

**Maintain / Enhance the Sense of
Community in Post-War Neighborhoods
which are going through regeneration process**

Master thesis

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January 2024

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1 Introduction

In this research I strived to explore solutions to the question:

How to maintain or enhance a sense of community in post-war neighborhoods undergoing regeneration processes

The outcome of this research provides a guideline for architectural planning, in creating an environment that reflects the importance of a sense of community in the built environment. The outcome can be viewed as a manual for analyzing and retrofitting neighborhoods, focusing on the shared spaces and maintaining or enhancing a sense of community. By focusing on a specific site, and examining its characteristics, I formed a guideline on how to treat specific issues with architectural interventions. I examined theories by various researchers (such as Gehl, Whyte, David Sim, and Bernard Tschumi) as well as architectural drawings of master plans that focus on shared spaces as an integral part of the vision.

My design project refers to an existing district, Groot IJsselmonde, Rotterdam. Groot IJsselmonde was built after the second world war, and composed of eight neighborhoods. My research strategy was to start with the broad context of the neighborhood, and then go into specific details. I started with the original master planning of the area, which shed light on the quality of the built environment as it is manifested today. In the next stage, I studied the characteristics of the inhabitants of the neighborhood, through observations and assumptions, to better understand the sense of community that is present today.

Creating a gap analysis is essential in forming solutions for densification regeneration projects. I contemplated what to preserve and what to change in order to find an architectural solution that considers the gentle infrastructure of the population considering their well-being. I believe that the integration of

new and old can form a resilient solution both for the community and the built environment.

I chose to focus on the largest target group that composes the district of Groot IJsselmonde, which is the young adult group, born between 1981 and 1996 (25 to 45 years old). The characteristics of this target group were analyzed by many sociologists and psychologists, and their needs and wishes were taken into consideration in my design. focusing on the largest age group makes the plan adequate and functional for a large number of end users.

My design aspires to provide freedom of choice to the end user. A 5-bedroom apartment can accommodate students or a large family. In addition, communal spaces will be added, in the open and indoors. These communal spaces will enable various activities, whether it is a shared study room, a playground, or workshops. Additionally, focusing on improving accessibility in the new master plan of housing and communal places, will allow various target groups to use the places equally.

The goal is to provide usable, performing, and functional shared spaces that will encourage interactions and strengthen the sense of community.

1.1 Methodology

This research is intertwined with the regeneration design I created for Groot IJsselmonde. Therefore, I decide to follow these research questions:

- 1) Which approach I want to take when investigating and analyzing the existing urban neighborhood
- 2) What architectural solutions I can attribute to the planning
- 3) How to get to the desired solution

I chose three main research methods: **Literature review, Review of Case studies and Gap analysis.** The different research methods contributed to forming various aspects of the research, and specifically to the goal of the project, to enhance or maintain a sense of community in post-war neighborhoods that are undergoing a regeneration process.

1.1.1 Literature review

In the literature review I studied various urbanists, architects, and sociologists, who focus on the relationships between architecture and community. This method helped me establish the design approach to the transformation plan for Groot IJsselmonde.

William H. Whyte, in his book *The social life of small urban spaces*, elaborates on city spaces, and the effect they have on day-to-day life. Moreover, he portrays which spaces work and does not work for the people using them, mostly through the manifestation of crowding. The book is based on observations made in various public places in New York City. The public spaces vary from parks, streets, and plazas, and are identified by the different target groups that use them most. Even in such a dense city such as New York City, there are public spaces that work better than others, and crowding is the evidence of which parts are more popular.

David Sim, in the book he wrote with Jan Gehl, calls for rethinking the complexity of urban densification solutions, and striving for low-cost, human-centered designs that make urban life easier, more attractive, and more comfortable. He describes simple urban forms that contribute to sustainable to a sustainable and resilient communities that make the people living in them healthier and happier.

I found various planners and researchers that tackle the issue of public spaces and communities. One of them is the organization's organization 'project for public places'. Their approach is to help communities transform their public spaces into vital places that highlight local assets, encourage rejuvenation, and serve common needs. Their main goal is to elevate public areas alongside the people utilizing them, to create community-powered spaces. After evaluating thousands of public spaces around the world, they developed a guideline called 'What makes a successful place?' in which they detail the four main qualities that a great space should have:

1. It is accessible, people share activities there
2. The space is comfortable
3. It is sociable
4. People would want to invite their families and friends there.

The four qualities are intertwined and support the main goal that a communal space that works well serves as a stage for community growth. The approach of 'project for public places' has helped me configure the gap analysis I performed on the open shared spaces, as a preliminary step to planning the regeneration plan for post-war neighborhoods.

1.1.2 Review of case studies

The case studies that I used for this project were projects and designs that had fundamentally a social approach. The examples range between residential neighborhoods, community gardens, and landscape design. I chose them because they are architectural representations of the solutions I wanted to implement in Groot IJsselmonde. Furthermore I investigated regeneration and renovation projects that were specifically attributed to post-war housing and sustainable solutions.

Bijlmermeer, Amsterdam

The context of the project is a district named Groot IJsselmonde, located in Rotterdam. The area was developed after the Second World War, over a period of 20 years. The construction typology of that era represented an excessive use of repetition. Many projects that were built in the Netherlands around that period show similar patterns. An example is the neighborhood of Bijlmermeer, in the southern part of Amsterdam. The neighborhood is composed of high-rise 11-story gallery apartment buildings that were built between 1966 and 1975 and hosts 13,500 social rent flats. The master plan is well-known for the honeycomb layout (figure 1). The study of this neighborhood concentrated on the extensive modification (figure 2) it has been through over the years, which consisted of demolition, regeneration and adding new buildings, completely modifying the area and the reputation of the neighborhood. (Bijlmermeer Renovation Planning Office, 2014).

The renovation planned by NL Architects and XVV architectuur, consists of moving the elevators from outside to inside, opening the ground floor, reactivating the plinth by relocating the storage unit and replacing them with dwellings, and restoring the facade. (figure 3)

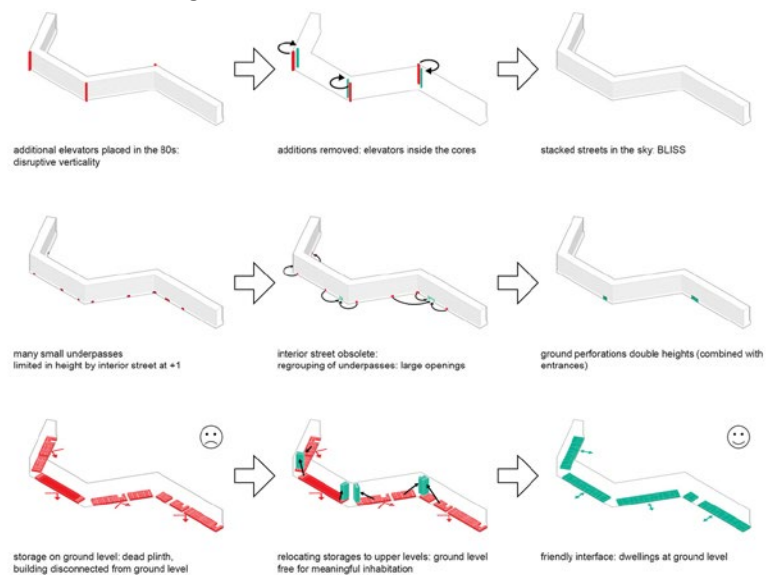


Figure 3 renovation strategy, by NL Architects + XVV architectuur. [source: Archdaily]



Figure 1 Master plan of Bijlmermeer until 1992 [source: Bijlmermeer Renovation Planning Office, 2014]



Figure 2 Master plan of Bijlmermeer 2013 [source: Bijlmermeer Renovation Planning Office, 2014]

De Kasbah, Hengelo

The Kasbah project, which was designed by Piet Blom and built in 1973, portrays a master plan that focused on collectivism. The similarities it shares with the post war housing projects are presented in the repetitiveness of the built environment (figure 5). The houses are tightly packed on the first floor, creating a roof over a shared space that stretches continuously on the ground floor (figure 6). (Kaal, 2018)

The neighborhood contains different type of dwelling typologies. There are 3 types ranging from studio apartments, to one bedroom, and 3 to 4

bedroom apartments (figure 7). Each one of the apartments beside the studio, has a private open space and a parking spot.



Figure 5 De Kasbah in Hengelo, Overijssel by Piet Blom [source: Wikipedia]

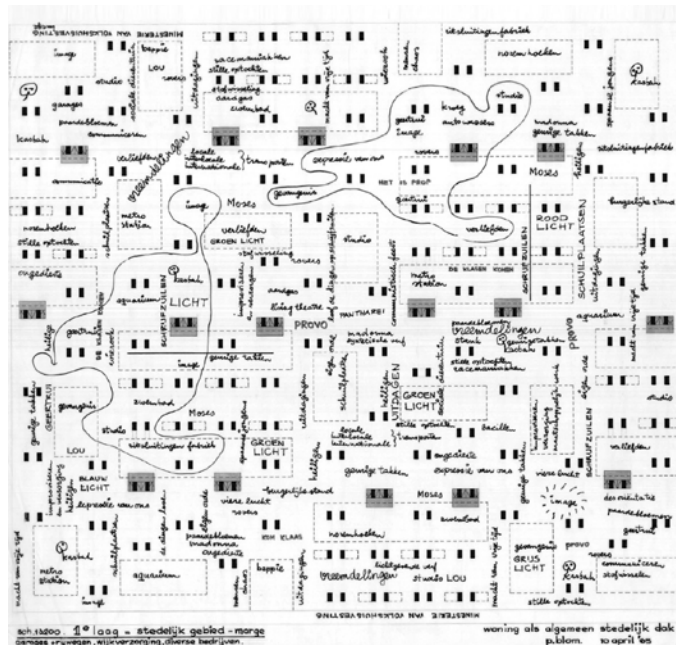


Figure 4 Concept drawing by Piet Blom [source: Hidden Architecture, 2013]



Figure 6 Ground view, De Kasbah [source: Hidden Architecture, 2013]

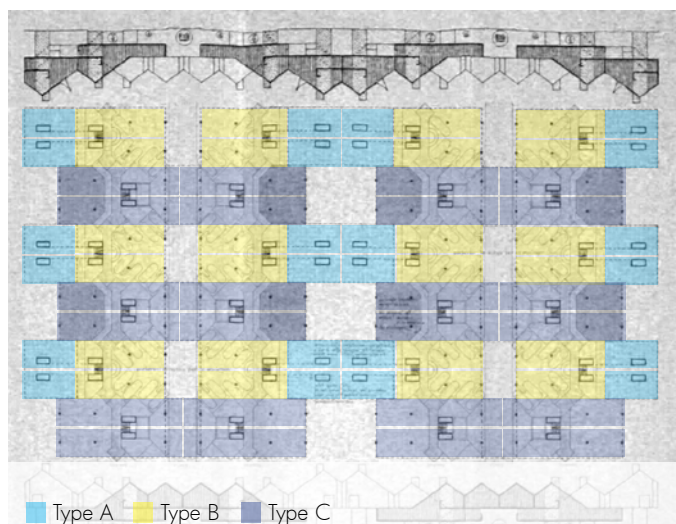


Figure 7 Floor plan, De Kasbah [source: Hidden Architecture, 2013]

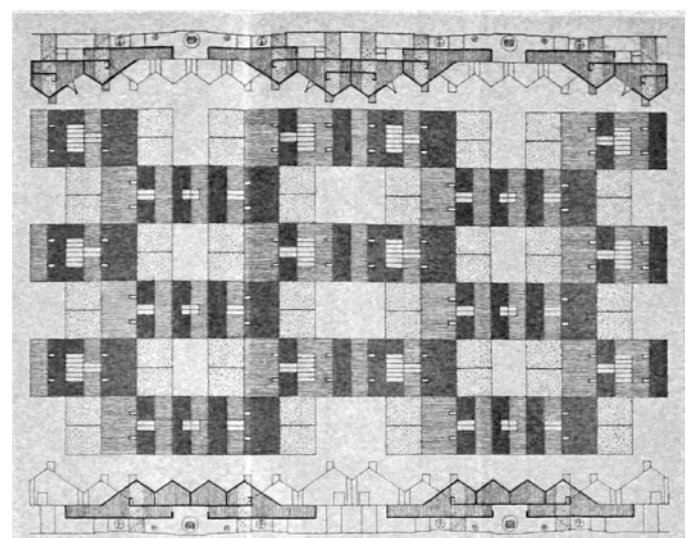


Figure 8 Site plan, De Kasbah [source: Hidden Architecture, 2013]

Robin Hood Gardens, London

The gallery flats, a residential housing typology that was exceedingly popular in the post war construction period, was studied and developed to the concept of Street in the sky by many urbanists and architects. The most famous architects that established the term in their practice and theories are Alison and Peter Smithson.

They frequently showcased their most groundbreaking ideas through unrealized urban plans. These visionary urban structures featured large galleries hosting terraces, offering horizontal access to apartments, and connecting buildings through a pedestrian network separate from ground-level traffic infrastructure. (Borges, Cunha, Marat-Mendes, 2019)

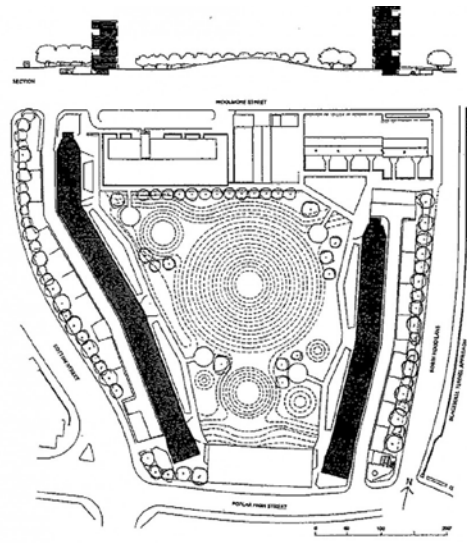


Figure 9 Master plan, Robin hood Gardens [source: ArchDaily]



Figure 11 Robin hood Gardens, by the Smithsons [source: ArchDaily]



Figure 10 Robin hood Gardens, by the Smithsons [source: the Guardian]

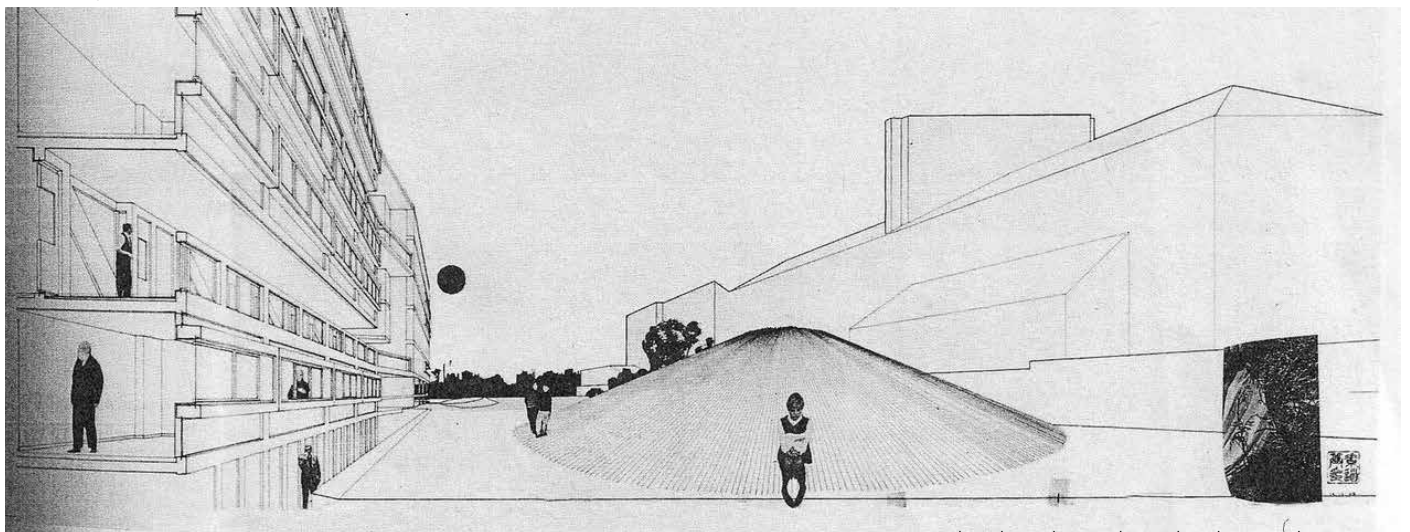


Figure 12 Section Robin hood Gardens, by the Smithsons [source: ArchDaily]

Spangen, Rotterdam

The street in the sky was a concept that could be found in an earlier project in Rotterdam. Spangen neighborhood is a housing project, built in 1919, and designed by Michiel Brinkman.

The concept is based on a courtyard typology of a four-storey building (figure 14). The ground floor hosts a single family house of two stories. The entrances are facing the courtyard directly. On the second floor, an open corridor creates a secondary passage, elevated from the ground which is reserved for communal use only. The gallery is also leading to single homes of two stories as well. (Hidden Architecture, 2015).

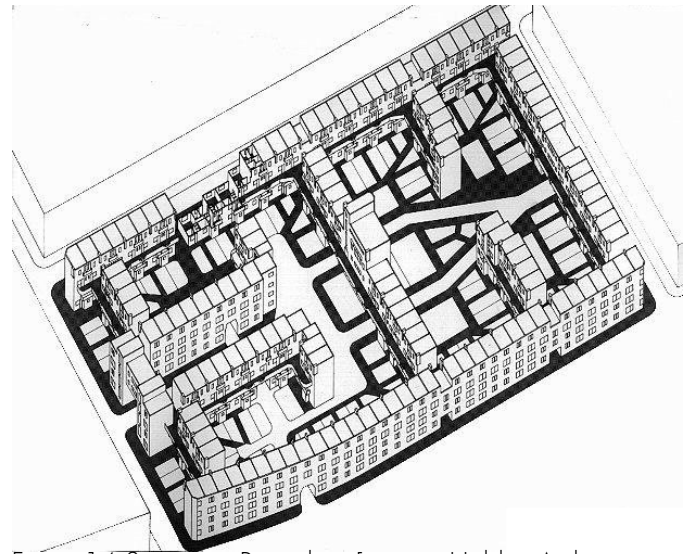


Figure 14 Spangen, Rotterdam [source: Hidden Architecture, 2015]



Figure 13 Spangen, Rotterdam [source: Hidden Architecture, 2015]



Figure 15 Spangen, Rotterdam [source: Hidden Architecture, 2015]



Figure 16 Spangen, Rotterdam [source: Hidden Architecture, 2015]

Conclusion

From each project I took inspiration to my design of regeneration of a post war neighborhood. I learned how a crowded neighborhood functions, and how to combine different housing typologies in a masterplan. I also identified the importance of the dwelling typology of the plinth to activate the ground floor of the residential area. The gallery typology circulation system holds an important role in sense of community of the building. It provides much more than just a mean of transportation. It can perform as a street, merge between the public and the private and at the same time be a barrier from the fully public ground floor functions.

In my design, which I further elaborate upon in chapter 5, I implement both aspects. Densifying on the expense of the open areas and compensate with other types of shared spaces, such as the external gallery, and dedicated communal areas on the ground floor.

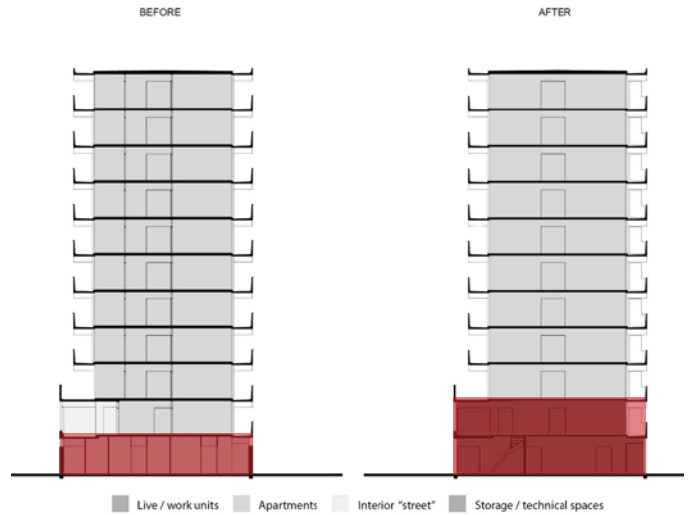


Figure 17 Diagram section, by NL Architects + XVW architectuur. [source: Archdaily]

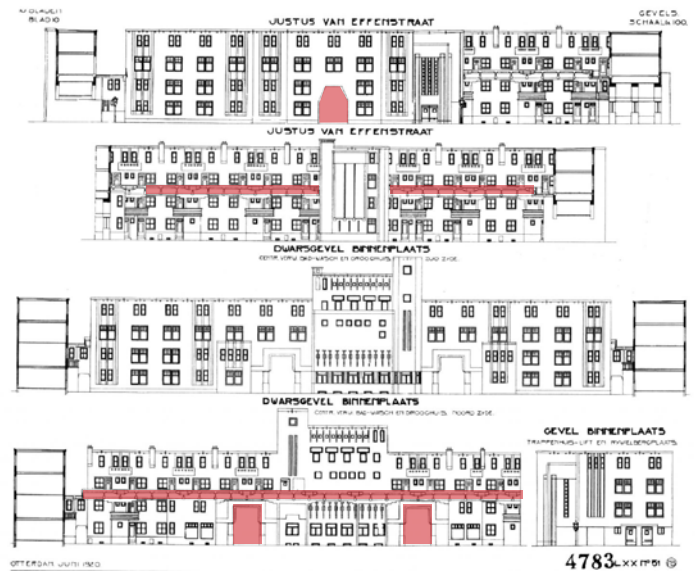


Figure 18 Sections, Spangen, Rotterdam [source: Hidden Architecture, 2015]



Figure 19 Floor plans Robin Hood Gardens, by the Smithsons [source: Archdaily]

1.1.2 Gap analysis

Gap analysis identifies gaps between the optimized allocation and integration of the inputs (resources), and the current allocation-level, this reveals areas that can be improved.

In this research, The gap analysis began by identifying which architectural interventions are influencing the sense of community.

I came across several resources addressing the issue of public spaces and communities, and one notable example is the “Project for Public Places.” This nonprofit organization aims to assist communities in revitalizing their public spaces by emphasizing local strengths, encouraging renewal, and meeting shared needs. The primary objective is to enhance public areas collaboratively with the community, fostering the creation of spaces powered by local residents.

They came up with a scheme (figure 20) that summarizes their evaluation of thousands of public places around the world. According to them the question “what makes a great place?” could be answered simply by – “Great public spaces are those places where celebrations are held, social and economic exchanges occur, friends run into each other, and cultures mix. “(project public places website) a space that is accessible and connected to its surroundings, provides a comfortable setting for social interactions, is exciting to be in among other people, and is considered interesting.

The accessibility aspect of a public space could be monitored by the connection of it to the visual and physical context. It needs to be noticeable from afar and up close, as well as conveniently reachable by public transportation and car. (Project for Public Spaces, & Surico, J., 2023)

The Use and activities aspects concentrate on the creation of a multipurpose place. They are fundamentally connected to the reasons why people visit the place, what makes it special and unique. One of the main aspects is making it local, in materials and program. Since the local community will be the one using it mostly, and maintaining it, it first needs to respond to their needs and wishes. (Project for Public Spaces, & Peinhardt, K., 2023)

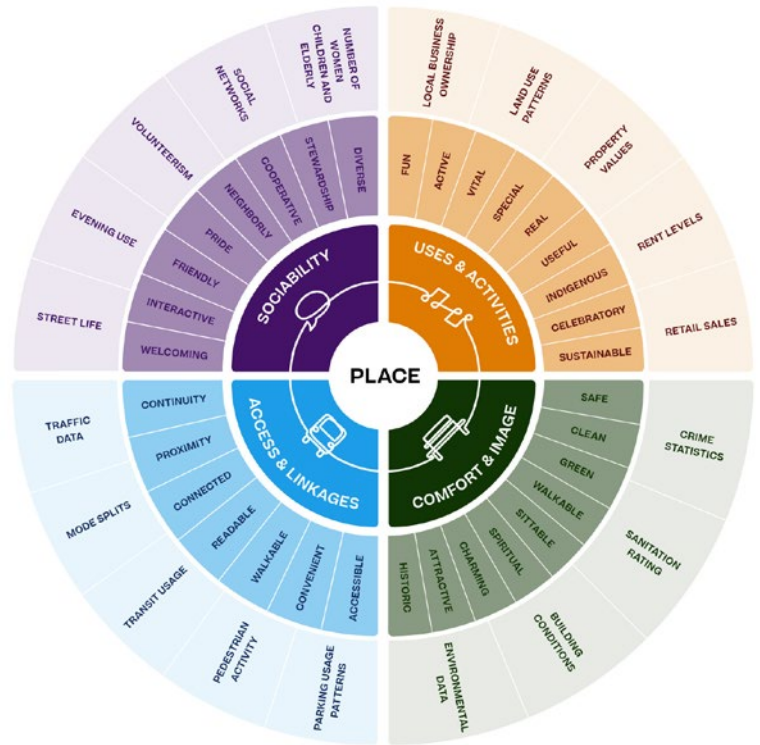


Figure 20 What makes a great place diagram [source: Project for Public Places]

The comfort and image of a place also refer to the perception of safety, cleanliness and presence of flexible sitting areas. These aspects overall influence if the place has a good image.

Sociability is the result of social interactions. In public space it is perceived also as the sense of excitement when arriving at a place filled with other people, a lively park, or a familiar walking route. Sociability is the most essential element of a public space and acts as proof of its success. When people feel comfortable, included, represented, and welcomed, it means that a place is functioning properly. (Project for Public Spaces, & Peinhardt, K., 2023)

The guidelines of Project for Public Spaces inspired my work, especially in the evaluation of the sense of community in the public spaces of the project area, Groot IJsselmonde.

The gap analysis of the public spaces, conveyed the goals and vision of the renovation plan. The areas for improvement led to the master plan, and each step is solved with an architectural intervention.

2 Sense of community

I chose the topic of enhancing or maintaining a sense of community as the cornerstone of my research, which focuses on densification methods for neighborhoods built after the war. Neighborliness is a cornerstone of thriving neighborhoods particularly in the dense parts of cities. (Gehl, Sim)

“A sense is an understanding about something; an ability to judge something” (Oxford Advanced Learner’s Dictionary). And together, a sense of community, arrived from a psychological approach that focuses on the experience. It reflects the individual’s perception and understanding of the community and its relation to its other members and participants. (Wright, S. (n.d.)) A sense of community is represented by four elements: membership, influence, integration and fulfillment of needs, and shared emotional connection. (Chavis, D. M., Hogge, J. H., McMillan, D. W., & Wandersman, A., 1986)

There are many types of communities, ranging from religious, ethnic, cultural, and social-based communities. The various environments for the formation of the community are answering the need for belonging, by finding the common denominator for connecting between the individual people.

In an existing neighborhood, there could already be an existing community. The strength of the relationship between the core neighborhood will determine the community life after renovation. When people live together, in the same place, in the same environment, and under similar conditions, they already have several reasons that can tie them together for a common goal. Whether it’s improving conditions, creating a pleasant and safe environment, or simply a more beautiful environment.

Physical places facilitate civic engagement and community interaction. As Whyte (1980) wrote, social life in public spaces contributes fundamentally to the quality of life of individuals and society as a whole. Promoting social interactions with strangers

is associated with greater feeling of belonging and subjective well-being, as well as feeling appreciated by and connected to people around you. Additionally, with the manifestation of individualism and loneliness, the role of community in our day-to-day life has proven to be fundamental. Spaces that host communal activities hold the solution for making and developing a community in the residential area, as well as enhancing the sense of community of the people living in it.

Connection between people can lead to a sense of belonging in the community, which leads individuals to take initiative and try to change the environment in which they live to suit their needs. There should be separation between the different activities and the target audience they are intended for. For example, in the morning hours, the people who can enjoy the public areas are the people who are active during these hours, and perhaps people who are looking for a comfortable workplace to sit and hold meetings. In the afternoon, parents with little kids are filling the playgrounds. And in the evening hours, there can be a higher demand for places that can accommodate large gatherings, such as social gatherings and lectures.

Parents of young children can appreciate additional open areas where they can play with other kids safely, as well as host friends from other parts of the city. Working from home has become more popular among young adults, and in a small apartment, it is sometimes not possible to establish a pleasant working environment. Therefore, a communal area designated for work and learning can be attractive and valuable.

Connecting people is a social aspiration that emphasizes the value of counter dependency in a society. In the era of sustainability, the principle of cooperation can be expressed on several levels, whether it is living in a partnership, sharing vehicles, or food, or sharing communal gardens and working environments.

3 Historical overview post war housing

The housing situation today is a significant topic in the housing discussion in the Netherlands. According to the research that was conducted in 2021 by ABF research group, the situation today is considered a crisis since the ratio between the demand to the supply has reached new limits and now stands at 5% (figure 21). The Dutch government has decided to build one million new homes by 2030 to reach a ratio below 2% of housing shortage to housing stock (ABF Research, 2021). The construction of new cities that will consume the remaining green open areas is against the government's ideology. One of the main methods to overcome the lack of apartments is by densifying existing low-density areas.



Figure 22 Top up (own image)

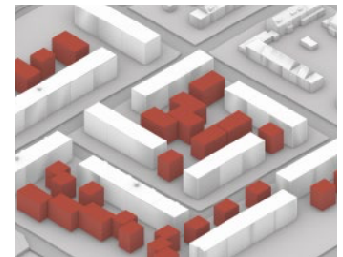


Figure 23 Building around (own image)

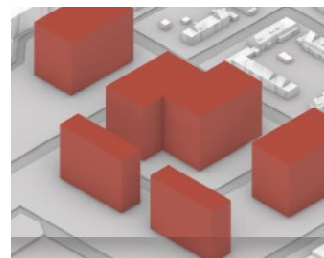


Figure 24 Demolish and build new (own image)

Forecast housing shortage the Netherlands
Source: PRIMOS 2020, graph by Capital Value

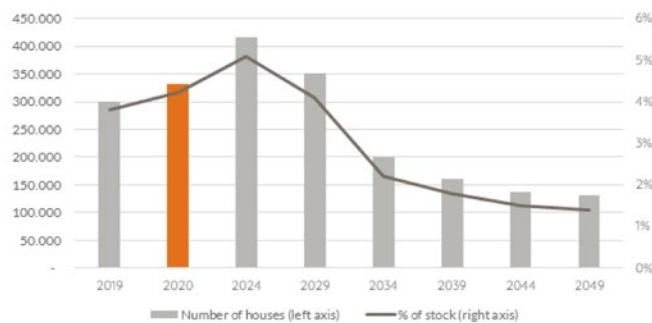


Figure 21 Forecast housing shortage the Netherlands [source: PRIMOS 2020, graph by Capital Value]

There are three main options for densification as a strategy:

1. Top up - add floors on top of an existing construction (figure 22)
2. Building around - build new construction adjacent to the existing building (figure 23)
3. Demolish and build new - replace low rises with higher construction (figure 24)

Plans for reconstructing Rotterdam started getting shape and form even before the war, but due to the heavy bombardment of the center of Rotterdam, they got a green light from the local government and set a starting point for the whole Netherlands' regeneration process.



Figure 25 The central part of Rotterdam after the bombing [source: Wikipedia]

The pre-war urban planning consisted of cleaning the center of Rotterdam from slums and creating more single functional zones. (Kozlova, E., 2022)

The focus of the plan was to provide a socially oriented solution while the government encouraged social corporations to lead the building industry in order to provide affordable housing in an abbreviated period of time. Therefore, they released building permits for completely new neighborhoods in the sub-urban part of the city. (Kozlova, E., 2022)

Large scale constructions, and lack of building materials and labor, promoted the use of prefabricated building systems. Various architects, from both a more traditional and a more functional orientation, were focused on adapting such techniques, from local constructors and internationals to the Dutch market. Therefore, in various parts of the Netherlands different construction methods were popular in use. (Bouwhulpgroep advies en architectuur, 2013). The different construction methods consist of prefabrication of large-ready-to-use concrete elements, as well as concrete poured on site in prefabricated molds. The methods of construction resulted in strip-like residential blocks. The size of the site was determined by the effective distance capacity of the crane which resulted in the length of the strips and the distance between them. (Netherlands, I., 2003)

The neighborhood concept aimed to control urban expansion and was developed by Clarence Perry during the 1920s. It was developed as a response to psychological and social problems of dense city centers that were lacking a sense of community and portraying unsafe residential areas. During that period many architects and architect's groups (such as De 8, Opbouw) were discussing this topic internationally in CIAM congresses. (Netherlands, I., 2003)

Among the various typologies of neighborhoods that were constructed over the years, the garden city concept has become one of the most popular neighborhood typologies in the Netherlands. The garden city concept is based on a theory by Ebenezer Howard and focuses on the creation of a

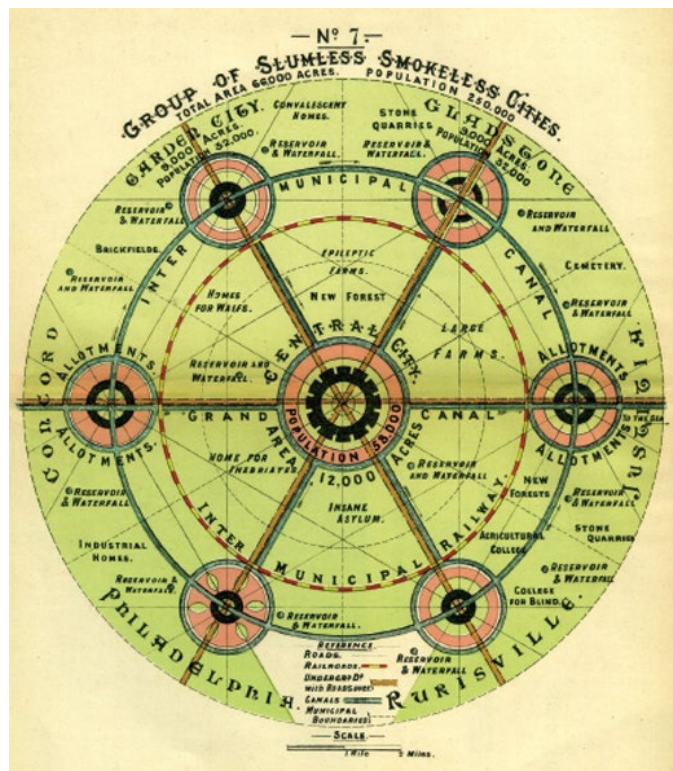


Figure 26 Ebenezer Howard's vision for a 'Group of Slumless, Smokeless Cities'. Image: SPUR

series of small cities that would combine the advantages of both environments. The small communities, planned in a pattern, would host housing, industry, and infrastructure. A combination of multiple communities is essential to the effectiveness of the garden city concept. (figure 26)

The masterplan of Groot IJsselmonde consists of ideas of the garden city concept and strongly manifests the aimed combination between urban life and green spaces. Today, the large green open areas that spread between the buildings represent the flexibility that the densification strategy could benefit from. The neighborhood Groot IJsselmonde is the case study of my project, which is located in the southern part of Rotterdam. The built environment is characterized by repetitive row houses and gallery buildings, vast green spaces, many car roads, parking lots and some water streams. Looking at the map, the housing typology is immediately identified in slim and long lines, in patterns, cluster by cluster, while between them separating big open areas, which are mostly left unused.

4 Strategies to maintain or enhance sense of community

4.1 Integrating new and old

An important aspect of the research deals with finding the right way to merge the new and the old, without detracting from the existing quality and creating a harmonious atmosphere.

Bernard Tschumi, influenced my way of thought and inspired me, since he emphasizes in his projects and theories the importance of the in-between space.

For example, in the Le Fresnoy (the National Studio for Contemporary Arts) project, a 100 by 80 meters metal roof placed on top of the old Fresnoy museum (figure 27), which remained untouched, "makes it look very small suddenly, like a duck sheltering under the wings of a swan." (Loriers, 1997).

The additional roof gives definition to the open space below it. The extension sideways brings the possibility for other activities that were not attributed to the museum previously. In this project Tschumi also implements his theory about the place in between, when he places a walking path above the old museum and right under the metal roof. It is not just about a walk between two roofs, the old and the new, but as Lorier describes in her article, "a metaphor of that real 'in-between' that constitutes the world of the new media." (Loriers, 1997).

I strive in my design to propose a new addition to the neighborhood, which reflects the necessary changes, and enhance the potential it holds. The renovation will accommodate possible changes, and will offer architectural solutions to the main question, how to densify an existing post war, and maintaining or enhancing the sense of community.

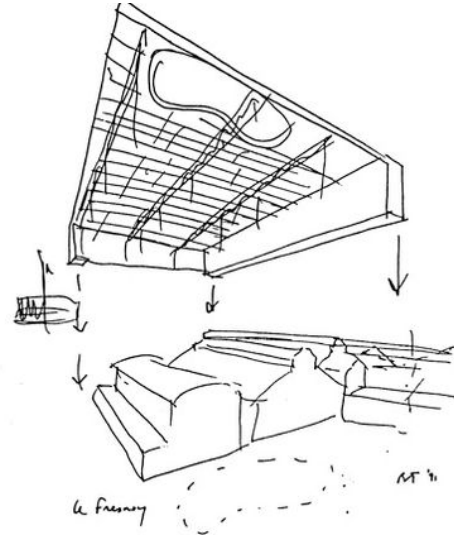


Figure 27 Le Fresnoy concept [source: Bernard Tschumi Architects]



Figure 28 Le Fresnoy art center [source: Bernard Tschumi Architects]

4.2 Variation of housing typologies

Residential neighborhoods often aim for a mixed typology result, which will attract people with diverse needs and desires. The apartments are equipped with the basic needs, kitchen, living room, toilets and provide various quantities of bedrooms.

The area I chose to work on, in Groot IJsselmonde, is composed of several repetitive buildings adjacent to each other. They all have the same internal planning of either 2-bedroom or 3-bedroom apartments. This supply of apartments might be relevant for most of the residents that live there, but today we know that a much greater variety is needed. For example, a family in growth will have to find their next home somewhere else, either in other parts of the neighborhood or even in a different city. An older couple, "empty nesters", might look for a smaller apartment after the kids have moved out and settled.

A residential neighborhood that has a variety of apartments is preferred. It can lead to more adequate living solutions that result in long time residences. And consequently, to a more resilient community that builds up and develops with the people, for their needs.

My choice to aim mainly at young adults came from the demographic characteristics of the area. Since it's the largest age group, it makes the planning and the solutions fit for more people.

The sense of community is reflected mostly in the open and shared spaces. The young adults reflect an age group that benefits most from such spaces. Often young adults have kids, which require safe open spaces to play and run around. Shared spaces can be used in many ways, it can be a place to meet people, host friends, and on the other hand to work from home or study.

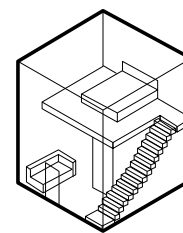
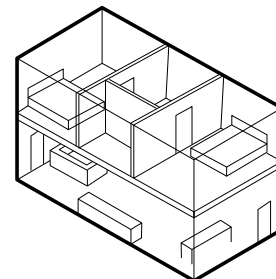
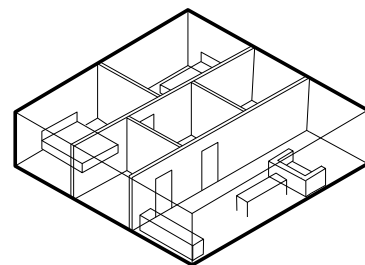
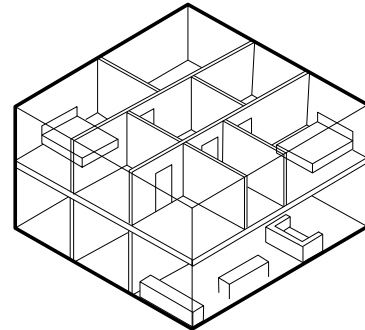


Figure 29 Housing typology [own image]

4.3 Shared spaces in 3 scales

Dividing the analysis and strategy into three scales helped me to reflect on different relationships that I identify in the built environment. First, is the relationship between the neighborhood (physical space) and other neighborhoods (other physical spaces), which I gave the title – The neighborhood scale. In this chapter the main focus is on the aspects that make the various parts of the city a whole, through the experience one may draw from just walking through it (a stranger) or living in it (resident).

The second scale, The stamp scale, is focused on the relationship between the neighborhood (physical space) and visitor (stranger). The objective of the streets and public spaces are different for a resident, who potentially uses them every day, and the visitor that will interact with them occasionally. Therefore, the boundaries of private and public should get a precise definition in order to create an equilibrated area. The residents should feel comfortable using the public areas and developing them in order to enhance the sense of belonging, and the stranger should not feel excluded and not welcome when passing by, but at the same time respect and acknowledge that this is a residential area.

The building scale focuses on describing the relationship between the residents. In this chapter the focus is on the shared spaces that are to provoke social interaction and create connections between people. In those areas the most intimate sense of community comes to light, because it is attributed only to the residents of the same building. The tenants are a part of the same built environment and may have different opinions concerning their built environment.

My approach is to find out how to transform a residential area, which will encourage connectivity through shared spaces. Analyzing the relationship between people and places in three scales is fundamentally important for my research.



Figure 30 Three design scales [own image]

4.3.1 The Neighborhood scale

David Sim (2019) defines neighborliness so well: “Neighborhood is a state of being in a relationship. More than anything, the human environment is about relationships: relationships between people and planet, relationships between people and place, and relationships between people and people.” (Soft city, 2019, page 11)

The neighborhoods that were built after the war, Groot IJsselmonde for example, manifest repetitions of the same building, and are clearly visible as stamps on the map. The use of this form of neighborhood planning was popular in the years after the war mainly because of the need for rapid construction, which was possible by manufacturing quick structures and repeating familiar and cheap building construction typologies. The need to provide housing to a large number of people went along with creating a living environment that provides access to basic services, road infrastructure for a convenient connection with a large nearby city, as well as gardens and parks for the well-being of the residents.

A study done in Baltimore by Taylor, R. B., Shumaker, S. A., & Gottfredson, S. D. (1985) found that the solution to an unkempt living environment and unsightly public spaces should be at the neighborhood level. A sense of security in the public space should be based on the entire neighborhood when its residents feel comfortable walking in it. Also, the public areas in the entire neighborhood should be at a high and uniform level of maintenance, so that the general atmosphere of the residents is mostly equal. Thus, the impact on the well-being of the residents in the entire neighborhood will increase. The feeling of difference between the various parts of the neighborhood that are expressed in a diverse economic, age, or family situation will be evident.

David Sim highlights the advantages of a dense urban environment and the importance of its diversity. Through observations and studies of a variety of neighborhoods across the United States, old and new he links the state of the built environment and the well-being of its inhabitants. The conclusion of the book deals with the integration of density and diversity, which creates closeness.

The desired result of functioning neighborhoods is the formation of a sense of belonging to the community, which is created by sharing the same places, services, and resources. The sense of belonging is expressed in the pride that the residents have in their city, the places of entertainment, and the leaders of the community. Every physical detail in our existing built and social environment has the potential to bring us pleasure, satisfaction, and connection to another. Urban neighborhoods that offer a higher quality of wellbeing, are influenced by the relationship between the person and the physical environment. That relationship is composed of the delicate balance between private and public needs, and the proximity of a variety of activities.

The connection between various places, varied sizes, and different activities in the built environment in which we live, reminds us of the way nature is built. Varied species live side by side, in different life forms on different trees or bushes. Biodiversity is the balance that nature always strives for. The neighborhood should be built in complexity and ready for changes, like nature.

At the end his book, *Soft city*, David Sim concludes that there are 9 criteria to evaluate the quality of the neighborhood: A livable, resilient, high-density area should have a diversity of built forms and of outdoor spaces, flexibility, a human scale, walkability, a sense of control and identity, a pleasant microclimate, a smaller carbon footprint, and great biodiversity. These criteria influenced my plan, and I took them into consideration while designing the renovation strategy for Groot IJsselmonde. I gave focus to flexibility, human scale, walkability, sense of control and identity.



Figure 31 illustrations of a public functions [own photo]

4.3.2 The Stamp scale

I would like to emphasize the importance of thriving in communal areas as a way to increase the sense of belonging and community. The principle that guides me in this urban scale study is the importance of outside space surrounding the building. Post war buildings are not characterized by private gardens or balconies. Therefore, the shared open spaces hold a wonderful potential for creating additional space as an extension to the private zone. My ambition is to create green, accessible open areas, where people can engage in diverse activities, and primarily get to know and connect with the other tenants living in the neighborhood.

The space between public and private must be accessible, the question is: does it or doesn't it invite and welcome people to use it, and to what degree? For example, an inner courtyard between four buildings arranged in a circle. The original thought was to create an open space that could be observed from the apartment for children to play freely and safely.

In the communal areas the profile of the tenants is revealed, if the garden is well maintained, there are places to sit, playgrounds, lighting. In these areas, the residents are invited to meet, socialize, get to know each other, and share experiences, one of the main aspirations of prosperous communal areas.

My research question examines the way this space is used, whether it functions as planned, whether it could be multifunctional, and how best to plan such a space that will increase the sense of community in the neighborhood.

The four main aspects a successful public space should achieve are – accessibility, sociability, activity, and comfort. These were set by the organization 'project for public spaces', that is active around the world and changing the way people interact with one another in the public sphere. After evaluating thousands of public spaces around the world, they developed a guideline that is called 'what makes a successful place?' in which they detail the four main qualities that a great space should have – it

is accessible, people share activities there, the space is comfortable, and it is sociable, people would want to invite their families and friends there. The four qualities are intertwined and support the main goal that if a communal space works well it serves as a stage for community to grow.

Many times, within the neighborhood there is an access street, characterized by a one-way road with parking lots along it. Jan Gehl, in his article 'Soft Edges in Residential Streets', talks about the street as the subject of the research but describes how the planning of the buildings, including the entrances, gardens, and parking, holds within the potential for a common space, and a preferred public area. In the paper, he compares several types of streets and their uses. If the route from the parking lot to the entrance takes only a few seconds, the potential to meet a neighbor and possibly exchange a minimal 'hello', is almost irrelevant. Therefore, he emphasizes that the planning should include activities that take longer time, for example, comfortable sitting areas in which a tenant could chat with a neighbor who is waiting for a friend.

The insight from the research points out the importance of front yards, both for increasing the presence of people in the public space, and for prioritizing the use of an open space that faces a lively and active area like the street, rather than a hidden back side. One of the main steps I wish to implement in the urban change plan for the post-war neighborhood is the creation of private front yards that will contain this potential for upgrading the street and will serve as a platform for casual meetings between the various tenants in the neighborhood.



Figure 32 illustrations of a public functions [own photo]

4.3.3 The Building scale

The route to the apartment in a shared building starts with the entrance to the building and then goes through the lobby, the corridors, the elevator, and the stairs, and finally, you reach the entrance of the apartment. The threshold separates the inside from the outside, between the private and the public.

In the previous scale, I dealt with the definition of the private and the public between society as a whole and the community, which is between the residents of the neighborhood and foreigners. In the current scale I zoom in on the relationship between a tenant and the other tenants.

The neighborhoods built after the war present diverse construction methods that affect the way the tenants experience the transition between the outside and the inside. For example, there are buildings built using the gallery method, where each floor has an open exterior corridor leading to the entrance doors to the apartments. This passage is not considered private, and the private space of each apartment begins at the doorstep. There are those who place a plant on the gallery fence, and there are those who leave their shoes outside. These elements are like a demonstration of

the tenant's character that the other tenants on the floor, when they pass by, get a sense of who lives inside.

This exposure of the tenant's attributes is selectable and can be ignored. Space cannot force people to reveal themselves if they do not wish to. The personal expression of the tenants can enable spontaneous interactions and engagement between the tenants. Casual relationships between neighbors can lead to better neighborliness and enhance the sense of community in the building scale. When tenants feel that they can rely on one another, ask for small favors, like borrowing a ladder, cup of flower or even donating furniture or clothes. Therefore, I appreciate architecture that enables personal interference. For example, entrances that allow objects to be left in them, spaces that allow cultivation and change, thus allowing the expression of desires and preferences of those who use the space.

As I show later in the chapter 5, the buildings that were originally planned with a staircase that leads directly to the apartment are lacking these type of communal spaces. Therefore, in my project I want to add this function by adding an external corridor along the building.

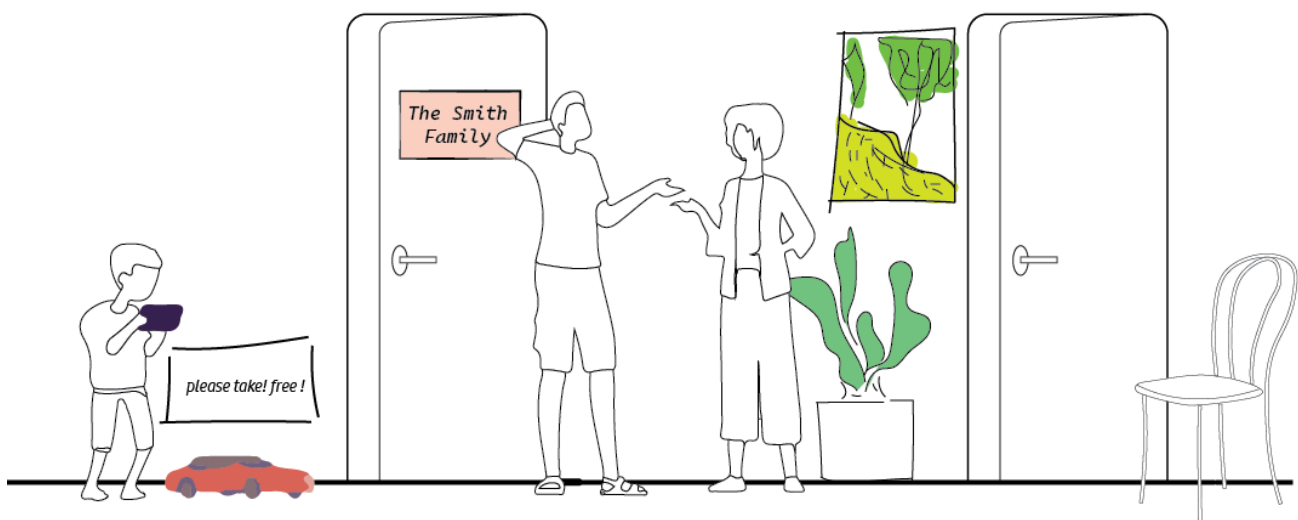


Figure 33 illustration of a corridor [own photo]

5 Strategy implementation - design

5.1 Overview of the neighborhood

My project of regeneration is in Groot IJsselmonde, which is located in the southern part of Rotterdam.

Walking in the neighborhood has had a considerable influence on how I perceive the changes that this neighborhood should go through. Starting at the train station, immediately the green aspect of the district comes to the front, and a boulevard full of trees is spread in front of it. (figure 34) The main streets are wide and efficient, multi-lane, traffic lights, and a wide sidewalk and bicycle path along them. The buildings face the streets but are situated sufficiently further away from them. Thus, the streets function as a barrier from one part of the district to the other.

Walking in the streets of Reyeroord, a part of Groot IJsselmonde, the core of the design principles of the garden city concept is manifested. This part has an independent car infrastructure. Sometimes on two sides of the same streets quite different housing typologies are reflected in one another, highlighting the different status of the residents. (figure 35)

The mixed typology of houses is present along the main streets of Reyeroord, it is distributed in groups of 4 to 6 buildings each. They form a type of stamp on the map (figure 36). For example, The long, 4 story apartment buildings, hold behind them a little treasure, the secret of the neighborhood. The residential strips hug a courtyard (figure 37). The grass is green, a tree or two have been growing for years. A few kids are running around under the parents' observing eyes from the apartment above.

Many questions arose after visiting the neighborhood a couple of times. Imagine a sunny afternoon, do people come outside to sit in this big garden? Where do people sit?

Is it accessible, is it comfortable, is there a sitting area? Is it shaded? Is it safe, protected, is there light? (project public spaces?)



Figure 34 [own photo]



Figure 35 [own photo]



Figure 36 [own photo]



Figure 37 [own photo]



Figure 38 [own photo]



Figure 39 [own photo]



Figure 40 [own photo]



Figure 41 [own photo]

Analyzing the original plans of this area, built over 60 years ago, and observing the current situation, there is evidence of external modifications that were done structurally and esthetically.

On one of the buildings an external structure with outdoor spaces was attached to the back façade. In some cases (figure 38), the front yard contains a picnic table, with a beautiful flower garden around (figure 39). In other cases, the front yard has become a bicycle parking area (figure 40), probably due to the needs and priorities of the residents. On the back part, where loggia balconies were put, some residents closed off and added extra square meters to their living space. In other cases, the front façade seems to have been extensively modified. The comparison with the original drawings concluded that the entrances had been replaced, as well as the windows, and the brick was also probably cleaned, since the color is different from the other brick façade around. The buildings are surrounded by a strip of accessible area, shrubs define the border of the plot, but the space in between is not accessible directly from the houses or seems to be in any kind of use (figure 41).

It seems that the changes, modification and extensions, were done either in a building scale or apartment scale. A neighborhood scale redevelopment was not performed on this part of Groot IJsselmonde. Probably due to the fact that the apartments are privately owned and the association of owners takes care of each building independently. Such changes are naturally welcome, but they influence the built environment, especially the appearance of the neighborhood. They have different degrees of aesthetics, quality of built, and render the renovations non harmonious. Therefore, they should be planned specifically for the needs of each building, but with the understanding that they globally affect the perception of the entire neighborhood.

5.1.1 Demographics

In the case study neighborhood, Groot IJsselmonde, the biggest age group is the young adult group, in the ages of 25 to 45 years old, born between 1981 and 1996. This particular age group is also called the Millennials. The following is the age group of 45 to 65 years old, together are the majority of the population with 51.1%.

The characteristics of millennials were analyzed by many sociologists and psychologists, and are usually characterized by the fact that they marry late and leave the parental home late, and they prefer rental over ownership. They take care of their health, and prefer a cooperative economy (bicycles, cars).

It is important to me to understand the characteristics of the target group for which I am designing. They are the end users of the designed spaces. The aim is to take into consideration their needs so they will feel represented in the design.

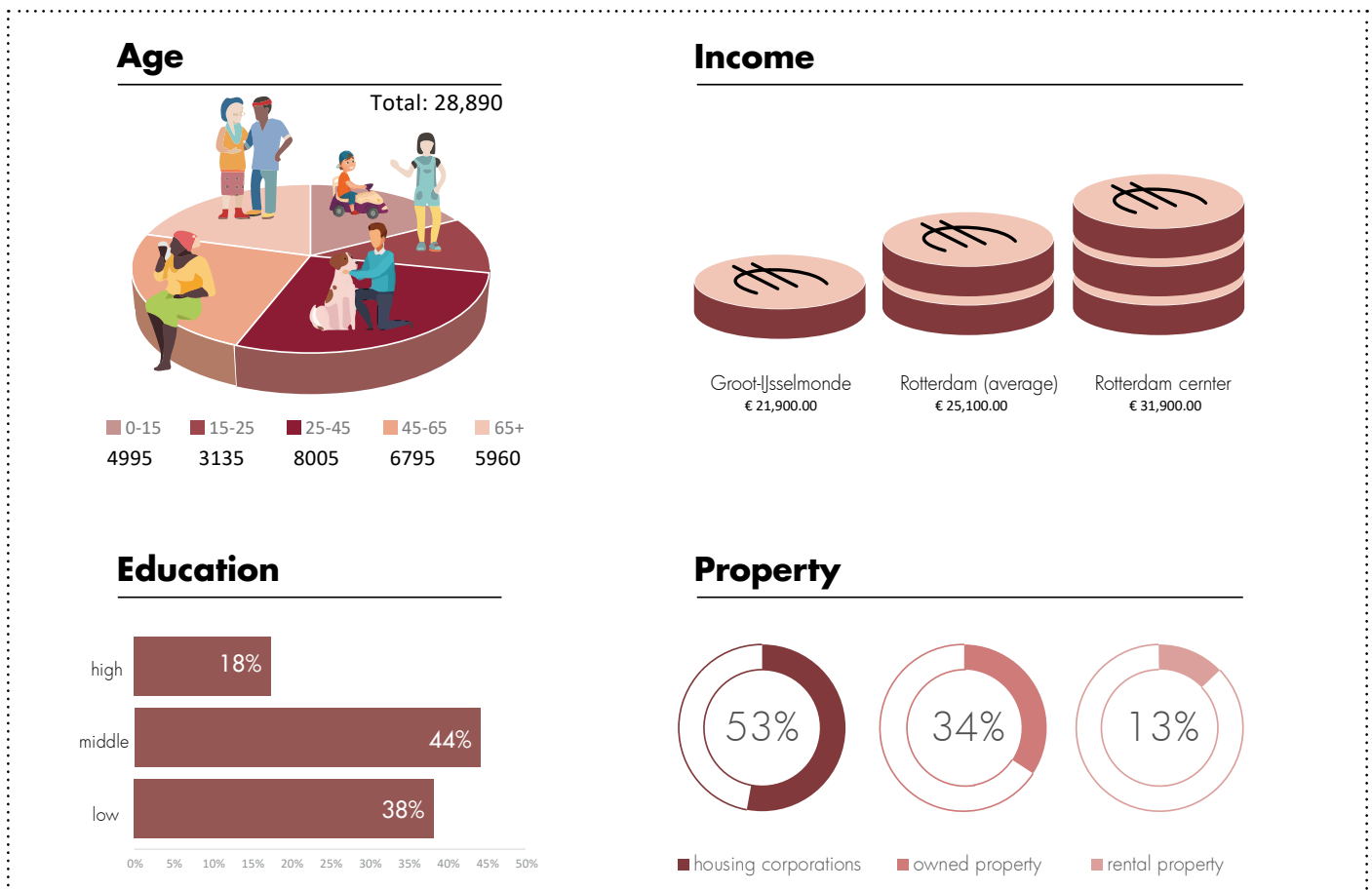


Figure 42 Demographic illustration [own photo]

5.2 Gap analysis - people

Inspired by ethnographic anthropological research methods, I learned that an interview with the local residents could lead to a more integrative design process. I wanted to conduct interviews with residents of Reyeroord and seek their expectations, feelings of belonging to the community, in order to bridge the gap between the present situation and their aspired one. I prepared a questionnaire and visited the site several times.

The questionnaire is composed of the following questions:

1. To what extent do you think that there is a sense of community in the neighborhood? From 1 to 10.
2. Do you know your neighbors? None, some, all
3. Do you have friends in this building / in the neighborhood?
4. If you needed anything, would you ask your neighbors? From flour to a ride
5. Do you have any shared activities? None, some, a lot. If you do, which?
6. Do you spend time outside the apartment and interact with people? If you do, where?
7. What do you lack, and wish you had to enhance the sense of community?
8. How proud are you of living here? 1-10
9. Do you have\ if yes, do you use, any means of virtual connection? To discuss as a group (WhatsApp, Facebook, Redditt)

When visiting the site I encountered several problems. There were only a few people in the streets, and the ones that were available preferred not to speak in english. Since I am an international student and do not speak Dutch, I encountered a language barrier. It had influenced the success rate of the design, and I would recommend in the future to translate in advance the questionnaire to the local language, or bring an interpreter along.

The conversation (in Dutch) my colleague had with a local employee had shed light on the situation. The young man was a representative of one of the social housing corporations. He admitted that most of the people living in those buildings are foreigners, who sometimes do not speak not dutch or english. It makes the communication regarding the apartment, maintenance and renovation plans, extremely difficult. The open areas at night usually perform poorly. They are dark and suspicious activity happens there, which makes the area considered unsafe. The kids are playing in the playground during the day with the presence of an adult but not alone.

The public spaces portray the lack of sense of community in the area, and the lack of people present is a manifestation of it. I believe that the masterplan that enhances the sense of community will not disturb the ongoing community activity, if there is one. I also acknowledge the upgrade further discussion with the local residents could do to my research.



Figure 43 Courtyard in Reyeroord [own photo]



Figure 44 Courtyard in Reyeroord [own photo]

5.3 Gap analysis - Places

As part of the garden city concept, Groot IJsselmonde is manifesting various kinds of open shared spaces. The shared spaces vary from outdoor spaces to indoor commercial places. The shared spaces that are scattered in the neighborhood are examined on different scales.

In the urban scale, the shared spaces are mostly the industrial zone at the core of the neighborhood, and the big parks and green zones that are stretching between the residential parts of the neighborhood. These areas provide the urban fabric with green areas that are reachable by foot (figure 45), which are rare to find in dense cities. These spaces are maintained and designed by the local government. They often portray different types of landscape features and amenities since they aim for an extensive audience. The plants and greenery is varied and on a larger scale. The quantity of trees gives a feeling of rural nature. The presence of water is also important as it holds historical connection to the canal system and water management of the area.



Figure 45 Green areas in Groot IJsselmonde [own photo]

In a smaller scale, the buildings enclose between them a semi-public outdoor open area [figure 28]. The courtyards are maintained by the residents from the building around it. Their role is to complement the surrounding residential buildings.



Figure 46 Courtyard in Reyerood [own photo]

These areas manifest a lack of organization and development. They mostly contain vast grass and a few trees. Only in a few courtyards as such, the presence of two benches is rare but comforting (figure 47). Over the years a number of courtyards were transformed from green zones into parking lots, due to increased importance for the residents. Even though they are not typically designed to host large gatherings, these courtyards show no intention to be used at all. In my observation, there was mostly neglect and unused space that could potentially be transformed into an enhancement to the sense of community of the neighborhood.



Figure 47 Courtyard in Reyerood [own photo]

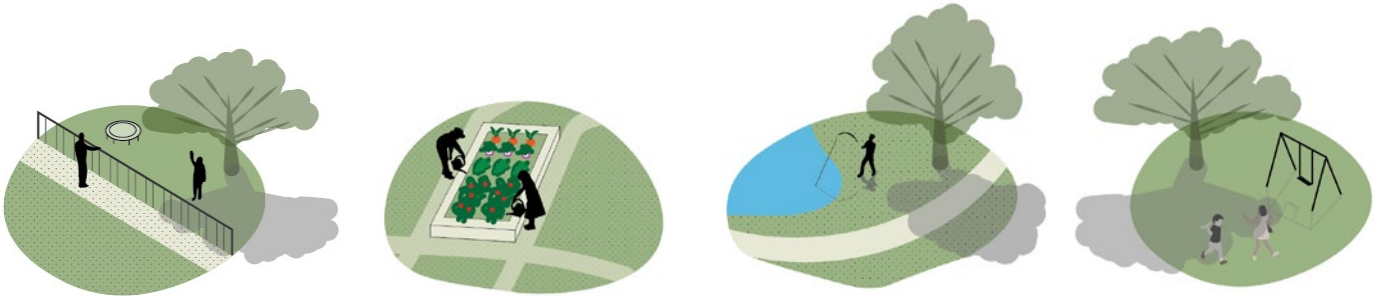


Figure 48 Courtyard diagrams [own photo]

From this gap analysis of the outdoor shared spaces, I formed the transformation plan. The main goal is to make the public park more accessible and provide a route to it that will cross the courtyard. The courtyard will be transformed and host small scale residential units and a few commercial zones. These will shape the open space and give it extra functions, such as access routes, private front yards, and public zones. The outdoor space will have a purpose, and consequently transform the whole experience of walking in this neighborhood into an urban trip.

Both the current residents and the future ones will benefit from the change. The current residents will enjoy the upgrade of their living environment. An upgrade that enhances the sense of community with the access of new members in mind. While the current residents will get new outdoor spaces they can transform and make their own, they will do it with the new residents and together shape the future of Groot IJsselmonde, as a united growing community.



Figure 49 Courtyard in Reyerood [own photo]

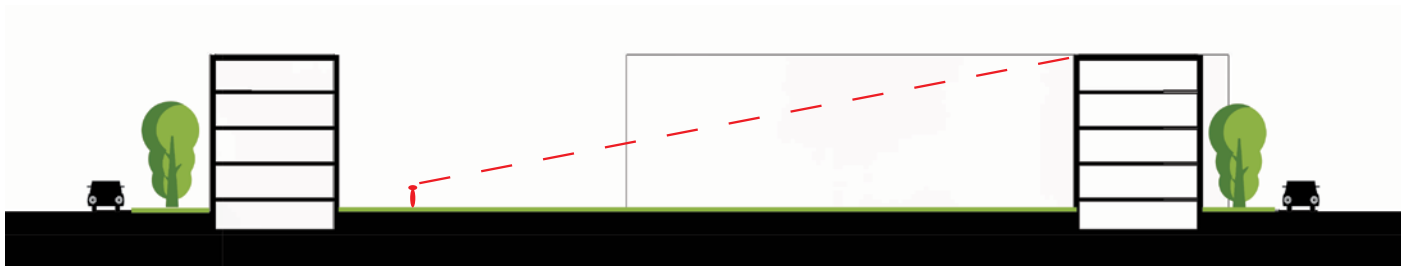


Figure 50 Courtyard section diagrams [own photo]

5.4 Applying design in Groot IJsselmonde

5.4.1 Planning the renovation

I believe that in regeneration projects it is essential to work with the existing as much as possible. I studied vastly the original structure of the buildings populating the chosen area. They manifest different construction techniques, and therefore a different renovation strategy. The main goal is identical, but the excursion is different. The main goal is to add a gallery type of corridors to the upper floors, transforming the ground floor into separate units, and moving the entrance to what is today the courtyard. The upper floors have a main circulation core attached to the side of the building, with the main entrance facing the courtyard as well. The open space along the building will get a new private purpose. It will be directly accessible from the ground floor units and will be designed wide enough to accommodate sitting areas.

The whole building will get a massive external renovation to extend the life cycle of the façade and increase the thermal comfort of the indoor spaces. The façade, which is composed of brick, will get insulated externally. The windows will be replaced and adapted to the new interior layout, in terms of size and performance. As part of the overall transformation of the building performance, solar panels and water collection systems will be installed on

the roof and in the basement. In order to reduce the direct sunlight and provide shading, an external shading system will be integrated in the design to reduce the cooling demand in summer.

In my opinion, in order to enhance the sense of community on a building scale, the entrance should hold a greater role in bringing the residents together. By combining the corridor system into a unique path that has only one defined entrance, more residents will have the opportunity to get together spontaneously.

The main lobby will lead to the upper floors. It will have an elevator that was not present before, and transform the apartments to be wheelchair accessible. An external structure with a corridor will be placed on the back part of the building, transforming the front access of the apartment facing the courtyard. The external corridor will become a gallery and designed with wider parts to accommodate balconies. A built-in planters system combined with a rainwater collection system is integrated in the design of the new structure.

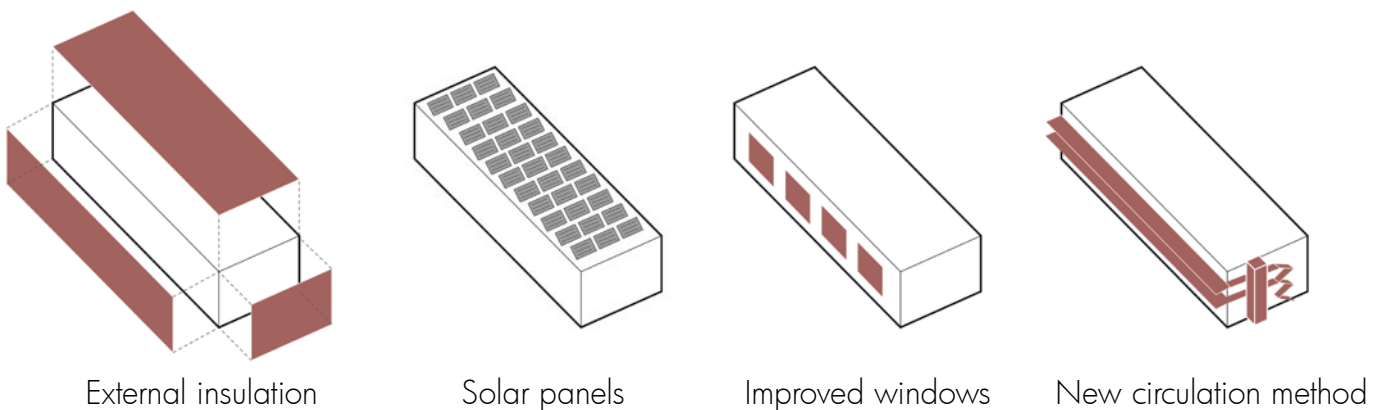


Figure 51 Renovation process diagrams [own photo]



Figure 52 Example apartment - floor plan [own photo]

The first two floors will transform from a one-story apartment to a duplex. The enlargement of the apartment as well as a private garden on the street site will hopefully attract young families to consider this complex as their new home. The main entrance to these apartments is from the courtyard side, rendering the accessibility route passing through the new main lobby. The entrance to the 5 ground

floor apartments has a front yard with space to place chairs.

The interior renovation plan shuffles the orientation of the rooms and combines opening up the spaces. Therefore, some of the load bearing walls need to be partially demolished and replaced with a beam.

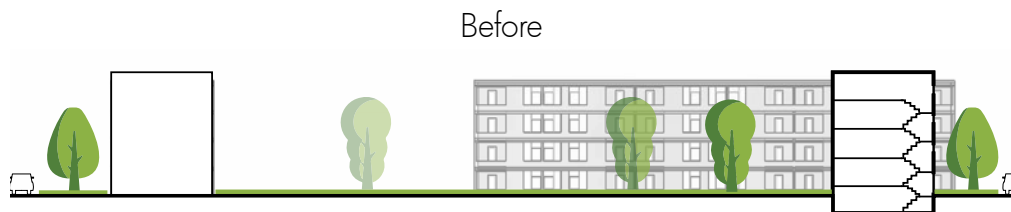


Figure 53 Cross section through the site [own photo]



Figure 54 Cross section through the site [own photo]

5.4.2 Creating an urban path and creating functions in the public zones

The neighborhood has a central commercial zone that hosts some shops, cafes and restaurants. Along the streets and inside the residential part, and in the park, there are no commercial features to be found. As one of the main aspects for the regeneration process, I aim to make the public spaces multifunctional. And therefore, adding commercial nodes mixed in the residential rendered essential to the process.

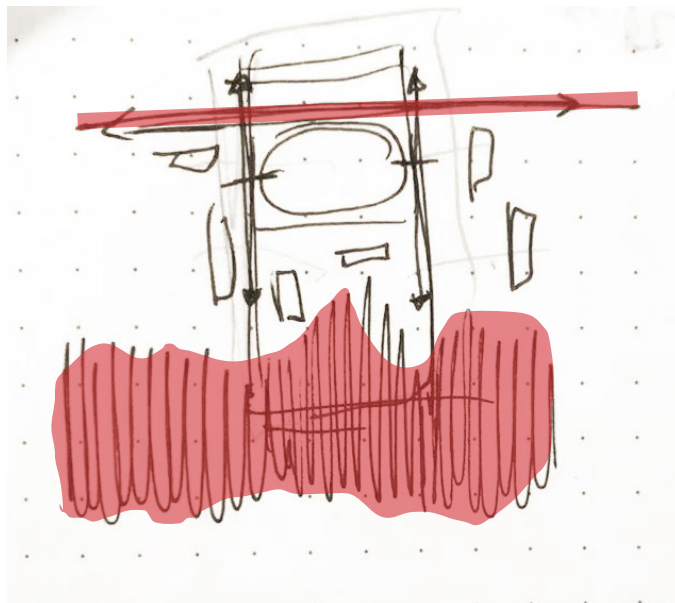


Figure 55 illustrations street\park [own photo]

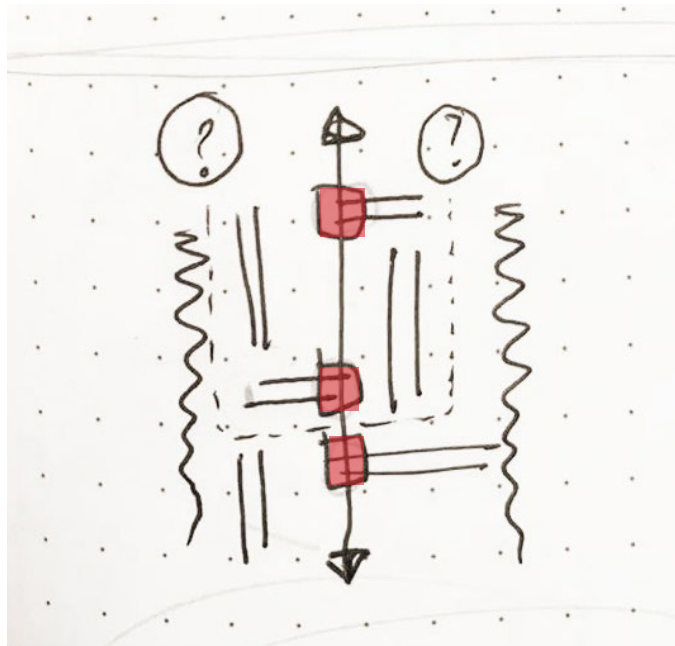


Figure 56 illustrations of a public path [own photo]

An Urban path will cross the courtyards, connecting the main street with the park nesting across the group of buildings [figure x]. The path will pass through the residential cluster and along the new houses. Along the path the front yard of the houses will provide a sense of community, the `new street`. Along this path, two commercial functions will be located. A kindergarten and a café. Those functions add reasons for people to explore this new urban fabric.

On the ground floor of the two buildings that `block` the public path, a communal function takes place. Co-working areas and indoor commercial zones, like workshops, that function as `gates`. The combination of public and commercial functions in a residential area is carefully planned not to become a disturbance. The café, kindergarten, coworking place and workshops are usually open through the morning and the afternoon and will not be a disturbance in the quiet hours of the night.



Figure 57 plan of a public path [own photo]

5.4.3 New housing units

The new houses that will be placed in the open space are designed as a small house typology. The houses have two stories and hold either one family or two families each (figure 58). They are placed in front of the older typologies, and their entrances facing the new ground floor units. These houses are to be placed adjacent to one another creating a strip-like form. Their shape will guide the new public path and define it since it is stretched along it. The single family house has two entrances, one in the front, and one in the back (figure 59, Unit B). The kitchen is located at the front part, the living room at the back and the bedroom on the upper floor. The communal areas are in direct connection with the outside spaces, which is a private area on both sides of the house. The private area is private but open, it holds the transitional function. In this area the owners are welcome to use and transform, and mostly to exhibit their character. The main idea in making small houses is to encourage people to use the communal areas and the open space more as an extension to their living environment.

The houses are constructed from prefabricated timber walls that are mounted on site. The components are brought to site with the windows and doors installed, while requiring only mounting, anchoring, and cladding. This system is efficient in reducing the construction site noise and making the workflow simpler and faster. The housing units can therefore be demounted in the future and replaced with a different system. The use of timber structures results in a low carbon footprint and is rendering this trans

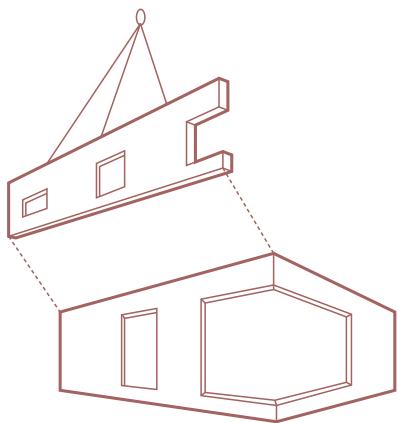


Figure 60 clt construction diagram [own photo]

Unit A

Unit B

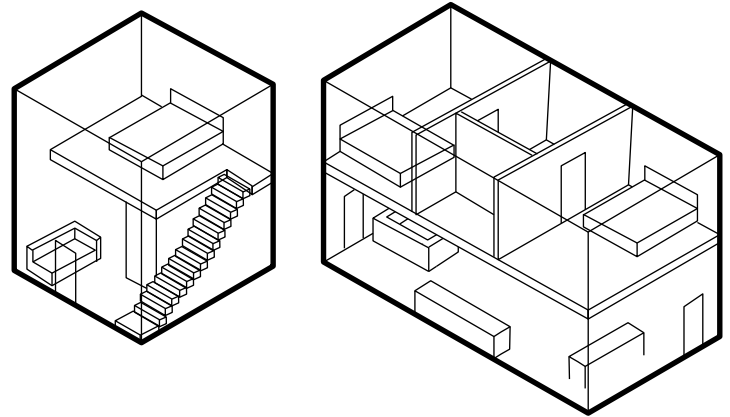
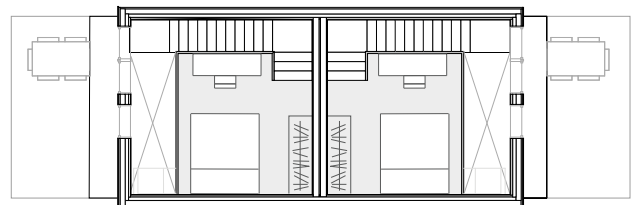
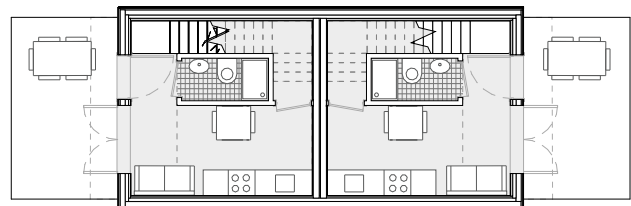


Figure 58 Housing units A and B [own photo]

Unit A - Floor plans

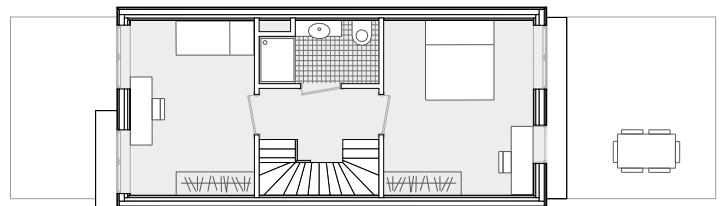


Level 01

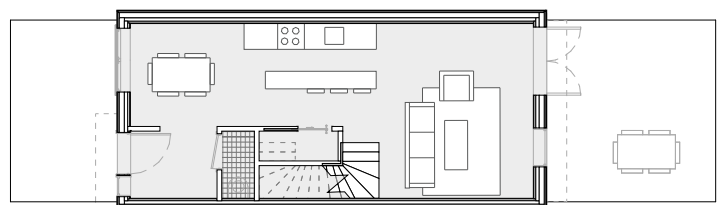


Level 00

Unit A - Floor plans



Level 01



Level 00

Figure 59 Floor plans Unit A and B [own photo]

5.4.4 Rescaling open spaces with communal areas

The masterplan for regenerating the open spaces includes rescaling and building new construction. The new buildings will be for housing and commercial use. The placement of the volume in the vast open space that spread between the original structure will redefine the typology of the remaining open spaces. The new circulation route, from the street to the main entrances will accommodate communal use along it with seating areas, shaded spots, and a communal garden. These areas are to define the semi-private zones and provide communal gatherings areas. In these areas the residents are responsible for developing, taking care of, and transforming according to needs. They could become bicycle parking, vegetable gardens or a playground. The space is directly accessible from the street and welcomes the residents and their guests in entering the residential area.

The materials used in the communal areas are to be used from the demolished brick walls of the interior renovation. The brick should be grounded and treated for external use and placed as gravel. The red colored brick will remind the old construction, will remain in the construction site, and get a second purpose. The whole process should be done on site and reduce transportation effort to a minimum.

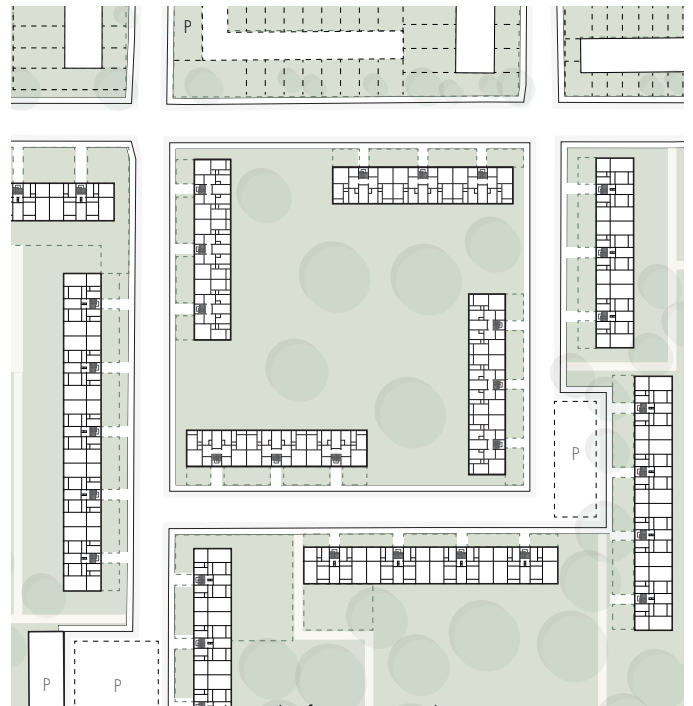


Figure 61 Master plan - before [own photo]

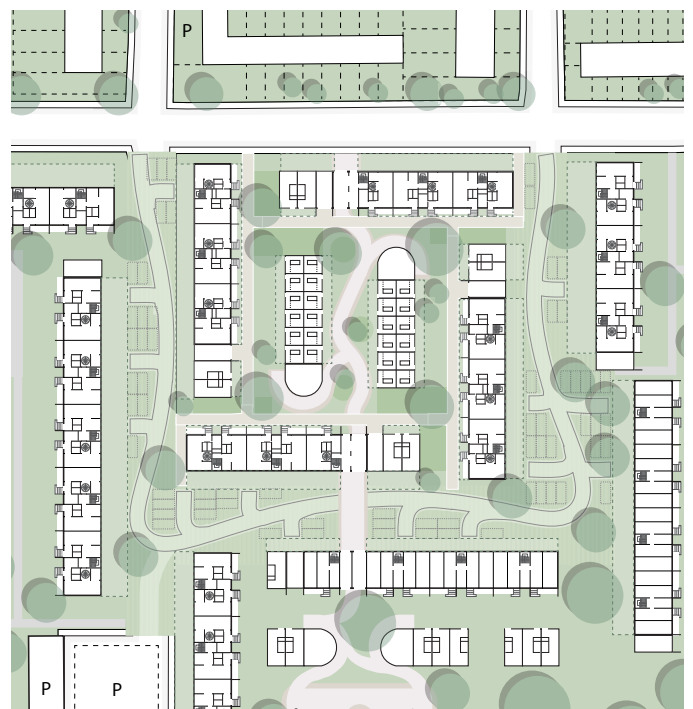


Figure 62 Master plan - after [own photo]

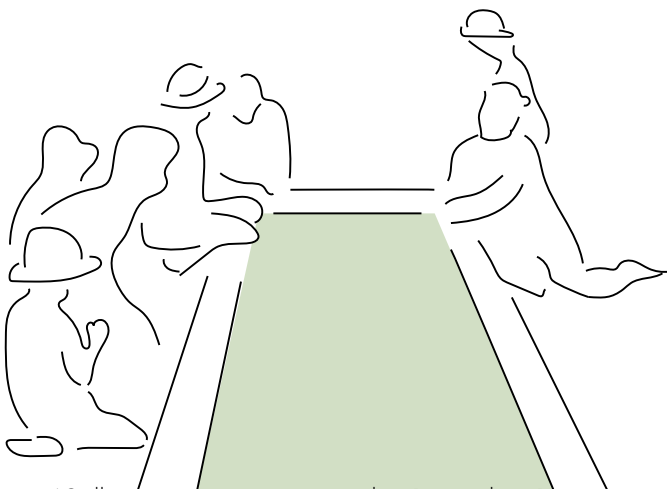


Figure 63 illustration community garden [own photo]

6 Reflection

My final research question is - *How to maintain or enhance a sense of community in post-war neighborhoods undergoing regeneration processes?*

Since starting this graduation project, I have been increasingly interested in the connection between architecture and society. In my perspective, the general problem is composed of two main aspects, architectural and sociological, since residential neighborhoods are the main topic of discussion.

During the research and the design process, I have doubted and questioned every part. Therefore the reflection is composed by the sub questions that arose during the process.

How to solve the housing crisis?

The current housing crisis in the Netherlands requires a comprehensive study on who is affected by it, what are its characteristics, and what are the possible solution strategies. I discovered that after World War II there was a great housing shortage which was solved with extensive urban sprawl. Today, the aim is not to reduce open areas, and therefore densifying existing cities is a prominent solution.

How to build a design manual?

Initially, I wanted to propose a design manual that would offer guidelines to densify post-war neighborhoods in the Netherlands. When I started composing the design manual and studying the



Figure 64 illustrations of a communal garden [own photo]

context of post-war neighborhoods, I realized that this would be a difficult task to achieve, due to the enormous scope and factors needed to take into consideration. Post-war neighborhoods have a large range of construction styles and materials, and master plan shapes. Moreover, in every neighborhood the population configuration is different, therefore they have different desires and needs.

Who is the solution for?

One of the feedbacks I received was to focus on a target group. Planning for a specific end user helped me understand its desires and needs. I chose the largest age group that resides in Groot IJsselmonde, young adults. This decision helps achieve a wide utilization of the solution. In other neighborhoods, the most prominent age group can be different.

How to integrate new residents with current ones?

A design of an environment that promotes the use of shared spaces, gives the community a place to develop and evolve. In these spaces the residents are welcomed to change and modify the surrounding according to their view. The current community holds enormous importance in the integration of the new residents. If a community exists, it will shape the communal spaces quickly and efficiently according to what is already successful and proven. The ongoing change of a communal space and the manifestation of the residents characteristics attribute to the sense of community.

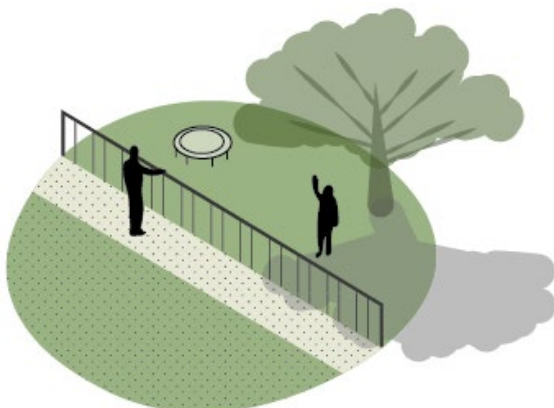


Figure 65 illustrations of a front yard [own photo]



Figure 66 illustrations of a public park [own photo]

Why a sense of community?

As a young adult myself, I sense that I am directly impacted by the evolving changes in our built environment while simultaneously being a key influencer on the factors that shape it. When I think about my sense of community, I think about my neighborhood and how the connection with my neighbors contributes to my well-being. On a larger scale, I notice the missing sense of community beyond the street boundary and wish that this neighborly behavior would grow into a neighborhood-scale safety net where everyone would feel they belong and contribute.

During the research phase, I planned to conduct interviews and observations in Groot IJsselmonde regarding the existing community. I visited the area a couple of times, but encountered several obstacles, the biggest of which was the language barrier. I did most of the analysis of the existing community by observing the common areas. In these territories, it was possible to see an expression of a sense of community in some cases and the lack of it in others. For example, benches in the inner courtyard indicate a potential meeting between neighbors, but some of the courtyards are empty of sitting areas or play areas. This led to the design choices I made in the implementation part of the research.

How does a sense of community manifest itself in architecture?

Studying existing master plans and theories helped me understand that a sense of community usually reflects itself in shared spaces. The various studies examined different residential areas and identified which elements influence the sense of community in a neighborhood. Consequently, I concluded the

crucial role of physical spaces in hosting social interactions. For example, the walking path towards the entrance, the corridor, and shared outdoor spaces.

How to integrate new and old?

An important aspect of the design is the contextuality aspect of it, there is a risk that the renovation project will become unrelated to the rest of the neighborhood. Examining the existing environment proved that certain solutions are not achievable, for example replacing the entire facade, or adding extra floors on top.

Walking in the neighborhood and photographing it gave me a lot of information. I made a comparison between the original drawings of the buildings and the existing situation. It proved to me which elements have changed. For example, a front yard was turned into bicycle parking space, and an external structure with outdoor space was added to one of the buildings. These changes established my ambitions for change that I could implement in the project.

How to build sustainably?

Part of the design proposal is adding new construction of small residential units in the open space. I investigated current ongoing residential projects. Looking at popular building methods sheds light on the current developments of building technologies, achievable sustainability goals, materials, and housing configurations.

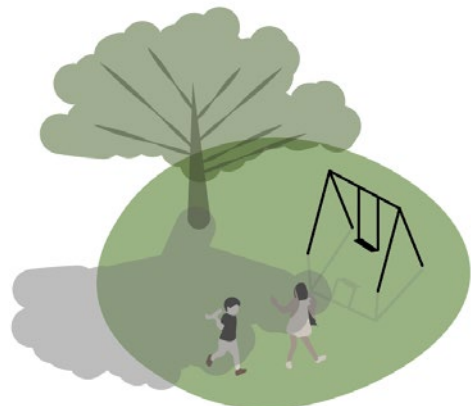


Figure 67 illustrations of a playground [own photo]

Conclusion

The planning of the regeneration transformation of Reyeroord in Groot IJsselmonde has been very interesting and challenging. The investigation part started with a visit to the Archive of Rotterdam, and photographing the original material. Analyzing and digitalizing the plans, sections, elevations, and details, has taught me a lot about the original construction method and layout of the apartments. It mostly highlighted the potential of the original structure to modifications and determined what can or can not be done, this had an influence on my design proposal. The research on how to maintain or enhance the sense of community in a residential neighborhood has brought three conclusions. First, the solution needs to integrate new and old construction in a way that will not overpower the rest of the neighborhood that might be renovated in different periods. Second, the importance of multiple types of housing solutions, in order to attract to the neighborhood a greater variation of target groups. Third, planning the shared spaces in three scales- urban, stamp, and building scale, in order to provide a well connected successful community. Although the design outcome is shown in the case study neighborhood-Groot IJsselmonde, I believe the research conclusions can be implemented in other neighborhoods with alterations.

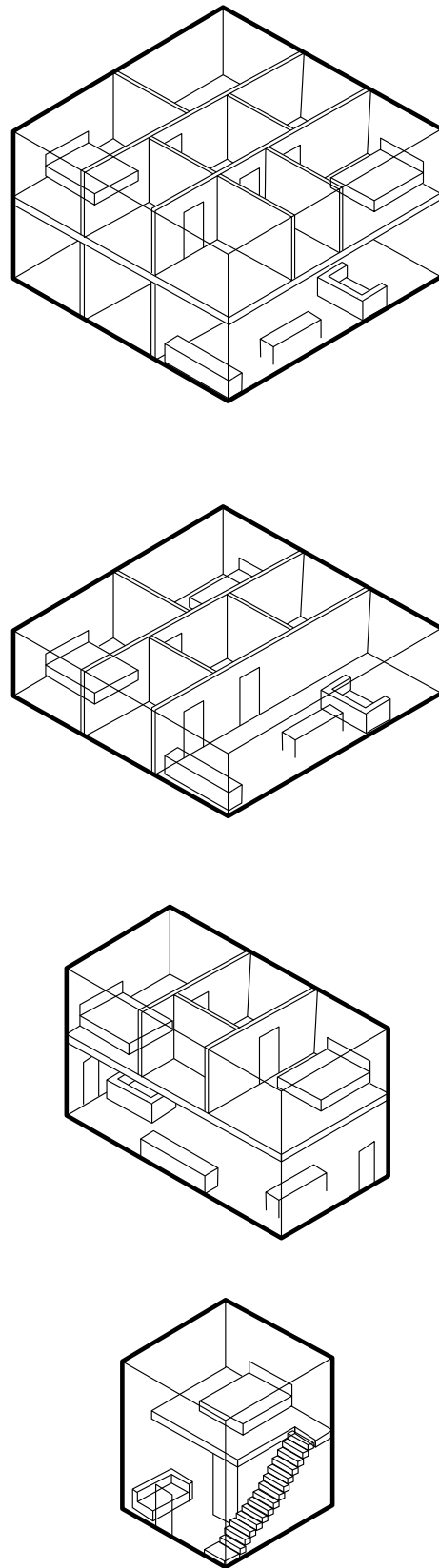


Figure 68 illustrations of various housing typologies [own photo]

7 Personal note

During the course of this project, I discovered why I chose this topic intuitively, and how the issue of sense of community in urban housing is relevant to me. As a young adult, I sense that I am directly impacted by the evolving changes in our built environment while simultaneously being a key influencer on the factors that shape it. When I think about my sense of community, I think about my neighborhood and how the connection with my neighbors contributes to my wellbeing. On a larger scale, I notice the missing sense of community beyond the street boundary, and wish that this neighborly behavior would grow into a neighborhood-scale safety net where everyone would feel they belong and contribute.

In my perspective the current housing crisis must be solved through consolidation. I think that after the in-depth research I have done, and the plan I propose has a high probability of working. Both in architectural and sociological aspects, I provide architectural solutions that will enrich the area with new meeting zones, activities and comfort. These spaces influence the sense of community and elevate the sense of belonging and vitality of the neighborhood.

The importance of this work is the emphasis on the sense of community as a main component of the neighborhood renewal project. As I learned, focusing on the sense of community will bring to the neighborhood the element that every good planning strives for and will make the neighborhood prosper beyond what it presents today.

While I carried out the research, I came across the fact that not many researches focus on the aspect of sense of community as a central element in the renewal of neighborhoods built after the war. This fact led me and pushed me to carry out in-depth research and to combine the methods of different theorists in my solution. Combining the material for the research was fascinating and enriching. During

the research I studied theories from different fields, such as urbanism, psychology, and sociology. The combination of theories from different fields created an architectural theory that is integrated into practice and can be applied.

During the planning phase of the urban renewal to Groot IJsselmonde, I was exposed to different construction methods. Each method has the technological innovation it brought to the field of construction at the time. The renovation of the original buildings raised many questions about the quality of the environment, integrative construction, and the integration of energy conservation technology in new and old construction.

I am confident that what I learned during this research will serve me in the future, and that I will apply my learnings. I realized the importance of communal values within the field of architecture, and how they can be applied to a wide variety of projects, encompassing residential, commercial and public contexts.

I am glad that I had the opportunity to deal with this issue since post war neighborhoods make up a large part of our built environment today. I enjoyed planning the potential outcome of these neighborhoods, overcoming the obstacles I faced along the way. Dealing with an existing structure required me to develop a comprehensive and rational thinking about what can or cannot be changed. The private living environment led me to plan a significant and achievable improvement, one that seems possible to take place within a limited budget. And especially dealing with the production of an entire project from the research phase to the implementation phase.

I hope that those who read the work will find it as interesting and useful as I did.

Ella

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