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Inter-cultural community cohabitation

Co-living and co-working as means for cohabitation between newcomers
and Dutch starters

Research report of advanced housing design graduation studio
TU Delft

Tutors: Anne Kockelkorn and Olv klijn

Student: Basma Shahoud
Student number:4971914
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Abstract

This paper concentrates on the Dutch housing sector, its potentials but also its obstacles. The research converges in particular on the housing sector in Rotterdam. It follows the logic of defining problems then potentials to solve them.

The research questions the refugees' housing and integration approaches. It examines co-living as a method to afford them shelter and as a tool of integration. Additionally, the research questions co-working possibilities in relation to housing and how it aids social interaction between refugees and the host society. The research's purpose is to cohabituate newcomers and locals in a new inventive manner of living and working together.

Keywords

co-living, co-working, cohabitation, proxemics, integration, refugees, status-holders, collective, social connection, intercultural.

Proxemics: is an investigation of human use of a specific space and how that space and its population impacts humans' attitude, communication, and socialising.

Cohabitation

Intro

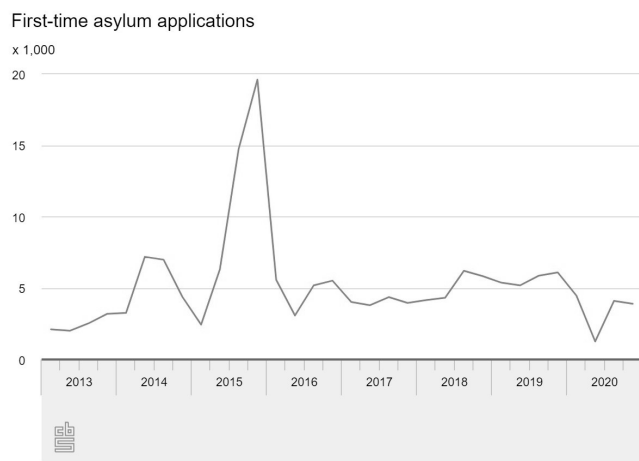
Co-working

Co-living

duction

Introduction

The Netherlands is an overpopulated country and is a destination for international households. The population is growing in Dutch cities which is mainly caused due to immigration flow within the previous six years. (Statistics Netherlands, 2019) Rotterdam as the second biggest city seems to attract more immigrants because of its strategic location, its labour and educational potentials. The more vital reason that attracts newcomers to settle down in Rotterdam is its intercultural character (Council of Europe, 2016). Regarding the asylum seekers, the country witnessed a peak of asylum seekers advent approximately 20.000 of first application in 2015 (Statistics Netherlands, 2021a).



Percentage of asylum seekers' first-time application
Source: Central Bureau of Statistics, cbs

Problem statement

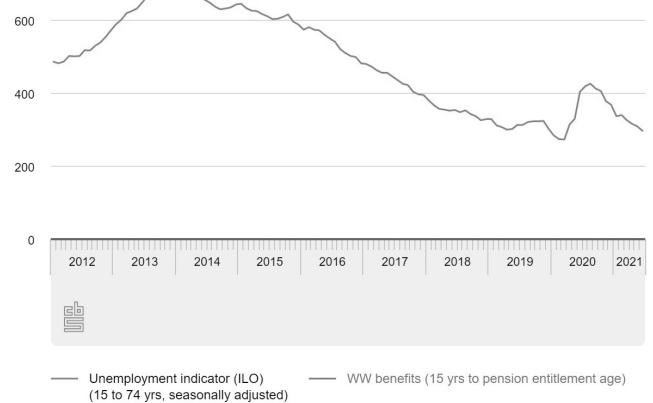
Shelter and labour as underestimated basic rights and means for social cohabitation

Asylum seekers have the right to housing when they obtain residence permits, thus, they should be accommodated by the government directly after obtaining the permits. (The Central Agency for the Reception of Asylum Seekers, 2015). In the last ten years housing crisis predominated the country. The Dutch government reformed the housing sector to make it further market-conform. That means stimulating tenure conversion such as allowing the transformation of social housing into owner-occupancy. Besides, the government allowed temporary rental contacts. That ended up by rose in the rents. That approach impacted low-income folk by hindering them to access the rental market. Dutch starters and newcomers encounter the problem of affording and accessing homes. In addition to the huge refugee percentage, further pressure put on the government to take rapid initiative of sheltering refugees (Czischke & Huisman, 2018). In that time, the government has already improved the One Million Home plan by 2030 to increase the housing supply (Séveno, 2021). However, this long-term plan could not solve the current problem of the enormous, needed home quantity for asylum seekers of 2015. Therefore, the government took a quick initiative to house them. That initiative was insufficiently studied and rapidly taken because of the peak. Consequently, asylum status holders are randomly allotted to social housing cross the country. These housing are not

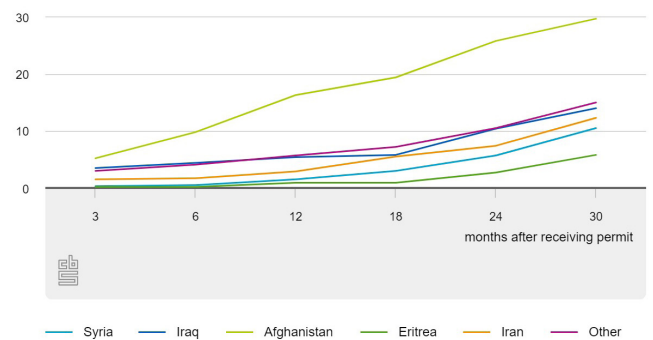
designed according to social integration factors of newcomers rather than they are meant for native inhabitants. (Czischke & Huisman, 2018). Particularly, in Rotterdam, the number of refugees accommodated is an average of 10.4 status holders per 1000 inhabitants in 2014. It increased to become 21.9 per 10 000 inhabitants in 2016 (CBS, 2014–2018). That initiative locks status holders in socially isolated homes where they do not know where and when to start. (Czischke & Huisman, 2018).

The other right for asylum seekers is working. But, because of the current isolated housing environment and the integration approach, refugees do not build social relationships with locals which leads to a very restricted network. Also, they do not grasp the work procedure in the new society. Therefore, they need more time to know where and how to commence working. That takes an average of five years and a half for 73% of the refugees to occupy a part-time job. (De sociale economische raad (SER), 2020) On the other hand, the unemployment rate increased in the whole country after the Covid-19 pandemic. Right after that, more than 300 thousand people were unemployed. This number considers as 3% of the whole labour force which is a considerable percentage which occurred in a short period of time. The unemployment rate rose from 2.9% before the Covid-19 to 5%. Although the 5% percentage is considered as rational unemployment percentage but it was a two third more in comparison with the former five years. (Statistics Netherlands, 2021b). Usually, refugees encounter difficulties in finding work or starting their own projects,

beside that was the unemployment raise after the pandemic. Thus, many obstacles stand central such as the language barrier, fewer jobs' possibilities after Covid-19 and more vital they have no suitable network. According to the CBS, they are not able to occupy paid jobs in the first year and a half after obtaining the resident permit. After that period was just 11% refugees employed in 2014 which differs according to the countries of origin. (Statistics Netherlands, 2018).



Dutch unemployment percentage of Dutch residents between 15 and 74 years old
Source: Central bureau of Statistics, cbs



Percentage of worked status-holders after receiving permit
Source: Central bureau of Statistics, cbs

To conclude, the main obstacles for newcomers' cohabitation with locals are the housing, integration and labour approach created by the current national approach in Holland i.e. no shelter based on social engagement, nor work based on economic, social and integrational benefits approach are invented in order to ease the integration of status holders. Therefore, this paper will tackle the problem of a smooth cohabitation between refugees and Dutch starters as the main target group.

II. Personal motivation and relevance

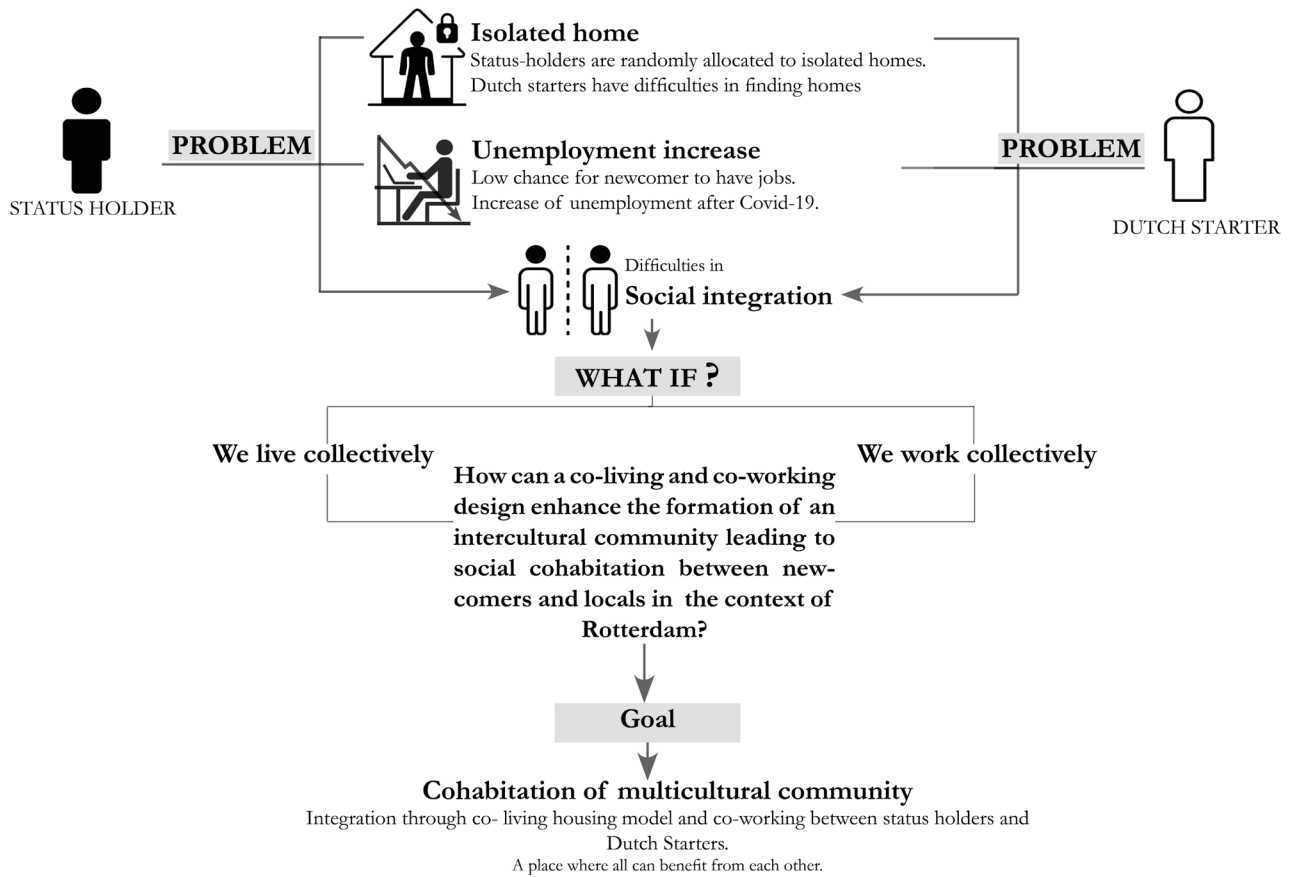
When I fled from Syria to the Netherlands, four years ago, I dreamt of feeling home again but in a peaceful milieu. However, that was challenging enough. Feeling home is not equal to living in a house. Feeling home in a new country after an unstable life is structured on two pillars derived out my experience. Firstly, having a peaceful environment to live in. Secondly, engaging in the new society. The Dutch government take care of all refugees to be sheltered in a peaceful environment . But the social engagement are missing. That could happen in multiple manners i.e. Housing, working and education, see section 1.3.

In my case, I wanted to develop my education further, even that was challenging because of the asked requirements to enter the education. Finally, I managed to fulfil the requirements and started the master's degree at the TU Delft. That was the first opened door for me to achieve my goal of integration. I entered the studio of advanced housing especially because of my faith in the housing role as a life creator and changer but also as a community builder. I, such as other status holders who are obligated to the integration approach, manage to succeed in finishing the language exams. But looking back to those exams. I could conclude it is a language learning method rather than integration tool. Although, language is a key for integration, it is not the only pillar of refugees integration. Many refugees stop after accomplishing the language exams because they are just isolated in their home and know no way to engage in the new society.

Even though many status holders are working and studying but not all refugees will manage to continue their improvement within an isolated milieu. Therefore, through this graduation studio, I want to examine a new approach for integration.

I desire to look at integration from an architectural perspective that is based on literature and deep analysis.

I position myself as an architect but also as a stakeholder who faced problems to integrate into the new society and who is now attempting to solve them with new insights. Accordingly, I based my interest on the most tangible manner of integration Living and Working as a social means for social engagement in the new society. And I asked the question
What if we Live together, what if we Work together?



Problems, hypothesis and vision

III. Hypothesis of collective living and working approach

Accordingly, looking back at my city, Aleppo, the inhabitants used to live and work in the same environment. The urban tissue is filled with labour and housing opportunities. Consequently, that leads to significant social encounters ending with a sense of belonging to a certain community. (Academy of Architecture, Amsterdam University of the Arts, 2018).

According to Naomi Cleaver, an interior designer who specialised in communal living, the new shift towards shared spaces is the new solution for the 21st century's urban and architecture issues such as the inaccessible housing market, loneliness and rejection of minorities. She argued that co-living and co-working might be hailed as the sought solution of our century. This shared model has the power to retexture the current society in a manner that transforms it into a further collaborative society for all social groups. (Cleaver & Frearson, 2021)

IV. main and sub-questions

The research converges on the co-living and co-working model as means for cohabitation between different ethnic groups. The paper seeks proper awareness about the social integration methods needed for refugees and the spatial structure of co-living and co-working in relation to the social engagement approach between the different intercultural stakeholders.

The main question that will guide the research will be:

How can a co-living and co-working design enhance the formation of an intercultural community leading to social cohabitation between newcomers and locals in the context of Rotterdam?

To answer this question, the paper starts with the social domains of integration. Secondly, the spatial design of co-living space is elaborated to reach optimum design tools of living together. Thirdly, co-working's spatial power in invigorating communities in relation to housing. The sub-questions are:

1. How can housing and working influence refugees' cohabitation with the Dutch society?
2. How can co-living be designed in a manner that increases social interactions between status-holders and Dutch starters?
3. How can co-working be spatially articulated in relation to the housing environment and which social impacts does it have on community formation?

These questions response to the hypothesis of co-living and working as a social cohabitation intercession between residents from different cultural backgrounds.

V. Methodology

To achieve the goal of intercultural society cohabitation, this paper derives design's tool-kits out academic publications, books, interviews and references projects.

The first chapter elaborates in the target group's social necessities. Therefore I include political, social and a Dutch reference project. The political study converges on asylum seekers policies and accommodation approach in Holland. This knowledge is provided by the Immigration and Naturalisation Service and the Central Agency of Asylum Seekers Reception's. Then the social domain of integration are discussed according to Ager, A., & Strang, A. (2008). *Understanding Integration: A Conceptual Framework. Journal of Refugee Studies*. After that, I analysed a reference project in the Dutch context spatially and socially. By studying the initiative of housing Dutch and refugees together. According to the publication of *Integration through Collaborative Housing? Dutch Starters and Refugees Forming Self-Managing Communities in Amsterdam* which is written by D. Czischke and C. Huisman. Additionally, Dr. Carla Huisman is an interview partner in this research. I interviewed her because of her insights on refugees' housing policies in the Netherlands and because of her on-site study of the Startblok. She informed me with precious insights and conclusions about social integration which I included in 1.4. I also undertook ethnographic study and residents interviews.

Secondly, the initiative of co-living will be investigated historically in the Dutch context, spatially and socially. The historical study will

focus on the Centraal Wonen initiative which commenced in the late 60th. I studied, the Tanthof settlement in Delft as a case study, according to *the history of collective living*, written by S. Schmid that touched various examples of col-living initiatives worldwide. After that, the spatial study will focus on designing appropriate collective living space in relation to communal space according to *Spatial design & architecture for coliving number 7*. Published by the professionals of the Coliving Insights. Finally, I linked the historical and spatial findings with social arguments in a manner that translates better knowledge on how and why co-living could increase social interaction between different ethnic groups according to *Understanding Integration: A Conceptual Framework. Journal of Refugee Studies*.

Ultimately, I investigated the co-working's possibilities through urbanistic, architectural and social experiments. The urban shift towards co-working will be based on the publication of the The Scientific Council of European *Productive Cities*. It clarifies the new shift in the urban planning to re-introduce productions again in cities. The mix between housing and working is articulated in the article of Hoppenbrouwer, E., & Louw, E. (2005). *Mixed-use development: Theory and practice in Amsterdam's Eastern Docklands*. That shows the manner of creating hybrid environments in cities and covers different hybrids in many urban scales. I review the social impact of co-working according to *Spatial Configuration and Users' Behavior in Co-Working Spaces* By Ondia, E. P. et al. which examines case studies of collective space and its social impacts on employees.

VI. Graphic novel introduction

The graphic novel elaborates on the operational structure of the aimed intercultural community. It studies the housing approach of the young low-income/ just employed adults with collaboration between the housing cooperative, the municipality, and the COA “Centraal Organization for Asylum seekers Reception”, and the architect

The graphic novel clarifies the contribution of the previously mentioned actors in reaching the goal of cohabitation between groups from different ethnic backgrounds. Similarly, it illustrates the proxemics of the future users, young status holders and Dutch locals, after five years of the project’s accomplishment. How they use the space and which impact has the space on their productivity and cohabitation with others. The community will be self-organized by assorted commissions created and managed by residents who can with the rest of the tenants manage cases in the community.

The notion is: what if the housing cooperative is open to a multicultural community, which is a non-profit association, and provides young adults with a place in Walenburghof in the city of Rotterdam. This cooperative can lease the land from Rotterdam municipality. Nevertheless, the municipality subsidizes about 35% of the dwellings for newcomers which makes the rent cheaper approximately 15% compared to the base rents. (Dellenbaugh et al., 2015, P.185), similarly to the cooperative model of Kalkbrite, Zurich, Switzerland. (Genossenschaft Kalkbreite, 2018).

The allocated status holders are nominated via COA and Rotterdam Municipality, those residences fulfil the community vision, and they are suitable to be a member of the cooperative.

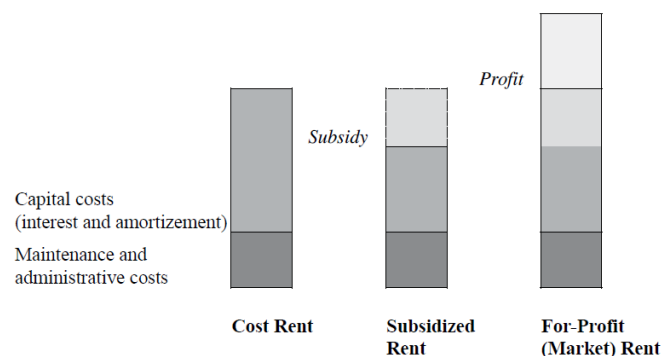


Figure: Composition of rent prices
Source: Urban Commons: Moving Beyond State and Market, 2015. Page, 185

The municipality and the cooperative delegate an architect who is originally a status holder to design the aimed project. The concept behind that is that the architect self has been through an integration process and he comprehends the users' needs and potentials.

The novel is based on research findings. However, the story is partly established on empathy because the main character has a similar situation as mine. The graphic novel will follow the integration journey of the main character, Ram, who recently arrived in Holland and obtained a residence permit. It will go along with the research chapters, by showing in each chapter the influence of those environments on the characters.

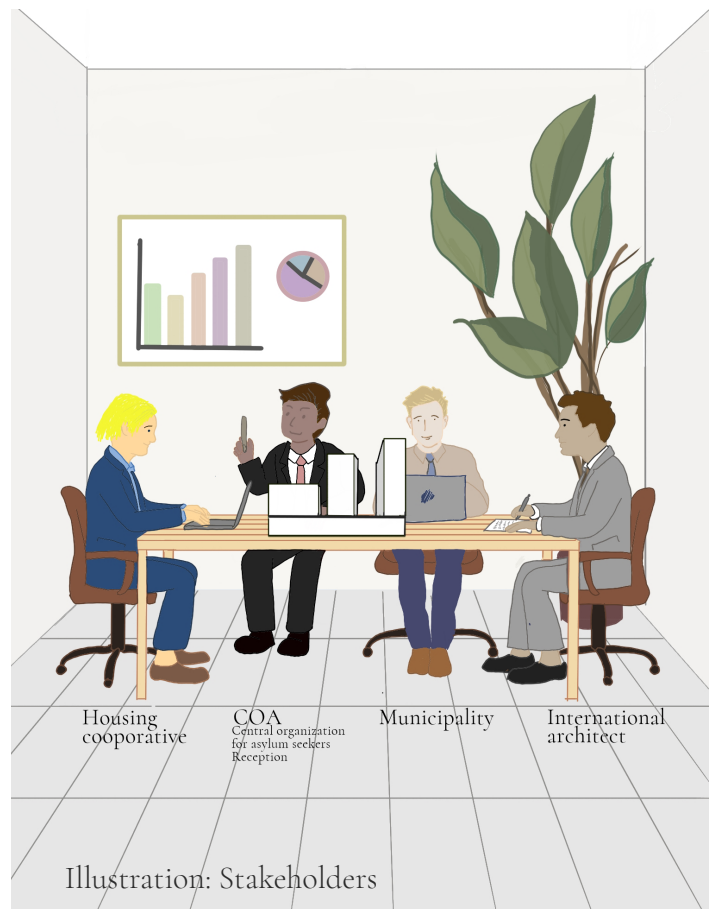


Illustration: Stakeholders



- | | | | |
|---|-------------------------------|---|--|
| . Elsie: 24 years old | . Ram: 25 years old | . Almaz: 31 years old | . Jan: 30 years old |
| . Dutch starter | . Syrian: status holder | . Eritrean: status holder | . Dutch starter |
| . Bachelor in social work | . Bachelor arts and sculpture | . Volunter in the residents administration commission | . Master in Administration |
| . Employed in the Refugee Agency in the complex | . No job | . Part-time seller in the retail department | . Work full-time for the housing cooperative |



Ram's dog

Illustration: Main character

01

Social integration of refugees

1. Refugees' social integration

According to the formerly stated problem of housing the low-income class, the housing shortage crisis and the refugee's advent to the Netherlands, the Dutch housing sector should fill those gaps. The refugees form a significant percentage of the low-income class and their integration and housing approach is questioned. (Czischke & Huisman, 2018, P.157-158).

Therefore, this chapter sheds the light on the refugee's coming to the Netherlands and the governmental housing approach. Also, it investigates the main integration domains for refugees. Finally, it examines the Dutch example of collaborative housing of refugees and locals. Those considerations shapes the response to the first sub-question **'1. How can housing and working influence refugees' cohabitation with the Dutch society?'** To terminate the chapter with the graphic novel.

1.1 Refugees' arrival to the Netherlands

The Netherlands received in the last two decades a high percentage of asylum seekers. Between 1994 and 1997 picked the number of refugees the 55000 people. The refugees in that period came mainly from Iraq, Afghanistan and Kosovo. It increased again between 2013 and 2016 to reach the 45000 refugees. (Vluchtelingen Werk Nederland, 2021)

Syrian refugees form the majority of asylum seekers in the last 10 years. The second large group of refugees currently applying for asylum in the Netherlands consists of Eritreans. Both groups are fleeing the military dictatorship in their country. In 2016 and begin of 2017, Syrians and Eritreans also formed the largest groups of refugees in Rotterdam. (IDEM Rotterdam, 2019. P.5) How many status holders are allotted to Rotterdam municipality? In total, 2,429 status holders were housed in Rotterdam in 2016 and the first half of 2017. 1,532 status holders have Syrian nationality. Furthermore, it concerns 244 Eritreans, 106 Ethiopians and 547 status holders with a different nationality. Besides 4000 stateless refugees who are also sheltered in Rotterdam. (IDEM Rotterdam, 2019. P.7) Accordingly, Rotterdam housed many refugees from different nationalities in the last 10 years. That goes parallel with the city inter-cultural identity. The city is a hyper-diverse city and has about 170 different nationalities. (IDEM Rotterdam, 2019. P.5-6)

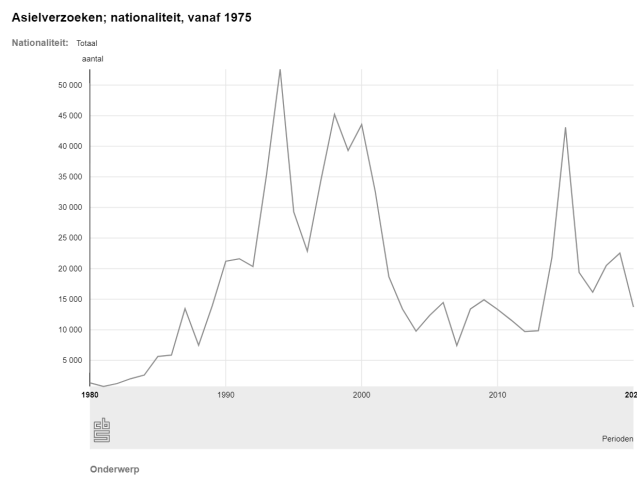


Figure: All nationalities asylum seekers in Holland between 1980-2020
Source: CBS, Centrale Bureau for Statics.

1.2 Current refugees' accommodation approach and its impacts on integration

But why are those numbers of refugees housed in Rotterdam municipality and what about other Dutch municipalities?

To answer that, it is vital to comprehend the asylum seekers' housing approach and how that influences their integration process in the new society. The asylum application procedure starts when the refugees arrived in the Netherlands. They apply for asylum permits and clarify the reason for their flights in the so-called hearing interviews with the immigration and Naturalization Agency (IND). (VluchtelingenWerk Nederland, 2022)

While they are waiting for IND endorsement about the asylum solicitation, they are usually allotted to "AZC " asylum seekers centres. The responsible agency for refugees' reception in those centres is the "COA". During the waiting time for the residence permit, COA shelters adult newcomers and barely provides them knowledge about the culture and language, with a one-hour Dutch lesson a week. This waiting period in the AZC lasts between 3 months and 5 years. This time counts as wasted time in all refugees' life. Because they are isolated in AZC and know no manner to integrate into the new country. (Het leven in en rond een azc, 2019) That was what I experienced too. I was sheltered in the asylum centre for 6 months where I did not encounter any Dutch inhabitants and where I did not have any potential to learn the language. After acquiring the residence permit, refugees have the right for housing. They are

allotted to Dutch municipalities across the country by the COA. Every six months, the central government determines the number of status holders that each municipality must accommodate that depends on the municipalities' surplus venue. The COA role is to link refugees to municipalities. The municipality arranges social housing depending on the status holder's profile, i.e., the number of family members and health condition. (Huisvesting van statushouders, 2020)

However, that allocation approach is not based on the refugees' personal requirements for study or work. Rather, it is randomly established on the free room by municipalities. (Czischke & Huisman, 2018, P.157-158) The chosen dwellings for refugees are supplied by non-profit corporations who collaborate with the government. Those corporations possess the majority of the social housing premises in Holland. Recently, they intended to shelter people with low-income people who are facing difficulties in entering the private housing rental market. To shelter this class, they make use of waiting time which leads to an unacceptable waiting time of approximate 10 years in large cities. Refugees have direct access through the assigned municipality to those social housings. In 2015, the housing corporations formed an auxiliary plan for housing the huge refugee arrival. Therefore, the Dutch government made some relaxed rules in housing status holders. In response, Dutch government implemented financial measures and amended the legislation to enable refugees to be accommodated in shared housing and on temporary rental contracts,

1.3 Housing and work as fundamental domains of integration

,as long as the refugees were re-assigned to an independent social housing with a permanent rent contract after a period of time. (Czischke & Huisman, 2018, P.157-158)

The social housing approach locks refugees in socially isolated dwellings in unprepared neighbourhoods for new-comers' social engagement.

Does housing influence refugees' integration and to what extent? what are the other domains that play vital role in refugees' integration?

Alastair Ager and Alison Strang investigated a conceptual framework of integration in 2008. They wrote about their finding in the article *Understanding integration: A conceptual framework*. They based their finding on four discrete elements: First of all, documentary and notional analysis; fieldwork in backdrops of refugee settlement. The secondary examination of cross-sectional survey data and verification. (Ager & Strang, 2008, P.170) Ager and Strang articulated the main domains of integration. They commenced with the integration's foundation which is rights and citizenship. The rights for refugees in human dignity, equality and freedom, independence, security, and justice. While citizenship is essential for integration. European countries have different approaches towards the nationhood of newcomers. For instance, in Germany, Citizenship depends on "ius sanguinis" (blood ties) rather than "ius soli" (birth in the country). Children born in Germany to immigrant parents are not instantaneously naturalized. Therefore, a high degree of cultural assimilation is commonly expected. That differs among European countries. The preceding research of Ager and Strang shows that to build a successful integration program, governments must explain policies on nationhood and citizenship, as well as the rights provided to refugees. Such concerns are critical to the normative framework that shapes refugee policy and how we define "successful results. (Ager & Strang, 2008, P.173-177).

Conceptual Framework Defining Core Domains of Integration



Source: Understanding Integration: A Conceptual Framework (Ager & Strang, 2008, P.170)

Main Facilitators that ease the integration are language and cultural knowledge but also safety and stability. Language is the key to integration. In many European countries, language learning is about utilizing rough books. Whereas many refugees argued is more about communication with locals. Besides, the language teaching approach lacks cultural knowledge. For many people, personal safety was important. Refugees frequently stated that they could not feel integrated if they did not feel physically secure in a place. Often, acts of brutality or threats have shaped people’s overall opinions of a group. Stability is mainly clarified by the continuous stay and housing of refugees in one environment where they can build relationships with locals along the time. (Ager & Strang, 2008, P.176-179)

For instance, in Pollokshaws, Scotland, existing homeowners and refugees built social relationships, that connections had been ‘cut short’ when refugees had to moved away by municipality after just a short time. (Ager & Strang, 2008, P.180-184)

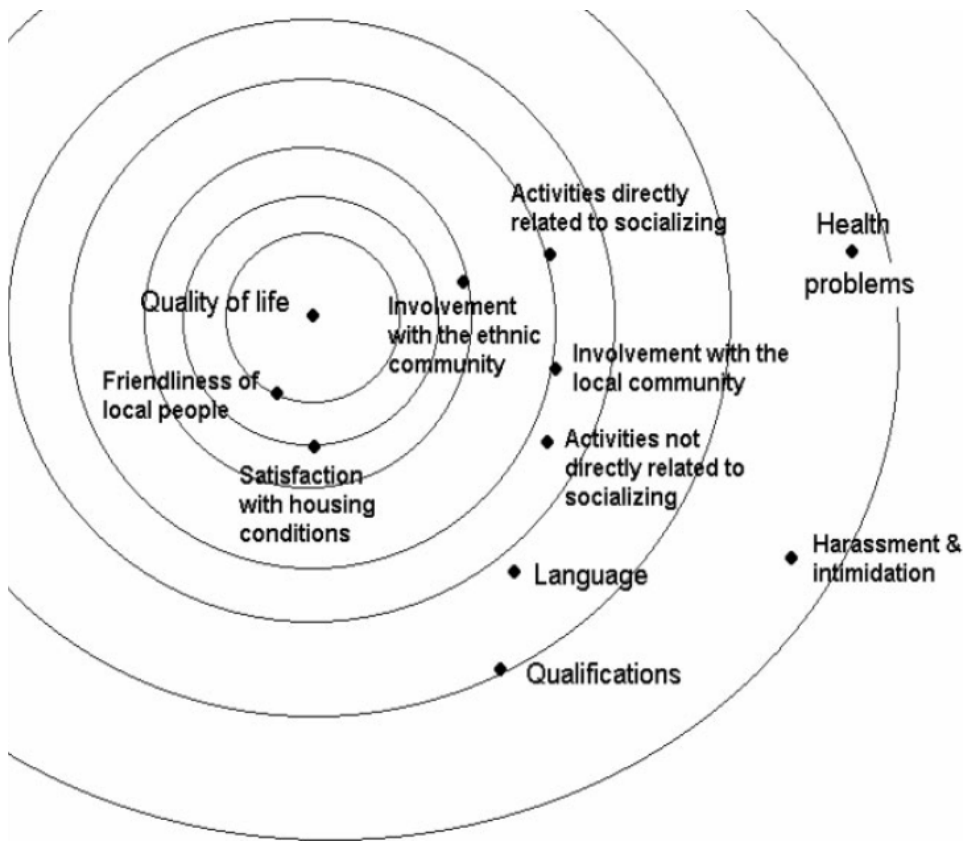
Social connection forms, according to (Czischke & Huisman, 2018), the main substantial domain of integration. This intangible area is the **absent link in obtaining a victorious integration** journey. (Czischke & Huisman, 2018, P.159). Those social connections are social bridges, links and bonds.

The social bridge is the connection with the host community. It refers to the social harmony between dissimilar ethnic groups and the magnitude of participation in the new society. Social bonds are refugees' engagement with a community from the same ethnic background or near family (bonding capital). They appreciated being close to family because it allowed them to share cultural traditions and retain established relationship patterns. They felt 'settled' partly because of this relationship. Social links indicate the connection between refugees and the state's structures, such as government services, are linked through social linkages. It also emphasizes the newcomers' ability to obtain government services. It was widely acknowledged that refugees' exceptional circumstances (lack of familiarity with their surroundings, inability to communicate in the local language, etc.) create barriers that require additional endeavour from both refugees and the wider community to achieve true equality of services' access. The following figure suggested the activity and involvement in the local society but also with the ethnic groups have the multi-dimensional influence of refugees integration. (Czischke & Huisman, 2018, P.177-181).

Ager and Strang articulate the markers and means of integration. Housing and employment compose as core means for integration, but why?

House environment has a well-documented impact on refugees' general physical and mental well-being, as well as their capacity to feel 'at home.' Local inhabitants and refugees both appreciated the continuity of ties associated with being 'settled' in a region over time. Because of the constant relocation of refugees, this system is frequently interrupted

An African women fled to Glasgow, UK
"Home is a place where to live and it is very different than house. In home, people find safety, stability and protection. Those are the main necessities for refugees" (Ager & Strang, 2008. P.172)



Relationship between Experiences and Activities of Refugees (referenced to Perceived Quality of Life)
 Source: Understanding Integration: A Conceptual Framework (Ager & Strang, 2008, P.179)

The most investigated area of integration is employment. Many relevant issues, such as promoting economic independence, future planning, encounters with members of the host society and providing opportunities to develop language skills, have consistently been identified as factors influenced by employment.

In comparison to other immigration groups, refugees are generally well educated. However, tribulations connected to the non-recognition of degrees and past work experience in the origin country stand as influential hinders to work. Many refugees are unable to show validation of past capabilities, and even if they are able, firms may not accept them.

As a result, underemployment (defined as working in a low-paid job) is on the rise.

“Integration means work for refugees”
 A young African Rwandan women who fled to France (ECRE 1999, P.42).

Finally, Education and health consider also as vital means for integration, but housing and employment play further significant role. That is the reason of concentrating on housing and employment in this research, specifically the collective models.

Social cohabitation Reference project



Startblock, Amsterdam, Netherlands

2017

Source: www.startblokkriekerveen.nl

1.4 The Startblock as a successful or failed example?

The following opinion is based on an interview done with Carla Huisman who has been studying the Startblock for more than a year and a half and on her publication about the societal integration of refugees in this housing model. (Czischke & Huisman, 2018). The interview took place on 24, December 2021.

According to her close study of the tenants' experiences in the Startblock, she argued that this example was the first and most successful cohabitation example between status holders and locals in the Dutch context. She explained that also in her article *Integration through Collaborative Housing? Dutch Starters and Refugees Forming Self-Managing Communities in Amsterdam, 2018*. The Startblock includes 50% Dutch and 50% status holders. The uniqueness of this example is that it consists of different corridors which form different groups. Each group has its own two managers. However, the community is organized by itself with different commissions such as maintenance, administration and communication commission. Tenants mostly voluntarily do those tasks, but some tasks are done as parttime employment.

This interconnected organised structure aids the creation of a balanced community and helps refugees' integration process. (Czischke & Huisman, 2018).

Another reason for success is the large community. The Startblock supplies 463 bedsits and 48 shared apartments "The bigger the project is the richer pool of people you can choose from; This will ensure that residents will meet someone with same preferences" Carlo Huisman.

However, the Startblock Riekhaven is established as temporary housing for accommodating refugees who fled to Holland in 2015. It is designed from retrofitted container units that were originally used in a student complex in Houthaven, Amsterdam. The housing corporation the Key together with Amsterdam municipality initiated the notion of accommodating the coming refugees and solving Dutch students' issue of finding housing. They established Startblock Reikhaven in 2016 on the previous sport field. (Czischke & Huisman, 2018)

Carla Huisman



Carla is a sociologist, editor of *Rooilijn* and postdoctoral researcher at TU Delft, department MBE

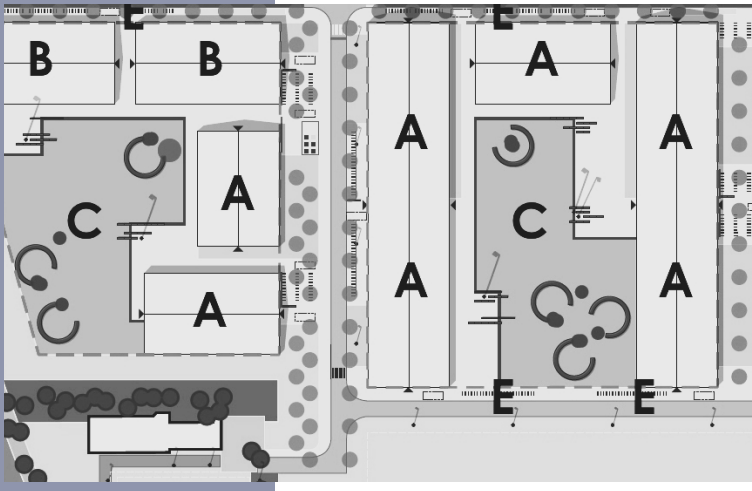
Carla Huisman is a sociologist and specializes in socio-spatial inequality. She conducts research into various issues, such as the growing uncertainty in living in the Netherlands and the influence of spatial distribution on the integration of refugees. Carla works as a postdoctoral researcher at TU Delft, Faculty of Architecture, Department of Management in the Built Environment, at the Co-Lab Research Hub.



Source: Facebook page of Startblok Reikhaven.
<https://www.facebook.com/startblok.reikerhaven>
 above: self-made swimming pool together, August 2020
 under: Syrian tenant is making Falafel “ tradition Syrian dish” for his neighbours, August 2020.

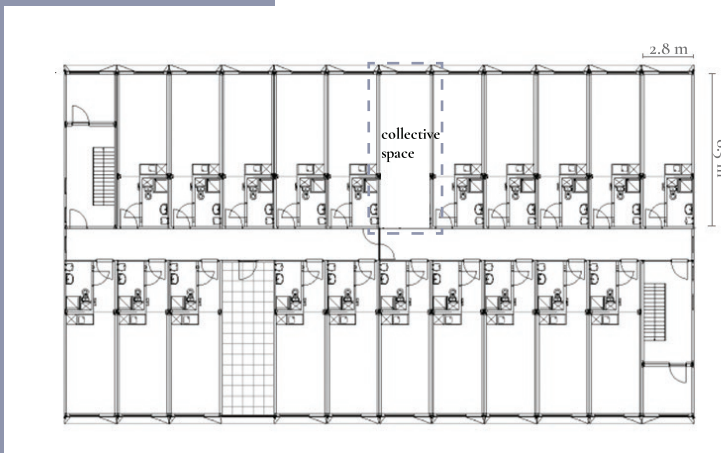
However, according to Carla and many tenants, I interviewed on 28-12-2021, the architectural layout was a hinder to successful integration. Mainly that occurs because of inadequate design for collective spaces. K.S a male Syrian tenant told me ” I would rather have a bigger space to meet more people, I live in one corridor which consists of 20 tenants, and we only have a small collective room, I like the balance that ten of the group is Dutch and the other 10 is international, but that not enough, we need bigger space to gather. Usually, you see a small group of 5-6 people that can be welcomed in this small space and they are usually from the same ethnic background. But we do have a large communal space in the largest corridor where all tenants can meet”. Many tenants see the spatial environment as a prison. Huisman siad” Too many contiguous units with a long narrow corridor. The adjacent walls are thoroughly closed which makes the spatial experience senses much further than a jail! Tenants feel disconnected from their neighbours”

The bright side is the tenants’ willingness to do things together i.e., they organize workshops, festivals and meetings. The female J. Van. D, 25 years old, optimistically talked about the communal spaces “ even though we have limited inner collective spaces to share but we do have the spacious previous sport field to utilize as outdoor collective space. We self-constructed a small swimming pool together in the former summer and we organize some workshops, playing time and testing other cultures’ dishes”



Site:

Start block is consisted of 19 corridors



Floor plan

Each unit is 2.8* 8.5 m2. It has kitchenette and bathroom.

Each corridor has just one communal space, a taken out unite of the dwellings. However, the complex has one big communal hall.

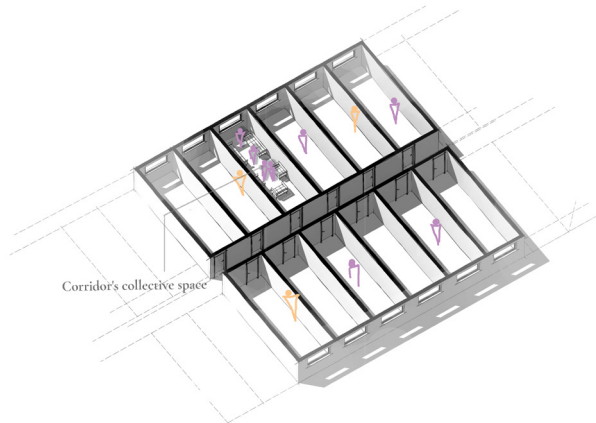
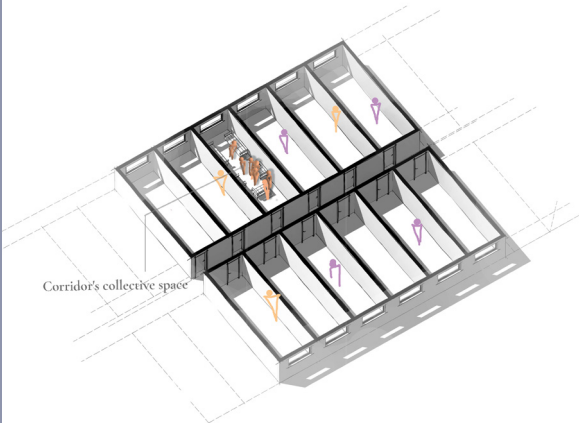
Source: StartbockReikhaven.nl



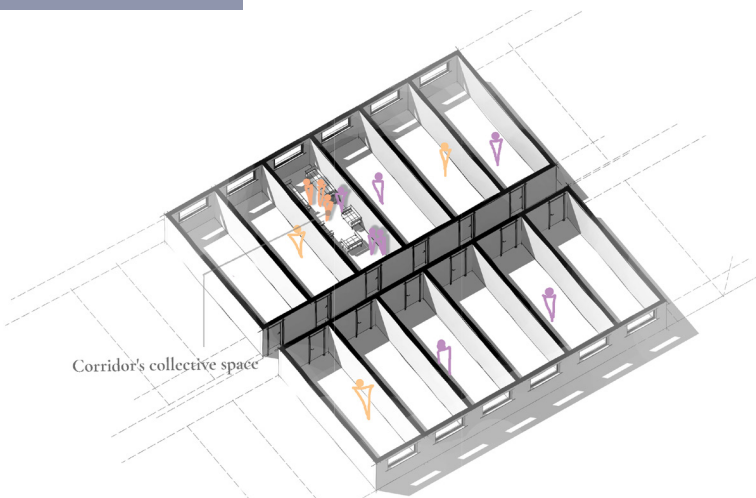
© Basma Shahoud
22-12-2021

Source: Facebook page of Startblok Reikhaven.
<https://www.facebook.com/startblok.reikerhaven>
right: activity in courtyard
left: communal space

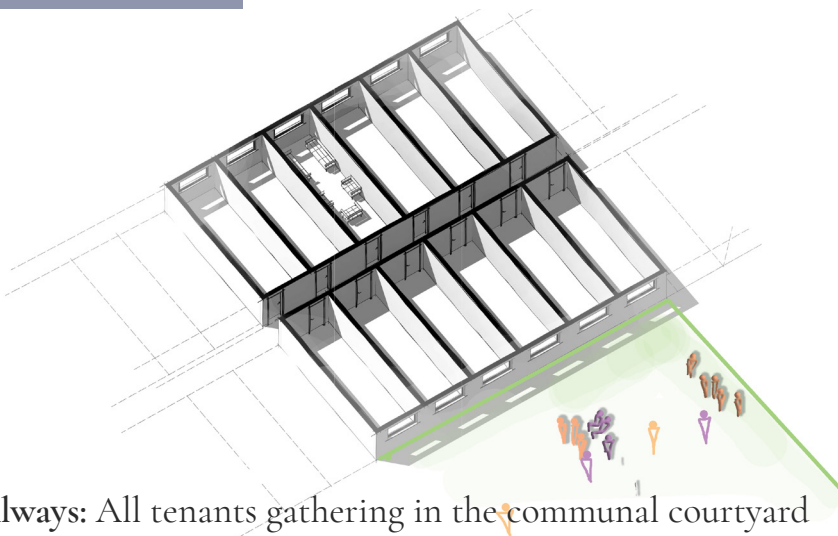
Communal spaces



Usually: Same ethnic background group



Sometimes: multiculture group gathering



Always: All tenants gathering in the communal courtyard

Source of the ethnographic study:
The use of the communal spaces analysis based on tenant's experiences.

Communal spaces
Ethnographic study

Legend

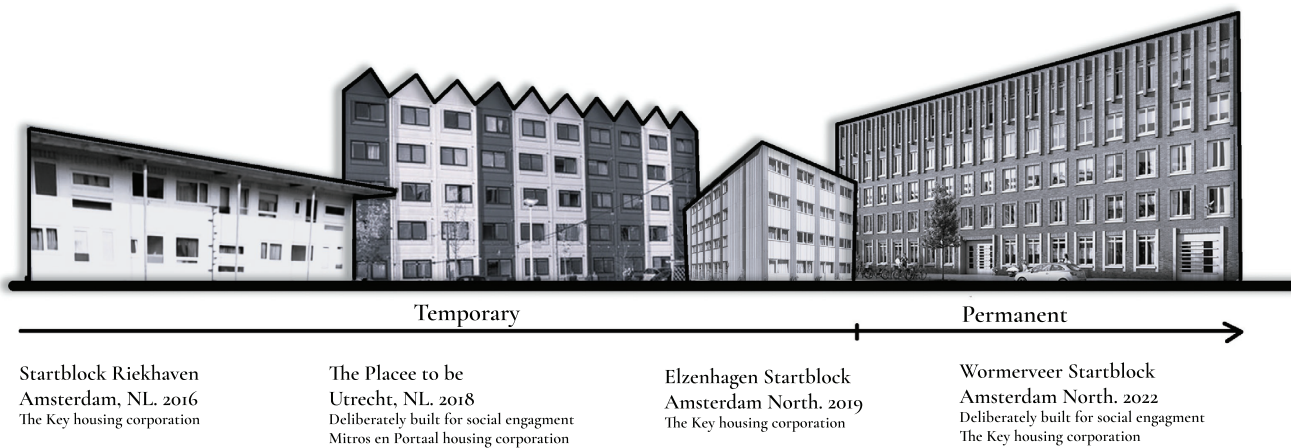


Dutch



newcomers

Because of the Startblock success, it has been mocked by numerous attempts in Holland. In 2018 The Place to be in Utrecht was constructed as a housing settlement for young Dutch and status holders by Mitros en Portaal housing corporation. (place2bu, 2018AD). However, according to Huisman, this example does not deliver promising outcomes as the former example of Startblock Reikhaven because of the lack of organization. Also in Amsterdam, The Key housing corporation with Amsterdam municipality established another temporary Elzenhagen Startblock in Amsterdam North supplying 540 modular furnished units in 2019. Ultimately, The Key corporation is now building a permanent Startblock in Wormerveerstraat, Amsterdam, it will be constructed by 2022 and it provides 48 single dwellings. This stands as the first permanent example of Startblock and it focuses on the proportion of 50% locals and 50% newcomers. It bids spacious shared living room between all private cells (Weessies, 2020).



Collage: Evolution of the Startblock example in the last 6 years and how it ends with permanent housing model

Evolution of the Startblock

1.4.1 Literature says about the Startblock:

Reflecting on Ager and Strang's investigation of integration in 1.3, it can be noticed that the Startblock meets numerous social connections and bids two means of integration: housing and employment which is studied by (Czischke & Huisman, 2018).

Housing and employment as means for integration

The housing means is crystallized by providing affordable housing for refugee and Dutch starters in South Amsterdam. The contract is temporary for 10 years for young adults between 18-and 27. This housing settlement delivers residents a good kick-off. The employment means is established through various dimensions of work potential. The community is self-organized and requests input from all tenants. That input is deemed as work responsibility i.e, volunteer and paid part-time jobs. The essence of that is to stimulate tenants to self-organize their living environment. The settlement consists of 19 corridors. Each corridor has two managers, refugee and Dutch, who receive discounts on rent. Besides, there is a maintenance team of 5 tenants who also receive discounts. Another task is the project team of five tenants who work as paid part-time jobs. These small work potentials motivate the tenant to co-work and co-organize their community leading to a satisfactory functional community. (Czischke & Huisman, 2018. P.161).

Social Connection

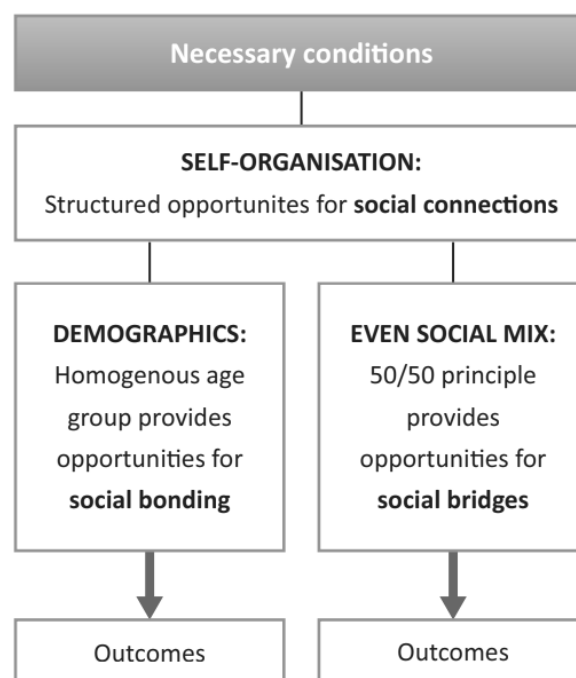
The precept of community formation is solidly embedded in the DNA of the settlement through frequent encounters between the residences. The social bridges, links and bonds are founded in the composition of the specifically chosen tenants.(Czischke & Huisman, 2018).

Social bridges are formed as a consequence of the 50/50 mix principle. The assumption clarifies that because of the even allocation of the studio as half of the refugees and half of Dutch, social bridges are established because of the intensive naturally happened social interaction. Bridging capital between newcomers and the host society. (See 1.3)

1.4.1 Literature says about the Startblok:

Social bonds are promoted through the demographic homogeneity between tenants who are from the same age and life stage. Both refugees and Dutch from various backgrounds have things in common according to their life phases. That motive the social bonds between the different groups but also between tenants from the same ethnic backgrounds.

Social links refer to the connection with the estate. The Startblok is situated in a well-linked spot by transportation. The presence of Vluctelingwerk Nederland agency assists newcomers in the integration journey. Furthermore, the daily encounter with locals helps refugees to form a better acquaintance with the culture and rules. (Czischke & Huisman, 2018. P.158-160).



Refugee integration in the Startblok model: analytical framework.

Source: Integration through Collaborative Housing? Dutch Starters and Refugees Forming Self-Managing Communities in Amsterdam. 2018, P.160.

1.5 sub conclusion

In this chapter, the literature shows that social connection to the host society plays a significant role in integration, similar to the social encounter that occurred in the work environment. These social interconnections bridge the link between the two groups, as analysed in the Startblock example. The cohabitation with locals builds social links, bonds and bridges between the two groups and eases the integration process. Therefore this research conducts a further investigation on collective housing and working in the next two chapters.

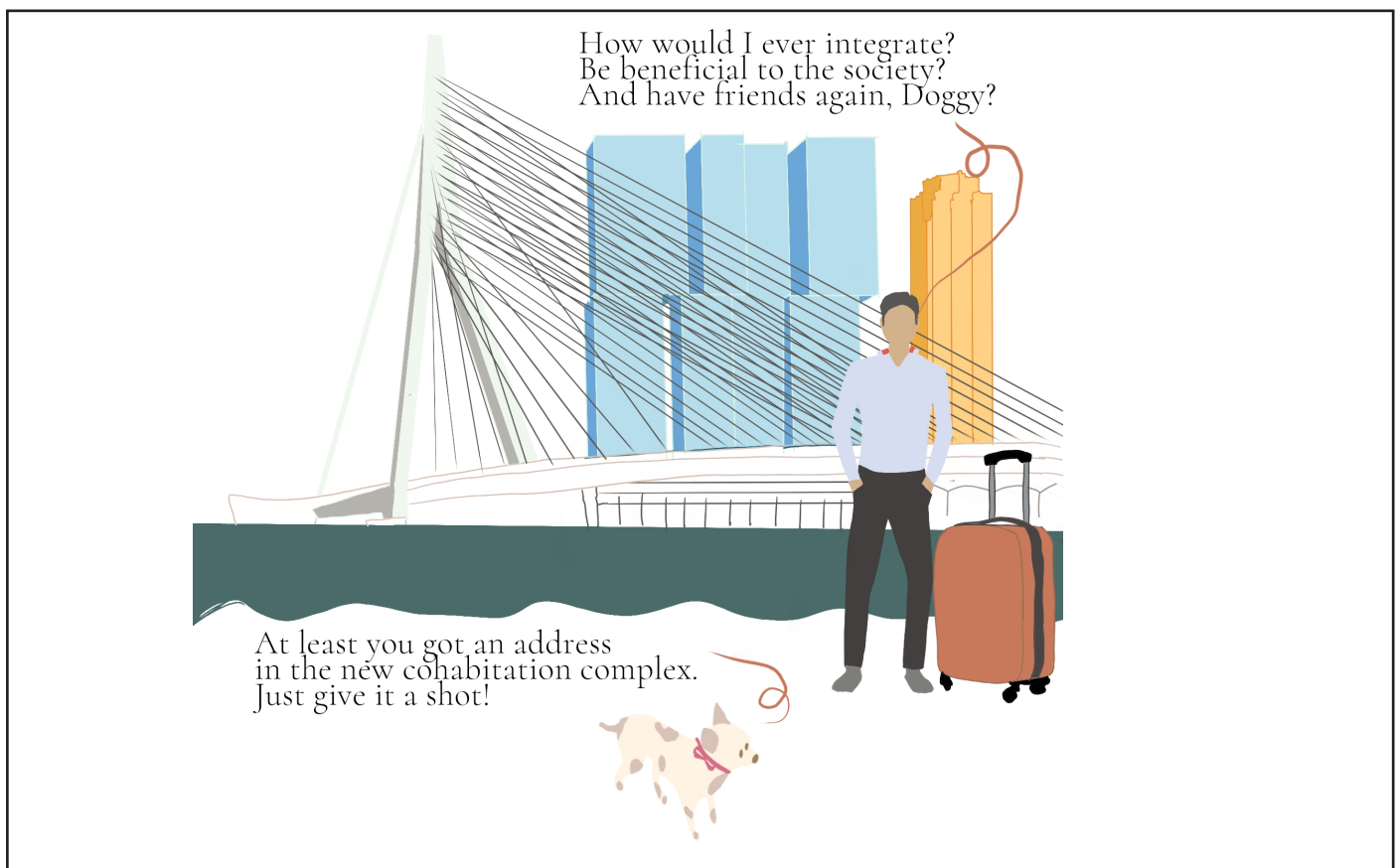
1.6 Graphic novel

Scene 1

According to the stated integration means in the first chapter, housing and employment, the perspective of the architect is to cohabitate locals and newcomers through collective living and working models. The architect himself was accommodated in an isolated social housing when he fled to Holland. Therefore, he believes that collectiveness smooth the integration process.

Ram obtains the residence permit and has right for shelter. The COA allocate him to Rotterdam municipality. After reviewing his profile as a young high qualified status-holder who wants to quickly integrate and be beneficial to society.

Ram's dilemma started after leaving the asylum seekers centre. How could he integrate? How will he ever feel at home again? How he will be beneficial for society again? He, as a newcomer, is very disappointed and does not feel optimistic at all about his new life. Ram has a dog, who presents his conscience and motivates him to socially integrate. Dog seems to be optimistic. He motivates him to go to his new address and give it a try. Because Ram got assigned to a co-housing project in Rotterdam which focus on newcomers' cohabitation with the new society. "That seems promising!!" Says Dog.



02

Coliving as a mainstream for social interaction

2. Co-living as a mainstream for social interaction

Co-living is a new form of cohousing that shed the light on the 21st issues regarding the lack of housing units especially in dense and overpopulated cities, such as Rotterdam. Moreover, it stresses the social issue of the nowadays fragile community that lacks a sense of belonging. Co-living is considered by many professionals in the urban and architectural sector as a remedy for the previously mentioned issues. (Cleaver & Frearson, 2021)

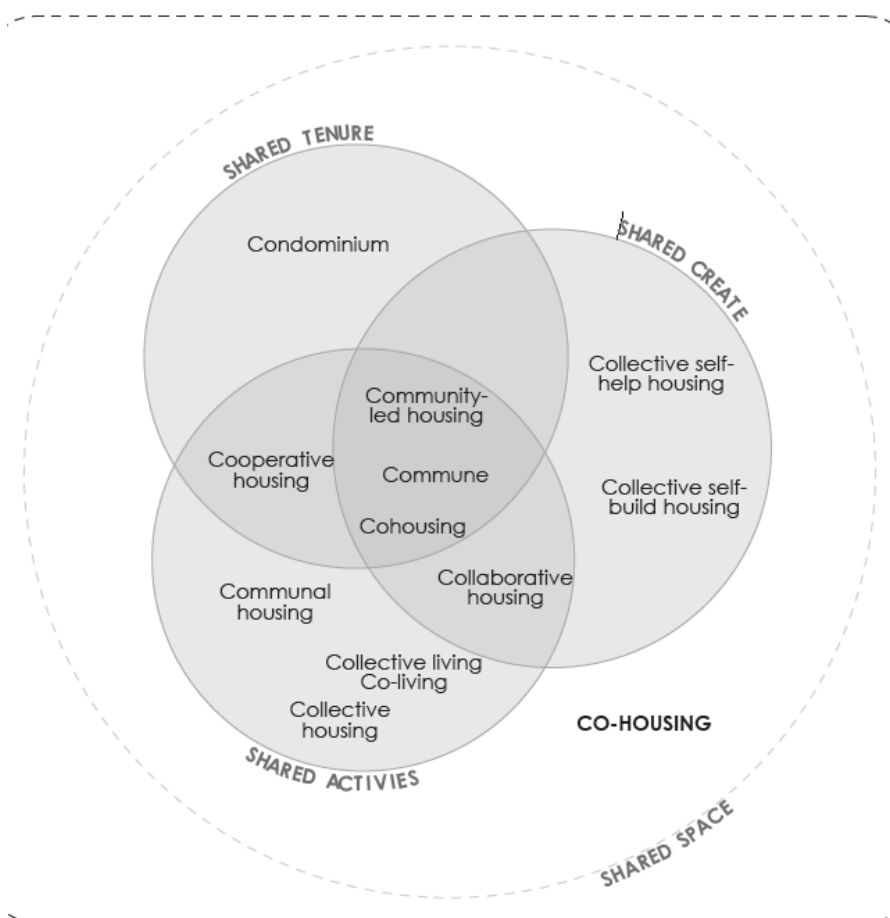
Co-living is an innovative housing approach that lacks to be studied further by scholarly research. This research suggests the necessity to study this model from distinct urban and architectural perspectives worldwide.

This chapter elaborates more on the coliving model. It concentrates on the history of cohousing and its category “coliving” and explores how and why this form became more vital recently. Then, the spatial and architectural tools of co-living will be studied. Thirdly, the socio impacts of this model are clarified. Lastly, it evaluates a Dutch example of cohousing “Centraal Wonen Tanthof”. To end up with tools that can conduct the design and with an answer to the second sub-question “. How can co-living be designed in a manner that increases social interactions between status-holders and Dutch starters?”

Coliving lexicon

Co-living is a category of co-housing. The co-housing initiative is based on collaborative creating and owning a residential space and on sharing some spaces. Whereas co-living is more about living together under one roof and sharing communal spaces, such as kitchen, living room, laundry, study, workspaces, and sometimes baths too. The only difference is that by co-housing the residents are usually the owner and creator of the place. Social wise, both focus on substantially engaging residents with the community in regular activities. (Babos et al., 2020, P. 4-14).

This research mainly focuses on co-living and its social impacts and spatial conditions. Co-living is a modern form of living where more than three biologically unrelated people live under the same roof with others who are like-minded and have the same goals and purposes in their current life stage. Where people have a minimum of private spaces, but a maximum of shared zones where they can execute daily routines. (Cleaver & Frearson, 2021, P. 8-10)



The co-housing sub-terms – social sharing-based categorization
 Source: Sharing-based cohousing categorization, 2020, P.16

	French	English	German	Dutch	Spanish
CO	<ul style="list-style-type: none"> • Habitat groupé • Habitat partagé • Cohabitat • Coopératives d'habitants • Habitat communautaire 	<ul style="list-style-type: none"> • Cohousing • Housing co-op • Intentional communities 	<ul style="list-style-type: none"> • Wohngemeinschaft • Genossenschaften • Wohngruppe (für senioren) 	<ul style="list-style-type: none"> • Samenhuizen (flamand) • Woongroepen (voor ouderen) • Collectief particulier opdrachtgeverschap • Centraal wonen • Zelfbeheer • Bouwen in eigen beheer • Kraken 	<ul style="list-style-type: none"> • Viviendas cooperativas
AUTO	<ul style="list-style-type: none"> • Habitat participatif • Habitat autogéré • Auto-promotion • Auto-construction • squat 	<ul style="list-style-type: none"> • Self-help housing • Self-managed housing • squat 	<ul style="list-style-type: none"> • Baugruppe • Hausbesetzer 	<ul style="list-style-type: none"> • Eco-dorp 	<ul style="list-style-type: none"> • Autogestionada • Okupa
ECO	<ul style="list-style-type: none"> • Ecohabitat • Ecovillages • Ecoquartiers 	<ul style="list-style-type: none"> • Ecohabitat • Eco-village • Eco-district 	<ul style="list-style-type: none"> • Ökodorf 	<ul style="list-style-type: none"> • Eco-dorp 	<ul style="list-style-type: none"> • Ecobarrio

Table. International terminology for cohousing
 Source:(Tummers, 2015)

2.1 The history of co-living

The Co-living movement existed through centuries in any historical constellation as a response to different motives. Those motives shaped a new iteration along the history was from either societal, economic, cultural, or technical impact of that epoch. In this paragraph, the main occasions of coliving through the history are discussed

Going back to the early commence of co-living BC, where nomadic ancestors lived and relied on each other in food production and protection, they always gathered as a community. (coliving.com, 2021) Then, the agricultural revolution around 10.000 BC gathered farmers in one settlement which was the first stone of sharing space, food and facilities together because these groups did not need to rely on each other for protection rather they stayed together willingly. (History.com Editors, 2021)

The medieval homes in Western Europe seem to have a shared living prototype according to the historian John Gillis. Societal and economic conditions were the reason for people to live together. Because they moved frequently, they did not have time or money to settle all services privately, therefore, they shared them. The 12th century was the initial notice of the monogamous couple in history. The difference with now, it was uncommon for couples to live alone usually they lived with family or friends. This was the situation till the industrial revolution in the 18th. Couples could afford home alone because of economic prosperity When the nuclear families are originated. (coliving.com, 2021)

After the industrial revolution in the 19th, there were endeavours for co-living again. The French theorist and philosopher Charles Fourier wrote publications about co-housing. His vision was about workers society who should work and live for themselves in their own land where they have private homes around communal shared space. This imagination was not realized until Jean Andre Baptiste Godin, an industrial leader and one of the Senate's members could implement this conception in Familistere in Guise, North France. Where he built massive multi-family dwellings and a manufactory. The workers owned and worked in the factory and maintained the communal spaces together. This specimen demonstrated a successful form of co-living. (Vestbro, 2008)

At the beginning of the 20th, life form was adapting. Families used to have a housemaid to take care of meals but that was not affordable for all social classes. Therefore, the concept of the Central Kitchen building spread widely in European capitals: Berlin, Vienna, Stockholm, Copenhagen, Zurich, Hamburg, London and Prague. The notion is that buildings must have a communal kitchen that residents can share, or where they can order meals from. The first accomplished settlement was built in Denmark, Copenhagen "Fick's collective", the building has the dumb-waiters system which allowed the food's tray to be transported from the central kitchen to the apartments. (Vestbro, 2000, P, 167-168)

Meanwhile, the Boarding House was very prevalent in the 20th because of the low rent expenditure. Residents have private rooms and share kitchens, baths and living rooms. This endeavour was because of the young adults who sought independence with a reasonable budget. (Vestbro, 2008)

Lastly, the cohousing initiative of the 1970th is the recent interpretation of collective living. It initially appeared in Denmark. They took the shape of multi family homes that surround a communal space. This Danish cohousing notion illustrated the modern cohousing movement in that stage. The uniqueness of this notion is that residents' willingness for living together. The cohousing vision is widespread in Europe in the 70th. (coliving.com, 2021)

The history of co-living in the Dutch context: Centraal Wonen

This movement was being followed in distinct European countries such as The Netherlands. In the late 60th, collaborative living groups created the so-called "Woongroepen". It was followed by the commencement of the 70th, as a similar initiative of the Danish cohousing, by "Centraal Wonen" which implies cohousing in Dutch. (De Vietter & De Vletter, 2004)

The 60th was an epoch of conversion in Holland. Architectural wise, the normal form of family Dutch houses were viewed discontentedly by Dutch citizens. Dutch people craved another independent life form because of the change in family structure. (De Vletter, 2004) Family bonds were not essential anymore in comparison with bonds with a like-minded community. (Bakker, 2006)

Acht deelplannen voor Delftse wijk Tanthof

DELFT — De Delftse raadscommissie voor stadsontwikkeling, openbare werken en verkeer kreeg in zijn vergadering van donderdagavond informatie over de acht deelplannen die voor de nieuwste wijk Tanthof zijn gemaakt.

woningen. De ontwerpen zijn toevertrouwd aan zes architecten, waardoor men een grote verscheidenheid in bebouwing hoop te krijgen. De Amsterdamse architect Albers ontwierp een nogal 'warrig' aandoend geheel, huizen die kruis-kraas door elkaar lijken te staan, met diverse kleine ongelijke pleintjes. Het architectenbureau Van Wijk/Gelderblom uit Soest hield zich voornamelijk bezig met etagebouw, huizen in enkele bouwlagen, met balkons en een fraai uitzicht, bijv. op de kinderboerderij. Laagbouwoningen wisselen de hogere bouw af.

Dezelfde architecten maakten nog een ander plan, met eenzelfde soort woningen, in de buurt van het station Delft-Zuid. De Rotterdamse architect Klunder maakte een ontwerp met veel smalle straten en pleintjes. Om sommige plaatsen worden huizen aan weerszijden van de straat door een soort loopbrug met elkaar verbonden.

lijnen liggen. Op sommige plaatsen kan de auto wel, op andere weer niet, voor de deur komen. Het ontwerp van de Hagenaars Mol en Reyenga bestaat uit woningen rond hele grote tuinen en speelplaatsen. Tenslotte is er nog een ontwerp van het architectenbureau Bakema en Van den Proek, dat gekenmerkt wordt door doodlopende straten en hofjes.

Open dag

De commissie kreeg te horen dat de ontwikkeling van Tanthof precies volgens schema verloopt. Op 2 augustus wordt een open dag gehouden, waarop iedereen van de plannen kennis kan nemen. Dat kan trouwens ook in het informatiecentrum in het stadhuis, waar een Tanthof-tentoonstelling van de deelplannen is ingericht. Volgens mededeling van de heer Groenewold van stadsontwikkeling komt er 2000 m² winkelruimte, ruimte voor enkele cafés, horeca en

De raadscommissie en deskundigen zullen een excursie gaan maken naar Hilversum, om daar het Centraal-Wonen project te bekijken. Wellicht is zo iets ook in Tanthof realiseerbaar. Verschillende groepingen hebben de gemeente gevraagd of zo'n plan in Tanthof worden ingepast. De commissie drong bij monde van de heren Notenboom (OPN) en Jacobs (PvdA) aan op het creëren van woonruimte voor werkende jongeren.

Schie

De commissie besprak ook de plannen voor verbreding van de Schie. Het terugleggen van de oostelijke oever ondervond enige weerstand, omdat de vrees bestaat dat lange vrachtwagens de bedrijven aldaar zeer moeilijk kunnen bereiken. Overigens zijn de plannen nogal inscriptend. De oostelijke oever bij de kolk moet worden teruggeleid. De Rotterdammerpoortbrug zal verdwijnen, de kolk van de Ham

Many societal, political, environmental, and economic reasons shaped this dissatisfaction of Dutch citizens and let them seek another type of life. The prominent reasons were: Dutch people were looking to further democratic life and less hierarchy in their work but also in their homes, therefore they chose a life condition where they live with a community from the same life stage and where they have an equal say and share in space and decision. That is also applied to family bonds, developing affinities within a community or group became even more vital than relationships with family, specifically, by young adults. Furthermore, the upgrade of women rights on equality, labour, and the required life conditions where they could accomplish the household jobs but run work besides. Living in a community supplied them with a place where they shared domestic work. (Bakker, 2006).

Families saw disadvantages in the nuclear family vision, family group contain just the parents and children, because of the rare social interactions. Besides, the awareness about European consumerism and environmental concerns rose significantly in that period. Those societal, economic, political, and environmental concerns grew the necessity to adapt that independent life-form and transform it to a more shared life. The Centraal Wonen initiative was the answer in the 1970th (Bakker, 2006). This initiative was applied in different Dutch cities such as Zwolle, Rotterdam, Hilversum and Delft. The example of Centraal Wonen, delft, Tanthof will be analysed in the morphological analyses 2.5.1 in this chapter. (De Vietter & De Vletter, 2004)

Trouw newspaper article: the news about cohousing movement filled Dutch newspaper. This article demonstrates how the council committee planned to evolve the district Tanthof, Delft. They had a plan to build a cohousing settlement comparable to that in Hilversum. Therefore, they planned a visit to see how the cohousing settlement in Hilversum was functioning.
Source: (Trouw, 1975)

Co-living emergence in 2010s

To conclude what is learnt from the history review: the political, societal, and economic aspects have the say in the previous epochs to let co-living initiative be established. Likewise, in the 21st the environmental issue of nitrogen crisis, the urban densification needs, and the social humanitarian needs for being together, are now the departure points of the collective living notion's re-emergence.



The trend of using co-living term between 2011-2021 worldwide. The source is accessed in 22-12-2021. This term is used continually in the last six years. Source: www.trends.google.com

In 2008 a banking crisis occurred which was followed by economic recession and the real estate bubble. That led to the emergence of the Occupy movement as a contrary movement to neoliberalism. This movement arose out of unhappiness with the inequality regarding the incomes and burdens' apportionment. Generation Z, the generation who becomes adult in the second decade of 21st century. Generation Z kept pressuring the housing market until these days. (Schmid et al., 2019, P.272-274) They seek independence within a city context in an affordable way and within a community where they can start the adulthood life-chapter. Therefore, the movement towards collective living for this young generation is based on the sense of belonging to a like-minded community. This model is usually associated with co-working spaces. Consequently, it is meant for single young professionals and creative workers (Schmid et al., 2019, P.272-274)

The model bids the minimum of private zone and provides the maximum of collective zones. Therefore, it is a method to just rent a small zone "the private room" and share the kitchen, living rooms, etc with others which makes it a very affordable manner of living. Besides its affordability and the formerly mentioned social reason, co-living is considered as an effective manner in living compact but still having access to all necessities by sharing them. Consequently, co-living is being disseminated faster in the 21st as a modern mode of living that is extracted from history (Babos et al., 2020).

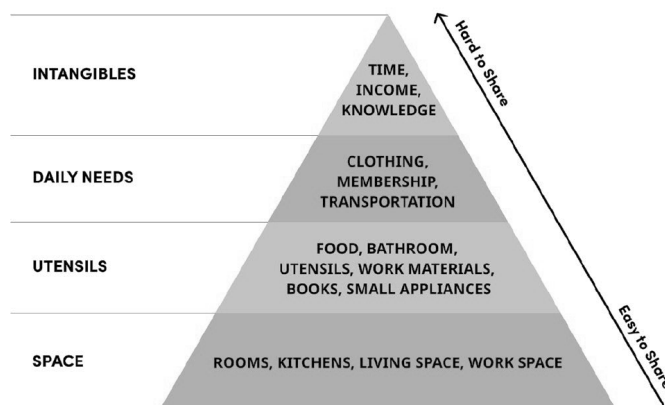
2.2 Co-living's spatial and programmatic design principles

The co-living model is spreading over the recent six years. It has managed to develop different spatial typologies that meet the social and economic principles of this initiative. Behind the coliving designs' principle stands a philosophy that centralizes the users' needs and requirements. Coliving design is usually perceived by its communal design and spirit. Because of its newness, this model explored innovative design principles but likewise is expecting challenges in the future. This paragraph will shed the light on most imperative spatial principle and design challenges. The architectural design principle will be reviewed in this research according to recent publications and studies.

2.2.1. Drive sharing to its limits

As discussed in 2.1, the two pillars of co-living are collectivity and sharing. Pushing residents to participate through design as much as possible is crucial. But realizing what can be shared and what cannot is further essential. (Co-living insights, 2021) Providing inhabitants with feasible shared options is vital. How far could sharing be pushed?

According to the sharing hierarchy, humans seem to easily share their basic amenities such as workspace, living room and kitchen. When it comes to more personal things, it can be clarified that it becomes harder to be shared such as bathrooms, books or bedrooms. Noticeable that the intangibles, time in particular, are problematic to be shared. Humans prefer to give more time for themselves. The design's role is to blend some daily basic actions such as laundry with collective space. In this example, tenants have the access to a private wash machine in a communal space. Consequently, residents still have to utilise the collective space, but they wash their clothes apart respecting their tendency of not sharing laundry and clothing with others. Thus, coliving design should contain collective space for only possible shared amenities such as kitchen, living room and workspace. Nevertheless, the spatial design should provide the hard shared utensils privately such as bathrooms. (Co-living insights, 2021, P.12-14)



The hierarchy of sharing

Source: Co-living insights, 2021, P.14. Credit: Art of Coliving

However, the international survey on coliving “One Shared Home 2030” which run across 144 different countries shows similar outcomes. This survey questioned 14000 individuals about their opinion on coliving and what they are willing to share. (Spacero, 2018)

The majority tend to share services, utilities, kitchen, living room, study workspace.

The survey participants mostly prefer to have bathrooms and groceries privately.

Bedrooms are off-limits to be shared by all people.

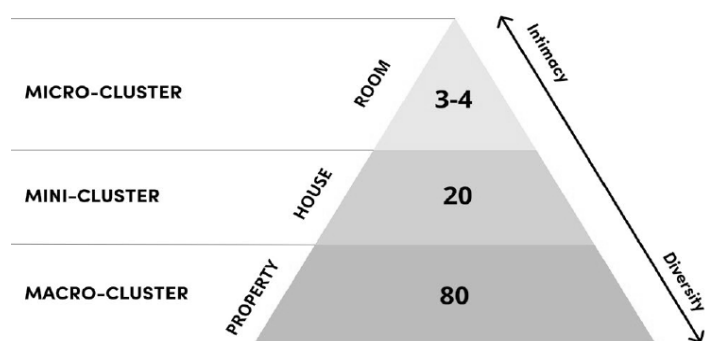
To live collectively it is essential to know the number of house-mates and the scope of the group a tenant will live in. Humans can build distinguishable relationship's sorts according to the community immensity they live or participate in. (Co-living insights, 2021, P.16-20)

Robin Dunbar, an anthropologist and evolutionary psychologist, investigated a model that illustrates the number of profound relationships and its limitation. Besides, the human ability to sustain such a relation within different group scopes. He distinguished between four sorts of relationships:

1. The family (5 connections): Humans with daily interactions. Deep relationship.
 2. The extended family (15 connections): Humans with trust and deep engagement in their personal life. Strong relationships.
 3. The Clan (50 connections): People form the personal living environment. They see each other often. They know each other mentality. Ordinary relationship.
 4. The extended network (150 connections): the person knows these people's interests and names, but they have a shallow connection. (Co-living insights, 2021, P.16-20)
- Dunbar argued that a profound connection can be created till 15 connections and this relationship would be substantial enough. However, connections with more than 50 show fragility and would not aid in building strong interaction .

The author of the book *Creating Cohousing* Charles Durrett suggested approximate 50 people in each collective cluster in order to increase the diversity but also have an accurate balance of connectivity. Creating intimacy among residents would be complicated with a cluster number of above 50 residents.

The determination of cluster size should be made according to the social aim and affordability of this design. If the design aims to create a giant community with a lot of connections the macro cluster (80 tenants) will function appropriately. If the goal is to build an intimate interaction between residents, then the microcluster (3-4 residents) is the best. Accordingly, the mini-cluster (20 tenants) works beneficially by sharing bigger scale communal spaces such as a study space. (Co-living insights, 2021, P.16-20)



Clusters size illustration according to number of residents
 Source: Co-living insights, 2021, P.19. Credit: Art of Coliving

2.2.3. Spatial design hierarchy

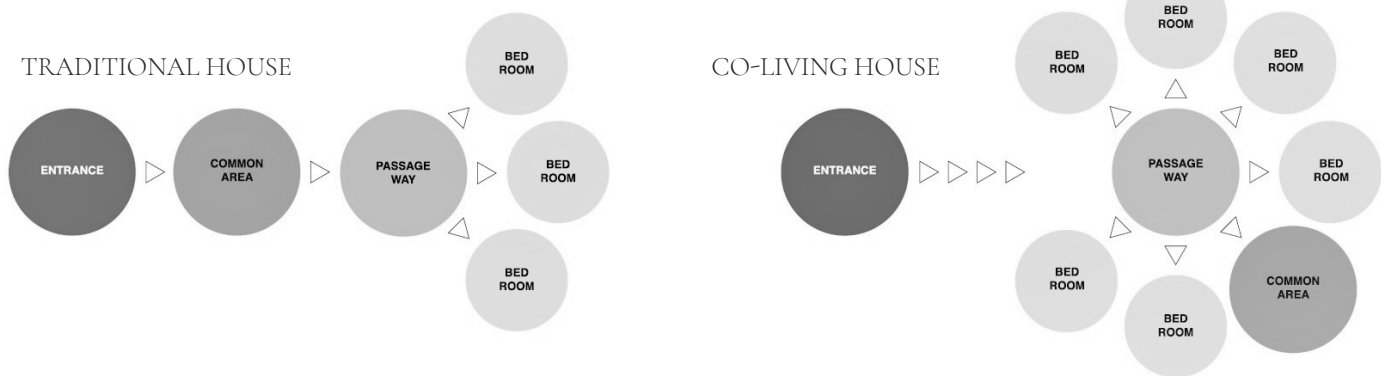
Nevertheless, a macro cluster can contain multiple mini and microclusters. For instance, a residential building that shelters 100 tenants in five stories. Each story has 20 residents. This example stands for an environment of a microcluster within a macro cluster where residents have the opportunity for strong and shallow connections to choose from. This is argued by Gui Perdrix, author, creator of the Art of Co and the Co-Liv the global organization of coliving professionals. He proposed a best intimate cluster is a range of 8-18 residents where people have the variety but also connectivity. It is an affordable and proper manner to share everything together. Contrastingly, sharing living spaces by larger clusters, more than 30, scatters the social connections. (Co-living insights, 2021, P.12-14)

Accordingly, the international survey on Shared Home 2030 ends with comparable results (Space10, 2018)

Many participants prefer to live in a small group between 4-12 person

In the coliving design, two elements play a vital role “access and privacy”. The building should have multiple access points connected to intermediate spaces to integrate hierarchy in the spatial transition: semi-public, semi-private and then private. The typical long hallways should be avoided instead, integrating spacious active intermediate space to increase the possible interaction in those spaces. Coliving and cohousing spatial design distinguishes from the conventional homes’ design.

In the illustration, in the traditional design, the order commences by the entrance, communal space, circulation (passage space) that lead to the private zone. However, that order modifies in cohousing design, it starts with an entrance leading to the passageway with a robust connection, mostly at the main axis, to the common area and then private zone. The common area is always embedded among private zone and with obvious access from the passageway. It can be concluded from the diagram the difference between the two designs is the common area location and dominance. In coliving design, the common area acts as a destination whereas in conventional design the common area acts as a transition between semi-public (entrance) and the private zones (bedrooms). (Co-living insights, 2021, P.22-28)



Spatial design hierarchy's difference between conventional home and cohousing
 Source: Co-living insights, 2021, P.25. Credit: Conner Moore

2.2.4. Design Challenges

Adaptable design challenge

Investments in a new residential model needs motives that encourage investors. The coliving is a relatively new design approach therefore investors needs proof of its viability. This affirmation needs time to be assured. This uncertainty should be solved by proposing another spare plan in case of the unsuccessful. Therefore, resilience and adaptability in the design are the keys. Floorplans of coliving should be designed resiliently that can be converted back to the traditional homes in any case. This method can secure investors to invest in this model until it proves its viability. (Co-living insights, 2021, P.28-31)

Privacy challenge

According to the One Shared Home 2030 survey, most people are concerned about privacy. Privacy is the major challenge of coliving design (Space10, 2018). A layered privacy approach could help according to Common Design (Yoh, 2019). By distinguishing the intended privacy in each zone, as mentioned in 2.2.3, and differentiating that by space size, transition, and circulation, the privacy challenge might be solved. This is an influential issue that should be deeply investigated through the design stage.

Although this model lacks further studies, it seems to offer community-based design and it proves its affordability throughout history. But it still encountering issues such as privacy and adaptability that should be further explored. (Co-living insights, 2021)

2.3 Social engagement through coliving

Co-living crystallizes a balance between individuality alongside the community. It is a model that is existed around 2010 following its former collective model, the cohousing initiative of the 70th. This initiative is based on social motives. In contrast to the former nuclear family housing model (Schmid et al., 2019, P. 272-274).

Coliving residents' mentality:

Lifestyle modification and the necessities for independence in the 21st let humans strive for an affordable interconnected housing model. The formation of this model was a consequence of the young adult generation sought for independence within a like-minded community. Thus, it is an economic social-based initiative. For many young adults owning a fully furnished apartment with a kitchenette is a surplus. Besides, domestic work is seen as a supplement. Also, cooking is considered as a leisure activity. (Schmid et al., 2019, P. 195-199).

Coliving concentrates on sharing those tasks and it incorporates minimalistic private units interconnected with spacious adjacent shared spaces. This combination states tons of social encounters due to the time spent in the communal space such as a kitchen. (Schmid et al., 2019, P. 192-194).

Co-living is a convinced life-manner for singles and childless couples among workers and professionals who tend to socialize and to share. It encourages multicultural communities because of its openness to demographic diversity. (SpaceIO, 2018)

A model based on social intentions:

Hence, urbanists claim the necessity for collectiveness rather than individuality. This is the retort for densification and social segregation that the nuclear family housing model left behind. Young adults of the working classes and professional endeavour collectiveness where they can share meals, costs, and thoughts. As a dynamic environment coliving is usually associated with co-working space which provides further social encounters. Social and ethnographic studies clarified the rise in solo-dwellers in the 21s because of the prosperity, those solos seek a balance between individuality and community's identity. Coliving strengthens individuality through community because of the specific community harmony of like-minded denizens. Residents can develop a broad range of interconnection because of the social interaction within the collective environment. (Schmid et al., 2019, P. 192-199). The social perspective behind the collectiveness in this model shows promising social-inclusive society and considered as a mainstream for social cohesion within intercultural community. (Cleaver & Frearson, 2021, P.50-54)

Communal spaces in the collective living model are becoming socialising and creativity hubs for international young workers and professionals. Residents comes often from different backgrounds because what matters in entering a collective living community is based on the person's intention to be in a community that bids suitable milieu for culture and knowledge exchange. (Schmid et al., 2019, P.273)

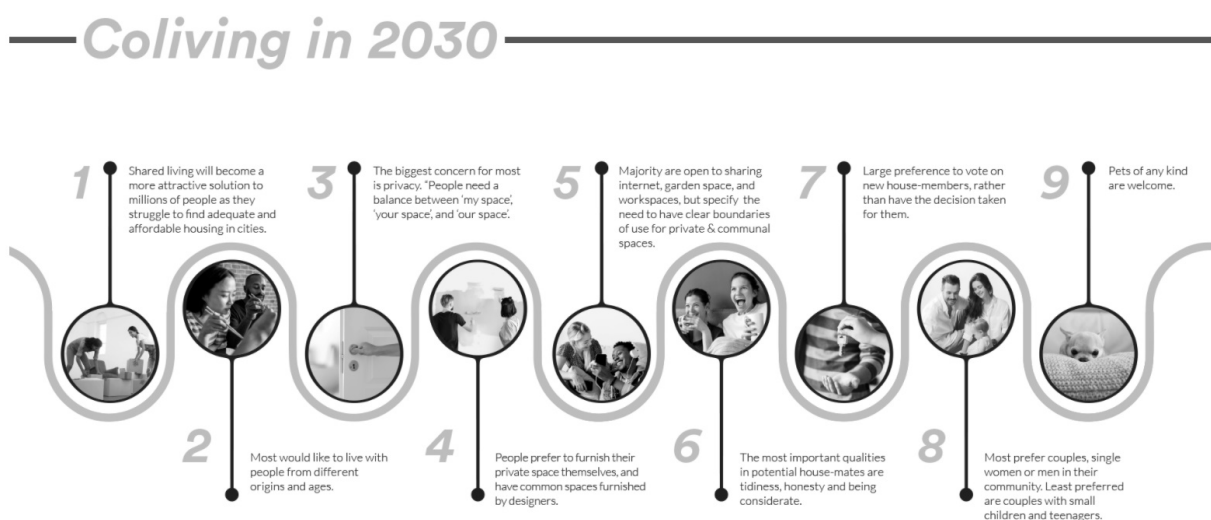
2.4 sub conclusion

To conclude, coliving is a living model that existed through history but in different approaches. The recent cohousing model has a lot of similarities with coliving. However, coliving focus more on social foundations and affordability by rising sharing level to its limit. Residents in cohousing usually co-own and co-create the settlement to enter whereas coliving is open for new neighbours with similar social intentions. It is deemed as a curative for the densification and living compact of the 21st.

It faces design and spatial challenges in this stage because of its newness, adaptable design could convince investors to implement this model further in the metropolitan tissue. (Coliving insights, 2021). The social intention is the core of this design

It faces design and spatial challenges in this stage because of its newness, adaptable design could convince investors to implement this model further in the metropolitan tissue. (Coliving insights, 2021). The social intention is the core of this design with a priority on communal spaces. It offers residents social interconnection and bids homes for similar like-minded communities.

Ultimately, the coliving model is being predicted to persist to disperse further because of its formerly noted economic and social values. (Schmid et al., 2019, P. 192-). Large cities will implement it further (Coliving insights, 2020)



The One Shared Home 2030 international survey's results about coliving
Credit: Spatial experience, www.spatial-experience.com

Coliving

2.5 case study morphological analysis



Tanthof, centraal Wonen, Delft, The Netherland
1981

© Flip Krabbendam



Tanthof Co-housing Settlement, Centraalwonen Delft

Location: Delft, Netherlands

Built year : 1981

Site area: 6875 m²

Height: 4 stories

Architect: Flip Krabbendam

Owner: Housing corporation “Duwo”

Amount of dwellings: 171 units, ordered into 13 residential groups and 4 clusters

This project is completely finished after approximately 10 years of preparation time. This project is designed with the future residents. It is realized in the social rental sector on behalf of the ‘Centraal Overleg Woning bouwverenigingen’ (COW).

It followed the design of Centraal Wonen in the Dutch context in the 70th. As other counterparts in Hilversum and Rotterdam. The design of those projects is structured in clusters. (Krabbendam, 2021)

The Tanthof Cohousing Settlement is a residential project consists of four clusters. It provides variety in shared space such as hobby rooms, meeting room, cafe and collective kitchen etc. The architectural perspective behind the design converges carefully on conveying private living spaces to collective zones where groups can collectively share facilities. The initiative aimed also to dissolve the isolation of families. The initiator, the housing cooperation and the architect, provide families with opportunity to occupy more than unite, but still share facilities with others. (Schmid et al., 2019.P.237)

Relevance

In the late 60th the perspective of Dutch citizens towards housing has changed radically. (De Vletter, 2004). The case of Tanthof Delft is an outstanding example. Therefore, this example is crucial to study in depth to understand the spatial structure and how that helps the social interaction between residents. Moreover, it is vital to acknowledge the operational structure and how that engages residents. Besides, it is a co-housing experiment that existed more than 30 years. Thus, it has obvious social outcomes of residents’ attitude.

Analytic criteria

Public
Collective
Private

Circulation
in relation
to shared
spaces

Communal
spaces

Dwelling
typology

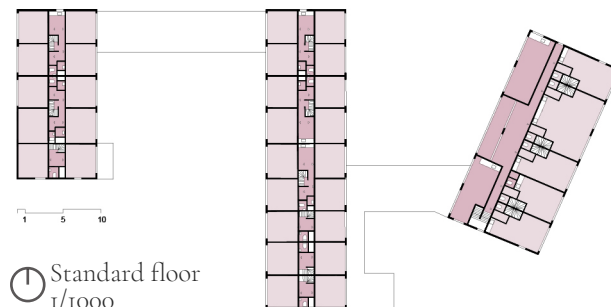
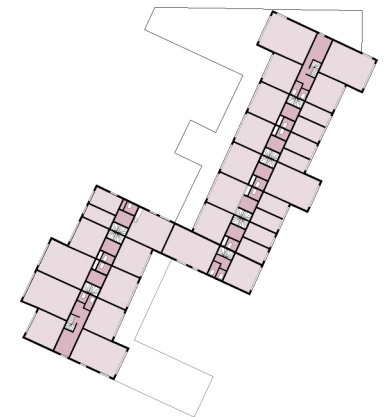
Operational
structure

What to learn:
The goal is to learn how that spatial structure is organized.

Analysis summary
The spatial structure is arranged through different layers. Starting with public space accessible for the neighbourhood and then the collective spaces. Where shared spaces, staircases, wet cells, and other communal spaces are structured. Ending up with private unites.



⌚ Ground floor
1/1000



⌚ Standard floor
1/1000

Legend

- Public
- Collective
- Private

Analytic criteria

Public
Collective
Private

Circulation
in relation
to shared
spaces

Communal
spaces

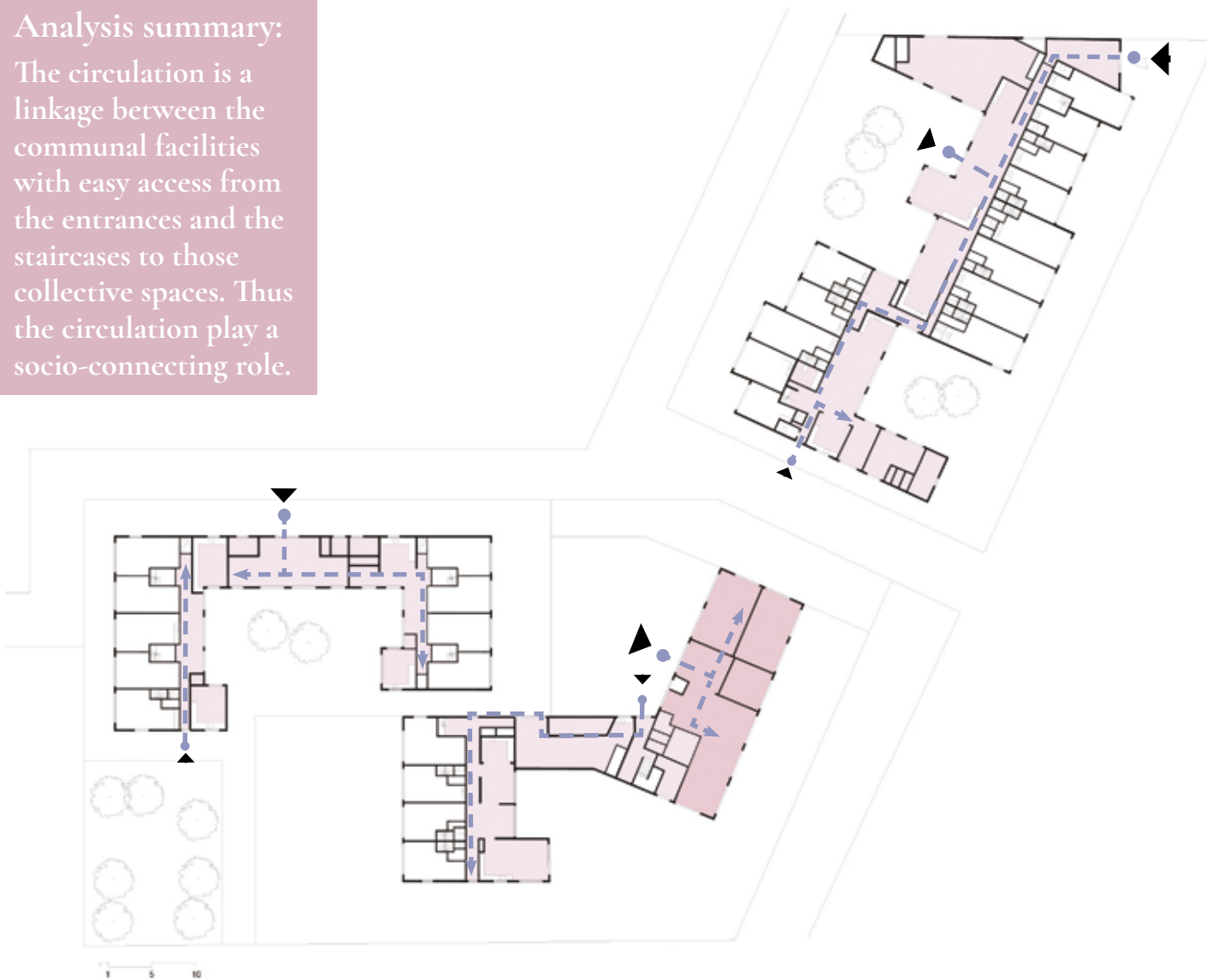
Dwelling
typology

Operational
structure

What to learn:
How the circulation is structured through different clusters ?

Analysis summary:

The circulation is a linkage between the communal facilities with easy access from the entrances and the staircases to those collective spaces. Thus the circulation play a socio-connecting role.



Legend

- Public
- Collective
- Circulation

Start route

⌚ Ground floor
1/750
Drawn by author based on *Centraal Wonen*
and history of collective living Book

Analytic criteria

Public
Collective
Private

Circulation
in relation
to shared
spaces

Communal
spaces

Dwelling
typology

Operational
structure

What to learn:
Which type of facilities can be shared?

Analysis summary:
The complex includes various social, labour and creative activities in the central area. Whereas all life-basics such as kitchen, laundry and bathes are widely embedded through floors. The total shared area is about a quarter from the whole site area, 1300 from 6700 m2. (Krabbendam, 2015)



Legend

- Hobby room
- Launderette
- Collective kitchen +dining and lounge
- Project rooms:
- Yoga, workshops, cafe, meeting rooms.



Ground floor
1/750

Drawn by author based on *Centraal Wonen and history of collective living Book*

Analytic criteria

Public
Collective
Private

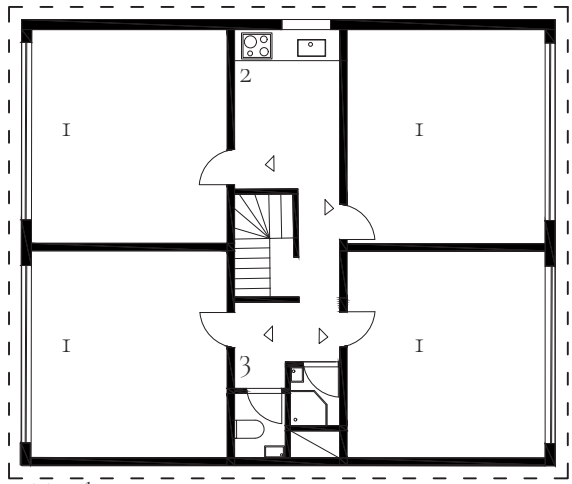
Circulation
in relation
to shared
spaces

Communal
spaces

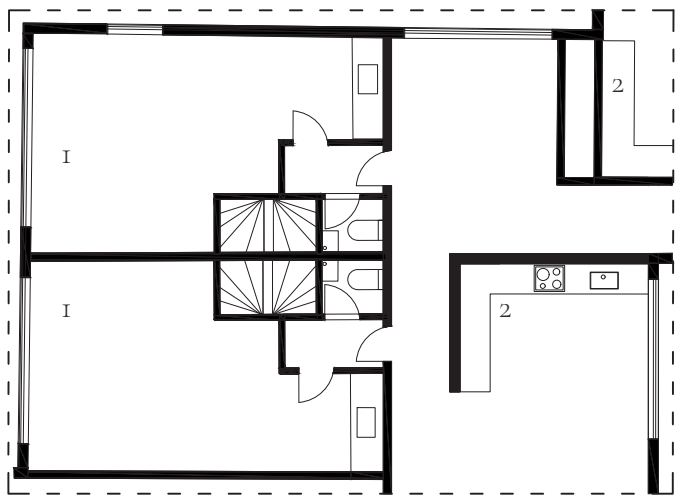
Dwelling
typology

Operational
structure

Analysis summary
 In all clusters, private rooms have been linked together through shared space. The area and the importance of this shared space distinguish according to the living facilities that are emended in private rooms. The typology I, hosts all wet cells(toilet and bath rooms) and kitchen in the collective space because the private rooms does not have any of them. In the second typology, private rooms have the minimum of daily basics facilities, such as small kitchenettes whereas the specious and full kitchen is collectively shared.



⌚ Typology 1
1/150



⌚ Typology 2
1/150
 Drawn by author based on *Centraal Wonen and history of collective living Book*

Legend

- I Dwelling units (private rooms)
- 2 Shared kitchenette/ full kitchen
- 3 Shared (toilet, bath)

Analytic criteria	Public Collective Private	Circulation in relation to shared spaces	Communal spaces	Dwelling typology	Operational structure
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Lounge area and discussion time
© Photographer: Erwin Mühlestein



Collective decision meeting
Source: Centraal Wonen website

Operational structure

It is a self-managed community by association between the cooperative and inhabitants. The operational structure gives opportunities to residents to be central in the manner in which the clusters operate. The residents are willing to participate. (Krabbendam, 2015)

There are commissions that organize the things in Tanthof. The commission focus and take care of 8 topics to handle: Money administration, new tenants administration, garden, Cafe, welcoming group, internet, trust commission and celebration commission.

Tenant are voluntary work as members in those commissions. Each year, there are two organisation meetings. (Centraal Wonen Tanthof, 2021)

Analytic criteria

Public
Collective
Private

Circulation
in relation
to shared
spaces

Communal
spaces

Dwelling
typology

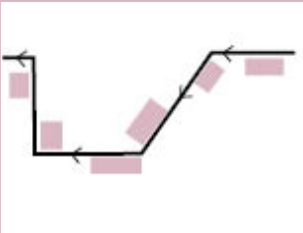
Operational
structure

Public

Collective

Private

The spatial structure is design through heierarchy, starting from public then collective and ending by private spaces.



The circulation is considered as a linkage between all collective space to increase social cohesion. It is also used as organization points.



The design offers tenants with variety of collective work, hobby and everyday-actions facilities. That minimize the individually needed for those facilities.



Dwelling typologies give residents privacy by including private room for each resident with a balance to the shared spaces.



The cooperation allows tenants to vote and to decide together.

Conlusions of the morophological analysis of Centraal Wonen, Tanthof



Organization method in the community

The picture is taken beside the communal living space along the circulation space

© Basma Shahoud

22-12-2021

Organization through circulation space

They manage and organize all domestic work on Sunday because all of them are free from work or study. They use a board on the circulation space to communicate.



Covered window of the collective kitchen

© Basma Shahoud

22-12-2021

Privacy

The architect wanted to bind the collective kitchenette of the Unites behind with the circulation space. However, users had another opinion they covered the window. Because the four tenants missed a privacy buffer between the collective kitchenette circulation space, of the whole cluster.

On site observation



1. Shared kitchenette on the first floor is turned into main kitchen
 © Basma Shahoud, 22-12-2021



2. Collective kitchen

Tanthof, Delft, NL
 © Basma Shahoud, 22-12-2021

Too many collective kitchens

The settlement is provided by 13 collective kitchen and a lot of small kitchenette for each 4 unites on the first floor.

Creating so much quantity of kitchenette let the first floors' tenants do not use the collective kitchen of the Ground-floor, rather they use the small kitchenette as a main kitchenette.

In the interview with the architect Krabbendam, who lives on the first floor since the settlement is built, he mentioned that he does not use the collective kitchen on the ground floor anymore “ *when I moved to live here, in 90th, I used to use the collective kitchen on the ground floor with the former neighbours. Nowadays, new neighbours come from different age and interests. Besides, going downstairs for cooking is not easy anymore, so I think using a close kitchen is more efficient, so I turned the tiny kitchenette beside my room to a permanent kitchen by purchasing a small oven* ” Krabbendam in the interview of 03-01-2022.

On site observation

Ethnographic analysis

Interviews and observation

The affirmation of collective space

I asked Krabbendam about what he would do if he could redesign the Tanthof settlement “*I would emphasis more on the communal space to make sure that pedestrians on street can notice the uniqueness of those space in comparison to the private dwellings.*” Flip Krabbendam.

He recommended the affirmation of collective space in the facade layout. Collective space should have another outstanding design to let visitors notice their uniqueness.



Tanthof, Delft, NL

Ordinary hidden facade layout of the communal spaces

© Basma Shahoud

22-12-2021

On site observation

1. Ethnographic investigations on the residents' frequent use of communal spaces and its impact on social interactions

The aim is to understand the residents' frequent use of shared spaces. In order to acknowledge the density of social interactions that are been created in that space which helps the community formation. Accordingly, this investigation helps in choosing suitable shared spaces to include them in the design.

Results

Too much collective space that are spreading over the clusters which leads to small groups formation, hence, it boosts the social interactions. That highly depend on the neighbours character in each cluster. In general, as Krabbendam mentioned, there is homogeneous relationships between all resident except one women, 43 years old, that lives on Ground floor. She mentioned "I do have my kitchenette and I do not come across anybody, I just use my front door which is adjacent to the street, so why I would make connection? "

Krabbendam "The design offer her all facilities individually within her unite which leads to less interconnection beside her antisocial attitude'

2. Residents' interviews, main questions:

- Why did you choose to live collectively?
- How do you evaluate the co-living experiences? Positively or negatively and why?
- How much time a day do you spent in the shared spaces? Do you use them by necessity or by willingness?
- Do you build friendship through shared facilities? How?
- Do you enjoy the social side of shared spaces? Why?

3. Interview with architect Flip Krabbendam

In 03-01-2022.



Tanthof, Delft, Netherlands

The frontdoor of private unite linked to the street creating individual circulation instead of collective one.

© Basma Shahoud

22-12-2021



Philip Krabbendam is the designer of Centraal Wonen Tanthof, Delft. He is a number of residential communities and, as a member of the editorial board of 'Gewoon Anders', is involved in the National Association of Central Living. He designed Central Living Tanthof, delft
In 2011, he obtained his doctorate at TU Delft for his research into qualities in the built environment that invite involvement

2.6 Learned architectural design toolkits and recommendations

Design toolkits derived from theory in chapter 2:

- Recommended cluster size 8-18 tenants. The small clusters can be embedded in macro cluster of 80 people.
- Main easily shared spaces are kitchens, living rooms, work and study space.
- Spatial structure starts with semi-public to semi-private (circulation space) that should be strongly interconnected with communal spaces then leading to private spaces.
- Adaptable design approach is recommended to convince operators and investors.
- A layered privacy design and a balance between collective and private is also recommended.
- Circulation plays socio-connector role.

2.7 Graphic novel

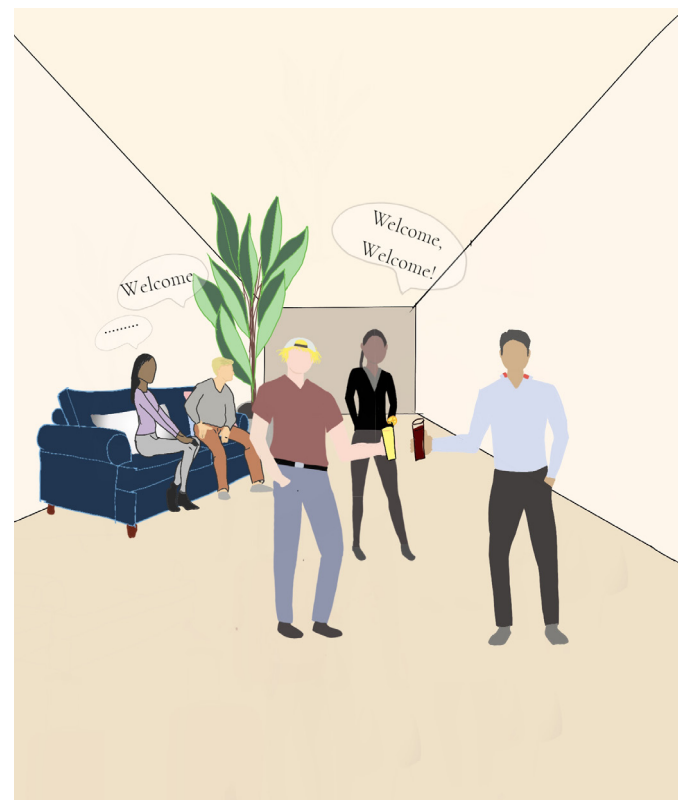
Scene 2

When Ram arrived at the settlement, a residence and the cooperative contact person guided him. Jan: a Dutch stater who works a full-time job by the cooperative, he aids new residents to settle down and arranges voting meetings to choose collectively new residents. He lives in the settlement because he owns a share in the cooperative and believes in the power of collectiveness.



Scene 3

The cooperative allocates a contact person who solve issues in the community as Jan. The community is self-organized and operates with diverse voluntary commissions composed of residents. For instance, the reparation commission is responsible for arranging reparation for all broken amenities. The welcoming commission holds meetings among residents to vote on the new-coming residents and they guide the new tenants. Almaz works voluntary by the resident's administration and arranged with the welcoming commission an event to welcome Ram. That happened in the lounge area provided by the design.



Scene 4

The architect's design approach is to provide residents with private bedrooms and bathrooms. Other daily routines are collectively shared, i.e. kitchen, living rooms, laundry, working and reading.

The tenor behind that is socially: to create a milieu for social interaction within all necessary amenities so that all residents utilize it and socialize. Economically, the cooperative will calculate the rent cost per usable area metre per person. The private zone plus the proportion of the shared spaces that are usable by this private unit costs are calculated. In this manner, tenants pay less rent cost because they share the collective spaces' cost. (Genossenschaft Kalkbreite, 2018)

However, Ram was sitting alone in his private room and closed himself off. Dog recommended him to go and have a look. Ram is hungry so he went to the collective kitchen to cook. He saw there Jan. He was eating with his girlfriend Almaz. Almaz is an Eritrean status holder and works as a seller in the retail department of the settlement. They invited him to eat together. Ram told them about his study and passion for the arts and sculpture. When Jan informed him about the Co-atelier in the settlement.

This was Ram's first social interaction in the community. It occurred in a collective milieu spontaneously.



03

Co- working as a community creator and creativity exchanger

3. Co-working as a community creator and creativity exchanger

To engage the intended target group of status holders and Dutch starters further in the community and to assemble a community that benefits from all residents' capabilities, the co-working model can be embedded in Rotterdam's metropolitan context.

This is investigated in this chapter. This chapter concentrates on the co-working model. It starts with the urban initiatives of the 21st, mainly the productive city and the shift towards shared working space. Then it studies the spatial toolkits of co-working design and its relation to housing. After that, this chapter focusses on the social value of the co-working phenomenon. Lastly, analyses of a case studies that combine the shelter-labour gene in its spatial design. The purpose of this chapter is to identify an answer for the third sub-question "How can co-working be spatially articulated in relation to the housing environment and which social impacts does it have on community formation? "

Co-working: lexicon

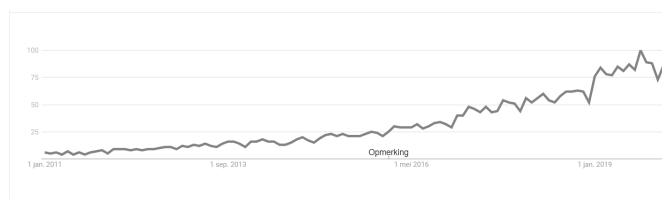
A co-working space is a place where more than three companies or individuals share that place entirely or partially. Co-working space is usually being rented to those companies by an external landlord or by an external cooperative. However, the participants can also cooperatively possess the place and co-work there. (Clever & Frearson, 2021, P.8)

3.1 The productive city and the new shift towards co-working

In the post-industrial era, factories and production functions were extracted out of cities. By necessity, urbanists add wisely some leisure, essential facilities and some public amenities such as restaurants or some offices. But the real production for non-professional workers has left the city and settled in its periphery. The new urban strategy after the industrial revolution has systematically excluded the program of production out of cities. The new metropolitan city is not considered an integral city anymore. Nowadays, urbanists notice the exclusion of labour possibilities for low-skilled workers who live in the metropolitan context. Besides, during the industrial revolution, the cities' urban planning focused on implementing housing, mainly the nuclear family typology. That led to further social segregation. Recently, those social and urban warnings are noticed by urbanists. Therefore, European cities argued on the new urbanistic approach "the productive city" which encourages the re-emergence of co-production again in cities. That does not include heavy production, but the small-scale factories are welcome again in the urban tissue. (The Scientific Council of European, 2017)

Introducing the co-production and co-working again in the city will lead to a sustainable context in which further possibilities for recycling, co-production, proximity to labour, and social interaction are substantially included.

Meanwhile, the sharing model spreads worldwide. Co-living, co-production and co-working are the contemporary urban approaches to confront gentrification and incorporate shelter-labour in a harmonious context in order to limit social segregation. Urbanists are welcoming co-working in dense cities to enhance the spatial compact working environment and to offer extra labour opportunities. There is a noticeable shift towards "Co" approaches. (Cleaver & Frearson, 2021, P.137-139)



The trend of using co-working term between 2011-2020 worldwide. The source is accessed in 22-12-2021. This term is used increasingly in the last eight years. Source: www.trends.google.com

3.2 the spatial relationship between labour and shelter

The re-introduction of work functions again to the current cities face, leads the urban design to welcome the mixed-use development again in the cities. A mixed-use project is defined by the Urban Land Institute (1987) as a cohesive plan with three or even more functionally and physically combined revenue-producing uses. (Hoppenbrouwer & Louw, 2005, P.970)

This development has been investigated well in the urbanism's practical sector whereas few have studied it deeply in the theoretical terms. Jan Jacobs discussed it theoretically in his book *The Death and Life of Great American Cities in 1961*. Jacobs argued that consolidating various uses in an urban mixed-use grain forms vibrant districts where all life-basics are situated in one grain. The main functions stand for employment, housing, recreation and transport. (Hoppenbrouwer & Louw, 2005, P.970).

This paragraph will shed the light on the housing and working uses in a metropolitan context. But what are the strategies to mix those uses? Alan Rowley demonstrated a conceptual model of mixed land use in his article "*Mixed-use Development: Ambiguous concept, simplistic analysis and wishful thinking?*" (Rowley, 1996, P. 85-97). Rowley linked those models to spatial scales: the scale of a building, block, district or the scale of a city. Rowley only focused on three-dimension whereas Hoppenbrouwer & Louw investigated a fourth dimension in *Mixed-use development: Theory and practice in Amsterdam's Eastern Docklands 2005*. The conceptual model of mixed land-use distinguishes between four dimensions of mixing land according to the formerly mentioned

spatial scales. (See figure).

Shared premises as a first dimension refers to multipurpose use at a specific location which is the scale of a building, such as premises in a building or apartment that are only utilized by one family. People are increasingly working from home which can be understood as a more private and informal approach of combining residence and working in a specific environment, home-working is considered as a perfect example.

The horizontal dimension refers to the scale of blocks, district and city. Where various blocks occupy different uses. The mix-uses are connected on the flat surface of those blocks. i.e., the first block holds housing, the second working and the last contains housing use again.

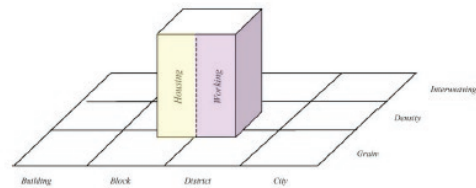
The vertical dimension refers to the scale of a block and building. Land uses are frequently vertically combined by clustering two or more functions over each other, with homes above stores being a well-known example. Because the ground surface is being utilized for more than one function, this layered use of land is commonly referred to as a hybrid development. (Hoppenbrouwer & Louw, 2005. P. 972-974)

The fourth dimension is the time dimension which is only studied by (Hoppenbrouwer & Louw, 2005). The authors saw the importance of including this dimension in Rowley's dimensions. The interweaving of land uses, or the extent to which urban services are spread within a confined region is a component of settlement texture that should be included. The scenario of a grocery shop that is divided

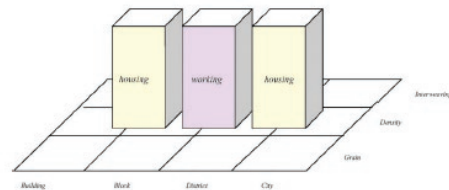
into four single units which are dispersed over a large region is a suitable illustration. Even though the four units all belong to the same type of land, the interweaving of functions in the territory grows as the number of territories grows but the type of activities remains the same which is the grocery function. (Hoppenbrouwer & Louw, 2005. P. 972-974).

Ultimately, the predilection for one dimension is mainly based on the targeted spatial scale of the mixed-use land. This means, for instance, if the wished effectiveness radius of mixed-use development is a city, then the horizontal dimension will function perfectly. Sometimes, more than one typologies are integrated together. (Hoppenbrouwer & Louw, 2005 .P. 974).

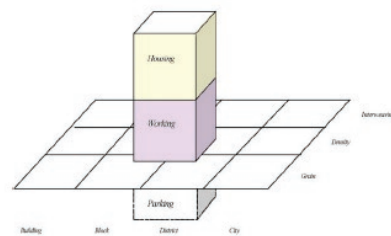
I. Shared premises dimension (point)



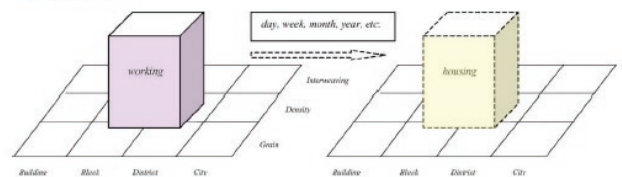
II. Horizontal dimension



III. Vertical dimension



IV. Time dimension



A conceptual model of mixed land use for four dimensions.

Source: Mixed-use development: Theory and practice in Amsterdam's Eastern Docklands(Hoppenbrouwer & Louw, 2005, P.973). It is based on Mixed uses and urban design (Roberts, M. & Lloyd-Jones, T. 1997)

It is coloured by author

3.3 Social engagement through collective working spaces

How does co-working environment cause social interactions? How does a co-working space lead to collaboration and knowledge exchange?

Those questions will be investigated through the study of ‘‘Spatial Configuration and Users’ Behavior in Co-working Spaces’’ (Ondia et al., 2018). The proxemics is studied in two co-working spaces. The investigated co-working spaces are located in Chiang Mai, Thailand including Punspace Nimman and Punspace Tha Phae Gate.

The community is comprised of start-ups in the different tech industries. However, this research will focus on the results gained from the proxemics study in those co-working spaces. The ethnography techniques of the proxemics study concentrate on the focus, collaboration, socialise and learn fields.

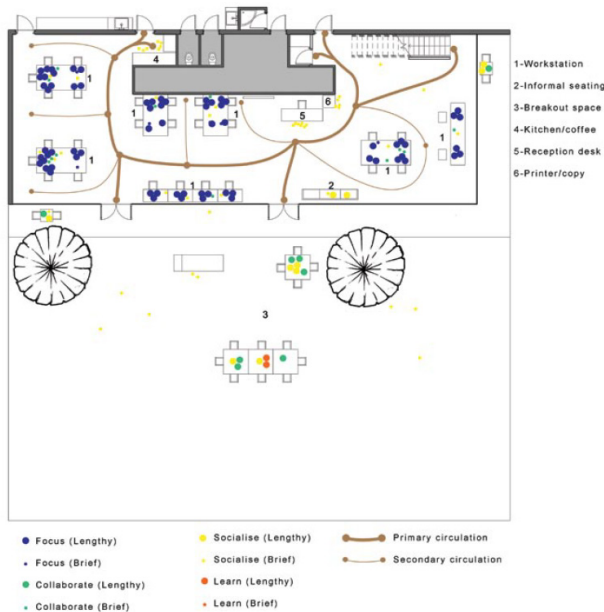


Figure 1. Behavioral map of users’ activities at Punspace Nimman.



Figure 2. Behavioral map of users’ activities at Punspace Tha Phae Gate

Behavior setting	Activities							
	Focus		Collaborate		Socialise		Learn	
	Frequency of activity	%	Frequency of activity	%	Frequency of activity	%	Frequency of activity	%
Workstation	74	100	12	60	14	25.5	-	-
Informal seating	-	-	-	-	3	5.5	-	-
Breakout space	-	-	8	40	17	30.9	2	-
Kitchen/coffee	-	-	-	-	7	12.7	-	-
Reception desk	-	-	-	-	7	12.7	-	-
Circulation routes	-	-	-	-	2	3.6	-	-
Printer/copy	-	-	-	-	5	9.1	-	-
Total	74	100	20	100	55	100	2	100

Table 1. Frequency of users’ activities in various behavior settings at Punspace Nimman

Behavior setting	Activities							
	Focus		Collaborate		Socialise		Learn	
	Frequency of activity	%	Frequency of activity	%	Frequency of activity	%	Frequency of activity	%
Workstation	108	99	18	69.2	17	18.7	-	-
Informal seating	-	-	-	-	17	18.7	-	-
Breakout space	1	1	8	30.8	8	8.8	2	100
Kitchen/coffee	-	-	-	-	12	13.2	-	-
Reception desk	-	-	-	-	12	13.2	-	-
Circulation routes	-	-	-	-	19	20.8	-	-
Printer/copy	-	-	-	-	6	6.6	-	-
Total	109	100	26	100	91	100	2	100

Table 2. Frequency of users’ activities in various behavior settings at Punspace Tha Phae Gate

Source: Spatial Configuration and Users’ Behaviour in Co-working Spaces 2018

According to the shown proxemics study in the previously mentioned examples, breakout rooms in the first example of Punspace Nimman and the informal seat area in the second example carries a noticeable percentage of socializing behaviour. The difference in the socialising percentage between the two examples referred to the spatial arrangement. The size of the breakout space in the first example contributes to further social interactions. In the second example, breakout rooms are restricted in size which impeded the social interactions. On the other hand, in the second example, high social interaction proportion occurred in the informal seating venue beside the main circulation route. This can be concluded because of the provided amenities and its close orientation to the main entrance. Although workstations carried significant social interaction in both examples, that does not occur in an extended period because of the need for high concentration in the workplaces. Namely, extensive interconnections for an adequate time are carried in breakout and informal seating spaces. (Ondia et al., 2018).

Users' collaboration has similar outcomes as the socialize percentage. The main productive collaboration occurred in workstations and breakouts. Employees of the two examples agreed on the productive information exchange in the co-working space and its amenities. Some users learn new knowledge about other labour sectors while they are using breakout rooms. They believe in the high knowledge exchange in coworking spaces. (Ondia et al., 2018).

What can be concluded from this proxemics study, co-working space highly promotes social interconnection between diverse professional backgrounds by providing a spacious venue for social interaction, collaboration and knowledge exchange.

Regarding the architecture role, attention should be paid to the size and the spatial structure in which spaces are organized. It is important to provide workers with spacious workplaces to encourage interactions. Also, break spaces and informal seating should be connected to circulation and well-furnished to allow big groups to gather and interact.

3.4 sub conclusion

According to what is investigated in the former chapter, it can be concluded that the metropolitan context needs to re-welcome the production and work potential again in its tissue. That is the new call for many European cities which is called the productive city. However, the mixed land needs to be further investigated theoretically as (Hoppenbrouwer & Louw, 2005) claimed. Although the theoretical investigation is lacking, practical wise there are numerous approaches to mixing lands. That is what Rowley, Hoppenbrouwer and Low attempted to clarify. There are four dimensions, and they differ according to the desired target area. Finally, introducing work possibilities to the current cities faces is becoming common. Consequently, collective workstations is being utilized and widespread in the last 10 years. Collective working spaces have numerous advantages discussed in 3.3 but the main stress is the social connection and knowledge exchange.

3.5 Work-shelter case study morphological analysis



Kalkbreite, Zurich, Switzerland
2014

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Kalkbreite

Location: Zurich, Switzerland

Built year : 2014

Site area: 22900 m²

Height: 9 stories

Architect: Müller Sigrist Architekten

Owner: Kalkbreite housing co-operative

Amount of dwellings: 88 flats+ commercial and services

Cinema at the ground floor level open for the neighbourhood. It is designed with height of two floors and adjacent to the main street



© Martin Stollenwerk



Housing with relation to the courtyard

offices

Mostly health care

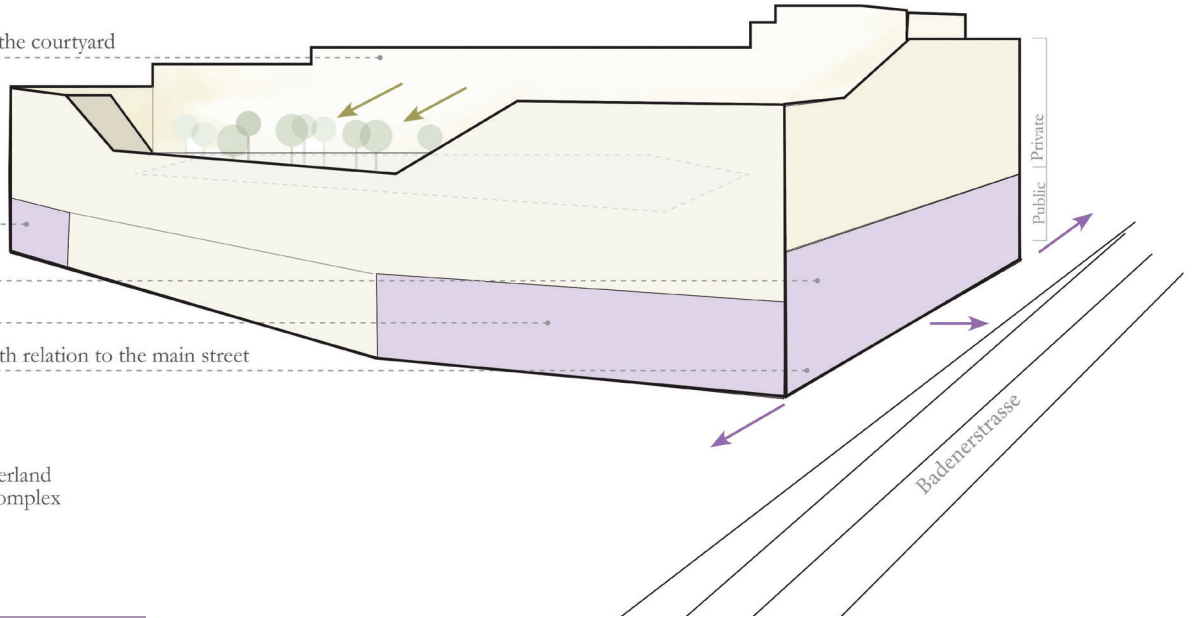
Mostly offices and studio

Retail and commercial with relation to the main street

Housing

Working

Kalkbreite, Zurich, Switzerland
Residential commercial complex



Kalkbreite, Zurich, Switzerland, 2014

Residential commercial complex which links the site again to the city by providing vigorous commercial plinth and by adding public green courtyard. It follows the vertical dimension (see 3.2).

Analytic criteria

Housing
Working
relation

Public
Collective
Private

Communal
spaces

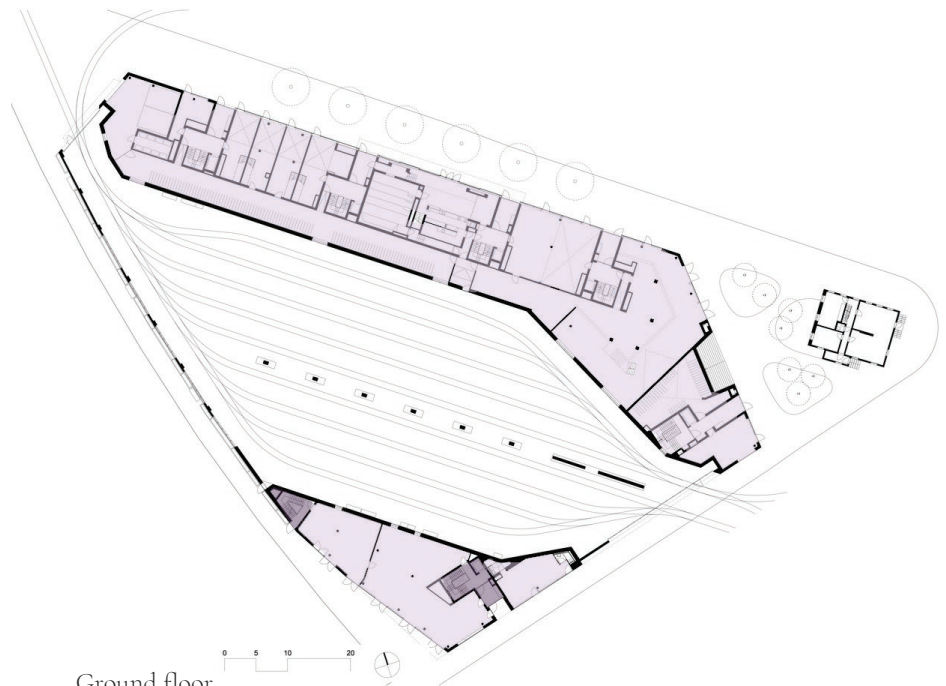
The complex starts with an open plinth to the public where it is occupied by various stores, shops, cafe and cinema. It offers the neighbourhood with important premises such as the health clinics and day care on the first floor.

Conclusion:

On the ground floor level and the first two levels it supplies the area with a lot of accessible facilities to the public and then it gradually starts to contain more collective spaces for residents where the residential apartments are situated

Legend

- Public
- Collective



Ground floor

Source: A history of collective living, (Schmid et al., 2019). P.261



Second floor

Source: A history of collective living, (Schmid et al., 2019). P.261

Analytic criteria

Housing
Working
relation

Public
Collective
Private

Communal
spaces



Third floor
 Source: A history of collective living, (Schmid et al., 2019). P.26r

Legend

- Public
- Collective

Analytic criteria

Housing
 Working
 relation

Public
 Collective
 Private

Communal
 spaces

Collective space in the residential floors.

Each residential floor has different communal spaces and premises. That provides large diversity for tenants.

Third floor

Source: A history of collective living, (Schmid et al., 2019).

P.261



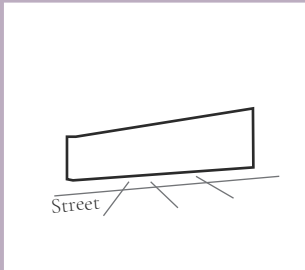
Analytic criteria

Housing
Working
relation

Public
Collective
Private

Communal
spaces

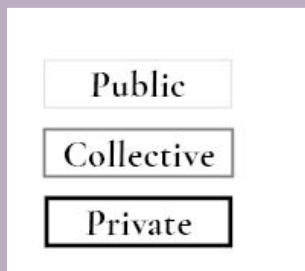
Learnt conclusion from the Kalkbriete morphological analysis



Open public plinth to the city as a welcoming gesture that re-invigorates the site.



Using the vertical approach to blend working and housing



Start from Public function, then collective blended afterwards with private spaces.



Balanced shared space.
Introducing the balance of sufficient shared space instead of surplus spaces.

3.6 Learned architectural design toolkits and recommendations

Implementing collective workstations is essential to assemble more robust social connections.

However, that can be mixed accordingly with housing development. For the scale of building and block, similar to the situation of Walenburghof planning, the vertical dimension works well similar to Kalkbreite example. To establish functional social interconnection between employees, the research reveals it is mainly occurred in breakout space that are linked to the workstation. To boost socialize activity it is fundamental to introduce those spaces in a balanced relationship to bureau space where the employee only focus on their work.

3.7 Graphic novel

Scene 5

Jan told Ram the opportunity to rent a diminutive zone in the atelier space and produce artworks that can be sold. Ram found that an appealing productive notion. However, Ram has the priority to rent in the co-working spaces because he is a resident in the cooperative. The rent contract might last from one to ten years, with an opportunity for an extension. (Genossenschaft Kalkbreite, 2018)



Scene 6

The architect provides the settlement with diverse co-working spaces that are meant mostly for tenants and they have the priority in leasing them. The co-working space distinguishes between production spaces e.g. clothing workshops and co-offices. The architect supplied the design with different work potentials so that each tenant can be productive. There is also a small department for 'Vluchtelingenwerk' Refugees Assistance Agency that aids newcomers with all formal transactions.

In the Atelier Ram met Elsie who is passionate about sculpture and trying to learn. Ram introduced himself and told her about starting to make artworks, but he is facing a problem in getting permission to them. Elsie works in the Refugees Assistance department, and she can help. Ram offered her some time to teach her some art science



Scene 7

After helping each other, Ram managed to sell his artworks at the retail departure and he gets his first income in Holland. He helped Elsie by teaching her how to sculpt and she helped him by preparing all administration and official paper of selling products in the Netherlands.



Conc

clusion

4. Discussion and Conclusion

The housing shortage crisis which is elaborated in the problem statement section shows that because of this crisis low-income class face difficulties in accessing the rental market. That applies to refugees and Dutch starters. Refugees, especially after the first years of flight, have limited income because they struggle to commence working. Likewise, Dutch starters either have limited revenue or are unemployed specifically after the Covid-19's disadvantageous economic impacts on the work sector. The research aims to answer the main question of **“How can a co-living and co-working design enhance the formation of an intercultural community leading to social cohabitation between newcomers and locals in the context of Rotterdam?”**

Firstly, paragraph 1.1 clarified the arrival of asylum seekers to the Netherlands in the last 8 years. Consequently, this number with the existed housing shortage crisis led to the unfunctional housing approach of the Dutch government. Refugees are usually accommodated in typical social housing that is socially isolated and does not promote social cohabitation with the host society, as examined in 1.2. However, there are still some potentials investigated in 1.3. Ager and Strang, 2008, clarified means for integration: housing, working, education and health. In the example of The Startblock, the means of housing and working seems to work in 1.4. Which combines locals and refugees in an even mix in a collaborative self-organized housing strategy which leads to social interactions. It is considered as a successful vision by Carla Huisman. Currently, it has being followed with many similar

approaches across the country. Thus, housing refugees in collaborative and collective housing models works well for cohabitation with the host society. Besides, supplying them with work potentials can ease the integration process. In other words, housing and working help the integration and that can be implemented on the site of Walenburghof, Rotterdam. As an answer to the first sub-question. **“How can housing and working influence refugees' cohabitation with the Dutch society”**

Based on that, the vision was to co-house and co-work between the two groups. This was the guidance of chapters 2 and 3. The co-housing model existed years ago, and it has an innovative manner in the current decade. This unique housing approach requires to be studied further as it is detected in 2.1. Literature shows in 2.2 that the layout of co-housing distinguishes it from conventional one. The difference is the layout hierarchy. The co-housing design emphasises the communal spaces and links them favourably to the circulation space. Some housing facilities cannot be conveyed i.e., toilets, paths. People display dissatisfaction in sharing them. Socially wise, co-living promotes social connection. Because of the high percentage of shared facilities and communal space people encounter their neighbours. Ideally, the co-living settlement designers tend to house residents that can benefit each other. Likewise, the example of Centraal Wonen Delft, Tanthof in 2.5, demonstrates the circulation spaces in relationship to communal spaces. However, this example has a variety of collective kitchens, laundry and living rooms.

Because of the large number of communal spaces some tenants use just a few. It is essential to design a balanced layout between private and collective. Also, to distinguish between those areas. The co-living design highly emphasises communal space which offers potential for residents' social interactions. As an answer to the Second question “**2. How can co-living be designed in a manner that increases social interactions between status-holders and Dutch starters?**”

Thirdly, the working development is coming back to be integrated into the city with the approach of the productive city as it has been articulated in 3.1. This combination can be implanted in various dimensions in the metropolitan context: Time dimension, vertical dimension, horizontal dimension and shared premises dimension, The chosen type of linking working to housing depends on the targeted spot. In the studied plot of Walenburghof, the vertical dimension will function.

Besides, co-working spaces provide employees with intensive social interactions and knowledge exchange as debated in 3.3. This is the answer to the sub-question of “**How can co-working be spatially articulated in relation to the housing environment and which social impacts does it have on community formation?**”

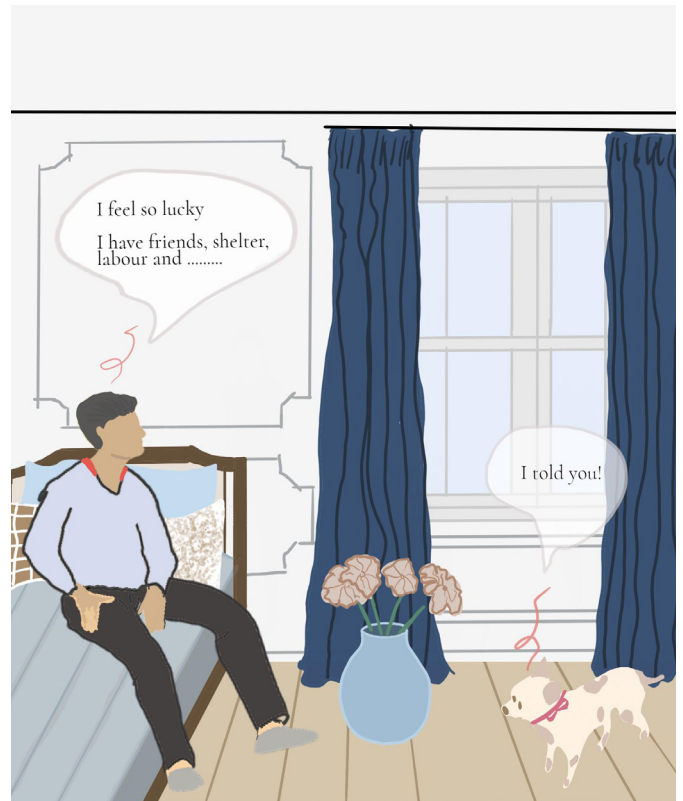
Finally, **cohabitation** between locals and newcomers could be function if the hosting environment stimulates that. Pursuing an environment where a lot of social interactions occur is a challenge by groups from different ethnic backgrounds. As an inspiration from the Startblock, it can be concluded that collaboration between tenants, **collective housing, co-working** and co-organizing potentials have eased the cohabitation between locals and newcomers. Consequently, the innovative manner of housing and working collectively can also boost **social interactions** in order to establish relationships between the two target groups. To conclude, housing and working are fundamental means for refugees to integrate into the new society and to cohabit with locals.

4.1 End scene of the Graphic novel

Scene 8

After all, Ram could occupy through the initiative of this cooperative, COA and Rotterdam municipality an affordable home. Through the design of the settlement, he made a lot of social interactions that leads to work potentials and a sense of belonging within this community.

Ram Feels lucky! He found friends, a new home and labour.



4.2 Graphic novel Conclusion

What can be concluded from this novel is that the right design, operational structure and initiators can lead to social cohabitation between different ethnic groups. It is vital to bid residents the spatial possibility to meet and socialize. In the case of starters, it is important to have initiators that believe in starters' capabilities in working and in creating a better society that is inclusive for all humans regardless of their ethnic backgrounds. Cooperative and some authority subsidies can aid starters to commence successful productive adulthood.

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