

Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences



Graduation Plan

Personal information	
Name	R Versteegen
Student number	4850149

Studio	
Name / Theme	AR3AD110 Designing for Health and Care: Towards a Healthy and Inclusive Living Environment
Main mentor	B Jürgehake Design
Second mentor	L van Deudekom Building Technology
Third mentor	L Oorschot Research
Argumentation of choice of the studio	<p>Ever since I started my Master's study, I had a fascination for human-architecture and supporting people's health, feelings and mental state by the use of building design. As homes are the places where people spend most of their day, the choice for studio 'Architecture & Dwelling' seemed fitting for my graduation studio.</p> <p>The choice for 'Designing for Care -Towards a Healthy and Inclusive Living Environment' specification was the result of personal experience. In recent years I have seen up close how important a home can be for people with an illness or other health condition and how a standard home can sometimes no longer meet the needs of the person in question. As my grandparent's independence deteriorated due to their increasing dementia, their last period of time in their own home became unpleasant, unsafe and unhealthy. A suitable (care) home, day care center or nursing home for this target group (and other target groups with other diseases) is therefore of great importance, both on an organizational level and on an architectural and spatial level. This is the main reason why this studio seemed interesting and relevant to me.</p> <p>Additionally, existing socioeconomic and health-related challenges (think of the aging society, a number of preventable diseases and the increase in mental diseases, a lack of healthcare workers, etc.) call for a change in the healthcare system. Naturally, this can result in or ask for a shift in health care architecture as well. This is something I, as an architecture graduate student, would like to contribute to in my future career and my graduation project.</p>

Graduation project

Title of the graduation project

'Dementia day care as a green addition to the city'

Goal

Location:

Binckhorst, Laak, Den Haag

The posed problem, research questions and design assignment in which these result.

Problem statement:

The Dutch population is aging what causes cognitive diseases such as dementia to increase is our society. It is estimated that the number of people with dementia will increase to more than 500,000 in 2040 and more than 620,000 in 2050 (Alzheimer Nederland, 2022). 79% of Dutch people with dementia still live at home and are cared for by their close family, mainly because they are in the early stages of the disease and do not want to move out yet. This leads to several problems. First of all, living alone can be very hard for patients, mainly due to loss of self-confidence and growing anxiety (Kwak et al., 2017). Next to this, the pressure on informal caregivers rises as the patient's condition declines. Unfortunately, often it is unavoidable for the patient to continue to live at home because of long waiting lists of nursing homes, the increasing pressure on the Dutch health care system or the fact that a move can be a mentally impactful event. (Ryman et al., 2019).

A proven effective option for people with early stage dementia is to visit dementia day care facilities several hours in the week while still living at home. This can support them in living independently for a longer period of time while informal caregivers can be relieved (Måvall & Malmberg, 2007). A specific type of day care that is popular in rural areas of the Netherlands is the 'zorgboerderij' also known as a 'care farm' or 'farm-based day care'. This concept is centered on a farmer opening up his farm to individuals in need of care so they can work in agriculture, be connected to nature and become socially involved (de Bruin et al., 2018). Recent research by Health and Society, WUR Plant Sciences and RIVM (de Bruin et al., 2020) emphasizes that the concept of farm-based day care could be a successful addition to the city and different green alternatives are already present in the Dutch urban fabric. Most of the green day care activities are taking place in public green locations instead of on the site of the day care or care facility itself. The connection with the built environment seems to be missing as the day care activities are not tied to fixed locations yet. The authors of this article therefore recommend that more research is needed into green day care initiatives in the city and implementing this in an appropriate way, as this research is still in its early stages. (De Bruin et al., 2020) This can be a challenge due to the density of the build environment within Dutch cities. So another problem arises: a potentially good typology does not have a place in de Dutch urban fabric yet.

Goal:

This research aims to find ways to create a fitting day care facility where people with early-stage dementia are supported in their daily life in order for them to live in their own environment for as long as possible. Architectural guidelines will be established to incorporate the qualities of farm-based daycare facilities into the dense structure of Dutch cities so that it

can blend in with the existing green-blue grid and support the spatial needs of the user. To achieve the mentioned goal, the research aims of the project are: getting to know the needs of the target group, exploring the existing concept farm-based day care, extracting the qualities of this concept in regard to the target group, translating these qualities into more widely applicable design guidelines and finding ways to fit these qualities in to the urban green-blue grid of cities.

The output of the research will be a design guide with generic design guidelines that can be implemented while designing for people with early-stage dementia. These guidelines will be following the principles and successful characteristics of farm-based care. The use of these guidelines can support the design of an urban day care center with the characteristics of a farm-based day care facility within the city.

Research question:

In order to contribute something to the mentioned problem statement and reach the research goal, the following research question and sub questions were formulated:

'How can the successful characteristics of farm-based day care be implemented in the green-blue landscape of Dutch cities in order to support the spatial and architectural needs of people with early-stage dementia?

Sub question 1: What are the spatial and architectural needs of people with early-stage dementia living independently in the city?

Sub question 2: What is farm-based day care and what are existing examples?

Sub question 3: What are the qualities of farm-based day care?

Sub question 4: How can the qualities of farm-based day care be made spatially applicable in a wider (non-rural) environment?

Sub question 5: How can the design guidelines for farm-based day care be implemented in the green-blue grid of Dutch cities?

Design assignment

The design that will be developed as a result of this research will be an urban take on a farm-based daycare center that is situated in Binckhorst, The Hague. In addition to daytime activities, the plan will include a guest home where people with early-stage dementia can temporarily stay with care in order to relieve the informal caregiver. Next to the functions specifically designed for those with early-stage dementia, public functions like a small animal farm, cafeteria, and social gathering area are included. In this manner, people with early dementia can benefit from meaningful daily activity while simultaneously maintaining neighborhood involvement and relieving informal caregivers. The different guidelines that follow from the research will be implemented in the design in order to incorporate the qualities of farm-based day care.

Process

Method description

Literature review

Literature review will be used for answering almost all the sub questions to give these chapters a theoretical bases. This method will be used to explore what the concept of farm-based day care is and what existing urban alternatives are. Next to this, several sources will be used to get a clear view on the spatial and architectural needs of people with early stage dementia and what farm-based daycare can offer for them. These will also play a big role in the design process. Additionally, literature research will be done on the topic of green-blue landscapes within, or connected to, Dutch cities, in order to find a place to implement the qualities of farm based day care. The specific sources will be listed in the paragraph 'Literature and general practical preference' of this graduation plan.

Case studies

Several case studies are going to be used to get a clear view on how farm-based day cares are organized and how the buildings of these facilities look. This will also inspire the design process. Three case studies are selected:

- Zorgboerderij de Reigershoeve, Heemskerk.
This location was chosen because it is a residential/ day care facility with the influences of a care farm. Although it is a newly built location, and not located in a farm or on the land of an active farmer. Do connect the vision and architecture to the farm-based day care concept.
- Onvergetelijk Leven Dagbesteding, Utrecht.
This location was chosen because it is a farm-based day care facility located in a newly built day care farm. The farm was recently built and directly translates the vision of the organization and farm-based care concept.
- Onvergetelijk Leven Dagbesteding, Hollandse Rading.
This location was chosen because it is a farm-based day care facility located in an old farm, bought by the owner of Onvergetelijk Leven. As it is located in an old farm, on a farmland in a rural environment, it fits the concept of care farming.

These three locations are the same organizations that were visited for observations during fieldwork. Information on these case studies will be documented by using text, maps, drawings and pictures in order to answer research questions 2 & 3. They will be compared to the characteristics of farm-based care previously extracted from the literature.

Observations (during fieldwork)

As part of the case studies, Zorgboerderij de Reigershoeve and two location of Onvergetelijk Leven will be visited during the fieldwork weeks of the course in order to do observations on farm-based day care. To get to know the target group a bit better, two locations of Habion will also be visited, 'T Kampje in Loenen and De Aa in Breukelen. These locations are not farm-based care institutions, but can however get a good insight in the life of elderly or people with dementia. Observations will be used to get an understanding on the clinical picture of people

with early stage dementia and to get a better view on their way of life and (spatial) needs. Results of these observations will be mainly incorporated into research question 3 in the form of storytelling because these questions focus on the experiences of the target group within farm based day care. The text will also be illustrated with hand drawings instead of pictures in order to maintain the privacy of day care users and residents.

Interviews

Staff members of the organizations that will be visited during the fieldwork week will be interviewed about their work, the patients the care for and the building they work in. Semi structured interview questions will be prepared before the visitations of the locations. This method is used to get a better understanding of people with dementia and their needs but also on the concept of farm-based day care. Because of ethical reasons, it is not possible to interview people with dementia themselves, but the experiences of staff members can tell a lot about how people with dementia live. Results of these interview will be incorporated into research question 2 and 3 and will be intertwined in the literature study.

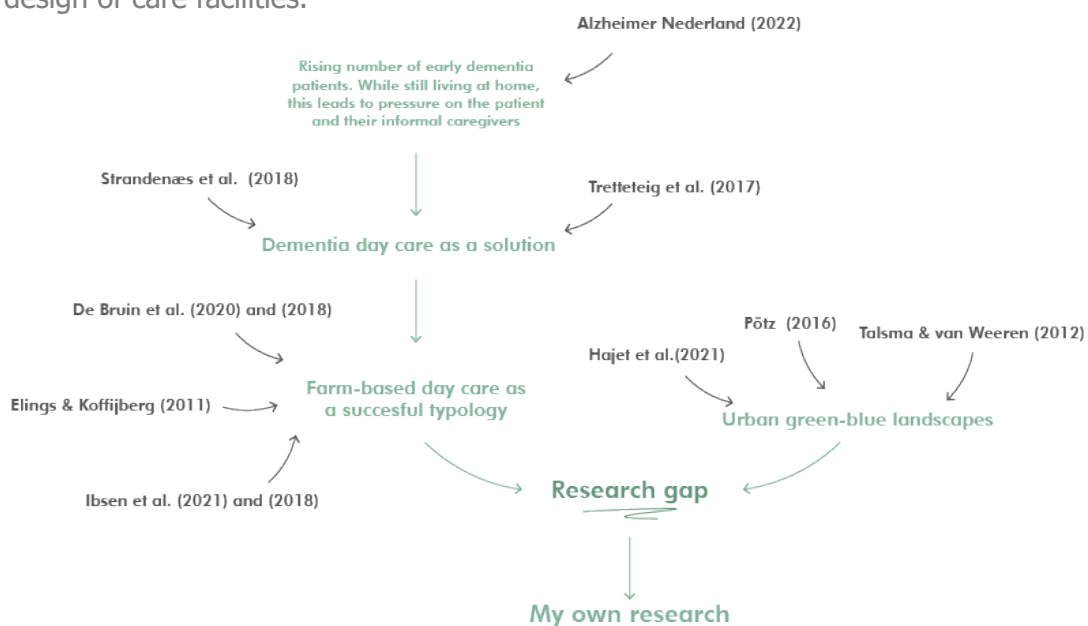
Literature and general practical preference

My research will be an extension of different existing studies. Data from Alzheimer Nederland (2022) is used as a starting point for this research and reading this had led to the mentioned problem statement. In existing papers, the subject of postponing the need for nursing home placement of dementia patients is common. A concept that is often proposed as a potential tool to support people with dementia living at home, is a dementia day care institution. The research articles by Strandenæs et al. (2018) and Tretteteig et al. (2017) called empathize the quality of dementia day care for people with early-stage dementia as well as their caregivers. These research papers will be the foundation and starting-point of my graduation thesis.

Elings & Koffijberg (2011), Ibsen et al, (2021), De Bruin et al. (2018) and De Bruin et al. (2020) describe the effectiveness of the specific type of dementia day care: farm-based day care. De Bruin et al. (2020) also emphasize a research gap when looking into urban alternatives for this concept. These studies are the foundation of the problem statement but will also be used to answer research question 2 and 3 and to extract qualitative principles of this day care concept.

While looking for a place for this typology within the Dutch urban fabric, studies like Hajer et al. (2021), Pötz et al. (2016) and Talsma & van Weeren (2012), emphasize the importance of preserving green-blue landscapes within cities and creating urban green-blue grids. The combination between these urban structures and farm-based day care could be made, but there appears to be no research into this yet. This is therefore where my research will continue.

The mentioned studies form a research gap on how a successful rural typology can be implemented in the city. This gap will be closed in my design and research by using observations from anthropological fieldwork but also by exploring what people with early-stage dementia need on a spatial level. The research by Fleming & Bennett (2021) will help with exploring spatial needs of people with dementia and design principles that can be applied in the design of care facilities.



Below will be listed the most important sources that will be used in the research:

Alzheimer Nederland. Factsheet cijfers en feiten over dementie. (2022.). Alzheimer Nederland. <https://www.alzheimer-nederland.nl/factsheet-cijfers-en-feiten-over-dementie>

de Bruin, S., Buist, Y., Hassink, J. & Vaandrager, L. (2020, 1 juni). Groene dagbesteding in de stad: een levendige plek voor mensen met dementie. *Mens & Maatschappij*, 95(2), 151–154. <https://doi.org/10.5117/mem2020.2.005.debr>

de Bruin, S., Hop, P., Molema, C., Stoop, A., & Baan, C. (2018, December 13). Dagbesteding op zorgboerderijen: de onderscheidende waarden voor mensen met dementie en hun mantelzorgers. Rijksinstituut Voor Volksgezondheid En Milieu. Retrieved October 7, 2022, from <https://www.loketgezondleven.nl/documenten/factsheet-zorgboerderijen>

Elings, M. & Koffijberg, M. (2011). Effecten van zorglandbouw : wetenschappelijk onderzoek naar de meerwaarde van zorgboerderijen voor cliënten.

Fleming, R., & Bennet, K. A. (2021). Environmental design resources: Dementia Training Australia. University of Wollongong.

Hajer, M., Buitelaar, E., Dam, C. T., Pelzer, P., & Hurk, V. M. D. (2021, February 2). Neighbourhoods for the Future: A Plea for a Social and Ecological Urbanism. Valiz.

Ibsen, T. L., Eriksen, S. & Patil, G. (2018, juli). Farm-based day care in Norway – a complementary service for people with dementia. *Journal of Multidisciplinary Healthcare*, Volume 11, 349–358. <https://doi.org/10.2147/jmdh.s167135>

Ibsen TL, Eriksen S. The experience of attending a farm-based day care service from the perspective of people with dementia: A qualitative study. *Dementia*. 2021;20(4):1356-1374. doi:[10.1177/1471301220940107](https://doi.org/10.1177/1471301220940107)

Kwak, Y. T., Yang, Y., & Koo, M.-S. (2017). Anxiety in Dementia. *Dementia and Neurocognitive Disorders*, 16(2), 33. doi:[10.12779/dnd.2017.16.2.33](https://doi.org/10.12779/dnd.2017.16.2.33)

Pötz, H. (2016). Green-blue grids. Atelier GROENBLAUW.

Rohra H, Mann J, Rommerskirch-Manietta M, Roes M, Kuliga S. (2021). Wayfinding and urban design from the perspective of people living with dementia - A call for participatory research. *Journal of Urban Design and Mental Health* 7;4

Ryman, F. V. M., Erisman, J. C., Darvey, L. M., Osborne, J., Swartsenburg, E. & Syurina, E. V. (2018, 28 april). Health Effects of the Relocation of Patients With Dementia: A Scoping Review to Inform Medical and Policy Decision-Making. *The Gerontologist*, 59(6), e674 e682. <https://doi.org/10.1093/geront/gny031>

Signe Tretteteig, Solfrid Vatne & Anne Marie Mork Rokstad (2016) The influence of day care centres for people with dementia on family caregivers: an integrative review of the literature, *Aging & Mental Health*, 20:5, 450-462, DOI: [10.1080/13607863.2015.1023765](https://doi.org/10.1080/13607863.2015.1023765)

Talsma, M., & van Weeren, B. J. (2012). Groenblauwe netwerken maken de stad klaar voor de toekomst. *H2O*, 14(15), 4.

Reflection

1. What is the relation between your graduation (project) topic, the studio topic (if applicable), your master track (A,U,BT,LA,MBE), and your master programme (MSc AUBS)?

My graduation project topic focuses on improving the quality of life of people with early stage dementia, as well as relieving the stress of informal carers, by using architecture. The outcome of this research will lead to a set of guidelines that will be used in my design, which will be an innovative concept combining both rural and urban characteristics. As the target group which I design for and the type of building I will design (a dementia day care facility and dementia guest house) have a strong connection within the subject of healthcare and healthy living, this theme fits in well with the topic of the graduation studio that I have chosen. As I will mainly focus on the influence of architectural and spatial design choices on the people with early stage dementia, this topic also fits within Msc AUBS and the master track: Architecture.

2. What is the relevance of your graduation work in the larger social, professional and scientific framework.

As emphasized earlier, the growing number of dementia patients is something our society will increasingly be confronted with. In combination with the growing shortage of healthcare workers and the pressure on healthcare in general, this problem will grow, both within healthcare itself and for architects. A change in Dutch healthcare has to occur to cope with the effects of an aging society, which will automatically lead to a demand for change in the built environment. At this moment, Dutch cities and their building envelope are not yet adapted to people with increasing cognitive problems as cities are often full of stimuli, unexpectedness and change (Rohra et al., 2021). This research can serve as support for this need for change by learning from anthropological research and by extracting qualities from a successful farm-based concept. This research, as well as the guidelines that will follow from it, can be relevant to a larger social, professional and scientific framework; As taking into account the (spatial) needs of people with dementia as an architect or architecture student, we can create a more inclusive, social and resilient society. Next to this, this thesis can close a research gap that exists when looking into farm-based care in the context of the urban environment and can offer a way to strengthen the green-blue grids of cities.