

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	Dean Simson
Student number	5005817

Studio		
Name / Theme	Dwelling, Designing for Health & Care	
Main mentor	Kobe Macco	Architect & Landscape architect
Second mentor	Jasmina Campochiaro	Building Technology
Argumentation of choice of the studio	I chose the Dwelling Designing for Health and Care graduation studio because it aligns with my commitment to addressing pressing social issues through architecture, specifically the urgent challenge of loneliness in urban settings. This studio's focus on creating inclusive, health-oriented living environments resonates with my goal of designing spaces that foster community and support social well-being across generations. By emphasizing health, care, and inclusivity, this studio provides a unique way to explore how architecture can actively combat loneliness, promote social connection, and improve quality of life for vulnerable groups in housing design in cities.	

Graduation project	
Title of the graduation project	Spaces of Belonging
Goal	
Location:	Tarwewijk, Rotterdam
The posed problem,	[Problem Statement]
research questions and	[Research Question]
design assignment in which these result.	[Design Assignment]
Problem Statement: Loneliness is a growing social and health issue that needs to be addressed in Western cities, particularly in urban neighbourhoods. While occasional loneliness is not inherently harmful, chronic loneliness poses serious health risks, including depression, heart disease, dementia, increased (and early) mortality (Cacioppo et al., 2006; Coalitie Erbij, 2018; Holt-Lunstad et al., 2015). In the Netherlands, elderly individuals are especially vulnerable due to declining physical and cognitive health, which hinders social connections (Campen et al., 2018). The Campaign to End Loneliness	

emphasizes its severity, equating its health impact to smoking 15 cigarettes daily (Holt-Lunstad et al., 2015).

However, young adults aged 16 and 24 are also at high risk of loneliness, according to international surveys, especially in Western countries (e.g., Hammond et al., 2018; Nemecek, 2020; DiJulio et al., 2018; Pyle & Evans, 2018; Payne, 2021; Ibbetson, 2019). Factors, such as relocation for education or work (Kaplan et al., 2020), or reliance on digital communication, rather than socializing in person with friends, family, neighbors or colleagues (Roe & McCay, 2021), contribute to this trend. Urban contexts further amplify loneliness in this group when feelings of distrust, insecurity, or lack of belonging arise (Pyle & Evans, 2018). This shows the complexity of loneliness because it is multifaceted, multigenerational and context-specific (Moore et al., 2023), requiring tailored urban interventions to promote inclusion and social engagement.

In conclusion, loneliness among elderly people and young adults is increasingly prevalent and detrimental to health in urban neighborhoods. This study investigates how urban neighbourhoods, like the Tarwewijk, can incorporate intergenerational communal spaces that foster social wellbeing, social engagement and a sense of belonging in the neighbourhood, hypothesizing that such designs are an architectural means to alleviate loneliness. The target groups are students (young adults aged between 16-24 years old) who are studying in Rotterdam and/or want to live in Rotterdam South, and elderly people (65 years plus) who want to live in Rotterdam South and who are willing to contribute an intergenerational housing community.

Research Questions

In what way can the design of communal spaces in urban neighbourhoods, such as the Tarwewijk, help reduce loneliness among residents of different age groups?

1. What specific factors contribute to feelings of loneliness among residents in the Tarwewijk?
2. What roles do the current communal spaces play regarding combating loneliness in the Tarwewijk?
3. How can the design of (future) intergenerational communal spaces be catered to the social needs of the elderly and young adults?

Design Assignment (or Objective)

The objective of the design assignment is to investigate how the design of intergenerational communal spaces (ICS) can foster social well-being and combat loneliness among elderly people (65 years plus) and students (young adults between 16 – 24 years). Both considering the design for health, care and inclusiveness, which stands central in this Dwelling Studio. The design research involves studies that will mainly focus on creating indoor intergenerational communal spaces (ICS), but also outdoor ICS that are crucial to integrate in the design, as seen in literature sources such Kaplan et al. (2020)(e.g., rooftop gardens). The design aims to follow the design guidelines from the research report as a foundation. These are derived from a

synthesis between the lessons learned from literature (theory), comparative casestudies (practice) and research grounded in Tarwewijk (quantitative and qualitative data). Ultimately, the housing design should contribute to the social wellbeing (and decrease loneliness) through the effective use and placement of intergenerational programming and sensory elements that might foster social interaction (e.g., acoustic control in ICS for elderly with hearing aids or impairments).

The design location for this project is Wolphaertsbocht, Tarwewijk, chosen for its accessibility -- which is crucial for housing elderly who might be less mobile or students who must travel for their education (e.g., university) – but also for its potential impact in its specific area which can soften the hard barriers and glue the fragmented neighbourhoods within the Tarwewijk.

Method description

The research will follow a qualitative, mixed-method approach combining site analyses, casestudies, interviews, and observational studies, and a literature review on how communal spaces might combat loneliness (see Figure 1 with a detailed description below).

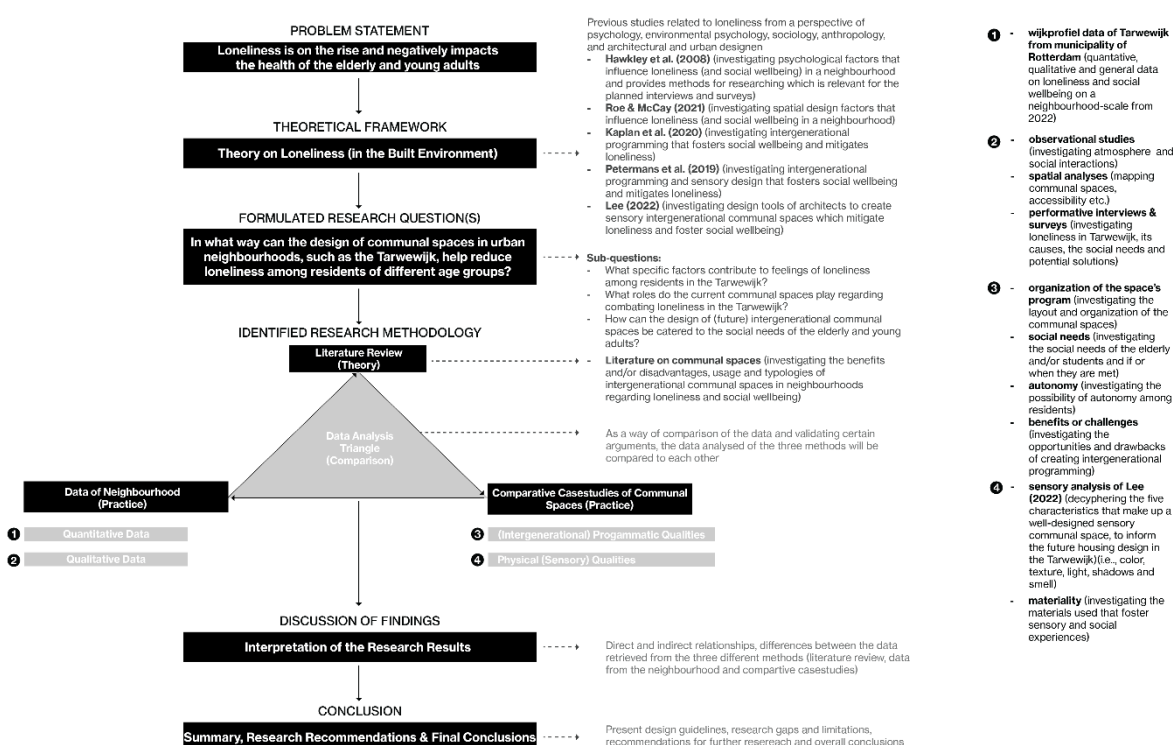


Figure 1. Research Flowchart. Source. Personal Work

Firstly, a literature review will be conducted of Hawkey Hawkey et al. (2018), who investigate loneliness predominantly from a psychological and sociological point of view. Studies of Kaplan et al. (2022), Petermans et al. (2019) and Roe & McCay (2021), provide insights and design toolkits to make communal spaces

intergenerational and beneficial for people's social well-being from an anthropology and environmental psychology perspective. Moreover, Lee (2022) provides a sensory design framework which gives a designer (or architect) the tools to achieve the atmosphere and needs that are discussed in the beforementioned theoretical sources. By using all these theoretical sources, it informs what influences feelings of loneliness, what the needs are of the elderly and students, and, most importantly, how the design of an intergenerational communal space (ICS) might pose a solution for tackling the problem of loneliness in urban neighborhoods.

Secondly, the quantitative data published by the municipality of Rotterdam, namely Wijkprofiel (2022) Rotterdam, will be analysed as it provides statistics that helps uncover the general context regarding loneliness in the Tarwewijk (e.g. the sense of belonging in the neighbourhood).

Next, qualitative methods such as observational studies, interviews, spatial analyses and surveys help inform the design of future intergenerational communal spaces at the end of this studio. Interviews are conducted with community centers, neighborhood counsellors and residents of the Tarwewijk, regarding the loneliness topic and ICS. Also, the survey includes eleven questions of the "Loneliness Scale" from Hawkley et al. (2008) and investigates the social needs of the target group that ICS could provide.

Additionally, at the fieldwork week in P2 at the Liv Inn in Hilversum, similar methods are used to understand the social needs of the elderly and students. Besides this case, other examples of housing that are characterized by their communal spaces such as the OurDomain in Holendrecht are analyzed in similar fashion.

The observational studies include on-the-spot observations where activity patterns were uncovered, for instance peak hours in ICS and (mis)alignments in the schedules of students and elderly residents. Spatial analyses include the sensory analyses based on Lee's (2022) sensory framework where physical qualities (e.g., light, shadows, texture, smell and color) are deciphered in ICS from the Liv Inn and OurDomain Holendrecht. Also, routing, visual connections and the placement of such ICS becomes evident through this exercise. Ultimately, all the research findings are synthesized and/or discussed in the "Discussion Chapter". Here the lessons learned form the basis for the design guidelines at P2 and the shortcomings of the research are mentioned.

From P2 and on:

Design

From P2 and on, further studies will be done to ensure that the housing concept mixed with ICS will contribute to increasing (spontaneous) social interactions and diminishing loneliness among elderly and students in the building and neighbourhood. For example, mass studies, façade studies, materiality studies, studies where programs are best allocated (on-going process), daylight studies etc. The design follows the design guidelines from the P2 research report as a base or points of departure. This way the design will be grounded in the theoretical and empirical research done in P1-P2, and more importantly provide a possible solution for how the

design of intergenerational communal spaces can reduce loneliness and promote social wellbeing in urban neighbourhoods, such as the Tarwewijk

Research

Although it is already mentioned that students (young adults aged between 16-24 years) and elderly people (65 years plus) are the main target groups in this study, it would be interesting further investigate what their complete profile is, where they are from, how long they plan to stay, diving further into their social needs etc.

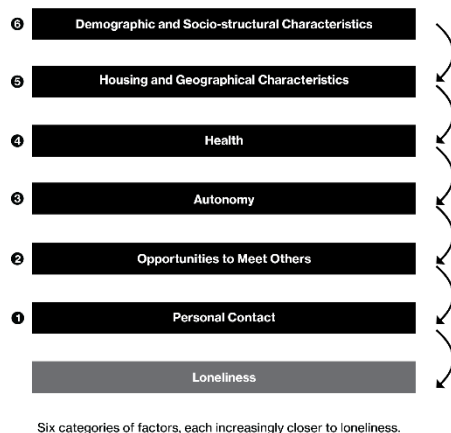
Literature and general practical references

Literature:

As mentioned in the Methods, this research consults several literature sources and practical casestudies (e.g., Liv Inn Hilversum and OurDomain Holendrecht)

To better understand the factors that influence loneliness and to gain insight as to how an architectural intervention could pose a solution for this issue, the framework of Hawkley et al. (2008) introduced in From Social Structural Factors to Perceptions of Relationship Quality and Loneliness: The Chicago Health, Aging, and Social Relations Study, where (proximal) factors that are similar are grouped and assigned in layers (see figure below)

PROXIMAL FACTORS REGARDING LONELINESS



Six categories of factors, each increasingly closer to loneliness.

Figure 2. Proximal Factors by Hawkley et al. (2008). Source: Personal Work

As a guide the Restorative Framework of Roe & McCay (2021) helps identify design elements (tools) that revitalize or harm social wellbeing (e.g. sensory or greenery interventions). It also considers accessibility, as this impacts the avoidance or appeal these spaces among the target-groups. Furthermore, Lee (2022) informs what physical elements can foster social wellbeing and mitigate loneliness through sensory design elements, which further builds on the toolkit. While Kaplan et al. (2020) and Petermans et al. (2019) inform the design which intergenerational programming might be best suitable for elderly and students alike, considering their social needs and potential synergy. They also elaborate in what way the presence of certain ICS might influence one's health and social wellbeing, and feelings of loneliness.

Casestudies:

Liv Inn in Hilversum is mainly an elderly home where the concept of ageing-in-place and community building through many communal spaces is integrated in their design. During the fieldwork week, a whole week is dedicated to gather information regarding their (social) needs, usage and opinions of their ICS. Students also live in this apartment complex, making it interesting to see how they live together with the older generation of residents.

Similarly, OurDomain Holendrecht is characterized with ICS and houses various residents with diverse demographics (e.g., students, young professionals and families). It also potentially houses elderly since there is only a income requirement needed to live here. Nonetheless, this casestudy provides built examples from the practice to learn from and potentially integrate in the future housing design in Tarwewijk

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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)?

This graduation project shows, on one hand, the complex nature of the issue of loneliness, and on the other how possible solutions for promoting social wellbeing and diminishing loneliness requires a vast amount of knowledge from neighbouring academic fields (e.g., sociology, psychology, anthropology, environmental psychology, urban design etc.). As the Dwelling Studio, Designing for Health & Care, addresses the design of housing that is inclusive, healthy and consists of (informal) care, designing housing with intergenerational communal spaces (ICS) with a sensory design focus aligns with the studio's objective. The ICS with a sensory focus aims to make communal spaces accessible and (socially) appealing for anyone, regardless of their (cultural) backgrounds or (dis)abilities. Thus, through promoting an inclusive approach, which is grounded in multidisciplinary research, other neighbouring fields (U, BT, LA, MBE) might consider the results and findings of this project as inspiration or a foundation for future human-centered projects.

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

Through sensory-designed public spaces, my graduation project tackles loneliness in urban neighborhoods, which is a pressing matter and especially relevant in the Dutch context where elderly and students alike report feeling lonely more often in urban areas. ICS promote (social) wellbeing and building meaningful relationships. It fosters inclusivity on a social level, educates architects on how to build for care and resilience on a professional level, and fills in knowledge gaps in environmental psychology and urban sociology by offering practical, empirically supported solutions for socially and environmentally sustainable and flexible communities that span generations.