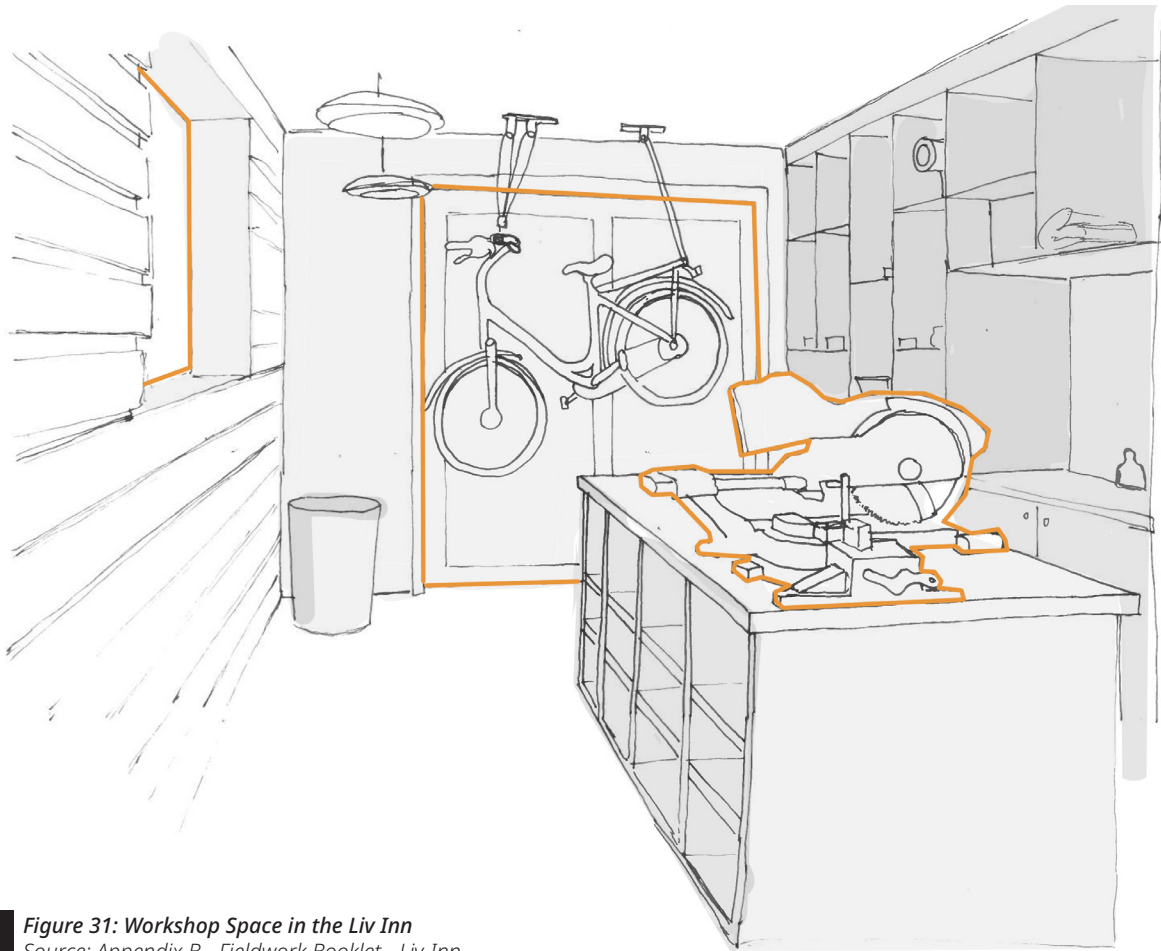
2.4.2 Space for Older Adults

One potential enhancement could be the inclusion of a dedicated space for older adults. In the Tarwewijk, school hours typically run from 8:30 AM to 2:15 PM. Outside these hours, this space could serve as a resource for the elderly. A similar workshop space already exists in the Liv-Inn, where Resident R uses the facility daily for repairing items for residents and assisting others in the neighborhood, such as fixing bicycles (Figure 31).

After school hours, older adults could use this space independently or host crafting afternoons for neighborhood children. Children have expressed a strong interest in engaging in creative activities, particularly alongside older adults (Figure 33). This intergenerational use of the space fosters community connections and enriches the experiences of both age groups.

The theater (Figure 32), although initially designed as a monofunctional space, emerged as the most flexibly utilized area within the Liv-Inn. It served not only as a venue for performances but also accommodated sports and creative classes. Interestingly, despite the existence of designated spaces for these activities, such as the sports room and family room, residents preferred to use the theater.

This preference can be attributed to several factors: its convenient location adjacent to the central hub, which made it easily accessible for residents to join activities; its favorable indoor climate, as other rooms were either too cold or lacked sufficient space; and its adaptable lighting, which allowed the space to be fully darkened—a particularly desirable feature for events like movie nights.



31 *Figure 31: Workshop Space in the Liv Inn*
Source: Appendix B - Fieldwork Booklet - Liv-Inn



32 *Figure 32: Theater Space in the Liv Inn*
Source: Appendix B - Fieldwork Booklet - Liv-Inn



33 **Figure 33: Crafting Drawing**
Source: Appendix C - Fieldwork Booklet - Workshop Children

2.4.3 Space for the Community

The workshop at the Liv-Inn serves as a valuable asset to the neighborhood, engaging not only older adults and children but also the broader community, thereby contributing to social cohesion. A potential addition to this concept could involve introducing a Repair Café initiative, organized by older adults within the space (Figure 34).

A Repair Café is an accessible, community-focused event where individuals come together to repair broken items instead of discarding them. This initiative emphasizes sustainability, waste reduction, self-reliance, and collaboration. Participants, guided by volunteers, can learn to fix defective appliances, clothing, furniture, bicycles, and other objects.

Older adults often possess extensive knowledge and life experience, making them valuable contributors in this setting. By involving them in such initiatives, they help strengthen community bonds while staying active and finding purpose in their daily lives (Newman, 1997).



34 *Figure 34: Repair Cafe*
Source: Repair Cafe (2024)

2.4.4 Multifunctional Use Design

Norouzi et al. (2023) designed an intergenerational environment aimed at fostering social interaction between older adults and children, while simultaneously respecting their individual autonomy and providing spaces for monogenerational activities. The design features a large, adaptable space (Figure 35) that connects areas for child development with those for older adults, facilitating intergenerational engagement.

This flexible space can also serve the broader community during weekends, evenings, or as needed. Its versatility allows it to accommodate various functions, including events, social gatherings, music and dance activities, and an art gallery for showcasing creations by both older adults and children.



35 *Figure 35: Large adaptable space*
Source: Norouzi et al., (2023)

2.4.5. Accessibility for Everyone

A multifunctional space must be accessible to all demographic groups. Currently, there are few accessible buildings for older adults in the Tarwewijk (see 1.1.1), which contributes to their limited presence in the neighborhood. Additionally, many residents in the Tarwewijk have limited proficiency in the Dutch language (Appendix A). Architects, therefore, need to design supportive and barrier-free environments that cater to individuals with hearing, visual, or mobility impairments, enabling them to participate in social, cultural, spiritual, or recreational activities—both within and across generations (Hammel et al., 2015).

Designing a multifunctional space with sensory-inclusive features ensures equal group status among all participants. Creating a space that is welcoming and safe for everyone fosters inclusivity and equal opportunities for community engagement. Key design elements for enhanced accessibility include:

- Smooth, non-slip floors and pathways for easy navigation.
- Visual signage supplemented with braille or audio cues.
- Accessible and reachable materials, such as windows and shelves.

To improve language and educational levels, this space could host tutoring sessions led by older adults or language-learning afternoons where Tarwewijk residents can develop their Dutch language skills (Appendix A). These initiatives not only support the integration of neighborhood residents into Dutch society but also strengthen connections between community members, fostering social cohesion.

2.4.6 Usage and Time Allocation

Ownership does not necessarily imply legal possession of a space but rather the perception of stewardship and responsibility for it (Platform31, 2021). This sense of ownership encourages behaviors such as care, organization, and maintenance of the space. The setup and accessibility of such spaces

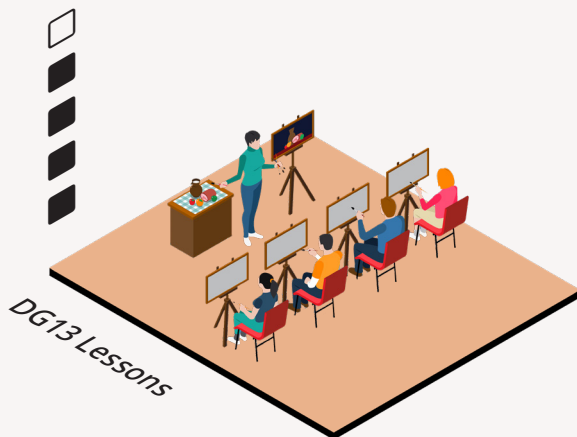
directly contribute to fostering ownership and community-building. Given that this space will serve both as a resource for schools and older adults, it is essential to clearly define usage times and responsibilities.

- 8:30 – 14:15 Ownership: Schools. During school hours in the Tarwewijk (8:30 to 14:15), the space is allocated to schools for practical lessons. The area must accommodate the needs of the “Werkstad” initiative, including facilities for science experiments, cooking, and technical education. Older adults can play a supportive role during these lessons, but the primary ownership during these hours lies with the school.
- 14:15 – 18:00 Ownership: Older Adults. In the afternoon, the ownership shifts to older adults. They are responsible for managing the space, organizing community-focused activities such as repair cafés or craft afternoons for neighborhood children.
- 18:00 – 22:00 Ownership: Community and Municipality. Evenings are reserved for social events organized by the community or municipality. Local organizations, neighborhood teams, or other stakeholders can rent the space. During this time, it can serve as a meeting room, an event venue, or a place for social gatherings.

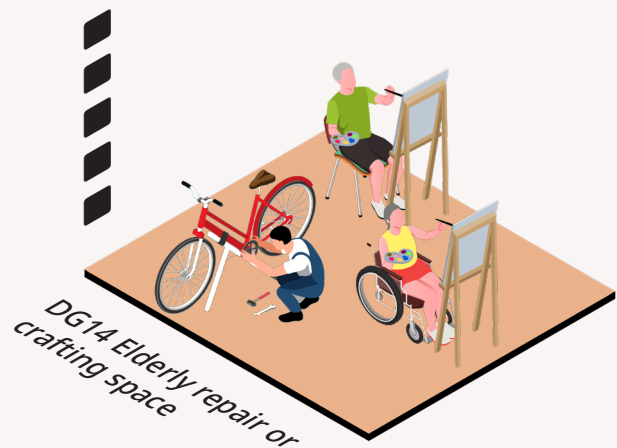
This flexible allocation ensures that the space is fully utilized, meeting the needs of diverse user groups and fostering a sense of shared ownership and community engagement.

Design Guidelines for the Multifunctional Studio: Focused on Learning, Making, and Connecting

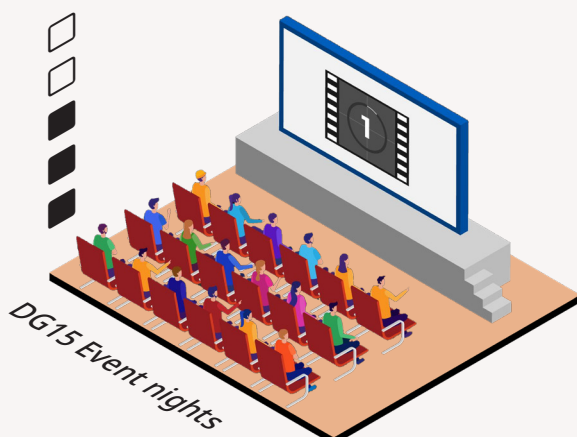
The design of a multifunctional space for the community, the elderly, and children contributes to bringing together these diverse groups of residents. It is essential to determine who has access to the space at what times and the corresponding design requirements. The space is intended for all age groups and neighborhood residents, ensuring it is easily accessible and welcoming for everyone. The design guidelines for this multifunctional studio are as follows:



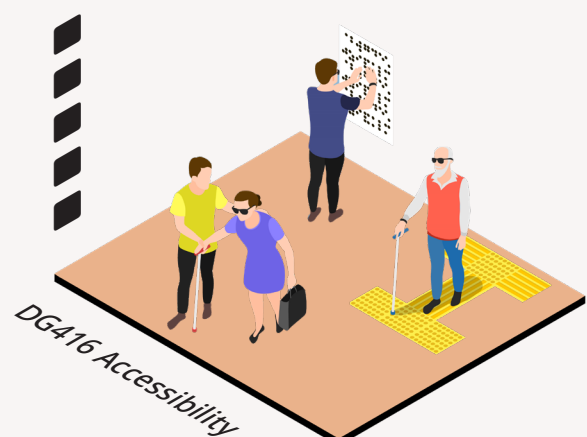
DG13 Provide space for classes during school hours (8:30 AM – 2:00 PM): Accommodates classes of 25–30 children for hands-on technical education..



DG14 Host a repair café outside school hours (2:00 PM – 6:00 PM): Easily accessible from the neighborhood, open and inviting with direct access from the central heart of the building.



DG15 Facilitate events, movie nights, or social gatherings (6:00 PM – 10:00 PM): A flexible, large space capable of seating a sizable audience, equipped with a stage and the ability to create a darkened environment.



DG16 Accessible to all age groups and community members: The design should account for reduced vision, language proficiency, or mobility challenges among both older and younger individuals.



Be



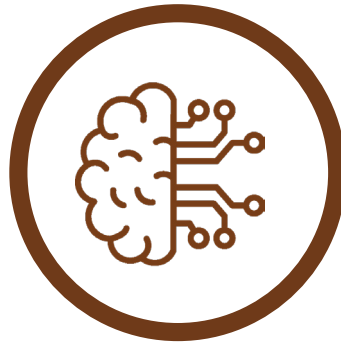
Care



Play



Learn



T O G E T H E R

03

**Conclusion &
Discussion**

3.1 Conclusion

This research aims to address the main question:

“How can an intergenerational environment be designed to promote planned activities and spontaneous meetings between very young and old people to improve their physical, mental, and social well-being?”

To provide a comprehensive answer, three subquestions were formulated, each contributing to a deeper understanding of the design of an intergenerational environment:

1. *“How can the built environment be designed to promote the types of spontaneous meetings in an intergenerational setting to enhance physical, mental, and social well-being?”*

2. *“In what ways do elderly and children prefer to have planned activities in an intergenerational environment to enhance physical, mental, and social well-being in the Tarwewijk?”*

3. *“What can be learned from a case study to promote activities between very young and old people to enhance their physical, mental, and social well-being?”*

The answers to these subquestions were carefully analyzed and presented in Chapter 2, structured around a thematic program. These programs include *The Heart*, *The Animal Park*, *The Play Area*, and *The Studio*. Each program explores specific aspects of the intergenerational environment in detail. Additionally, several case studies were utilized to address the third subquestion, offering valuable insights into fostering interactions and activities between young and older generations. The following sections present conclusions for each program, taking the planned activities, spontaneous meetings and the well-being into account.

3.1.1 The Heart of the Building

Here, planned activities and spontaneous encounters contribute to the mental and social well-being of residents. Planned activities for both young and old depend significantly on the presence of spaces attractive to both age groups. For example, cooking, eating, and drinking are enjoyable activities for children to engage in with the elderly, as evidenced by the daily coffee moments and weekly communal meals observed in the *Liv-Inn*. An open kitchen serves as a hub for these activities, fostering interaction and community. Spontaneous interactions can occur at the entrance, near the mailboxes. Designing these spaces with additional room, shelter from rain or wind, and comfortable seating encourages conversation among residents. Displaying artwork or creations by children and elderly residents in central spaces can also spark intergenerational dialogue. A sense of familiarity within the building is essential to encourage residents to greet neighbors they recognize. The route from shared spaces to private homes should progressively foster this familiarity, enabling a sense of community among a select group of neighbors. Incorporating “in-between spaces,” such as benches or play areas along walkways, further promotes spontaneous interaction. A central, inclusive space for all age groups can mitigate hierarchical divides and create positive, mentally comfortable environments that foster intergenerational interaction.

3.1.2 The Animal Park

Planned activities and spontaneous encounters in the animal park primarily enhance the mental and social well-being of both children and the elderly. Transforming the existing dog park into an animal park allows elderly residents to care for the animals while children visit and interact with them. It is crucial to select animals suitable for care by the elderly and safe interaction with children. Activities such as feeding animals or teaching children about their behavior, nutrition, and care offer opportunities for planned interaction. Thoughtfully designed seating areas in the park, positioned at angles conducive to conversation, can facilitate spontaneous encounters. Animals also have a calming effect on elderly adults, offering mental relief through physical interaction, such as petting or cuddling. For children, interacting with animals fosters confidence and social skills. An intergenerational space featuring animals contributes to the mental and social health of both groups.

3.1.3 The Play Area

Planned activities and spontaneous encounters in play areas contribute to the physical, mental, and social well-being of both children and the elderly. Designing various indoor and outdoor play spaces encourages interaction between the two groups. For example, incorporating playful elements in waiting areas, such as near laundry rooms, allows elderly residents to engage with children while waiting. Outdoor activities require equipment suitable for both age groups, given their similar motor abilities. Current equipment in the Tarwewijk is inadequate and should be replaced or supplemented with age-appropriate options. Placing fitness equipment near children's play areas fosters visual and auditory connections, encouraging spontaneous interactions. Visually connecting play areas with nearby homes enhances neighborhood safety. Play areas reduce feelings of loneliness among older adults, improve cognitive functions and memory, and support physical health, decreasing the risk of dementia. For children, play supports language development, social skills, learning capacity, and reduces age-based stereotypes. Intergenerational play thus contributes significantly to the physical, mental, and social well-being of both children and the elderly.

3.1.4 The Multifunctional Studio

The multifunctional studio supports planned activities and spontaneous encounters, enhancing the social well-being of both children and the elderly. During school hours, the space functions monogenerationally, serving local schools for practical lessons within vocational education frameworks. This contributes to children's development. After school, ownership of the space shifts to elderly residents, who can use it for various activities. These include repairing personal belongings, hosting a repair café for the community, or organizing craft afternoons for children, as expressed by their enthusiasm for crafting with the elderly. The studio can also facilitate tutoring sessions for language and education. In the evenings, the studio can be rented for community meetings, events, or gatherings. Ensuring the space is inclusive and accessible fosters spontaneous encounters. Attention to visual, auditory, and mobility needs, as well as language barriers prevalent in the neighborhood, is essential. By bringing together different age groups, this space enhances the social cohesion of the community.

Planned Activities

The Gathering Heart

2 Levels of improving wellbeing: *Physical, Mental and Social*

DG1: Open Kitchen

DG2: In-Between Spaces

DG3: Bourgeois

DG4: Interior

Playing for All Ages

3 Levels of improving wellbeing: *Physical, Mental and Social*

DG12: Safety

DG11: Appropriate Equipment

DG10: Side by Side

DG9: Indoor

2 Levels of improving wellbeing: *Mental and Social*

DG5: Manipulation

DG6: Bench Angled

DG8: Educational

DG7: Small Animals

Animal Park

Spontaneous Meetings

1 Level of improving wellbeing: *Social*

DG31: Lessons

DG6: Accessibility

Multifunctional Studio

DG14: Bldy Cafe

DG15: Event Nights

3.2 Discussion

This study highlights the challenges faced in Tarwewijk, where the lack of designated spaces for older adults and children has resulted in the absence of elderly residents in the neighborhood and insufficient facilities for children. The research explores how spaces can be created to accommodate these age groups and how their interactions can mutually benefit and strengthen each other. While the study focuses on Tarwewijk, the principles of togetherness, caregiving, play, and learning can be applied to other intergenerational environments as well.

The findings align with the research of Norouzi et al. (2015, 2016, 2019, 2023), which demonstrates how intergenerational environments can be designed to encourage interaction by creating spaces that foster visual, auditory, and physical connections between children and older adults. Additionally, insights from fieldwork conducted with schoolchildren in Nijmegen and residents of an active senior center in Hilversum informed the development of design guidelines for intergenerational living environments.

However, the limitations of this research should be acknowledged. The study is centered on Tarwewijk, yet the school in Nijmegen, although a public school like those in Tarwewijk, is situated in a different physical and cultural context. This difference may affect the comparability of results if a similar study were conducted in a Tarwewijk school. The same applies to the active senior center, which is located in Hilversum. Results might differ if the senior center were situated in Tarwewijk.

Furthermore, the ages of the children studied in previous research vary slightly. In the study by Doff et al. (2024) in Tarwewijk, the children's ages differed from those in Nijmegen. While the Nijmegen study involved children aged 6–8, most children in Tarwewijk were around 13 years old. Future research could standardize age groups and locations to ensure more consistent and comparable results.

3.3 Reflection

Reflecting on my research, I am pleased with the amount of information I gathered through the various methodologies I employed. By actively involving the two target groups—older adults and children—I gained perspectives that I might not have uncovered otherwise. The workshop with children was particularly valuable and enjoyable. Asking them to create drawings of an intergenerational environment where they engage in activities with older adults allowed the results to become highly visual and directly applicable to my study. Through their drawings, the children also illustrated how the built environment would accommodate these activities, which proved to be highly relevant to my research.

The people in Tarwewijk were less accessible. The residents were more reserved and preferred not to participate in interviews or to keep them brief. This made the interview with the director of two local schools in Tarwewijk even more valuable. She provided insights into the family situations of the children that I likely would not have uncovered through direct interviews with the residents.

The literature by Norouzi, a designer and researcher specializing in intergenerational environments, was a significant resource for my work. Her research provided key frameworks for developing the design guidelines. Additionally, the report “Ontwerpen voor ontmoeten” by Platform31 (2021) was instrumental in understanding how to encourage spontaneous interactions in the built environment, which greatly enriched my research.

Overall, I look back on this study as an engaging and diverse exploration, where the combination of different methodologies added significant value to the outcomes of my design guidelines. These guidelines will undoubtedly serve as a strong foundation in the next phase: the design phase.

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This study investigates how an intergenerational environment can be designed for the Tarwewijk neighborhood. This programmatic research establishes guidelines for the four thematic pillars—togetherness, caregiving, play, and learning—that such an environment should fulfill. The focus is on fostering spontaneous interactions and planned activities between children and older adults, contributing to the social, mental, and physical well-being of the participants.



T O G E T H E R



BRIDGING THE GAP BETWEEN YOUNG AND OLD

Being, Caring, Playing, and Learning Together in an
Intergenerational Environment in Tarwewijk, Rotterdam

FIELDWORK BOOKLET

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Designing for a Care in an Inclusive Environment
28-01-2025

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Fieldwork at the Tarwewijk

APPENDIX A

The Tarwewijk is a neighborhood with a diverse population, where both children and older adults face unique challenges in terms of mental, physical, and social well-being. This study focuses on how an intergenerational environment can enhance the well-being of both groups. It examines the mental and cultural needs that must be considered, how social interaction can be fostered, and how the neighborhood's physical infrastructure can be made more accessible. The findings provide insights into how design and policy can contribute to creating a livable, cohesive, and supportive environment for all residents.

A1 - Mental Healthy

During the study on elderly and children in the Tarwewijk neighborhood, it became evident that the area represents a highly diverse and dynamic community where cultural differences and socioeconomic challenges are deeply intertwined. Central to this dynamic are cultural disparities, language barriers, and income inequalities. The design must address this complexity and foster an inclusive environment where children, older adults, and local residents can come together.

A1.1 Families Facing Multiple Challenges

The principal emphasizes in the interview that many students at the school come from families facing multiple challenges, which is often difficult for teachers to identify. She explains:

“When a student’s performance falls short, that child is closely monitored: is it due to classroom dynamics, is something happening at home, and how can we address the issue? However, recognizing these factors is very challenging. Research shows that children who worry, for example about their parents’ financial situation or other problems, are affected by this in the classroom. Identifying these issues remains difficult, but we are making progress. Unfortunately, when we look at the data on child abuse, we know there are children in your classroom or school who are experiencing it. In this neighborhood, those numbers are likely even higher. But you don’t recognize them, and that is confronting. Even with our strong, professional team, we are not able to notice everything.”

A1.2 Cultural Differences

The cultural diversity of the neighborhood is also evident in the schoolyard. When picking up their children, parents often cluster together based on shared cultural backgrounds. While these clusters are shaped by shared religion, language, and culture, they also reflect an underlying social division. Nevertheless, the principal emphasizes that the diversity within the school is a positive attribute.

“Fortunately, we have a well-mixed environment within this department, with no single or dominant ethnic group. The same applies to the teaching staff. This means many children can find someone they can relate to. I’m especially glad that it’s not just young women with a Dutch background. I truly appreciate that.”

In addition, the language barrier is a significant challenge in the neighborhood. Parents often group together based on shared languages, which hinders social interaction across cultural boundaries. This calls for a physical environment that facilitates communication, regardless of language.

A1.3 Low-Income Households

The Tarwewijk is characterized by high turnover rates: many families frequently move due to economic circumstances. This transient nature leads to residents feeling less connected to the neighborhood, as they often perceive their stay as temporary until they find another place to live. Consequently, social cohesion and the sense of community in the Tarwewijk are diminished. The school principal also noted the high rate of student turnover in the area:

“We closely monitor the transitions here: how many children enroll and how many leave, and that percentage is simply very high. This is a ‘transit neighborhood.’ The people who move here are predominantly at the lower end of the socioeco-

conomic spectrum, drawn by affordable housing. We see many people from the Antilles, for example, who were able to secure housing here. One Antillean mother told me that her entire family is in Amsterdam, so I asked her: why are you living here? She said it's because she could find a home here, something almost impossible for her there. So she lives here, very isolated from her family and without knowing anyone in the area. This is a story we hear often in this neighborhood."

A1.4 Conclusion: Guidelines for an Inclusive Neighborhood for Young and Old

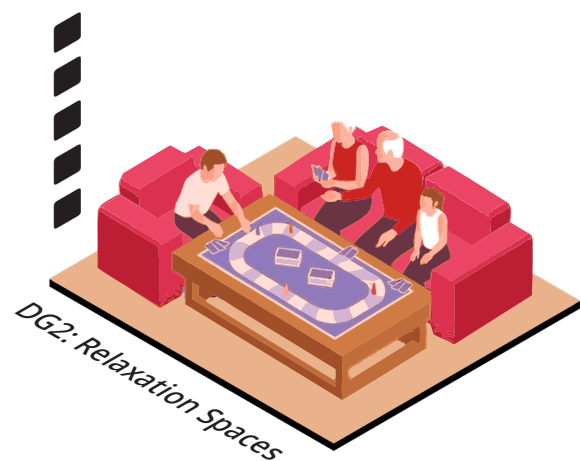
The Tarwewijk must once again become a neighborhood where residents feel at home and wish to stay. This requires taking into account the differences among resident groups, particularly cultural differences, income disparities, and language barriers.

DG1: Support for the Social Well-being of Children from Families Facing Multiple Challenges

Design spaces where mentors or trusted individuals can engage in informal and accessible conversations with students. These spaces should be easily accessible from both the school and the neighborhood, ideally located near a communal area and the main entrance.



DG2: Relaxation Spaces Design calming spaces within the school where students can retreat to a safe and comforting environment. Use soft colors, comfortable seating, and sound-dampening materials to create a warm, homely atmosphere. These relaxation areas offer a sanctuary for children with various concerns, allowing them to unwind and recharge.



DG3: Cultural and Religious Inclusivity

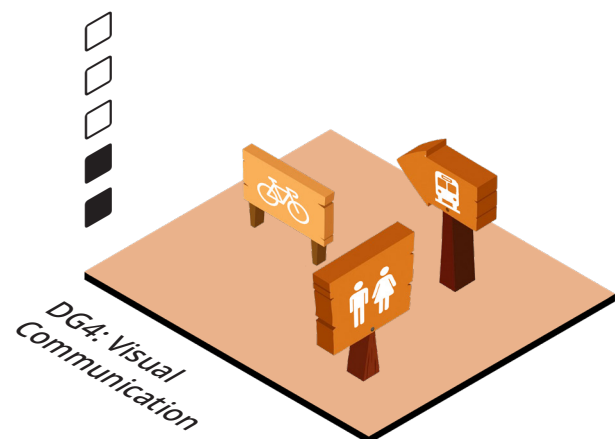
Design spaces where diverse communities can come together to practice their religion. This could include displaying cultural symbols or artwork that fosters a sense of recognition and connection.



DG3: Cultural and Religious Inclusivity

DG4: Visual Communication

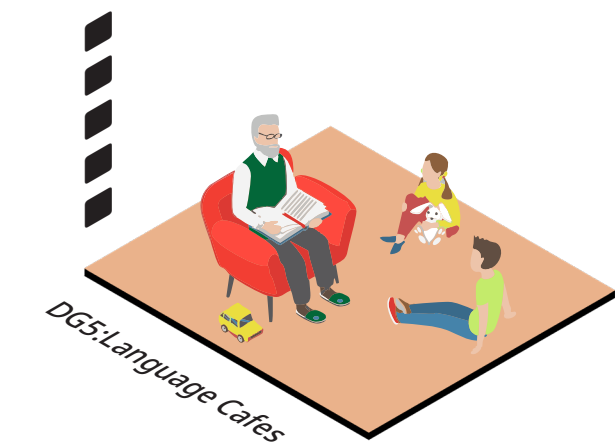
Given the many different languages, communication should primarily be visual, using images instead of words. Use of pictograms and universal symbols in signage will ensure that everyone can easily navigate the building.



DG4: Visual Communication

DG5: Language Cafés

Develop spaces for informal gatherings where people can assist each other with language skills. This will allow children to learn a language they can use to communicate more easily within the neighborhood. Older residents who are proficient in Dutch could help pass on their language knowledge to the children.



DG5: Language Cafés

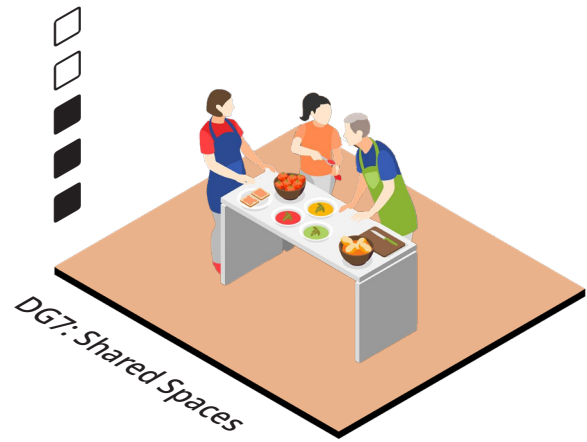
DG6: Spaces for Affordable Activities

Ensure that no activities within the building are costly. In the Liv-Inn, for instance, a stamp card can be purchased for 15 euros, allowing participation in organized dinners five times. The cost of food is kept relatively low, encouraging people to join in.



DG6: Spaces for Affordable Activities

DG7: Affordable Housing with Shared Spaces Since many residents of the Tarwewijk have limited financial means, housing should remain affordable. The sharing of communal spaces can also help keep costs low.



A2 - Social Environment

Schools play a crucial role in connecting neighborhood residents and fostering social interaction within the community. While the school has expressed a desire to revert to a monofunctional structure focused solely on education, a multifunctional approach offers significant opportunities to further enhance social cohesion in the neighborhood. Through targeted architectural interventions, schools can serve as central hubs where not only education is provided but also interactions between children, older adults, and other residents are facilitated. Actively involving parents in the design process of the school fosters a sense of engagement and belonging, further strengthening social cohesion within the community. In this way, schools can serve not only as educational environments but also as vital contributors to building a stronger sense of community in the neighborhood.

A2.1 Mixed-Use Buildings Enhance Social Well-Being

The public primary school (OBS) De Globe and the Special Primary Education (SBO) Sonnevank are located in a heritage-listed building on the Zwartewaalstraat in the Tarwewijk. Eight additional classes from OBS De Globe are currently housed in a nearby annex on Den Hertigstraat. Part of the school building on Zwartewaalstraat is currently rented out for cultural activities by the House of Urban Arts. However, there are plans to repurpose this section of the building for educational purposes, allowing the eight classes currently located in the annex to move to this site.

The social benefits of a mixed-use building extend beyond the provision of education alone. Mixed-use buildings promote the social well-being of residents by encouraging social activities as complements to essential activities such as work or school. This concept is rooted in the findings of Gehl (1987), who argued that the presence of diverse functions in a building or neighborhood fosters greater social interaction and a stronger sense of community.

In the case of the Tarwewijk, the mixed-use nature of the building, combining education and cultural activities, can play a crucial role in enhancing social cohesion within the neighborhood. Moreover, House of Urban Arts is a

highly popular organization among all age groups in the community, and its departure would be deeply regretted. The cultural programming offered by this organization fulfills a vital social function, contributing to the cultural identity of the neighborhood and bringing together residents of different ages.

A2.2 Parental Engagement in Schools

Parental involvement plays a key role in the educational experience, as it strengthens the bond between parents, students, and schools. Parent B, who traveled all the way from Slinge to pick up her children, shared that parents collaborate with the school to organize various activities and lessons aimed at teaching practical skills such as cooking, gardening, self-defense, and a wide range of other activities. She volunteers in the cooking classes and seems highly engaged with the school community. Parent A also noted that the school places a strong emphasis on involving parents:

"The school offers many activities that not only engage parents but also motivate them to become an integral part of their child's school environment."

However, the principal indicated that involving parents has proven to be a challenge.

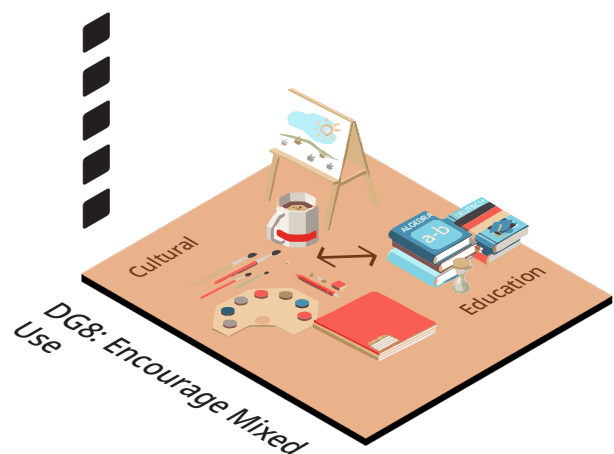
"We try our best to involve them, but it remains difficult. A significant portion of the parent population seems to have a lower level of education, similar to their children, and of course, language barriers are also a major issue. Engaging parents requires a tailored approach, and this is challenging. Additionally, many parents work or must complete tasks to receive social welfare benefits, leaving them with little time to be present. We do have some parents who help with playground supervision, one parent who assists with cooking, and others who are involved, but it is not a large group. When it comes to their own child, most parents show up, but interest in school activities is much lower."

Thus, while parents appreciate the school's efforts to involve them, the reality is that relatively few parents actively engage in the school's extracurricular activities.

A2.3 Guidelines for a Mixed Use Campus

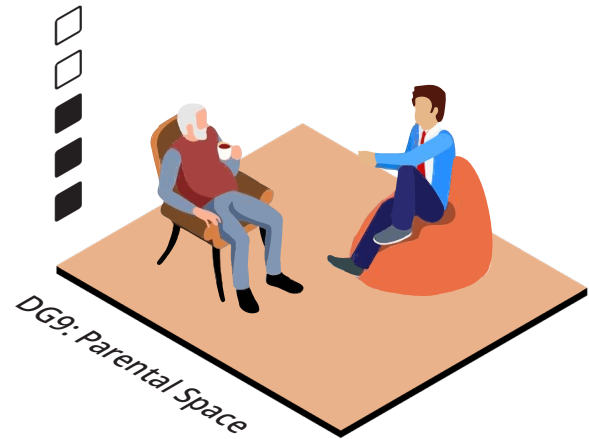
Based on these considerations, the following architectural design guidelines can be formulated to create a mixed-use school campus that brings together various ages, functions, activities, and organizations within the neighborhood:

DG8: Encouraging Mixed Use A multifunctional school can contribute to a stronger sense of community within the neighborhood by bringing together diverse educational and cultural institutions under one roof. This provides children the opportunity to learn not only within the school environment but also to benefit from the knowledge and experiences offered by other organizations and community initiatives. In this way, the development of children is not only supported, but a platform is created where different generations and cultures can meet and learn from each other.



DG9: Accessible Parental Space

Create an inviting space for parents, such as an open and transparent lounge where they can easily engage with the school staff. This encourages parental involvement and strengthens the connection between the parents and the school community.



A3 - Physical Inclusivity

Creating an inclusive and accessible neighborhood requires careful consideration of the diverse needs of its residents. In the Tarwewijk, where the population includes both older adults with limited mobility and children with specific spatial and safety requirements, the design of public spaces and buildings must address these varying needs. Accessibility goes beyond physical infrastructure, encompassing usability, health, and the facilitation of social interactions in shared environments. By integrating principles of universal design and prioritizing safety, accessibility, and inclusivity, the neighborhood can evolve into a space that supports the well-being of all age groups while fostering community cohesion.

A3.1 Accessibility and Usability

Observations in the Tarwewijk highlight significant opportunities for improving accessibility for individuals with limited mobility. Currently, the neighborhood has only one public transport stop, the tram stop at Brielselaan, that is wheelchair-accessible. It is crucial that this stop is easily reachable for individuals using wheelchairs or walkers, without obstacles that hinder their mobility.

Within buildings in the neighborhood, such as schools and community spaces, short and efficient routes should be designed to ensure that older adults can quickly access their essential facilities. This prevents them from having to traverse unnecessarily long distances within the building. On a neighborhood level, the same principle applies: older adults are, according to Platform31 (2024), heavily dependent on the so-called “3 A’s”—Apotheek (Pharmacy), Albert Heijn (Supermarket), and Arts (Doctor). These basic amenities must be easily accessible, ensuring that older residents can navigate the neighborhood without unnecessary challenges.

For school environments, it is equally important to establish short, clear routes. Children should not have the opportunity to wander through the entire building during school hours. Clustering school spaces promotes both organization and safety for students and staff. The same principle applies to the school playground. A fenced and well-organized play area ensures that children cannot leave the school premises unnoticed, while also provid-

ing a secure and controlled space for outdoor activities and social interactions.

By adhering to these design principles, an accessible and safe environment can be created that enhances inclusivity and usability in the Tarwewijk for both older residents and children.

A3.2 Different Modes of Mobility

Designing a neighborhood must consider the diverse modes of mobility utilized by its residents. For younger individuals, the availability of cycling infrastructure and other modes of transportation, such as skateboarding and scooters, is often a higher priority than for older residents (Roe et al., 2021). Simultaneously, connections within the neighborhood must be designed to ensure ease of access for elderly individuals and those with mobility challenges. This includes features such as wheelchair-accessible pathways, short walking distances, and seamless integration with public transportation systems to enhance overall accessibility.

A3.3 Weakened Immune Systems and Hearing Challenges

Bringing children and elderly individuals into close physical proximity introduces potential health risks, particularly regarding infection transmission. Children are often asymptomatic carriers of viruses and bacteria, such as cold and flu viruses, which they may inadvertently pass on. Older adults, who often have weakened immune systems or underlying health conditions, are more susceptible to infections

and may face more severe complications. This necessitates implementing preventive measures, such as proper ventilation and hygiene protocols, to mitigate the risk of infections.

Moreover, age-related hearing impairments among the elderly can pose challenges in shared spaces, particularly as children tend to be loud and energetic. This can create discomfort or hinder communication for older individuals. To address this, shared environments should incorporate acoustic design elements, such as sound-absorbing materials and clear zoning, to ensure a harmonious coexistence where both children and elderly individuals can comfortably interact without causing disturbance.

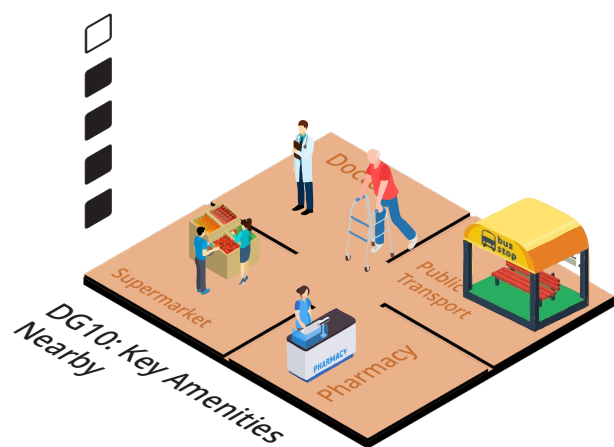
By addressing mobility needs alongside health and auditory considerations, the built environment can be optimized to foster accessibility, safety, and well-being for all age groups.

A3.4 Guidelines for a Physically Inclusive Neighborhood

A physical inclusive neighborhoods prioritize accessibility, safety, and comfort for residents of all ages. By incorporating short routes, accessible transport, and adaptable shared spaces, such environments foster connection and usability while addressing diverse needs of different age groups.

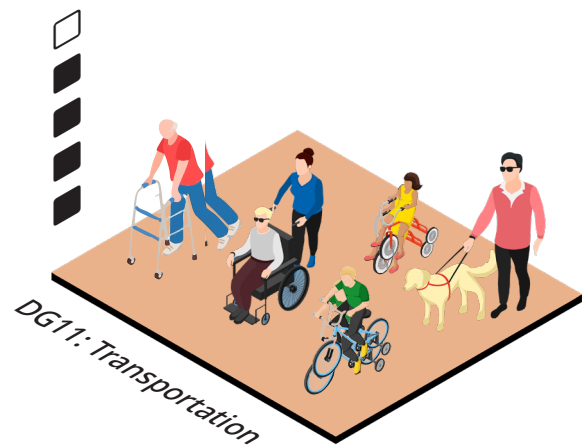
DG10: Short and Inclusive Routes for Key Amenities

Ensure short and accessible routes between key amenities. These routes should be safe and appealing for all age groups, incorporating adequate crossings, shelters, resting areas, and lighting. They must also provide sufficient space for wheelchairs and walkers, with lowered curbs at crossings to facilitate mobility for individuals with physical limitations.

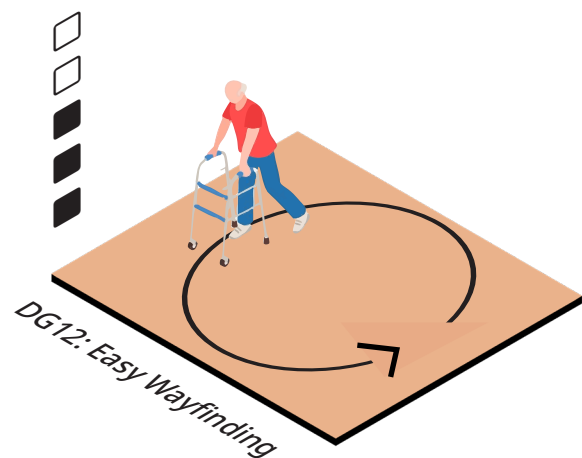


DG11: Prioritizing Walking and Cycling

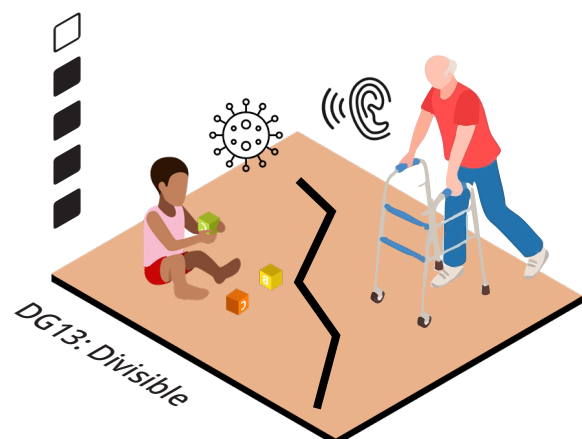
The design must account for the varied modes of mobility used by residents. Children primarily use bicycles, skateboards, or scooters (Roe et al., 2021), while older adults often take walks around the neighborhood or use mobility scooters. The neighborhood should support these modes with safe and accessible pathways.

**DG12: Easy Wayfinding with Courtyard**

Courtyards are effective communal spaces, as they provide a secure environment for both children and other residents to engage without the risk of wandering off. The design of a courtyard building includes a clear pathways that allow users to easily find their way back to the starting point, enabling short and convenient walking routes, particularly for those who prefer circular pathways.

**DG13: Divisible Building Layouts**

Given the risk of infection, it is essential to design spaces that can be separated between younger and older residents. Older adults also express a need for occasional retreats from the presence of children, emphasizing the importance of providing private and quiet spaces. Since children are frequently loud, it is crucial to design environments with sound-absorbing materials and zoning that minimize noise levels.



A4 - Conclusions on Mental, Social and Fysical Improvements for Elderly and Children in the Tarwewijk

The study of the Tarwewijk neighborhood highlights the urgent need to create an inclusive and accessible environment where children and older adults feel at home and can actively participate in the community. This research identifies three key challenges that must be addressed: mental health, cultural and social inclusion, and physical accessibility.

Many children in Tarwewijk grow up in families facing multiple problems, which increases their need for safe and supportive environments. It is crucial to provide them with access to spaces where they feel comfortable to openly communicate with mentors or psychologists. Furthermore, language poses a significant barrier: a substantial proportion of the children have little to no proficiency in Dutch. Consequently, the use of visual communication, such as pictograms and imagery, is essential in the design of facilities and buildings.

The cultural and religious diversity of the neighborhood calls for design solutions that allow for the practice of religion and foster a sense of cultural recognition and familiarity. Such spaces contribute to feelings of belonging and acknowledgment. Additionally, the socioeconomic context of Tarwewijk is a key consideration. Many families have limited financial resources, making it imperative to integrate affordable amenities, such as local shops and cafés, into the neighborhood's design. High-end establishments could hinder accessibility and diminish the sense of inclusivity.

These challenges are not only relevant for children but also for their parents. Engaging parents in the design process and creating spaces where they feel welcome strengthens social cohesion. Such an approach transforms the neighborhood into a social catalyst, fos-

tering connections across generations and communities. The integration of multifunctional spaces enhances these connections. An example is OBS De Globe, where education is combined with cultural activities through the House of Urban Arts. Although this combination is currently under pressure, preserving and expanding this model in the neighborhood is of vital importance. Multifunctional spaces not only provide a place for children but also promote interactions and collaboration among residents of different ages and backgrounds.

Regarding the physical challenges in the neighborhood, the focus is particularly on older adults. They require proximity to the so-called "three A's" (supermarket, doctor, and pharmacy) and appropriate infrastructure to meet their mobility needs. This includes designs that are accessible to individuals using walkers, wheelchairs, and service dogs, as well as clear and short routes within and around buildings. To minimize noise pollution and the risk of infections between children and older adults, buildings should be designed to allow functional separation. This can be achieved by creating distinct spaces for different user groups while still facilitating connection and interaction.

By adhering to these design guidelines, an inclusive living environment can be created that improves the mental, physical, and social well-being of both children and older adults. This not only benefits individuals but also strengthens the community as a whole, making Tarwewijk an attractive and livable neighborhood for all generations.

Fieldwork at Liv Inn Hilversum

APPENDIX B

Fieldwork Report
AR3AD110 Dwelling Graduation Studio:
Designing for Care in an Inclusive
Environment (2024/25 Q2)

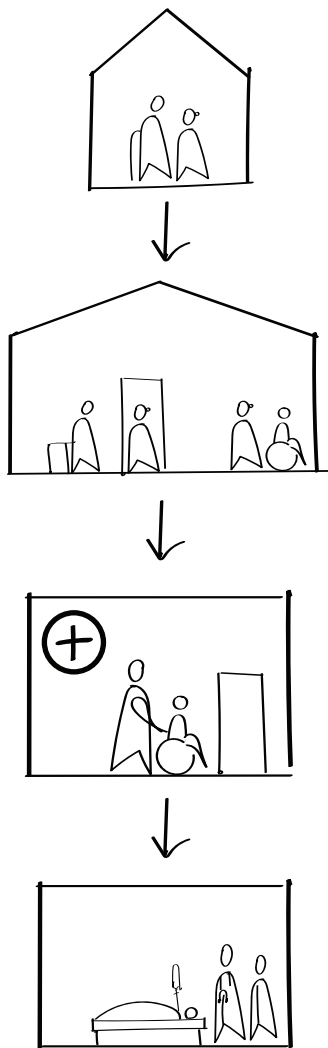
TU Delft // Faculty of Architecture and
the Built Environment // Department of
Architecture Chair of Architecture and Dwelling

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01 Traditional Care vs. Liv Inn Model

Insights into the comparison between traditional care models and the Liv Inn model are derived from an interview with Peter Boerenfijn, the director of the Dutch housing cooperative Habion. The traditional approach to elderly care is characterized by a phased progression, beginning with individuals aging in their own homes. This is followed by relocation to a centralized institutional care facility, often transitioning through stages such as elderly care homes, specialized care facilities, and ultimately, hospice care.



Independent Living at Home:

- Independent living with minimal or no care needs
- Care is brought in as needed but often leads to isolation due to a lack of community support.

Elderly Care Home:

- When living alone becomes difficult, people move to an elderly home.
- Basic care and assistance are provided, but the transition can feel disruptive and disempowering for many.

Specialized Care Facility:

- Individuals requiring intensive medical or dementia care move to highly specialized facilities.
- Social connections and personal environments are often left behind.
- Long waiting lists and shortage of staff makes it not scalable for the future

Hospice:

- In the final stages of life, individuals are moved to a hospice for end-of-life care.
- This can mean another significant transition for the individual and their family.



The Liv Inn model brings care to residents through three pillars: Apartment Living, with adaptable, independent apartments designed for aging in place; Community Spaces, fostering social interaction and active ageing, and a resident-driven community; and Care on Demand, offering seamless, comprehensive care within the same community, ensuring continuity, dignity, and stability without relocations.

Pillar 1: Apartment Living

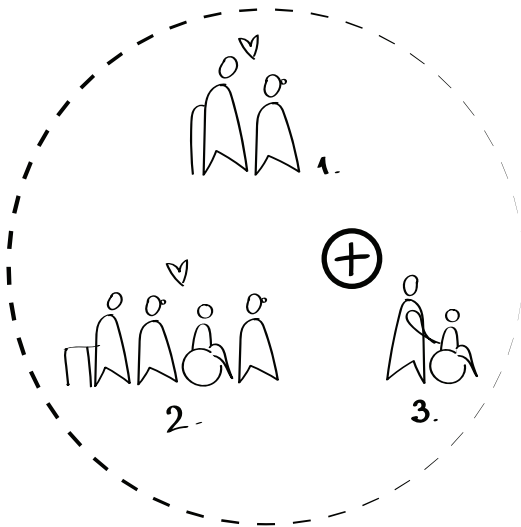
- Residents at the complex live independently in apartments designed for aging in place.
- Apartments are adaptable to evolving care needs, eliminating the need for relocation.
- Encourages ownership, autonomy, and personalization of living spaces.

Pillar 2: Community/Communal Spaces

- Shared spaces foster social interaction, reducing isolation and building a sense of belonging.
- Activities, events, and shared meals create a vibrant, active community.
- Residents actively shape the community, contributing to its development and purpose.

Pillar 3: Care on Demand

- A full spectrum of care is available, from minimal support to specialized end-of-life care, all within the same building.
- Care providers work seamlessly within the community, supporting residents' independence and dignity.
- No disruptive moves between facilities, ensuring continuity and emotional stability.



02

Integration & Interview Process



Liv Inn Hilversum was created through the residents' ideas on how they wanted to age, according to the developer that created the Liv Inn in Hilversum. Moreover, over a hundred future-oriented social housing units are realized with interactive communal living spaces, where elderly can receive care if necessary and where residents are both central and in charge over how you (actively) age.

Entering the Liv Inn

The policy for all Liv Inn locations is that residents have to be motivated to live there. Yet, it differs per location how people can apply for a room. Sometimes they can do it directly and other times it has to be done through "WoningNet", a room application website. Everyone must meet income requirements for rental housing set by the government per room type or Van Der Linden. Additionally, a check is done for their age. If they meet all of these requirements, they are invited to preliminary talks, are interviewed and get a tour through the Liv Inn. Although the Liv Inn has "care rooms", it is an important part of the interview and the contract that they sign where the elderly state that they are allowed to live at the Liv Inn as long as they are not a threat to themselves or to others, hinting that the Liv Inn accommodates a limited level of (professional) care. For the students that are allowed to live in the studio's in the building, the agreement is that they have to study something related to the topic of elderly people.

Becoming a Member of the Liv Inn Association

The association is set up by and for the residents of the Liv Inn. Through this, residents are able to exercise their hobbies, participate in many social events (e.g. communal dinner, happy hour at the communal bar) or writing in the Reuring magazine of the building. Residents are able to become members of various groups that actively organize activities within the Liv Inn and they are always able to communicate and propose their own initiatives or ideas that they have for the community (e.g. creative club, finance commission and cooking team). The membership is €20 per year and €40 for residents that do not live in the Liv Inn itself.

03

Interaction Between Age Groups



Research of student living in the Liv Inn Hilversum

The research of the student explores the dynamics of multigenerational interaction within a communal living environment, focusing on its impact on resident well-being, inclusion, and the effectiveness of communal spaces. The findings highlight both positive outcomes and significant challenges, offering valuable insights into how these spaces can foster relationships across age groups. The research is motivated by an interest in understanding how shared living environments like Liv Inn can reduce isolation and promote meaningful connections. Its problem statement emphasizes the difficulty of designing communal spaces that meet diverse needs while fostering supportive, intergenerational relationships.

Positives

Interactions between age groups at Liv Inn contribute significantly to building a sense of community and mutual support. Many residents reported reduced feelings of isolation due to opportunities for interaction created by the presence of other older individuals and (occasionally) younger residents, such as students. These intergenerational exchanges often include assistance with daily tasks, participation in activities, and shared learning experiences, fostering a sense of purpose and belonging.

Communal spaces are essential in facilitating these connections. Areas such as the “binnentuin”, lounges, and kitchen-dining rooms serve as meeting points for informal interactions and structured activities, including communal meals and celebrations. These spaces allow for spontaneous exchanges and provide a framework for organized events, enhancing the overall social fabric of the community. Residents who actively participate in these activities often report an improved quality of life, as the interactions provide emotional support and meaningful engagement.

Negatives

Despite the strengths of Liv Inn’s multigenerational setup, several challenges remain. Social dynamics within the community sometimes lead to exclusion, particularly for newcomers or quieter residents. Tight-knit groups among long-term residents occasionally create barriers to inclusion, leaving some individuals

feeling disconnected. Additionally, gossip and cliques can exacerbate feelings of exclusion, discouraging participation in activities and reducing the effectiveness of communal spaces in fostering inclusion.

The lack of volunteers to support community events limits opportunities for interaction. This challenge is particularly evident among residents with limited mobility, who may find it difficult to access or fully utilize communal spaces. Design shortcomings, such as inadequate seating or unwelcoming corridors, further restrict engagement for less active individuals. While many residents benefit from the communal setup, those unable to participate due to physical or social barriers often experience continued isolation. Additionally, in an interview with the student it became evident that there is limited interaction between the students and the elderly due to varying schedules and interests. The student further explains that most activities are focused on the elderly, which makes it less appealing for the younger audience to join. Besides that, constant negative comments about their attendance and lack in support by the elderly further demotivate them to participate in the communal activities. Even piloted activities initiated by a student-based commission struggled to launch after having minimal elderly attendees.

Behavioral issues during social gatherings, such as excessive alcohol consumption during the "happy hour" at the communal bar, have disrupted community harmony on occasion (e.g. fight and medical incidents that required police and/or medical interventions). Such incidents detract from the sense of comfort and inclusivity that these spaces are designed to promote.

Recommendations to use in Tarwewijk

- **Boost Volunteer Participation:** Actively engage more residents, especially younger and mid-aged individuals, to support and organize activities, reducing reliance on a few individuals
- **Promote Inclusion:** Develop programs and small-group activities to ensure quieter or less mobile residents feel involved and valued within the community.
- **Improve Accessibility:** Adjust communal spaces to accommodate mobility limitations, ensuring they are welcoming and usable for all residents.
- **Establish Behavioral Guidelines:** Introduce clear rules to address issues like gossip, exclusion, and disruptive behaviors, fostering a more inclusive and respectful environment. The student mentioned in an interview that this might be outsourced so the role does not fall on the residents

04 Buddy System



The buddy system was introduced to the residents of the Liv Inn as a way to provide mutual support between the elderly and the students. The idea is that each student (e.g. a newcomer) is assigned to several elderly people and helps them with their daily tasks, such as doing the groceries, or digital hurdles, and participation in the social activities. In an interview with an elderly resident, she explained that a student helps with the cooking and cleaning three times a week and doing the groceries, which helps her a lot since she has limited mobility due to ageing. Another interview with a student highlighted that the students are “stand-by 24/7” and ready to call for help in case the elderly need medical attention, if they fall for example.

“Spread too thin”

Although the buddy system seems like a fitting concept to promote social interaction and mutual support between the two age groups, the student-interviewee says the system is not convenient at the moment. This is mainly due to the elderly who are becoming more dependent on the few students (11 in total) that in the Liv Inn. She mentions that it can be very unfamiliar for newcomers (students)

that are assigned to some elderly that need more informal care such as help with the cleaning, cooking or groceries. It results in a lot of pressure for the students as they already have a busy schedule. A proposed solution is to change the ratio between students and elderly, so students can cover for each other when one is sick or not available at that moment to help the elderly for example. Additionally it can also increase the number of people the elderly resident meets and foster more meaningful relationships between the two age groups.

Neighbours as buddies

The students live mainly in the "corners" of the buildings, as this is where the studio-apartments are located. At least two students live in every corner. The student-interviewee mentions that this helps the neighbouring elderly to spontaneously meet and interact with the younger age group. Furthermore, she mentions that she prefers these spontaneous meetings in the hallway or at an elderly resident's room more than meeting new people at the communal activities, as it is more organic. Lastly, she finds it interesting to further research how a mix student-elderly clusters in the hallways (instead of only the corners), might affect the stimulation of building meaningful relationships.

05

Situation in Neighborhood



Source: Habion; Vragen, antwoorden & plattegronden Liv inn Hilversum

The Liv Inn buildings in Hilversum is designed around a central core or “heart” that organizes the surrounding space. The ensemble consists of three individual buildings set within a park-like environment. Access points are strategically placed along major streets such as Vondellaan, Vaartweg, and Boomborglaan, emphasizing its orientation towards easy navigation and fostering community interaction with the neighborhood.

06

Interviews at Liv Inn Hilversum



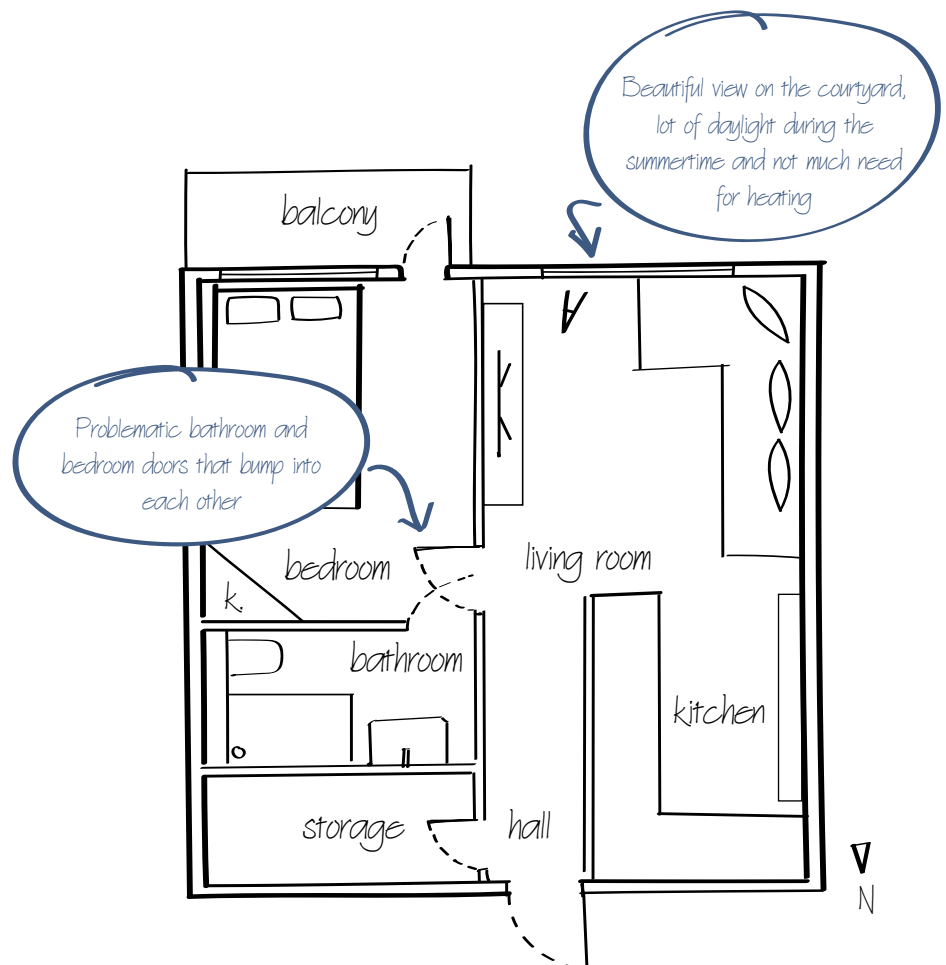
Name: P
Gender: F
Age: 70
Persona: The Volunteering Group



- P is responsible for finances, contracts, and planning activities at the Liv Inn.
- She moved to Hilversum 2-3 years ago to age in a more active way. She is one of the most **active volunteers** at the Liv Inn in planning activities and also coordinating with Habion and the Congress.
- She prefers to **take the stairs** instead of the elevator to stay active and healthy.
- She is frustrated by the lack of volunteers who are willing to help organize events and activities. There is a lack of younger, active adults (aged 50-60) who are more mobile. In her opinion, the group predominantly consists of people aged 80-90, many of whom stay in their apartments and do not interact much. Communal dinners are planned in the shared kitchen, but only about 20 people (or fewer) attend, partly due to the **lack of volunteers and willingness to participate**.
- P believes that more intensive care facilities are not well-suited for the Liv Inn and suggests that residents who need more support may need different housing arrangements. She has ongoing discussions with Habion about how to handle residents who may pose a danger to themselves or others (referring to people with dementia), as they need intensive care and are not suited to participate at Liv Inn.
- Prefers more residents from Hilversum, as most residents are from other parts of the Netherlands.
- Her apartment is 38 m² and, while compact, it is well suited for her needs. She has a beautiful **view of the central garden**. She is frustrated with the way the **bathroom door collides with the bedroom door**, says that the room must have been "designed by a man" and didn't take into account her needs
- She is dissatisfied that she does not have a say in how the garden is managed (interior policies amongst the residents as to who is in charge).
- Likes to watch tv in her free time
- She plans to travel to Spain for four months during the winter. Habion (management) does not accept new residents who plan to be away for extended periods, as they want **active participants**.
- Pauline mentions that Habion's interview process ensures that candidates are available to stay at the Liv Inn most of the year and don't spend too much time away in the summer or winter. She enjoys walking, but here not so much because there aren't walking trails/routes. She likes to run and ski.
- She is trying to smoke less



View of the central courtyard from P's room



P's apartment, located in the older part of the Liv Inn Hilversum building



Name: E
Gender: F
Age: 75
Persona: The Volunteering Group

- E is an **active participant** in **communal dinners** at the Liv Inn, where she cooks once a month.
- She enjoys cooking Surinamese food with spices and finds it relaxing.
- She used to be heavily involved in **gardening** but stepped back due to internal disputes and her **arthritis**, which makes movement difficult. The head of the gardening committee is very stubborn and insists on doing things his way.
- Her husband R assists with electrical work, lighting and other technical chores within the community. R is very active at the workshop space by the entrance, he is there most of the day.
- Both E and P commented that the Liv Inn might not be the best fit for individuals with limited mobility, as they may struggle to fully participate and contribute.
- Enjoys the happy-hour **gatherings**



Name: E
Gender: F
Age: 77
Persona: The Active Group

- L, an American resident, enjoys **playing pool** with her friend circle in the evenings.
- She has been living in the Netherlands for around 40 years due to her husband's work, and her grasp of Dutch remains limited, especially in formal **language contexts**. She therefore also struggles to fit in at the Liv Inn community at times.
- She mentions that she worked at Schiphol for a long time for multiple airlines, and that she had to wake up early, so now she tends to sleep in.
- L's apartment is small, which she likes, but she misses some of her old furniture, which she had to leave behind in her old house which was bigger and had stairs. She would like to have a bigger countertop for **cooking**.
- Sometimes, she **forgets** where she put things around her apartment due to the limited storage space.
- When asked if she likes the community, she said it has both ups and downs. She likes to stick with her friend group which periodically plays pool together.
- She mentions **walking her dog** Max in the evening, so she can wait until the late morning before walking him again.
- She also joined in the **communal yoga session**





Name: G
Gender: M
Age: 87
Persona: -



- G has been a resident at the Liv Inn for three years.
- A few years ago, a close friend of his, who was in critical health, also moved into the Liv Inn. G and his friends provided care and support during his friend's final years, highlighting the value of informal care networks and the ability to spend the last stages of life in a communal living environment rather than relying solely on a specialized care facility or hospice.
- Additionally, professional care services are available through Amaris, located on the building's second floor.



Name: M
Gender: F
Age: 75
Persona: The Volunteering Group



- M noted the lack of volunteers for cooking activities at the Liv Inn.
- She makes lunch once a month for the **communal dinner**
- She is concerned about what will happen if "X," another resident, is unable to continue volunteering because she always cleans the coffee machine. This shows that each resident is important within the community and some have specific roles
- M lives in a spacious apartment with beautiful **views on the garden**. Also a spacious balcony that is connected to the living room and the bedroom.
- She mentions that she used to live in a more expensive apartment, and her children advised her to move to the Liv Inn where she now pays a third of the **rent**



Name: B
 Gender: M
 Age: 70
 Persona: The Volunteering Group



- B is considered the “lighting expert” of the Liv Inn. He bought a lamp as a housewarming gift and is in charge of setting up Christmas lights.
- He ensured that we knew where the light switches above the sofas we were studying at and fixed the TV. He makes rounds late at night to make sure there are no issues.
- Highly **autonomous**, he interacts well with younger people and engages with students.
- Showed us pictures of students who were here last year. Although most apartments are equipped with kitchens, many residents order **pre-packed meals** from the chef to heat up later.
- He also dines out **with students** and is invited to have dinner with them at their homes.
- He likes to go out to concerts and theaters given his fondness for **music**



B's apartment, located in the newer extension of the Liv Inn Hilversum building



Name: W
 Gender: M
 Age: 75
 Persona: The Volunteering Group



- W is responsible for weekly **communal dinner planning** and is often seen shopping for groceries, ensuring that meals are well-prepared for the group. He cooks once a month for the communal dinner, often cooking Dutch food that the other elderly people are familiar with (e.g. Hutspot)
- He drives regularly, often times in the nearby area in his lease car, sometimes to family in Brabant (longer distance), or to do the groceries. When asked if W he would be open to a shared-car concept (deelauto's) for the Liv Inn (with other elderly or students) he replied with a no. He does not want to share his "own" car with others, he assumes that others would not keep it clean.
- He labels his food in the fridge to make sure that others don't take it by mistake.
- He mentioned that once per week the communal areas are cleaned by the cleaning staff. The rooms are cleaned by the residents themselves. If the residents want help cleaning assistance you can apply for help at the municipality, and you pay 20€ for 6h per week



W's apartment, located in the newer extension of the Liv Inn Hilversum building



Name: B
Gender: F
Age: 76
Persona: The Active Group



- B is an **active participant** at Liv Inn. She has been very busy recently, participating in a variety of activities at the Congress. At the Congress she aligns the needs of the residents and what architects can do.
- She shows us her apartment and what she likes/doesn't like. The light switch is inconveniently located behind the designated coat-hanging space, which is considered a design flaw. **A light sensor** has been installed as a practical solution to this issue.
- The bathroom is **wheelchair-friendly**, a convenient feature for future accessibility needs, even though it is not currently required for her.
- The area just outside the entrance to her apartment provides a versatile space that can be personalized and utilized as desired. She pins up her **paintings** on the magnet board.



Magnet/corkboards at the entrance to the individual apartments provides opportunity for personalization



Name: N
Gender: F
Age: 77
Persona: -



add here diagram of N's route
with scoot-mobile (Mara)

- Believes that **light** can enhance the feeling of coziness and create a homey environment in the common spaces at Liv Inn. Likes lower lighting, which she feels adds ambiance to her home.
- Appreciates being able to take **walks** whenever she wants, if she's able to. She likes to go for a stroll in the evening for 20-30 min, as it is pleasant.
- She explains that the brickwork in the **corridor** to her room is darker, and that she doesn't like the long hallways because it looks like a hospital.
- Physio is painful for her
- Sometimes likes to watch people come and go from a bench near her room. There are no sufficient **sitting places** at the library, which causes her to take the books to her room, instead of being able to read it in the heart of the building.
- It's nice for her that the Liv Inn has organized lunches and dinners, which means that she does not need to do groceries herself, which is quite difficult for her.
- Although she explains that the students usually don't connect with the elderly, she does explain that there is one student who helps her with dinner, groceries and cleaning 3x a week. One other day she eats **communal dinner**, because she can't do groceries herself. She has a friend who lives on another floor, whom she met through the communal activities.
- She does have a **scoot mobile**, but mentions that it's scary to cross the streets and at intersections.
- Explains that it doesn't necessarily bother her that she can't go outside, because otherwise she has everything she needs in the building.
- There are discussions regarding residents with **dementia**, with varying opinions on how best to integrate them into communal life. Although people with dementia are not allowed to live here due to the special care they need and them being a danger to themselves and others, it's hard to legally kick them out when their health has deteriorated to the point that they've become dement.
- Explains that the Huiskamer is usually used for birthday parties, which allows family members and friends who are visiting to celebrate it with the elderly.
- Likes the size of her room and that she has everything she needs
- When she moved in there was a lot of concrete everywhere and now it's **wood** and it's nicer
- She is a bit **deaf** and doesn't like to sit in loud cafes
- They can pick which spices to plant in the garden, but she has her own balcony and she plants there as well



Name: E
Gender: F
Age: 58
Persona: The Active Group



- Romanian, but moved to NL when she was 18
- Has lived at Liv Inn for one year and is one of the **youngest residents**.
- Chose this place because it is close to where she does **Tai Chi**. Lived in Hilversum before moving at Liv Inn. Is very active: does Tai Chi outside of the Liv Inn, but also gives classes of Tai Chi and chair yoga for the residents of Liv Inn, likes to ski (she used to be a ski instructor). She walks to be more active (biking would be too easy)
- Lack of **dedicated fitness areas** at Liv Inn, need to use makeshift rooms for yoga or Tai Chi
- She sold her house and wanted to rent something small, no big house and garden to take care of alone
- She really likes the **community feeling** at Liv Inn.
- Plays **pool** with 4-5 others almost every night, and she really likes it, sometimes they bring wine and snacks
- The pool group is going to celebrate Sinterklaas together with poems and little gifts
- Lounges need to be **larger and more appealing**.
- **Corridors** should be made livelier; they currently resemble hospital hallways, especially those with brick walls.
- Sound insulation can be improved, it can be very **loud** especially if the band is playing.
- There are biweekly dinners, yoga sessions, Tai Chi classes, and a Christmas lighting ceremony for the central tree, which are well-attended by residents.



Name: F
Gender: F
Age: 77
Persona: The Elite Group



- F likes to play piano, but Liv Inn doesn't have one
- She likes the aesthetics of the other Liv inn more (white frame instead of black)
- Would like a heated swimming pool and sauna
- Used to live in Dan Haag and had a lot of stairs; in the house it was cold, so she wanted something smaller
- She lives 5 mins away from her son
- She doesn't participate in activities here because she doesn't like the organization

07

Personas at Liv Inn



Personas are research-based representations of target group users. In most cases, they make an abstraction of individual people and describe a group formed of three or four people who share similar characteristics or personalities. There are also exceptions to the rule, in the case of individuals possessing character traits that stand out.

The personas were formed based on a combination of quantitative and qualitative research methods, such as interviews and observation conducted at the Liv Inn and it concluded in eight personas:

- the active group
- the elite group
- the lighting man
- the congress group
- the grumpy group
- the volunteering group
- the passive group
- the student group

The use of personas creates a clear distinction of who the user is and what the needs of the user are. It reduces the risk of designing for a general user with non-specific characteristics and ensures that the design solution resonates with the real user.

In the case of the personas formed after the Liv Inn fieldwork, the physical and social activities were of great importance for the target groups, as the main focus of this community is staying active, both mentally and physically. Understanding the different ways in which the personas stay active creates better-defined guidelines for designing. Another aspect of the created personas is the negatives and positives of living at Liv Inn, which offer an in-depth understanding of the things that work well and the things that could be improved, from a user's point of view.



// The elite group //

AGE: 75
GENDER: Female
PREVIOUS OCCUPATION: -
LIVING SITUATION: living alone

Physical Activities



Piano

She enjoys playing piano, and would like to have a real one in the building, but it was not allowed.



Walking

She enjoys walks around the building and neighborhood.

Social Activities



Drinks & snacks

A small group of people gather at a specific table from the interior garden for drinks and snacks, creating an exclusive environment.



Coffee gathering

She joins the gathering for coffee in the morning.

Frustrations

- She would like a real piano, but it was not allowed. She would also like a heated swimming pool and a sauna.

- She does not like the aesthetics of black frames of the Liv Inn, and prefers the aspect of the newer building that has them white.

Positives

- She lives five minutes away from her son.

- She can easily interact with other people her age.



// The lighting man //

AGE: 85
GENDER: male
PREVIOUS OCCUPATION: -
LIVING SITUATION: living alone

Physical Activities



Christmas tree lights

He is in charge with setting up the Christmas tree lights and ensuring proper functionality.



Music DJ

He takes over the DJ role because he enjoys to play music and creates playlists for gatherings and parties.



Walking

She enjoys walks around the building and neighborhood.

Social Activities



Bond with students

He has a close relation with the students living in the building, and have dinner or go out for drinks together sometimes.



Common dinner

He participates in the weekly common dinners organized in the shared kitchen.



Coffee gathering

She joins the gathering for coffee that happens every morning.

Frustrations

-

-

Positives

- He enjoys the interaction with the students living in the building, and has a close relationship with them.

- He likes that he has full control over costumizing his room and adapting it to his wishes.



// The congress group //

AGE: 87
GENDER: female
PREVIOUS OCCUPATION: -
LIVING SITUATION: living alone

Physical Activities



Painting

She enjoys painting, even though she is too busy to do it at the moment.



Walking

She enjoys walks around the building and neighborhood.

Social Activities



Coffee gathering

She joins the coffee gatherings almost every morning to socialize with the fellow residents.



Congress

She is enaging in multiple activities at the Congress.



Feedback on floorplans

Works with architects on providing feedback on floorplans for elderly housing.

Frustrations

- The light switch on the hallway is hard to access behind the space appointed for hanging coats.

- The kitchen couter is too small, and there is not enough space for cooking.

Positives

- The bathroom is wheelchair friendly, even if she does not applicable to her at the moment.

- She enjoys being able to personalize the panel outside of her room.



“The grumpy group”

AGE: 80
GENDER: male
PREVIOUS OCCUPATION: -
LIVING SITUATION: living alone

Physical Activities



Walking

He enjoys walks around the building and neighborhood.



Physiotherapy

Once per week there is a gym class organized by the physiotherapy center located in the building.



Dog walking

Several times per day he walks around the building with the dog.

Social Activities



Coffee gatherings

He joins the coffee gatherings almost every morning to socialize with the fellow residents.



Happy hour

Once per week, the happy hour takes place and residents meet to socialize over a drink.



Common dinner

He participates in the weekly common dinners organized in the shared kitchen.

Frustrations

- Not all activities are according to his liking.

- He does not want to volunteer to organize activities.

Positives

- He lives close to his children who live in Hilversum.

- He likes that he can be as independent as he wants, without needing permission to get out of the building.



“The volunteering group”

AGE: 70
GENDER: female
PREVIOUS OCCUPATION: -
LIVING SITUATION: living alone; part time living in Spain

Physical Activities



Walking

She enjoys walking, but she would prefer to have walking trails/routes in the proximity of the building.



Cooking

She prepares dinner once per month for the common meals.



Ski

She enjoys skiing when she has the chance.

Social Activities



Coffee gathering

She joins the coffee gatherings almost every morning to socialize with the fellow residents.



Congress

She is engaging in multiple activities at the Congress and is responsible with finance, contracts and planning activities at Liv Inn.



Finance and activities

She is in charge of the finance of the building and of organizing activities, so she collaborates often with other residents.

Frustrations

- She would like more residents of the Liv Inn to come from Hilversum and not other parts of the country.

- Not enough people are young and fit to volunteer for activities.

Positives

- She is content with her apartment even though it is small.

- She enjoys being part of a community and staying active.



“The passive group”

AGE: 88
GENDER: female
PREVIOUS OCCUPATION: -
LIVING SITUATION: Living alone

Physical Activities



Walking

She enjoys walking twice a day for approximately half an hour, around the building.



Motorized scooter rides

Due to limited mobility, she uses the scooter for longer distances in the neighborhood.



Gardening

She likes to plant spieces on her own balcony.

Social Activities



Coffee gathering

She joins the coffee gatherings almost every morning to socialize with the fellow residents.



Common dinner

She participates in the weekly common dinners organized in the shared kitchen.



Help from students

She has a strong bond with the students. She receives cooked meals three times per week from a student and help with cleaning once per week.

Frustrations

- The brickwork in the hallway where she lives makes the atmosphere too dark and it reminds her of a hospital.

- She thinks there are mixed opinions among residents, making it hard to reach a consensus on various issues, sometimes leading to disagreements.

Positives

- She appreciates that she can go out of the building whenever she wants, without restrictions.

- She feels like she has everything she needs in the buildin, so she does not mind that she cannot go outside that often due to her mobility limitations



“The active group”

AGE: 65
GENDER: Female
PREVIOUS OCCUPATION: IT developer
LIVING SITUATION: living alone

Physical Activities



Pool games

Every evening, a small group of people meet and play pool before dinner time, combining physical activity with socializing



Chair Yoga

Once a week, the chair yoga class is held, that encourages the residents to stretch, move and relax.



Tai Chi

A group of around eight people participates in the Tai Chi classes that are held once per week.

Social Activities



Drinks & snacks

While playing pool, the group sometimes enjoys drinks and snacks. They also organize other activities together, such as celebrating Sinterklaas.



Tea time

After the yoga class, the participating group gathers to socialize over a cup of tea.



Tai Chi

She joins a Tai Chi studio from the neighborhood, which acts both as physical and socializing activity for her.

Frustrations

- In the need of a proper sports room, big enough for the Tai Chi and Yoga classes to take place freely.

- The sounds insulation in the building is not so good, and you can hear your neighbors through the ceiling.

Positives

- She liked the community feeling which helps with not feeling alone.

- She liked that the building encourages sports and movement.



// The student group //

AGE: 20
GENDER: female
PREVIOUS OCCUPATION: -
LIVING SITUATION: living alone

Physical Activities



Going to the gym

She goes to the gym at least once per week.



Biking

She often uses the bike to move around the city



Helping the elderly

She sometimes helps the elderly with chores or volunteer for activities.

Social Activities



Meeting with friends

She likes to hang out with her friends in their free time.



Study

She socializes with many classmates during her studies.



Work

Through her work, she socializes with her colleagues.

Frustrations

- Sometimes the elderly complain that the students do not spend time with them.

- It can become too much to help all the elderly with their chores, so she needs to have clear boundaries.

Positives

- It is a beautiful building with many amenities.

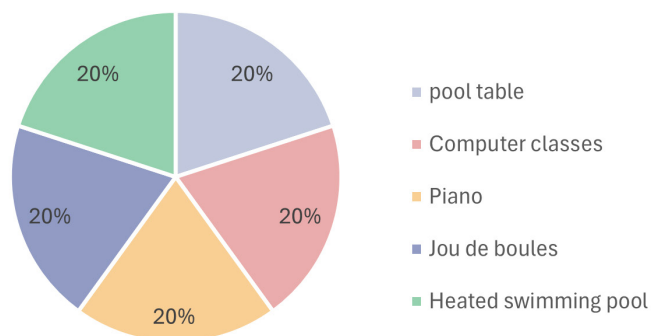
- She does not feel alone because it is a big community.

08 Quiz

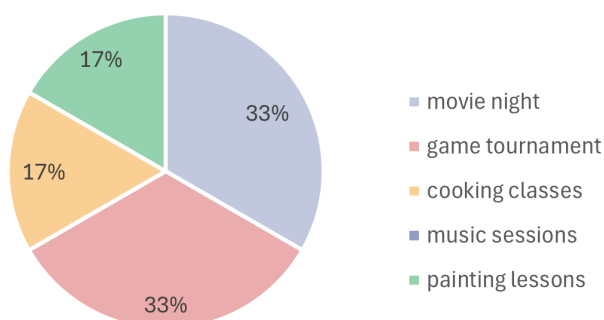
To get to know the residents better informally, a quiz was created that they could fill in. The quiz was composed of questions regarding ideal improvements from the residents' point of view, preferred outdoor and indoor activities, suggestions for room additions, and more. A few questions had an open answer, while most had multiple choice answers, with the possibility of adding another answer as well.

Valuable information was obtained by interacting with the elderly in a fun way. This information will be used as feedback from the residents of the building and will possibly be translated into further guidelines for designing for elderly. The questions will be stated below, with graphs including the answers.

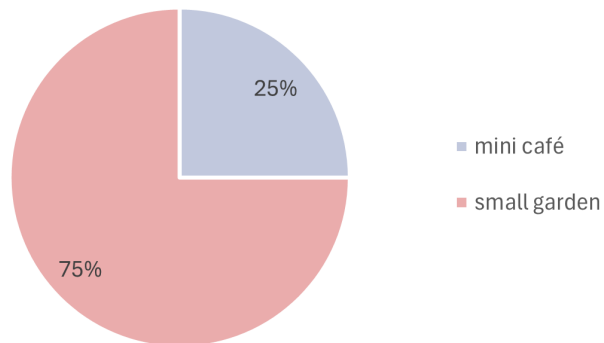
If you had won €5000, what would you want to buy for the Liv Inn?



Suppose you could create one new weekly activity. What would that be?

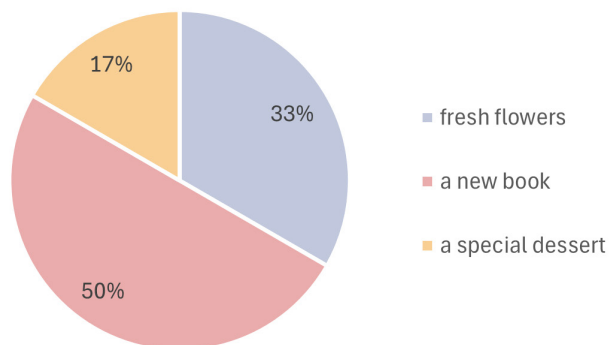


Would you rather have a mini cafe to relax in or a small garden to help maintain?

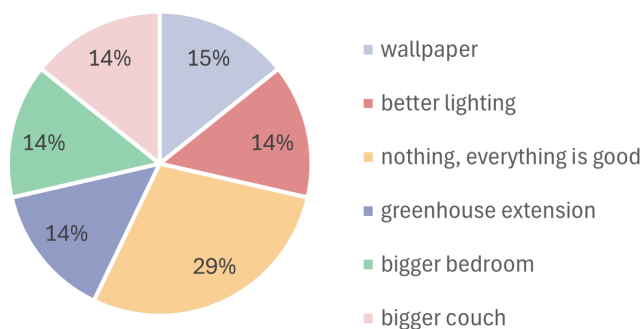


Among the residents choosing the small garden, it was mentioned that the garden should be in the sun, and a cafe would be too busy for them. Among the residents choosing the cafe, it was specified that the cafe should be open daily.

Suppose that every week you could get a personal delivery. What would you choose?



What would you change to make your apartment cozier?

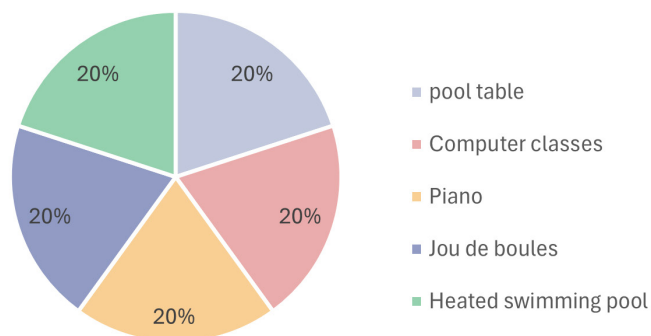


08 Quiz

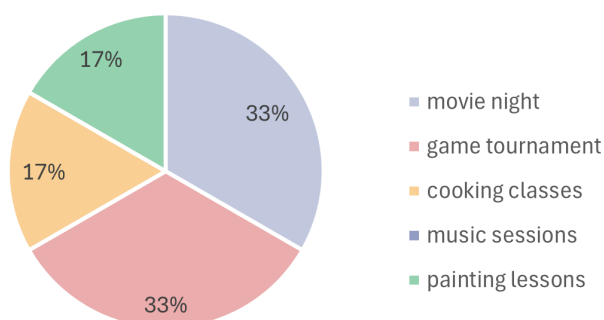
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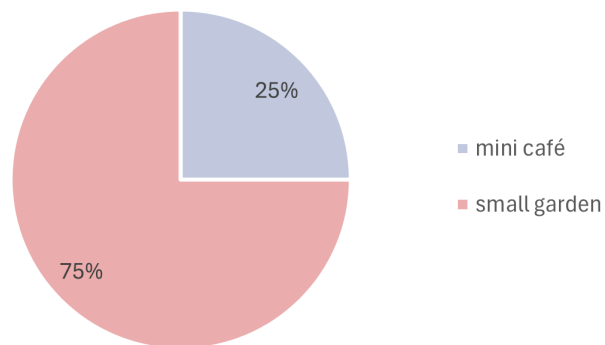
If you had won €5000, what would you want to buy for the Liv Inn?



Suppose you could create one new weekly activity. What would that be?

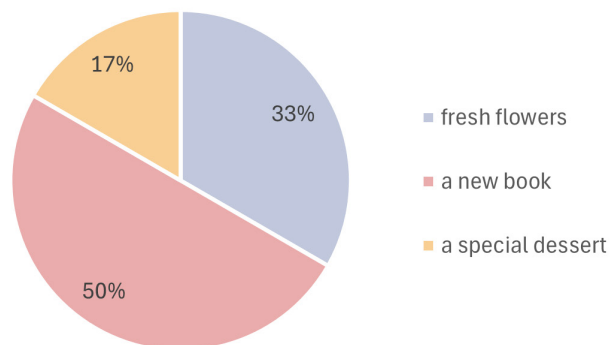


Would you rather have a mini cafe to relax in or a small garden to help maintain?

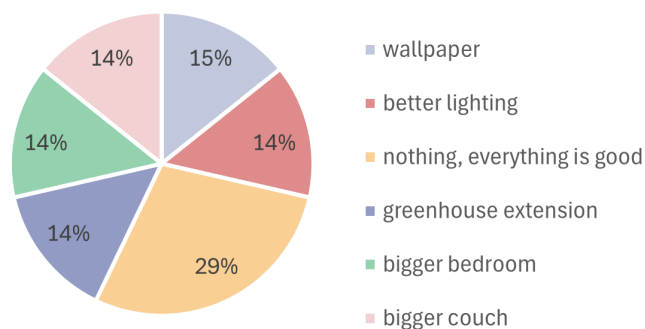


Among the residents choosing the small garden, it was mentioned that the garden should be in the sun, and a cafe would be too busy for them. Among the residents choosing the cafe, it was specified that the cafe should be open daily.

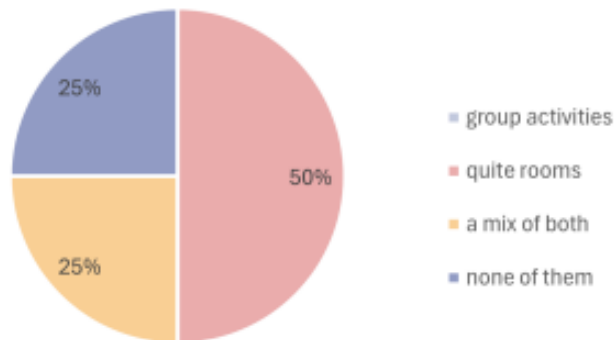
Suppose that every week you could get a personal delivery. What would you choose?



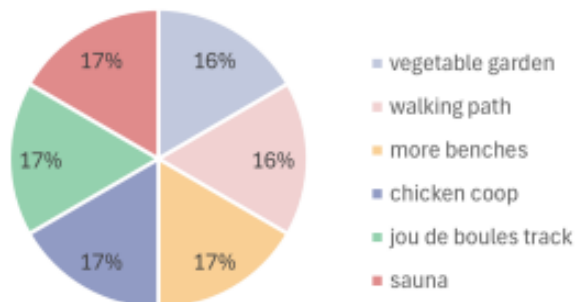
What would you change to make your apartment cozier?



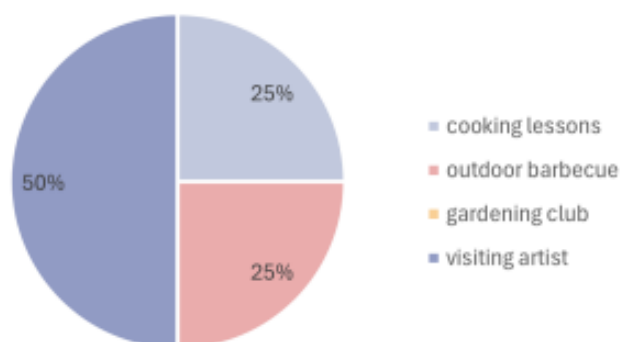
Would you rather have more group activities, more quite and relaxing rooms or a mix of both?



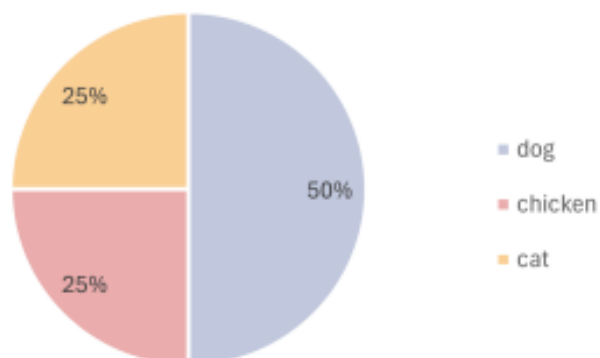
If you could have one new outdoor facility, which one would you rather have?



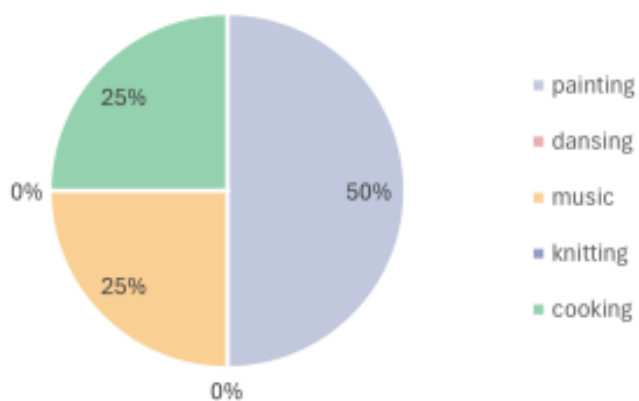
If you could organize one special monthly activity, what would that be?



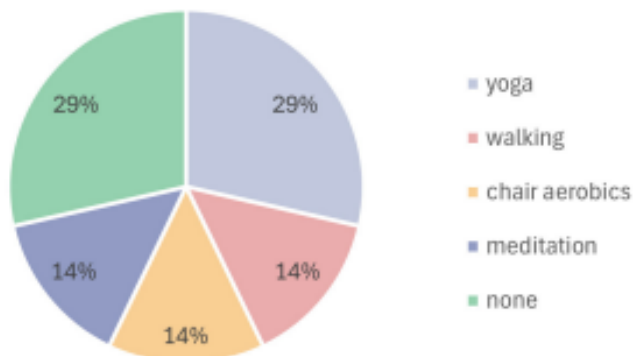
If you could have a small pet at Liv Inn (e.g. a fish, a bird, etc.), what would that be?



If you could invite a hobby instructor, what would you like to learn?



What type of exercises or wellness activities do you find nice?



09

Day in the life

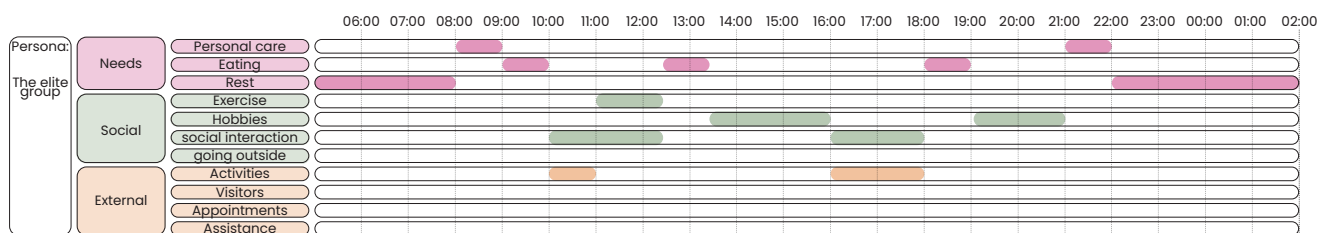
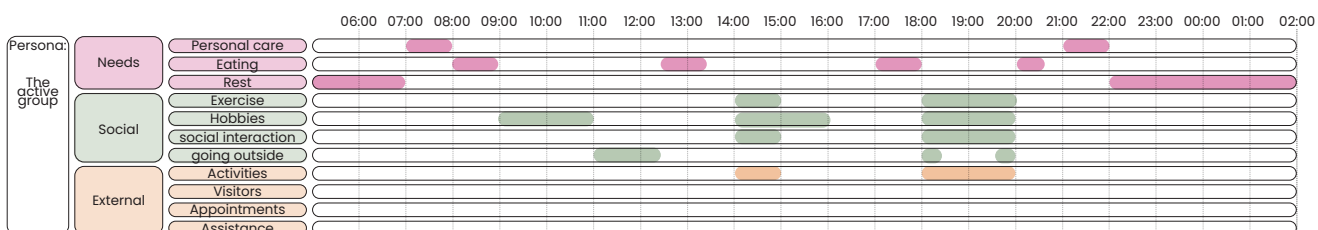
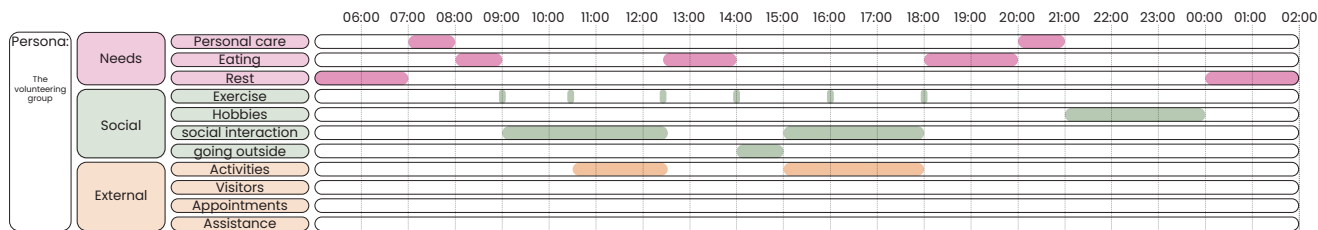
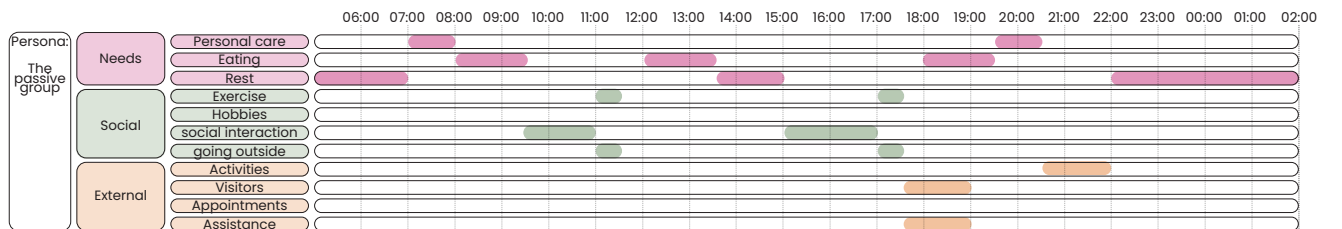
The “day in the life” timelines were created based on the personas defined in the previous chapter, but the schedule belongs to only one individual out of the persona group.

The timeline is divided into three categories: needs, social, and external. These categories are also split further into smaller actions that can be tracked and compared. Some of these actions can happen simultaneously, and overlap, for example needing external help while eating.

On one hand, this timeline has the purpose of understanding when the schedules of different groups of people overlap and when they differ from one another. The overlapping of schedules leads further to examining the activity and peak hours in the common rooms and how the flow of people moves from one area to another. The peak activity in the common rooms is further described in a later chapter.

On the other hand, this timeline looks into the different habits of the residents during a common day in their life. These habits give an insight into how much they socialize, exercise, go outside and receive help in their daily routines. This information is valuable for better understanding the target group as well as designing based on their needs and customs.

The results have been collected using interviews, discussions, and observation and have been mapped out to determine whether there are gaps in daily schedules that are challenging or face unmet needs.



10

Spatial Organization: Peak Hours & Traffic Flows

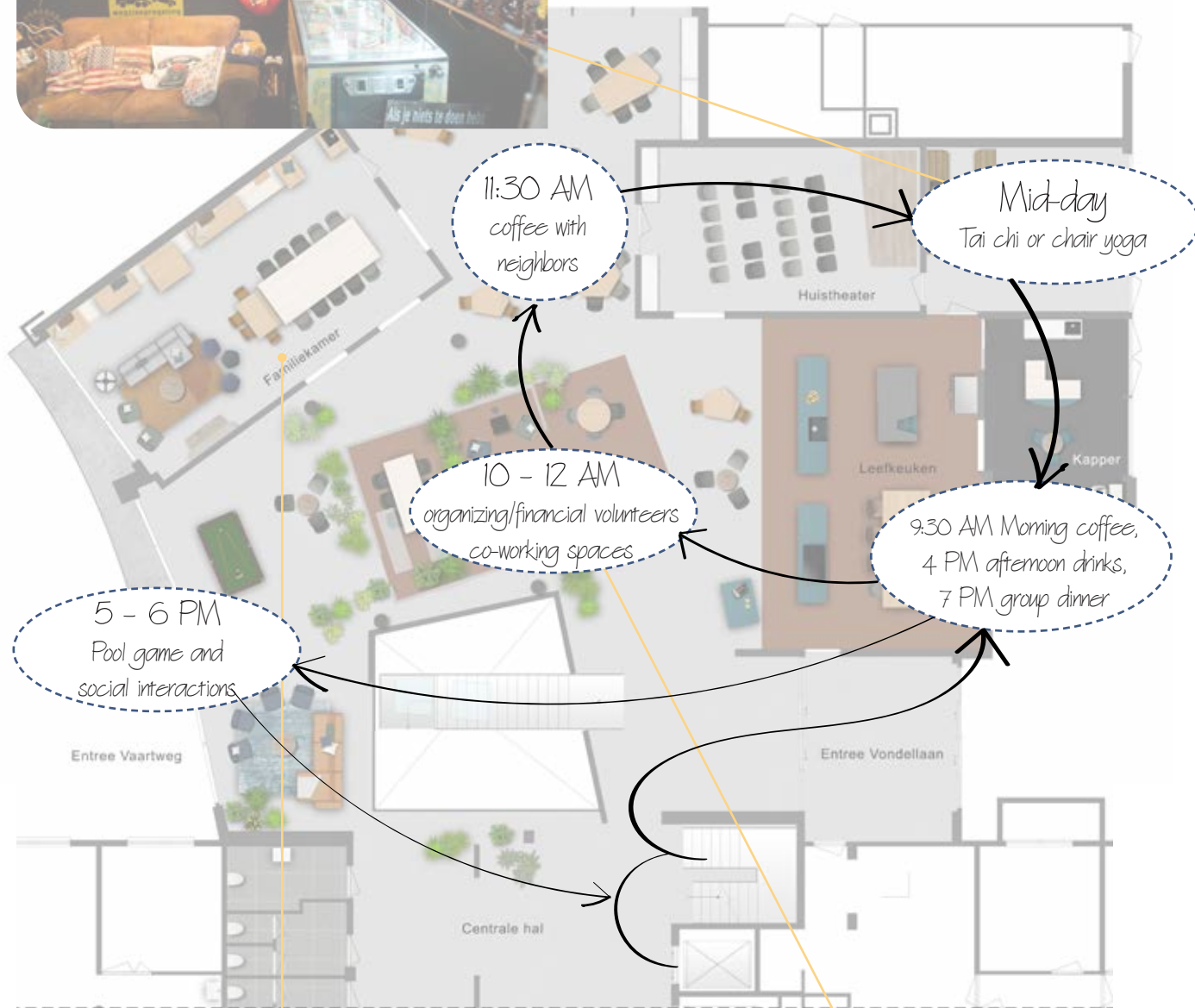
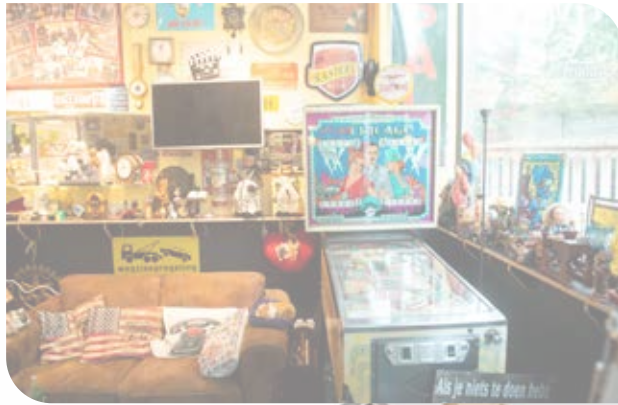
The communal areas at Liv Inn are designed as a central hub, fostering interaction through fluid, adaptable spaces. Soft separations between areas like the communal kitchen ("leefkeuken"), family room, theater, and internal courtyard ("binnentuin") are achieved using wooden frames, varying materials and lighting, curtains, and plants. This approach encourages seamless transitions and social engagement.

Throughout the week, the flow of residents and visitors across these communal spaces reveals distinct patterns of activity. The day typically begins around 9:30 AM with a coffee session in the communal kitchen, which accommodates up to 10 people. If attendance exceeds this, smaller nearby tables are utilized. By 10:30 AM, residents disperse for scheduled activities, personal errands, walks, or grocery shopping, creating a quieter period between 10:30 AM and 12:00 PM. During this time, organizing and financial volunteers often gather at tables near the binnentuin, while the hairdressing and nail art rooms see a steady flow of visitors. Around 11:00 AM, external members frequently rent tables in the binnentuin for co-working purposes.

Organized activities like Tai Chi or chair yoga take place in the theater room, an adaptable space as the building lacks a larger dedicated area for physical activities. Lunchtime varies: on days with organized lunches, the communal kitchen becomes a lively hub around 12:00 PM; otherwise, the space is quieter as residents eat privately in their apartments.

Activity picks up again around 4:00 PM, with residents gathering for drinks at the kitchen table. Between 5:00 PM and 6:00 PM, traffic shifts to the opposite end of the communal spaces near the windows, where a pool game and casual seating create a lively and vibrant atmosphere. If there is a group dinner, residents congregate in the kitchen area once more.

On Sundays, the bar opens from 4:00 PM to 8:00 PM, drawing many residents for an extended social evening, often lasting later than usual.



11

Occupancy of Communal Spaces

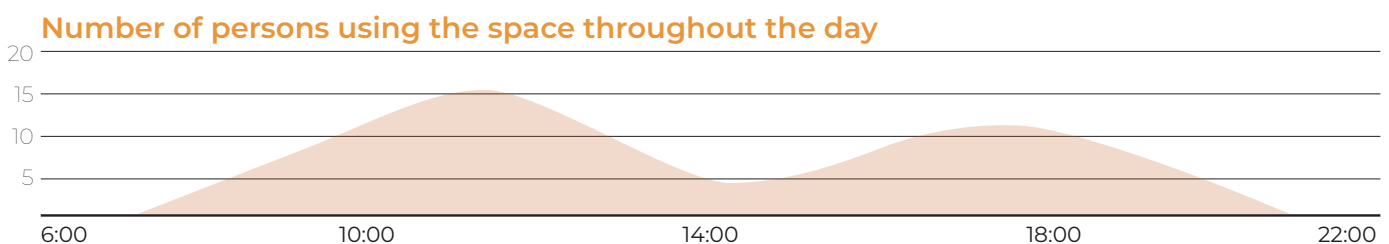
Communal Kitchen

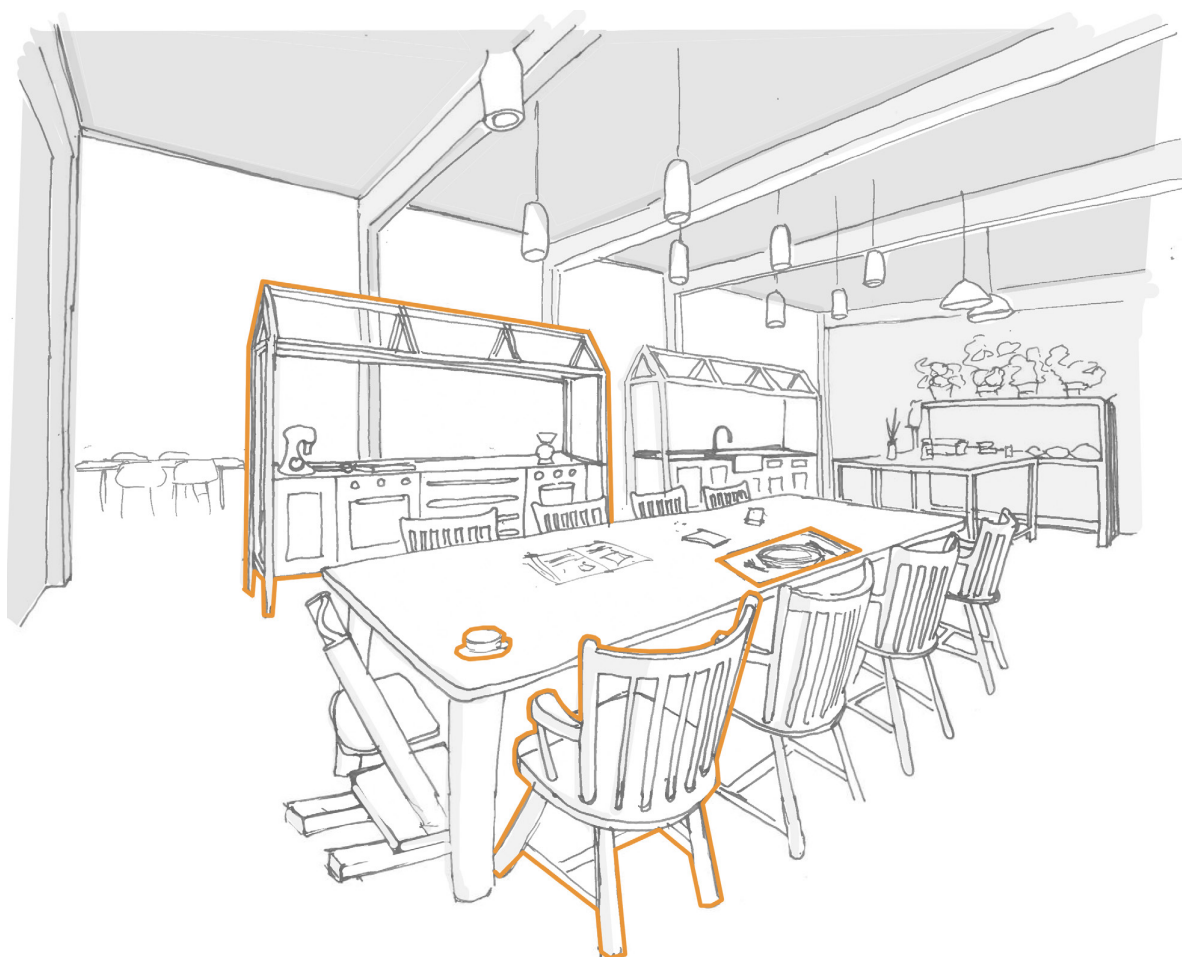
Space Use

One of the most frequently used spaces by the elderly residents is the large open kitchen. The daily coffee break at 10:00 AM serves as the peak moment of the day in this space, with a group of around 20 elderly individuals gathering each morning to start their day together. After about an hour to an hour and a half, the group disperses, and the kitchen becomes quieter. However, there are always a few residents who remain in the kitchen, as they prefer not to be alone in their rooms and enjoy being among others. On Tuesdays, a lunch is organized by one of the residents, and on Wednesdays, a communal dinner takes place. These events also attract many people to the shared kitchen space. Overall, it is evident that the communal kitchen is a highly valued place for the residents, who consider it a pleasant space to spend time in. However, the kitchen is located quite deep within the building, which results in limited natural daylight and a lack of views to the outside.

Applying to Tawrwewijk

The Tarwewijk area primarily consists of family homes, many of which come equipped with their own kitchens. Therefore, an additional shared kitchen for the elderly would likely be redundant for most Tarwewijk residents. However, if people are interested in communal dining experiences, the regular lunches and dinners could serve as an opportunity to invite local residents to join and participate, thus fostering a sense of community and making them aware that they are welcome to share a meal together.





Evaluation

Daylight / view	● ● ○ ○ ○
Location in the building	● ● ● ● ○
Atmosphere	● ● ● ● ●
Design score	● ● ● ● ○

Used by Elderly	● ● ● ● ●
Combine with Children	● ● ● ● ●
Add to Neighbourhood	● ● ● ○ ○
Add to Design in Tarwewijk	● ● ● ● ●

Pool Table

Space Use

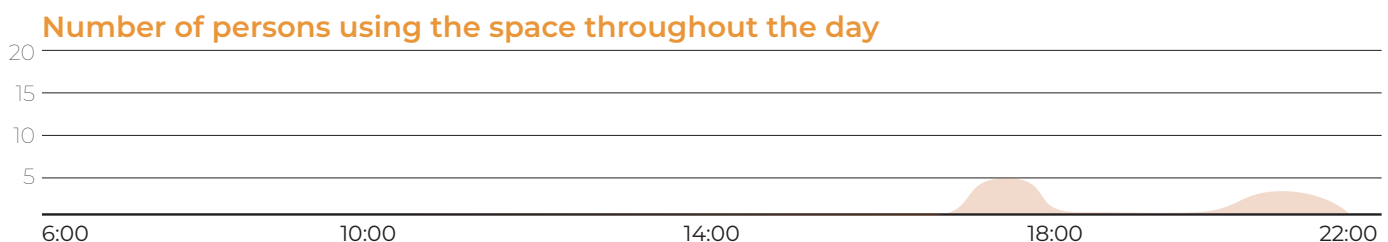
At the heart of the 'Liv Inn,' the pool table serves as a central point for social interaction, especially for the older residents. After dinner, a regular group of elderly individuals often gathers for a game of pool. It is clear that the pool table is an important space where residents can relax and simultaneously engage with one another. However, after 8:00 PM, the use of the pool table shifts to the students in the complex.

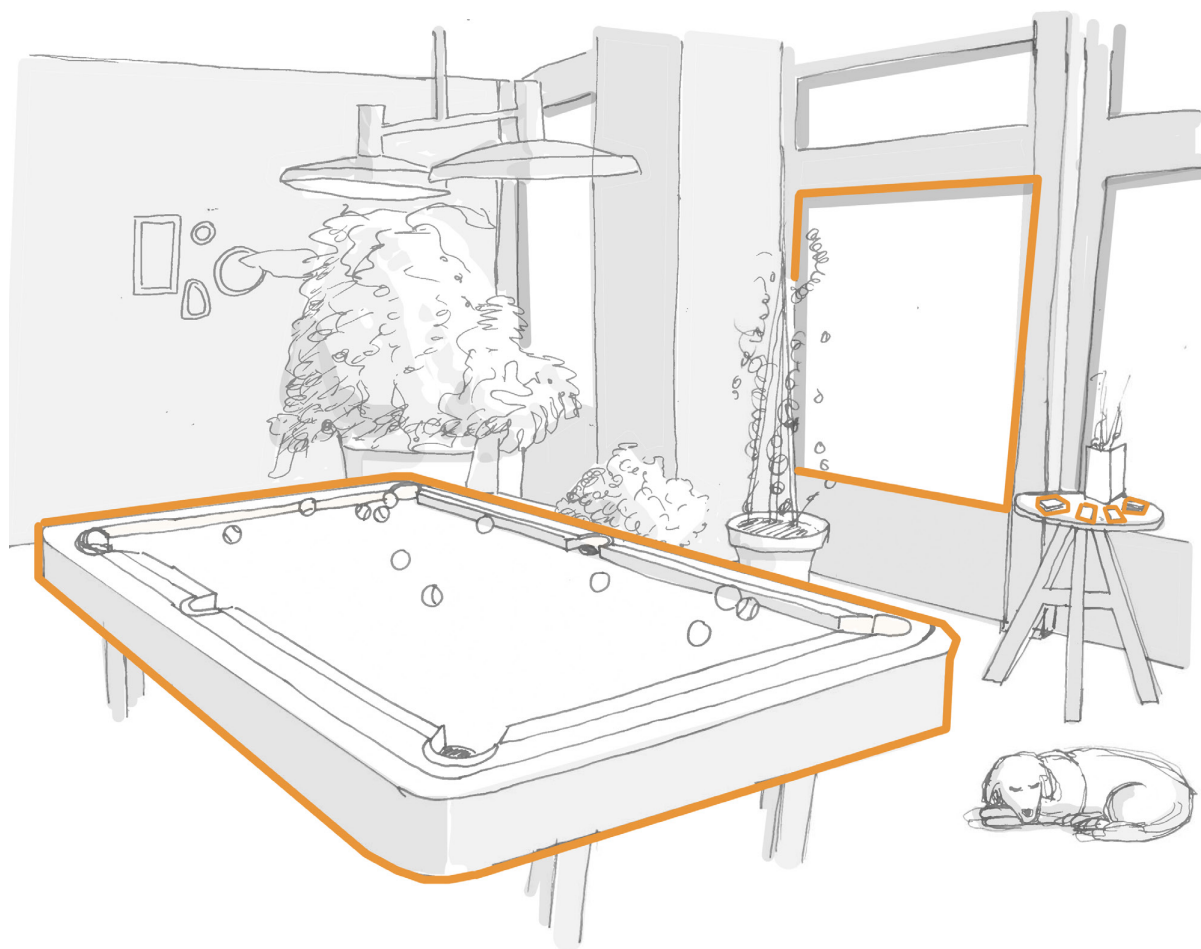
Some of the elderly residents have expressed a desire for a billiard table, indicating a need for more variety in available game options, which could make the space more appealing to the older residents. While the game cabinet offers some variety, allowing other games to be played, the desire for more options still exists.

The space around the pool table is located centrally in the building, making it an ideal spot for people who are already present in the heart of the complex to meet. The area has a cozy, homely atmosphere, with benches and chairs around it, where residents can either play other games or watch. The space is filled with greenery, and large windows provide a view of the entrance to the 'Liv Inn.' Overall, it is a pleasant place to spend time.

Applying to Tawrwewijk

The pool table could become a connecting feature for the neighborhood. However, the current space is not large enough to accommodate more people than the group of elderly residents and students already using it. Adding more pool tables would likely compromise the intimate, homely character of the space as it is now. wider community.





Evaluation

Daylight / view	● ● ● ● ●
Location in the building	● ● ● ● ○
Atmosphere	● ● ● ● ○
Design score	● ● ● ● ○

Used by Elderly	● ● ● ● ●
Combine with Children	● ● ● ● ○
Add to Neighbourhood	● ● ○ ○ ○
Add to Design in Tarwewijk	● ● ● ● ○

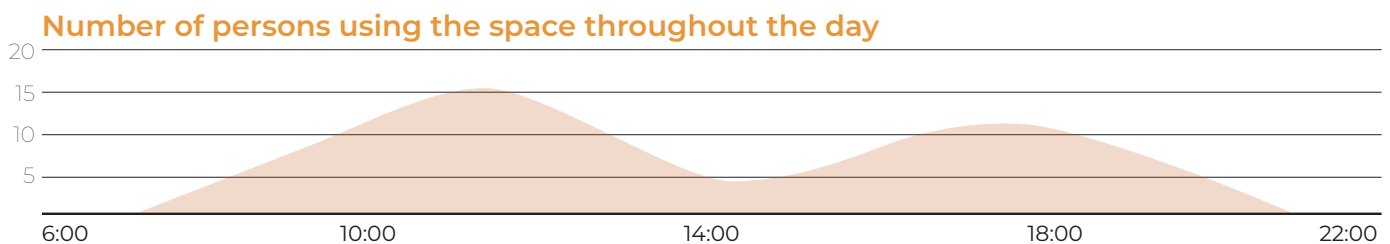
Workshop

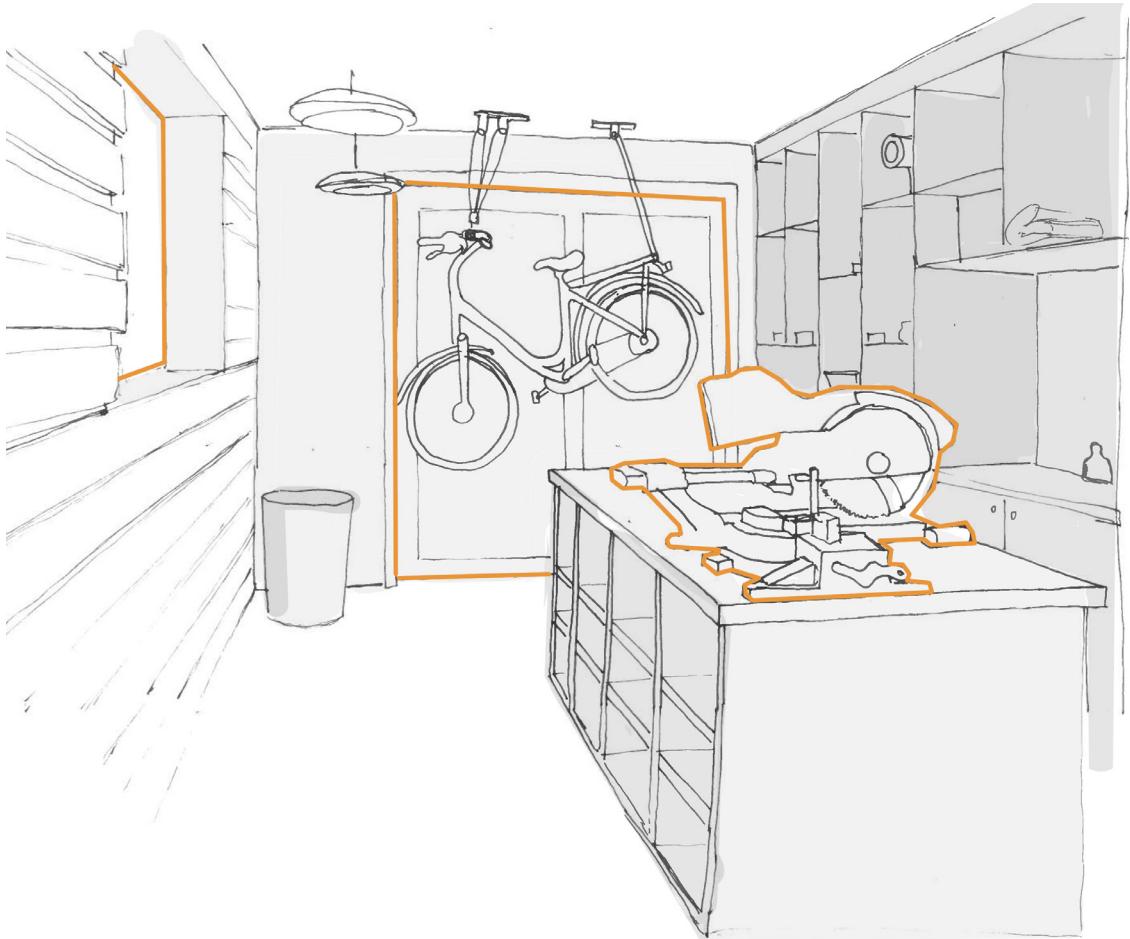
Space Use

Observations of the workshop space reveal that it is primarily used by one man, who is often found working there. Residents approach him when things need repairing, whether it's broken lamps, kitchen utensils, or even bicycles. This makes the space a focal point for interaction across the entire community, as it brings together both the elderly and younger residents. The workshop is located next to the building's side entrance, with both an external door and a window that allows passersby, whether inside or outside, to view the space. However, observations suggest that the side entrance is not frequently used, which means few people walk past the workshop. The space itself is large enough to accommodate these repair tasks and has a distinct workshop atmosphere, with the use of raw materials like wood and metal, making it a comfortable environment to work in.

Applying to Tawrwewijk

A workshop space for the neighborhood would be a valuable addition. While the current space is sufficiently large for one person to work and to occasionally accommodate repairs for the 177 residents, if it were to be used as a workshop for the entire neighborhood, both the size of the space and the number of volunteers would need to increase. Expanding these aspects would ensure the workshop could better serve the needs of the wider community.





Evaluation

Daylight / view	● ● ● ● ●
Location in the building	● ● ○ ○ ○
Atmosphere	● ● ● ● ○
Design score	● ● ● ○ ○

Used by Elderly	● ● ● ○ ○
Combine with Children	● ● ● ● ○
Add to Neighbourhood	● ● ● ● ●
Add to Design in Tarwewijk	● ● ● ● ○

The Theater

Space Use

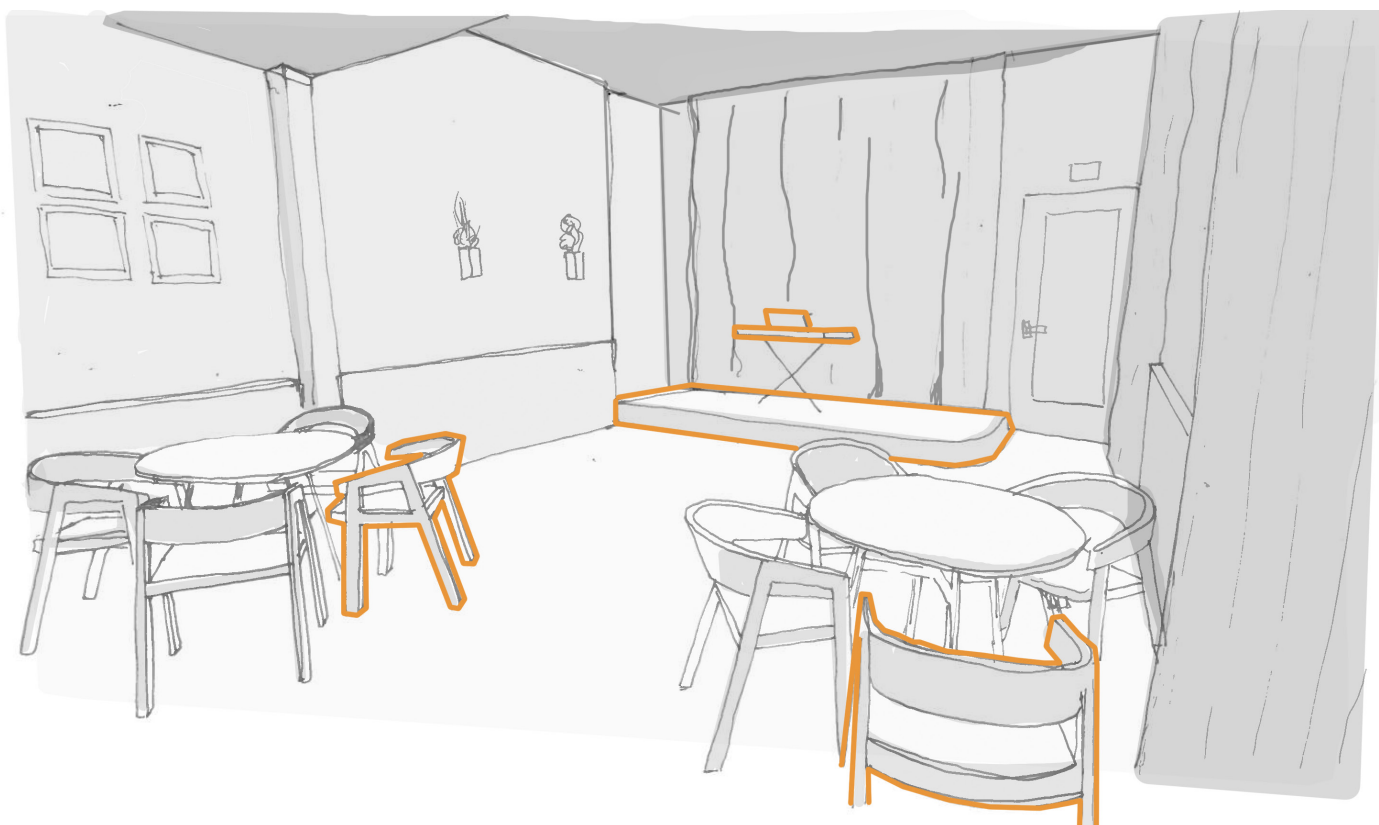
The theater is primarily used when an activity is organized, such as the chair yoga session on Wednesday afternoons or the Tai Chi lessons on Thursday mornings. During these activities, all tables and equipment are moved to the side to create space. The theater also has the capability to screen films on a large projector. Overall, the space is very multifunctional and can be used for various purposes. The theater is located next to the heart of the building, with large windows offering a view of this central area. However, this can sometimes be considered disruptive by participants in the activities, as noise from the heart of the building can cause sound disturbances.

Applying to Tawrwewijk

The theater already hosts regular community gatherings, such as performances and workshops by local musicians and artists. The space accommodates around 30 people, but for larger groups, the open area in the heart of the building is used. The stage in the theater is not suitable for large-scale performances where multiple people need to use the stage simultaneously.

Number of persons using the space throughout the day





Evaluation

Daylight / view	● ● ● ● ●
Location in the building	● ● ● ● ○
Atmosphere	● ● ● ● ○
Design score	● ● ● ● ○

Used by Elderly	● ● ● ● ●
Combine with Children	● ● ● ● ○
Add to Neighbourhood	● ● ○ ○ ○
Add to Design in Tarwewijk	● ● ● ● ○

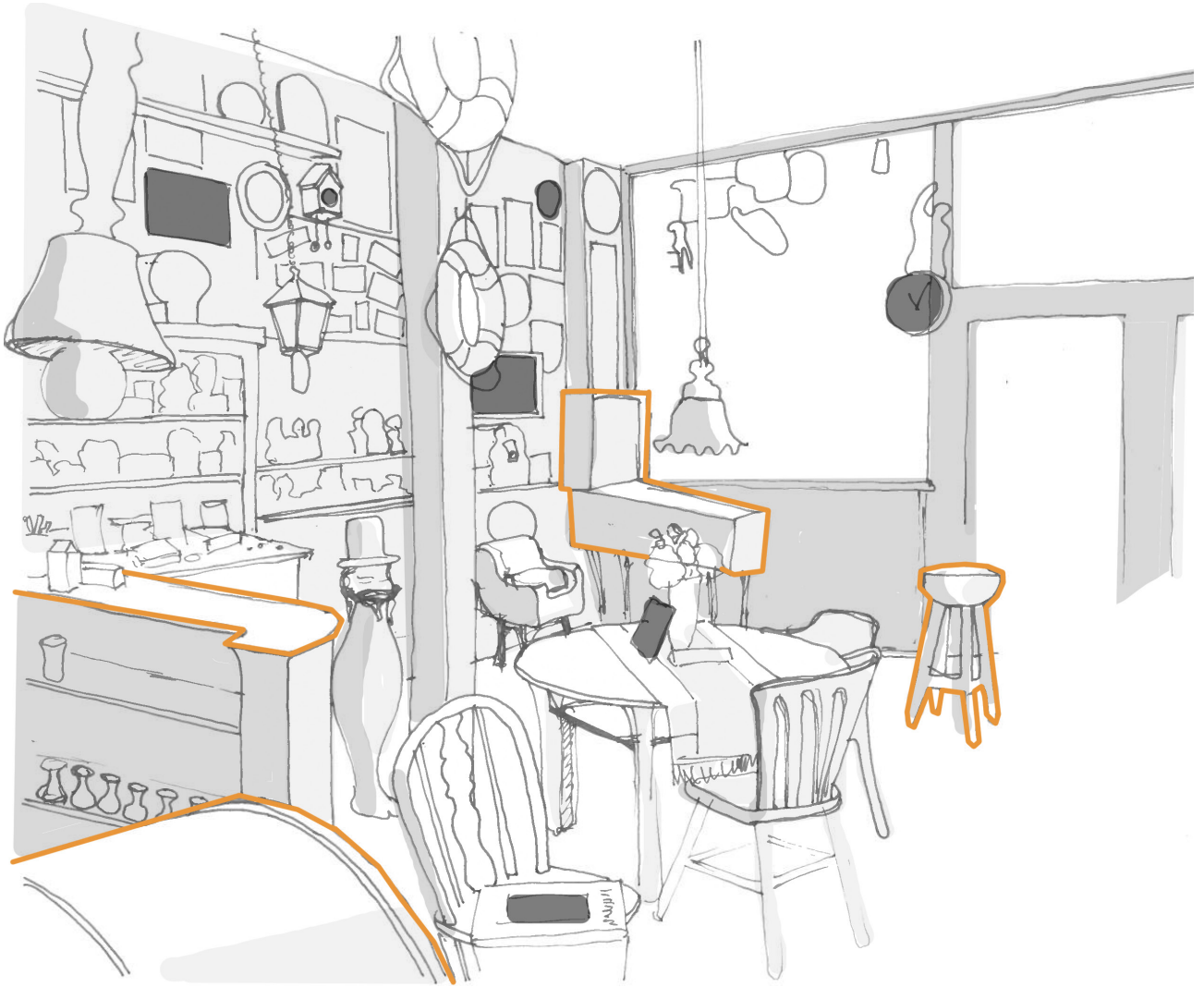
Bar

Space Use

The bar is not regularly used by the residents. The dishwasher for the kitchen is located here, so occasionally, people pass through the bar. However, on Sunday evenings, the bar becomes quite popular during happy hour, where residents can enjoy drinks using their punch cards. Typically, between 10 and 15 people gather during this time, and it often remains a lively, social space late into the evening. The space is designed to resemble an authentic pub, with great attention to detail that contributes to a warm and cozy atmosphere. The jukebox and pinball machine are unique additions that enhance the ambiance and provide extra entertainment for visitors. These elements make the bar not only a place to enjoy a drink but also an inviting space for people to socialize and have fun together.

Applying to Tawrwewijk

A bar could be a pleasant addition to the neighborhood, offering a social space for residents. If research shows that there is a demand from the local community, it could be a valuable addition to the Tarwewijk. Since the elderly residents do not use the bar daily, it would be necessary to find a way to separate the bar from the rest of the building to ensure it doesn't disturb other areas when not in use.



Evaluation

Daylight / view	● ● ● ● ○
Location in the building	● ● ○ ○ ○
Atmosphere	● ● ● ● ○
Design score	● ● ● ○ ○

Used by Elderly	● ● ● ○ ○
Combine with Children	● ○ ○ ○ ○
Add to Neighbourhood	● ● ● ● ○
Add to Design in Tarwewijk	● ● ● ○ ○

Family Room

Space Use

The family room is primarily used by neighborhood residents and visitors, playing a vital role when large groups of family or friends gather and cannot fit in a personal room. This space offers a warm, homely atmosphere with a large living room setup, a spacious dining table, and ample toys for children, making it an accessible and versatile location.

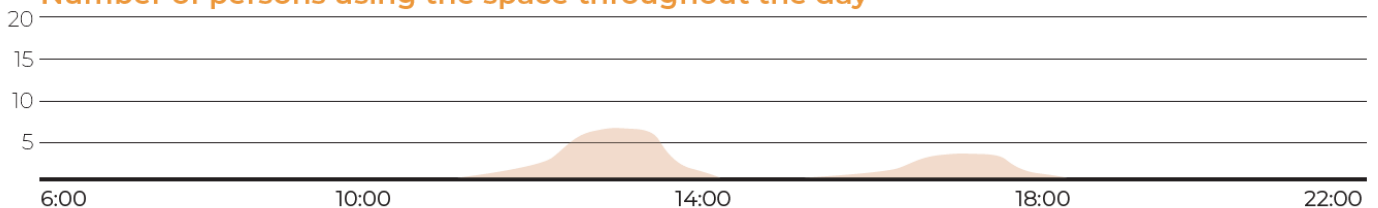
In addition to informal gatherings, the family room is also rented out for various activities. For example, the neighborhood team uses the space weekly for meetings, and discussions with residents and experts are frequently held here. When the room is rented, residents often provide coffee, tea, and snacks in exchange for a small fee, giving the space a personal and welcoming touch.

One notable drawback is that the room is relatively deep within the building, making it feel slightly dark around the dining table. Additionally, the family room is adjacent to the central heart of the building, which, during events in the heart, can result in noise disturbances, potentially hindering the peaceful use of the space.

Applying to Tawrwewijk

The family room is already a valuable addition to any neighborhood. Particularly in Hilversum, where a traditional community center is absent, this space fulfills a similar role. It provides a venue where local residents can come together for social activities, discussions, or simply to connect with one another. In this way, the family room contributes to strengthening the sense of community and fostering relationships among neighborhood residents.

Number of persons using the space throughout the day





Evaluation

Daylight / view	● ● ● ○ ○
Location in the building	● ● ● ○ ○
Atmosphere	● ● ● ○ ○
Design score	● ● ● ○ ○

Used by Elderly	● ● ○ ○ ○
Combine with Children	● ● ● ○ ○
Add to Neighbourhood	● ● ● ● ●
Add to Design in Tarwewijk	● ● ● ○ ○

12

Role of Lighting in Creating Atmosphere

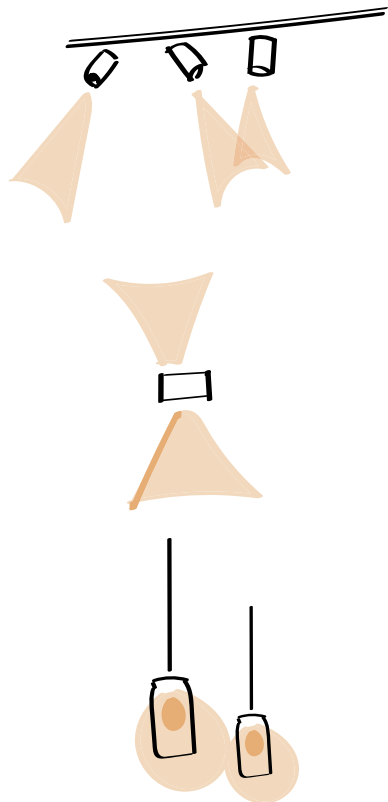
Lighting is a crucial element in interior design, serving not only functional needs but also contributing significantly to the aesthetic and emotional ambiance of a space. At Liv-Inn, the emphasis is on diffused lighting, which helps create a warm and inviting environment, fostering a sense of coziness and comfort. The selection of various lighting fixtures demonstrates how thoughtful design can enhance the atmosphere.

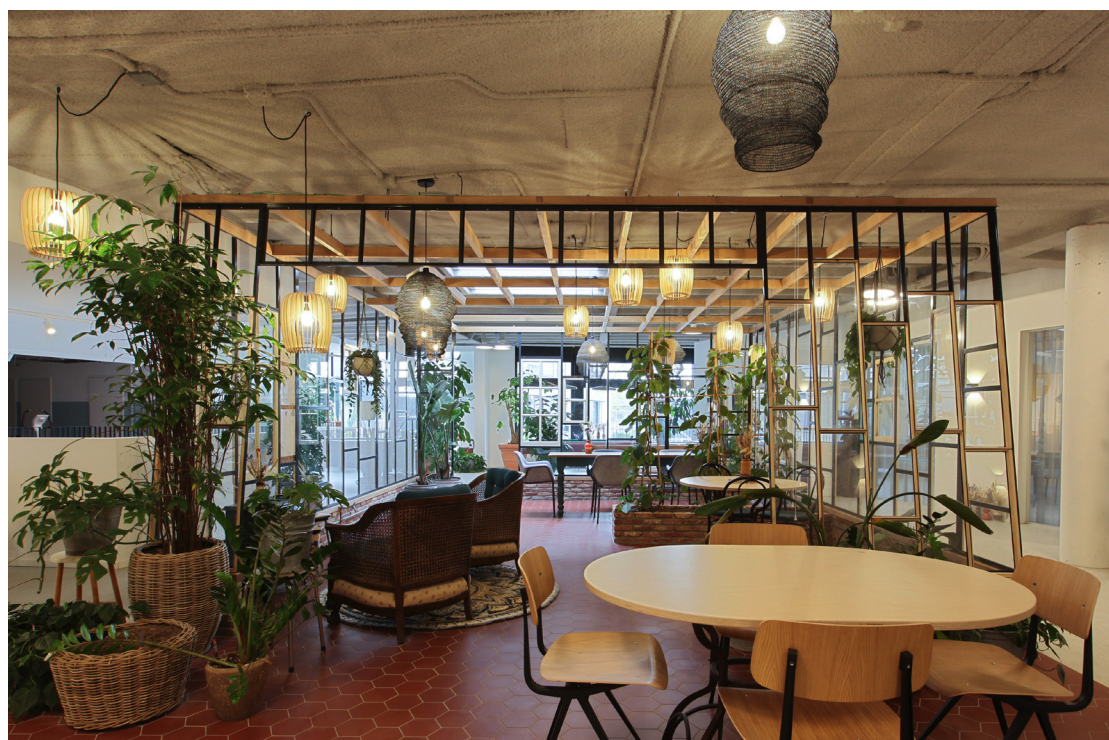
By integrating fixtures of diverse textures, shapes, and materials, the lighting design ensures a harmonious interplay between form and function. These materials allow light to filter through in a manner that is soft and pleasant, avoiding harshness. According to an interviewee, it contributes to the coziness of the spaces and she associated the hanging lights and lanterns with the common spaces. The hanging lights, for example, provide focused yet gentle illumination, striking a balance between practicality and mood enhancement.

The arrangement of lighting in common areas, such as dining or seating spaces, reflects a careful consideration of how light interacts with furniture, decor, and the spatial layout. The combination of natural and artificial light ensures a dynamic yet consistent feel, adapting to different times of the day and the activities within the space.

Through this meticulous approach, lighting not only serves as an aesthetic feature but also becomes an active participant in shaping the experience of those inhabiting the Liv-Inn.

Designing communal spaces requires a thoughtful integration of light, sound, and environmental elements to create an atmosphere that supports well-being and influences behavior. The use of warmer lighting during dinner and softer tones afterward aligns with natural circadian rhythms, fostering comfort and relaxation. Blue-light adjustments, along with the introduction of daylight and outdoor-inspired materials such as tiles, help blur the boundaries between indoor and outdoor spaces, creating a harmonious and inviting environment. Ventilation systems that manage CO2 levels, combined with the careful manipulation of sound and reflection, enhance both comfort and health. These sensory elements, paired with intuitive wayfinding, work together seamlessly to create dynamic, engaging spaces that feel natural and effortless to navigate.





1. Common kitchen area
2. Binnentuin with rentable office spaces

13

Sensory Analysis of Communal Spaces

To decipher the physical qualities of the interior space and its relation to creating spaces of belonging, comfort, home and social wellbeing a sensory analysis is made based on the framework of Khyeun Lee (2022).

According to architect Gwendoline Schaff in *Home in Later Life* by sensorial factors directly impact emotional and social wellbeing. By balancing sensory stimuli like light, material texture, and sound, spaces can encourage both privacy and interaction. Alternatively, Keunhye Lee (2022) advocates that multi-sensory engagement (e.g., through light, shadow, texture, and smell) creates emotional connections to space, enhances social well-being and establishes identity. Such design enriches spatial experiences by fostering personal and shared cultural memories, which can mitigate loneliness and promote social interaction.

Moreover, analysing sensory design elements in the design can help generate specific acoustic parameters for the people with hearing difficulties and adequate lighting compositions for the visually-impaired (e.g. Qualidom, 2018). For example, residents of the Liv Inn also mention that focusing on making the lighting more diffused and adding measures for communal spaces, which are too loud for those with hearing disabilities at the moment, are important factors for the comfort, coziness or user satisfaction the communal spaces. Analysis

The analysis focuses solely on the sensory factors of the interior communal spaces, i.e. texture, light, shadow, color, sound and smell. Temperature is left out in this scenario, as it is hard to identify and fairly similar in each room (personal opinion). The orange dot indicates that the sensory element works "good". And the green dot indicates that the element works "very well".

	Morphological Factor						Sensual Factor							Influential Factor	The Body		
	Volume	Scale	Rhythm	Order	Proportion	Contrast	Texture	Light	Shadow	Color	Temperature	Sound	Smell	Culture	Local	Senses	Movements
TH																	
B																	
IG																	
CK																	
...																	
...																	
...																	
Theater (TH), Bar (B), Inner Garden (IG), Communal Kitchen (CK), ...																	

Sensory framework for analyzing interior spaces by Keunhye Lee (2022)

Sensory Analysis: The Theater

Sound

To absorb the sound emitted from the speakers or instruments in the theater, wooden panels on the side of the walls help reduce unwanted noise or distortion, contributing to the acoustic quality of the room. Additionally, the floor is carpeted which can contribute to the absorption of soundwaves due to its physical qualities and soft surface.

Light

Throughout the communal spaces of the Liv Inn, (movable) spotlights are used (see figure to the right). These spotlights, "accent lighting", emphasize important areas in the theater, such as the stage or area with the tables and chairs or the piano area. Alternatively, wall-mounted armatures are used as decorative lighting, which helps to set the mood or positively contribute to the atmosphere of the building.

Shadows

With little to no windows openings, the theater is naturally dark, which is ideal for this specific function. The shadows create a dramatic and contrasting play with the lighting, as the accent lighting focuses more on the stage, tables, piano area, and wall-armatures more on decorating the walls. This leaves room for the shadows dramatize shadows in the corner (located at the hanging curtains) and on the floors, especially near its entrance.

Texture

Wooden panels, the carpeted floor and plastered (colored) walls mainly make up for the play with texture in this room. Carpeted floor also increase the feel of comfort, coziness and home, next to their acoustic properties.

Color

Vibrant colors contribute to the atmosphere of the theater, as the blue curtains, carpet, walls are inviting, lively and complimentary to the wooden objects in the room (e.g. color of the tables, chairs, wooden panels).



SOUND



LIGHT



TEXTURE



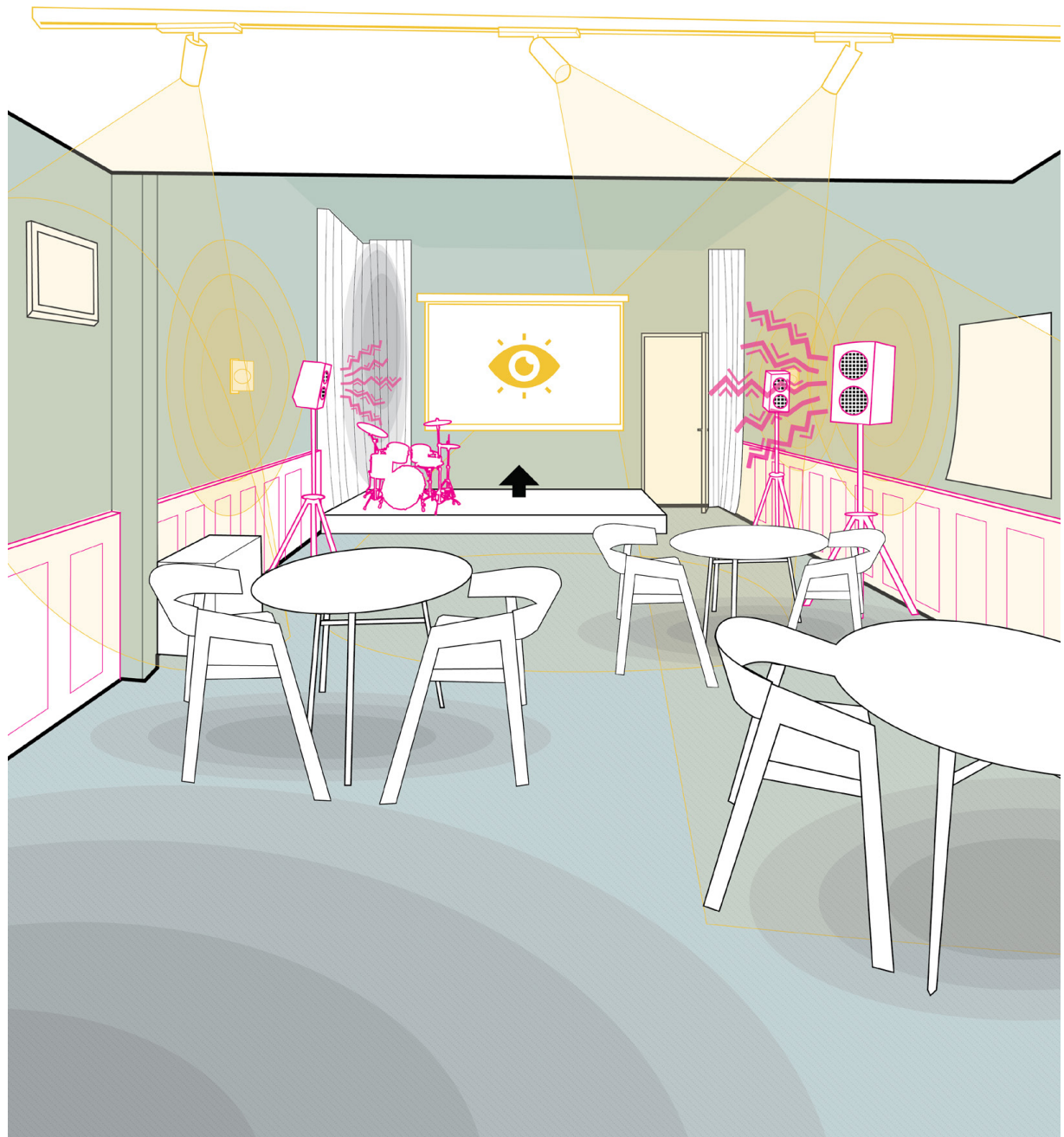
COLOR



SHADOW



SMELL



The Theater

Sensory Analysis: The Bar

Sound

To absorb the sound emitted from the speakers or instruments in the bar, wooden panels on the side of the walls also help reduce unwanted noise or distortion, contributing to the acoustic quality of the room. Similarly, the floor is carpeted which can contribute to the absorption of soundwaves due to its physical qualities and soft surface.

Light

The bar uses decorative lighting that helps to set the mood and positively contribute to the atmosphere or look-and-feel of the space. Similar to the theater, accent lighting is used in this space, but now to emphasize the decorative posters, flyers, old vinyl covers on the wall, and "nostalgic" furniture of the elderly (e.g. cigarette dispenser or traditional wall cabinet).

Shadows

With the decorative lighting as the main lighting for the bar, shadows are a little less prominent in this space. On the other hand, the lighting makes the room less illuminated which in turn causes for a cozy and homy feel.

Texture

Similar to the theater wooden panels, the carpeted floor and plastered (colored) walls mainly make up for the play with texture in this room. Again, the carpeted floor can contribute to the acoustic performance of the room. Alternatively, various (almost random) object hanging from the walls or ceiling add a 3D texture to the space, which acts as a "Wunderkammer", where every object you focus on is totally random but still has its own story and (nostalgic) value.

Color

Apart from the vibrant yellow color of the wall, and blue carpet, the bar also becomes interesting through the old vinyl record collection of an acquaintance of the Liv Inn residents that were used by the interior designer. The various colors of the covers and center of the vinyls make the room colorful and compliments well with the vibrant colors of the walls and floors.



The Bar

Sensory Analysis: The Kitchen

Light

The communal kitchen is also seen as the heart of the building. The kitchen uses decorative lighting above the dinner table which contributes to the atmosphere at the table when eating or drinking. Additionally, accent lighting in the form of spotlights are used to emphasize and illuminate the kitchen islands (where the cooking and the washing of dishes happens), and the shelves (to the left in the drawing) where the glasses and other kitchen equipment is stored.

Shadows

Although the presence of shadows is minimal, the play of accent lighting and the decorative lighting above the dinner table causes the shadows to separate three main areas in the communal kitchen: the shelves or cabinets (left), dinner table (middle) and kitchen islands (right).

Texture

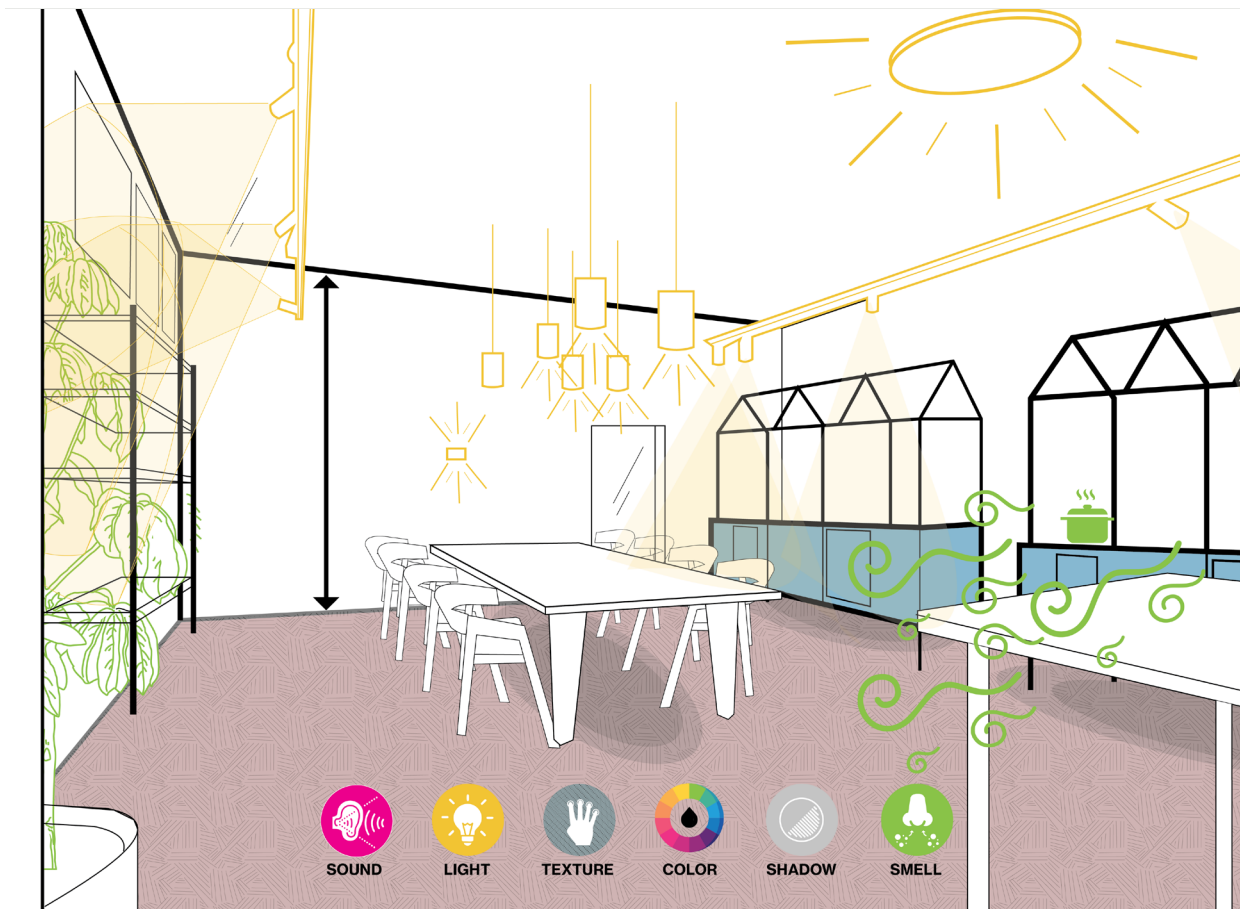
Similar to the inner garden, red hexagonal ceramic tiles are used to border the communal kitchen from the surrounding walkways and interior spaces. Other than that, the walls are white plastered.

Color

The vibrant blue color used in the theater is repeated to highlight the cabinets of the kitchen islands. This makes them both noticeable and act as borders in the open space. For example, the tiles in combination with the kitchen islands that lie in one line indicate when a person either enters or leaves the communal spaces. Decorative greenery also adds to the atmosphere and coziness of the kitchen.

Smell

Almost logically, the large kitchen is designed where the smell of cooking from the oven or induction plates, or the smell of coffee from the coffee machine can be experienced.



The Common Kitchen

Sensory Analysis: The Theater

Light

The inner garden mainly uses decorative lighting that helps to set the mood and positively contribute to the atmosphere or look-and-feel of the space. Besides that, the inner garden is adjacent to large window openings on the first floor in the Liv Inn, which allows a lot of natural daylight to come through.

Texture

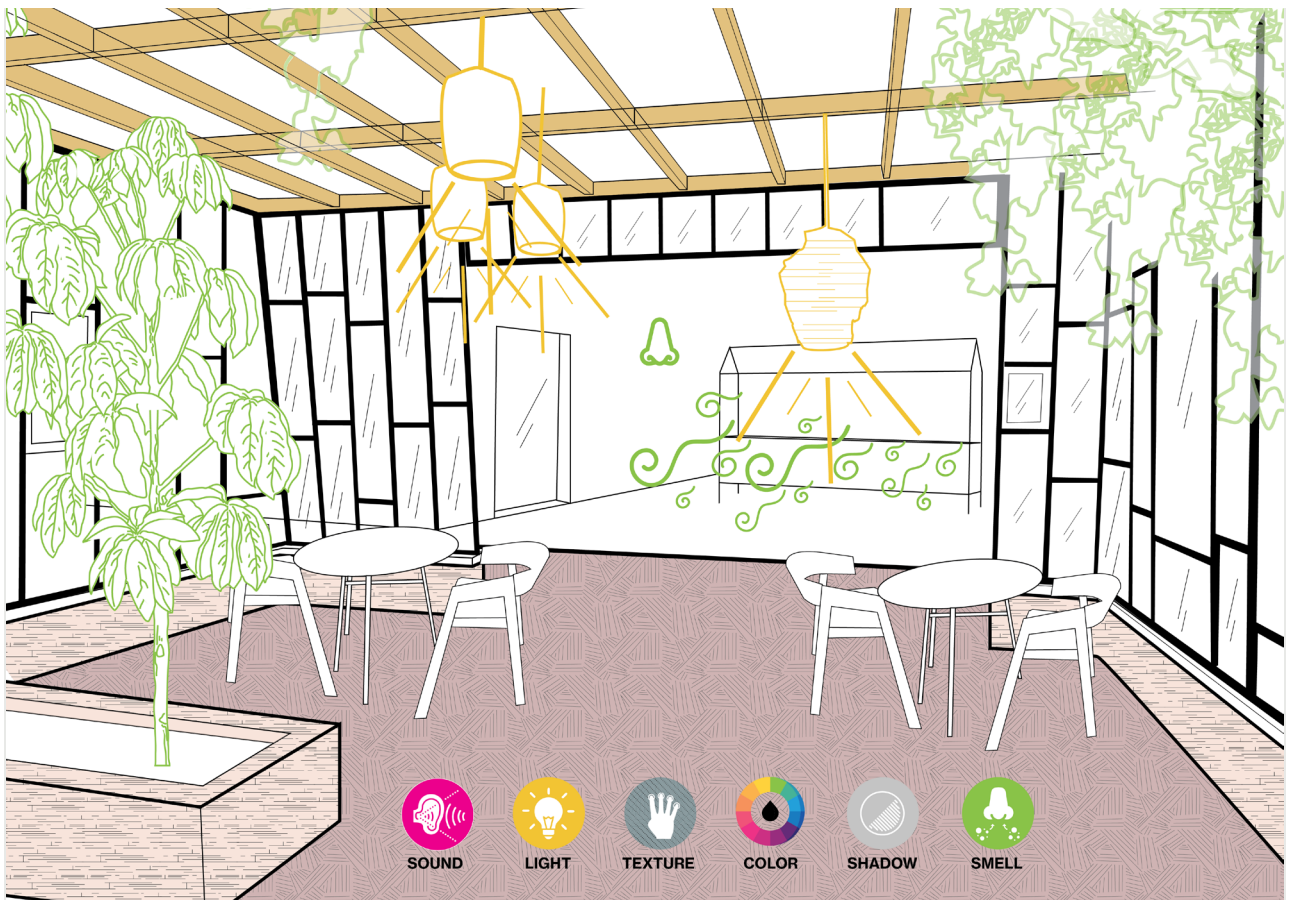
The inner garden, as the name suggests, focuses on creating a garden-like environment in the interior of the Liv Inn. By drastically bordering the floor surface texture with red hexagonal tiles of the inner garden in comparison to the walkways or other functions with a polished concrete look, a contrast and zoning of the inner garden becomes evident. Apart from that the glass partition cause for a semi-transparent wall around the space. An open wooden ceiling and refurbished wooden elements in the glass wall add to the warmth of the space. To further border the inner garden in the open, yet central interior space it finds itself in, the architect's use a plinth made of red brickwork, which also adds the the warmth and interplay of textures within the space.

Color

By using warmer colors such as wood, red brickwork, red hexagonal ceramic tiles and greenery around the ceiling and in planting beds which are integrated in the brick plinth, the inner garden certainly feels comfortable, cozy and invites lingering and provides an atmosphere that is suitable for study or work. The latter is concluded based on talks with staff, a student and elderly who confirm this success of the inner garden.

Smell

Although the garden is drastically bordered or partitioned from the surrounding interior spaces, it still has an open design. This allows for the smell from cooking or coffee from the communal kitchen to enter the space. This can residents to possibly move from the inner garden to the communal kitchen, which is often occupied by residents during certain peak hours for either drinking coffee, a drink, cooking or eating.





LIGHT

Layered Lighting: Integrate layered lighting types such as combining accent lighting and decorative lighting to create an inviting atmosphere

Natural Light: Maximize natural daylight with large windows in communal spaces, as it enhances mood and fosters connection with the outside environment



SHADOW

Dynamic Play of Shadows: Employ lighting that produces soft, dramatic contrasts. Use shadows to evoke depth and intimacy while maintaining visibility

Soft Transitions: Prioritize diffuse and low-intensity lighting to minimize harsh shadows, creating a cozy and homelike feel



TEXTURE

Tactile Diversity: Use varied materials to provide tactile richness and visual contrast, making spaces feel warm and recognizable

Functional Textures: Use distinct textures to define zones, which can visually guide users to navigate



COLOR

Warm and Vibrant Tones: Utilize warm and vibrant colors like red brick or vibrant accents to foster appeal, comfort or recognizability

Personal and Nostalgic Touches: Include personalized or nostalgic coloured elements such as vinyl records or curated artifacts to evoke emotional connections and stimulate conversation



SMELL

Aromatic Flow: Design open connections between areas to allow pleasant or identifiable smells, to permeate and encourage movement and socialization

Natural Scents: Incorporate natural greenery and plants into spaces like inner gardens to provide a refreshing sensory experience and enhance calmness



SOUND

Acoustic Treatment: Use sound-absorbing materials to minimize noise and echo

Purposeful Noise Control: Design spaces with clear acoustic zoning to ensure sound is contained where needed and reduced in adjacent areas to foster pleasant conversations



RELATION TO LONELY PEOPLE (IN TARWEWIJK)

Poor lighting prevents one's ability to "read" the space, making it feel unsafe or comfort, hinders their mobility and sense of orientation, decrease in social connectedness (Petermans, 2019)

Poor contrast to the lighting (with shadows) can have the same effects as the ones stated above.

Poor lighting prevents one's ability to "read" the space, making it feel unsafe or comfort, hinders their mobility and sense of orientation, decrease in social connectedness.

Studies show that even simple changes in colour combined with strategic placement of certain social activiteit can drastically increase social connectedness (Petermans, 2019)

Despite being in a new environments, the sense of wellbeing among elderly can be traced back to the (nostalgic) things that recall meanings of home, which are often tied to objects of home from their past (Petermans, 2019)

The smell of food or coffee might be an invitation (or rather an excuse to some) to go and socialize with others (e.g. coffee time at lunch or joining communal dinners)

Smell is directly linked to the spatial perception of people. It is a design factor that influences how people (partially) evaluate spatial cues and in turn, how they might experience social relations with others within that space (Petermans, 2019)

People with hearing impairments, that might use hearing aids, might avoid (communal) spaces that become too noisy when crowded, resulting in them potentially further isolating themselves. Designing acoustically-sound spaces might encourage these individuals to participate in social activities

14

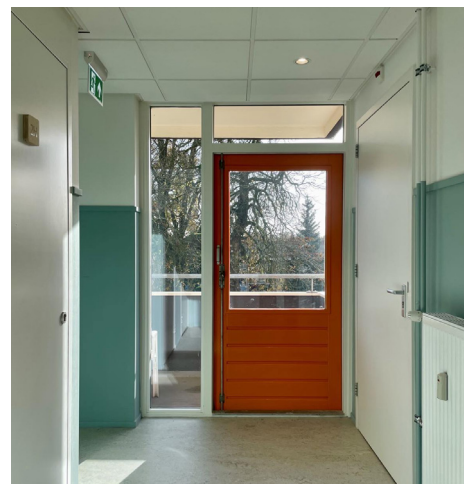
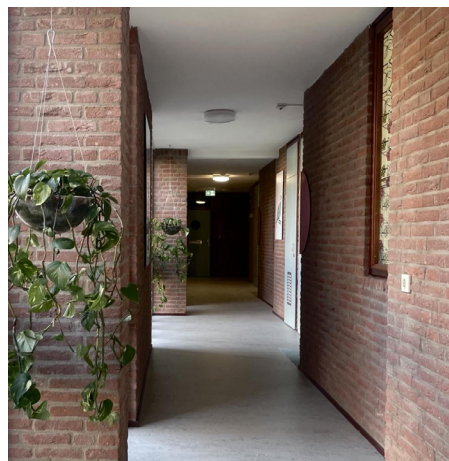
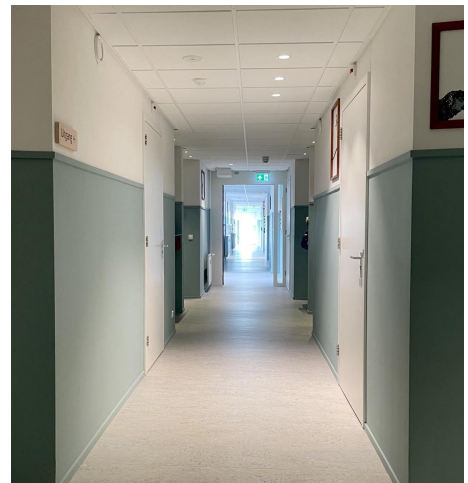
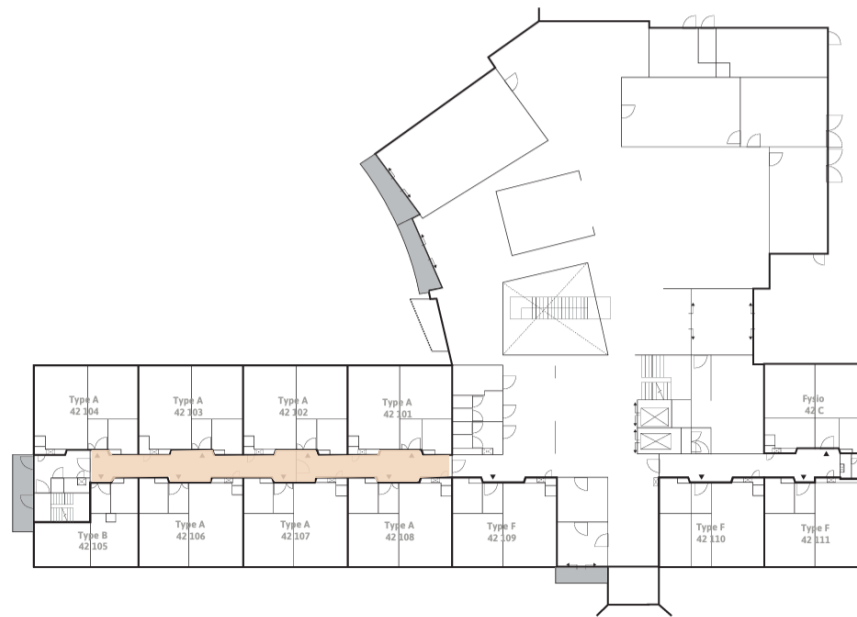
Deserted Corridors: A Study in Spatial Perception

Among the spaces we observed, the long corridors in the building stood out as the most deserted areas throughout the day. Their configuration—long, linear pathways—evoked hospital-like imagery for one of our interviewees, reinforcing a sense of sterility and disconnection. Despite their functional purpose as transitional spaces, these corridors fail to invite pause or engagement, lacking the warmth or visual interest that might encourage lingering.

The stark difference in wall materials further amplified the divergence in perception. In the newer half of the building, plastered walls, with their bright and reflective surfaces, created a sense of openness and light. By contrast, the older section featured dark, exposed brick walls, which felt heavier and less welcoming according to another interviewee. This juxtaposition of materials offered a striking commentary on how architectural finishes alone can shift the emotional tenor of a space.

The gym on the second floor presented another layer of complexity. The design of this space mimicked the elongated, corridor-like typology of the adjacent spaces: a long, curved room with daylight penetrating only through high, narrow windows. Over the course of our week-long stay, we noted that the gym remained entirely unused. Interviews and observations suggested several possible reasons: its placement in the corner of the building, on an upper floor, creates a sense of inaccessibility. The lack of inviting daylight—restricted to the upper reaches of the walls—renders the room dim and uninviting, despite its potential utility.

Additionally, the gym's elongated configuration reflects a spatial typology associated more with movement through space (like corridors) than with activities requiring presence and engagement. This subtle architectural cue might subconsciously discourage users from spending time there. The lack of direct visual or physical connection to other active spaces in the building further isolates the gym from the rhythms of daily use.

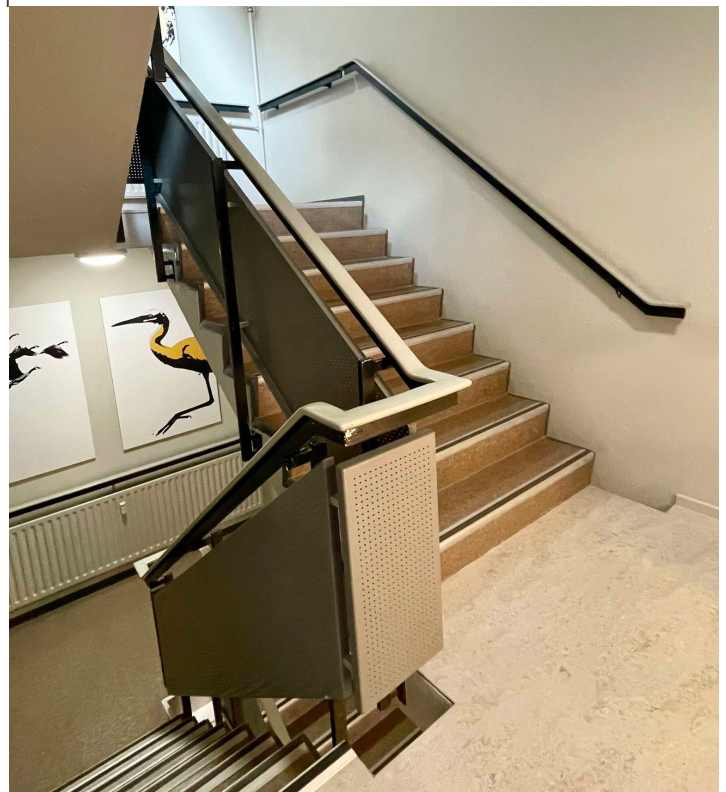
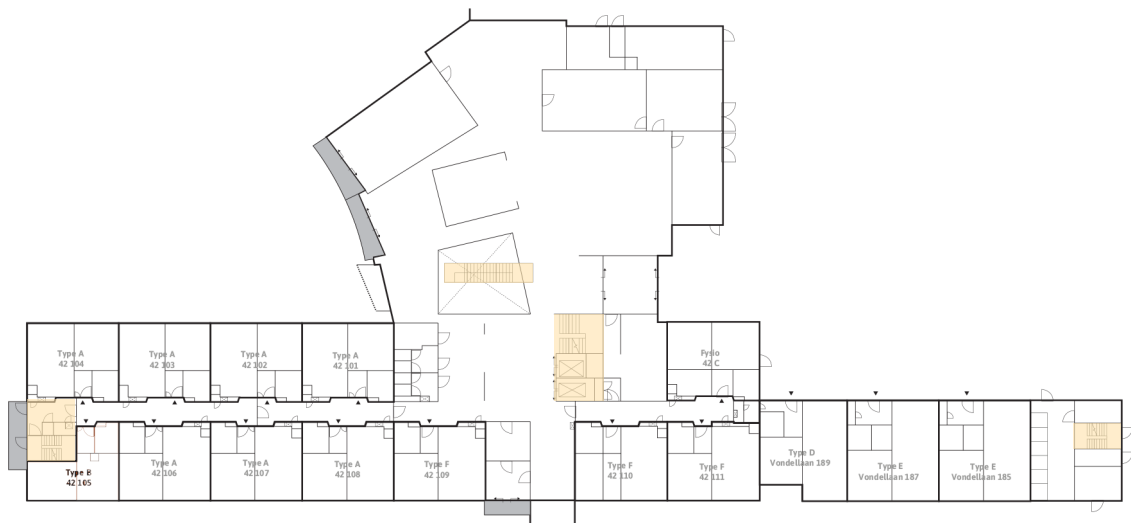


1. Gym on the second floor
2. Corridor along the first floor (newer extension)
3. Corridor along the third floor (old building)
4. Door to balcony at the end of first floor corridor (newer extension)

15

Encouraging Movement through the Built Environment

The stairwells are thoughtfully designed to promote walking and physical activity. Interviews with younger, mobile residents reveal a strong preference for taking the stairs over the elevator. The spacious, well-lit main staircase, which connects directly to the communal space, sees frequent use, while the elevator is used less often.



16 Fostering a Sense of Ownership in Collective Living

Spaces at Liv Inn are thoughtfully designed to encourage personal expression and active engagement. Bulletin boards and magnet strips outside individual rooms allow residents to showcase their identities and personalize their spaces. Activities like tending plants, cleaning, and maintaining the communal kitchen and facilities not only foster a sense of responsibility but also keep residents mentally and physically active. The communal garden provides a shared outdoor area for relaxation and interaction, while workshop spaces equipped with tools and equipment for rent offer opportunities for creativity and hands-on projects.



17

Limitations and Discussion Fieldwork at Liv Inn Hilversum

Declining Volunteer Pool

According to our interviews, the Liv Inn is experiencing a shrinking demographic of active, younger elderly residents (aged 55–65), who are traditionally more mobile and capable of taking on volunteer roles to organize events and foster community spirit. This demographic shift leaves the community dominated by residents aged 80–90, many of whom are less mobile and prefer to stay in their apartments rather than participate in shared activities. This lack of active participation not only reduces social engagement but also places additional pressure on the few available volunteers, leading to frustration and fatigue among those willing to help.

Communal dinners in the shared kitchen, while planned, suffer from low attendance (fewer than 20 people) due to both a lack of volunteers and resident willingness to participate. The minimal turnout suggests deeper issues in the community, such as social isolation, health limitations, or a lack of appealing programming to draw residents out of their apartments.

Residents Requiring Intensive Care

The presence of residents with advanced dementia or other conditions requiring intensive care presents unique challenges. While Liv Inn fosters a communal living model, accommodating such residents can strain resources and disrupt the atmosphere. Potentially rethinking the balance between independence and care within the Liv Inn model.

Challenges in Inter-generational Engagement

While residents wish for students to play a more active and engaging role within the Liv Inn community, there is a misalignment between the schedules of elderly residents and students. The elderly are most active midday, whereas students are generally away studying during the day and socialize more in the evenings or nighttime, leaving little overlap for meaningful interaction.

18

Relevance Fieldwork for Tarwewijk

Addressing lack of neighborhood volunteers

The issue of a shrinking volunteer pool is a significant challenge, as seen in areas like Tarwewijk. For instance, the lack of volunteers to manage sports fields and parks often results in closed gates, discouraging community activity and engagement. This highlights that providing physical infrastructure alone is insufficient; the issue is deeply rooted in social dynamics, such as the absence of active, younger residents willing to take initiative. There is a pressing need to coordinate efforts and implement strategies that encourage volunteerism, particularly among younger demographics.

Future of informal care in networks

Promoting ageing in place presents several challenges, especially as elderly residents may reach more critical stages of care or advanced dementia. This underscores the importance of building an inclusive safety net that supports ageing in place while fostering informal networks of care. Strengthening these networks will require community engagement, awareness campaigns, and collaboration among families, neighbors, and local organizations to ensure comprehensive support.

Monofunctional spaces prevent inter-generational interaction

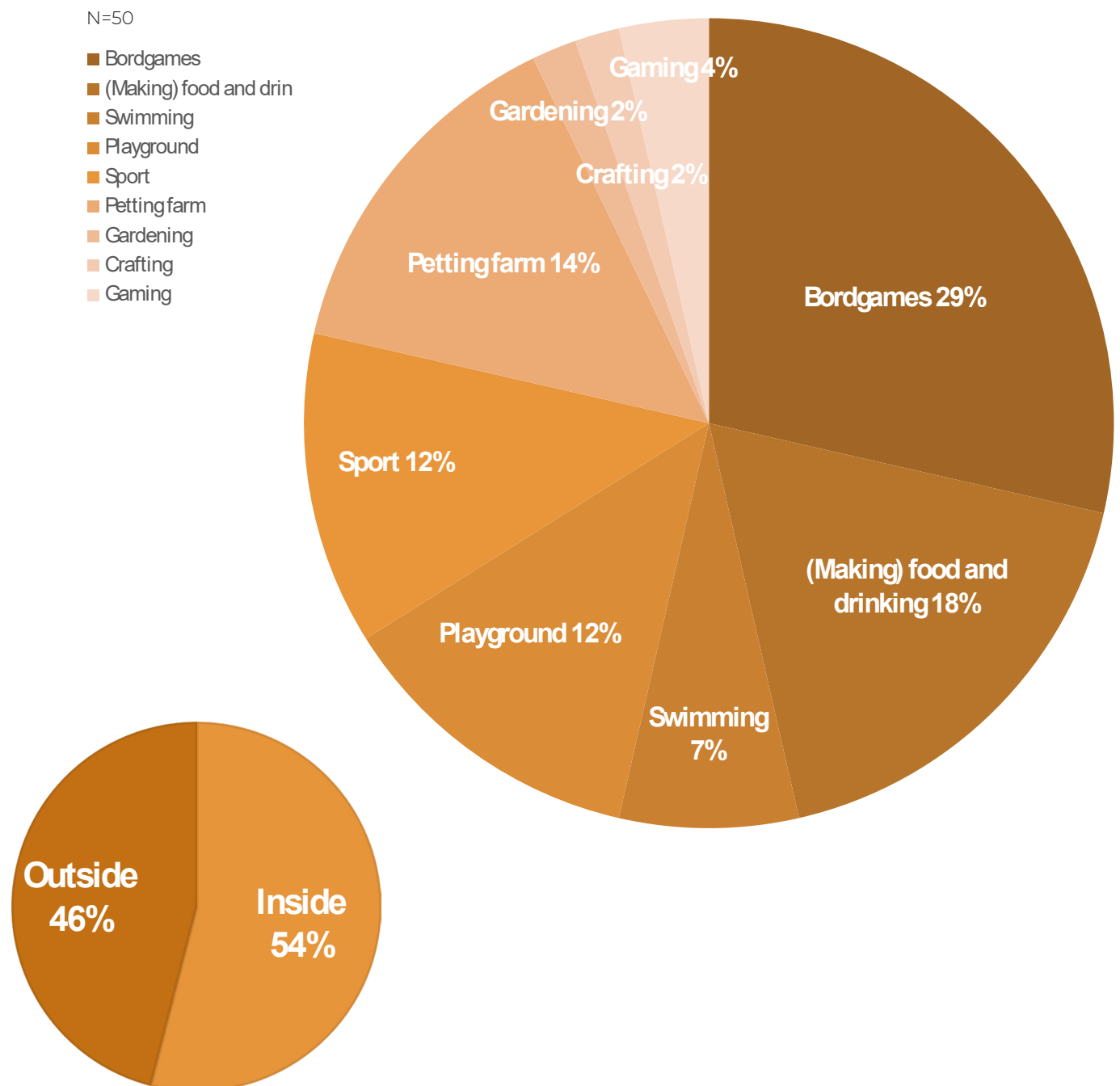
Monofunctional spaces, such as parks designed exclusively as play areas for children, limit opportunities for intergenerational interaction in neighborhoods like Tarwewijk. The lack of shared, multi-use spaces hinders meaningful engagement between residents of different age groups. Addressing this issue will require rethinking urban design to create versatile spaces that encourage social integration and interactions across generations.

Fieldwork at Primary School

APPENDIX C

C1 - Children Workshop

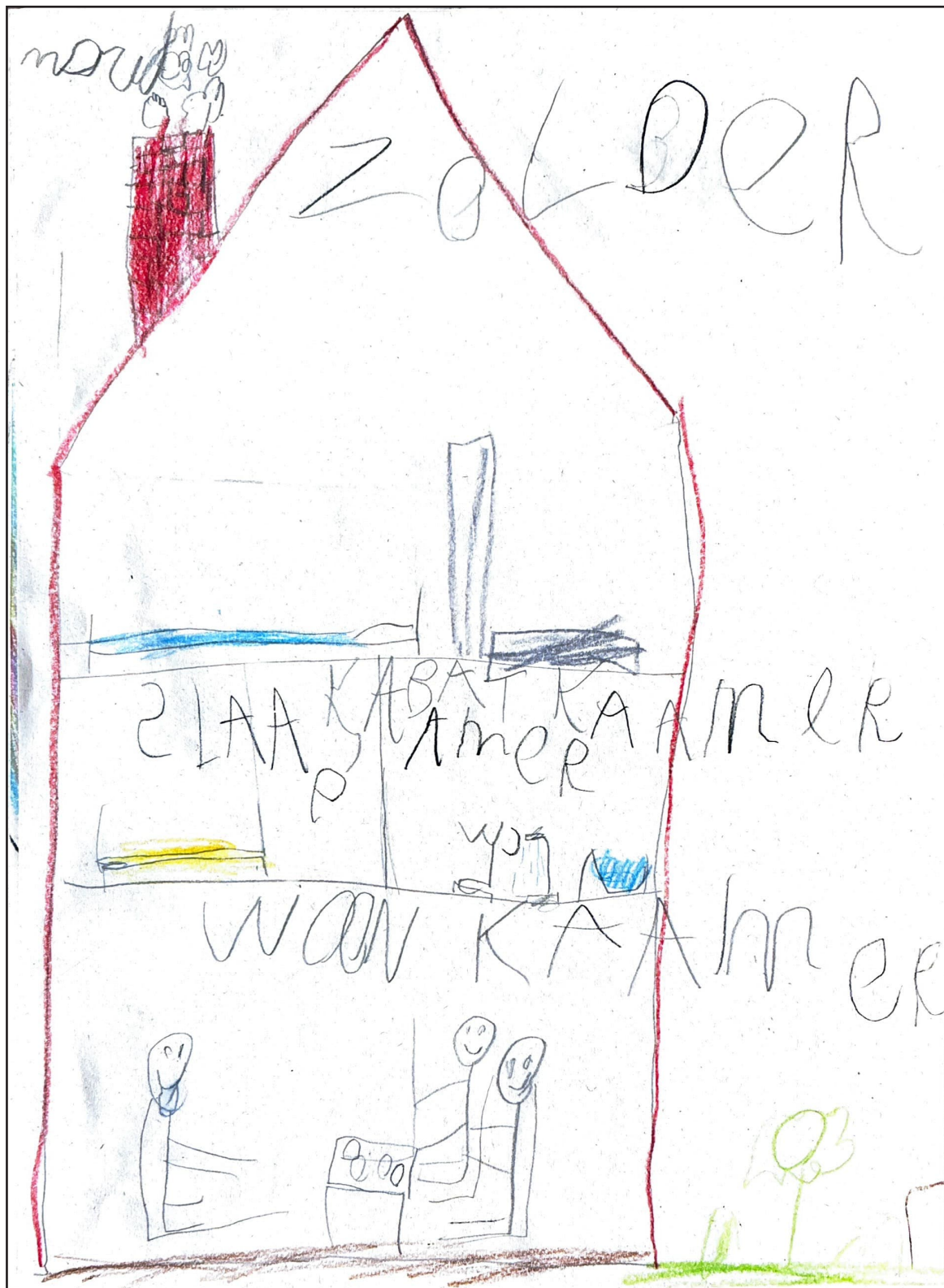
Research was also conducted to explore children's preferences in a multigenerational environment with older adults. To this end, a public school similar to OBS De Globe was visited, where children were asked about their preferred activities with older adults. The results are presented in the pie chart, highlighting nine activities that were mentioned multiple times: playing games (29%), cooking and eating together (18%), caring for animals (14%), engaging in sports (12%), going to the playground (12%), swimming (7%), gaming (4%), crafting (2%), and gardening (2%).





C1.1 Sports

Twelve percent of the children ($n=6$) drew something related to sports as an activity to do with older adults. In many cases, this involved a ball sport. The boy who created the drawing above illustrated a soccer field where he and his brother play against two older adults. When asked whether elderly people might be too old to play soccer, he responded: *"No, my grandpa still plays soccer with me, so other elderly people should be able to as well."*



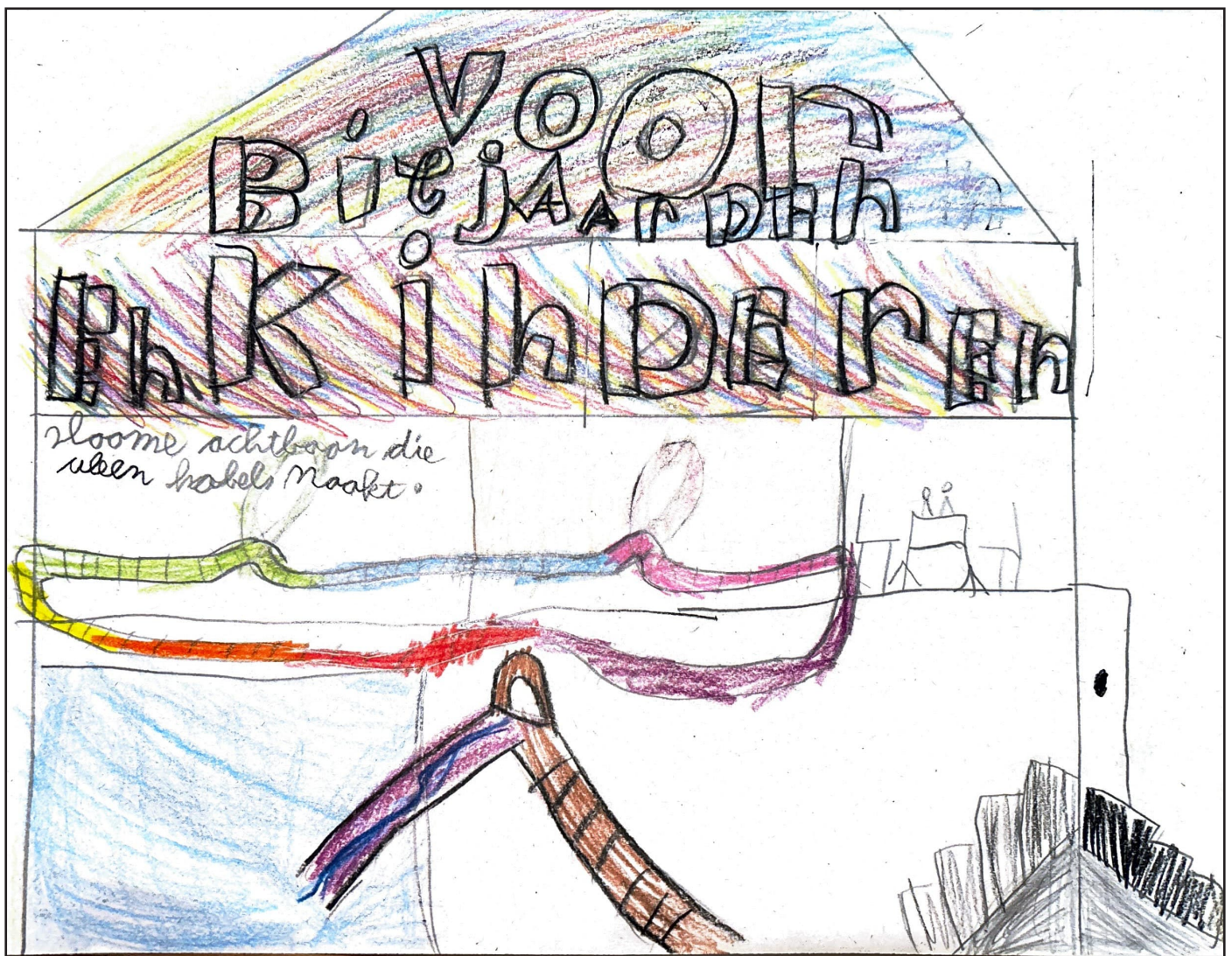
C1.2 Bordgames

The largest group of children (29%) drew board games as activities to do with older adults. Monopoly and chess were particularly popular choices. The boy depicted above is one example, showing himself playing chess with his grandparents in the living room.



C1.3 Swimming

Swimming with older adults was also depicted several times. The children mentioned that their grandparents still often go swimming, and they enjoy accompanying them.



C1.4 Playground

A few children (n=6) drew playgrounds, fairs, and amusement parks, which were grouped under the category "Playground." One particularly creative girl enthusiastically sketched a large roller coaster that she wanted to ride with older adults. When asked whether older adults would enjoy riding a looping roller coaster, she quickly ran back to her table. A short while later, she returned, having erased the loops (see the drawing above) and added the following note: "Slow roller coaster that only makes bumps."



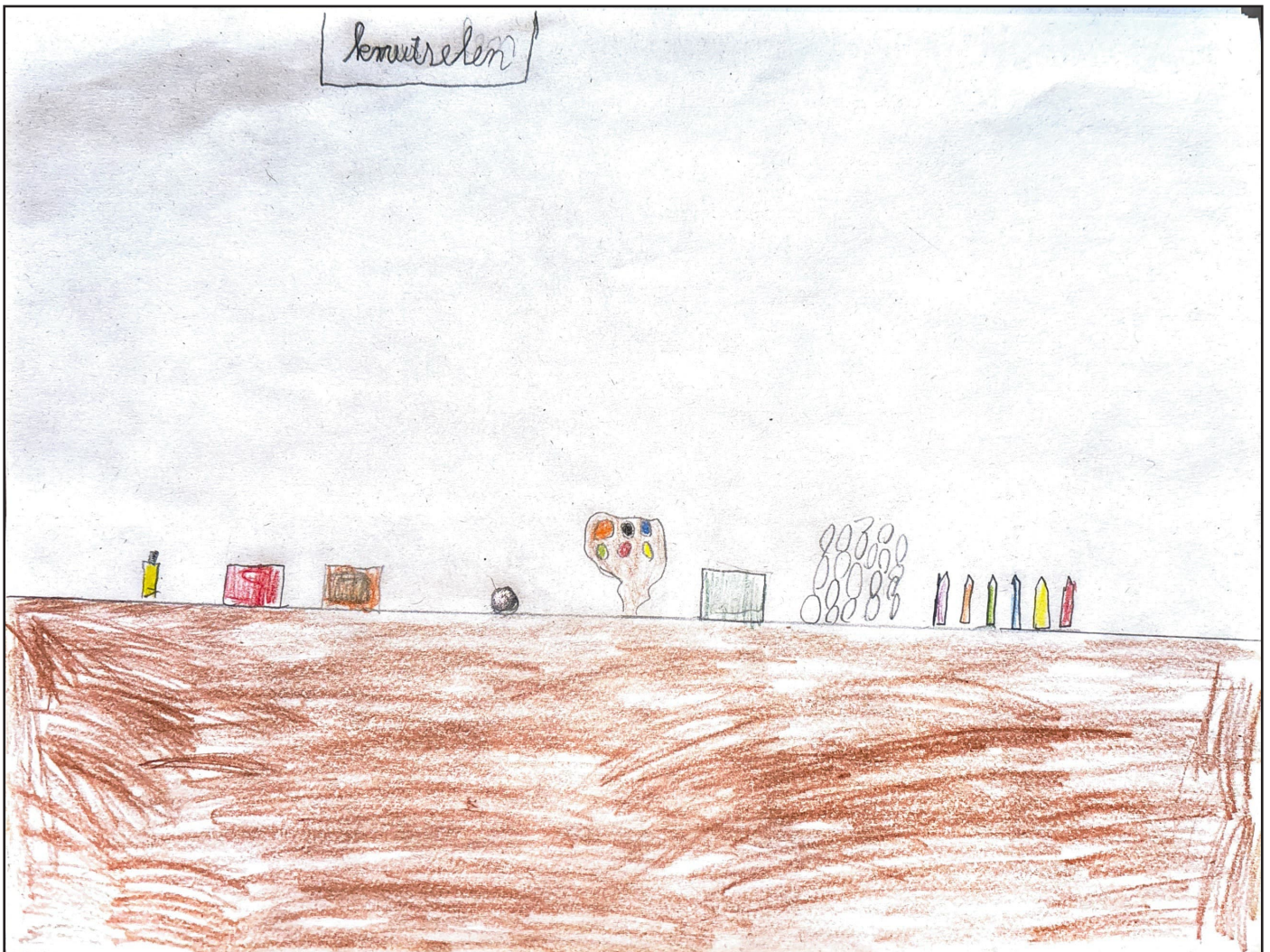
C1.5 Making food and drinks

Nine children (18%) drew activities involving eating or baking together with older adults. The girl depicted above expressed her desire to bake a cake with older adults and then enjoy eating it together. Picnicking was also a recurring theme in several children's drawings.



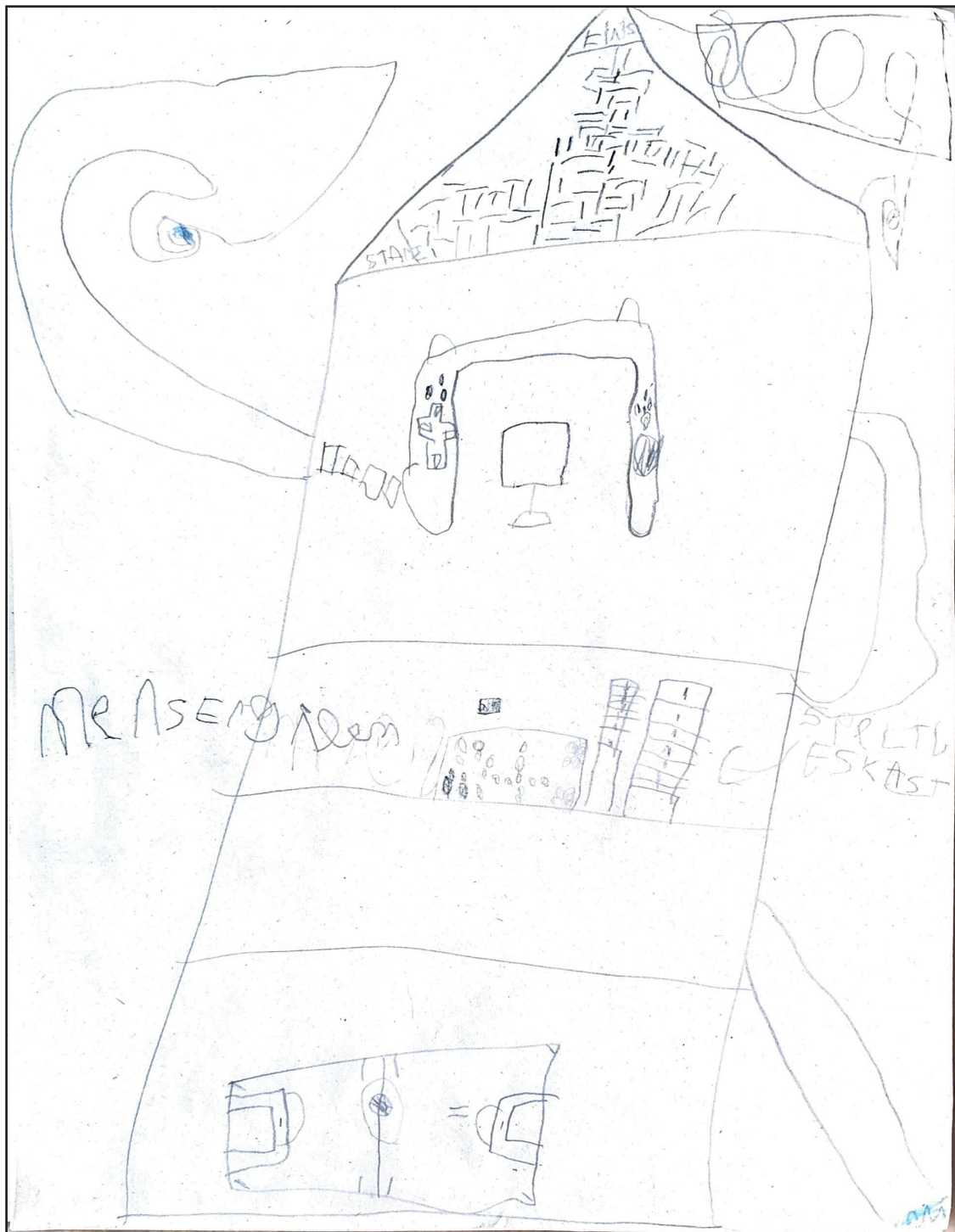
C1.6 Petting Farm

Animals were also a recurring theme among the schoolchildren. Many of them mentioned regularly visiting petting zoos with their grandparents. The idea of going to the farm with a large group of children and older adults seemed exciting to most of them. As one child explained: "That just means there are more people to play with."



C1.7 Crafting

Crafting and drawing were less commonly depicted by the children. However, when asked whether they enjoyed this drawing exercise and if they would like to do similar activities with older adults, the children responded with great enthusiasm.



C1.8 Gaming

Some boys in the class also expressed interest in gaming with older adults. When asked which video games they thought older adults might enjoy, Mario was mentioned frequently.



C1.9 Gardening

Many children drew activities with older adults that could be done outdoors, one of which was gardening together. The boy depicted above created a drawing showing himself digging a hole in the garden while a retired adult prepares to plant the seeds.

Fieldwork at LIAG Architekten

APPENDIX D

D1 - LIAG ARCHITECTS

CASE STUDY OF THE INTEGRAL CHILD AND ELDERLY CENTER IN NOORD SCHAARNWOUDE

During the interview with Liag Architects, we discussed the design choices made for the elderly and child center, although no visual materials of the project could be shared due to confidentiality agreements with the client. However, Liag Architects did provide some insights into their design decisions.

The project was developed in collaboration with RUM, as they frequently work on similar projects. Importantly, the center is not a traditional nursing home, though it does provide care services. The design incorporates a multifunctional restaurant that also serves as a waiting area for parents, which helps in fostering a community-oriented environment. Additionally, there is a playroom that is accessible to both residents and the local neighborhood, promoting interaction across generations.

On the first floor, there is an atelier that can be used by both the residents and children. The building also includes meeting rooms and a breakroom for teachers, which is shared with healthcare professionals. This space allows for the exchange of knowledge between the healthcare providers for children and elderly residents.

The design of the elderly care area is centered around a “living room” concept, which is strategically placed near the playground, encouraging social interaction. One of the notable features of the project is the building’s Z-shaped layout, which was chosen due to the higher ceiling heights of the school floors.

For practical considerations, parking for drop-off and pick-up is temporarily accommodated on the school grounds, ensuring smooth operations. A key aspect of the design is the central main entrance, which encourages spontaneous meetings between residents, children, and visitors, aligning with the goal of fostering connections.

The landscape design draws inspiration from the “1000 Islands” in the Netherlands, further contributing to the serene and welcoming atmosphere of the center. The overall design creates a homely ambiance, with clear sightlines from within the building to the outside, promoting a sense of openness and connection to the surrounding environment.

The playground is equipped with movement-based equipment suitable for both older adults and children, as they share similar motor skills. This design choice encourages intergenerational physical activity and interaction, fostering a more inclusive environment for both groups.

This fieldwork book serves as an appendix to the research report: *Bridging the Gap Between Young and Old*. It provides additional information on the field research conducted in Tarwewijk, at Liv-Inn, at the primary school 'De Verbinding', and the case study interview with Liag Architects regarding the integrated elderly and child center in Noord-Schaarnwoude.



T O G E T H E R