UPSCALING DEMENTIA ARCHITECTURE

GRADUATION RESEARCH PLAN

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Dwelling Graduation Studio:
Designing for Health and Care in
an inclusive environment
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INTRODUCTION

Dementia is an urgent and growing social problem. The disease has the highest burden of care and affects people with dementia as well as their loved ones and caregivers. In 2015, the Netherlands still had 117,000 over 90-year-olds, but by 2040 there will be 340,000 (Ministerie van Algemene Zaken, 2021). Dementia is particularly prevalent in this age group and 40 percent of all people in their nineties are expected to be affected. The RIVM (n.d.), therefore, reckons the number of people with dementia will double within the next 20 years. This means that much more care is needed for the elderly, and as a result, we also need a lot more help providing care for them. To ensure that elderly care can continue to be well organized in the future, given the severe shortage of staff and rising demand for care, Alzheimer's Netherlands advocates building 11,000 dementia-friendly homes per year (Alzheimer Nederland, n.d.).

People with dementia want to continue living their normal lives for as long as possible but often end up in social isolation without help because of their disease. Unfortunately, that help does not seem to come naturally: only 25% of the Dutch think they can recognize the signs of dementia. 42% find it difficult to approach someone with dementia on the street who may need help. In a dementia-friendly society, people with dementia feel safe because they are seen and there are people who make the effort to understand them (Zorg&Sociaalweb, 2018).

Alzheimer's Disease International's 'World Alzheimer's Report 2020' focuses on the architecture of dementia. The report makes a strong statement that designing for people with dementia lags as much as 30 years behind caring for people with disabilities. The researchers thus call for catching up.

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Neighborhood scale, Dementia-friendly design, Architecture
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INTRODUCTION

Problem Statement

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. This forces them to move to nursing homes. The transition from home to a nursing home is too steep. The nursing home is the last resort when it becomes nearly impossible to live at home. Additionally, 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).

Through the years, many solutions for dementia care were found. The dementia village is a recent solution and example of a utopian and theoretical society that raises questions about unique and acceptable approaches to dementia care. Living in a carefully constructed village has the unfortunate consequence of occasionally making reality seem a little less real (Haeusermann, 2018). Since the introduction of the Dementia Village model, not much progress is made. This may be due to the possibility that dementia care providers lack the financial resources and staff size to create diverse activities and advanced medical services for residents. The planning and construction costs related to new construction for a healthcare center of the scale and scope of the Dementia Village are another issue that worries providers (Roberts, 2020). 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. 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 group. Alternative living solutions in existing neighborhoods could close the gap between independent living and nursing homes.

Goals

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. An alternative living solution will be made for people with dementia to stay physically, mentally, and socially active. The solution will accommodate future-proof lifestyles that allow individuals to stay in their homes rather than having to relocate to nursing homes. People being more self-reliant and slowing down dementia and are priorities in the design. 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.

INTRODUCTION

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 typologies (macro-scale) 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?

Design Hypothesis

Making existing neighborhoods dementia-friendly will result in a safe and inclusive living environment, which is needed to accommodate the growing group of dementia patients and prevent future problems. Architectural typologies and small-scale measures can provide a solution to slow down the progress of dementia and improve the quality of life. Meaningful and supporting spaces in neighborhoods or homes enhance the well-being. Giving individuals environmental control and enabling strong communal ties have a favorable correlation with well-being. Implementing these measures ensures the possibility for the elderly with dementia to be able to live as long as possible in their own homes. This also reduces costs and pressure on the Dutch healthcare system.

THEORETICAL FRAMEWORK

The theoretical framework explains intriguing previous studies that have been conducted on this topic. Key aspects of this research are stages of care for dementia, architectural dementia-friendly principles, and dementia in a neighborhood context.

Stages of care for dementia

Verdult (2003) has made a theoretical model of experiential counseling based on four factors that determine the perceptions of people with dementia. According to Verdult's theory, people with dementia are aware of their decline and make an effort to cope by using their remaining skills. Dementia is a disease with distinct symptoms and continues to progress in a negative process. The four stages have their characteristics and are described as the impacts on the body, mental health, and how to interact with others. This theory is important to understand the various stages and requirements of people with dementia.

According to Kitwood (1997), the treatment of dementia patients is overly medical and nursing-focused. Both the difficulties of dementia and the individual with dementia are given little attention. According to Kitwood's theory, we must pay attention to six psychological requirements while providing care and assistance for those who have dementia: love, comfort, identity, occupation, inclusion, and attachment. This offers another approach to the psychological aspect of the requirements of people with dementia.

McCracken (2019) integrates literature studies with interviews to create a dementia persona tool as a study and design tool to aid architects and designers in obtaining crucial information on design procedures and decisions in practice. These personas describe diverse needs and stages. Designers and architects lack the essential ethical clearance to work with those who have dementia, which makes it difficult to understand the demands of dementia care. Therefore, dementia personas are used rather than directly approaching people with dementia.

Architectural dementia-friendly principles

Many studies have previously been conducted on architectural dementia-friendly principles. Wiener (2021) combines psychological theories and design knowledge to make design recommendations that are dementia- and age-friendly to reduce spatial disorientation by emphasizing basic navigational abilities. A variety of academic fields, such as cognitive psychology, neuropsychology, environmental psychology, and architectural design are integrated. This provides a comprehensive perspective across a variety of disciplines, which could be helpful for this research.

Ferdous (2014) suggests that architectural configuration variables influence both the likelihood and the kind of interaction that are likely to take place in particular settings. The links between spatial arrangement, spatial behavior, and social life for individuals within a space are described by the spatial behavior interaction model. This is a research method that includes behavior mapping and spatial analysis for behavioral observations in the social spaces of long-term care facilities (LTCFs) serving patients with dementia. Understanding the impact of environmental characteristics on social interaction is important for the research.

Burke and Veliz- Reyes's (2021) research conceptualizes the socio-spatial interactions and lived experiences of dementia patients in residential care facilities through theoretical analysis. A conceptual model is created that considers inconsistencies in "ideologies of spatial conception," "veridictions," the representation and actualization of residential care homes, as well as embodied spatial aspects including liminalities, affordances, and enablement.

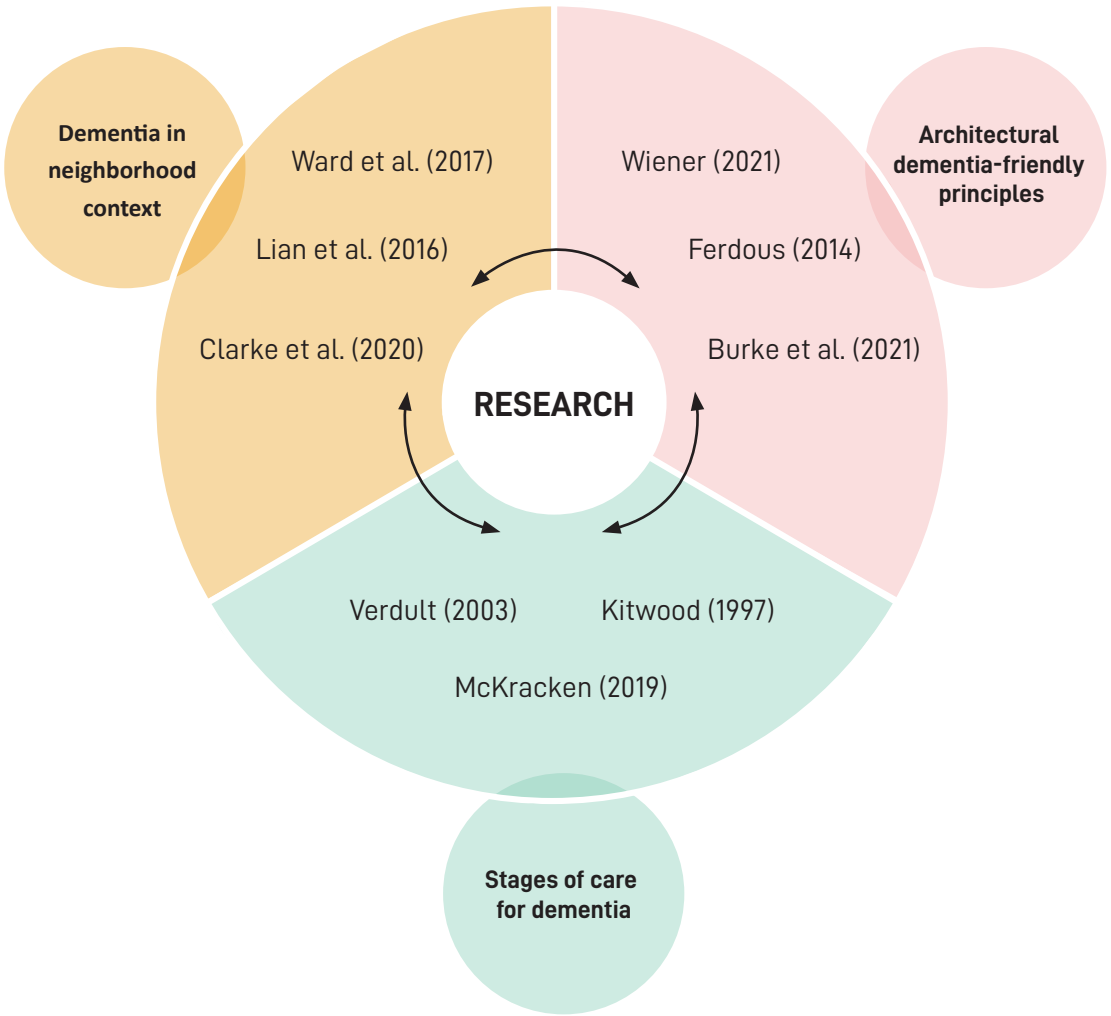
THEORETICAL FRAMEWORK

Dementia in neighborhood context

A new perspective on how people with dementia engage with their surroundings and how such communities could support them in living as independently as feasible is provided by Clark et al. (2020). It describes the possibility for social support made available by regular and engrained engagement with others and analyzes empirical, qualitative research. The study demonstrates how people view their neighborhoods as relational places and considers how people with dementia might engage with and connect to their communities in ways that may support social well-being.

Lian et al. (2016) explore and analyze the scientific literature on the indoor and outdoor therapeutic design of dementia care facilities to investigate the difficulties of developing a therapeutic neighborhood environment for individuals with dementia. This study suggests various design principles for developing a therapeutic neighborhood for dementia patients to utilize and enjoy by drawing comparisons to the social environment.

To comprehend the capabilities, capacities, and competencies of persons living with dementia better, Ward et al. (2017) address the lived experience of the environment. Concerning the discussion of social health and policy related to dementia-friendly communities, the study offers distinctive insights into how neighborhoods and daily life for people with dementia interact. The research is multidisciplinary and draws on sociological perspectives on location and space as well as critical and environmental behavioral science.



METHODS

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, in-depth interviews, and case studies. First, it is necessary to understand the various stages of dementia with the existing literature study. Afterward, research will be done about the spatial needs, behavior, and psychology of these stages.

During the fieldwork, caregivers will be interviewed about the specific needs of people with dementia and the role of the specific buildings they work in. These interviews will be 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. Residents without dementia will be interviewed at the Liv-Inn to understand their perspective on living together with people with dementia.

What architectural typologies (macro-scale) for dementia are already existing and in use?

This question investigates the existing typological solutions (macro-scale) for dementia care. There are various solutions already which can be used as a design foundation for new design possibilities. This part will focus on five relevant projects and will not only limit to projects in the Netherlands. These reference projects are supported by the literature. The result is to find out various solutions which will be used to create a list of typological design principles for dementia care.

Case studies in the Netherlands which could give insight into various typologies are the Humanitas Apartments like ‘’de Kristal’’, where residents are provided with nursing home or assisted living care on-site, removing the need for stigma and relocation concerns. The second is the distinctive De Hogeweyk dementia village. Both approaches employ “tiny dwellings” for severe dementia care and have distinct physical design components and philosophies that support them. (Glass, 2014). The third is Habion Liv-Inn. During the fieldwork, I will be staying here for 5 days.

METHODS

What architectural principles (micro-scale) can assist and add value to people with dementia?

This question will investigate the micro-scale architectural influences which 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 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.

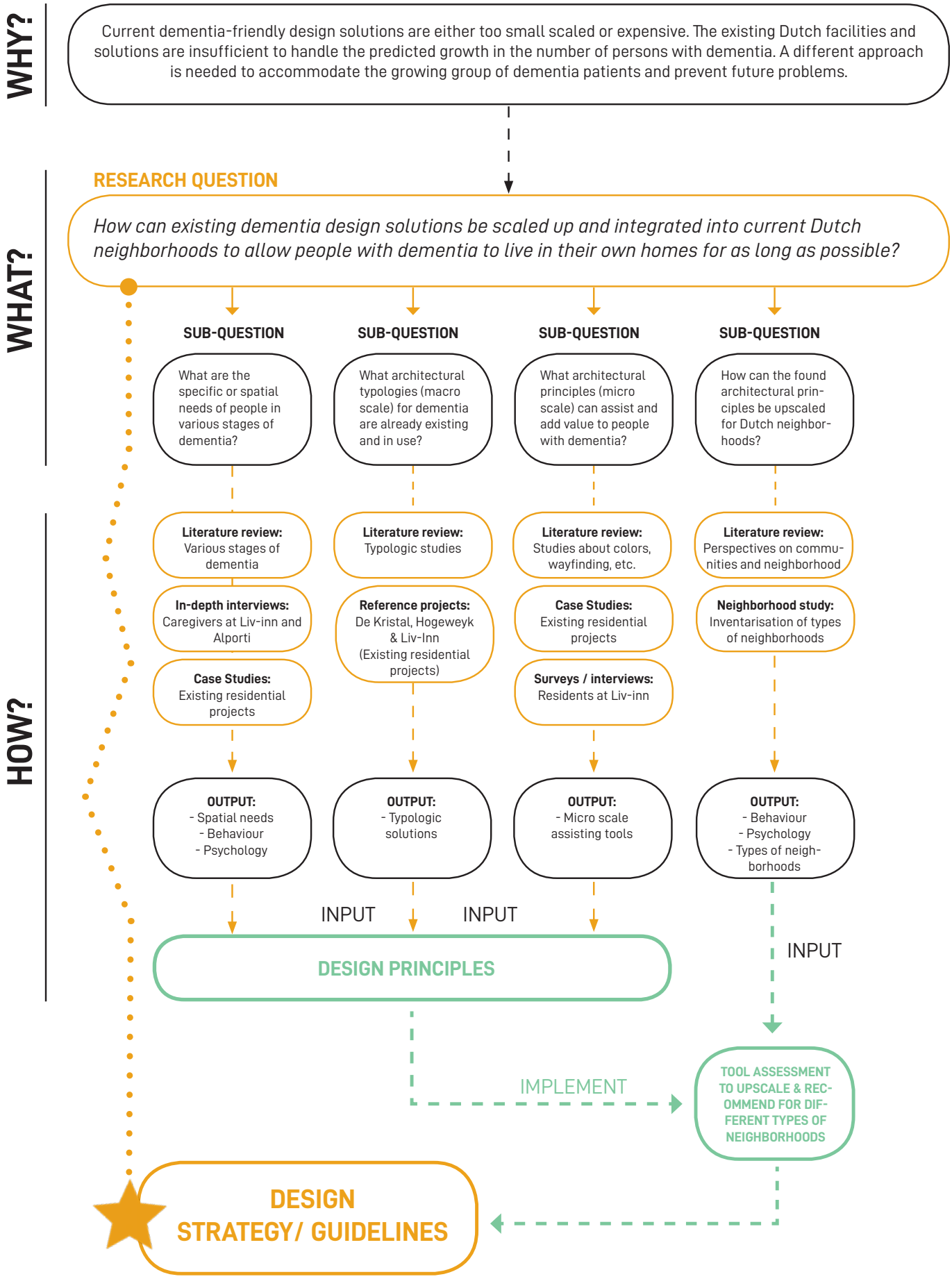
During the fieldwork, Habion Liv-Inn and Alporti will be investigated. With the use of criteria from the book 'Dimensie voor Dementie' and 'De Toolkit Dementievriendelijk Ontwerpen' these two buildings will be analyzed to understand the dementia-friendly tools for various stages of dementia. Information like floor plans, sections, and concept drawings will be analyzed and tested by the criteria. The building organization will be analyzed and how the care is integrated into this building. 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?

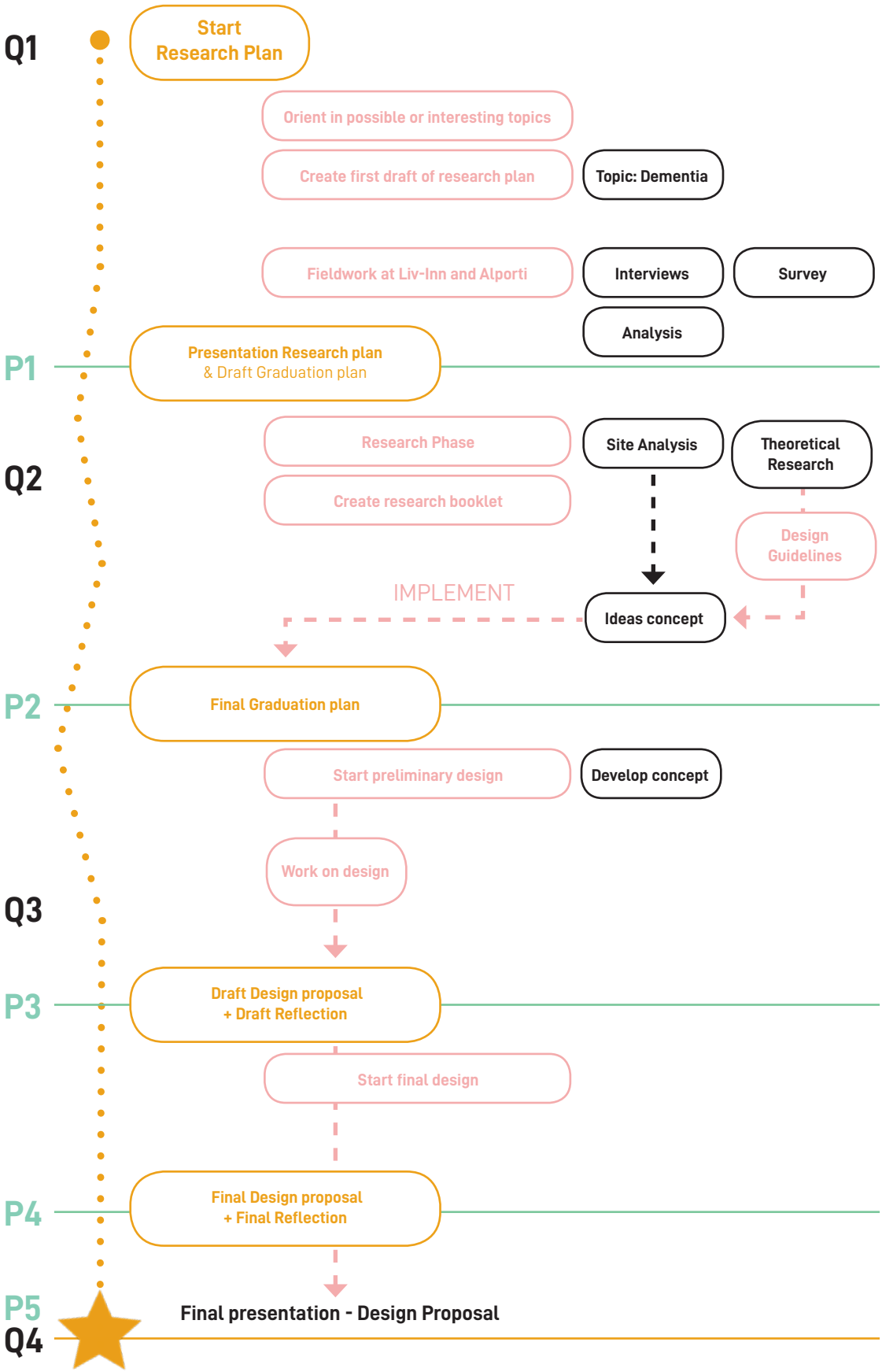
This question will combine both the information on a micro and macro scale and look for solutions to upscale the tools into guidelines for a Dutch neighborhood context. Potential design principles and strategies will be developed with the various stages of dementia in mind. This will be done to find 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. There are varying types of neighborhoods from different eras in the Netherlands. These vary in typology and philosophy because of their timeframe. The different typologies and appearances (shape and height) will be grouped and described to find opportunities and limitations for dementia-friendly guidelines and design principles. The guidelines will be categorized according to these different timeframes of residential neighborhoods (viable option, may still change):

- Built before 1920
- 1920-1950
- 1950-1970
- 1970-1990
- After 1990

WORKPLAN
RESEARCH DIAGRAM



WORKPLAN
PLANNING



DEFINITIONS

Dementia
In dementia, nerve cells in the brain break down. (Alzheimer Nederland, n.d.) The connections between the nerve cells might occasionally fail instead of the nerve cells themselves. The brain starts to operate less and less effectively because of this cell loss. Some people experience deterioration quite rapidly. Others can continue to lead quite typical lifestyles for years. The effects of dementia eventually make a person exceedingly feeble.

Elderly
Elderly is a subjective term and often used for people who are 65 years or older. Its main traits include unemployment and age-related impairments.

Macro-scale
A large scale involving general or overall structures or processes rather than details.

Micro-scale
A relatively small or detailed scale.

Nursing Home
In a nursing home, intensive care and medical care is offered. A nursing home is meant for people who have severe physical or psychological disabilities. You do not need to be in a hospital (anymore) but (still) need treatment. Caregivers and nurses are around 24 hours a day. (Verzorgingshuis of verpleeghuis? Wat is het verschil?, 2020)

RIVM
The Dutch National Institute for Public Health and the Environment (RIVM) coordinates the Dutch Population Screening programs such as newborn screening, fights infectious diseases and plays a central role in population surveys. (RIVM, n.d.)

Social isolation
When someone has few or no (meaningful, helpful) contacts, we talk about them being socially isolated. Loneliness is distinct from social isolation. It may, however, coincide. Loneliness is a state of being, whereas social isolation is a circumstance. (Ministerie van Volksgezondheid, Welzijn en Sport, 2019)

Upscaling
To raise to a higher level or improve the quality.

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