

# 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](mailto: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	Chahrazad el Otmani
Student number	4567005

Studio		
Name / Theme	Advanced Housing Design	
Main mentor	Theo Kupers	Architecture
Second mentor	Ferry Adema Anne Kockelkorn	Architectural Engineering Research
Argumentation of choice of the studio	<p>I choose this graduation studio because I hope to gain more knowledge about residential architecture. For my first studio of my master's program, I followed the Extreme Architectural Engineering studio, where I learned to search for solutions for environmental and societal issues on Sint Maarten. For my second studio, I followed the Heritage and Architecture studio. In this studio, I learned to work with a heritage building. In this studio, I learned to transform a heritage building whilst incorporating its fundamental characteristics.</p> <p>I have not yet worked on residential architecture as much and after graduating I believe it will be very beneficial to have studied a topic related to residential architecture, as I will most likely work with this type of architecture.</p>	

Graduation project	
Title of the graduation project	<p><b>Together Alone.</b></p> <p><i>The relation between the needs of the solo-dweller and the design strategy of co-living.</i></p>
Goal	
Location:	Merwehaven, Rotterdam

<p>The posed problem,</p>	<p>There is a misconception that the rise of solo-dwellers is a sign of a social problem. This is, however, not the case as it is more a sign of a social change. The rising number of solo-dwellers is a result of changes in families and relationships in recent decades such as later marriage, increased cohabitation, increased divorce and cohabitation breakdown, and later parenthood (Smith, Wasoff, &amp; Jamieson, 2005). Sociological phenomenon's such as postmodernism and individualism are the driving force behind social and technical changes in life. A result of these changes is the rising number of solo-dwellers. As this number continues to grow, the risks of social isolation and thereby loneliness is an important issue we have to be aware about. The social problem we are facing is the rising number of people who express to feel lonely, specifically among the solo-dwellers. Although living alone does not necessarily mean that a solo-dweller is lonely, they are more at risk of social isolation which can cause loneliness. Loneliness and social isolation can be extremely harmful to physical and mental health (Holt-Lunstad, 2015). As these solo-dwellers are more at risk of social isolation, they need access to networks of social support. A network that does not only rely on having relatives, friends or co-workers. According to Novotney (2019), the co-living trend seems to be a popular trend for people to improve social connections. This research explores the role that co-living housing schemes could play in improving social connections between the residents and thereby reducing loneliness among solo-dwellers.</p>
<p>research questions and</p>	<p><b>Main research question:</b> How can co-living design strategies meet the changing needs of young solo-dwellers, both within the collective and private domain of a building?</p> <p><b>Sub-research questions:</b></p> <ol style="list-style-type: none"> <li>I. How did the young solo-dwellers and co-living trend develop during the last 50 years in the Netherlands?</li> <li>II. Who are the young solo-dwellers and what are the transitions in their household formation?</li> <li>III. How do their changing living arrangements affect their daily activities and thereby their needs?</li> <li>IV. What design strategies that stimulate social interactions in co-living developments have been implemented in precedent housing schemes?</li> </ol>
<p>design assignment in which</p>	<p><b>Design question</b></p>

<p>these result.</p>	<p>What architectural design strategies for co-living meet the changing needs of young solo-dwellers, protect their privacy and incite moments of social encounter?</p> <p><b>Sub-design questions</b></p> <ol style="list-style-type: none"> <li>I. Context       <ol style="list-style-type: none"> <li>i. Where is the building located and how does it relate to its context?</li> </ol> </li> <li>II. Circulation       <ol style="list-style-type: none"> <li>i. How are the collective facilities and private dwellings accessed?</li> </ol> </li> <li>III. Programme       <ol style="list-style-type: none"> <li>i. How are the essential activities allocated among the different types of spaces throughout the building?</li> <li>ii. How does the private dwelling relate to the collective domain?</li> <li>iii. How does the dwelling accommodate the changing living arrangements of a solo-dweller?</li> </ol> </li> <li>IV. Sequence of space       <ol style="list-style-type: none"> <li>i. What are the spaces that a resident experiences while moving around in the building?</li> </ol> </li> </ol> <p>The design question is specifically focused on the changing needs of the young solo-dwellers. Sennett discusses the concept of stream of consciousness to explain how people dwell. A stream flows and is therefore never fixed, meaning that to dwell is never static. People cycle in and out of different living arrangements.</p>
<b>Process</b>	
<b>Method description</b>	
<p>This research is primarily based on qualitative methods. Quantitative research and data are used from governmental institutions to understand the demographical changes in the Netherlands. Also, this data is used to explain and illustrate the issue of loneliness among the different types of households in the Netherlands. Reliable quantitative data on the topic of co-living in the Netherlands is yet unavailable.</p> <p>In the introduction, major changes in our societies have been defined to understand the reason why the number of solo-dwellers is rising. Also, it gives an insight into the social structures in today's society. It explains how people behave in public and how that can impact a person's mental health. For this part, literature research was used such as the book <i>Ethics for the City</i> by Sennett (2018) and <i>The condition of postmodernity</i> by Harvey (1990).</p>	

After the introduction, this research paper will start by giving a historical context regarding the topics of solo-dwellers and co-living. This historical context will be focused on the last 50 years. This is because around 1970 the co-living trend appeared in Europe and during this time it also became more common to live on your own. This part of the research paper will be based on literature research. Vestbro has written many documentations about the co-living trend and cohousing such as *Living together: cohousing ideas and realities around the world: proceedings from the International Collaborative Housing Conference in Stockholm 5-9 May 2010* by Vestbro (2010) and *Design for Gender Equality: The History of Co-Housing Ideas and Realities* by Vestbro and Horelli (2012). In his research, he explains how the idea of collective living started and developed in Europe. On the history of the solo-dwellers, the book of Eric Klinenberg *Going Solo: The Extraordinary Rise and Surprising Appeal of Living Alone* (2012) will be used.

Next, the young solo-dwellers and the transitions in their household formation will be analysed. This research will be based on literature research. For this part, the same book of Eric Klinenberg (2012) will be used. In his book, he shows original data and from more than 300 interviews he describes experiences of solo-dwellers in America. The perspective of Klinenberg is very refreshing because he argues the widespread assumption that living alone is a negative trend. In his book, he illustrates that solo-dwellers are actually more engaged in social activities than those who do not live alone. The findings of Klinenberg are used in this paper to understand who the solo-dweller is and how they live.

Furthermore, to understand how their changing living arrangement will affect their daily activities the study of Klinenberg will be useful. This is because the interviews with solo-dwellers will provide an insight on how solo-dwellers live and experience their dwelling. Moreover, other researches on resident behaviour will be used such as *Saving space, sharing time: integrated infrastructures of daily life in cohousing* by Jarvis (2011).

Lastly, the topic of co-living will be studied with literature research and a case study analysis. Many papers have been written on designing for communities and social interactions such as *Designing Neighbourhoods for Social Interaction: The Case of Cohousing* by Williams (2005). Publications that discuss the topic of co-living often link their research to specific target groups such as the elderly households, which makes it difficult to link their findings to the solo-dwellers. One example of this is the article *The role of co-living spaces in digital nomads' well-being* by von Zumbusch & Lalicic (2020) which discusses the influence of co-living spaces on specifically digital nomads. There is however a growing realisation that co-living spaces can also be used for younger people. *Co-living: A solution to the Housing crisis* by Corfe (2019) is a study that explores the role that co-living could play in increasing homeownership among younger age groups in the United Kingdom. The same publications of Vestbro will be useful for this part of the research.

The second method for this part of the research is a case study analysis. The four co-living buildings that will be analysed are Tietgen Dormitory, Songpa Micro housing, Kalkbreite, and Treehouse. These four case studies have been selected because they all are co-living buildings with communal spaces. This is done to make sure that the buildings can be compared to each other. The four case studies all have different qualities that set them apart from one another. This is done in order to have a diverse set of co-living buildings to study which can give different insights. The Tietgen dormitory provides high-quality student housing and illustrates the possibilities of how shared space in housing can be organized. Songpa Micro Housing and Treehouse have micro-apartments. As the dwellings are kept to a minimal size the communal spaces are even more important in these buildings. A book *Small is Necessary: Shared Living on a Shared Planet* by Nelson (2018) ) discusses how and why small and shared housing is a stepping stone towards environmentally sustainable livelihoods. Finally, Kalkbreite is a residential and commercial complex that combines a socially mixed community in a building block. The building has a mix of functions and scales. This building caters to diverse household types and clusters together like-minded people into smaller groups. All these case studies will be studied on the following criteria: urban context, circulation, programme (including layout and proximity), division of public and private spaces, and the quality, type, and functionality of communal spaces, and lastly sequence of space (including social networks and interactions). There are many different types and forms of interactions. Harvey (1990) discusses the scheme of Hägerstrand (see appendix C, figure 1) which illustrates how the daily life of individuals unfolds in space and time. In this case, the interaction is physical. Each person is an agent that takes up movement in space with their daily routines. These paths can be portrayed diagrammatically and when two or more paths intersect a social interaction takes place. In this diagram, there are stations (places where certain activities take place) and domains where social interactions prevail. These physical interactions are important in developing a social structure. In co-living developments, these social networks are important as you gain knowledge about each other and are able to build trust and relationships. The literature study together with the case studies will help to define and illustrate how co-living buildings design to stimulate social interactions.

## Literature and general practical preference

The literature and data that is consulted for this research are discussed in the previous topic of Method. The plan analysis will be focused on the following four co-living buildings: Tietgen Dormitory, Kalkbreite, Songpa Micro-Housing, and Treehouse. The bibliography is attached to the final pages.

## 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)?

My topic is about young solo-dwellers and the co-living trend. As the number of solo-dwellers is rising in the Netherlands, there needs to be more focus on studying their living arrangements and thereby their needs. During my research, I found out that loneliness and social isolation, especially among solo-dwellers, are important issues in today's society. As an architect, you cannot claim to solve mental issues and overestimate the impact design has on them. Human behaviour is influenced by personal, informal, formal, and physical factors. Physical factors (layout, communal facilities) encompass the role of architecture in behaviour. Other factors are personal factors (personality traits, social class, culture, religion, education, family), informal social factors (financial resources, time, and health), and formal social factors (policies, social structure, organized activities) (Williams, 2005).

My aim for this research is, therefore, to get a proper understanding of the role physical and formal social factors have on stimulating social interactions between residents. By inciting social interactions, and thereby social relations, the proposed issue of social isolation can be minimized in a building. In today's society, loneliness and social isolation is a growing issue. And from my research I hope to understand the role I can have, as an architect, to create the most optimal environment for residents to meet and interact. For this reason, I believe that this research will benefit me and my future work in architecture.

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

Today, there are many misunderstandings concerning the rise of the solo-dwellers. Many people assume that the reason for the rising number of solo-dwellers is a social problem. However, due to economic development and social security more people can live on their own. Also, society is more focused on the individual. Solo-dwellers are rising and not because of a social problem, but because of a social and financial change. There is, however, the issue of social isolation and loneliness among many types of households including the solo-dweller. In the field of architecture, this means that it is important to question the current traditional solo-dwellings and its facilities. Co-living design strategies can provide a different perspective on how to design to improve social connections. This perspective will be beneficial for looking at ways the solo-dwelling and its environment can improve. Also, the key design factors of co-living can be applied to other forms of residential development. This research paper

will illustrate how architecture can accommodate a fitting environment for the solo-dweller, while preventing social disconnect.

# Bibliography

## Co-housing and co-living

Corfe, S. (2019). Co-living: A solution to the Housing crisis. The Social Market Foundation. Retrieved April 24, 2021 from <https://www.thinkhouse.org.uk/site/assets/files/1885/smf0219.pdf>

Fromm, D. (2012). Seeding Community: Collaborative Housing as a Strategy for Social and Neighbourhood Repair. *Built Environment (1978-)*, 38(3), 364-394. Retrieved March 11, 2021, from <http://www.jstor.org/stable/23290269>

Jarvis, H. (2011). Saving space, sharing time: integrated infrastructures of daily life in cohousing. *Saving space, sharing time: integrated infrastructures of daily life in cohousing*, 43, 560–577. <https://doi.org/10.1068/a43296>

Kath Scanlon, K., & Arrigoitia, M.F. (2015) Development of new cohousing: lessons from a London scheme for the over-50s, *Urban Research & Practice*, 8:1, 106-121, DOI: 10.1080/17535069.2015.1011430\

Kienbaum, L., Schmal, P. C., Kienbaum, L., & Ring, K. (2015). *Bauen und Wohnen in Gemeinschaft / Building and Living in Communities*. Walter de Gruyter GmbH.

Marckmann, B., Gram-Hanssen, K., & Christensen, T. (2012). Sustainable Living and Co-Housing: Evidence from a Case Study of Eco-Villages. *Built Environment (1978-)*, 38(3), 413-429. Retrieved March 11, 2021, from <http://www.jstor.org/stable/23290271>

McCamant, K., & Durrett, C. (2011). *Creating Cohousing: Building Sustainable Communities*. Retrieved March 11, 2021, from <https://1lib.nl/book/5295048/5d909d>

Nelson, A. (2018). *Small is Necessary: Shared Living on a Shared Planet*. London: Pluto Press. doi:10.2307/j.ctt1zk0mpz

Sargisson, L. (2012). Second-Wave Cohousing: A Modern Utopia? *Utopian Studies*, 23(1), 28-56. doi:10.5325/utopianstudies.23.1.0028

ScottHanson, C., & ScottHanson, K. (2004). *The Cohousing Handbook: Building a Place for Community*. Retrieved March 11, 2021, from <https://1lib.nl/book/807451/ed7f2f>

Vestbro, D. U. (2000). From collective housing to cohousing - a summary of research. *Journal of Architectural and Planning Research*, 17(2), 164-178. Retrieved March 11, 2021, from <http://www.jstor.org/stable/43030534>

Vestbro, D. U. (2008). *History of cohousing - internationally and in Sweden*. Retrieved March 11, 2021, from <https://1lib.nl/book/3074578/a1c29e>

Vestbro, D. U. (2010). *Living together : cohousing ideas and realities around the world : proceedings from the International Collaborative Housing Conference in Stockholm 5-9 May 2010*. Retrieved March 11, 2021, from <http://kollektivhus.se/wp-content/uploads/2017/06/Livingtogetherwebb-1.pdf>



Vestbro, D., & Horelli, L. (2012). Design for Gender Equality: The History of Co-Housing Ideas and Realities. *Built Environment* (1978-), 38(3), 315-335. Retrieved March 18, 2021, from <http://www.jstor.org/stable/23290266>

von Zumbusch, J. S. H., & Lalicic, L. (2020). The role of co-living spaces in digital nomads' well-being. *Information Technology & Tourism*, 22(3), 439-453. Retrieved April 24, 2021 from <https://link.springer.com/article/10.1007/BF02982615>

Williams, J. (2005) Designing Neighbourhoods for Social Interaction: The Case of Cohousing, *Journal of Urban Design*, 10:2, 195-227, DOI: 10.1080/13574800500086998

## **Solo-dwellers**

Baranwal, J., & Ram, B. (1985). Societal Development, Familialism and Solo Living : A Cross-National Study. *Journal of Comparative Family Studies*, 16(1), 61-73. Retrieved May 22, 2021, from <http://www.jstor.org/stable/41601530>

Klinenberg, E. (2012). Going Solo: The Extraordinary Rise and Surprising Appeal of Living Alone. Retrieved March 19, 2021, from <https://1lib.nl/book/1280801/d4d5b2>

Palmer, G. (2006). Single person households: Issues that JRF should be thinking about. Retrieved March 19, 2021, from <https://www.jrf.org.uk/report/briefing-growth-one-person-households-trends-causes-and-issues-arising>

Pots, B. (2014). Single wordt de norm - Stedelijke ontwikkeling: meer alleenstaanden met minder middelen. NUL20: platform voor woonbeleid in de regio Amsterdam, November 2014, p. 16, 17.

Smith, A., Wasoff, F., & Jamieson, L. (2005). Solo living across the adult lifecourse. Retrieved May 23, 2021, from <https://era.ed.ac.uk/bitstream/handle/1842/2822/rb20.pdf?sequence=1>

Wates, N., & Knevitt, C. (2013). *Community architecture (routledge revivals) : How people are creating their own environment*. ProQuest Ebook Central <https://ebookcentral-proquest-com.tudelft.idm.oclc.org>

## **Other topics**

Halman, L. C. J. M. (1995). Individualization and individualism investigated: Results from the European values surveys. (WORC Paper / Work and Organization Research Centre (WORC); Vol. 95.12.027). Retrieved May 22, 2021, from <https://pure.uvt.nl/ws/portalfiles/portal/1186415/HL5619957.pdf>

Harvey, D. (1990). *The condition of postmodernity* (Vol. 14). Oxford: Blackwell. Retrieved May 22, 2021, from <https://libcom.org/files/David%20Harvey%20-%20The%20Condition%20of%20Postmodernity.pdf>

Mamadouh, V., & Van Wageningen, A. (Eds.). (2016). *Urban Europe*. Amsterdam: Amsterdam University Press. doi:10.2307/j.ctvczzrh

Novotney, A. (2019). Continuing education the risks of social isolation. *Monitor on Psychology*. Retrieved March 11, 2021, from <https://www.apa.org/education/ce/social-isolation.pdf>

McCarty, J. A., & Shrum, L. J. (2001). The influence of individualism, collectivism, and locus of control on environmental beliefs and behavior. *Journal of Public Policy & Marketing*, 20(1), 93-104. Retrieved May 22, 2021, from <https://journals-sagepub-com.tudelft.idm.oclc.org/doi/10.1509/jppm.20.1.93.17291>

Sennett, R. (2018). *Building and Dwelling: Ethics for the City*. London, Great Britain: Penguin Random House UK.

Stefanov, S., Terziev, V., & Banabakova, V. (2019). The understanding of security in the postmodern society. *International E-Journal of Advances in Social Sciences*, 4(12), 570-579. Retrieved May 22, 2021, from <http://ijasos.ocerintjournals.org/en/pub/issue/41230/476555>

## Case studies

### Tietgen Dormitory

Lungaard, B. (2002). Tietgen Dormitory. An imaginary journey around a real building. Accessed April 12, 2021 from [https://issuu.com/editionblondal/docs/tietgen\\_dormitory](https://issuu.com/editionblondal/docs/tietgen_dormitory)

Lungaard & Tranberg Arkitekter (2021). Accessed April 12, 2021 from <https://www.ltarkitekter.dk/>

Tietgenkollegiet (2021). The building & the visions behind Accessed on april 13, 2021 from <http://tietgenkollegiet.dk/en/the-building/>

### Songpa Micro-Housing

Archdaily (2019). Songpa Micro Housing / SsD. Accessed April 12, 2021, from <https://www.archdaily.com/576302/songpa-micro-housing-ssd>

SsD Architecture (2014). Songpa Micro-Housing. Accessed May 20, 2021, from <http://www.ssdarchitecture.com/works/residential/songpa-micro-housing/>

Zapel, E. (2017). Floor plan manual housing. Birkhäuser.

### Kalkbreite

Archdaily (2018). Kalkbreite / Müller Sigrist Architekten. Accessed april 16, 2021 from <https://www.archdaily.com/903384/kalkbreite-muller-sigrist-architekten>

Boucein, B. and Seidel, T. (2015). Open Building as a Principle of Cooperative Housing. Proceedings of the Open Building conference, Switzerland, 2015, ETH Zurich, Zürich, 1-14. Accessed May 21, 2021 from <https://www.research-collection.ethz.ch/handle/20.500.11850/110106>

Vinke, J & van der Lubbe, M, (2019). Accessed on april 12, 2021 from <https://www.archined.nl/2019/06/groeten-uit-kalkbreite-een-inclusief-stuk-stad/>

De Jorge-Huertas, V. (2020). Collaborative Designing of Communities. Helsinki and Zurich Pioneers. ACE: Architecture, City and Environment, 15(43), 9012. DOI: <http://dx.doi.org/10.5821/ace.15.43.9012>. Accessed May 20, 2021 from [https://www.researchgate.net/publication/342814921\\_Collaborative\\_designing\\_of\\_communities\\_Helsinki\\_and\\_Zurich\\_Pioneers](https://www.researchgate.net/publication/342814921_Collaborative_designing_of_communities_Helsinki_and_Zurich_Pioneers)

### Treehouse

Astbury, J. (2019). Treehouse is sloping block of co-living apartments with a tree-filled atrium. Dezeen. Accessed May 20, 2021 from <https://www.dezeen.com/2019/08/12/treehouse-co-living-bo-daa-seoul-concrete/>

van Es, K. (2019). Treehouse is a co-living space in Seoul's start-up district. Avontuura. Accessed May 20, 2021 from <https://www.avontuura.com/treehouse-by-bo-daa/>

Han Eun-Hwa, K. (2019). Treehouse share house offers atrium and communal space. Korea JoongAng Daily. Accessed May 21, 2021 from <https://koreajoongangdaily.joins.com/2019/03/07/industry/Treehouse-share-house-offers-atrium-and-communal-space/3060286.html>

Rosete, A. (2020). Itaewon-based Architecture Firm Designs A Co-Living Space That Shows COVID-19 Is Not The Death Of This Typology. Metro.Style. Accessed May 21, 2021 from <https://metro.style/living/home-tours/itaewon-based-bodaas-tree-house-co-living/24516>