

Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences



Graduation Plan: All tracks

Submit your Graduation Plan to the Board of Examiners (Examencommissie-BK@tudelft.nl), Mentors and Delegate of the Board of Examiners one week before P2 at the latest.

The graduation plan consists of at least the following data/segments:

Personal information	
Name	Bugra Atciyurt
Student number	5248035

Studio		
Name / Theme	Dwelling Graduation Studio: Designing for Health and Care in an inclusive environment	
Main mentor	Birgit Jürgenhake	Architecture & Research
Second mentor	Lex van Deudekom	Building Technology
Argumentation of choice of the studio	The Dutch healthcare is under pressure and this studio gives the perfect opportunity to find new possibilities to future-proof our care. Dementia is a growing problem and can result into problems in the future. Approaching and solving this problem in time can raise awareness, inspire more designers and be helpful for society.	

Graduation project	
Title of the graduation project	Upscaling Dementia Architecture
Goal	
Location:	Laakkwartier, Spoorwijk, Den Haag
The posed problem,	The Dutch government has decided that no new nursing homes will be built in the future. This results in people with dementia living in their homes for as long as possible. As dementia progresses, a person with dementia may require more care and assistance. Existing homes for individuals with dementia are often not suited to their requirements. The nursing home is the last resort when it becomes nearly impossible to live at home and transition from home to a nursing home is too steep. Individuals delay admittance as

long as possible due to the stigma of the nursing home. Because intermediate housing options are lacking, people with dementia stay living at home for too long. As a result, informal carers are further burdened in an improper household.

An elderly person's habits, rituals, and surroundings will be significantly disrupted if they are removed from their home, where they may have lived for 40 or 50 years. This may result in transfer trauma, sometimes referred to as relocation stress syndrome (Seniors, 2021).

Dementia patients frequently depend on comfortable, familiar surroundings for mental stability, therefore for these people, a change in setting is more likely to be unpleasant. Seniors who have this disease are more likely to experience health issues, including major illnesses and injuries. Those who display the symptoms of relocation stress syndrome are at a higher risk of mortality (Robertson, 1993).

A different approach is needed to accommodate the growing group of dementia patients and prevent future problems. Current dementia-friendly design solutions are either too small scaled or expensive. The existing Dutch facilities and solutions are insufficient to handle the predicted growth in the number of persons with dementia. In 2040, the amount of people with dementia will be doubled. The Dutch government has committed itself to dementia prevention, encouraging long-term living at home, and refuses to build any further nursing facilities in the near future. Learning from existing dementia-friendly solutions and upscaling them into a neighborhood scale could offer new insight to accommodate this growing

	<p>group. Transforming existing neighborhoods in dementia-friendly places where aging in place is possible could close the gap between independent living and nursing homes.</p>
<p>research questions and</p>	<p>Main research question: How can existing dementia design solutions be scaled up and integrated into current Dutch neighborhoods to allow people with dementia to live in their own homes for as long as possible? Sub questions: 1. What are the specific or spatial needs of people in various stages of dementia? 2. What architectural macro-scale principles for dementia are already existing and in use? 3. What architectural principles (micro-scale) can assist and add value to people with dementia? 4. How can the found architectural principles be upscaled for existing Dutch neighborhoods?</p>
<p>design assignment in which these result.</p>	<p>The goal of this study is to make it possible for people with dementia to live as long as possible in their own homes by transforming current neighborhoods into inclusive living environments. The design assignment will be a strategy that adds several facilities like a daycare, community center and hospice in the neighborhood (Spoorwijk in Den Haag) which will support the people with dementia, their formal and informal caregivers. These facilities will offer them to stay physically, mentally, and socially active.</p> <p>The strategy will approach the target group on different scales. The homes, apartment buildings and the neighborhood will be transformed and supported with care to allow individuals to stay in their neighborhoods rather</p>

than having to relocate to nursing homes. Those who have dementia continue to live their life as fully as possible and remain part of our society instead of moving into closed communities. This strategy also contains a dementia hospice in the neighborhood which will offer care to those who can't be independent anymore. Families will also have the possibility to stay here.

The facilities described here will be architecturally designed. Alongside, a proposal will be made to make the neighborhood itself dementia-friendly with landmarks, benches and signs for example.

Process

Method description

The research questions are major components of the study as each address a part of the main research question. The research methods to answer each supported question and the results are described.

What are the specific or spatial needs of people in various stages of dementia?
This question will be answered by providing information about the various stages of dementia. Every stage has its own specific or spatial requirements and needs. These are investigated to gain information about the target group. The main research methods used in this part are literature study and in-depth interviews. First, it is necessary to understand the various stages of dementia with the existing literature study.

During the fieldwork, caregivers were interviewed about the specific needs of people with dementia and the role of the specific buildings they work in. These interviews are held at the Habion Liv-Inn and Amaris Alporti in Hilversum. There is a contrast between these two locations because the Liv-Inn is an apartment building with social functions and Alporti is a semi-closed environment. People with severe dementia reside at Alporti, whereas those in the initial stages do so at the Liv-Inn. Dementia case-managers will also be interviewed to understand the need of care in the neighborhoods.

What architectural principles (micro-scale and macro-scale) can assist and add value to people with dementia?
Principles like colors, behavior, wayfinding, etc. will be investigated with the use of literature. The research methods used in this part are existing literature, fieldwork at Liv-Inn and Alporti, and reference projects/case studies of dementia-friendly buildings. The information about architectural principles will be gained from

secondary sources like books, scientific papers, and own interviews in the fieldwork. Furthermore, a survey with other classmates is made for the residents at the Liv-Inn. This survey is about the facilities in the building, the lifestyle, and the social life of the residents. Conversations are also made to understand the preferences and experiences of the elderly. The answers do not contribute directly to the dementia-friendly tools but give an insight into the social aspect of residents. Improving social activities and facilities could have a preventive effect and slow down the effects of dementia. The findings of this research question will be listed and will be translated into guidelines.

How can the found architectural principles be upscaled for existing Dutch neighborhoods?

First, the principle of a dementia-friendly neighborhood is researched with a literature study. This information will be used to find a gap between residential homes and care homes. The knowledge of needs of people with dementia and their carers will be combined with existing tools to find new possibilities. The principles will be summarized and will be looked into possibilities to use in neighborhood scale. Another part is finding possibilities with research by design.

This question will combine both the information on a micro and macro scale and look for solutions to upscale the tools into guidelines for a Dutch neighborhood context. This will be done to find possibilities for the elderly with dementia who remain living in their own home for as long as possible. The guidelines and design principles will act as a foundation for the design project.

Literature and general practical preference

Burke, R. L. & Veliz-Reyes, A. (2021). Socio-spatial relationships in design of residential care homes for people living with dementia diagnoses: a grounded theory approach. *Architectural Science Review*, 1–15. <https://doi.org/10.1080/00038628.2021.1941749>

Clark, A., Campbell, S., Keady, J., Kullberg, A., Manji, K., Rummery, K. & Ward, R. (2020). Neighborhoods as relational places for people living with dementia. *Social Science & Medicine*, 252, 112927. <https://doi.org/10.1016/j.socscimed.2020.112927>

Ferdous, F. & Moore, K. D. (2014). Field Observations into the Environmental Soul. *American Journal of Alzheimer's Disease & Other Dementias*, 30(2), 209–218. <https://doi.org/10.1177/1533317514545378>

Glass, A. P. (2014). Innovative seniors housing and care models: What we can learn from the Netherlands. *Seniors Housing and Care Journal*, 22(1), 74-81. https://www.researchgate.net/publication/274700006_Glass_A_P_2014_Innovative_seniors_housing_and_care_models_What_we_can_learn_from_the_Netherlands_Seniors_Housing_and_Care_Journal_221_74-81

Haeusermann, T. (2017). The Dementia Village: Between Community and Society. *Care in Healthcare*, 135–167. https://doi.org/10.1007/978-3-319-61291-1_8

Hung, L., Hudson, A., Gregorio, M., Jackson, L., Mann, J., Horne, N., Berndt, A., Wallsworth, C., Wong, L. & Phinney, A. (2021). Creating Dementia-Friendly Communities for Social Inclusion: A Scoping Review. *Gerontology and Geriatric Medicine*, 7, 233372142110135. <https://doi.org/10.1177/23337214211013596>

Krause, F., Boldt, J. (eds) *Care in Healthcare*. Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-319-61291-1_8

Kitwood, T. M. (1997). *Dementia Reconsidered: The Person Comes First*. Amsterdam University Press.

Lian, F., Chen, Y., Ma, Y., & Xue, M. (2016) Making the urban environment dementiatherapeutic: design guidelines in neighborhoods.

McCracken, I., de la Harpeand, R. & Ruvo, M. D. (2019). Developing Dementia Personas for User Centered Architectural Design Considerations in Non-specialized Contexts. *Communications in Computer and Information Science*, 48–61. https://doi.org/10.1007/978-3-030-33540-3_5

Ministerie van Volksgezondheid, Welzijn en Sport. (2019). Wat is sociaal isolement? Over eenzaamheid | Alles over eenzaamheid. <https://www.eenzaam.nl/over-eezaamheid/wat-issociaal-isolement>

Ministerie van Algemene Zaken. (n.d.). Aanpak dementie met de Nationale Dementiestrategie. <https://www.rijksoverheid.nl/onderwerpen/dementie/aanpak-dementie>

Ontwerpen voor dementie | Wat is dementie. (n.d.). <https://www.ontwerpvoordementie.nl/wat-is-dementie/>

RIVM (n.d.). <https://www.rivm.nl/en/about-rivm/rivm>

Roberts, E. & Carter, H. C. (2020). Making the Case for Centralized Dementia Care Through Adaptive Reuse in the Time of COVID-19. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, 57, 004695802096930. <https://doi.org/10.1177/0046958020969305>

Robertson, C., Warrington, J. & Eagles, J. M. (1993). Relocation mortality in dementia: The effects of a new hospital. *International Journal of Geriatric Psychiatry*, 8(6), 521–525. <https://doi.org/10.1002/gps.930080611>

Seniors, C. F. (2021). Relocation Stress Syndrome: The Dangerous Costs of Uprooting the Elderly. *Companions For Seniors*. <https://companionsforseniors.com/2021/01/relocation-stresssyndrome-costs-of-uprooting-elderly/>

Van Steenwinkel, I., Van Audenhove, C., & Heylighen, A. (2017). Insights into living with dementia: Five implications for architectural design. Paper presented at the International Conference on Architecture, Research, Care, Health (ARCH17).

Van Steenwinkel, I., Verstraeten, E., & Heylighen, A. (2016). Adjusting an older residential care facility to contemporary dementia care visions. *Designing Around People: CWUAAT 2016*, 219. Verhaest, P. (2016). *Architectuur. Dementie. Van begrijpen naar begeleiden. Handboek voor referentiepersonen dementie en andere betrokkenen.*

Verdult, R. (2003). *De pijn van dement zijn: de belevingsgerichte aanpak van probleemgedrag.* HBUitgevers.

Verzorgingshuis of verpleeghuis? Wat is het verschil? (2020). *Zorgvilla Expert*. <https://zorgvillaexpert.nl/verschil-verzorgingshuis-verpleeghuis/>

Wat is dementie? (n.d.). *Alzheimer Nederland*. <https://www.alzheimer-nederland.nl/dementie#:~:text=In%20het%20begin%20van%20de,regie%20over%20zijn%20eigen%20leven.>

Ward, R., Clark, A., Campbell, S., Graham, B., Kullberg, A., Manji, K., Rummery, K. & Keady, J. (2017). The lived neighborhood: understanding how people with dementia engage with their local environment. *International Psychogeriatrics*, 30(6), 867–880. <https://doi.org/10.1017/s1041610217000631>

Wiener, J. M. & Pazzaglia, F. (2021). Ageing- and dementia-friendly design: theory and evidence from cognitive psychology, neuropsychology and environmental psychology can contribute to design guidelines that minimise spatial disorientation. *Cognitive Processing*, 22(4), 715–730. <https://doi.org/10.1007/s10339-021-01031-8>

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)?

In relation to the Dwelling Graduation Studio: Designing for Health and Care in an inclusive environment, I will make a strategy that can be used to make a dementia-friendly neighbourhood and reduce the pressure on the Dutch healthcare. The theme Health and care will be addressed by making a design which will assist and add value to people with dementia and their caregivers. The Architectural design is also in relation with the master track Architecture.

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

Studies about dementia-friendly architecture have been done before. However, studies focusing on upscaling the dementia-friendly design principles to apply in neighborhood context are rare. This research focuses on Dutch neighborhoods which can differ from neighborhoods in cities abroad. Current solutions are not perfect, which offers an opportunity to find or improve with this research. For this reason, this study will focus on dementia friendly solutions for current Dutch neighborhoods to allow people with dementia to live in their own homes for as long as possible. As the dementia problem in the Netherlands grows, the relevance of this study will be more valuable.