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	Amber Gorter
Student number	4673212

Studio		
Name / Theme	Designing for care - Towards an Inclusive Living Environment	
Main mentor	Birgit Jürgenhake	Architecture
Second mentor	Lex van Deudekom	Building Technology
Third mentor	Kobe Macco	Research
Argumentation of choice of the studio	The Dutch healthcare system is under pressure to provide enough treatment and care due to the growing older population who is affected by chronic diseases like dementia. Having experienced personally seeing my grandfather battling with dementia in the last years of his life and reading about the increase of people diagnosed with dementia (1 in 5 people) made me motivated to research the connection between the disease and people's living environment. Specifically, the question how architecture can be utilized as an instrument that can contribute to the prevention of dementia in the living environment.	

Graduation project	
Title of the graduation project	Forget about dementia: *A research into the prevention of dementia through architectural interventions in our built environment*
Goal	
Location:	Delft West (Voorhof, Buitenhof, Tanthof)
The posed problem,	The approach of our modern healthcare system has failed to make much progress against age-related chronic diseases as the sole focus is on treatment rather than prevention (Attia & Gifford, 2023, pp.26-27). Especially for dementia, mainstream medicine has not worked properly as it is the only folk disease for which no solution has been found yet (1 Op De 5 Mensen

	Krijgt Dementie | Alzheimer Nederland, n.d.). The Dutch government's healthcare advisor Zorginstituut Nederland is therefore also advocating for a 'rigorous change' of approach from solely treatment to also preventive measures in order to find ways to prevent these diseases as they warn that the current healthcare system is risking of becoming too overburdened and unaffordable unless it will undergo some changes (Pascoe, 2022). In recent years, more studies have been conducted into the search for preventive measures by creating a healthy environment for people that could contribute to the prevention of diseases and change our common believe that we are unable to prevent ourselves from getting sick (Attia & Gifford, 2023, pp.28-29). These are focused more on the larger scale in our urban context and living environment as The National Institute for Public Health and the Environment for example published a report in August 2023 that examined the correlation between a healthy living environment and chronic diseases (cancer, obesity and dementia). They consider this a first step into creating a more intensive approach to preventing these diseases on a national scale. They state that the influence of the living environment on health, both directly as well as indirectly through other determinants of health is offering opportunities for the prevention of cancer, dementia and obesity: 'a safe, healthy and green living environment not only protects against health-threatening factors in the environment (such as radiation, air, pollution, tobacco smoke, chemicals and viruses and bacteria), but also promotes healthy behavior and thus reduces the risk of cancer, dementia and obesity' (Relatie Tussen Gezonde Leefomgeving En Kanker, Overgewicht En Dementie | RIVM, n.d.). However, these are generally focusing on

	the living environment on the larger scale but leave out the effects of the smaller scale (neighborhood and building scale) of our built environment as a prevention tool.
research questions and sub-questions	**Main question:** How can architecture and the built environment be an instrument in developing design strategies that contribute to the prevention of dementia? **Sub-questions** 1. What is dementia, and how do architectural interventions within the existing built environment currently respond/adapt in order to support the daily lives of dementia sufferers? 2. What are different principles of a healthy living environment and how can these contribute to the goal of preventing dementia (while prolonging healthy living)? 3. What characteristics of dementia are preventable through architectural interventions within the built environment?
design assignment in which these result.	

The aim of this research is to utilize the topic of preventing dementia through architectural interventions within our built environment as a starting point for a wider, more inclusive renewal of the built environment that could prevent us from getting sick by prolonging our healthspan. By combining architectural interventions used in architecture for dementia and design principles for healthy living environments to prolong people's vitality, a design toolkit can be created that can create a healthy living environment that contributes to dementia prevention.

These design principles will be implemented in existing neighborhoods by using small scale interventions as an instrument to achieve this through multiple scales (building, street, area, neighborhood) in private dwelling as well as publicly used buildings and shared outside spaces. Implementing the design principles into existing neighborhoods will ensure to prevent dementia whilst prolonging people's healthspan and to change our current societies' perspective against elderly getting sick and shifting it towards a more preventive orientated society which will be reflected into the healthy living environment.

Process

Method description

This research will be conducted through multiple different methods. The three sub-questions will be divided into three representing chapters. Before starting answering the sub-questions in the representing chapters, an introduction chapter and a chapter about understanding the disease dementia will be described. After those two chapters, the three chapters that will answer the sub-questions will follow.

In chapter 1, the literature research will be used to gain an understanding on how dementia works by describing the definition, symptoms, stages of the disease as well as the needs of people that are suffering from dementia.

Chapter 2 continues by exploring design guidelines for dementia. This is done by conducting research into the current living environment of people suffering from dementia. To research this, literature research will be used to explore multiple design principles. Also, one case study (Alzheimer's village by Nord Architects) will be researched and two different dementia care facilities were visited to observe and experience the daily lives of dementia sufferers in their living environment.

In Chapter 3, the principle of a healthy environment will be explored by investigating two different concepts to gain an understanding whether these can be applied to contribute to the prevention of dementia. The two concepts that will be discussed are the 'Blue Zones' by Dan Buettner and 'The 15-minute city' by Carlos Moreno. One case study that implemented the 15-minute concept (20-minute neighborhood in Melbourne, Australia) will be examined in order to understand how the concept can be integrated into existing neighborhoods and how it could contribute to the prolonging of people's healthspan while they are still vital and disease free.

Finally, in Chapter 4 information will be retrieved on how architectural interventions can be inclusive and suitable for everyone by conducting literature research into which dementia design guidelines could be implemented into ordinary architecture in order to contribute to the prevention of dementia in existing neighborhoods. In order to do this, first literature on risk factors that causes dementia will be explored in to order to gain an understanding which risk factors are modifiable and can be prevented through implementing interventions in the green and built environment.

Literature and general practical references

This literature list contains the references used for the research plan. Further literature will be added in the final and complete research report.

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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)?

The approach of our modern healthcare system has failed to make much progress against age-related chronic diseases as it solely focuses on treatment rather than also prevention. The graduation studio from Dwelling 'Designing for care in an inclusive environment' offers the opportunity to conduct research into finding innovative ways to support our healthcare system through architectural design. For dementia specifically, mainstream medicine has not worked properly as it is the only folk disease for which no solution has been found yet. Therefore, exploring this topic can contribute to finding solutions from the architectural perspective.

With this specific graduation project that focuses on designing for health and care, in relation to the master program Architecture, the goal was to create a strategy for transforming an existing neighborhood by creating a healthy living environment that contributes to the prevention of dementia while promoting healthy lifestyles. This is done by implementing smaller-scale architectural interventions through different scales.

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

Studies and research into designing for dementia has been done a lot in the past, however, designing architectural interventions that can contribute to the prevention of dementia is a more undiscovered field. Therefore, this research will focus on designing architectural interventions within our built environment that can contribute to the prevention of dementia. Changing our societies' approach towards a more preventive orientated society will be beneficial to both relieve the current pressure on our healthcare system as well as to create a healthy living environment for our growing older population that can contribute to the prevention of dementia and the prolonging of their healthspan and vitality.