



DESIGN FOR PEOPLE WITH DEMENTIA

What are requirements of the living environment for people with dementia in care facilities, for achieving optimal autonomy during each different phase of dementia? (For example, in Rotterdam)

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COLOPHON

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PREFACE

My mum used to work as a nurse at the psychogeriatric department. During high school and Bachelor's degree I worked as a cleaner in a nursing home for people with dementia. A lot of caregivers had complained about the building and the lack of nature surrounding it. This was one of the main reasons to start my research about designing for people with dementia.

Last year I did an internship at Veldacademie. Otto Trienekens introduced, to me, a publication from Masi Mohammadi about Livinglabs and designing with dementia. Their research approach focuses on centralizing the user and what their needs are. They co-create with the users and apply their needs in the physical environment. By renovating spaces and changing the interior. Creating a 'gesprekstafel' to increase social interaction or way finding by using wall stickers and/or using technology. This concept of centralizing the user resonates with me and their research was inspiring to read.

I would like to thank my tutors Leo Oorschot, Wing Yung, Frank Schnater and graduation studio coordinator Machiel van Dorst for guiding me towards a desired result and helping me along the way of graduation. A special thanks to Andrea Fitskie and Otto Trienekens for organizing and orchestrating opportunities for our graduation studio to interact with experts of the municipality of Rotterdam.

Finally, I would like to thank my friends and family for all the love and support. I am immensely grateful for everyone's contribution for making this research possible.

Noa van Dorth
Delft, February 10, 2025

ABSTRACT

Keywords: living environment, dementia friendly, freedom of movement, autonomy, communal space

The Netherlands, in this case study, Rotterdam is dealing with a growing elderly population, a shortage of healthcare staff, and an increasing risk of dementia. These challenges are worsened by a housing shortage and the lack dementia-friendly housing and living environments. The municipality encourages elderly individuals to remain in their homes for as long as possible; however, current housing and living environment fails to meet the needs of those living with dementia. Moreover, policies such as “zorg en dwang” care and force, which is to protect people who are endangering themselves or others, is taking away the autonomy and freedom of movement of such a person. However, this clashes with the constitution policy that states that everyone is allowed to move freely.

This thesis explores the design of indoor and outdoor spaces that respect the autonomy and freedom of movement of people with dementia. The design vision seeks to integrate public, communal, and community functions with elderly housing, creating a seamless blend of private living spaces and shared environments. Enhancing nature to create a sense of freedom and autonomy.

In the early stages of dementia, individuals can still maintain a level of independence but require assistance with daily tasks, which may be provided by family members or caregivers. During this phase, it is vital to support autonomy through well-designed spaces that facilitate social interaction and reduce confusion. As dementia progresses, the design must adapt to ensure environments remain familiar, safe, and accessible while avoiding elements that may cause distress. Personalized spaces, autonomy in decision-making (such as choosing where to eat), and the incorporation of social hubs, like cafes, help maintain identity and a sense of control.

Design guidelines emphasize safety, with wide entrances and corridors, accessible outdoor spaces, and clear wayfinding to accommodate those with visual and mobility impairments. Community integration is important, with access to public transport, recreation, and services ensuring continued independence for as long as possible. Advocating for the autonomy of people with dementia, by shifting from traditional elderly homes and nursing homes to a design that allows individuals to have the perception of moving freely and remain part of a community while they still receive the care that they need. The importance when designing a building to include a view on nature and social interaction, creating spaces for community activities and social interaction to happen are crucial for autonomy and mobility freedom.

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LIST OF ABBREVIATIONS

Abbreviation	Definition
MPU	Medical Psychiatric Unit
PWD	People with dementia
YOD	Young Onset dementia

LIST OF DEFINITIONS

Term	Definition
Autonomy	Having control over oneself or the activity one does (Cambridge University Press & Assessment, n.d.).
Caregiver	Caregivers may provide assistance with daily tasks, chores, and errands but cannot complete medical duties (Weston et al., 2025).
Care home	Temporary place where people with dementia stay for a couple of days or weeks (De Vette, 2023).
Living environment	The spaces where the person with dementia lives in. This can be the nursing home, but also a bit outside of that such as the street or neighbourhood they live in.
Living lab	Bringing together different professions and people with dementia to create innovative solutions (Halsall et al., 2014).
MPU Children's department	Is a Medical Psychiatric Unit for children, who have either mental or physical issues. This is the only location for such children in the Netherlands (Amsterdam UMC, 2024).
People with dementia (PWD)	People who have decline in grey brain matter, which leads to short term memory loss and a distorted perception of the environment.
Optimal autonomy	As much autonomy as possible for people with dementia.
Nurse	Nurses can provide these daily tasks and complete medical duties with a doctor's approval (Weston et al., 2025).
Nursing home	The home and living environment of people with dementia.



Figure 1. Nursing home Molentocht Purmerend

Assisted living
 Nursing home departments
 Reception, communal spaces and care facilities

INTRODUCTION

The first time I got in contact with elderly with dementia was when I started my summer job as a cleaner at a nursing home in Purmerend. After 5 years of working at this psychogeriatric department, I had to get used to the interactions and how to approach them. There were times when it was fun, but there were times when it was painful to see them suffer and hard for them to understand why they lived there. It was difficult to see them pounding on the windows and doors to sometimes scream they wanted to get out. It was suffocating because they would walk in circles and repeat this behaviour.

There is an increase of elderly people in the Netherlands (CBS, 2024). This research focuses on Rotterdam, where most elderly live in the north and south of Rotterdam (onderzoek010, 2024). Aging comes with an increasing risk of dementia (Alzheimer Nederland, 2024a).

With that in mind I would like to create communal spaces for elderly people with dementia. A space that they can explore, feel safe and not feel trapped inside a building. This document contains the research plan for the graduation studio Veldacademie and is part of the Master Architecture at the Technical University of Delft. Veldacademie is a research organ/partner from the municipality of Rotterdam and focuses on resilience for deprived neighbourhoods in Rotterdam. This research is architectural and focuses solely on people with dementia and their autonomy regarding their living environment. To make it even more specific most of the case study and built environment is in Rotterdam. This research is for architects and the municipality of Rotterdam, because they can apply the design guidelines that result from this research in health care facilities and elderly homes.

Problem statement

15,7% of the people in The Netherlands that are **65 and older** live in **Rotterdam**. There is an increase in dementia diagnoses and mostly in women (VZinfo.nl, 2022).

Onderzoek 010 (2024) is the statistical database of the municipality of Rotterdam and Wijkprofiel (2022) (p.14-15) shows the perceived satisfaction of the

neighbourhood (AKA neighbourhood index) based on interviews held with residents in each neighbourhood in Rotterdam executed by the municipality of Rotterdam. When overlapping the data of the 65+ year olds map and the neighbourhood index (see Figure 2.). Where do elderly live and how is their neighbourhood index in that region? As you can see, Charlois has

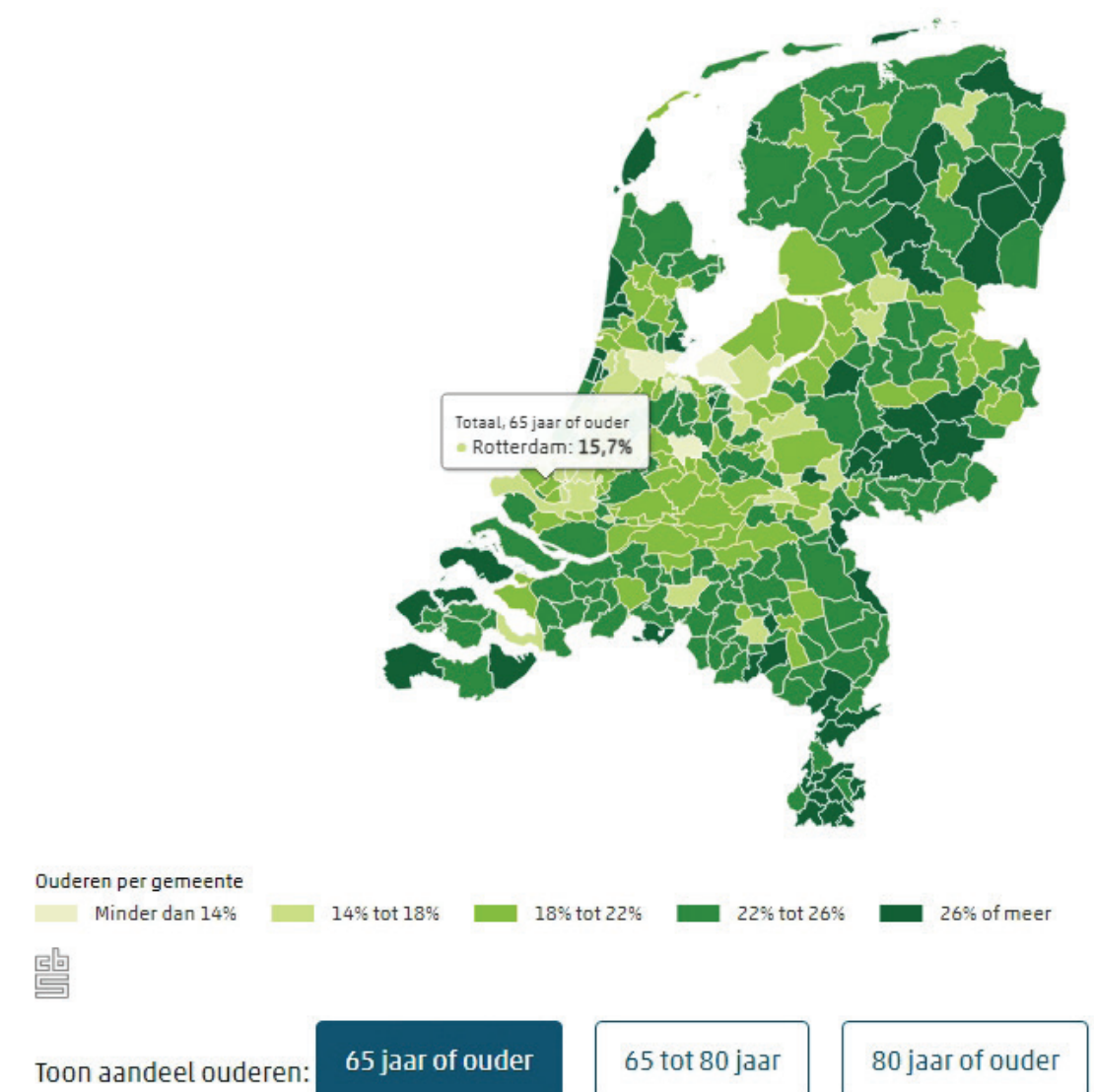


Figure 2. Elderly map of the Netherlands per town (CBS, 2024)

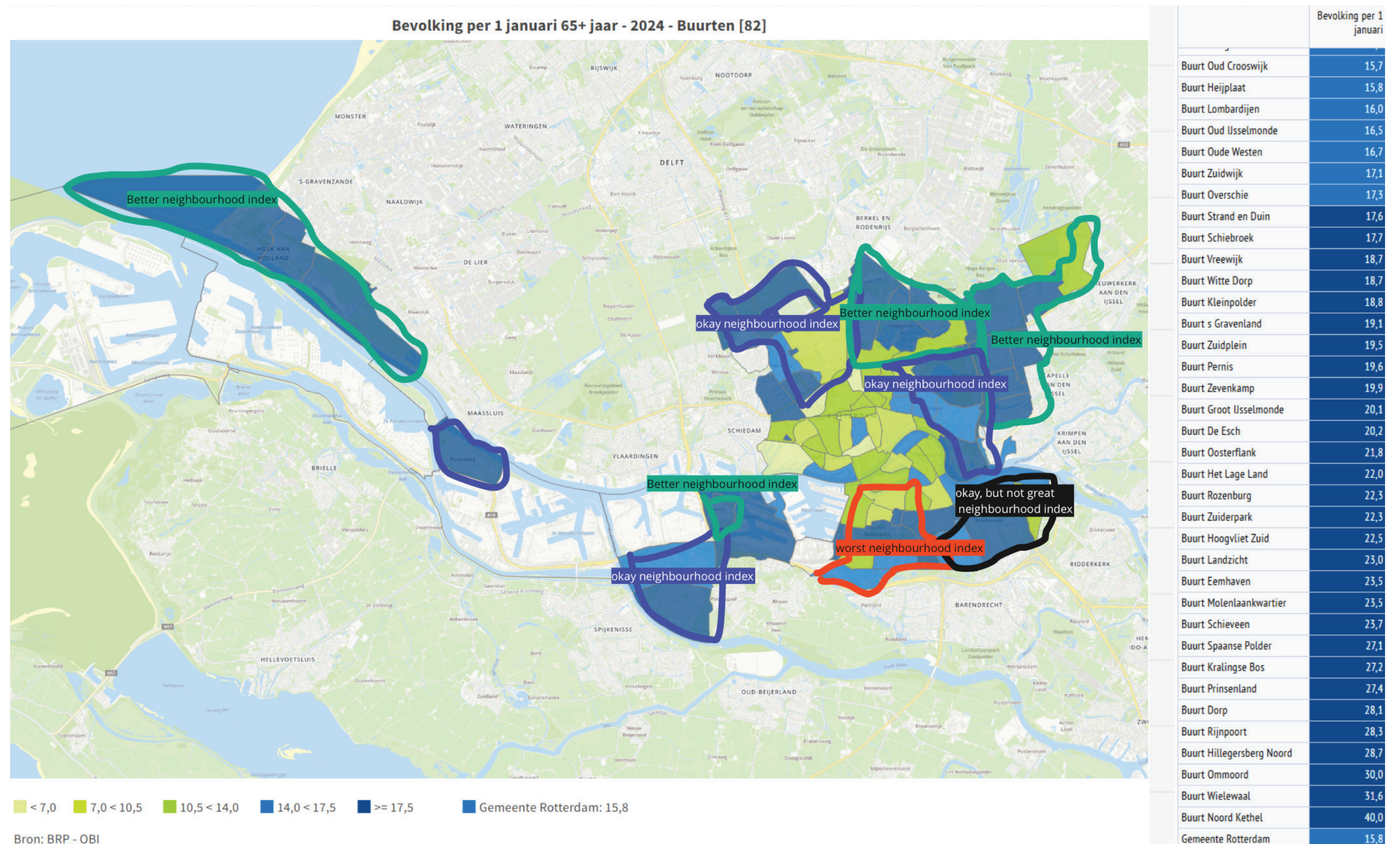


Figure 3. Neighbourhood index based on Wijkprofiel & Onderzoek010 (Gemeente Rotterdam, 2022, 2024)

about half the amount of elderly in Rotterdam (Onderzoek 010, 2024) and has the lowest index regarding social, physical and especially safety, according to Wijkprofiel (2022). IJsselmonde scores in the midium on the neighbourhood index (Wijkprofiel, 2022) and has more elderly than Charlois (Onderzoek 010, 2024). The neighbourhoods with the blue outlines drawn around them, scored medium

or higher (Wijkprofiel, 2022) and have more elderly then other neighbourhoods (Onderzoek 010, 2024). These medium scoring neighbourhoods are important, as they could be overlooked by the municipality of Rotterdam. As a result of Charlois scoring extremely low. The best scoring neighbourhoods are drawn with the green outline (Wijkprofiel, 2022) and have mostly elderly people living there

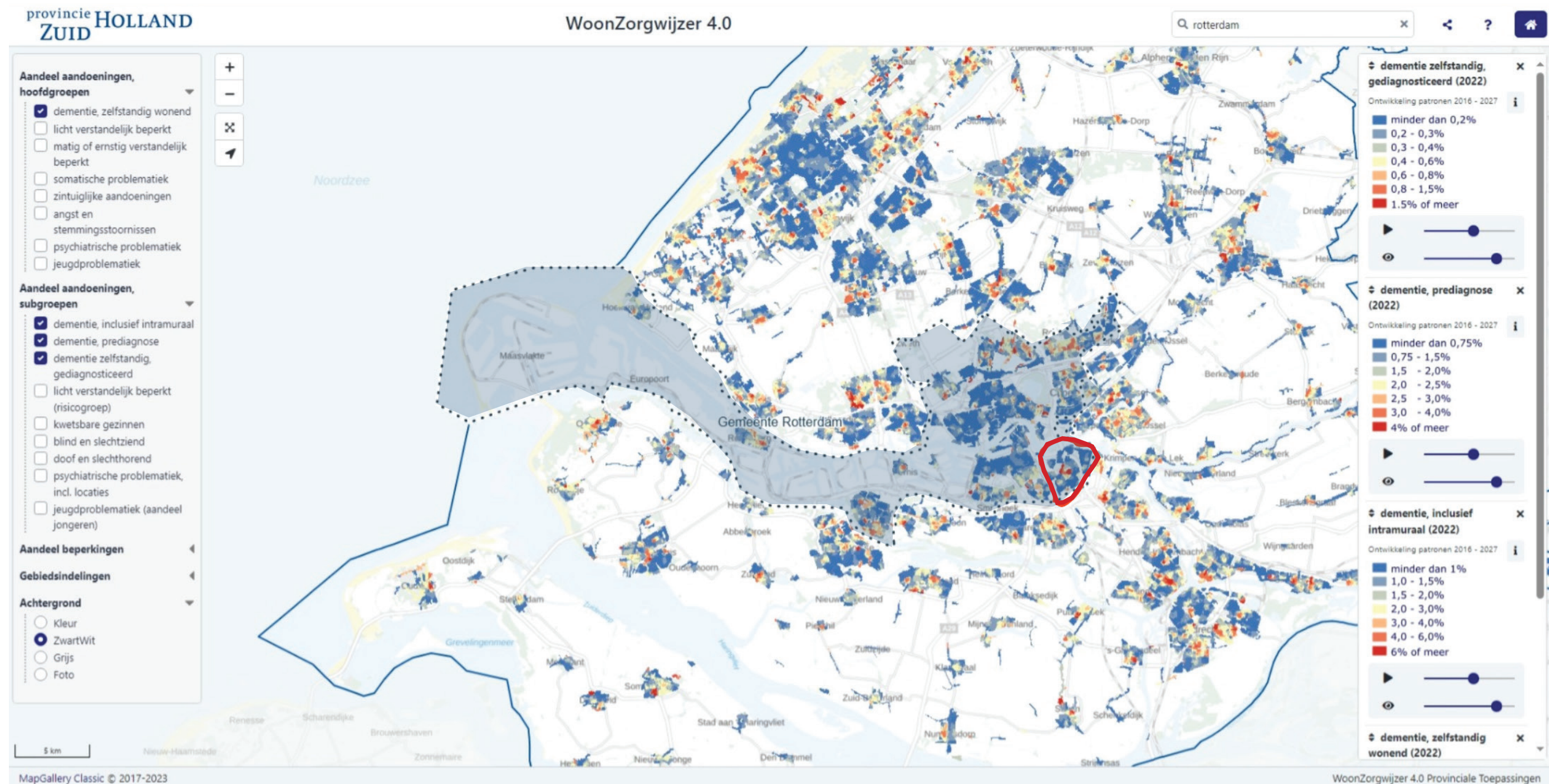


Figure 4. Dementia population in Rotterdam from WoonZorgwijzer map (WoonZorgwijzer, 2024)

(Onderzoek 010, 2022). To conclude, most elderly people live in the better scoring neighbourhoods compared to other neighbourhoods in Rotterdam. Half of the neighbourhoods they live in, can still use some improvements (Wijkprofiel, 2022). According to Onderzoek010 (2024) about 65+ elderly living in Rotterdam, Wijkprofiel (2022) (see Figure 2.) and WoonZorgwijzer

map (2024) (see Figure 3.): IJsselmonde has a lot of elderly with an increasing chance of dementia and a neighbourhood that can be improved. A local person from IJsselmonde at the market, stated that there is not much to do and if you want more 'gezelligheid', which means sociability, you need to go to other places in Rotterdam (2024). There is an increase in workload and a decrease in government funding

for healthcare in the Netherlands (VZinfo.nl (2022).

This targets vulnerable groups, such as people with dementia, whereas the amount of PWD increases and therefore the burden on the healthcare workers. This requires a different way of providing care and support to people with dementia. To relieve the pressure on nursing homes and hospitals. For example,

staying home instead, is a solution that is currently attractive. However, there are other problems that arise, such as more elderly people who need long-term care (24 hours) will end up in the hospital sooner. The current living situation is not suitable, whereas nursing homes and hospitals are designed to have fall prevention and access to caregivers (Erasmus University Rotterdam, 2024). In an article from the NOS, Van de

Klundert (2023) highlights the current crisis: long waiting lists, bureaucracy, a shortage of housing, and a lack of healthcare workers. The article also discusses a shift from elderly homes to providing healthcare within neighborhood communities, supported by caregivers (Van de Klundert, 2023). There is a positive side to not move to a nursing home, such as staying around family, friends and a familiar environment (Student, 2021). In short, pressure on nursing homes decreases, while it increases in hospitals. Shifting from nursing homes to community health care. Making homes suitable for people who needs care is something architecture can provide.

How can we best support our loved ones with dementia? When diagnosed in the early stages of

dementia, it is crucial to collect information about this. This knowledge can help with responding to someone with dementia and the approach. As for the doctor it is very important to discuss the diagnosis with the patient, in order to not infantilize / de-humanize them. Usually, the diagnosis is initiated by the relatives, since they have noticed changes in their behaviour for some time (Buijsen, 2019). According to Alzheimer Nederland (2024b) it is important that the environment offers autonomy to people with dementia. Caused by the sometimes disgracefully practices in care facilities (Toebes, 2023). Dementia friendly living (see Figure 5) focuses on autonomy, community, familiarity and safety (Alzheimer Nederland, 2024b). These themes are overlapping with "The neighbourhood medicine".

The municipality of Rotterdam describes in their action plan that the goal is to make Rotterdam dementia friendly and have elderly stay home longer by encouraging creative talent in elderly and having a social concierge. The social concierge organizes small events for the residents to interact with each other (Gemeente Rotterdam, 2023). According to Woonzorg Nederland et al. (2024) the current housing and living environment is currently not suitable for people with dementia or early signs of dementia. They made spatial and practical guidelines based on their research for improving the current housing stock in the Netherlands. Making the neighbourhoods more dementia friendly, can help with prolonging staying home. This can also reduce the pressure of the care facilities and the hospitals (Alzheimer Nederland, 2024b). According to the "zorg en dwang wet" compulsory care law, which is for people who are endangering themselves or others. which means that people lose the autonomy to roam around independently. However, this clashes with the constitution law that states that everyone is allowed to move freely

'Gebrek aan bewegingsvrijheid in verpleeghuis schending mensenrecht'

Figure 6. quote - (Kro-Ncrv, 2024)

(Kro-Ncrv, 2024).

"The lack of freedom of movement is against the human rights" - (Kro-Ncrv, 2024)

The current environment is not suitable yet for people with dementia and therefore the **design goal** is:

- Creating and designing communal spaces indoor and outdoor for elderly people with dementia. Focussing on the mental health and wellbeing of individuals.
- Creating a space where they can feel free to explore, and have control over some part of the environment they chose to be in.

In short: Designing indoor and outdoor space, for people with dementia, where autonomy and freedom of movement is respected.



Figure 5. What is dementia friendly living infographic (Alzheimer Nederland, 2024b)

THEORETICAL FRAMEWORK

Scientific director Mohammadi (2022) talks about designing for dementia in "Dutch Empathic Environment Livinglabs". Their research approach is a living lab and the research focuses on centralizing the user and their needs. They co-create with the users' needs in the physical environment. By renovation spaces and changing the interior. Creating a 'gesprekstafel' to increase social interaction or way finding by using wall stickers and/or technology. p. 171 Researcher Leonie van Buuren mentions that during her research a man with dementia kept looking through a window towards the living room, when she was walking with him, he explained that he wanted to see who is inside the living room and whether or not he wanted to go there. Lost in space : architecture and dementia (Feddersen, E.

and Lüdtke, I., 2014) has a lot of examples of interior spaces for people with dementia or elderly homes. This research focuses on perception and sensory experiences for people with dementia. It shows different spatial designs. They state the importance of dual spaces, which means that there are two different types of spaces from which they can chose to be in. Giving people with dementia control over what environment they want to be in, can help them remain calm. For example, **House of life**, in Germany is a nursing home. Their interior design has open spaces with ceiling to floor windows and it also allows to see inside the communal space before entering (see Figure 7). This is similar to the observation of Leonie van Buuren from the Livinglabs (Mohammadi, 2022).



Figure 7. House of life (Feddersen, E. and Lüdtke, I., 2014)

The Neighbourhood Medicine (Baak, 2019) 'what makes a neighbourhood dementia friendly?' looks at six themes: accessibility, familiarity, legibility, distinctiveness, comfort and safety. Objects are being placed to create familiarity and to make it easier to identify and recognize the area (see Figure 8).

The *Toolkit Dementia Friendly Living* (2024) is a booklet with helpful tips for developers, real estate managers, and renters (in this case, PWD). They based their design guidelines on the symptoms PWD experiences in their day-to-day lives, therefore it seems to stem more from a medical point of view, where they first determine the symptoms of PWD. The toolkit begins by examining the neighborhood level, focusing on three key factors: functionality, physicality, and sociality. Like Baak (2019) the design guidelines have similarities. The design guidelines, from the *Toolkit Dementia Friendly Living* (2024), include orientation, accessibility, independence, sensory stimuli, security, safety, familiarity, and a balance between public

spaces and more intimate areas. The guidelines are explained for each space in an apartment building; this ranges from where to place seating to what type of kitchen tools to use. However, what they have described so far is more on an interior and element scale, rather than an architectural scale.

Spatial orientation is needed to help people with dementia find their way around the block and can be done by landmarks or signposts (Buijssen, 2019).

Not enough user-centred design and stimulating social interaction (Mohammadi, 2022). Lack of accessibility, familiarity, legibility, distinctiveness, comfort and safety (L.M. Baak, 2019). Lack of control of themselves and the environment. Feeling lonely and lost (Feddersen, E. and Lüdtke, I., 2014). Being treated as a patient instead of human. A lot of burdens on family and caregivers (D. Al-Hamdany, 2023). Feeling isolated, fearful and being infantilized or de-humanized (Buijssen, 2019).

	Accessibility	
	Urban designer 	Involving actors 
Neighbourhood 	Connected routes Basic needs (500 m) Secondary needs (800 m) Direct routes	Pedestrian friendly Intergenerational spaces Communal spaces
Street 	Circular paths No dead ends Active plint	Readable crossroads Wide footpaths
Object 	Ramps/ Steps must be marked Accessible levels No height differences	Clear entrances

Familiarity		Legibility		Distinctiveness		Comfort		Safety			
Urban designer 	Involving actors 	Urban designer 	Involving actors 	Urban designer 	Involving actors 	Urban designer 	Involving actors 	Urban designer 	Involving actors 		
Hierarchy of familiar streets		Irregular grid	Viewports	Varied urban form		Green spaces	Informal spaces		Social communities		
Small street blocks		Different shapes		Distinctive Architecture	Wayfinding points	Places of activity				Welcoming spaces	
Open spaces		Variety in building styles		Different street furniture							
	Neighbourhood furniture									Raising awareness for dementia	
		Cluster shops together							Frequent pedestrian crossings		
		Small street blocks									
Coloured streets		Short streets		Streets with distinctive features		Seperate footpaths		Wide footpaths			
Contrast		Narrow streets				Wide footpaths		Buffer zones			
		Gently winding streets				Bordered footpaths					
		Buildings follow the building line			Buffer zones						
		View of the end of the street									
Use of colour			Landmarks		Landmarks	Accessible toilets		Good lighting	No arbitrary changes		
			Good signage				Plenty of trees				Signs for dangerous areas
			Clear entrances				Water element in the park				
						Benches			Safe crossings		
						Shaded places					
						Raised beds					

Figure 8: The Neighbourhood medicine design tools (Baak, 2019)

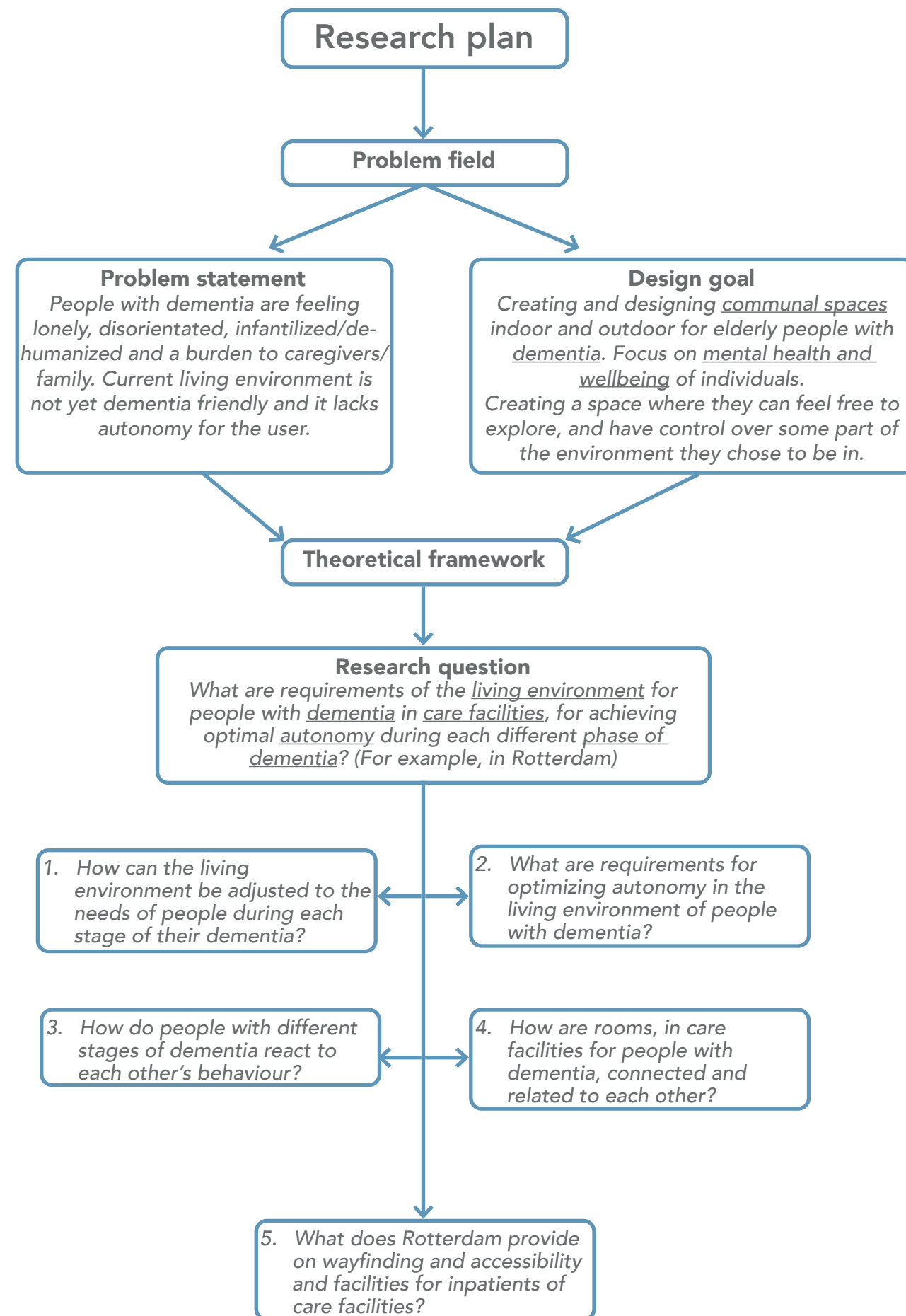


Figure 9. Research plan overview

Research question

What are requirements of the living environment for people with dementia in care facilities, for achieving optimal autonomy during each different phase of dementia? (For example, in Rotterdam)

Research sub questions

1. How can the living environment be adjusted to the needs of people during each stage of their dementia?
2. What are requirements for optimizing autonomy in the living environment of people with dementia?
3. How do people with different stages of dementia react to each other's behaviour?
4. How are rooms, in care facilities for people with dementia, connected and related to each other?
5. What does Rotterdam provide on wayfinding and accessibility and facilities for inpatients of care facilities?

Autonomy = freedom of movement, the freedom to explore, decide and have control over the environment or space that they are in. Such as opening a window or closing a curtain and deciding to sit in privacy or in a group.

Nursing home = the home and living environment of people with dementia.

Dementia = decline in grey brain matter, which leads to short term memory loss and a distorted perception of the environment.

Living environment = the spaces where the person with dementia lives in. This can be the nursing home, but also a bit outside of that such as the street or neighbourhood they live in.

Optimal autonomy = as much autonomy as possible for people with dementia.

People with dementia = PWD

RESEARCH APPROACH

The methodology will give a plan for who, what, when and where this research will be conducted. This research will take place during the graduation studio of Veldacademie and is planned for Q2 according to the academic year planning of the TU Delft. This period is from September 2024 until January 2025. In the first 2 months literature and general information about dementia and the living environment will be explored. In November and December most interviews will be held. In January, all the research data that has been collected will be analysed and translated into architectural design guidelines.

Interviews with professionals (e.g. doctors, nurses and care managers), conversations with caregivers and family and observations of PWD will be done at various care facilities. This includes community centres (daycare), nursing homes and elderly homes. The target group is elderly who experience symptoms of dementia and the people around them, such as caregivers. This research looks at the relationship between autonomy in the living environment of PWD and how architecture can play a role in that. The needs of someone with dementia in relation to their living environment will be further investigated through the following:

Literature review: collecting information online and some through interviews with professionals .

- Searching online on the TU Library website with keywords: dementia, space, architecture. Selecting only the architectural research related to the autonomy of PWD.
- Finding general information on Alzheimer Nederland website.
- Keywords on Google: demencie, langer thuis wonen, autonomie. Looking for articles about these topics from the last 4 years and filtering news articles that are

- from the last year.
- Searching in Dutch as this research applies to the Netherlands.

References from Machiel van Dorst (coordinator of graduation studio):

- Al-Hamdany, D. (2023). Personal Paths, Societal Steps " Graduate from last year Veldacademie studio.
- Baak, L. (2019). The Neighbourhood Medicine
- Buijssen, H. (2019) Het hart wordt niet dement : een praktisch handboek voor naasten van mensen met demencie.
- Andrea Fitskie (Veldacademie): Gemeente Rotterdam. (2023). Actie agenda Goud voor Oud. which is the Action Plan of the municipality of Rotterdam.
- "Eenzaamheidsavond" which is to spread awareness for loneliness and was organized in Delft Meeting professionals at this event that work elderly and PWD.

Sources through interviews with professionals:

- Halsall, B., MacDonald, R., Halsall Lloyd Partnership, Liverpool John Moores University, Ravenhill, A., Keeley, E., Macdonald, J., & Smith, G. (2014). DESIGN for DEMENTIA (Vols. 1–1) [Book]. The Halsall Lloyd Partnership.
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Architectural precedents from

the literature "Architecture for dementia" and comparing them based on functions, type of care facility, building shape, spatial plan and type of outdoor space. Precedents researched and shown in the documentary Human Forever by Teun Toebes (2023).

Case study:

- Visiting nursing homes in Rotterdam and from personal experience of working in a nursing home (Molentocht in Purmerend) before starting the research at TU Delft.

List of nursing homes visited in Rotterdam during this research:

- Aafje Meerweide
- Stichting Laurens, location Delfshaven
- Stichting Laurens location Stadzicht

Other care facility:

- Community centre for PWD in Delft, connected with professional at "Eenzaamheidsavond" in Delft.

Mapping the floor plans and the relation between different rooms (functions).

Comparing guidelines/design tools from the literature to nursing homes in Rotterdam.

Survey:

In person speaking with professionals such as, doctors, nurses, care managers and community managers in Rotterdam and Community centre in Delft. The questionnaire/ survey template can be found under appendix A.

Talking with PWD at Community centre in Delft, since the staff is very kind and open to this research. Approached other care facilities to do the survey at such as, nursing homes, but unfortunately, they declined.

The approach to communicate the research question to people with dementia. Visuals are hand drawn digitally in ProCreate and specifically made to ask what the preferred spatial situation is. This shows between two to five options per scenario. It helps to start the conversation and helps PWD to better understand the question. It

keeps it the survey practical and simple.

The rules for consent for this research were discussed with the research tutor as following: explicitly asking if the information gained during the interview can be used for this research and if the interviewed person allows it to be published. Asking for consent and when not given, the data will be collected anonymously. Therefore, it cannot be traced back to a specific person, name and address etc.

The people interviewed all gave consent to be part of this research. However, for the observations no consent was asked and therefore the observants are anonymous. The PWD interviewed are anonymous, even though they gave consent.

Site visit:

The request for spatial change in the nursing home Stadzicht, was mentioned in the interview with Care manager (2025).

Therefore, this is the building site for this thesis. Visiting the building location, analysing the existing building structure and materials. Analysing the floor plan in terms of wayfinding and the relation between functions. Photographing the interior for analysing interior design. Analysing the vision plans of the municipality of Rotterdam for Overschie Kleiweg 555.

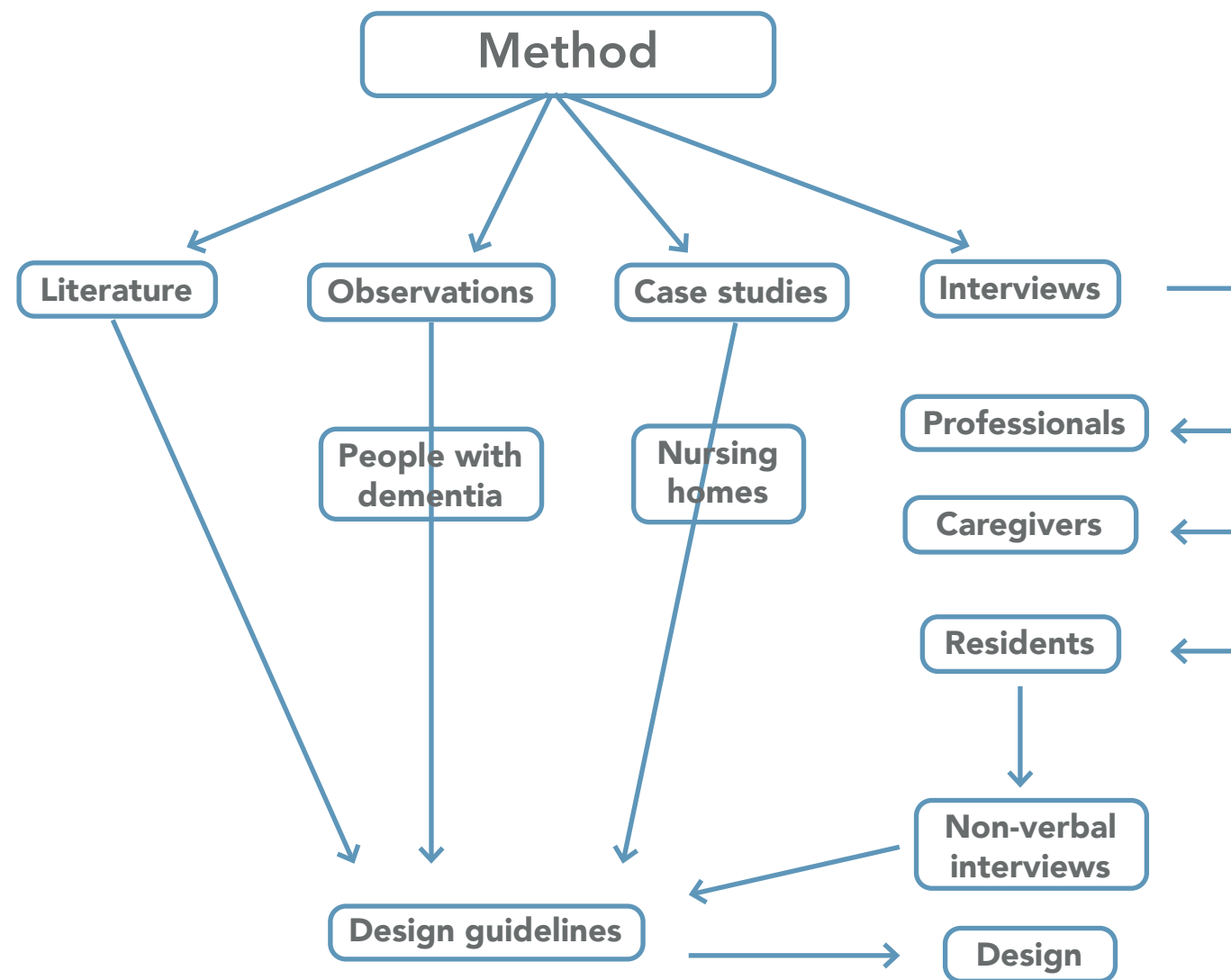


Figure 10. Methodology scheme

Scope

Considering the research will happen in a limited time period, it could impact the outcome, since it will only collect data from that time. Therefore, the scope of this research is limited to the facilities which are visitable in the time span of this research. Moreover, the only PWD that will be considered in this research will be the residents or visitors of these care facilities that happen to be there during the visitation. They will only be observed anonymously as they cannot give consent for interviews. The interviews will be held with whoever is willing to participate at that time, this means that it won't cover the entirety of everyone involved with PWD. As for the case studies the research will look at different types of care facilities that are available to visit and/or find pictures and floorplans of online, but this cannot cover every care facility that exists.

Output research

The outcome of the research is for me as an architect focused on design guidelines regarding the living environment on different scale levels such as, neighbourhood, district, residential building and interior. These design guidelines are then used to design a care facility, with indoor and outdoor spaces, for PWD. The design guidelines will be organized by priority from highest priority to lowest priority and from large scale to small scale. For example, autonomy, safety, to practical things, familiarity and accessibility. Inside and outside spaces may have different design guidelines. This research offers design guidelines for architects to design dementia friendly living environments, but can also be helpful for other parties, such as the municipality, corporations and care facilities. or even people who live at home and want to prepare their homes.

RESULTS

Literature review

This literature review explores existing research and resources on designing dementia-friendly environments, focusing on the perspectives of people with dementia (PWD), caregivers, and professionals. It also examines the gaps in current approaches and highlights the need for integrating the voices of PWD into architectural and spatial design decisions.

Existing Resources and Perspectives such as Alzheimer Nederland provides general information about dementia in the Netherlands and guidelines for creating dementia-friendly neighborhoods. However, it is unclear whether these guidelines were developed in collaboration with PWD or based solely on professional input.

The book *Het Hart wordt niet dement* (2019), offers a personal perspective from family members of PWD and includes insights from conversations with PWD themselves. This resource highlights the emotional and social challenges faced by individuals with dementia. *Oud maar Goud* (2023) is the vision for the coming years of the municipality of Rotterdam and presents Rotterdam's vision for housing elderly individuals and PWD. However, the approach appears to be top-down, with limited evidence of co-creation or direct input from residents.

Lost in Space: Architecture (2014) is architectural research and focuses on perception and creating secure spaces for PWD. While it includes architectural case studies and articles, it lacks direct engagement with PWD, relying instead on interpretations by professionals. *Architecture for dementia*, Stirling Gold (2021) explores empowering environments for PWD from the perspectives of architects, nurses, engineers, and designers.

It highlights best practices and methods to research PWD but does not explicitly involve PWD in the design process.

Personal Paths, Societal Steps (2023) emphasizes autonomy but is limited to observations and interviews with caregivers, excluding direct input from PWD.

Neighbourhood Medicine (2019) is more focused on urban-scale interventions and stakeholder perspectives but does not include the voices of PWD.

Another Dimension (2023) relies on observations rather than direct engagement with PWD.

Teun Toebe's Documentary (2023) advocates for improving the living environment of PWD through community-based approaches. While it addresses social and political aspects, it does not delve deeply into architectural design.

A significant gap in the existing literature is the lack of direct conversations with PWD about their preferences and needs regarding physical spaces. Most architectural guidelines are stemming from healthcare professionals, architects, and caregivers, rather than from PWD themselves. While methods like living labs involve PWD, they often focus on observations and physical measurements rather than seeking direct input on architectural and spatial designs.

This raises critical questions such as, how were specific design requirements determined? Were they based on direct input from PWD, or were they interpreted through the biases of professionals? Integrating the perspectives of PWD into the design process is essential for creating environments that truly meet their needs.

Basic information about dementia and the stages

Dementia is a progressive condition characterized by memory loss, cognitive decline, and behavioral changes. It creates fear and isolation, as described by Buijsen (2019): "Dementia is like a crooked downward road." There are over 50 types of dementia, with Alzheimer's disease, vascular dementia, Lewy body dementia, and frontotemporal dementia being the most common. Each type presents unique challenges, such as memory loss, mobility issues, or language difficulties (Alzheimer Nederland, 2024c).

Dementia progresses through four stages: early, mild, moderate, and severe. In the early stages, individuals often live at home with support for daily tasks. As the condition progresses, they may transition to daycare or nursing homes, eventually requiring 24-hour care (De Vette, 2023; Palmer et al., 2021).

Autonomy in Dementia friendly design

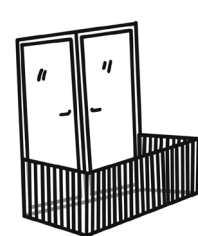
Autonomy for PWD involves allowing them to make decisions and move freely within safe boundaries. Therefore, transparency and choice are important. For example, by allowing PWD to view spaces, such as a living room, before entering (Mohammadi, 2022). Additionally, creating diverse environments by providing contrasting spaces to facilitate decision-making can help improve the feeling of autonomy (Feddersen & Lüdtkke, 2014).

While existing research provides valuable insights into dementia-friendly design, the lack of direct input from PWD limits its effectiveness. Future studies should prioritize co-creation and participatory design methods to

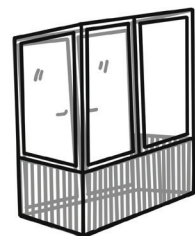
ensure that the voices of PWD are central to the development of living environments. This approach is particularly relevant for the municipality of Rotterdam, where municipal policies and urban planning come together with the needs of its aging population.

The Book Architecture for dementia, Stirling Gold: 2008-2020 (Palmer et al., 2021) shows case studies of various dementia friendly care facilities from the United Kingdom to Australia and Japan.

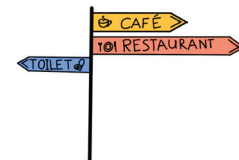
The type of buildings ranges from care or nursing homes to independent living units to neighborhood hubs and intergenerational residences. Most of the residential homes include a private bedroom, kitchen, and access to a balcony or Winter garden. Communal facilities are dining rooms, lounges, courtyards, and activity areas. Semi public functions are cafés, hair salons, and rooms for social interaction. Some facilities also include intergenerational spaces like kindergartens or community centers. Public facilities are libraries, sports centers, and commercial spaces to encourage community living. Secure gardens, courtyards, patios, and raised beds for growing food are important, offering safe and accessible outdoor activities. Accessible spaces are made by barriers free and wide paths, ramps, and clear routes. Signage systems, artwork, and sculptures can help residents navigate spaces.



Private balcony or terrace



Private loggia or Winter garden



Signage with color coding



Wayfinding by artwork



Wide entries and corridors



Barrier-free



Sculptures

As for lighting inside the building natural light is preferred. Other types are roof lights, and soft artificial lighting to emphasized and create calming environments. Residents are encouraged to make choices, such as deciding where to eat or whether to participate in communal activities. Freedom of movement within secure boundaries is supported by features like open layouts and clear sightlines. Amber Wood Care Home (United Kingdom), features a social hub where residents can choose to pay for snacks and drinks, promoting autonomy. Creer Residence Yokohama Tokaichiba (Japan) integrates a kindergarten and community café and focuses on intergenerational interaction. The Green (Australia) maximizes green spaces and outdoor activities, emphasizing barrier free design and visual connectivity. In conclusion, these case studies demonstrate that dementia-friendly environments prioritize safety, familiarity, and autonomy while integrating communal and outdoor spaces to enhance residents' quality of life. See Appendix A for a full overview of the projects.



Figure 11. Thuis Utrecht (Toebees, 2023)

TEUN TEOBES -DOCUMENTARY (Toebees, 2023)

The documentary starts in Thuis, a nursing home in Utrecht, where his mother with dementia lives. In this documentary Teun Toebees stays in multiple nursing homes across the world.

About 20% of elderly end up in a closed facility and with that their autonomy disappears. Staying at home secures you social circle and interactions (Toebees, 2023). Living at a closed department means having to ask everything, before doing so. Even if someone wants to go outside (Toebees, 2023).



Figure 12. Fenced garden (Toebees, 2023)

Hundested - Denmark
Similar to the Netherlands, although autonomy is more present. Complete freedom is not an option. Due to the fence, it still feels like being locked up (Toebees, 2023).

Moldavia
Psychiatric department has a different system, and this one was focused on treating patients as your own children. It's about forming a community where they help, encourage and listen to each other (Toebees, 2023).

In Moldavia elderly live at home or at their child's home and the family takes care of the elderly. Health care system by government is non-existing. People rely on the church (Toebees, 2023).

Kaapstad - South-African
Similar to Moldavia family looks after the elderly and they rely on communities. There are nursing homes, but people are treated badly and are lonely (Toebees, 2023).



Figure 13. Moldavia's Psychiatric department (Toebees, 2023)

In South-Korea and Sweden they believe in improving health at a younger age will help prevent dementia. e.g. in Korea they have health programs, organised by the government, so one can join to stay fit (Toebees, 2020).

Amsterdam - Huis van de Tijd
People with onset dementia live amongst the rest of us here (Toebees, 2023).



Figure 14. Belgium (Toebees, 2023)

In Belgium they used warm materials like wood and textiles to make people feel at ease. They are closed off from the rest of the world but seem happy due the autonomy gets to keep (Toebees, 2023).

Rusthuis Aymonshof
People feel good, because they still have fun. Caregivers take a step back and let people live their life (Toebees, 2023).

Teun Toebees' documentary explores dementia care globally, emphasizing autonomy and community. In the Netherlands and Denmark, closed facilities often restrict independence,

while Moldova and South Africa rely on family and community support, though formal healthcare is lacking. Belgium uses warm materials to create comfort, and Sweden and South Korea focus on preventive health programs. Facilities like Huis van de Tijd in Amsterdam and Rusthuis Aymonshof integrate PWD into communities, fostering independence and joy. The documentary highlights the need for care environments that prioritize autonomy, social connections, and belonging. Learning from these examples can inspire more inclusive and empowering dementia care solutions worldwide. The short fragment of the documentary highlights the importance of PWD going outside and allowing them free mobility without restrictions. This a better and more humane approach, although the probability of applying this in other locations might require a shift in health care practices.



Figure 15. Mariahout, The Netherlands short fragment (Toebees, 2023)

"Our foundation is that people are free to leave and therefore choose to stay. So if you know the door is open and you can leave, you feel comfortable. If you close the door and say you can't leave until I say so, then you're not comfortable here. Then it doesn't feel good, and that's precisely when I want to leave."

Figure 15: Mariahout, The Netherlands short fragment (Toebees, 2023)

Case studies

As described in the research approach (methods), interviews were done with various parties, including nurses, care managers, community managers and people with dementia.

Delft, community centre
Summary: This place was visited three times for this research. The first time was to interview the community manager (see appendix b). The second time was to walk outside in the nearby park together with PWD and the last time was for the non-verbal interviews with PWD (see appendix e).

Floor Plan: How are rooms connected?
Upon entering the building sliding doors open and then a second set of sliding doors open. On the left, there is a seating area and the reception. On the right, there is a lot of space for walkers and mobility scooters. Straight ahead is the exercising

room. To the right, there is a staircase leading to the managers' office. Behind the reception, there are some small meeting rooms and offices. The hallway near the office is connected to the garden. Further into the corridor, there are multiple living rooms. A corridor connects two bathrooms, including toilets. Each living room has a kitchen and a small office. The kitchen is used to host activities such as cooking together with PWD. Some of the living rooms have a view of nature but are not directly connected to the garden. The garden has a view of the water stream and park, located north of the building site. However, it is not directly connected to each other. The only way to access the park is to go back to entrance and walk around the building. It is a beautiful walk, which at first looks like a flat grass field but turns into a forest with a small river and dyke. The walk with PWD included

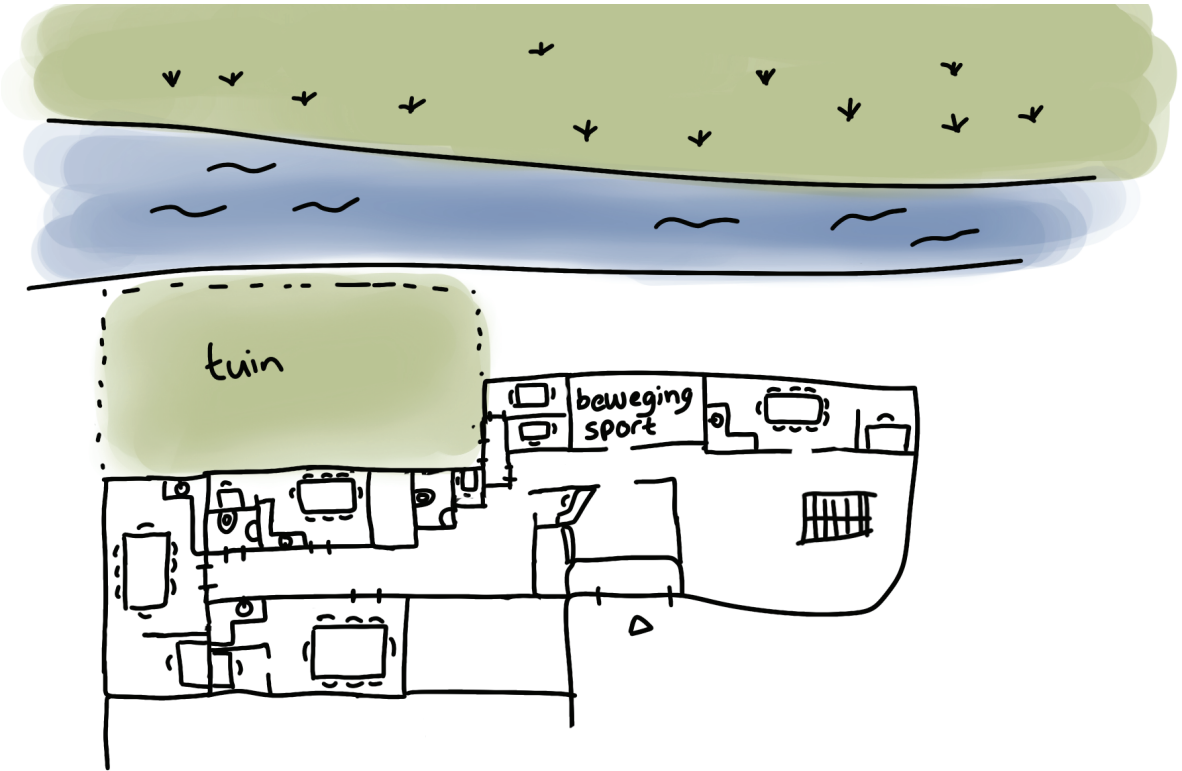


Figure 16: Sketch of elderly community center in Delft



two women (one using a walker), and they were accompanied by an informal caregiver. The observations of the walk are as follows: they walked through a park opposite the community centre, near Den Hoorn, for about 40 minutes. The park features an open grass field for events with a building, extending into a small forest with water, and offers a circular walking path. One woman, from Den Hoorn, was brought to the community centre by car. When asked if they would walk as often without the park, both women said no; one mentioned she would cycle more instead. An employee noted they also walk through the neighbourhood. Therefore, access to outdoor walking is important for elderly people with dementia. However, having a park nearby may not always be feasible in cities like Rotterdam. As an alternative, the community centre provides 30-minute indoor movement exercises daily.

Rotterdam nursing home
Aafje Meerweide, IJsselmonde

Summary:
For this site visit, a community manager was interviewed (see Appendix C). During the visit, the building was in the middle of renovation, therefore not the entire building was explored and documented during this site visit.

Floor Plan: How are rooms connected?
Upon entering the building, through sliding doors, there is the restaurant or café. On the right is the reception, and further to the right, there are offices. At the end of the hallway, there is a staircase, and this leads to the individual apartments for PWD. Each floor has an entry hall with a communal living room and the mailboxes. In the hallway, there is an overview of the staff members working there, including pictures and names. Each room has its own pantry and bathroom with a toilet. There is a snoezel room, which is for sensory stimuli.

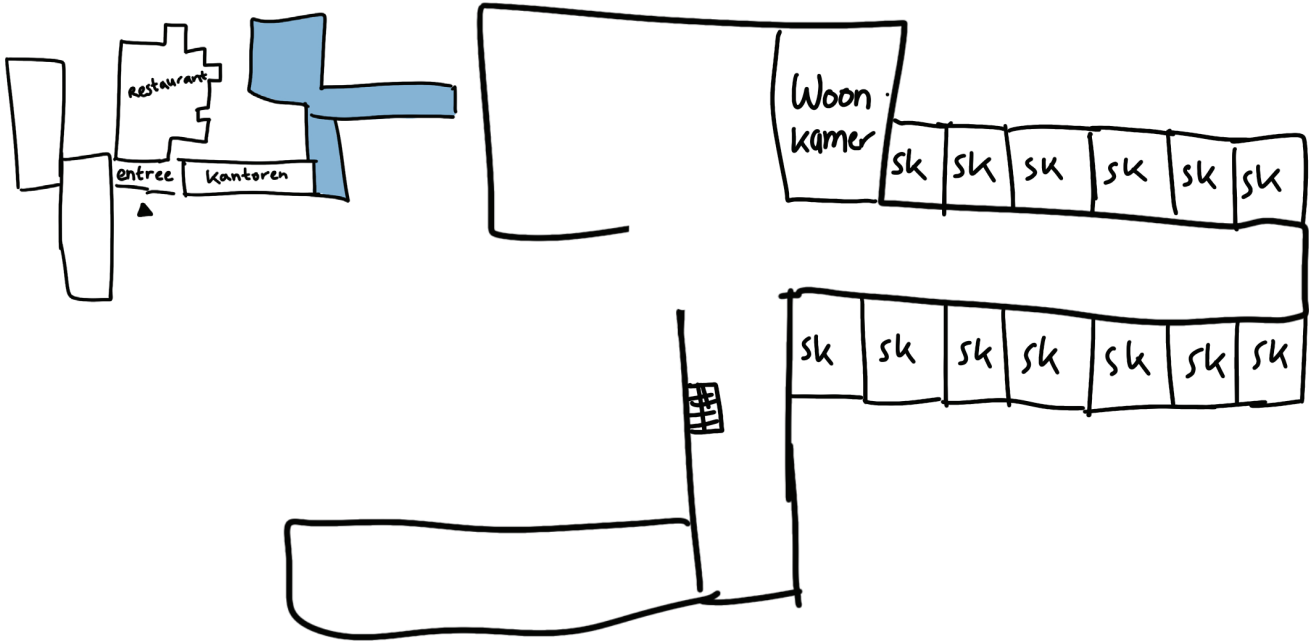
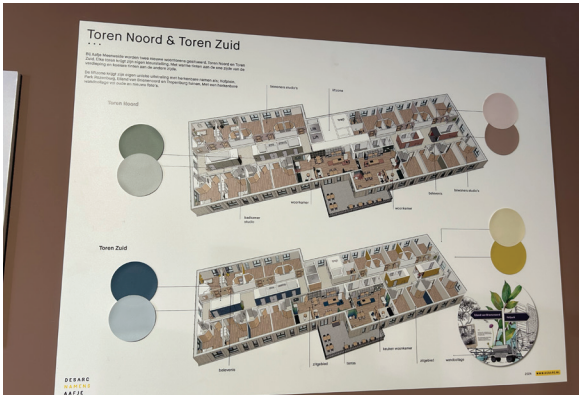


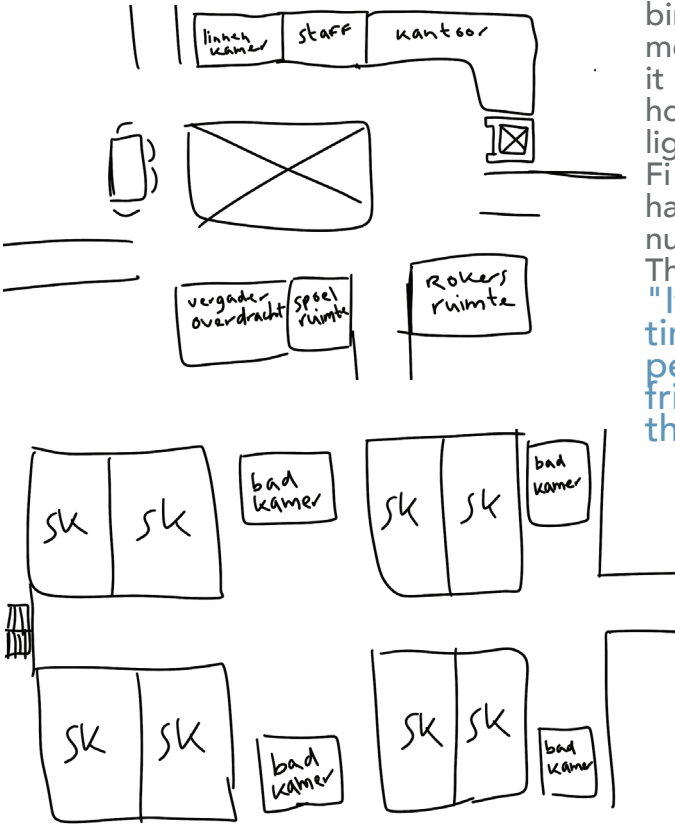
Figure 17: Sketches of a nursing home and assisted living in Rotterdam South



Rotterdam Nursing Home
Stichting Laurens Delfshaven
Summary:
This location was visited two times.
One interview was conducted
with a doctor (see Appendix B),
who pointed out visual design
improvements that can be used for
this research. The other interview
was with a nurse (see Appendix C),
which was suggested by the doctor
from the first interview. The nurse
pointed out more practical design
improvements.
Floor Plan: How are rooms
connected?

- Rooms: 72
- Living rooms: 12

Upon entering the building, the
restaurant is on the left and the
reception on the right. In the centre,
there is an atrium, which goes
through every two floors and skips
one floor.



There are three wings: north,
east, and west. Each wing has
six bedrooms and four shared
bathrooms, including toilets.
The main circulation is around the
atrium. There is only one elevator
for the entire building, located in
the centre of the six-floor building.
The staircases on the outskirts of
the building are fire exits and are
sometimes used by staff members
because the elevator takes too much
time before arriving to the correct
floor. When visiting it took longer
than five minutes before the elevator
arrived. Some residents have a view
of the communal garden, while
others have a view of the street or
the parking alley behind the building.
The building includes special rooms
for smokers.
In the basement, there are washing
machines and logistics. There is also
a southern area with a communal
living/dining/party area, where a
resident could invite family for a
birthday party. However, the nurse
mentioned during the interview that
it is not cozy, and the basement also
houses logistics and storage. The
lighting is bad, and there is no Wi-
Fi or phone signal. So, if something
happens at the department, the
nurse does not receive notifications.
The nurse (2024) said:
"It's scary down here. One
time, there was a homeless
person here, and I was
frightened. I did not expect
that."

Figure 18: Sketches of nursing home in Rotterdam



Amsterdam UMC, MPU Children's Department
Summary:
This project is different from the others that were researched because it is a psychiatric centre for children. However, it still includes important elements regarding autonomy and spatial planning. For this, the project manager was interviewed (see Appendix D).
Floor Plan: How are rooms connected?
The facility combines psychiatry with a multifunctional environment, including spaces such as an office, restaurant, sports hall, and outdoor areas.
The case study here focuses on the children's MPU (Medical Psychological Unit), which has recently undergone transformation. New rooms were added, and communal spaces were created—not only open communal areas but also more intimate communal nooks. Patients are allowed to go

outside into the secured courtyard. If a private conversation with, for example, a doctor is needed, they can use a more luxurious room with a private, secluded garden. Safety is a priority, with measures such as digitally controlled windows to prevent risks like self-harm. The facility has shifted from a closed door policy to a key-operated system. This creates an open yet secure environment, where access is granted by scanning a key pass. This gives patients more autonomy to move freely within set boundaries. Staff members are displayed with pictures for easy identification, a feature also observed in some of the visited nursing homes. In case of a fire, doors close automatically, sealing off fire compartments. For more information, go to: Bos, H. (2025, February 3). MPU voor kind en jeugd: een unieke zorgafdeling in Nederland. AT Osborne. <https://atosborne.nl/artikel/mpu-voor-kind-en-jeugd-een-unieke-zorgafdeling-in-nederland/>



Figure 19: Sketch of MPU Children's department where space is divided into private and open zones



Rotterdam Nursing Home
Stichting Laurens Stadzicht

Summary:
This location became the focus for the design of this master's graduation project after interviewing the care manager.

Floor Plan: How are rooms connected?

Finding the entrance was not very intuitive since it requires to walk past the parking lot on the road. For some reason, there was no pavement or indication where to walk. The entrance was either from the staircase next to the bike parking or walk up the slope where taxis arrive as well. Upon entering, there are two sliding doors and then the reception. On

the right, there is a small gift shop. On the left, the corridor leads to the physiotherapy area, and further down the wide corridor, there are two large living rooms with two small kitchens on opposite sides. Between the two living rooms was a dressing room for staff and storage space. The living room connects to a small corridor leading to the terrace. Between the terrace and the second terrace, there is a gate, and then you can access the garden. Towards the water, there was a two-meter-high gate, and a resident from the YOD department has tried to climb over it. This YOD department is located on the ground floor in the west wing, and each room has its own pantry and bathroom with a toilet.

The south wing has a large open space with columns dressed as fake trees. This area is for residents to



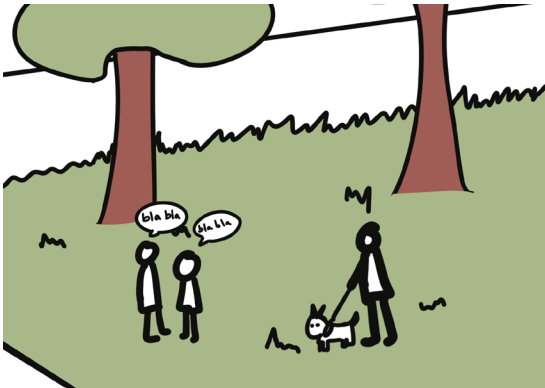
Figure 20: Sketches of nursing home in Rotterdam, first floor (left) and second floor (right).



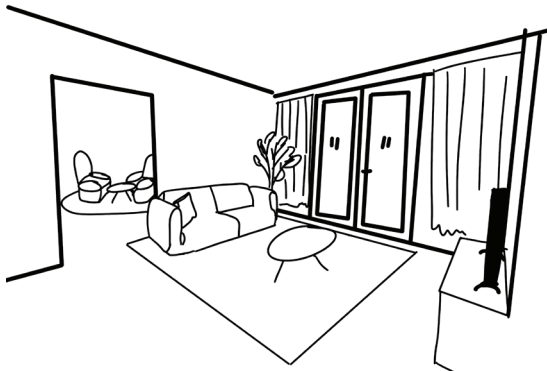
meet family or other visitors. Further ahead, there is a restaurant that has access to the terrace and the garden. In this corridor, there are more rooms, but they share facilities such as a shower and toilet. They also have two living rooms. There is a snoezel room, which is for sensory stimuli. The layout is similar for the other floors in the west and south wings. Only in the middle there was a small office for staff. The north and east wings consist of logistic spaces and the basement. All the hallways are full of benches and furniture, and there is still a lot of open space.

Design guidelines: case study

The design of care facilities emphasizes functional and accessible spaces that enhance residents' quality of life. Key features include wide corridors, communal living areas, and secure outdoor spaces like gardens and terraces, which promote social interaction and a connection to nature. Facilities often integrate multifunctional spaces, such as movement rooms and restaurants. However, challenges remain, such as poorly lit or unwelcoming areas for residents and staff members. Overall, design for PWD is about balancing functionality, safety, and comfort to enhance environments and the autonomy of PWD.



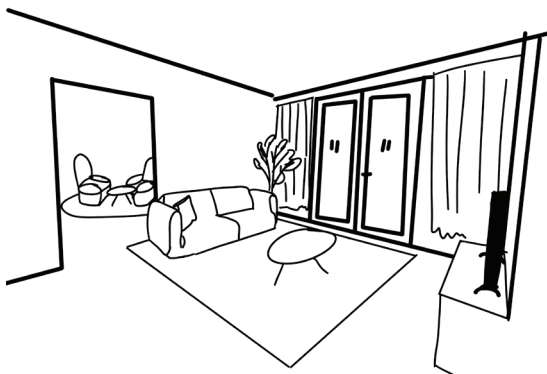
Acces to a park or garden



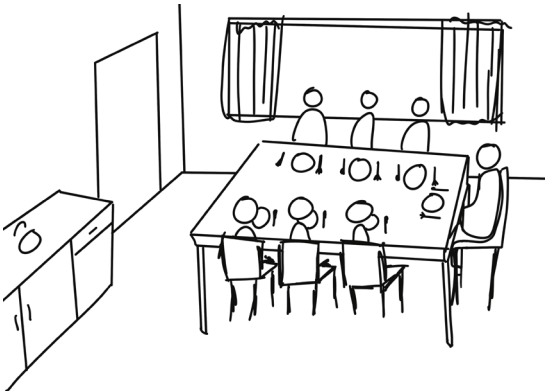
Intimate vs open zones



Private bathroom



Snoezel room, sensory stimuli



Eating together



Communal garden

Figure 21: Design guidelines from case studies

Survey

The collected data from interviews has been placed in an overview, which exists of **3 categories**:
1. Non-verbal approach, (interviews with PWD)
2. Interviews with professionals
3. Observations during my work in a nursing home and from visiting nursing homes in Rotterdam

All the collected data during this research can be found under appendix b to f. The survey template can be found under appendix b. The full interviews in Dutch with the professionals can also be found under appendix c. The summary of the open interviews can be found under appendix d. The method of interviewing PWD by illustrations can be found under appendix e. The data of this interview can be found under appendix f.

The PWD interviews were based off on illustrations shown to the PWD participants while asking them which design scenario they preferred and why? The group of participants that was interviewed for this specific part of the research, were three women and three men in the beginning stage of their dementia, who still live at home. The data shows that more than half of PWD preferred the view interaction and movement. Whether that is in the form of nature or people talking on the street. One participant's reason for this preference was, that they could look outside and see nature. Therefore, it feels like they were outside even though in reality they were inside. This in turn gave them a sense of freedom. This research shows that more than half of the PWD preferred the bathroom visible in the bedroom, however one of them did not like the sliding door as it would take too much time to close. The data shows that everyone had different preferences when it comes to eating together or alone. About the hallway,

the data shows that if it has a bench PWD confused it for a waiting room and some even pointed out they preferred some décor, such as a painting.

The survey with professionals and open interviews included seven professionals, all associated with the medical field in some way. Four out of seven of them working in a nursing home. Their profession differs from one another, and this makes this research being able to shine light on different perspectives. However, the results from the interviews were somewhat similar. For example, to provide autonomy to PWD three of them said they are allowed to choose where to eat. Two of them said that it depends per PWD individual, if they can go outside independently. Although the questions of this research did not cover all the answers given, there are two important points: a view on nature and a sense of community can enhance a sense of autonomy when designing for PWD.

People with dementia						
Non-verbal	View	Bedroom A	Bedroom B	Eating together or alone	Hallway	Greenery
A-1	Street, a bit nature, parking further away, due to CO2 emission	Sliding door takes time to close	Smell from the toilet near bed	Fun party together, alone no. better with 2, breakfast or lunch with smaller group, talking to others	A: fast, clear and good lighting. B: waiting room, would add trash can and no smoking	D: socializing, children playing
A-2	Trees and nature, watching clouds. Gives movement. Interaction gives movement	Closed of space for washing and having private shower.	Couldn't find toilet	Family, don't like other people. More than 2 people and being able walk around table	B: waiting room? Only wider hallway if don't other spaces don't lose space	D: with trees and grass. Would place a fence to make it private
A-3	Watching people is fun. Buildings give perspective. Shopping street is lively	A: better, different elements touch each other.	B: I don't know where the toilet is	Alone, nothing to look at, just outside. Group more fun and busy. Sometimes alone is fine. Depends each time	B: Add looking outside, way-finding on the floor	Children playing, trees becomes park, add benches and tiles and people make it fun
A-4	Interaction, trees are fine	A: pretty, seems nicer. Toilet is visible	-	not alone, big groep is more fun. Small group is also fun, but minimal 4 people	B: wider hallway, more light more sun	trees better with bench. Dog there is more interaction
A-5	looking outside, trees, freedom and gives feeling that im outside	A: warmer feeling. Toilet and sink	empty room, not practical that toilet is behind the door.	with friends, bigger group is too much. Rather 2-4 people. Add decoration to the tables	A: empty, make homely by adding painting	B: person waiting to go outside and can look outside
A-6	interaction, there is life	A: good floorplan interior, would close the toilet door.	B: more privat, toilet not visible	each is fine. Big group is more fun, cuz people. 6 or more people	bench makes it more lively	trees, people lively attracts more people. Add bench and children playing

Figure 22.1: Overview collected data - non-verbal interviews

	Professionals					
	Type of care	Your work/role	Work with dementia	Spaces	Interaction with environment	Autonomy
Verbal interviews						
M. van der Hoeven	Everything	Community manager of multiple community centres	Organizing activities and information courses for families	Multiple living rooms with kitchen and small office. Toilet with shower, physical activity room, reception, communal garden	Reading newspaper, playing games and activities together.	Open door, everyone can leave when they want, picked up with family or walk back home with staff
Activity manager	Nursing home, thuiszorg, etc.	Organizing activities in nursing home and administrative	Activities in nursing home, monthly program and newspaper	Reception, restaurant, 3 floors with living. Some independent living and others closed department, own toilet shower in bedroom, multiple living rooms	PG en somatisch zijn nu verbonden	Can chose where to eat and open door. Some can walk and go through the whole building some only that floor
B. Birkenhäger	Nursing home, thuiszorg, etc.	Doctor	Design for dementia		Different phases mixed. Some are more passive (apathy) some are restless and walk around. Not so much interaction, depends per group.	They can go outside, but it's not accessible in the way we would like. There is a (traplift) since the communal garden is slightly elevated to the ground floor.
Nurse	Nursing home, thuiszorg, etc.	Nurse	Caregiver in nursing home	Reception, restaurant, elevators, washing room, logistics, one communal living room with 8 bedrooms and 4 bathrooms. 3/4 living communities in east wing. Storage, medical equipment.		People can go outside if they smoke. But depends on patient
C. Zilyan	Research in Improving behaviour (problem gedrag)	Researcher at Hogeschool Rotterdam	Housing dementia from medical point of view	Housing with communal space to have a community	Depends per person	10 years live at home before nursing home.
L. van Buren	Nursing home, thuiszorg, etc	Researcher	Housing dementia from medical point of view	Clustered housing, spontaneous interactions in the hallway to combat loneliness.		Communal participation, interaction and cohesion
Care manager	Nursing home, thuiszorg, etc	Care manager	Manages one department in the nursing home	Reception, gift shop, restaurant, snoezelroom, department has 16 rooms and 2 living rooms and kitchen. Communal terrace and garden.	YOD wants to go outside	They have their own room and bathroom. They can go into the snoezelroom and experience sensory stimulation.

Figure 22.2: Overview collected data - interviews with professionals

	Nursing home residents			
	Interaction	Movement	Frustration	Outside
Observations				
Men (1)	Talked about his life and didn't know the chronological order.	Wanted to walk around but was told to sit down and wait	Wanted to go back to his room, but wasn't allowed since they were renovating the rooms. He didn't understand	He probably could with guidance
Men (2) (from previous work)	Barely spoke a word, but always riding around in his electric wheelchair and curious about what I was doing	Electric wheel chair in search of candy. Even stealing from other people's rooms	When he would be caught stealing candy and had to put it back. Or when he would eat decor because he thought it was candy	Only with family (once a week)
Men (3) (from previous work)	Would talk about sports like F1 racing and would watch alone or with others. Had actual normal conversations, but mostly forgot about it after a day.	Would go onto the balcony to smoke and walk around. He forgot to lock the balcony, so that was dangerous for other residents.	At some point he wasn't allowed to go onto the balcony alone anymore and walk around other departments	Whenever he got the opportunity, so with family, staff, etc.
Woman (1) (from previous work)	Sometimes gave comments to others but no response	Would walk around and hide spoons and other stuff in her bed	Fearful that people steal her stuff, so she carried a picture frame with her family in her purse	Only with family (once every 2 weeks)
Woman (2) (from previous work)	Interaction as in non-verbal, she couldn't speak anymore. But would always touch everything and look like she was inspecting	Walk around, would swing her plates and drink. She probably forgot that she was still holding it. Would sometimes fall	Endlessly walking around but would sometimes scream or pounce the wall or doors	Everyday her husband would come to take her outside for a walk. Only during covid they weren't allowed and it was heartbreaking to see.
Woman (3) (from previous work)	Didn't speak Dutch but would say things in her own languages	She would sit in the living room and try to communicate with signs	When we didn't understand her, she would be aggressive and fight	Rarely, haven't seen her family.

Figure 22.3: Overview collected data - observations nursing home

Site visit

As mentioned in the last case study, the location for this graduation studio is nursing home Stadzicht by care provider Stichting Laurens. It is in the north of Rotterdam, at Overschie Kleiweg 555. The nursing home was built in 1973 and is surrounded by a lot of nature. However, when visiting this location from the tram stop at Franciscus Hospital, there are some challenges, such as getting down from the dyke by stairs or an elevator, crossing the entrance of the highway, walking under a dark tunnel, and dealing with the sidewalk suddenly ending.

The building consists of a concrete structure with concrete façade panels. Part of the building has one floor and has a steel structure with aluminium façade panels. It has a repeating façade pattern.

Here is a series of photographs of how one gets from the tram stop to the nursing home.



The results are translated to design guidelines to help during the architectural design fase.

★★★★☆ Priority rating by stars (5* most important)

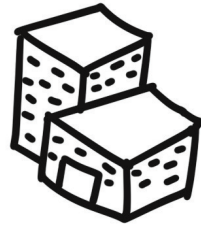
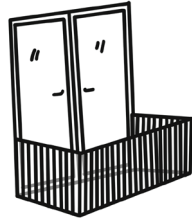
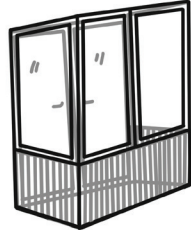
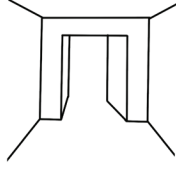
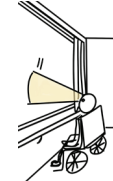
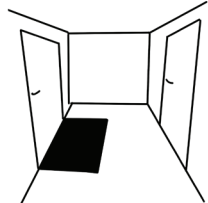
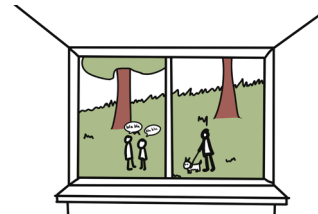
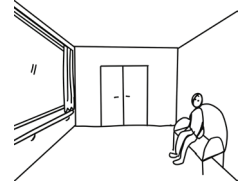
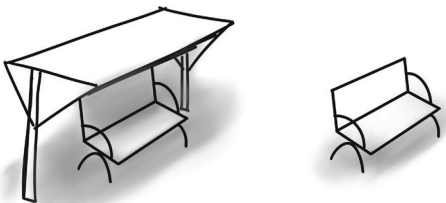
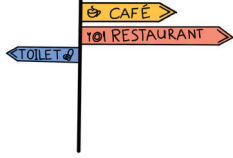
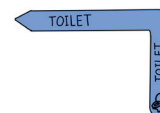
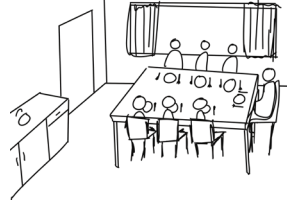
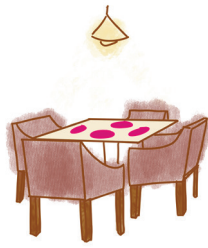
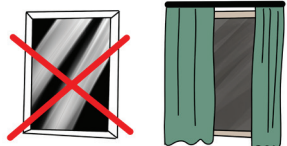
	Autonomy	Accessibility	Familiarity	Legibility	Distinctiveness	Comfort	Safety
Building 	 ★★★★★ Private balcony or terrace  ★★★★★ Private loggia or Winter garden  ★★★★★ Multiple living room areas, more private / quiet vs. more open  ★★★★★ Open door policy	 ★★★★★ Wide entries and corridors	 ★★★★★ Room resembling their previous home	 ★★★★★ Window on their eye level  ★★★★★ Private bathroom and visually seeing the toilet	 ★★★★★ No black for floors, as it can seem like they can fall through it	 ★★★★★ View from room interaction and nature  ★★★★★ Seating every +/- 8 meters	 ★★★★★ Communal courtyard  ★★★★★ Communal secured garden
Street/ Outdoor  Urban 	 ★★★★★ Choosing shaded seating OR non-shaded seating	 ★★★★★ Barrier-free		 ★★★★★ signage with colour coding  ★★★★★ Arrows on the floor	 ★★★★★ Wayfinding by artwork  ★★★★★ sculptures	 ★★★★★ Accessible outdoor toilet  ★★★★★ Raised planters for gardening	 ★★★★★ Railing in the garden No slippery surfaces
Other	 ★★★★★ Eating together, preferably with friends or family		 ★★★★★ Contrasting, outstanding and light/warm colours combined with good lighting	 ★★★★★ Men / women is confusing Simple and clear	 ★★★★★ Avoid glare Use curtains to reduce glare	 ★★★★★ Avoid movement distractions and don't approach them from behind or the sides	

Figure 23: Design guidelines matrix

Conclusion

What are requirements of the living environment for people with dementia in care facilities, for achieving optimal autonomy during each different phase of dementia? (For example, in Rotterdam)

This research explored the requirements for creating a living environment that supports optimal autonomy for people with dementia (PWD) in care facilities, particularly in Rotterdam. The findings highlight the importance of changing the environment to the specific needs of individuals at different stages of dementia, ensuring safety, familiarity, and opportunities for social interaction.

Research sub questions

1. How can the living environment be adjusted to the needs of people during each stage of their dementia?

In the beginning stage people can still do a lot themselves. However, for this group, support of daily tasks is needed by either their family or caregivers. At this stage they can still live at home for about 10 years. For example, in Singapore they have a community space on the ground floor by reception hall (Zylian, 2024). There are two important points from the interviews with PWD and these are nature and social interaction. This requires space reserved, for accessible nature, a communal room and wide hallways for social interaction. However, the purpose of the space must be clear to prevent confusion for PWD. For example, during the interview some PWD thought the hallway illustration with bench was a waiting room. From interviewing PWD, arrows on the ground was suggested to highlight paths.

Later stage, it is important to consider that people don't know where they are anymore. They might have had to move to a nursing home. Therefore, making it accessible and

simplify wayfinding is important. Re-creating the space of their previous home, can help them feel familiar with the space (Care manager, 2025). In the beginning stage, it is important to design the room like their previous house, for familiarity. However, at a later stage it might make someone distressed and certain objects must be removed from the room. Some PWD can become aggressive or distressed, and there is a need for calm colours. Therefore, bright colours won't work for them. Individual room decorations might differ based on the finances that are controlled by the family of PWD. Thus, regardless of the amount of money someone has made during their lifetime, due to a family member it can still be a problem for them to live properly at a care home (Care manager, 2025). People with Young onset dementia desire to go outside independently, however it can still be dangerous for them due to wet slippery surfaces outside and cause them to fall or slip. Elderly people with dementia often go outside with family, nonetheless it is still dangerous (Care manager, 2025).

The practical implication from the interview with Care manager (2025) are firstly, window height adjusted to create an accessible view. Secondly, a view on the building surroundings is preferred over a roof top. Thirdly, accessible entrance of the bedroom and space next to the bed for a Hoyer lift. Fourthly, accessible toilet in the garden. Lastly, placing benches in the hallways and near the elevator to give them a space to rest in between walks (Care manager, 2025).

This research showed that PWD preferred a view on nature and interaction. While a nurse preferred an accessible view on the entrance from each floor, in order to see who and if someone is waiting by the entrance and then open the door for them.

Another space that is important for PWD is a "Snoezelruimte" for sensory experience and calmness. One can visit alone or together with partner or family member for more intimacy. The overall point is to consider safety regarding visual impairment and difficulty walking, while designing spaces (Care manager, 2025).

2. What are requirements for optimizing autonomy in the living environment of people with dementia?

From the interview with van der Hoeven (2024) and Birkenhäger (2024), one of the requirements for autonomy for PWD is allowing them to do things by themselves with guidance. This can be done through easy to find, safe accessible spaces indoor and outdoor and, communal spaces.

Some practical design guidelines are to prevent big transparent walls, as PWD can walk into the glass due to the visual impairments and their own reflection can give them the impression that someone is watching them. Therefore, it is important to place curtains by each window. They can close the curtain if they want (van der Hoeven, 2024 and Birkenhäger 2024).

The second requirement for autonomy is to allow PWD to choose. For example, if they want to eat together in a dining room, or a quieter room or their own room (Birkenhäger 2024 and van den Broek 2024).

Design for dementia: GOLD Stirling (2020) is literature that Birkenhäger, 2024 recommended. This literature states the same thing about allowing PWD to choose. Besides that, the literature highlights the importance of freedom of movement and access to communal spaces. Huub Buijsen (2019) says that it's important for them to stay in

control, therefore asking them if they want to eat and if they say yes, follow up with "Do you want to go to the dining room?". Wanting to belong and participate, keeping their identity, providing safety and support are crucial. Let's not forget to consider their needs and feelings as they still have these. Activities for PWD according to international Alzheimer research are: cooking, household chores, handwork (crafting), listening to music, gardening, hobbies, looking at old memories and social interaction. The interior design needs contrast and calm luminous and minimize visual distractions while focusing on e.g. eating.

3. How are rooms, in care facilities for people with dementia, connected and related to each other?

The different nursing homes that were visited during this research had a similar layout. They either have a living room connected to about eight rooms with their own sink and two or four shared bathrooms. Or multiple individual rooms with their own bathroom, toilet and pantry. And on each floor, there can be multiple living communities with a bigger shared hallway space. The typology looks like student housing in some way.

4. What does Rotterdam provide on wayfinding and accessibility and facilities for inpatients of care facilities?

On of the case studies was in IJsselmonde and they have quite a lot of care facilities already. Although they lack wayfinding. They have made sidewalks accessible and barrier free for wheelchairs or walkers with a small slope. But sometimes the street is not very logical, there is no short cut from the bus/tram to the shopping mall for example and I think this could be improved. As elderly might not

be able to walk such a distance and in between there are no places to rest (like a bench) for example. The same was in Overschie in Rotterdam, sometimes the pavement would just stop. Although most places were barrier free.

5. *What care facilities are needed for a dementia friendly neighbourhood?*

C. Zylia (2024) said that we should focus instead on the fact that there is not enough caregivers to facilitate these functions. Therefore, putting individual housing close to a nursing home can make it easier for them to also give care at home.

At first the question was "What care facilities are needed for a dementia friendly neighbourhood?". After talking to C. Zylia this has shifted more towards "What facilities are needed?". Such as community and staying longer at home. In (design for dementia GOLD book) the reference projects had facilities such as secured garden or courtyard, private balcony or terrace or loggia, community spaces, café, hairdresser and some a kindergarten. The ones with kindergarten wanted to include the local community inside the building. Important urban planning strategies are access to public transportation, sport facilities and recreation.

Most reference projects were independent living units, so a care facility is nearby. And others even replaced hospital task and nursing homes, so people didn't have to leave the building.

Discussion

This research provides valuable insights into the preferences and needs of people with dementia (PWD) regarding their living environments. However, several limitations must be acknowledged to contextualize the findings and guide future research.

One significant limitation is the short duration of the study, which was conducted over three months and only once executed. This restricted timeframe means the data reflects a specific moment in time, and the results may not fully capture the dynamic nature of dementia and its impact on individuals' preferences. For instance, conducting the same interviews or observations over a longer period or at multiple intervals could lead to more accurate and nuanced findings, as the needs and experiences of PWD may evolve over time. Another limitation is the sample size and diversity of participants. The research included interviews with seven professionals from various disciplines and most of them work in Rotterdam, the Netherlands. The six PWD living at home, that were interviewed all live in Delft, the Netherlands. While these participants provided valuable perspectives, the lack of geographical and cultural diversity limits the generalization of the results. A more diverse population, including PWD from different regions, backgrounds, and living situations, might reveal varying preferences for dementia-friendly environments. The ideal environment described by participants may not align with the needs of a broader, more diverse group of PWD. Additionally, the research relied on fieldwork conducted by a single researcher, which introduces the potential for unconscious bias. Personal interpretations and perspectives may have influenced the data collection and analysis process. To mitigate

this in future studies, involving multiple researchers or adopting a participatory research approach could provide a more balanced and objective understanding of the topic. Finally, the evolving nature of dementia care and design means that the findings of this research may become outdated as new perspectives and technologies are emerging. For example, advancements in dementia-friendly design or shifts in societal attitudes toward dementia could alter what is understood as an ideal environment for PWD. Therefore, this study should be seen as a snapshot of the current preferences and needs of PWD.

In conclusion, while this research offers important insights, its limitations highlight the need for longer-term, more diverse, and collaborative studies to fully understand and address the complexities of creating dementia-friendly environments in architecture.

Reflection

Regardless of my prior knowledge, I still learned a lot about dementia. Like how different each nursing home looks and still functions in a similar way. The importance of having a community and accessible outdoor space and how this is connected to each other. What was new for me mostly was the research approach as I had never done in person surveys, including non-verbal ones for research before. Talking to all the different parties involved, granted me a lot of new perspectives and how each of them have different values within the same space. I enjoyed interviewing and learning new things, even when they were sometimes not architecture related. Sometimes it was difficult to filter all the data that was collected, since I have not done such large research before. And some people said a lot of important things that were not so relevant for my research specifically. Usually, it would be literature and a couple of case studies, but this required a lot of mental strength to listen, observe and analyse the situation. It was not a simple research, since it involved a lot of different parties that I had to communicate with and locations to visit. At the same time, I enjoyed peeking inside a building which otherwise would be closed to the public.



Oslo, Norway
(Photography by
Bas van Beelen (2024))



Vienna, Austria

At start of my research my partner and I went on a trip to Oslo (see pictures), and I got inspired by how much public outdoor spaces there were. The quality of public transport was also better than the Netherlands, but the roads were not. After my last interview I was asked by Veldacademie to help them with interviewing people with dementia for their project SACRED and it felt like a compliment that they wanted my help. I am grateful for all the lovely students in the Veldacademie graduation studio and the lovely trip we organized to Vienna (see pictures). Although, the projects were not directly relevant for this research, I still learned a lot about the architecture in Vienna.

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APPENDIX A - ARCHITECTURE FOR DEMENTIA

Projects											
GOLD book (design for dementia)											
NAME	LOCATION	TYPE	AMMOUNT OF HOUSING	CARE TYPE	FACILITIES private	FACILITIES public	COMMUNAL FACILITIES	PUBLIC	OUTDOOR	GUIDELINES	AUTONOMY
Grassy Meadow Court	UK	Care housing and resource centre		24h care on site	Balcony or winter garden (loggia)	Resource centre	Café, treatment rooms	transport	communal and secure gardens	Wayfinding, barrier free	Rooflights, natural light
Amber Wood Care Home	UK	Residential care home			Household: lounge, dining, kitchen		Communal social hub (snacks and drinks)	reception, shop, coffee area, hair salon and activity room	Internal courtyard, greenhouse		Rooflights, natural light
Worthington Lake Care Home	UK	Residential care home	32		Household: lounge, dining, kitchen		Home hub, dining room, breakfast bar, patio		Secure garden, sheltered terrace and patio. Outdoor exercise equipment and children's play	Oriental, visibility, signage system	soft light
Great Sankey Neighbourhood Hub	UK	Neighbourhood hub / centre				swimming pool, sport, café and pharmacy		Fitness, reception, accessible toilets		Visual access, signage	natural and artificial light
Cecil Gardens	UK	Care housing	95	Independent living	2 bedrooms, lounge/dining area, kitchen, shower, balcony or terrace	Public: transport, shops, doctor, local amenities	lounges, dining room, hobby and activity rooms, hair salon and restaurant		4 secure courtyard gardens with game area, raised bed for food.	sculptural wayfinding	
Harrison Park	UK	Care housing	65	Independent living	one or two bedrooms, lounge/dining area, kitchen and shower		communal hub and corridors	Entrance, communal dining / restaurant, activity hub, hair salon	secure courtyard garden		good line of sight, brightly lit, large windows
Redwood Glades	UK	Care housing	156	Independent living	one or two bedrooms, lounge/dining area, kitchen, terrace or balcony		Communal hub and garden, corridors, community café		Garden, patio, glass houses, game area, exercise and gathering space	memory, wayfinding, familiar	
Creer Residence Yokohama Tokachiba	Japan	Senior living residence and dementia care	311	Mixed ages	loggia, bedroom, balcony	dementia care service, community café and kindergarten / nursery, community spaces		facilitates local community, café, restaurant, culture		navigational, network, visual cues, sensory	soft lights
Meadow View Community Care Centre	UK	Residential and community centre		health and wellbeing services	terrace or balcony	day, health care, café, hair salons	communal kitchen and dining rooms, lounges and amenities, common foyer	public areas, entrance and centre	outdoor activities		natural light
Gaynes Park Manor	Australia	Care housing		24h care on site			Communal kitchen and dining rooms, lounges and amenities, common foyer	local cricket grounds or theatre, commercial kitchens	green space		natural light and big windows
The Lakes Care Centre	UK	Residential care home	64			activities family visit space			secure garden, terrace, raised beds for food		
Grancree Setagaya Nakamachi Care Residence	Japan	Senior living residence and dementia care	176 housing + 75 bedrooms	Mixed ages, long term care service	private garden or balcony	Hospital care, care home, community centre and kindergarden	communal dining, courtyard		courtyard, raised beds for food		identity, routine, care needs, autonomy
Goodson Lodge	UK	Care home	64	Specialist	Household: lounge, dining, kitchen	cinema, shop, café, hair salon	living, dining, bathing	public facilities	signage, wayfinding		
Florence Shipley Centre	UK	Care home		care centre short and longterm		café, consulting/meeting rooms, specialist bathing, hair salon	lounges, dining and activity spaces		garden	barrier free	sunlight
Daisy Hill House	UK			12 week stay			communal areas in the centre, dining, tv, activity		Internal courtyard		freedom of movement
Ada Belfield Centre and Belper Library	UK	Care Home and Library				library and community café			enclosed courtyard outside activity spaces		Angled windows avoid glare
The Green	Australia	Retirement Village	94				existing amenities, public transport	green area, gardens, public parks and green vistas	barrier free, visible route		autonomous aging
The Verge at Burleigh Golf Course	Australia	Retirement Village	177		on-suite bedroom, kitchen and balcony	golf club	informal seating areas		maximise visual space		
Total					balcony or terrace	community space, café, hair salon, kindergarten, sport and commercial spaces	café, dining, living, kitchen, reception, sport and commercial	secure gardens, courtyards, raised beds, play areas, F&B, outdoor activities, playground	barrier free, wayfinding, signage, network, accessible	natural light, skylight, soft light, big windows	free movement, where to eat

APPENDIX B - SURVEY TEMPLATE

Interview questions in original languages (Dutch):

1. Wat voor zorg biedt (naam zorginstelling of zorgaanbieder) aan mensen met dementie?
2. Wat is jou rol daarin? Wat voor werk doe je?
3. Hoe is je werk gerelateerd aan het onderwerp dementie?
4. Hoe zien de ruimtes eruit waarin mensen met dementie verblijven?
5. Wat is de relatie/ interactie die je opvalt tussen mensen met dementie en de ruimtelijke omgeving (kamer/gang/tuin/verblijfsruimte)?
6. Hoeveel autonomie heeft iemand met dementie over zijn/haar leefomgeving? [Dus: mogen zij zelf een raam/gordijn openen of dichtdoen?]

Interview questions translation:

1. What kind of care does (insert name of care institution or care provider) offer to people with de-mentia?
2. What part do you play in this? What kind of work do you do?
3. How is your work related to the subject of dementia?
4. How do the spaces, where people with dementia live in, look like?
5. What is the relationship/interaction that you notice between people with dementia and the phys-ical environment (room/hallway/garden/living space)?
6. How much autonomy does someone with dementia have over his/her living environment? [So: are they allowed to open or close a window/curtain themselves?]

APPENDIX C - INTERVIEWS PROFFSSIONALS

Interviews

M. van der Hoeven:

28 oktober 2024

Antwoorden:

Volledig zorg pad (vanaf niet pluis fase t/m verhuizen naar een intramurale woonlocatie of volledig pakket thuis):

Diagnose

Hulp thuis: (hulp bij huishouden)

Thuiszorg (wijkverpleging, verzorging thuis, medicatie, wondverzorging, specialistische zorg etc. en volledig pakket thuis)

Casemanagement (onderdeel van de thuiszorg en de dementieketen; een professional die iemand (persoon met dementie en diens naasten) begeleidt in het traject van dementie, zolang mensen thuis wonen)

Advance care planning: is een onderdeel van de professionals die met mensen met dementie en hun naasten werken; helpt bij mensen zelf besluiten laten nemen. De belangrijkste beslissingen worden in het begin al besproken. (Bijvoorbeeld: Wat vinden je belangrijk? Wat willen je zo lang mogelijk blijven doen? Hoe bereid je je voor op de toekomst als het thuis wonen niet meer gaat?)

Sociale benadering dementie; is een benaderingswijze voor mensen met dementie en hun naasten; de nadruk ligt hierbij meer op het leven met je aandoening i.p.v. de focus voornamelijk om medische aspecten.

Ontmoetingscentra: thuiswonende mensen met dementie kunnen hier een aantal dagdelen per week terecht. Voor mensen met dementie, naasten en mantelzorgers. Hoelang? Vanaf dat zij zelf behoefte hebben aan ondersteuning en contact met anderen totdat de persoon met dementie, de mantelzorger en/of de professionals merken dat thuis wonen niet meer verantwoord mogelijk is. Er wordt tijdig ingespeeld op het eventueel verhuizen naar een aangepaste woonomgeving, zoals bijvoorbeeld een verpleeghuis of andere woonvoorziening of, indien mogelijk, een VPT.

Verpleeghuis

Behandelpraktijk

Manager van ontmoetingscentra:

10 in Delft/ Westland/Pijnacker-Nootdorp en

Midden-Delfland

Betrokken bij Projecten langer thuis wonen

Projecten op gebied van dementie

Helpen met het bedenken van

opleidingstrajecten voor medewerkers,

nieuwe interventie te implementeren en

nieuwe programma's voor mantelzorgers

of mensen met dementie implementeren.

Nieuwbouwtrajecten, Spoorzone bij Delft

station wordt een nieuw verpleeghuis.

Belangrijk omdat er behoefte is aan

verpleeghuisplaatsen, maar het zou mooi

zijn als er ook andere woonvormen voor

mensen met dementie ontwikkeld gaan

worden, bijvoorbeeld een community met

mensen met dementie, hun familie en

betrokken buurtbewoners.

Cardia in Rijswijk heeft een nieuwe locatie

geopend voor mensen met dementie op

basis van VPT, ze werken veel met domotica

-> zorg op afstand en op basis van inzet

informele zorg.

Wet zorg en dwang, alle locaties 'opendeur

beleid' met behulp van domotica (waaronder

gps tracker).

Onrust door gesloten deuren

Receptie (hoeft geen receptie te zijn,

geeft vaak een instellingsgevoel, het gaat

erom dat het een vriendelijke ontvangst

bij binnenkomst is), woonkamer + keuken,

kantoor (hoeft geen kantoor te zijn

maar wel ruimte met werkplek waar je

ook gemakkelijk individuele gesprekken

met mensen met dementie en/of hun

naasten kunt voeren), bewegingsruimte en

buitenruimte. Er is een toilet met douche en

een ruimte om te slapen maar die wordt, als

er geen mensen zijn die tussen de middag

rusten, voornamelijk als opslag gebruikt.

Glazen deur van vloer tot plafond is niet

praktisch, omdat mensen tegen het glas

aanlopen en zich vaak bekeken voelen

tijdens bijvoorbeeld sportactiviteiten en

gespreksgroepen).

Mensen komen samen om de krant te lezen

of samen een spelletje/activiteit te doen

maar vooral om 'maatjescontact op te doen'

en te leren omgaan met de aandoening

waarbij ze zo lang mogelijk kunnen wonen

en leven, ondanks hun aandoening. Veel

activiteiten zijn daarop gericht. Reablement

is een interventie die ook steeds meer

wordt toegepast. Daarnaast is er een

mantelzorgprogramma wat onder andere

bestaat uit omgaan met de aandoening,

lotgenotencontact en informatie
 Ontmoetingscentra, wat soms lastig is, is dat je altijd met een groep bent. Hier zijn deuren altijd open, dus iemand is hier op vrijwillige basis. Ze kunnen weg wanneer ze willen, of even meelopen of familie bellen om opgehaald te worden. Ze mogen zelf ramen en gordijnen open of dicht doen. In het verpleeghuis, zelf ramen openen en voor de gordijnen zijn er 3 opties. Niet alle ramen kunnen open, vanwege valbeveiliging en klimaat eisen. Licht aan en uit te doen, met nep knop.
 Buiten activiteit -> duo fiets of riksja
 c. Tuinieren
 d. Wandelen
 e. Boodschappen doen
 etc.

Activity manager:

18 november 2024

Antwoorden:

- 1) Één groep PG in huis. 27 bewoners.
 - a. De rest tijdelijk verhuisd
 - b. Er wordt een grote toren gebouwd.
 - c. Er is een somatische afdeling
 - d. Er is verzorgd wonen
 - e. Verzorgd wonen voor beginnend PG
- 2) Dagbestedingscoach
 - a. Activiteiten samen met? gastvrouw?
 - b. Op de pg-afdeling
 - c. Activiteiten in de huiskamers en brasserie
 - d. Bespreken onbegrepen gedrag naar wenselijker gedrag. Samen met verpleging, arts, psycholoog en agoog
 - e. Materialen voor de activiteiten en beetje interieur
 - f. Open deuren beleid -> omgeving aanpassen
- 3) Veel administratie
 - a. Contact te houden met de afdeling balans
- 4)
- 5) Open deuren beleid
 - a. De aanpassing is dat nu de PG en somatische afdeling met elkaar verbonden zijn via een gang
- 6) Mogelijk meer beweeg vrijheid, uit een vooropgezet plan met arts. Eerst begeleiding en daarna meer zelfstandigheid geven aan de persoon met dementie.
 - a. Bijvoorbeeld eten ophalen in de keuken en ervoor kiezen om in eigen kamer op te eten. Mogelijkheid is er om zelf te kiezen waar je eet.

B. Birkenhäger:

2 december 2024

Antwoorden:

Hofstee, Stadzicht, open deuren naar binnentuin
 Delfshaven, tuin met rolstoel lift. Beter om het gelijkvloers te maken.
 Er zijn trappen en je kan alleen via de lift, niet handig.
 Trappen worden nu in de vide gerealiseerd.
 Mensen willen een eigen badkamer douche en wc.
 Vanuit je bed het toilet kunnen zien
 Hammondcare - Miranda in Australië.
 Overzicht: alles in een keer zien
 Logisch: gang moet gang zijn en niet met stickers op iets anders laten lijken
 Diffuse licht, goede verlichte gangen
 Duidelijk en niet te veel versieringen, meubels

Basisprincipes DSDC

Design interiors for people with dementia
 Overzichtelijk, logisch, bewegwijzering (tekst + illustraties)
 Vanuit de ene ruimte de andere ruimte kunnen zien
 Mensen kunnen in de war raken van spiegels, omdat ze hun eigen spiegelbeeld niet herkennen.
 Als je glas tussen 2 ruimtes hebt dan reflecteert dat in de avond ook en dan zou je eigenlijk een gordijntje erbij moeten hebben.
 Fase van dementie door elkaar, nadelen dat mensen gewend waren en dan verplaatst worden
 Het is duurder als er een kamer leeg staat
 Turkse en Kaapverdise achtergrond, aanpassingen bij eten en activiteiten
 Qua diepte, contrast, maar geen zwarte vlakken op de vloer
 Kleurintensiteit
 Passiever: door apathie
 Mensen die rondlopen en onrustig zijn
 Er is niet heel veel interactie en is per woongroep /persoon verschillend
 Groepjes van 2 of 3
 Mensen die graag alleen zitten
 Keuken met half deurtje afsluiten
 Mensen moeten de mogelijkheid hebben om te kunnen koken
 Alleen zitten in je eigen kamer
 snoezelruimte: schommels, geluidjes, kleur-tjes
 Op maat
 Oefenruimte: bewegingstherapeut
 Huis met de tuin voor wandelen

Binnentuin

Bankje bij de hal, rondkijken
 Rondlopen door het gebouw of restaurant
 Een groot duidelijk ding, waaraan ze dingen herkennen. landmark
 Kleinschalig 25 bewoners
 Grootschalig voordelen: meer ruimte voor, restaurant, gezelligheid en reuring.

APPENDIX D - EXTRA INTERVIEWS (OPEN CONVERSATION)

L. van Buuren:

5 december 2024

Samenvatting:

- Woonzorg NL
- Live longer at home, gap in housing market. Traditional home – care homes
- Clustered housing types, social interaction, cohesion
- Building manager interviewed for this research
- Overview typologies diagram
- Loneliness clustered housing vs. non-clustered housing
- Communal space -> more contact participation in community
- Not everyone needs contact. Some want to, but there are boundaries/obstacles
- Spontaneous vs. Organised encounters -> main hall, hallway, circulation spaces
- Observed daily lives of people with dementia.

C. Zylia:

6 december 2024

Samenvatting:

- Reageren op elkaar en omgeving – verschilt per persoon
- Cognitieve problemen, informatie-verwerking, zicht en gehoor komt anders binnen
- Probleemgedrag, sommige hebben hallucinaties, distorted zicht
- Verpleeghuis, laatste fase van dementie
- De rest blijft thuis, dat is niet dezelfde groep
- Vroeger verzorgingshuis -> lichte zorg en verpleeghuis -> zware zorg
- Levensloopbestendig huizen bouwt. Brede doorgangen, lage drempels
- Lichamelijke, sneller struikelen, slechter eten
- Valpreventie
- Zo lang mogelijk in hetzelfde huis blijven
- Kleiner wonen vanaf 60 of later
- Boorden, symbolen die al bekend zijn voor iedereen
- Singapore, healthier Singapore demetievriendelijke
- Wat voor iedereen duidelijk is
- Wayfinding met boorden en op de weg met kleuren

- Allemaal kleuren en labels
- HBD's hoogbouw, allemaal een kleur
- Community in het gebouw en publieke/gemeenschappelijke functie op begane grond
- Wat goed is voor mensen met dementie is ook goed voor anderen
- Ruim 10 jaar van begin tot eind dat nog prima functioneert wilsbekwaam
- Met hulp zelf keuzes kunnen maken
- Familie: wij moeten alles overnemen terwijl het niet hoeft, niet zomaar dingen overnemen
- Die persoon is nog in staat om dingen te doen en kunnen nog nieuwe dingen leren.
- Gebouw, ontmoeten en dingen leren
- Singapore voorbeeld
 - o BG centraal hal met ontmoeting ruimte
 - o 60-plussers in een gebouw en onderin is kinderdagverblijf
 - o Ouderen ontmoetingscentrum
 - o Geld krijgt als je dicht bij je ouders woont
 - o Flat = midden en laag inkomen
 - o Samen dingen doen en activiteiten
- Te kort aan zorgverleners
- Community van mensen kan zijn, jong en oud
- Dat de gewone mens weet hoe die er mee omgaan
- Eten en drinken
- Oudere woningen, community met studenten
- Niet dat de student alleen de oudere helpt. Dus ook dat de student er iets uithaalt
- Zorg voorziening, hou rekening met te kort aan zorgpersoneel en misschien geen zorgverlener hebt om in dat gebouw te werken.

Nurse - Delfshaven:

10 december 2024

Samenvatting:

8x slaapkamer en 4x badkamer per afdeling. Verbeter punt, een trap naast de lift. extra liften op verschillende plekken in het gebouw. aparte linnenkamer per woongroep. eigen wasmachine per verdieping. Het zou handig zijn als je vanaf de verdieping naar beneden en buiten kan kijken of iemand

voor de deur staat. soms is er geen receptie-nist, zoals in de avond.

(-1) beneden wasmachines

kelder => geen bereik, beetje eng. Er zitten

soms zwervers

huiskamer aan tuin, maar er zit een trap en trap lift.

bergingen

technische dienst

kledkamer en douches

Begane grond:

noodvoorraad medicijnen

restaurant

toiletten bezoekers

opslag zuurstof flessen

vide: onhandig omdat je eromheen moet

lopen. slecht bereik in het gebouw

J. Müller:

16 december 2024

Samenvatting:

Kantoor -> psychiatrie

Restaurant

Sportzaal

Kinder MPU

Transformatie project -> nieuwe kamers bij bouwen

Mensen kunnen zelfstandig naar buiten

Regie geven aan de patiënt doormiddel van een pasje.

Je kan overall uit, maar niet overall in

Aparte ruimte met privé tuin voor 1 op 1 begeleiding

Digital het raam bedienen, anders zouden

de patiënten zichzelf kunnen ophangen

Overzicht van de werknemers bij de balie/receptie

Care manager:

7 januari 2025

Samenvatting:

Elisete Rondleiding

- Jong dementerend
- 16 bewoners
- 2 huiskamers
- Slecht zicht
- Overgang naar buiten heeft een gladde helling
- Open setting, voor deur dicht
- Tuin met code (familie en verpleging)
- Terras open voor bewoners
- Glad, niet zo veilig
- Winter wordt niet echt gebruikt
- Beter als er een Binnen tuin was
- Park buitentuin
- Er is geen buiten toilet, maar is wel nodig
- Man/vrouw is niet handig, maar allen

een wc of douche is duidelijker

- Te veel stoelen op de gang
- Pilaren -> maak functioneler. Bijvoorbeeld door interactie en tactiel
- Bezig crowd funding afdeling Noordplein
- Helft is jong dementerend en die groep wil naar buiten
- Maar ze willen mixen
- Beter als zelf zonnenscherm open of dicht kunnen doen
- Onderhoud en financieel is het slecht
- Helling is steil England. En er is geen handgreep bij de uitgang
- Prieltje
- Keuze bieden, in zon of schaduw
- Praktische zit plekken
- Goed schoen te maken zijn
- Niet dat plastic zeil
- Inrichten appartementen naar de fase waarin die persoon is
- In begin inrichten zoals thuis. Herkenbare items
- Veiligheid
- Soms moeten dingen we glas er onrust ontstaat
- Gemeenschappelijk
- Passen bij de doelgroep
- Ronde tafels
- Geen velle kleuren, maar rustig
- Verschillende disciplines kijken naar de keuze van meubels
- Wie heeft er last van? Besluiten genomen ten goede van de zorgvragers
- Snoezelruimtes, met warm waterbed. Wordt ook met naasten gebruikt om een intiem moment samen met partner te hebben.
- Toevoegen een buitensnoezelruimte

Experts via Veldacademie

Municipality of Rotterdam:

November – december 2024

Samenvattingen:

Project manager of the accessible city program 'Rotterdam Onbeperkt'.

- Inclusion for people with disabilities
- 3 forms:
- Physical: enter building, walk street without obstacles
- Social: feeling welcome
- Information: if you can access website
- Mental disability: laagdrempelig, stoplicht met geluid conformation
- Quiet spaces, sensory free areas in

public

- Cozy corner (with a hedge or green wall)
- Accessibility on education, building, housing, playground
- Universal design: value sensitive design for disability
- What does the user need?
- Universal design, more cost effective if you design it than adjust it later
- Art tenders Rotterdam onbeperkt
- Schakel, guidelines design and maintenance

Elderly housing:

- Housing for elderly 80-88
- Elevator that functions when a fire happens
- Evacuation with wheelchair
- Tours with mobility scooter
- Sensory art accessibility
- Living library -> father with dementia

Urban planning department:
green spaces and amenities

APPENDIX E - TEMPLATE NON-VERBAL INTERVIEW

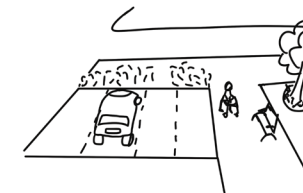
Bomen



Auto's



Entree, straat, parkeren



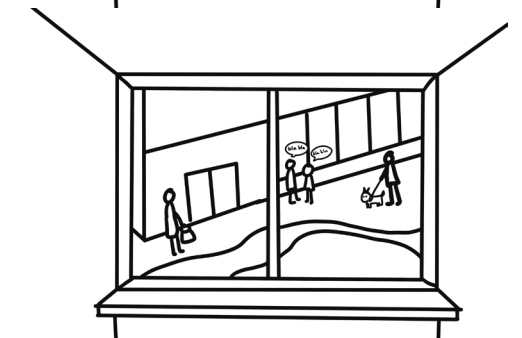
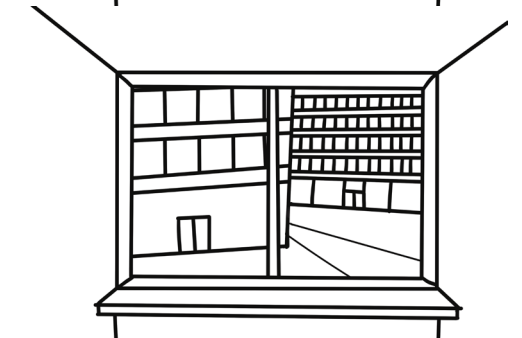
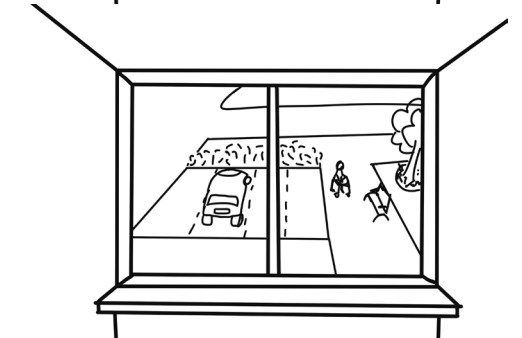
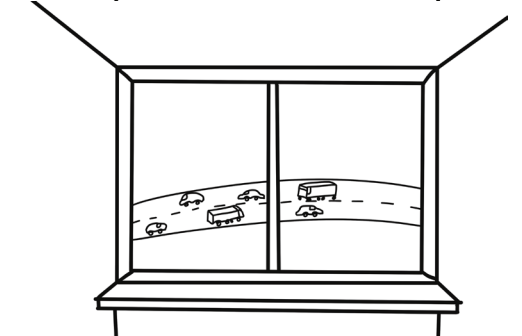
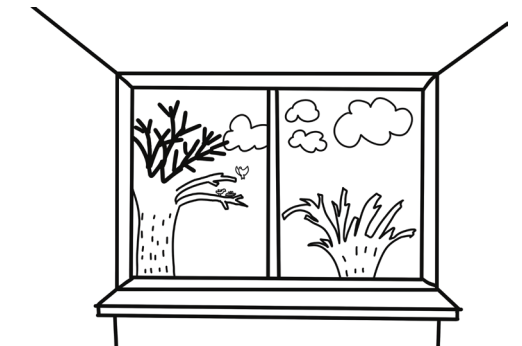
Gebouwen

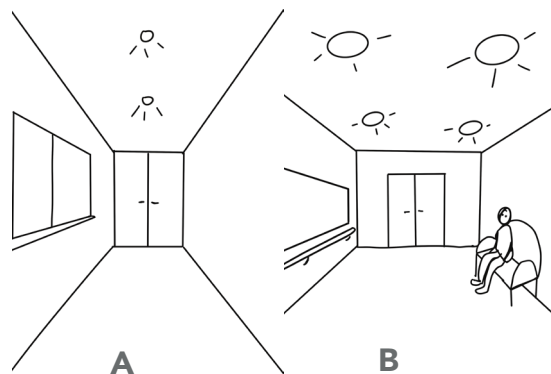
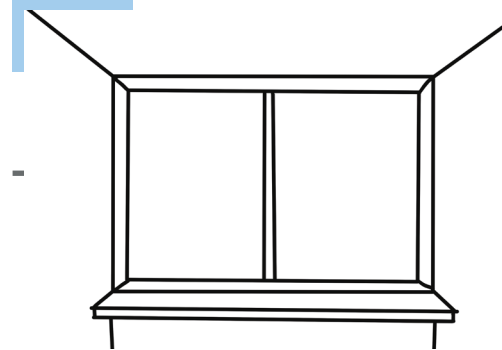


Straat met interactie

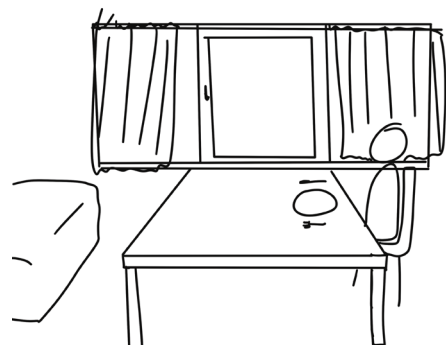


Uitzicht op:

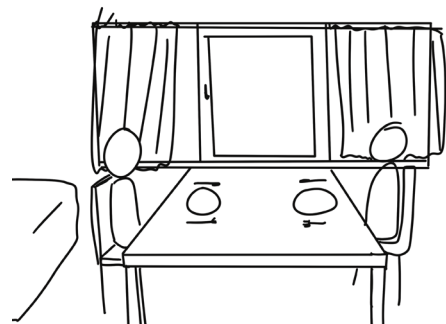




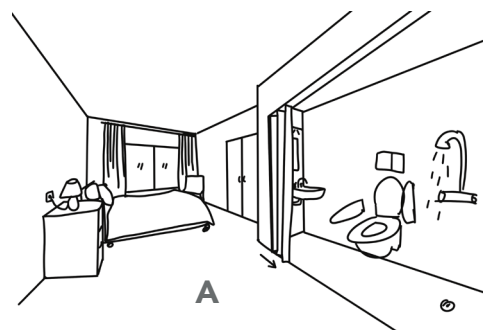
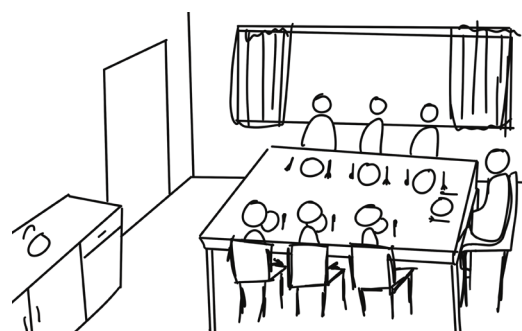
Alleen



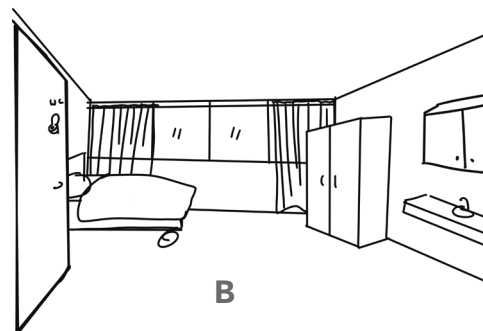
Samen (vrienden/familie)



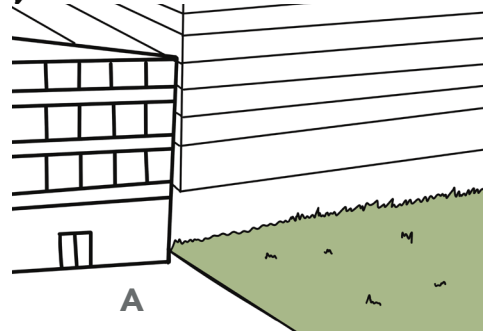
Met (woon)groep



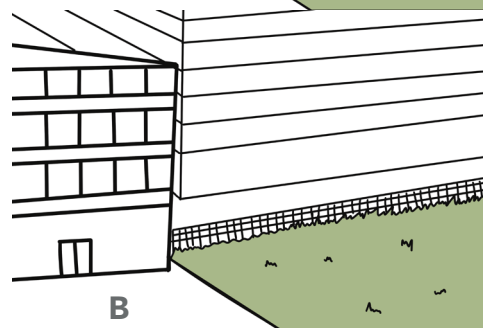
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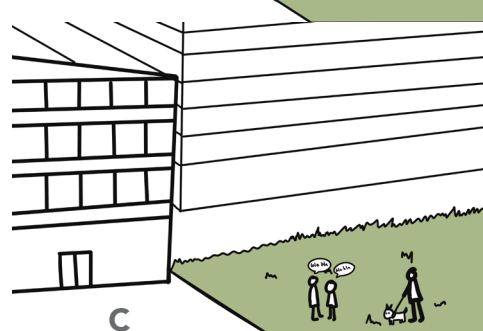
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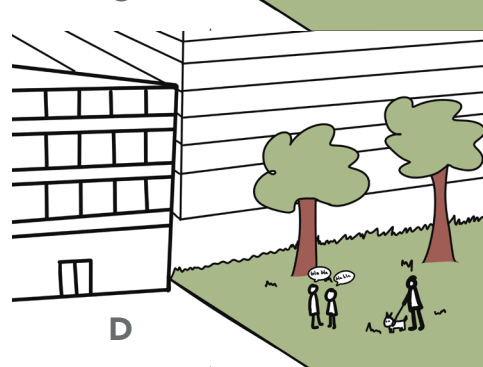
A



B



C



D

APPENDIX F - NON-VERBAL INTERVIEWS WITH PWD

Non-verbal Interviews

A1:

21 november 2024

Antwoorden op schetsen:

Uitzicht:

Op de straat en beetje natuur. Alleen die parkeerplaats verder weg, vanwege uitstoot.

Slaapkamer

A: duurt lang om de schuifdeur dicht te krijgen voordat je prive op toilet zit.

B: lig jemet je hoofd (bed) dichtbij de deur van de wc en krijg je veel geuren van de wc.

Eten (samen vs. Alleen)

Leuk feest dan gezellig met iedereen.

Alleen is nooit zo leuk

Met z'n 2'en al gezelliger

Boterhammetje eten met kleinere groep

Liever niet alleen, praatje met iemand wel prettig

Gangen

A: sneller op je bestemming -> goed verlicht

B: zit op z'n beurt te wachten

Zou afvalbakje en niet roken toevoegen

B; brede gang, minder ruimte voor woning te creëren

A: duidelijker

B: weet niet of mensen van de wachtkamer gebruik maken. Reclame ding?

Grasveld

D: lekker gesprekje, gebeurt vast wel

In Dleft: -Veldje tussen grote gebouwen, kinderen spelen, Scholen naast dat veldje met speeltoestel

Met inrichting, speeltoestellen anders gaat niet goed

Mensen in contact brengen die in de flats wonen.

Verschillende mensen gezellig

Er moet gepraat worden met elkaar, dan gaat het goed.

A2:

Antwoorden op schetsen:

Uitzicht:

Bomen natuur, lucht -> het geeft beweging
Interactie geeft beweging

Slaapkamer

A: afgesloten ruimte voor wassen (douchen) is fijn. En eigen douche

Gangen

B: is dat een wachtkamer?

Voorkeur brede gang als het niet ten koste gaat van de andere ruimte.

Eten (samen vs. Alleen)

Voorkeur familie hou niet van zo veel mensen

Beter als je om de tafel heen kan lopen

Met zn 2'en kan je alleen maar met die ene persoon praten

Grasveldje

D: met bomen en grasveldje bbeter, perspectief

Ik zou er een hek omheen zetten -> beveiligd is

A3:

Antwoorden op schetsen:

Uitzicht:

Naar menen kijken is altijd leuk

Gebouwen, geeft diepte aan

Winkelstraat gezellig

Slaapkamer

B: ik weet niet waar de wc is, mooiere kamer omdat bed en kast (die waren dus niet opgevalen in de andere tekening)

A: leuker omdat verschillende elementen elkaar ontmoeten

Gangen

B: veel naar buiten kijken toevoegen, iets op de vloer, looprichting, en naar buiten kunnen kijken

Eten (samen vs. Alleen)

Alleen, ik zie geen leuke dingen, kan alleen naar buiten kijken

Grote groep, gezellig, druk

Soms zit je in je eentje en dat is prima

Verschilt per keer

Grasveld

Saa, leuk als er kinderen spelen

Bomen begint al iets meer een park te worden.

Banken toevoegen, plekken om te gaan zitten.

Betegelen en banken

Mensen, gezellig

A4:

Antwoorden op schetsen:

Uitzicht:

Interactie vind ik de leukste

De weg, vind ik saai

Bomen wel aardig

Slaapkamer

A: de mooiste, lijkt gezelliger -> wc is zichtbaar

Gangen

Brede gang, bankje, veel licht, meer zon

Eten (samen vs. Alleen)

Alleen, die niet

Grote groep, gezelliger

Kleinere groep is ook leuk met zn 2'en is een beetje kalig. Beter met minimaal 4 personen

Grasveld

Bomen -> gezelliger, met bankje erbij

Hondje, er gebeurt meer

A5:

Antwoorden op schetsen:

Uitzicht:

Naar buiten kijken

Met bomen, vrijheid gevoel dat je buiten bent

Slaapkamer

A: geeft een warmer gevoel. Er is een wc en kraan

B: kale boel, niet handig dat de wc achter de deur zit.

Gangen

B: die persoon op de tekening wil graag naar buiten en kan naar buiten kijken.

A: straalt niet veel uit. Gezelliger maken, schilderij aan de muur

Eten

Met vrienden zitten

Grote groep -> te veel

Liever dinner met 2-4 personen

Tafel gezelliger aankleden

A6:

Antwoorden op schetsen:

Uitzicht:

Interactie mensen, er is een beetje leven

Slaapkamer

B: meer prive, wc niet zichtbaar

A: Leuk ingedeeld, zou de wc wel dicht

Gangen

Bankje, meer leven, gezellig

Eten (samen vs. Alleen)

Elke is opzich prima

Grote groep, gezellig, beetje mensen

Reuring -> 6 personen

Grasveld

Bomen, mensen, die leeft spreekt mij wel aan. Trekt automatisch mensen

Bankje, kinderen spelen.

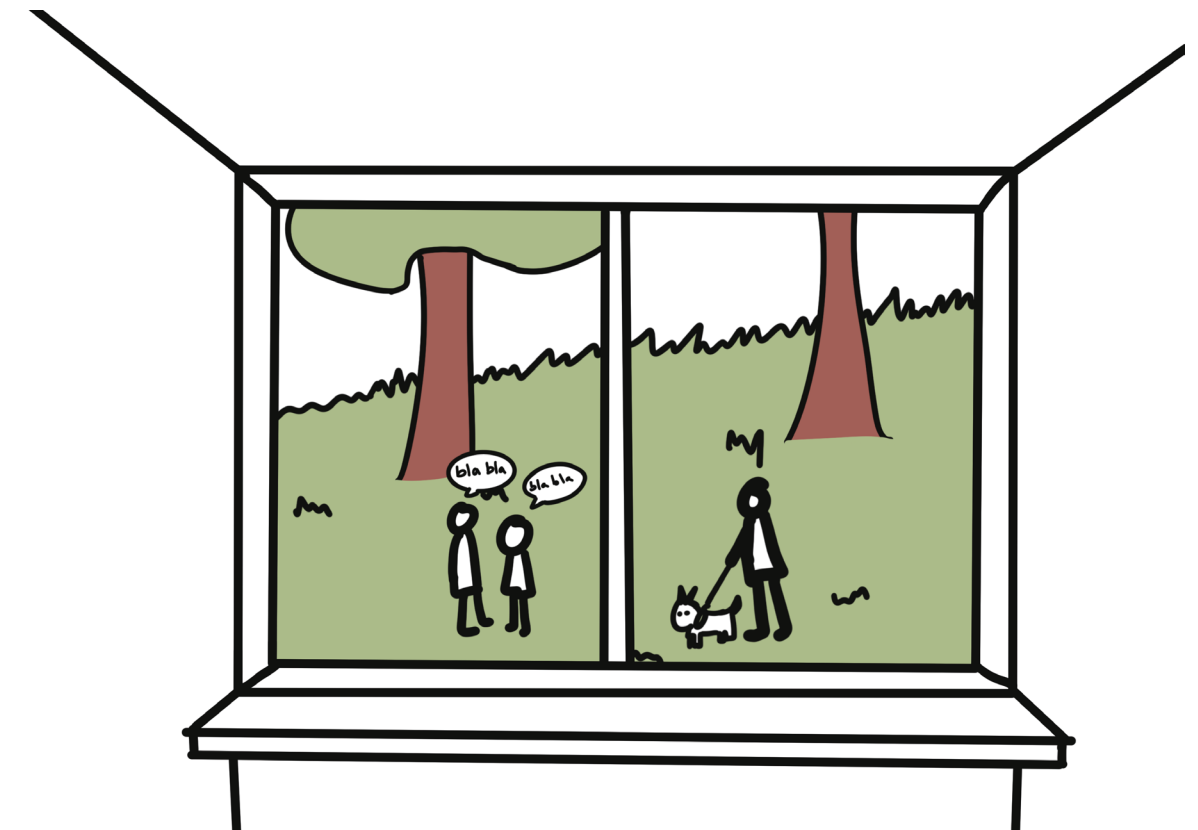
*note

Mensen konden soms de tekening met raam kozijn niet goed zien, dus ik had het dan zonder raamkozijn laten zien. Verder waren de tekeningen helder, alleen ik merkte wel dat bij de gekleurde tekening het duidelijker was voor hen om te zien/begrijpen wat het is. Merkte bij sommige dat het begrijpen van de vraag 'wat heeft u voorkeur?' het toch lastig was voor sommige om te begrijpen. Hierdoor gingen sommige personen een ander onderwerp aansnijden en voornamelijk eigen ervaringen delen.

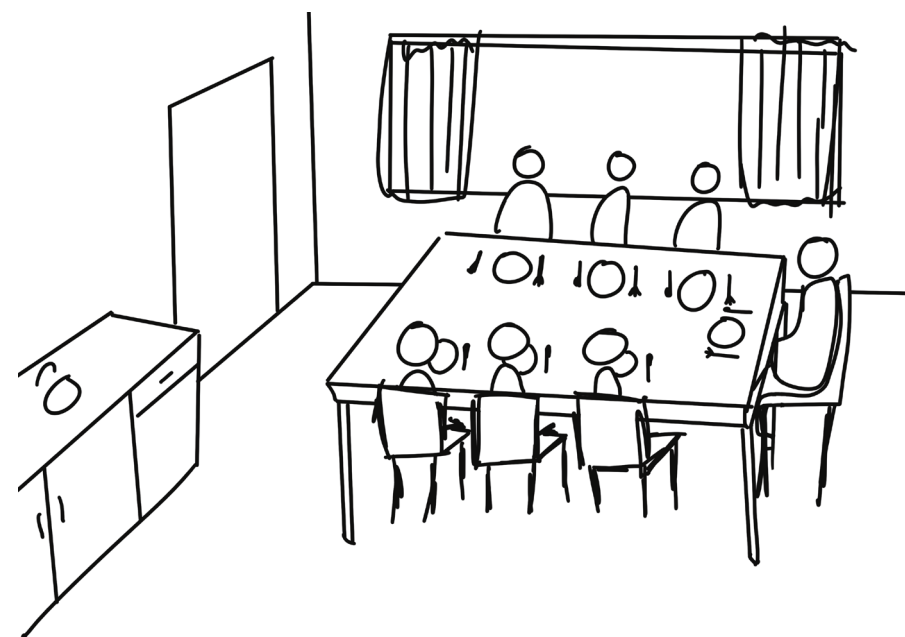
APPENDIX G - DESIGN GUIDELINES



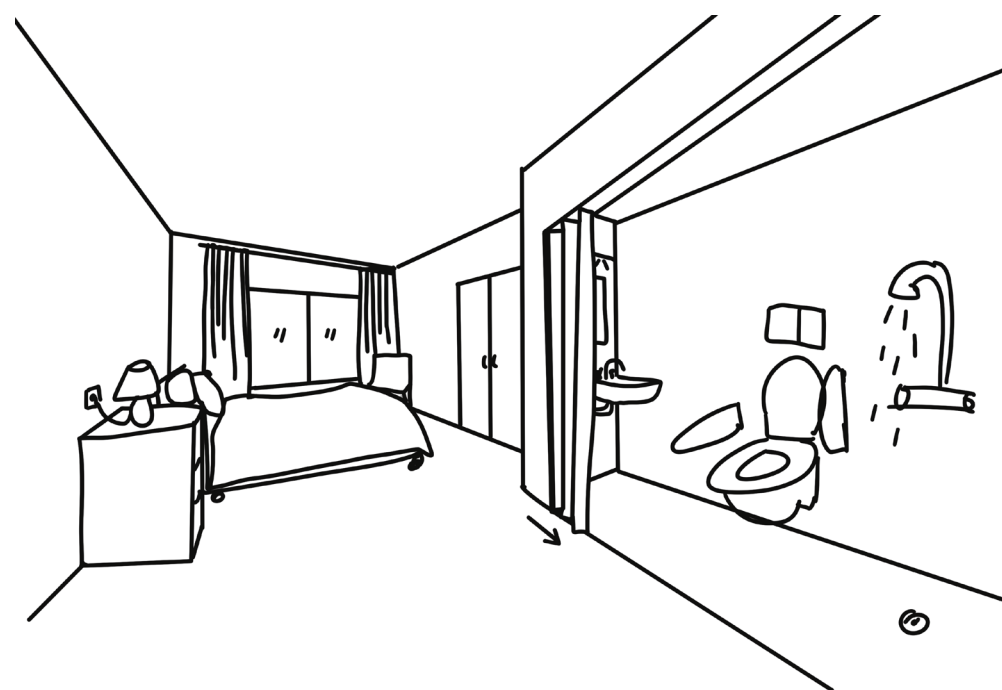
Multiple living room areas, more private / quiet vs. more open



View from room interaction and nature

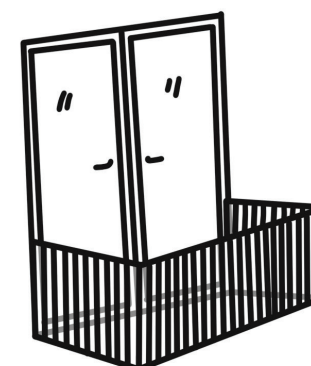


Eating together, preferably with friends or familie

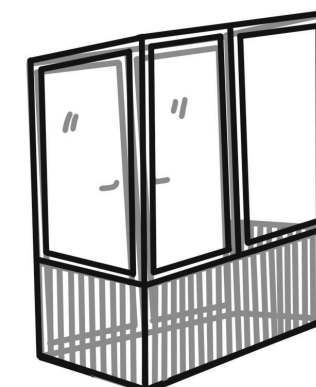


Private bathroom and visually seeing the toilet

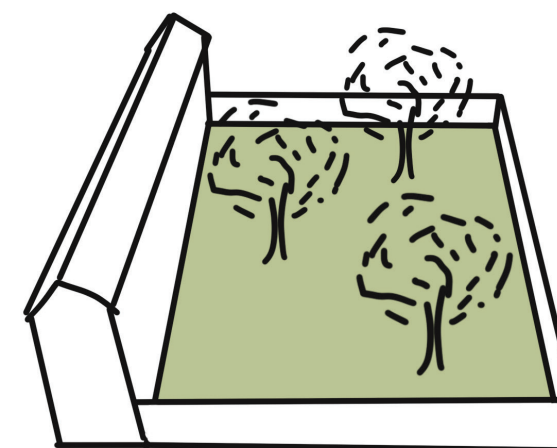
These are designguidelines for the outdoor spaces.



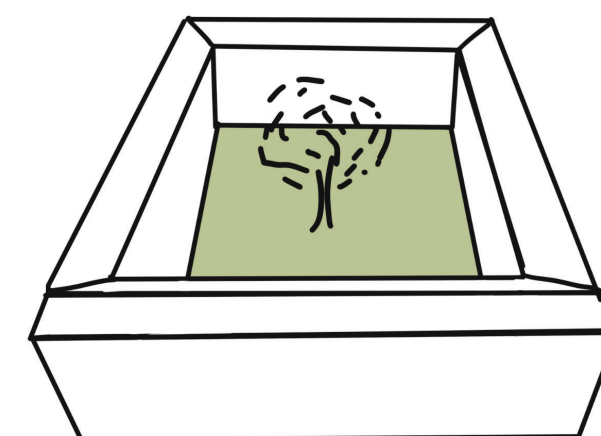
Private balcony or terrace



Private loggia or Winter garden



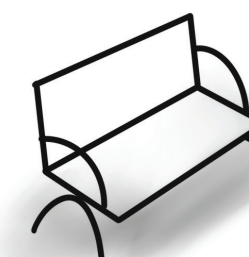
Communal secured garden



Communal courtyard

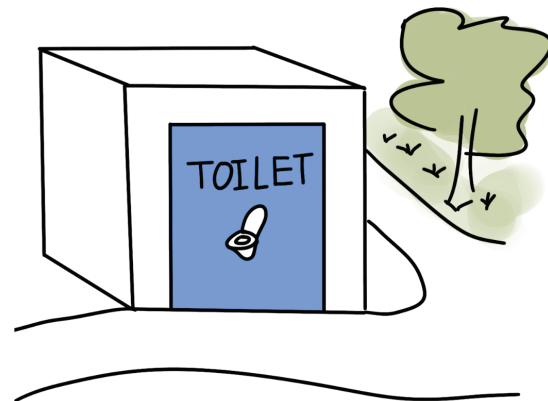


Shaded seating

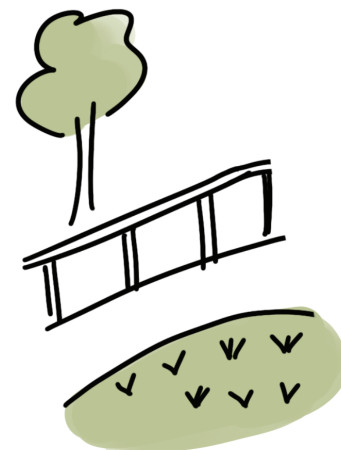


Non-shaded seating

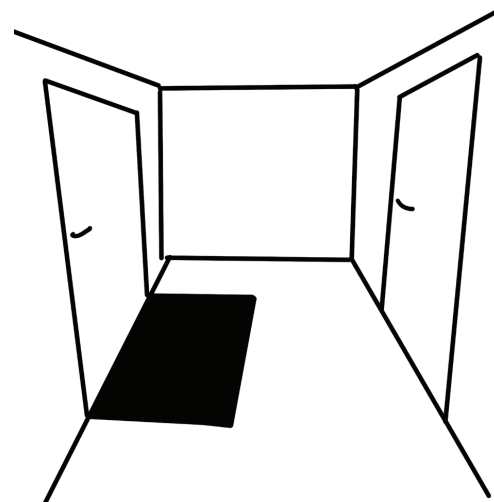
These are designguidelines for the outdoor spaces.



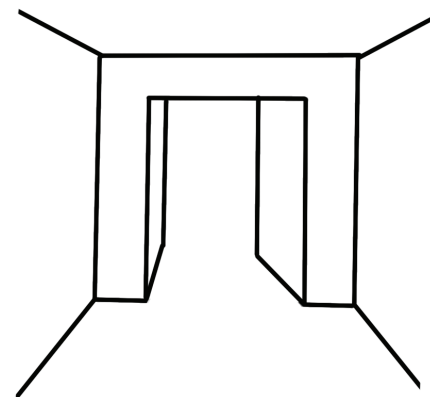
Accessible outdoor toilet



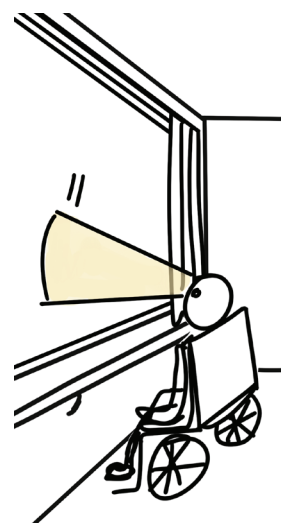
Railing in the garden



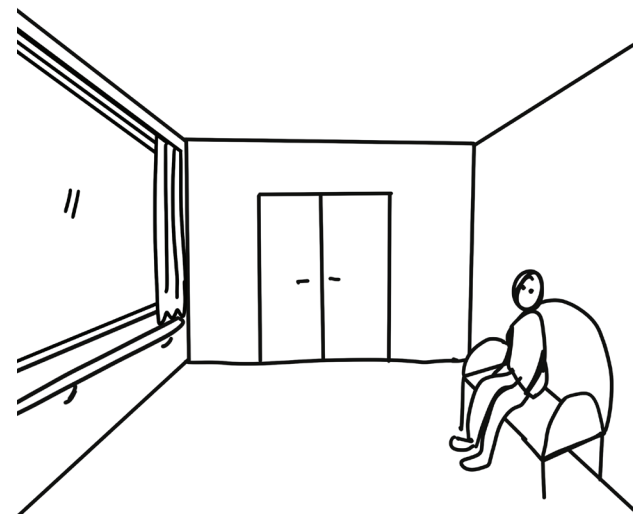
No black for floors, as it can seem like they can fall through it



Open door policy

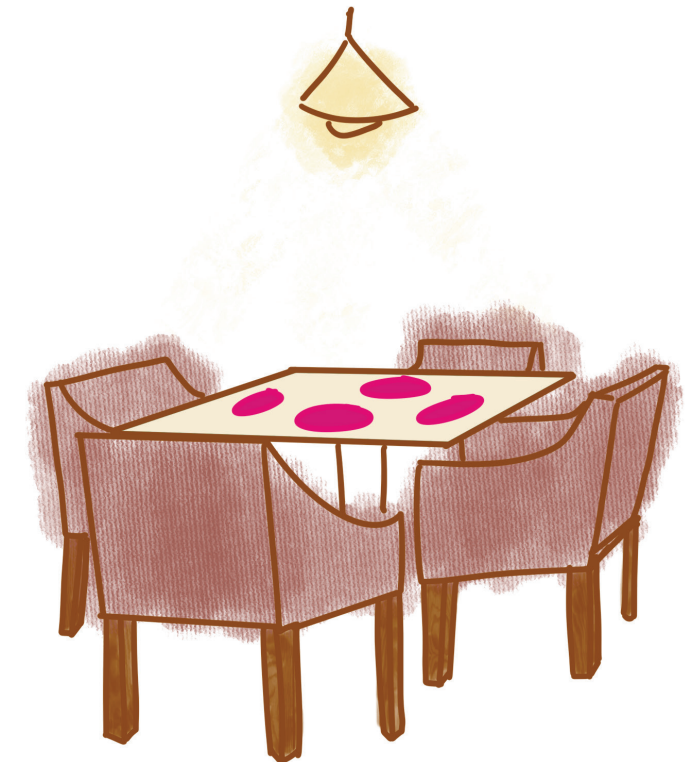


Window on their eye level



Seating every +/- 8 meters

These are designguidelines for furniture.

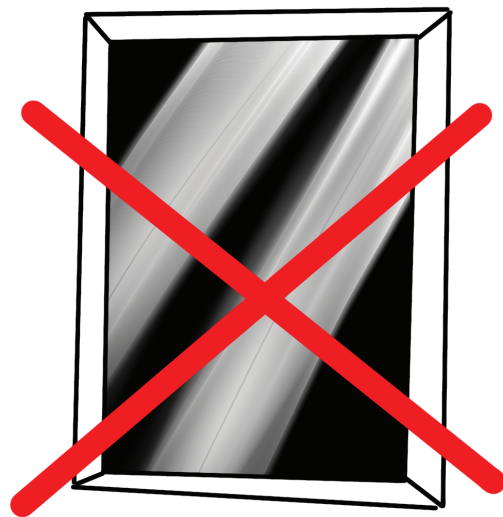


Contrasting, outstanding and light/warm colors combined with good lighting

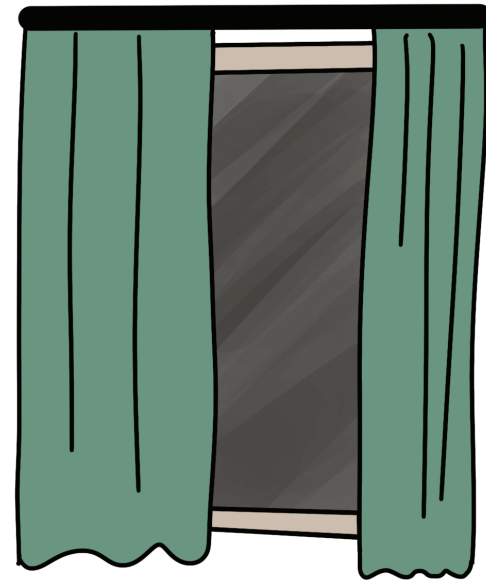


Raised planters for gardening

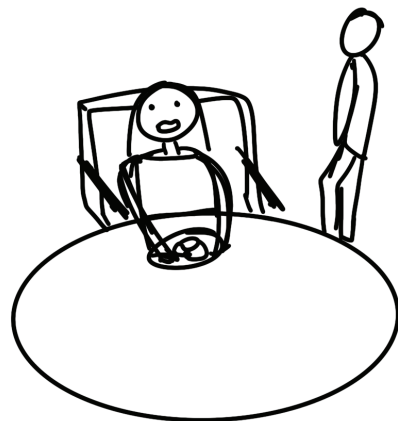
These are design guidelines for furniture.



Avoid glare



Use curtains to reduce glare

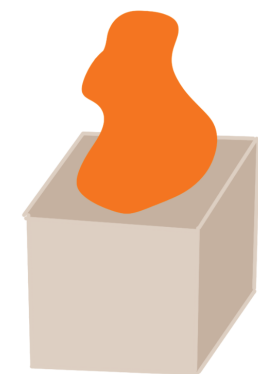


Avoid movement distractions
and don't approach them from behind or the sides

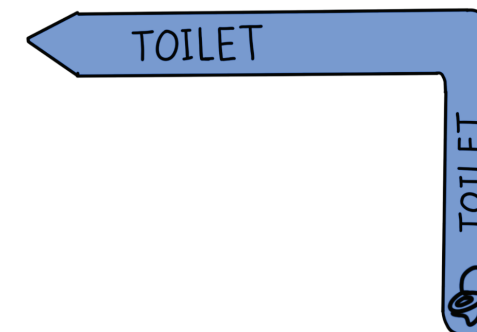
These are design guidelines for wayfinding.



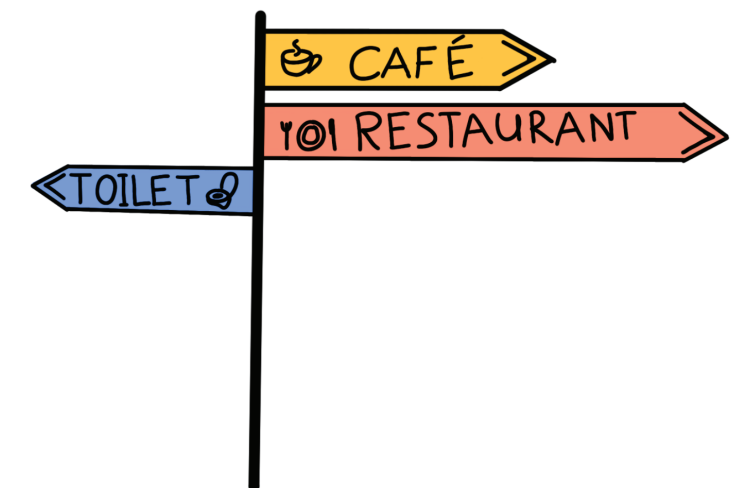
Wayfinding by artwork



Sculptures



Arrows on the floor



Signage with color coding



Men / women is confusing



Simple and clear