

# Reflection

## Multigenerational Living for the Sandwich Generation



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Designing for Care in an Inclusive Environment

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## Reflection of research-design process

Reflecting on the entire research process, it has been a challenging, frustrating, and interesting experience for me. This studio focuses on the theme of care and health. It differs from other studios in that the research approach focuses on understanding users and discussing the issues of care and housing for aging in a human-centered way. Therefore, through this research, I had the opportunity to meet the local people and learn more about the issue of the aging population in the Netherlands. I also had the opportunity to experience losing mobility in a wheelchair before the research started and to examine the friendliness of the whole built environment to people with mobility problems from the user's perspective. In this reflection chapter, I would like to share my findings and experiences throughout the graduation project process, from fieldwork, cultural differences, and the research-design process.

The way of conducting fieldwork is a unique method in this research. Before I came to the Netherlands to study, I had already heard that the Netherlands had developed well compared to Taiwan regarding elderly care and retirement living. Being a foreigner living in a senior citizen's residence is a unique opportunity and the first experience in my life. During my stay in het Kampje, I had the opportunity to chat with several residents, visit their homes and listen to their life stories. As a result, I gradually understood how Dutch society as a whole thinks about the care of the elderly: the elderly do not want to be a burden to their children, so most of them go to better-equipped elderly housing or nursing homes on their own initiative when they grow old, and their children also think that the government cares for the elderly is a preferable option. This is very different from Taiwan. Although the overall social atmosphere in Taiwan has gradually changed in recent years with the expansion of long-term care facilities and senior daycare centers, most of the elderly are still looked after by their own children and live together for convenience due to the influence of culture and traditional values.

At the beginning of the research, I had doubts that my research topic might not be suitable in the context of the Dutch society because, as mentioned above, the elderly in the Netherlands prefer going

to nursing homes rather than being a burden to their children, and the Dutch society, in general, considers the care of the elderly to be a matter for the government. However, after discussions with professors, literature research, checking local news in the Netherlands, and talking with friends, it became clear that such a situation, where the government is solely responsible, may not be the norm anymore, as policy changes, budget cuts in medical care for the elderly, and news of nursing home queues abound, making aging at home the most likely outcome. In addition to the shortage of housing, high housing prices, and the fact that young people are leaving their homes for longer and longer periods, this has motivated me to think and speculate that family living together and caring for each other may be one of the solutions to the aging society in the Netherlands.

The most challenging part of the study was finding literature on multigenerational families and sandwich-generation caregivers in the Netherlands. Compared to the United States, Australia, China, or Taiwan, the Netherlands has relatively limited literature on multigenerational families, and the data shows that the percentage of Dutch people living with their parents is the lowest in Europe, with very few studies or reports showing what Dutch people think about living with their parents. Therefore, after P2, I interviewed several friends from the Netherlands and European countries to discover their perceptions of living under the same roof with their parents. From the results, it seems that it is not as absolute as the literature, but also that some people consider that multigenerational cohabitation can be considered as long as it ensures privacy and autonomy for each person. This interview process became the main reason that gave me the confidence to continue with the study.

The process from research to design is enjoyable because it is not a one-way process but a cycle of back-and-forth verification. Firstly, according to the preliminary research conclusion, a suitable building location is selected, and then programs are set based on the site analysis and research results. When conducting massing studies, it is essential to consider the rationality of the built environment and whether it is consistent with the research findings. Also, when design evidence is found to be insufficient, it is necessary to go back to the literature, case studies, and interviews to complete

it. For example, in P2, I designed a daycare center as a residential facility without defining whether it would be medical care or non-medical care oriented. However, after a visit to an Ontmoeten in Dutch society between P2 and P3, I realized that the daycare center I had designed was supposed to be a medical care type for the elderly who were in relatively poor health. Therefore, the daycare centers in this graduation project were ultimately divided into healthcare-oriented daycare and ontmoten, which are similar to community centers.

After P2, the discussion with Birgit and Lex helped me greatly to increase the width of my thinking about the design. For example, the massing scheme I chose in P2 did not correspond to the urban environment of the location, so they advised me to rethink other massing schemes. I, therefore, reexamined the whole volume from the model and site photos and finally chose a high rise that was more in line with the urban environment. In addition, when considering the structural type, the discussion with Lex also inspired me to think from the perspective of circularity. Finally, I decided to replace the concrete structure with a hybrid structure made of timber and concrete, which can minimize carbon emissions, shorten construction time, and create a healthy environment, making the overall solution more aligned with health and care needs.

From P2 to P3, I designed almost different floor plans for each level to create semi-outdoor space, so I spent much time on floor plan design. However, I did not notice that when transferring from concept to actual house size, the two originally designed high-rise houses would interfere with each other's sunlight area and fail to provide the maximum amount of sunlight to the residents. Therefore, I made a relatively significant change in the design by reducing the volume of the two houses to one, and in order to provide more daylight, I removed some of the units and designed a more extensive lighting surface that allows sunlight to penetrate the atrium and the communal space in the houses. In addition, based on the feedback I received from P3, I focused more on how people use the communal spaces of housing, such as corridor and roof space, and how residents access the community centers, libraries, meeting spots, and daycare centers on the lower floors, besides the floor plans of the housing units. During this process, I

I learned that the logic of building structures differs for various materials, such as wood, concrete, and a hybrid structure. Besides, because I am from a subtropical country, I have little knowledge of the climate design related to architecture in Northern Europe, so it was pretty challenging to consider the design of high-rise buildings and to draw detailed drawings, such as the insulation design and the ventilation shaft setting.

In summary, throughout the research-to-design process, I learned how to find literature, filter the necessary knowledge from the literature, and finally integrate it into my thesis; also realized that doing research is not only reading literature but also field research, observing behaviors, and interviews, I can obtain more direct knowledge than literature and apply it in my thesis. Finally, the design process is a unique self-learning process in which the research results are applied to the design process because the previous solid research results make the design process logical and the design direction clear.

### **What is the relation between your graduation project topic, Architecture master track and Architecture master programme ?**

Caring for people with architectural space is the most central goal of this graduation design studio. Moreover, this graduation studio's concept and teaching content focus on the space and its users and encourage observation and interaction with target groups. The aging society has been an inevitable issue in recent years, and Dutch society is also facing this problem of an aging population, elderly care, and living. In order to meet the care and housing needs of the elderly, the living model and housing typology gradually developed differently. In recent years, there have been more so-called intergenerational cohousing (non-blood relationship), retirement housing, and kangaroo housing (rarely) in Dutch society. However, in an aging society, in addition to the elderly, another group is significant and needs to be considered: family caregivers.

After the Dutch healthcare reform, family caregivers have become increasingly important because of the shortage of professional caregivers. Additionally, due to the shortage of nursing homes, seniors are increasingly likely to live at home and be

cared for by family members, thus making family caregivers an essential and critical part of the care relationship and the overall healthcare system. However, the caregiver is often in a variety of roles at the same time; for example, the caregiver may be a carer, a mother, and a daughter, and this in-between generation is my target group - the Sandwich Generation. They are exposed to different stresses and burdens that are rarely discussed. Even in home spaces, they often suffer from physical injuries, and the quality of care decreases because the space cannot meet the care needs, directly affecting the quality of life and care for the elderly. Hence, under the core objective of the studio and the current issue of elderly care in the Netherlands, my graduation project aims to design a house that can accommodate family members who are kin to care for each other and live together. Most importantly, it addresses the issue of aging care by designing homes to reduce the burden on caregivers, maintain the autonomy of the elderly, and increase the possibility of families living together.

### **How did the research influence the design/recommendations and how did the design/recommendations influence the research?**

The primary target groups of the study are family caregivers and the elderly in the sandwich generation. Living in Het Kampje at the beginning of the research gave a crucial start to this research:

1. An overview of the current situation of elderly living in the Netherlands was obtained: the behavior and needs of the elderly.
2. Knowing that medical care and personal care in the Netherlands are different from my culture gave an obvious direction to the literature search. For example, it was essential to know the different definitions of healthcare and who the caregivers are, the relationship between quality of care and quality of life, and how to interview the target groups and find out from their answers what factors influence the quality of care.
3. I have learned that the design of the built environment ought to create an environment that is not only friendly to the elderly but also to the caregivers to tackle the issue of elderly care effectively.

Moreover, when searching for cases or articles related to multi-generational housing, I found that

the case study revealed that multi-generational housing is rare in the Netherlands and only existed as kangaroo houses in the suburbs or single-family houses in the recent past but rarely in mid- to high-rise houses in the city, which makes the study more difficult. As a result, it is only possible to analyze the type of housing and the factors that should be considered concerning living together in Australia, the United States, or other Asian countries. Finally, regarding care space requirements, personal care is usually provided by professional caregivers in the Netherlands, so there are relatively few studies of family caregivers providing personal care. Therefore, care space requirements can only be investigated from relevant studies on professional caregivers.

Starting with P2 and progressing to the design phase, the site selection approach was based on the previous research discussions to determine the space and neighborhood amenities needed for seniors and caregivers. As a result, the future Bickhorst neighborhood was selected for its accessibility, pedestrian friendliness, and amenities.

From the feedback of the mentor professors and examiners, two weaknesses were mentioned in the research: 1. the needs of the youngest generation of the sandwich generation were not discussed; 2. the interviewees were Asian, and there was a lack of data from Europe and the Netherlands. Thus, between P2 and P3, I interviewed ten people from Europe and the Netherlands between the ages of 25 and 34 to understand their needs through additional interviews, which immensely helped the architectural project program. In addition, during the P3 design process, it was found that research on the spatial needs of seniors and caregivers for the homes themselves was incomplete and limited to universal and accessible design in general, so the content of the literature study was added about ways to increase the quality of care, reduce caregiver injuries, spatial factors to prevent falls and enhance social interaction.

The process of research to design is a continuous back-and-forth process, making it possible to apply the research to the design practice. The final result of this research and design is a high-rise housing in the urban context with close facilities and transportation for the sandwich generation that maintains the independence and autonomy of each family member while allowing them to care for each oth-



-er at all times. Moreover, the home space, the community, and the neighborhood, with a particular focus on injury prevention and an age-friendly environment, will enhance the quality of life for both caregivers and cared for, ultimately achieving the long-term goal of aging at home.

### **How do you assess the value of your way of working (your approach, your used methods, used methodology)?**

In the research report, literature research, fieldwork, interviews, and case studies were used. Knowledge of the factors affecting the quality of life of caregivers and older adults, the physical impairment associated with caregiving, and the maintenance of mobility in older adults was obtained from literature studies. The remaining aspects, such as elderly behavior, living habits, caregiver feedback on space use, space for care needs, and European perceptions of family living together, were learned through fieldwork, interviews, and case studies. Using these methods above, I integrate essential information that can be applied to the design into the study.

In terms of the interviews, I think there is too little information about informal caregivers in the Netherlands because the caregivers interviewed were all Asian (the author's parents and friends). On the other hand, the Dutch interviewees had no experience of informal caregiving and, therefore, could only draw from them their willingness, imagination, and advice about living with their parents. Furthermore, in the case study, except for Winter Garden House and Curaçaostraat Groningen, there were few mid-rise and high-rise residential projects with multi-generational families, so evaluating their comparison with existing projects was impossible. Consequently, the final design principles are results from the research of various theories. From another point of view, the final design principle has the value of reference, and the design results are experimental.

### **How do you assess the academic and societal value, scope and implication of your graduation project, including ethical aspects?**

During the process of literature and case studies, so-called Kangoeroewoning can be found in the Netherlands, mainly in the suburbs or in the countryside. Furthermore, the housing typology is mainly single houses, such as the Three gen-

-eration house in Amsterdam, or apartments designed for the non-blood care relationship, such as Curaçaostraat Groningen. However, there is no high-rise housing in the city designed for the Sandwich Generation that is easy to care for among family members and age-friendly. My graduation project proposes an alternative way of thinking about aging care in living. It challenges the notion of caring for parents in Dutch society, which I think is socially relevant in both aspects and creates an opportunity for an interesting academic discussion on housing and elderly care.

Such discussions have been occurring throughout the research and design process. At first, without conducting a complete literature study, I did not realize that the Dutch and Taiwanese societies had different notions of the responsibility of caring for the elderly. Therefore, I did not find any problems with family members living together. However, in the conversation with professors, Dutch people, and even Europeans, I discovered that most people hesitate to live with their parents, making the research process much more difficult. I even felt that I had chosen the wrong research direction. However, after learning more about the Dutch healthcare reform, such as people lining up for nursing homes and the decreasing number of professional caregivers, the current living model and reliance on the government to care for the elderly no longer works. Thus, I strongly believe that living with families and caring for each other is one of the options to solve the problem of aging care.

Concerning the ethical part of the research, the difficult part was when I stayed at het Kampje. As I do not speak Dutch, even though my classmates helped me to ask some questions, I usually could only observe and write them down in my notebook. This situation might not seem like a problem. However, because I was an outsider, and the residents did not know me, while I could not explain what I was doing in time, it was very much like I was peeping into people's lives. So sometimes, the residents would walk back and forth to observe what I was doing, which stressed me. To resolve this dilemma, I initiated a pre-study observation exercise, focusing on each observation rather than immediately recording what I observed. I would wait until the library was empty and then write down my observations throughout the day; instead of bringing a notebook with me during the

day, I imagined myself as a resident and tried to make eye and facial contact with them as much as possible. On the third day, the residents gradually embraced me, and a lady even invited me to her guitar practice activity. We had dinner together last night and sang some popular English songs. This last night made me feel part of their lives, and the awkwardness disappeared.

### **How do you assess the value of the transferability of your project results?**

My project is transferable but may be faster to realize in Asia than in Europe. The concept of living together, in particular, is understood and accepted differently by people because of cultural differences. The project initially started from my cultural background. Through the research process, I have connected it to the cultural context of the Netherlands so that the design principles could be applied in Europe (Netherlands) or Asia. For example, in Taiwan, it is natural to take care of parents, so it is common to live together. On the contrary, in the Netherlands, living together is less acceptable than in Taiwan because of the importance of privacy, independence, and complete healthcare welfare. The project thus analyzed this difference and developed a model of family cohabitation that can be applied in Dutch society.

Although living together may be a barrier due to cultural differences, other principles of spatial design and neighborhood amenities can be widely applied. These principles can be applied not only to multi-generational households but also to different types of housing. For example, the room's size must consider space for both the elderly and the caregiver to use assistive devices, toilets must be easily accessible, and enough light in the room to prevent falls. These design principles are designed to improve caregiving support, enhance the mobility of the elderly, and increase the quality of life for both, thus achieving the vision of aging in place.

