Standing Strong Together

Designing a community orientated dementia residential care neighbourhood

Research Plan

Tom Stuiver
4479580

Delft University of Technology
Faculty of Architecture and the Built Environment

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Tutors
Birgit Jürgenhake
Elke Miedema
Leo Oorschot
Frederique van Andel

ABSTRACT

Loneliness and social isolation amongst elderly is becoming an even more oppressing problem and could even cause dementia over time. A worrying omen, especially when the growing dementia figures in the Netherlands based on the aging population are taken into consideration. Even more so considering the current- and future shortage of financial funding, healthcare staff and housing. A relatively new typology which tries to create a partial solution for this problem is the Dementia Village, where healthcare, social functions, and nature are combined with a community based living on a larger urban scale than usual. However, this typology only focuses on patients with advanced dementia and thus only covers a small part of the main problem. This urges the question if some of its features could be implemented within the current and future built environment, in order to also provide suitable residential care for patients with early stage dementia and elderly. Could a neighbourhood be realized where inhabitants form a tight community together, and by that tackling the problem of loneliness and social isolation amongst this patient- and age group? Next to that, can a living environment be created that not only provides suiting residential care for patients with all stages of dementia but also provides ways to prevent it? The main question of this research is defined in the following manner: **How can the Dementia Village architecture provide residential care for early stage dementia patients and elderly on a larger community orientated neighbourhood scale?** By the use of literature reviews, case studies of current Dementia Village's, interviews with architects, urban planners, and healthcare staff, observations of dementia patients and the current healthcare environment, and location research an answer will be provided to this main question. Eventually this will lead to the definition of design guidelines for the implementation of features of the current Dementia Village typology, location and its architectural elements within the current and future built environment.

Key words
dementia, dementia village, community, loneliness, neighbourhood, social isolation

CONTENT

BACKGROUND

Research by the Dutch Ministry of Health, Wellbeing, and Sports concludes that 44,6% of the elderly by the age of 65+ within the Netherlands indicate feelings of loneliness, while 9,2 % experience very strong feelings of loneliness. These numbers even grow further to 65,9% and 14,3% amongst elderly by the age of 85+ (Ministerie van Volksgezondheid Welzijn en Sport, 2020). Alongside, does population research show that people with many social contacts are at a lower risk of dementia, while people who describe themselves as lonely are more likely to develop dementia later on (Alzheimer Nederland, n.d.). With the increasing percentages of lonely feelings amongst elderly and the increased chance of developing dementia, a conflicting problem arises. One of the new typologies which tries to provide a partial solution to this problem is the Dementia Village, where healthcare can be combined with a community like environment on a larger scale than usual. It provides very vulnerable patients with advanced dementia a way to improve wellbeing in a more playful and varied way of living. By dividing the single nursing home in multiple dwelling blocks, in combination with some social functions and nature, a safe secluded living environment can be created where the needed care can be provided. (Figure 1)

However, features from such an environment could also be beneficial for a wider group of users in multiple different ways. For example elderly and people who suffer from early stage dementia, which is an usually forgotten and neglected age- and patient group currently. A group that is often physically and/or mentally too well for a nursing home, but on the other hand not well enough to keep on living in their own homes without receiving additional care. Due to the current shortage in suitable housing, this group repeatedly has to live often alone in their own homes for a longer duration; further increasing social isolation and loneliness amongst this age- and patient group. Further mentioned by Van Gaalen: clinical geriatricians are especially concerned about elderly people with dementia. Due to staff shortages in home- and elderly care and persistent crowds at general practitioners, they often remain out of sight and by that causing overloaded situations for informal caregivers (Van Gaalen, 2022, p.4). However, the realization is that patients with dementia will have to remain living in their home environments in an increasing manner. How can the current and newly built environment be altered and modified to provide the right living environment for these patients and by that improving their overall wellbeing?

Next to that, is it also very important to promote and accommodate the prevention of dementia within the living environment. By providing ways to prevent dementia an even more oppressing situation over time could be foreclosed. How can the living environment play a vital role in that matter and what social functions should be added within the neighbourhood? In what ways could the community sense be strengthen, not only within the neighbourhood itself but also within its connections with the surrounding urban areas. Could the addition of different age- and patient groups create a divers and tight community, which could improve overall wellbeing and activate a sense of togetherness? Conclusively and most importantly what architectural features have to be implemented to provide and activate the previously stated circumstances?

Figure 1: Top view of the Alzheimer's Village in Dax, France designed by NORD Architects, including some sketches of its implementations of nature on different scales. NORD Architects. (n.d.). Alzheimers Village / NORD Architects [Image]. ArchDaily. Retreived on October 10, 2022, from https://www.archdaily.com/973948/alzheimers-villa-nord-architects

Due to the increasing rate of people being diagnosed with dementia within the Netherlands and the decrease in financial funding and medical staff, a prominent problem arises for the future. This is also described by the Dutch Ministry of Health, Well-being, and Sport who currently estimate the amount of residents within the Netherlands who suffer from dementia, based on population screening, to be around 290.000. However, the expectation for the future as a direct result of the ageing population is that this number will rise to 500.000 in 2040 and 620.000 in 2050 (Ministerie van Volksgezondheid, Welzijn en Sport, n.d.). Furthermore is there already a huge shortage in available and suitable dwellings showing; from the 290.000 current dementia patients within the Netherlands, only 80.000 patients are able to live in nursing- or care homes (Alzheimer Nederland, 2021). This will be even further increased due to the Dutch governmental future policies regarding this topic; which is aimed at ensuring that dementia patients continue to live in their own living environment instead of moving to distinct healthcare facilities. Even though that the general idea, where people with dementia can remain living in their familiar home environment, is an ideal and beautiful situation. Will this create an even more oppressive and exhausting situation over time, in particular on informal care givers who have to carry this burden as of now. It is important to find ways to ease this pressure, and by doing so ensuring that dementia patients can continue on living in their home environment for the rest of their lives.

One of the typologies that was created to tackle part of this problem, as previously mentioned, is the Dementia Village. However, this typology only focusses on a small percentage of patients who suffer from more advanced dementia, which makes it a very expensive solution for only a minor part of the main problem. Even more so when the dire lack of financial funding and healthcare staff is taken into consideration. Already making it an outdated and unrealistic approach for the future; quite a painful realization considering it is just a decade ago after the typology was first constructed. But even though that the typology on itself is unrealistic for the future, are certain features within its design still very valuable. This begs the question if distinct features from the typology could be implemented within the built environment for it to be more future proof, and by that also provide residential care for the majority of the patients.

By doing so, it could provide a community like environment for the majority of the previously stated main problem; in accommodating those who only have starting symptoms of dementia and/or elderly with no problems at all. Besides, is it also important for the future additions of the Dementia Village architecture to show due diligence in order to strengthen its future feasibility. This can even be combined with the addition of social functions, which also strengthen the sense of community and the connections with the surrounding areas. Next to that, should it aim to find ways to increase feasibility within the lack of healthcare staff. Would the willingness to help fellow residents provide a partial solution to reduce the demand for care and the workload for formal- and informal caregivers? Could this even be further reduced in combination with new technological developments and architectural features?

In conclusion should another relevant problem also be taken into consideration, which is often present within the current nursing- and care homes. Nowadays, whenever a patient evolves to the later stages of dementia he or she will be moved to a healthcare facility in order to provide the right care. This is a big step for patients who unintentionally and out of necessity have to leave their familiar living surroundings, further improving stress and the feelings of fear and loneliness. How can the current and newly built environment be modified to provide a way for dementia patients to remain living in their own living environment to prevent these unnecessary stressful feelings?

RESEARCH QUESTIONS

The main question that will take a central role within this thesis will be the following:

How can the Dementia Village architecture provide residential care for early stage dementia patients and elderly on a larger community orientated neighbourhood scale?

In order to come to a conclusive answer to this main question, the research must be divided in multiple sub questions to cover this broad topic. These sub questions have been defined in the following manner:

1. What architectural features are of importance when designing for dementia patients?

2. How can the architectural design stimulate a community orientated neighbourhood for early stage dementia patients and elderly?

3. What can we learn from the current Dementia Village design?

4. How can the Dementia Village architecture be implemented to provide residential care for a wider range of users?

RESEARCH GOALS

This research aims to provide guidelines for the implementation of features of the current Dementia Village typology, location and architectural elements. Focussing on not only a valuable way of living for current dementia patients and the premeditated future increase, but also actively implementing architectural ways to further prevent dementia within the built environment. Creating a neighbourhood where patients who suffer from all stages of dementia and elderly can live for the rest of their lives, without the fear of having to leave their familiar surroundings in the case of decreasing medical conditions. Furthermore, by the addition of multiple age- and patient groups it aims to create a diverse and tight community which could improve overall wellbeing and activate a sense of togetherness. Providing ways to decrease loneliness and social isolation amongst this age- and patient group, alongside ways where architecture could facilitate a reduce in demand for care and the overall workload on formal- and informal caregivers. The focus will not only be on the community and neighbourhood itself, but also on ways to connect with the surroundings and the overall successful implementation within the existing urban landscape.

It is important to note that architecture on itself is not capable of creating solutions to all current healthcare problems. It can however enable and facilitate a faster transition to an improved situation, thus will that be the main aim of this research. Furthermore, will the research only focus on Dutch patients and the current healthcare situation in the Netherlands to narrow down the input and possibilities. Due to this fact, only case studies from within the Netherlands or for some exceptions from close by neighbouring countries will be utilized. By doing so cultural differences and different approaches considering residential care and healthcare will be limited, creating a more specific and fitting theoretical framework for the further design.

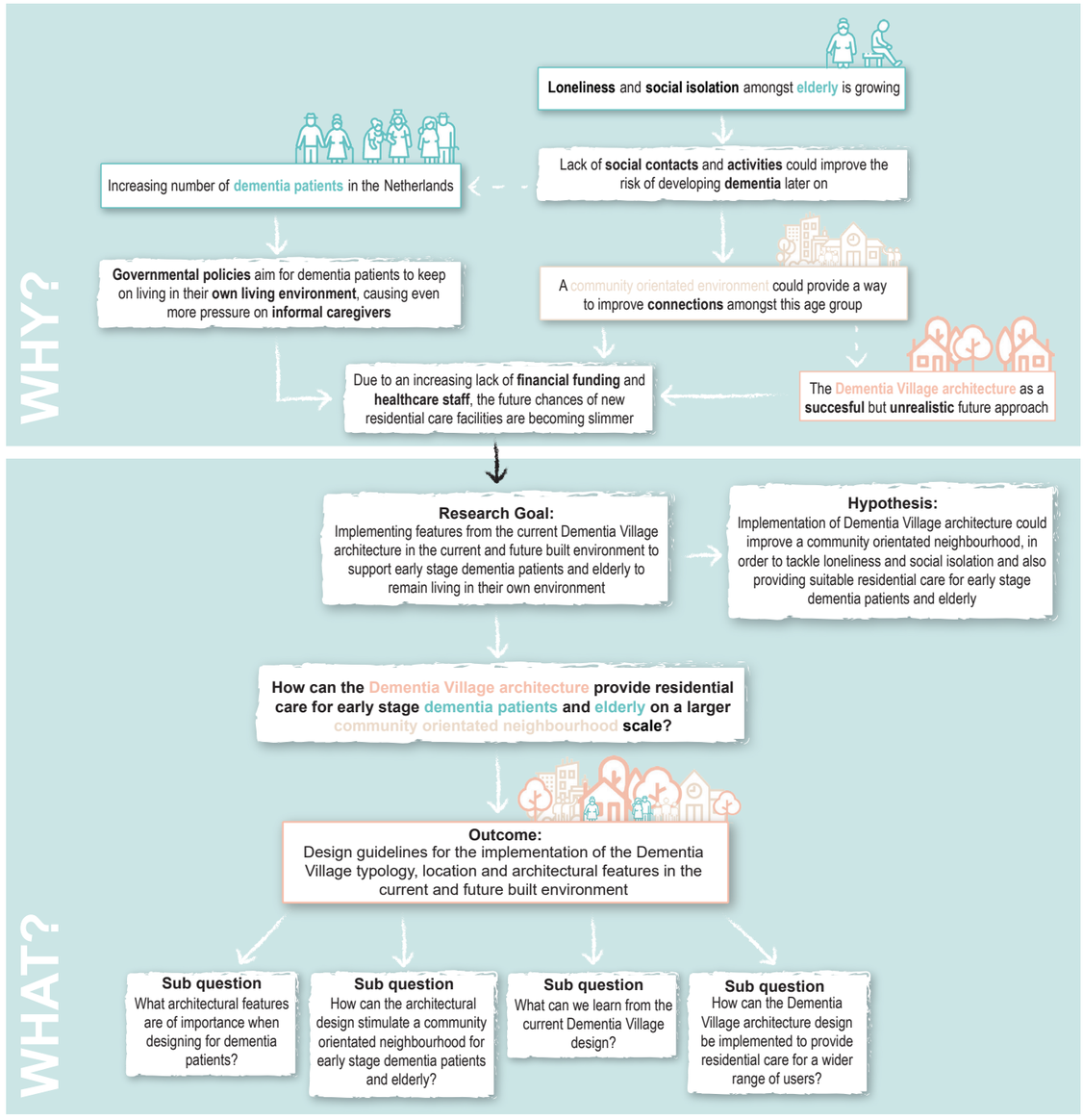

Figure 2: Start of the research diagram and overall summary of the introduction (illustration by author).

THEORETICAL FRAMEWORK

There have already been an extensive research of the ways in which architecture impacts dementia patients (e.g., Feddersen & Lüdtke, 2014; Nillesen & Opitz, 2013; Innes et al., 2016; Marquardt, 2011; Van Hoof et al., 2013; Eastham & Cox, 2017; Niedderer et al., 2019). The majority of the research focusses, for instance, on topics like; wayfinding, the implementation of social activities, the use of materials, use of colours, etc. However, this is a relative new field of research which gained momentum in the last two decades. Predominantly by the switch from institutionalized care to a more human-centered care approach. The impact and importance of architecture and the environment on the overall wellbeing of dementia patients is rightfully becoming even more relevant.

Furthermore, have there already been wide-ranging research about loneliness and social isolation amongst elderly and dementia patients. In particular on the importance of the built environment and community (Kemperman et al., 2020) and ways to improve age-friendly cities/neighbourhoods (van Hoof et al., 2020). In addition, is there already some research present about the Dementia Village architecture in general (Mitchell et al., 2004; Niedderer et al., 2019). Most of the research is often combined with a central case study, for example 'Tönebön am See' (Haeusermann, 2018), 'Bryghuset' (Peoples et al., 2018), and 'Hogeweyk' (e.g., Chrysikou et al., 2018; Anderzhon et al., 2012). Providing valuable ways of knowledge about how the typology currently functions and which flaws are already present. (Figure 3)

However, despite all the current research is there an prominent research gap showing. Possibilities on how the current Dementia Village architecture could be implemented within the existing and newly built environment, to facilitate a wider group of users, is a research field that yet still has to be explored. This should create more possibilities in order to provide ways for dementia patients to remain living in their familiar home surroundings, a problem which is becoming even more relevant and problematic in the upcoming years. (Figure 4)

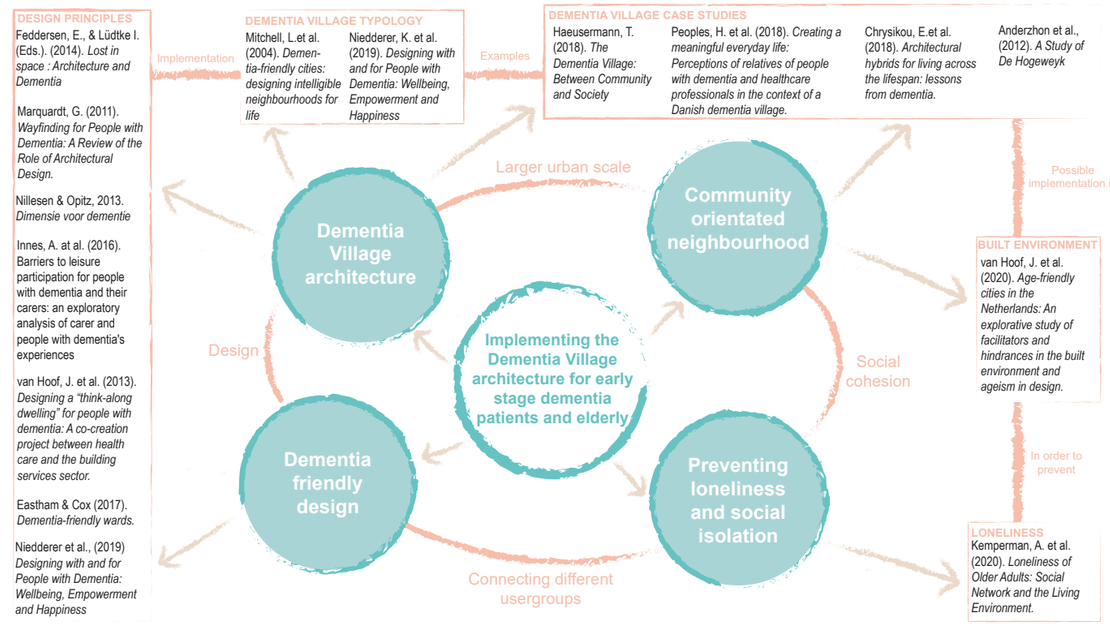

Figure 3: Overall scheme for the theoretical framework and the link between central research topics (illustration by author).

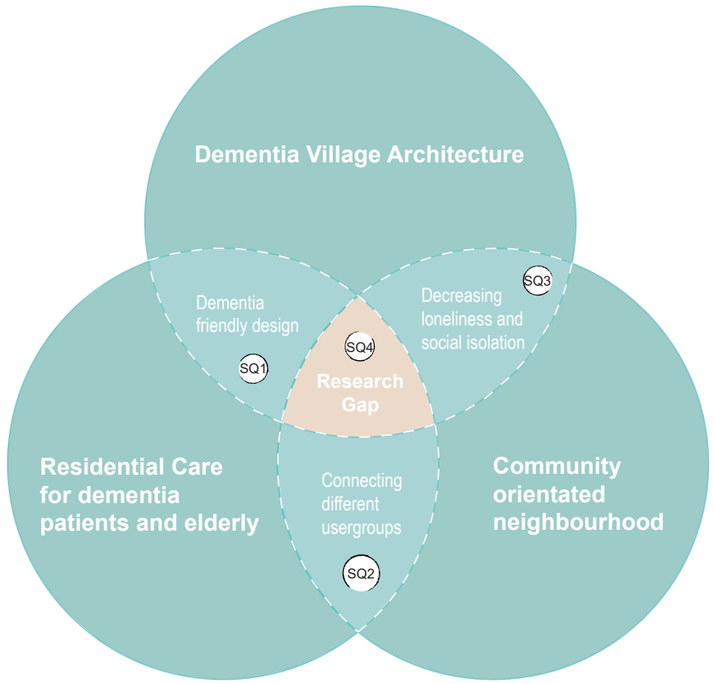

Figure 4: Definition of the research gap between excisting research fields and the position of the sub questions (illustration by author).

RESEARCH METHODS

This research will be subdivided in two consecutive central research topics. The first part of the research will focus on the current circumstances, in the second part of the research the attention will be shifted towards the future implementation possibilities. The first sub question will focus on the architectural features that are of importance within the design for dementia patients. The use of literature reviews will take a central role in order to provide conclusive answers to this topic and a valuable insight into the current expertise. ‘Healing architecture’ will be utilized as a central theme by focusing on multiple design principles like: wayfinding, use of colours, daylight, interior views on nature, materialisation differences within buildings and the exterior, social activities, etc. In order to provide a more practical view on this theoretical approach, observations during the fieldtrip at Habion and the Reigershoeve will be utilized. Do these correspond with the information provided within the literature or could this give a critical approach of what could be improved in further designs?

The second sub question will pay close attention to the addition of patients with early stage dementia and elderly, and how they can benefit from healthcare on a larger community orientated neighbourhood scale. Using literature reviews to further scope in on the community side and how the built environment could facilitate a way to reduce loneliness and social isolation. Alongside, could observations of the residents during the fieldtrip provide valuable point of interest on what could be improved. Conclusively, to get a better grip on this subject and the further needs, interviews with caregivers will be utilized to obtain desirable possibilities and improvements.

After that the focus will shift to the Dementia Village typology and its location in the urban landscape, in specific by focussing on its current successful features and flaws. Once again, will the research first be focused on literature review about the typology itself. In order to provide a deeper insight alongside these theoretical backgrounds, architects and urban planners from Dementia Village’s will be interviewed. Specifically about the design process and to further analyse what features are of most importance, alongside valuable lessons that are still there to learn. This knowledge will then be tested during the research of multiple case studies of Dementia Village’s within the Netherlands and neighbouring countries. This should create a broader image of the current existing typology by noticing similarities and important differences. These case studies will be the same as the previous mentioned examples within the literature to create a strong connection with the provided literature. Observations during the fieldtrip and the visit of the Hogeweyk could also provide valuable insights or approaches for this chapter.

In the second part of the research the attention will be shifted towards the future implementation of the Dementia Village architecture possibilities. Design guide lines input from previous chapters will be utilized and combined within this chapter. The research will focus on ways to provide residential care for a wider group of users within the implementation of the current Dementia Village architecture. What are the current living standards for elderly and patients with early stage dementia and in what way could they be improved? What are the needs on dwelling and building scale? What technological developments could be implemented to reduce the demand for care/workload? In order to create a better understanding of the previous stated circumstances, five case studies from recently completed elderly housing / care housing will be analysed. One of those case studies will be the Liv Inn, where valuable input and observations from the fieldtrip can be implemented. Further will in-depth interviews with caregivers provide relevant insights on possible ways to decrease workload and overall improvement points. At last, will the design location requirements be defined to see its possibilities and ways to implement the established design guide lines.

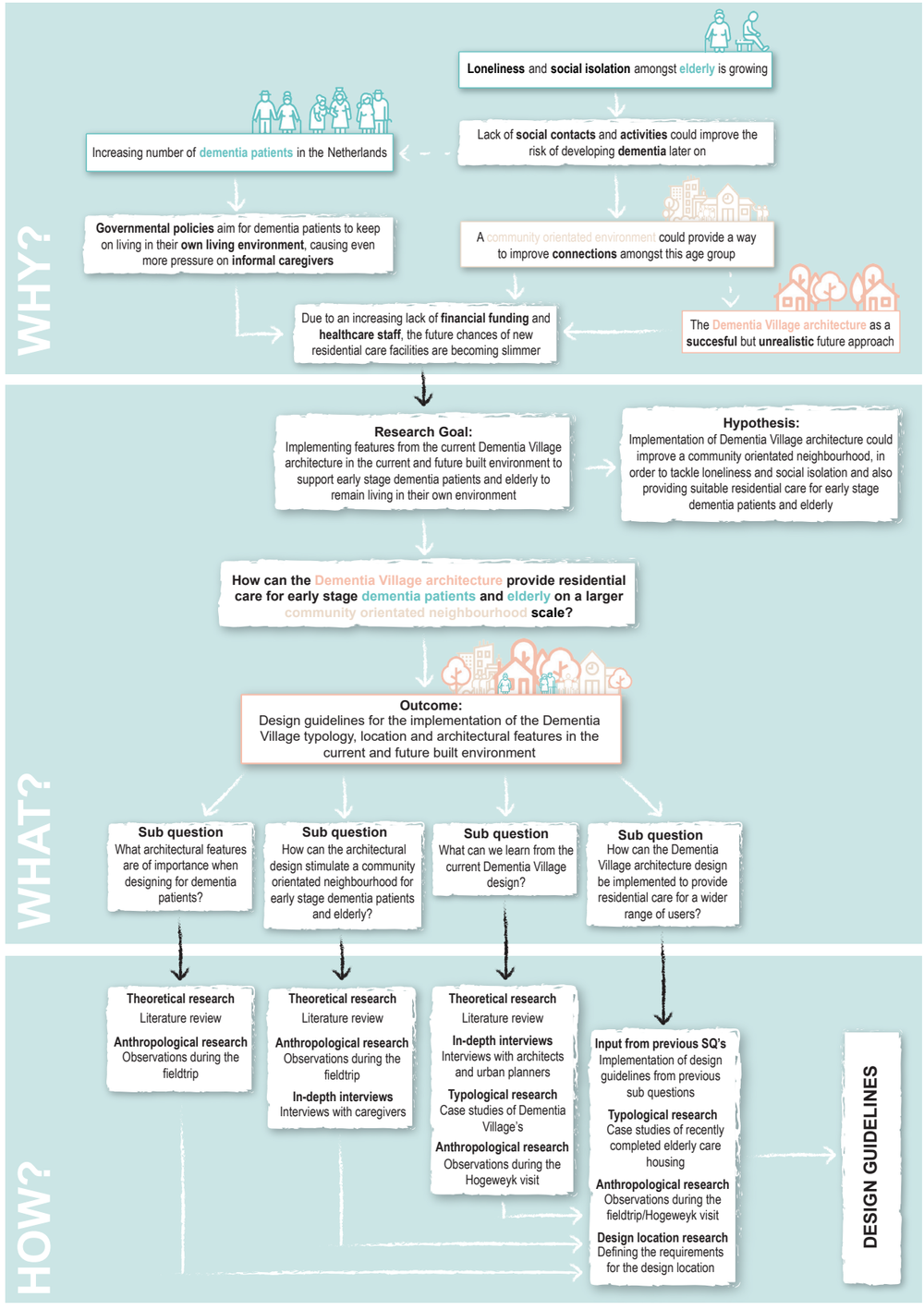

Figure 5: Complete research diagram (illustration by author).

WORKPLAN

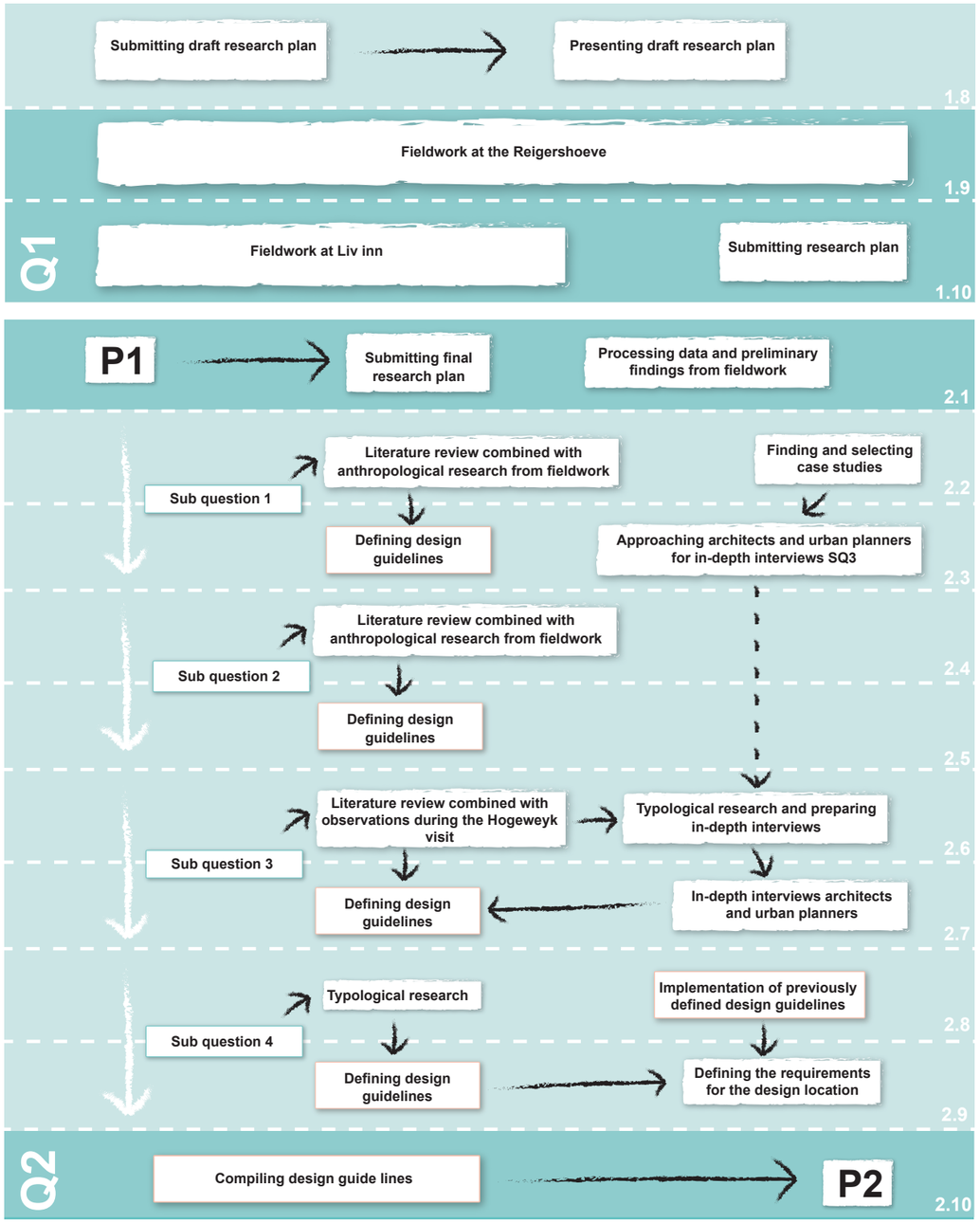

Figure 6: Workplan for the research until the P2 (illustration by author).

DEFINITIONS

Community:
"*A community is a group of people who share something in common. You can define a community by the shared attributes of the people in it and/or by the strength of the connections among them. (...) people who are alike in some way, who feel some sense of belonging or interpersonal connection*" (Simon, 2018, par. 3).

Dementia:
"*Dementia is an umbrella term for loss of memory and other thinking abilities severe enough to interfere with daily life. (…) Disorders grouped under the general term "dementia" are caused by abnormal brain changes. These changes trigger a decline in thinking skills, also known as cognitive abilities, severe enough to impair daily life and independent function. They also affect behavior, feelings and relationships*" (Alzheimer's Association, n.d., par. 2).

Dementia Village:
"*Dementia villages are long-term care homes that resemble villages and are designed for people with advanced dementia*" (Wallington, n.d.). Often a combination of residential and commercial buildings, along with other social functions in a predominantly green living environment, which tries to "*emphasize improving quality of life for people with dementia by providing person-centred care in smaller scale, less institutional, more "home-like" environments*" (Harris et al., 2019, p.4).

Formal caregivers & informal caregivers:
Formal care "*refers to paid care services provided by a healthcare institution or individual for a person in need. Informal care refers to unpaid care provided by family, close relatives, friends, and neighbors. Both forms of caregiving involve a spectrum of tasks, but informal caregivers seldom receive enough training for these tasks*" (Li & Song, 2019, p.1).

Neighbourhood:
Part of a municipality that is homogeneously demarcated on the basis of historical or urban features (CBS Statline, 2022). A neighbourhood is "*a collection of dwelling units located close together, having a common interest in the character of the surrounding areas. (...) a small-scale community where people know each other, share many of their activities, and provided a sense of belonging*" (Wangchuk, 2022, par. 4).

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