Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences

Graduation Plan: All tracks

The graduation plan consists of at least the following data/segments:

Personal information	
Name	**Lotte Wiegers**
Student number	5071569

Studio		
Name / Theme	Metropolitan Ecologies of Places	
Main mentor	R.M. Rooij	Spatial Planning & Strategy
Second mentor	M.C. Lugten	Environmental Technology and Design
Argumentation of choice of the studio	As a student in Urbanism, I am deeply interested in researching societal challenges within urban environments. My decision to pursue this master was driven by a fascination with how urban environments shape our daily lives and influence interactions, both active and passive, among various groups of people. However, cities today face numerous social challenges, such as social exclusion and inequality. I am particularly motivated to address these challenges by creating accessible, liveable, and inclusive environments that cater to all individuals, regardless of their background or social status. As this studio focuses on the relationships between Design, Life, and Space, I am able to combine the challenges in urban environments through different scales. The cross-disciplinary character of the studio integrates both smaller scale redesign of neighbourhoods, as well as a spatial design strategy for the implementation and transferability of the project.	

Graduation project	
Title of the graduation project	Age-friendly urbanism. A pattern language for age-friendly communities in the Netherlands.
Goal	
Location:	Apeldoorn, The Netherlands
The posed problem,	In the past years, populations have been ageing massively. This is not different for the Netherlands, where the population is set to reach 25,1% of people aged 65 and over in 2040 (CBS, 2022). The change in demographics has led to different spatial needs, which requires adaptation in the built environment, especially in cities as the world continues to urbanize (Salmistu & Kotval, 2023). Because of this trend, there has been literature and research on the topics of 'active ageing' and 'age-friendly cities'.

	However, the majority of this literature has been published in the domains of social and health sciences and has yet to find its way to urban journals (Salmistu & Kotval, 2023). Additionally, other cities, like Hong Kong or Toyama, have actively designed and planned for their ageing population (Roberts, 2021). But the Netherlands has yet to make this step as only few studies have assessed Dutch cities on their features facilitating for older individuals' quality of life (Van Hoof et al., 2021). Besides, policy makers have yet to acknowledge the demographic shift and what desires in spatial changes this causes.

The lack in knowledge has negatively impacted the opportunities for healthy and active ageing for elderly in Dutch cities. Studies have shown that the experience of loneliness and social isolation among elderly is related to the physical characteristics of the living environment (Kemperman et al., 2019). Additionally, Demirkan (2007) reports elderly are more successful in carrying out daily activities when the relationship with their surroundings is of better quality. Indicating they can maintain their independence. Thus, these studies suggest urban environment play a central role in the quality of life and well-being of older residents, and disregard of its importance could negatively affect an older individual's social inclusion.

Aside from the influence of public spaces on elderly, it also extends to individual homes; the private spaces. Wang & Durst (2022) discussed how decreasing incomes and health conditions are arising challenges as people retire around the age of 65. Naturally, with these new challenges elderly have certain needs in and around their home, like access to healthcare facilities or adaptable homes when disabilities appear (Smets A. J. H., 2011). These needs and changes in later life influence older adults to look for a dwelling that is more suitable for maintaining their freedom. However, the Dutch housing market supply is currently not offering enough dwellings that suit their needs, creating bottlenecks for younger generations in an already imbalanced housing market (Boelhouwer & van der Heijden, 2022).

A possible cause of these problems is the lack of age-friendly cities which understand the heterogeneity of the elderly, where they can grow old while actively taking part in the community. Furthermore, current policies cause a stagnation in the housing market and increasing prices. Nevertheless, since housing is part of the physical environment in cities, acknowledging the connection between these interconnected issues could positively impact the quality of life of elderly in Dutch cities. |
| research questions and | Main research question: |

	"How could age-friendly spatial planning and strategy in Dutch cities support active and healthy ageing for elderly and provide a more balanced housing market?" Sub questions: 1. What are the key factors influencing the dynamics in the housing market in Apeldoorn and how do they impact housing accessibility for the elderly? 2. What is the current social, economic and health position of elderly in Apeldoorn? 3. Which social, spatial and functional structures in Apeldoorn influence the ageing and housing challenges of Apeldoorn? 4. What are spatial patterns of age-friendliness related to urban planning and design? 5. What role can public, private and semi-public spaces play in supporting personal independence and healthy and active ageing among elderly residents in urban neighbourhoods? 6. How can the pattern language be translated into a spatial design (and (re)development) for neighbourhoods in Dutch cities?
design assignment in which these result.	In this graduation project, the nexus between the elderly, the neighbourhood, and active and healthy ageing will be explored. The aim is to develop a strategy for an age-friendly community in a neighbourhood in Apeldoorn, incorporating both the social and physical environments, considering possibilities for addressing relocation needs and desires, and recognising the heterogeneity of older people. In this way, a neighbourhood will be holistically designed to support older people both physically and socially, ensuring that the quality of life remains high and that safety and independence are not negatively impacted by the urban fabric. The desired outcome of this graduation project will be a strategy consisting of a pattern language across four domains: safety, accessibility, adaptability, and participation. This pattern language will be tested in a neighbourhood in Apeldoorn, resulting in a design for that area. Ultimately, this strategy could provide transferable knowledge for other neighbourhoods in the Netherlands.

Process

Method description

Literature research

The literature research serves as the foundation for the theoretical framework of the project. It explores current trends, concepts and scholarly perspectives related to ageing, urban environments, and the housing market. This method helps refine the problem statement and provides a comprehensive understanding of existing knowledge on these three topics.

Additionally, the literature research plays a pivotal role in developing the theoretical background for the pattern language, ensuring that the design interventions proposed later in the project are grounded in theory.

The desired outcome of using this method is to broaden and refine the scope of the topic, while providing a solid theoretical backbone for other methods, particularly the pattern language.

Critical policy analysis

The purpose of a critical policy analysis in urban planning is to understand and evaluate the decisions made by policymakers regarding urban planning and particularly the housing market. By analysing municipal and provincial policies, this method provides valuable insights into how these policies impact elderly.

The desired outcome of this method is a deeper understanding of policy documents, creating a critical perspective on what topics the municipality and province view as important in relation to the older residents.

Stakeholder analysis

Stakeholder analysis identifies and categorizes the key actors involved in the implementation of age-friendly communities, it specifically helps to classify the elderly, a key actor in AFC's and a diverse and complex group. This method helps in understanding the positions, interests, needs and potential conflicts among stakeholders.

The outcome of this method is identifying the elderly group, other relevant stakeholders, and the potential conflicts.

spatial analysis and mapping

Spatial analysis is a crucial tool in urban planning and design, as it provides insights into the physical, social and functional characteristics of the study location. By creating detailed maps, this method allows for the visualization of existing spatial features, including demographic information, land use and infrastructure. The spatial analysis will form the basis for the final design.

The outcome of this method is a set of maps showing the physical, social and functional characteristics of the case study location, Apeldoorn, which will serve as the basis for the design and strategy proposed later in the project.

fieldwork

Doing fieldwork offers a real feel of the area, allowing for experiencing invisible characteristics of the community and its dynamics. While spatial maps and data provide useful information, fieldwork adds a human perspective by uncovering aspects like social interactions and informal spaces. Additionally, fieldwork is necessary to obtain interviews with local residents and elderly.

The desired outcome of fieldwork is an on-the-ground perspective of the study location, complementing the findings from the maps of the spatial analysis, and taking interviews with locals.

Interviews

Interviews with elderly residents are a key method for gathering insights directly form the target demographic. This approach provides a platform for elderly to voice their experiences, concerns, and suggestions, in order to identify gaps or opportunities in the project. The interviews also serve to confirm or test the findings from the analysis.

The desired outcome of taking interviews it to collect qualitative data that adds to the analysis, provides new insights from informal conversations, and talk to the target audience.

pattern language
The pattern language is composed of a set of interconnected patterns, each addressing a specific issue and offering a solution derived from theory gathered in the literature research. By using this method a structure to the design process is provided, giving urban planners and designers a chance to create functional and sustainable designs based on a theoretical framework.
The desired outcome of the pattern language method is a set of patterns, connected in a pattern field, which will guide the design process in creating an age-friendly community.

Design and spatial design strategy
Based on the pattern language, a spatial design will be created for the case study location. Visual representations of the design will showcase how the patterns can be implemented in practice, creating an age-friendly community for active and healthy ageing.
The desired outcome of this method is a spatial design that illustrates the implementation of the pattern language, offering a tangible solution to the challenges identified in the previous phases of the project.

Literature and general practical references

Senior living examples:

Bevan, M., & Croucher, K. (n.d.). *Lifetime Neighbourhoods*.

E, J., Xia, B., Susilawati, C., Chen, Q., & Wang, X. (2022). An Overview of Naturally Occurring Retirement Communities (NORCs) for Ageing in Place. *Buildings*, *12*(5), 519. https://doi.org/10.3390/buildings12050519

Trolander, J. A. (2011). Age 55 or Better: Active Adult Communities and City Planning. *Journal of Urban History*, *37*(6), 952–974. https://doi.org/10.1177/0096144211418435

The Dutch housing market:

Boelhouwer, P., & Hoekstra, J. (2009). Towards a Better Balance on the Dutch Housing Market? Analysis and Policy Propositions. *European Journal of Housing Policy*, *9*(4), 457–475. https://doi.org/10.1080/14616710903357235

Boelhouwer, P., & Van Der Heijden, H. (2022). De woningcrisis in Nederland vanuit een bestuurlijk perspectief: Achtergronden en oplossingen. *Bestuurskunde*, *31*(1), 19–33. https://doi.org/10.5553/Bk/092733872022031001002

Demirkan, H. (2007). Housing for the aging population. *European Review of Aging and Physical Activity*, *4*(1), 33–38. https://doi.org/10.1007/s11556-007-0016-z

Forsyth, A., Molinsky, J., & Kan, H. Y. (2019). Improving housing and neighborhoods for the vulnerable: Older people, small households, urban design, and planning. *URBAN DESIGN International*, *24*(3), 171–186. https://doi.org/10.1057/s41289-019-00081-x

Renes, G. (n.d.). *Doorstroming op de woningmarkt*.

Wang, W., & Durst, N. J. (2023). Planning for active aging: Exploring housing preferences of elderly populations in the United States. *Journal of Housing and the Built Environment*, *38*(2), 795–809. https://doi.org/10.1007/s10901-022-09962-0

Age-friendly framework:

Buffel, T., Phillipson, C., & Scharf, T. (2012). Ageing in urban environments: Developing 'age-friendly' cities. *Critical Social Policy*, *32*(4), 597–617. https://doi.org/10.1177/0261018311430457

Green, G. (2013). Age-Friendly Cities of Europe. *Journal of Urban Health*, *90*(S1), 116–128. https://doi.org/10.1007/s11524-012-9765-8

Grey, T., Xidous, D., O'Neill, D., & Collier, M. (2023). Growing Older Urbanism: Exploring the nexus between ageing, the built environment, and urban ecosystems. *Urban Transformations*, *5*(1), 8. https://doi.org/10.1186/s42854-023-00053-z

Khoddam, H., Dehghan, M., Sohrabi, A., & Modanloo, M. (2020). The age–friendly cities characteristics from the viewpoint of elderly. *Journal of Family Medicine and Primary Care*, *9*(11), 5745. https://doi.org/10.4103/jfmpc.jfmpc_1098_20

Smets, A. J. H. (2012). Housing the elderly: Segregated in senior cities or integrated in urban society? *Journal of Housing and the Built Environment*, *27*(2), 225–239. https://doi.org/10.1007/s10901-011-9252-7

van Hoof, J., Dikken, J., Buttig, S. C., Kroon, E., & Marston, H. R. (n.d.). Age-friendly cities in the Netherlands: An explorative study of facilitators and hindrances in the built environment and ageism in design. *Indoor and Built Environment*.

World Health Organization. (2007). *Global age-friendly cities: A guide*. https://iris.who.int/handle/10665/43755

Ageing population:

Eenzaamheid | Leeftijd en geslacht | Volksgezondheid en Zorg. (n.d.). Retrieved 15 January 2025, from https://www.vzinfo.nl/eenzaamheid/leeftijd-en-geslacht

Leefbaarometer. (n.d.). *Leefbaarometer Kaart*. Retrieved 23 January 2025, from https://www.leefbaarometer.nl/kaart/#kaart

Statistiek, C. B. voor de. (n.d.-a). *Jongeren en ouderen per gemeente* [Webpagina]. Centraal Bureau voor de Statistiek. Retrieved 15 January 2025, from https://www.cbs.nl/nl-nl/visualisaties/dashboard-bevolking/regionaal/jongeren-en-ouderen

Statistiek, C. B. voor de. (n.d.-b). *Ouderen* [Webpagina]. Centraal Bureau voor de Statistiek. Retrieved 15 January 2025, from https://www.cbs.nl/nl-nl/visualisaties/dashboard-bevolking/leeftijd/ouderen

Statistiek, C. B. voor de. (2022, December 15). *Kernprognose 2022–2070: Door oorlog meer migranten naar Nederland* [Webpagina]. Centraal Bureau voor de Statistiek. https://www.cbs.nl/nl-nl/longread/statistische-trends/2022/kernprognose-2022-2070-door-oorlog-meer-migranten-naar-nederland?onepage=true

Policy documents:

Joon, J. (2022). *Woest aantrekkelijk Apeldoorn*.

Zaken, M. van A. (2019, June 6). *AOW-leeftijd 2024-2030—AOW - Rijksoverheid.nl* [Onderwerp]. Ministerie van Algemene Zaken. https://www.rijksoverheid.nl/onderwerpen/algemene-ouderdomswet-aow/aow-leeftijd-2024-2030

Pattern language:

Salingaros, N. A. (2000). The structure of pattern languages. *Architectural Research Quarterly*, *4*(2), 149–162. https://doi.org/10.1017/S1359135500002591

Salmistu, S., & Kotval, Z. (2023). Spatial interventions and built environment features in developing age-friendly communities from the perspective of urban planning and design. *Cities*, *141*, 104417. https://doi.org/10.1016/j.cities.2023.104417

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 relation between my graduation project, age-friendly urbanism, and my master track is the scales, topics, and approaches touched upon. Since urbanism includes a range of scales, from neighbourhood design to the planning of regions, the track

allows for knowledge in establishing a cross-scale project. For example, exploring how national policies affect a specific demographics' living environment, but also how spatial neighbourhood implications can impact a community, both negative and positive. Applying this knowledge in my graduation project is one of my objectives for delivering a comprehensive product.

The master track has provided me with the necessary knowledge and skills needed for approaching this topic. It enables me to work on the connection between the physical environment and social environment and connect it to a national shift of a greying society. Furthermore, the track challenges me to seek and understand connections beyond the public space, like including the housing market system. The broad and comprehensive topics explored in the first year of the master's degree in Urbanism have given me a better understanding of which scales, topics, approaches are possible when designing or planning in Dutch cities or regions.

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

The relevance of my project is to contribute to the social and economic challenges the Netherlands is currently facing, with a greying society and a stagnant housing market. And since there is limited knowledge in the Netherlands on age-friendly frameworks, the project fills a knowledge gap and explores an example of implementing the framework.

Furthermore, this project allows me to explore how communities and social inclusion are connected to the design of the physical environment of cities. Addressing the urgency and importance of the global societal shift, as well as the housing crisis.

Thus, the project also has relevance for other fields within and outside of the architecture master, such as management in the built environment, gerontology, and governments.

Additionally, the methods used throughout the project, like a pattern language, could provide relevant knowledge in both the professional and scientific field. Since this methodology approaches the issues from small spatial design and planning implications, the bigger scale solutions in the project are established from theoretical connections and argumentation.