STITCHING A NON PLACE

Towards a more integrated design of urban fragmentation in Hillegersberg Zuid



Miriam van Eck
4010841
P5

Student name Miriam van Eck
Student Number 4010841
First Mentor Teake Bouma
Second Mentor Cor Wagenaar

Msc Urbanism studio Urban Fabric
TU Delft
21 - April- 2023

ABSTRACT

This report attempts to explore the causes of spatial incoherency in Hillegersberg Zuid. It does this through a retrospective historical analysis of the infrastructure, its symbolic projections and its use. Through the lens of socio-political motives of the past century the cities' response to the current housing crisis is questioned in the area along the Ceintuurbaan, RET and St. Franciscus Gasthuis , designated as a search area for densification by the Municipality of Rotterdam. The existing functions service a larger framework yet present as isolated blocks disconnected from their immediate surroundings. (Re) developing this physical, economic and socio-political border, has the potential to create a more permeable boundary and allow for more diverse interaction. By searching for an approach in which the existing structures are integrated into a sustainable densification of the area a proposal is presented through physical models and design research in a concept to reconnect the fragmented area.

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MOTIVATION

As this paper is the accumulation of a trajectory towards entering the field of Urban design a position must be taken on the role of the urbanist. I consider the work of an urbanist to be imbued with personal conviction whilst, simultaneously and cooperatively, considering the plurality of the society for which we are trying to develop a livable environment. We must function within and with developed policy, the physical realm and be able to envision speculative futures without myopocy. I am in advocacy of compromise and was hoping to be able to move between the human scale and the complexity that the greater urban landscape brings with it to work towards an implementation in practice.

The year this project started marked a century since Thomas Kuhn was born. An appropriate time to reflect upon our new reality.

1 INTRODUCTION

1.1 PROBLEM STATEMENT

Urban development is a cumulative human construction through a constantly changing societal context. As the process of organizing, implementing and building this physical space occurs and endures within a different pace than our perspectives on them we live amongst the consequences of paradigms that may not align with our current state of mind.

Simultaneously these structures influence our action by the way we live our lives within them and the meanings we project on them.

To expedite the materialization into our urban fabric in response to current urgencies tools such as policies and specializations are developed. Though these tools help us organize, categorize and prioritize, it also creates unexpected spatial consequences in the crevices of the urban environment.

The current housing crisis in the Netherlands is setting a multitude of responses in motion, ranging from the implementation of accelerated building permits to exploring temporary adaptive housing solutions (MBZ, 2021). With the urbanization trend in the Netherlands, particularly towards the Randstad, Rotterdam is preparing for densification as defined in its Omgevingsvisie(2021). However, with foreshortened processing comes selective prioritization. A few overarching areas in Rotterdam have, thus far, been explored more extensively. A smaller area designated for densification can be found in Hillegersberg Zuid. This area, contains few residential structures, fragmented through past developments. Responses to residential densification during a crisis in the past have impacted the social dynamics of those areas in unforeseen ways and can inform our design process in the current housing crisis to stimulate socially sustainable communities in a period of rapid transformation.

1.2 RELEVANCE

As a point of contention the housing crisis is addressed frequently and from a variety of angles within policy papers, public debate and academic research. Recent analytical criticism focusing on the political causality of the situation can be found in David Madden's and Peter Marcuse's "In Defense of Housing" (2016) and more locally in Cody Hochstenbach book "Uitgewoond"(2022).

The College van Rijksbouwmeester has addressed the housing urgency in studies such as the commissioned exploration into "Flexwonen" and the Dutch government is working on an overarching policy streamline development and make housing more available, more affordable and of better quality with a multi year investment strategy (MZK, 2022). However, the pace at which these policy models allows for actionable development has been broadly criticized and impatience can be through protests and initiatives such as Ministerie van Maak at the IABR (2022).

In contrast, on a local scale projects can be seen hastily responding to single issue matters that are later regretted when a new context presents itself. The consequences of this short sightedness within urban development can be seen in examples such as the tearing down of the Hofbogen to accommodate the A20 only to establish plans to rebuild it a few years later.

1.3 PROBLEM CONTEXT

1.3.1 Densification

The world is facing a population increase, including the Netherlands which is expected to grow from the current 17,5 million to over 20 million by 2070 (CBS, 2021). Without a growing territory an increased population density is unavoidable.
Besides population, other densities influence the urban environment as well, such as house(holds), services or floor space (Berghauser Pont & Haupts, 2010). These are measured and calculated by institutes such as the CBS and PBL informing prescriptive density policies.
In line with the international urbanization trend (UN, 2018) the Netherlands is coping with rural flight and urbanization, particularly in the Randstad (NOVI, 2021).
Densification does not occur unilaterally and needs to be considered on different scales. Berghauser and Pont identify five scales to determine density; the building, the lot, the island, the fabric and the district(2010).

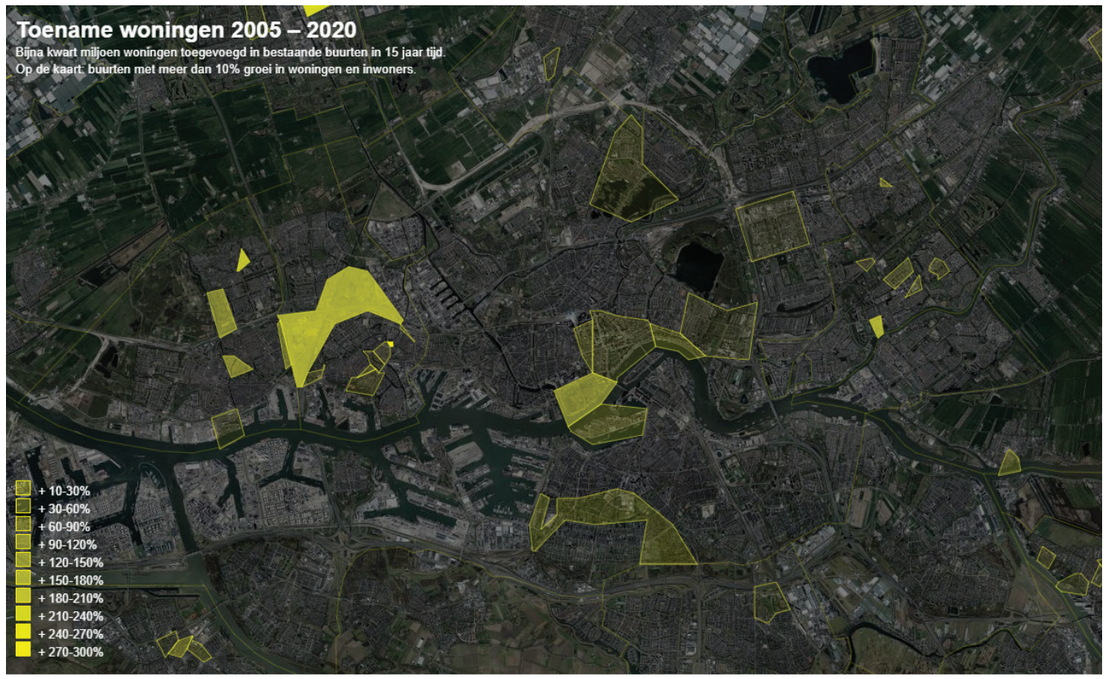


Figure 1. Densification in Rotterdam; neighbourhoods with at least 10% growth in residents and housing
Source: Excerpt from nl2100.nl/verdichting

1.3.2 Housing crisis

Though the term ‘housing crisis’ has been contended, as a crisis in housing is always felt by the less fortunate (Madden & Marcuse, 2016), the Dutch news media and public debate is rife with the term and its more appropriate derivative “livingcrisis”.

After World War II the country required reconstruction of its entire physical environment and the housing shortage was high on the political agenda. To illustrate the magnitude of the current housing urgency the NOS OP3 draws a direct comparison between current situation and the way Joris in ‘t Veld referred to the housing crisis of the post war(2021).

The cause of the Dutch housing shortage consisted of a slew of political misjudgments and escalating consequences leading to too few houses being built for the growing population demands whilst simultaneously seeing the existing stock bought out by investors.
The financial crises of 2008 triggered a recession that made it difficult for people to buy a house in turn causing housing prices to drop whilst de-incentivising building new ones. Meanwhile international investors were encouraged to seek out the Dutch housing stock as an investment opportunity, removing the ownership from potential residents. In addition the housing corporations were sanctioned with an extra tax causing them to sell existing stock and limit new construction. This, in combination with a population increase, smaller household sizes and larger average living quarters per person, resulted in the housing crisis we face today.

Housing is both a human right as established by the United Nations (OHCHR, n.d.) and established in the Dutch constitution under article 22 in which the government is charged with making sure the housing stock suffices (Overheid, 2018)

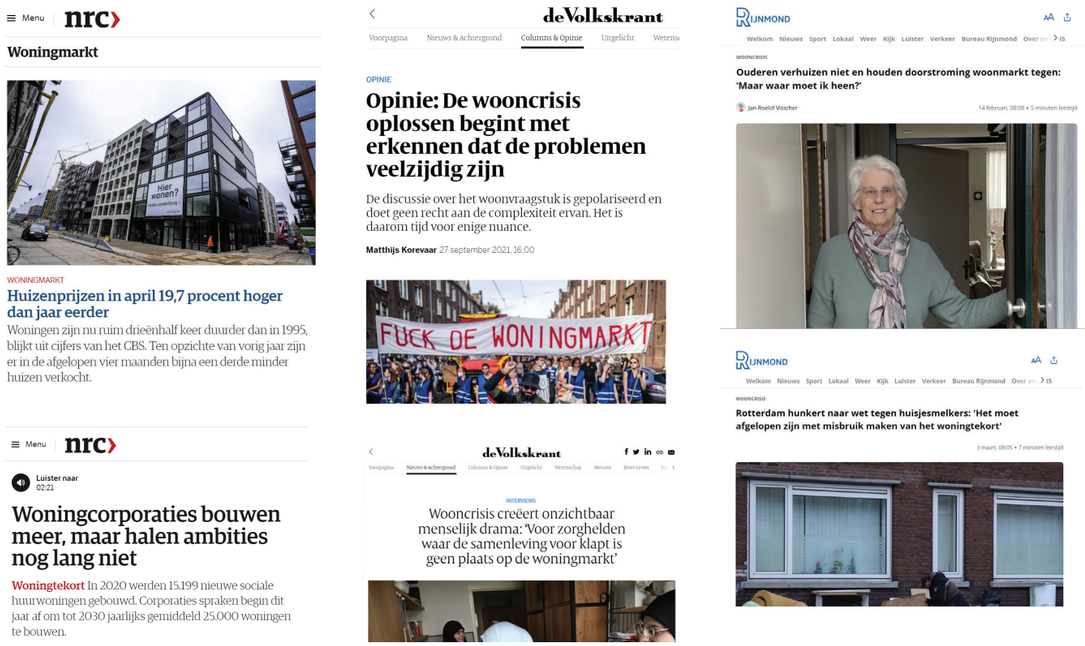


Figure 2. Multilayered issues of the Housingcrisis
Source: NRC, Volkskrant, Rotterdam Rijnmond

1.3.3 Co-presence

Though there has been a lot of development in algorithmic ways of assessing urban interaction such as in network analysis, measuring the potential of human interaction does not necessarily reflect reality as social cohesion and interaction is not only dependent on proximity (Legeby, 2013).

Besides proximity the different characteristics of people inform their own social pockets which should be allowed to exist
The street and its public space is is an important meeting grounds for "unintended encounters".

Sennett emphasizes the importance of social identity of groups and their needs to feel safe in a public space, often manifesting in pockets to which they can retreat to. He further asses Levinas view of the neighbor as a viable way of interacting and becoming aware and interactive with one another (2018).
This concept of the neighbor is
It is, in part, related to the proportions and shape of the public space as well as how walkable the it is. Though walk ability is a strong component not all walks are the same; some may be functional to get from one destination to another, the walk itself may be necessary for the purpose of exercise or the walk may perform no purpose at all but to wander. Each walk has it's own pace, focus and predictability. Legeby touches upon creating distractions in walking routes whilst simultaneously creating (social) rituals, and that by introducing variation in ones interaction ritual it inevitably creates countless others (2013)
We may ask what spatial responsibility the urban designer have? One takeaway is that by creating variations and distractions in the walkable environment can stimulate interaction rituals that would other ways not take place, especially between individuals who are not strongly connected(Legeby, 2013)

1.3.4 Projected meaning

Symbols are embedded in the fabric of the man-made world, these may be physical references depicting figurative or metaphorical allusions but they are also wildly present in the language we use to name our environment.

As part of the Symbolic Interactionist Paradigm the attributed meaning and how it influences our actions has been explored by social theorists hailing from the 'Chicago school' (Inglis, 2012). In Nas' concept of the Hypercity The significance of this layered meaning we place upon the urban environment shapes a notion of the city that may become more real to us than the mere elements (Nas, Jaffe and Samuels, 2006).

We see this projection of symbolic meaning in Levebvre's notion of the Representational space (1991) and, as Lynch notes, these non-physical properties of names and meaning is one of the clues to reading the urban space. (1960) However, he emphasizes this should not be considered in isolation to its spatial and temporal qualities.

The ontological idealism embedded in toponyms may not always be consciously perceived by the immediate users of our environment but will none the less provoke associative meaning. Besides the effects these names have on our perception and our actions (Blumer, 1969). The ways in which we give names to our environment are elaborated upon from phenomenological viewpoints in Norberg-Schulz's Genius Loci in which he emphasize how we use nouns, propositions and adjectives to distinguish between place, space and character(1981), as well as from an etymological viewpoint such as in MaartenJan Hoekstra's DORP STAD LAND in which he explores the cultural and historical transference of the Dutch language in relation to our urban environment (2015).

1.3.5 Policy Framework

As our society does not function in isolation To organize and create consensus on how we live together spatially and politically multi scalar policies are drawn up and mobilized to allow for sustainable development of our urban fabric. Herein a range of subjects and scales are addressed. These policy scales need consideration when developing a densification design for the area North of Rotterdam.

NOVI

The Dutch government is revising its policy framework for the public realm and working towards an 'Omgevingswet', a new law aiding in simplifying and streamlining urban development(Rijksoverheid, 2022). In the context of densification the law One of the core ambitions is to improve construction or residential housing. However, organizing an integrative approach to streamline brings with it the necessary human collaborative constraints embedded in time, bureaucracy and communicative quality.

OMGEVINGS VISIE ROTTERDAM

In response to the NOVI Rotterdam has developed their own regional vision addressing five main perspectives to accomplish a compact, inclusive, sustainable, healthy and productive physical environment. (Rotterdam, 2021). Within these guidelines a range of initiatives are described. Informing the basis of any neighborhood redesign in Rotterdam. Within the context of this project 'The inclusive city' is of particular significance:

The Inclusive city
- Walking routes for elderly
- Good an affordable services
- Accessibility public transport and facilities
- Multi generation living environment
- Diminish barriers
- Space for Neighborhood initiatives
- School as anchor
- Stimulate interaction in public space

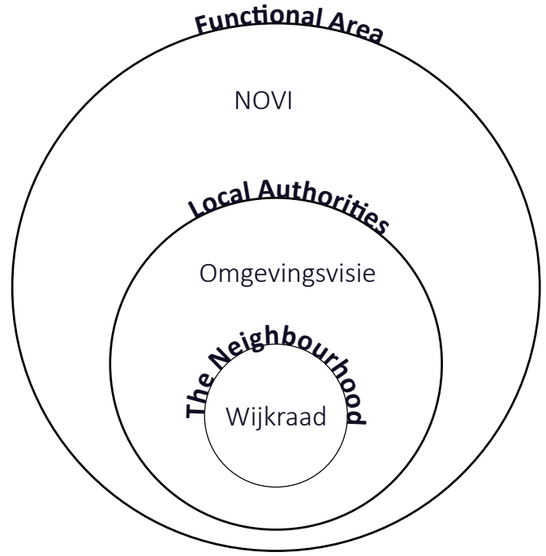


Figure 3. Simplified scales of different organisational levels
Source: Author

2 METHODOLOGY

2.1 RESEARCH QUESTIONS

How can the searcharea for densificantion within Hillegersberg Zuid be designed in an integrative way to stimulate social co-presence?

Sub Questions:

1 What types of social networks are present in Hillegersberg South?
Between which persons and when and where do they take place?

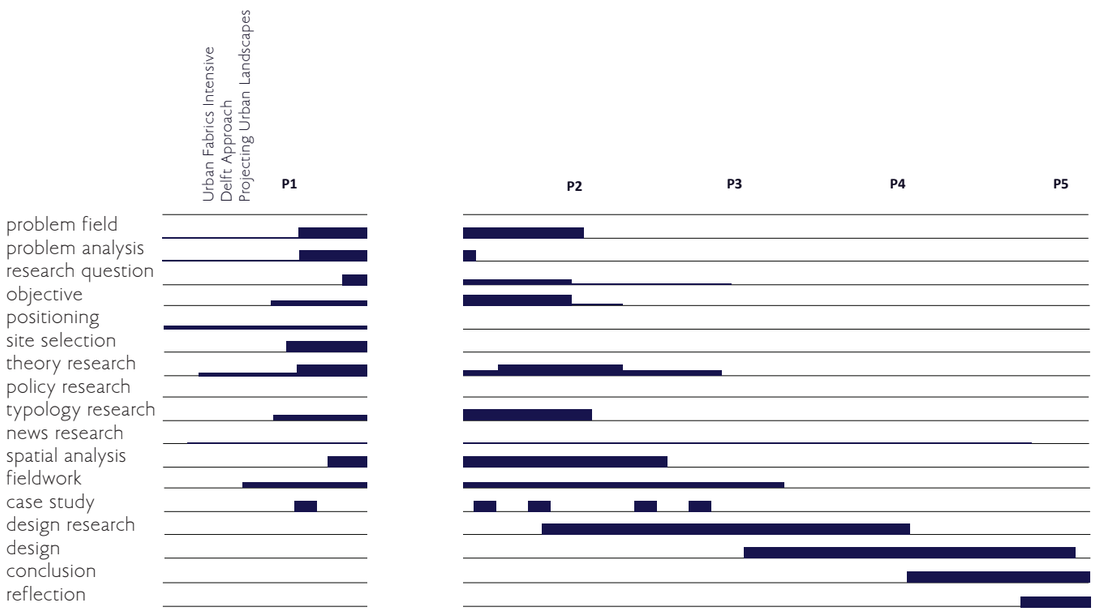
2 How do existing policies and projects inform the densification of the area?
What can the past development of the area teach us in relation to the?

3 How does the existing infrastructure influence social encounters?
What types of edges are present in the area, where do they come from, how permeable are they?

4 How do symbolic projections affect the project area?

5 How can the existing functions reach a more diverse audience?

2.2 TIMELINE



2.3 METHODOLOGICAL FRAMEWORK

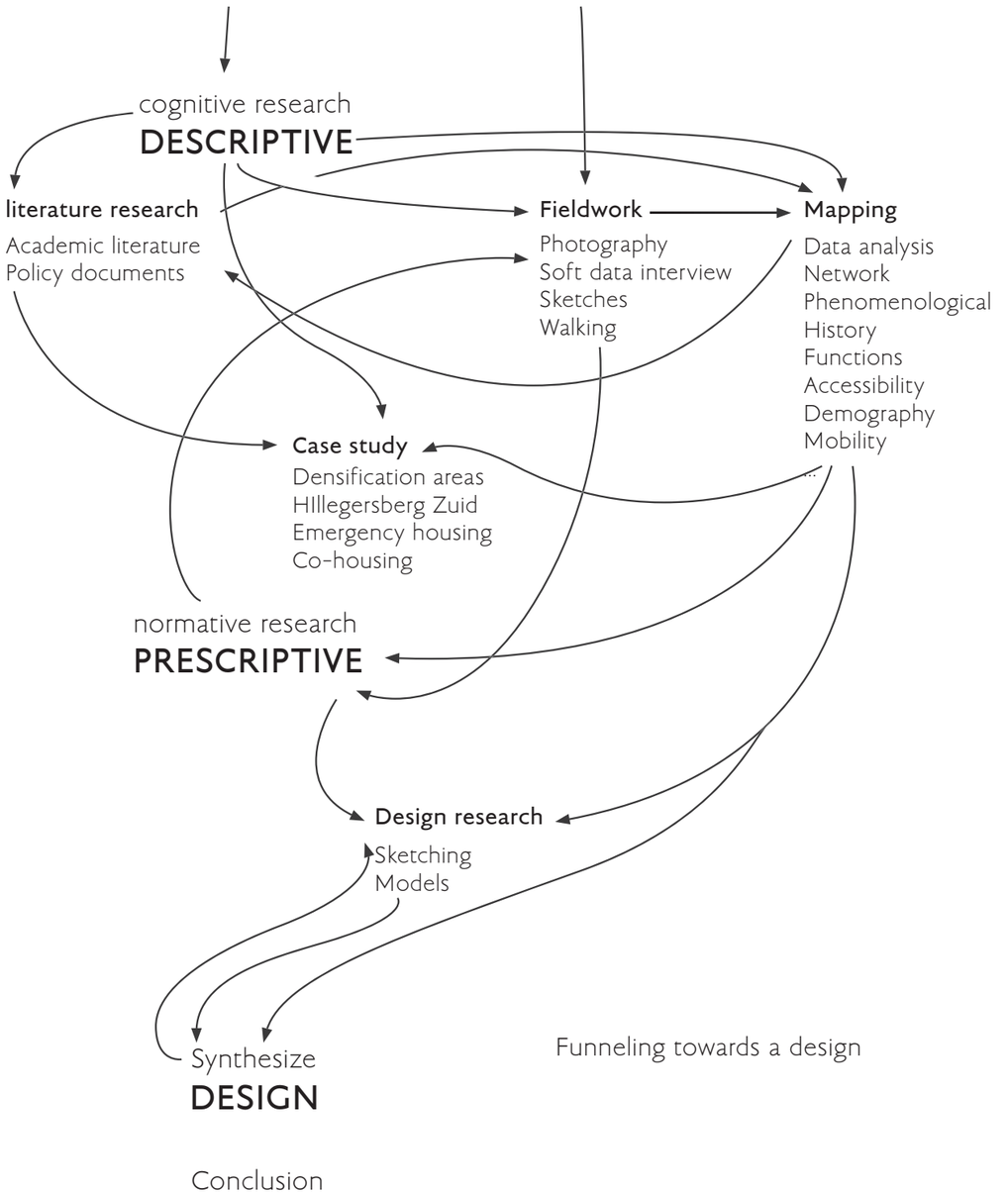


Figure 4. Methodological Framework
Source: Author

2.4 SELECTING THE PROJECT AREA

SEARCH AREAS FOR DENSIFICATION

On a National level urbanization
Within the Omgevingvisie Rotterdam a number of areas are identified as search areas for densification. A distinction is made for areas considered for long term densification plans.(2020)

Many of these spaces contain urban supporting structures such as parking lots, industry and sports fields, though a few areas in the center and south consist primarily of low rise housing.

Though the Omgevingsvisie mentions their aspiring neighborhood rules, they also acknowledge that the execution will be different for each neighborhood. A few areas are elaborated upon here to show how diverse a range each area can be in scale, progress and consideration.

Besides the Omgevingsvisie, other organizations such as the Metropoolregio Rotterdam den Haag and the Investeringsprogramma Zuidelijke Randstad also present areas for urban development that need to be considered.

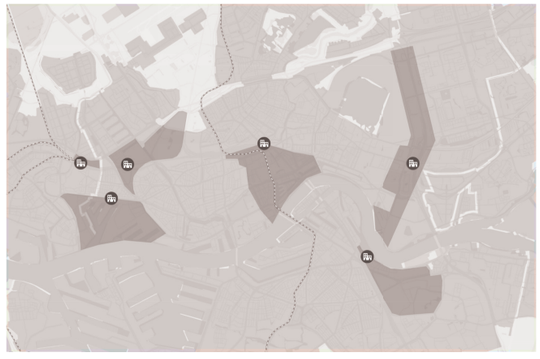


Figure 5. Investment focus projects in Rotterdam
Source: Investeringsprogramma Zuidelijke Randstad

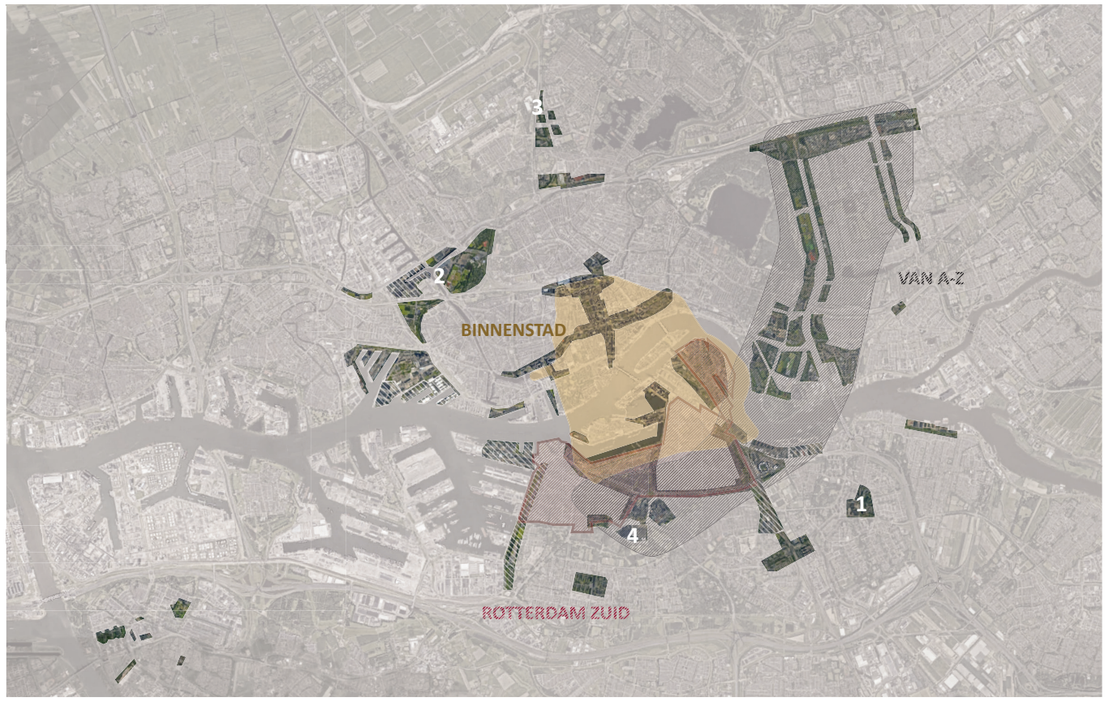


Figure 6. Search areas densification
Source: Author, Google Earth, combined and traced from Omgevingsvisie Rotterdam

1. IJSSELMONDE

In the middle of a residential area in south this area contains a few residential high rise next to a commercial center. There are plans to renovate the existing buildings and upgrade the commercial area



2. VAN NELLEKNOOP

Consisting of de Spangen Driehoek, Spaanse Polder Zuid, Roel Lagerakpark, Abraham van Stolkweg and the Kanaalweg. Research towards developments in densifying this area have been performed by the municipality of Rotterdam(2021. Concluded was that it would require significant investments, current functions would require moving and consideration of the van Nelle was needed.



3. Mileupark Hillegersberg-Schiebroek

The most North lying area designated for densification, this sight currently functions as the local waste collection. Though the city is developing circular waste flows(Rotterdam, 2021) there are currently no plans or research on whether or not this particular area can be moved or used in a different way.



4. HART VAN ZUID

Development of Hart van Zuid is in full swing (HartvanZuidRotterdam, n.d.) The commercial, event, sports and mobility hub is being renovated and developed as a primary social center including energy neutral residential housing on the west side in the park.

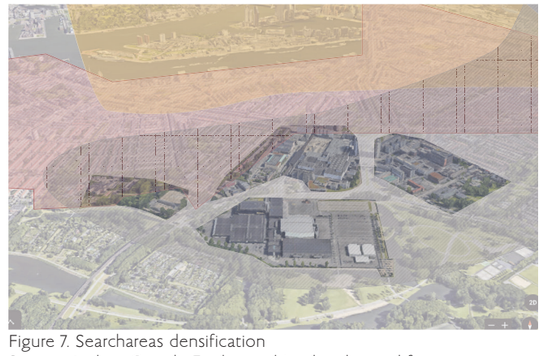


Figure 7. Searchareas densification
Source: Author, Google Earth, combined and traced from Omgevingsvisie Rotterdam

HILLEGERSBERG ZUID

In response to the preselected inner city densification areas as determined in the Rotterdamse Omgevingsvisie a project area within Hilligersberg Zuid was selected for a number of reasons:

* As of writing this paper the area has not yet been developed.

* It is not part of one of the three large focus areas elaborated upon in the Omgevingsvisie.

* The location holds a unique position along the ring and the new construction of the A16.

* The location, though built, contains minimal residential units allowing for the potential of new residents to be introduced without displacing others.

* Located in the periphery of the city near previous emergency housing locations.

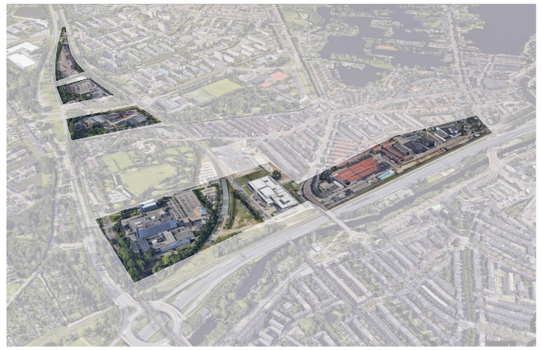
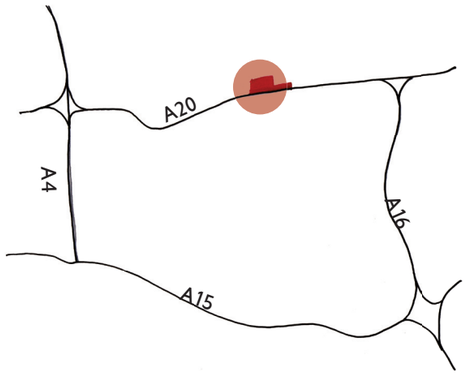


Figure 8. Search areas densification
Source: Author, Google Earth, combined and traced from Omgevingsvisie Rotterdam



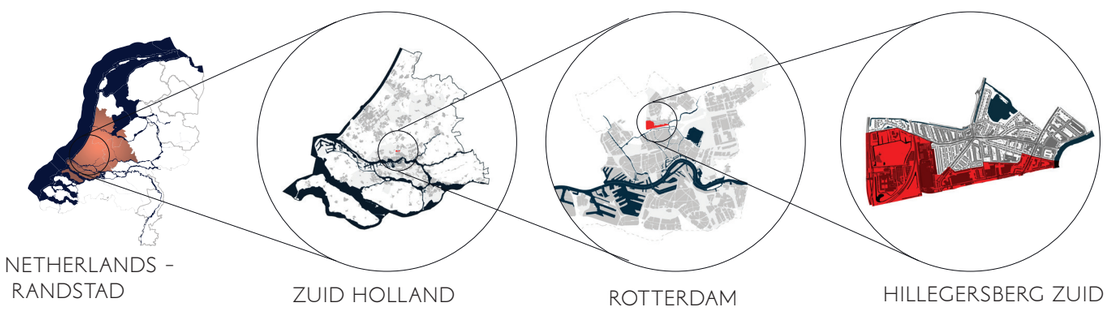


Figure 9. Location Hillegersberg Zuid
Source: Author, combined and traced from BGT, Rijkswaterstaat, CBS

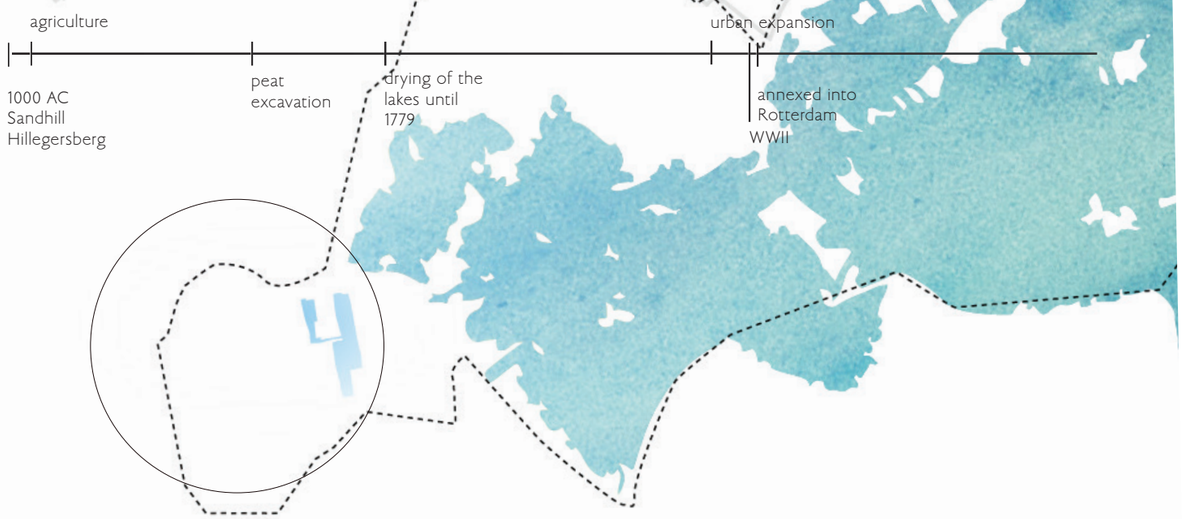




Figure 10. Indistinct Hillegersberg Zuid, Kleiweg tramstop and Ceintuurbaan
Source: Author

2.5 HISTORICAL DEVELOPMENT

The soil has been key factor to how the area of Hillegersberg was shaped, originating on a sand hill amongst the peat and developing from a polderlandscape to a residential neighborhood in the past century. (SHHS, n.d.).



POLDER

The low lying polderlandscape to the north of Rotterdam was a typical for the area. The Bergpolder, Part of the Municipality of Hillegersberg was a polder bounded by the Rotterdamse Schie, Brommendijkse Schieweg to the south, the Kleiweg to the north and the Paadje van Duizendtree to the west.

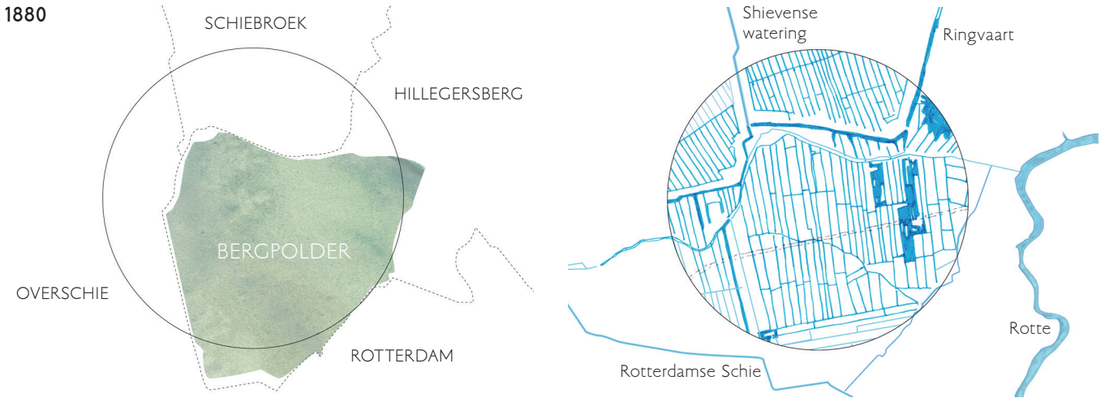


Figure 11. Polderstructure
Source: Author, based on information from Stadsarchief Rotterdam

RAIL

In 1899 The HIJSM buildt a track between Maasstation and Rotterdam Central. The Hofpleinlijn was added in 1908 (Spoor Tijdlijn Nederland, n.d.). This sections the Bergpolder off into four quadrants. As the southern quadrants, Liskwartier and Blijdorp, are in early stages of development, this sectioning can be seen incorporated in their development.

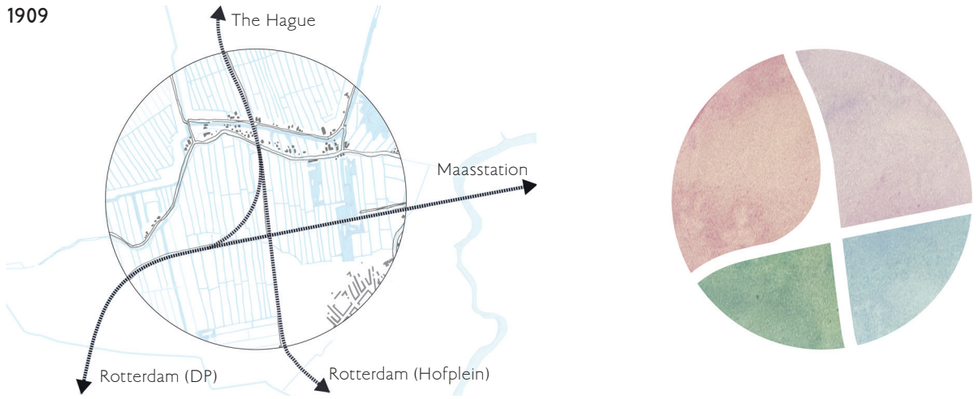
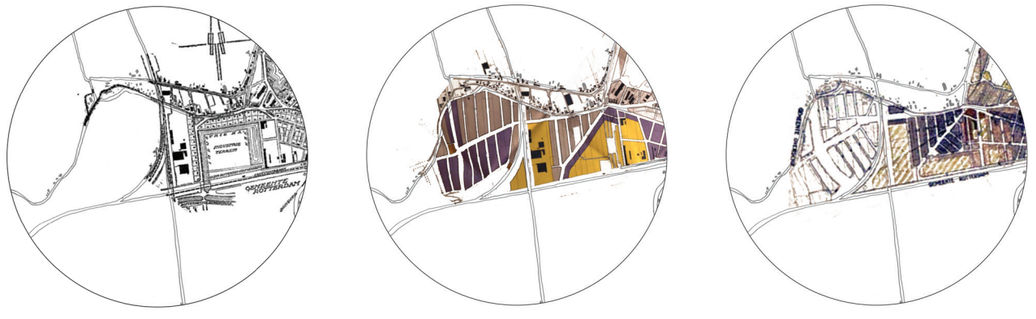


Figure 12. Segmentation by traintracks
Source: Author, based on information from Stadsarchief Rotterdam

INTERBELLUM

The majority of the neighborhood was built between the hope and crisis of the twenties and thirties. Development plans continually pushed the industry down creating an axis along the ceintuurbaan. From plan Moliere, uitbreidingplan '23, Van de Kloot Meyburg 33 plan to what was eventually built.

EXPANSION PLANS



plan Moliere '20 | Uitbreidingsplan '23 | Van de Kloot Meyburg '33

Figure 13. Changing developmental plans for Hillegersberg Zuid
Source: Author modified from Stadsarchief Rotterdam, Gemeente Rotterdam

CANAL AND DISPLACEMENT

After the bombing of Rotterdam, many residents were displaced and emergency housing was built, primarily situated at the outskirts such as can be seen along the Noorderkanaal. Though isolated from the rest of the city these residents built close communities. The temporary designation created mistrust towards the reconstruction period of the post-war by the residents of these emergency housing (Couperus, 2020).

1943

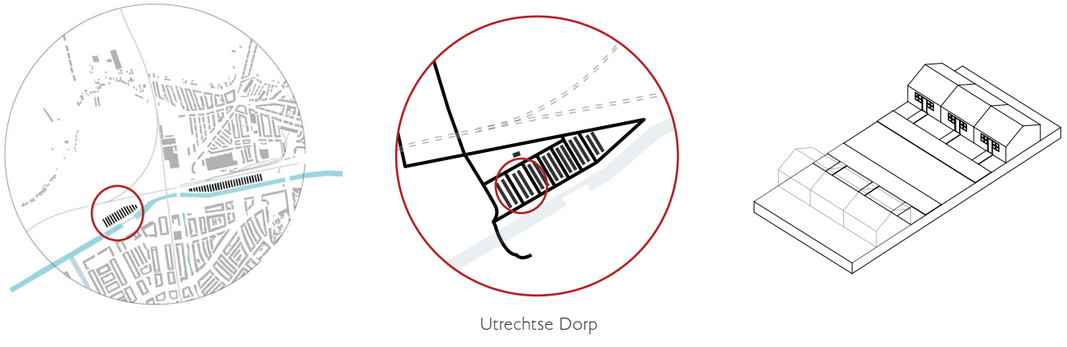


Figure 14. Emergency housing along the Noordercanal and housing typology of the Utrechtse Dorp
Source: Author, based on information from the Stadsarchief Rotterdam

HIGHWAY AND HOSPITAL

In the 70s the A20 connected Prins Alexander and Schiedam filling the space between the rail and the Canal. The Provincial road N471 towards Pijnacker severed the Kleiweg, originally continuing into Overchie. As the Sint Fransiscus needed to expand a new building was built in 1975 on the empty fields by the Schieplein.

1975



Figure 15. The introduction of the highway and the Sint Franciscus Hospital
Source: Author, based on topotijdreis and BGT

CURRENT

With only vague plans surrounding the reuse of the Hofbogen the section bridging the highway was razed in 2011 to allow for a lengthening of an exit along the A20.
Park Zestienhoven, finished in 2021, boasts the new "outside' living (park16hoven.nl, n.d.) echoing the early 19th century commuters community of suburbia, this time on a literal island.

2022



Figure 16. Current built environment and resulting spatial fragmentation
Source: Author, BGT

THE APPENDAGE

The shape of Hillegersberg shows the project area as a sort of appendage to its main center. The local plans for it set aside and prioritized by municipal and regional needs. With each introduction of such an element permitting the space to progressively anonimize.

How the space is then perceived determines the plans we assign to it, losing the potential of coherence it might once have had.
Do we perceive this space merely as the brim of a hat or are we in fact looking at the head of a boa constrictor(Saint-Exupéry, 2018)?

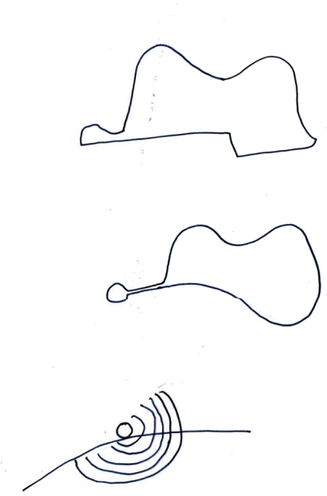


Figure 17. Abstraction of the municipal border of Hillegersberg... or a boa-constrictor digesting an elephant.
Source: Author

REDEFINING THE PROJECT BORDER

As the city is in perpetual development, projects are worked out at different scales and time frames. To contain the scope they are often defined by a project border. These may be informed politically such as a municipal borders, through ownership such as in the Kadaster, and based around specific themes such as networks or green space.

Though helpful in defining the program and streamlining consensus with stakeholders, these borders may also inhibit consideration of its immediate surroundings.

When looking at different projects in and around the southwest of Hillegersbergs Zuid, we see project borders slicing through this space(see fig 20).

As the decisions to lead the railroads through the area, the highways along its edges, the placement of large disconnected functions beside each other and the slow disintegration of the industry along the Ceintuurbaan, we may at least consider the possibility that these interventions were made without thorough integration of their immediate surroundings. Time pressure, existing conditions, financial and other limitations will have likely influenced these decisions yet the effects are there, whether intentional or not.

This thesis attempts to respond to the fragmentation and consider the consequences and possibilities of this in-between space. In an attempt to neutralize these constraints to some degree a radius of 1km is drawn around the central point of the block containing the hospital, golf course and RET. The kilometer is chosen for its walkable scale, and the circle for canceling out project borders along existing structural patterns.

Though we must consider that this new border will bring its own limitations the uncommon framing may allow for a different perspective.

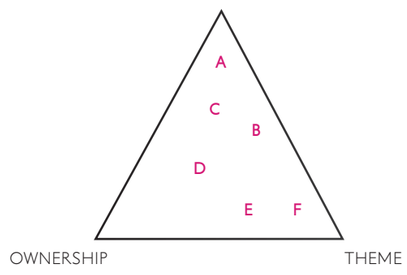


Figure 18. Part-space Influences of project borders in Hillegersberg Zuid
Source: Author

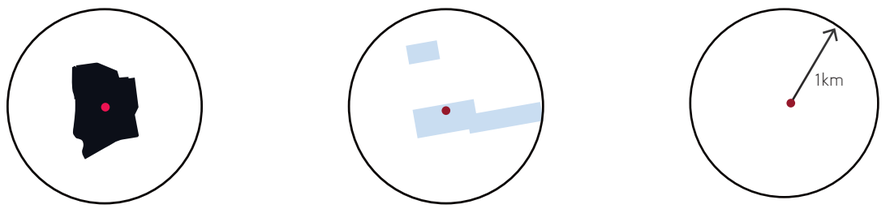
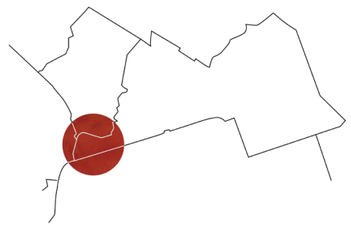


Figure 19. Definition of the project border
Source: Author

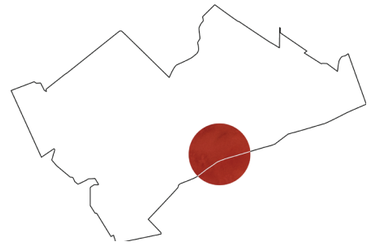




A MUNICPAL BORDERS POST ANNEXATION (1941)



B "OMGEVING ROZENLAAN" ROTTERDAM EXTENSION PLAN IN PARTS (1954)



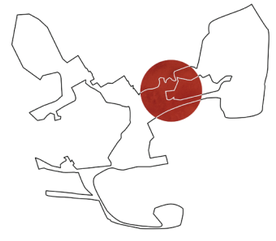
C STRUCTUURPLAN NOORD (1981)



D BESTEMMINGSPLAN FRANCSISCUS (2016) and KLEIWEGKWARTIER (2018)

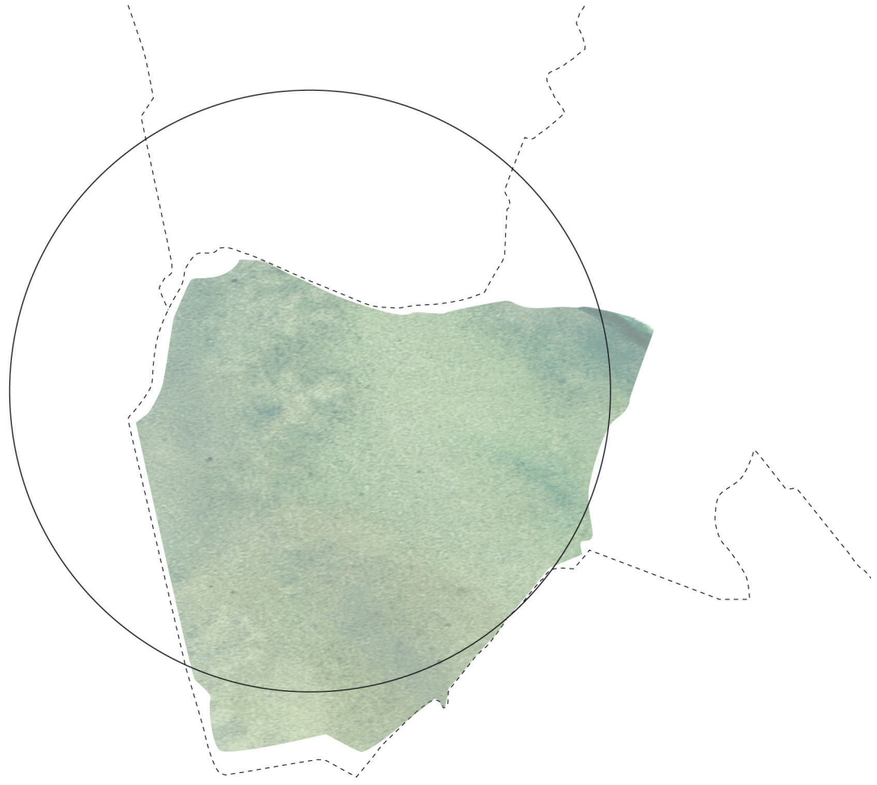


E HOFBOGEN (2019)



F STADSPARK WEST (2022)

Figure 20. Project Borders cutting through Hillegersberg Zuid
Source: Author, informed by Stadsarchief Rotterdam, RuimtelijkePlannen, de Urbanisten and Buro Maan



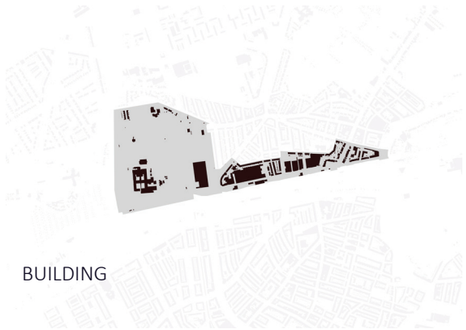
1880

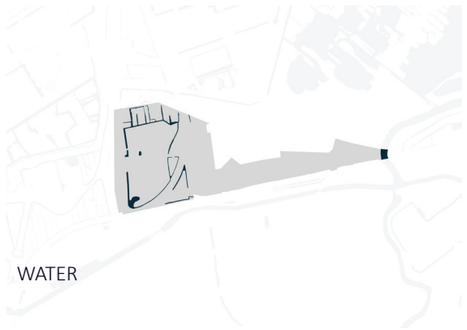


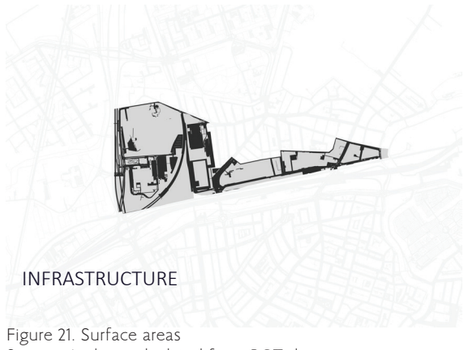
2023

3 SPATIAL ANALYSIS

3.1 INFRASTRUCTURE







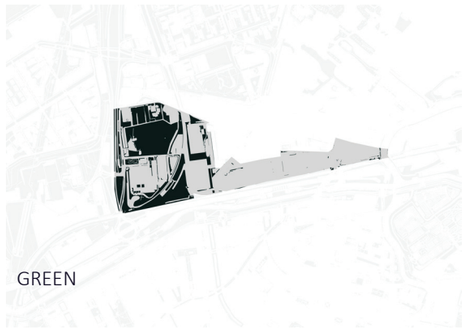


Figure 21. Surface areas
Source: Author, calculated from BGT data

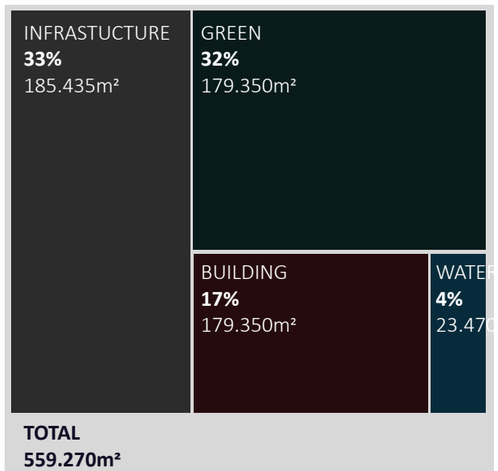


Figure 22. Division of surface project area
Source: Author

SURFACE COVERAGE

The physical coverage of the site reveals a distinct division between the West area and the Ceintuurbaan concerning building, green and water. This suggests a difference in experience between these two areas,

Calculations can be found in the appendix



Figure 23. Parking
Source: Author, Based on data from BGT, google earth and prettigparkeren.nl

PARKING

Notably, the parking structures in the area reveal clustered patches contrasting the single-file street parking seen in the residential neighborhoods to the south and northeast. The project area contains 34.060m^2 of uncovered parking plus an eight story parking garage. Most of the larger parking plot areas are privately owned or maintained by the hospital, the golf course, the RET and industries along the Ceintuurbaan and have varying accessibility.
The parking lots between the golf course, hospital and the RET have been implemented since 2012 by the hospital for employee parking. The site was formerly used as a construction and storage area during maintenance of the metro line.



Figure 31. Parking along the Ceintuurbaan
Source: Author



Figure 32. RET bus storage with hospital parking to the west of the rails.
Source: Google Earth

As calculated the total infrastructure covers a third of the project area . This grossly out ways the national average of 3% as well as the 10% of Rotterdam that is covered by infrastructure(CBS, 2019).

Considering such a large portion is designated to infrastructural functions it is imperative to consider the implications they have for future development.
In assessing the infrastructure on its potential influence on the site and its emergent properties the seven propositions posed by Stan Allen(1999) are kept in mind:

1. The conditions created by means of division, allocation, construction of surfaces, provision of services and establish networks of movement, communication and exchange.
2. Prone to flexibility.
3. Acknowledges the collective nature of the urban fabric. It is strategic and encourages improvisation and on its own is not self indulgent.
4. Operates instrumentally and pragmatically in response to the landscape its positioned in.
5. Not completely free of limitation and systemization
6. direct artificial ecologies
7. technical and instrumental in informing the design

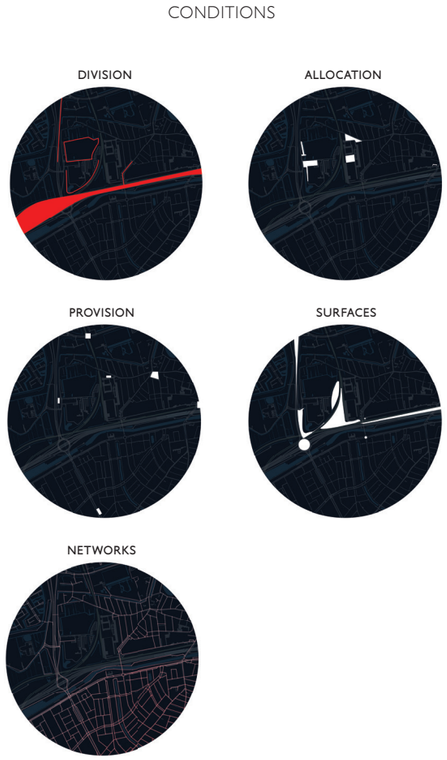


Figure 24 .Spatial conditions based on mobility in the area
Source: Author

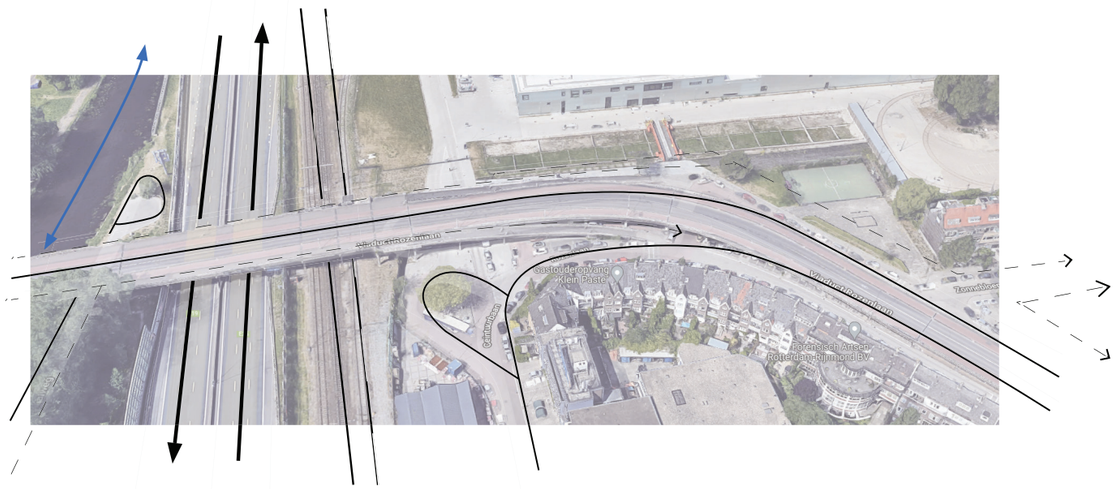


Figure 25 .Overlapping but disconnected infrastructure at viaduct Rozenlaan
Source: Google Earth

Creating public space requires a contiguous network (Marshall, 2005) The infrastructure on the site presents varying routes for different modes of transportation allowing preferential access to particular functions in the area.
Besides the connections that the physical pathways create, each mode of transportation and the speed at which it allows us to move through space presents us with varying lateral consciousness (Sennet, 2018).
For these reasons we may suppose that the experience of the neighborhood is vastly different based on mode of transportation alone. These individual mobility pathways and their connection to the project area reveal disparate networks alluding to distinct use of space. The intersections however also pose opportunities for interaction(Sim, 2019). Car traffic, public transport, pedestrian paths and bicycle paths in the site are elaborated upon.

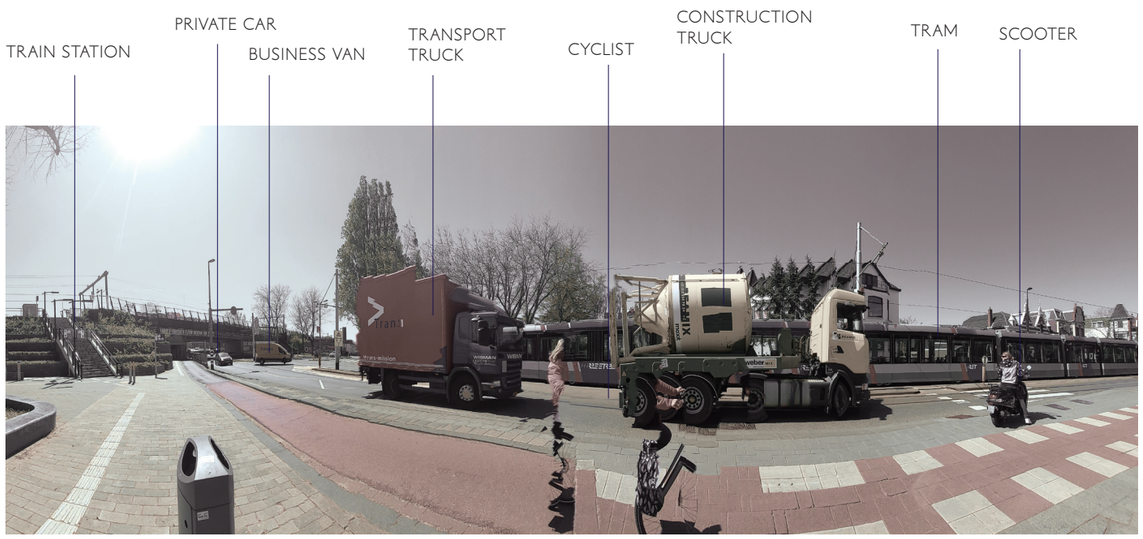


Figure 26. Intersecting types of mobility along Straatweg by Station Rotterdam Noord and the "muizengaatje"
Source: Author

AUTOMOBILE

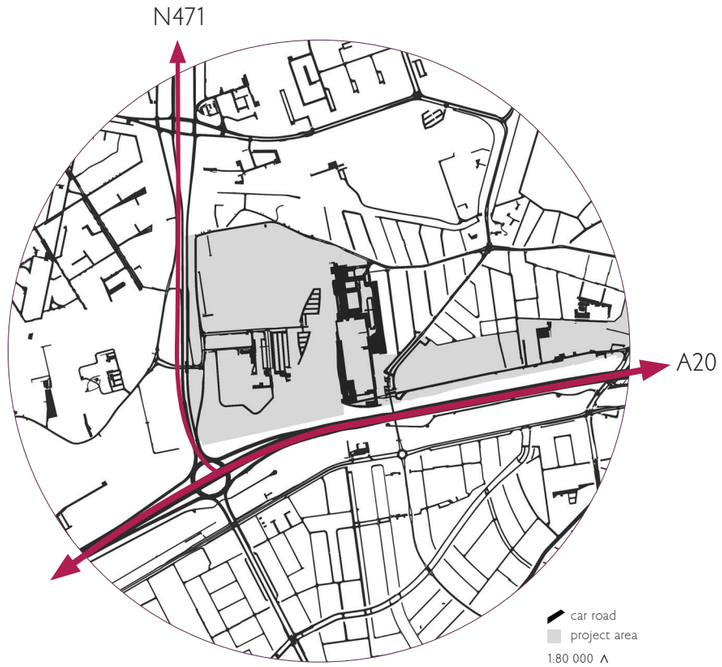


Figure 27. Roads for car traffic
Source: Author, made with data from BGT and Site observation

The amenities in the project area are especially accessible for cars. The hospital and the golf course have their entrance on the west side along the Kleiweg separated from any other entrances or housing units. The Ceintuurbaan, with its wide road and sparse sidewalks, allow for delivery vehicles to easily maneuverer through the space.

The A20 is a highway that runs from Westerlee to Gouda and passes the project area along the south of the site. The hospital and a few of the companies along the Ceintuurbaan can be seen when driving on the A20. Though this may indicate a possible incentive to visit these places, exit 14 allows for direct entry to the Hospital whereas exit 15 enters the southern neighborhood creating three additional decision points to get to Ceintuurbaan. WIth the construction of the A16 a yearly decline of 4% - 11% is expected along this section of the A20 as well as a decline of almost 30% along the N471 up to the van Limburg van Stirumplein (Rijkswaterstaat, 2015).

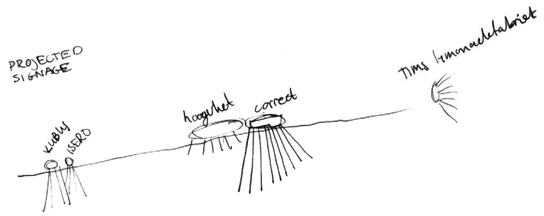


Figure 28. Signage projection from Ceintuurbaan
Source: Author

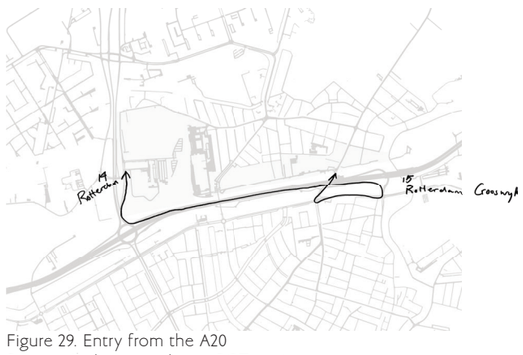


Figure 29. Entry from the A20
Source: Author traced over BGT

VISUAL CONTINUITY ALONG THE BORDER OF THE A20



Figure 30. View from A20 on Ceintuurbaan
Source: Google street view



Figure 31. View from Ceintuurbaan on A20
Source: Author

BICYCLE

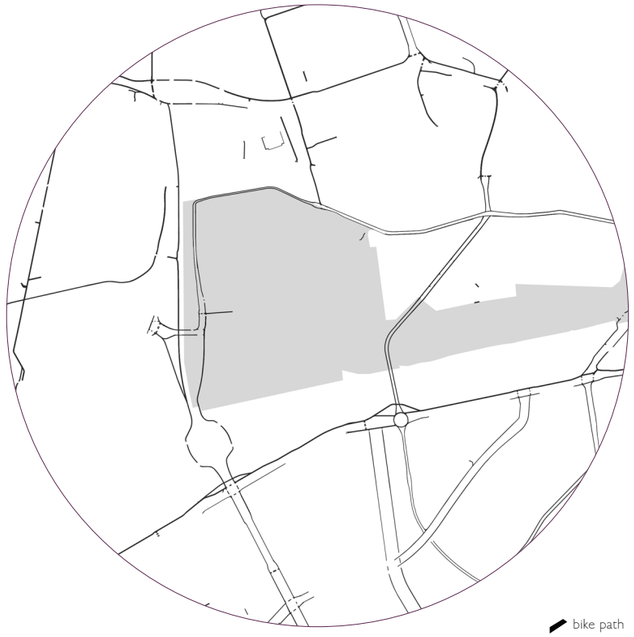


Figure 32. Bike roads and use
Source: Author, made with data from BGT and Site observation

As a primary mode of transport in the Netherlands, creating bike-able cities is high on the agenda of the Omgevingsvisie, being mentioned explicitly in interventions within both the "Compact city" as the 'Healthy City". The area has three designated bike lanes cutting through it but no refined network allowing easy movement within the area causing cyclists to use undefined street spaces.

PEDESTRIAN



Figure 33. Sidewalks and Pedestrian paths
Source: Author, made with data from BGT and Site observation



Figure 34. Pedestrian Crossing Displays (VOP) in Hillegersberg Zuid
Source: Author

APPROPRIATION

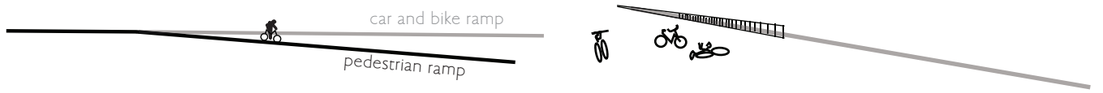








Figure 35. Cyclists using infrastructure not intended for them
Source: Author

SECONDARY





Figure 36. Obstacles and Discontinuity
Source: Author

PRIMARY





Figure 37. Redirection and Past Accessibility
Source: Author, Google maps



Figure 38. A sunbather, spotlit while walking.
Source: Author

PUBLIC TRANSPORT

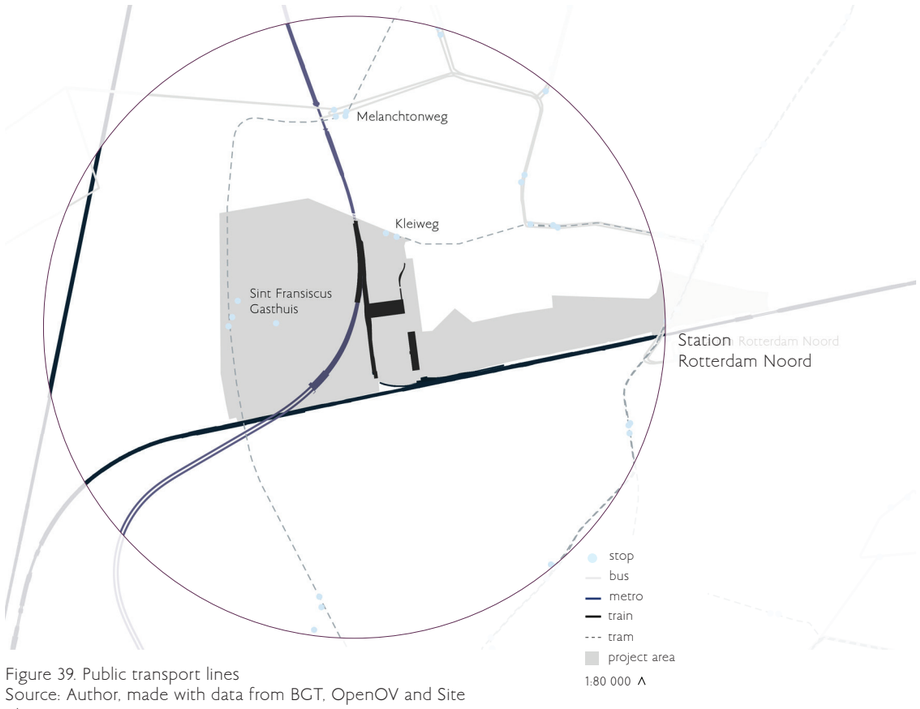


Figure 39. Public transport lines
Source: Author, made with data from BGT, OpenOV and Site observation

The site shows an array of public transport passing through and stopping within the area. The train between Rotterdam and Utrecht passes and stops along the south, tram line 25 stops at the hospital and the 8 at the station and along the northern part of the Kleiweg. The metro line runs through the middle of the site along the RET base where both trams and buses are stored.
In a prognosis done by RET the metro line will not be able to cope with the increased demands due to urbanization (2019) Along the metro line E the two points are specifically identified as NMCA bottlenecks (MOVV, 2021).

Located on the border of a public transport zone the Sint Franciscus and Station Rotterdam Noord stops are positioned at the interstice between the two allowing travelers from both the northern as the southern zones to travel to these destinations for a low fee.

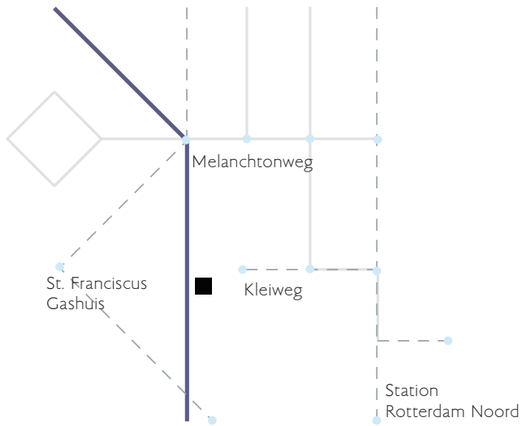


Figure 40. Schematised Public transport in the area
Source: Author

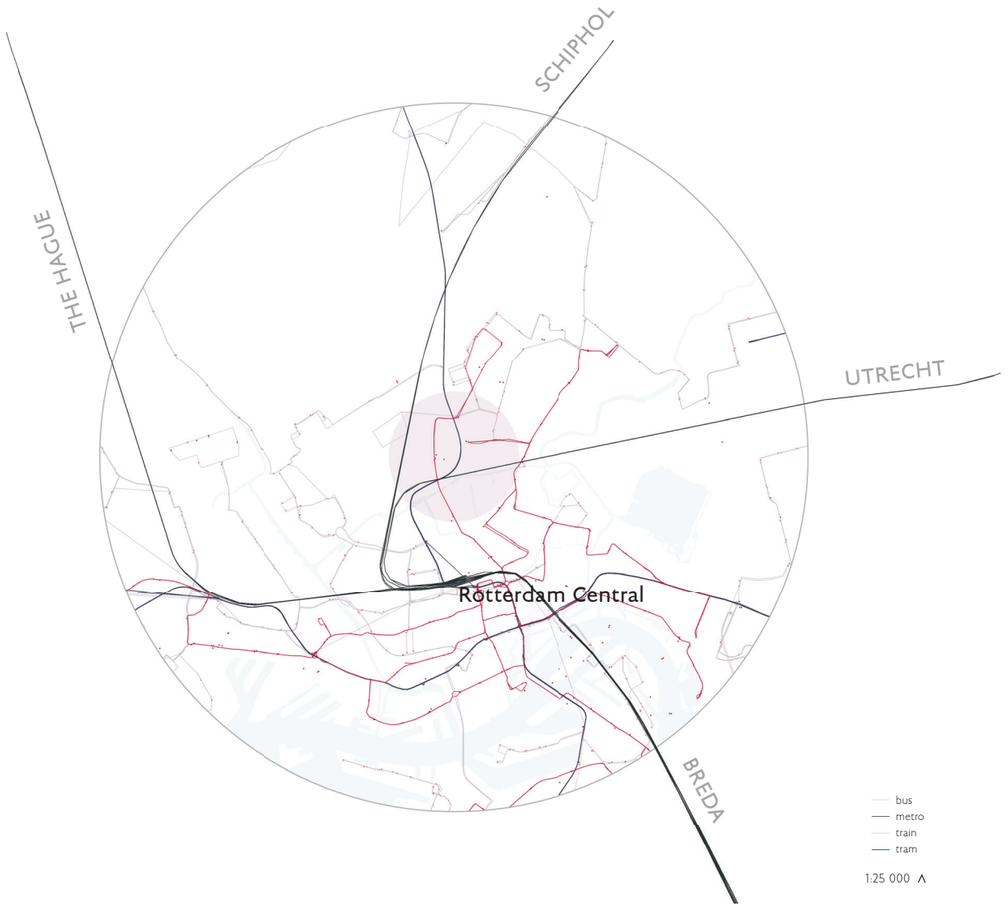


Figure 41. Regional network public transport
Source: Author, made with data from BGT, OpenOV and Google maps

3.2 FUNCTIONS

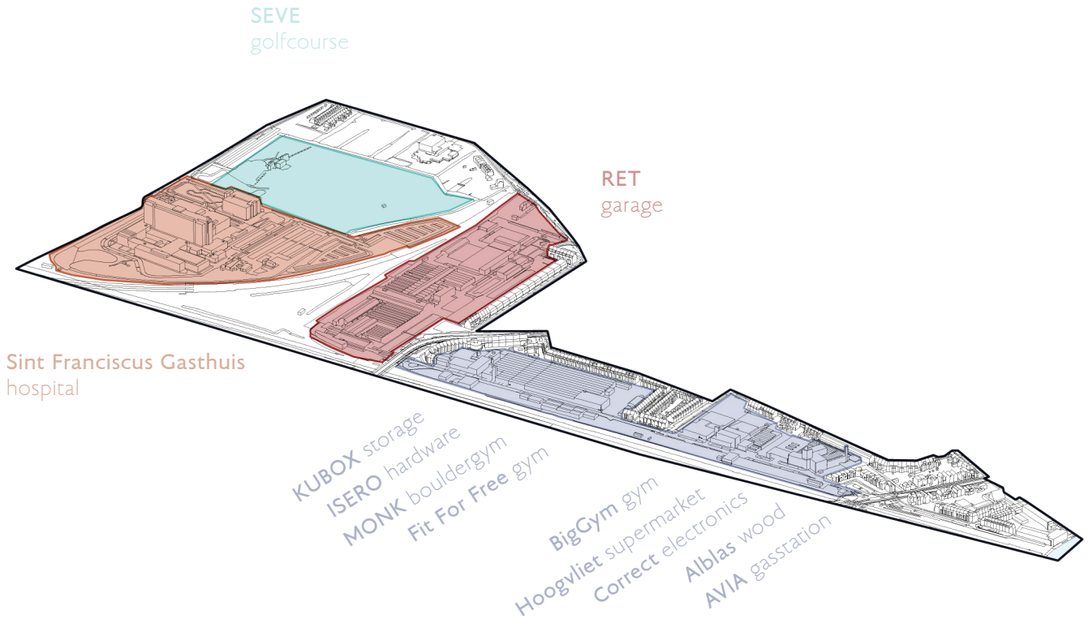


Figure 42. Primary four areas
Source: Author, 3d model constructed with data from Rotterdam 3D and BGT

The site presents a variety in (semi)public institutions and private entities with a diverse set of stakeholders in the area. Four primary functions stand out in the area; The Sint Franciscus Hospital, the Seve Golf course, The RET storage site and the Industrial area of the Ceintuurbaan. These functions however perform largely in isolation of each other with entrances facing away from each other

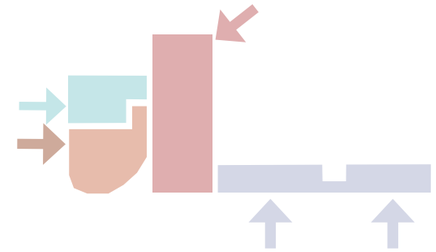


Figure 43. entrances to the primary four areas
Source: Author

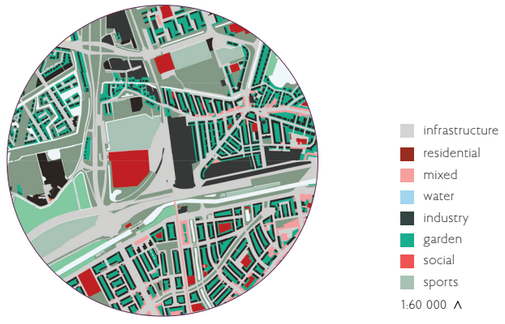
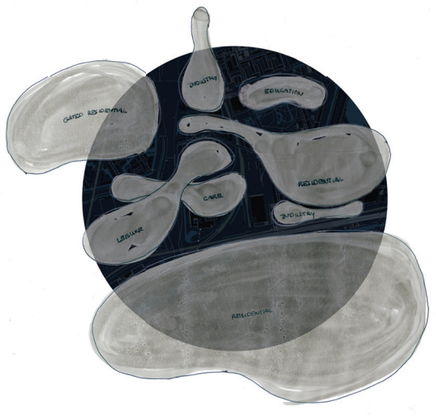


Figure 44. Area Functions and a spatial grouping (interpretation)
Source: Author, made with data from Rumitelijkeplannen.nl



REACH

Besides the functions in the primary four areas oriented outwards they each service a different urban range.
The scale of the hospital and golf course suggest they are destinations for people from the larger Rotterdam area, the industrial nature of the RET may also draw employees from the general Rotterdam area. The Ceintuurbaan hosts a couple of family businesses and services that benefit the immediate neighbourhood (such as supermarkets and gyms).

As hospital employees may also come from neighboring cities and most patients in the Netherlands can reach a Hospital within a 30 minute drive (vzinfo, n.d.), a range of 25 km is estimated. Visitors, such as family and friends may come from further away. When running a network reach analysis of walkability to the hospital in 10 minutes(fig 57) we see a north south acces of service range, suggesting a.o. a disconnect from the neighbouring Hillegersberg Zuid. (space syntax calculations are elaborated on in the appendix)

The Golfcourse is primarily accessed by car. It attracts individuals specifically interested in this sport and hosts a business club with both local and international companies(Seve, n.d.). Golf is a primarily a male dominated sport with only about 32% of the players being women and has a majority of older players (NGF, n.d.). Seve has 7 other golf courses in a range of 10km because of convenience playing a role the general Rotterdam area is assumed.

As the RET garage primarily is accessed by employees who may come from the General Rotterdam area
Their exact ranges would require gathering a database of each of the employees, visitors, customers and others using each of the mentioned functions.



Figure 45. Estimated reach of each main
Source: Author made with data from BGT

10 minute walking and tram acces to Hospital



Figure 46. Access to hospital within 10 minutes by foot and public transport.
Source: Author, networkanalysis done in qgis with QNEAT

3.3 OWNERSHIP

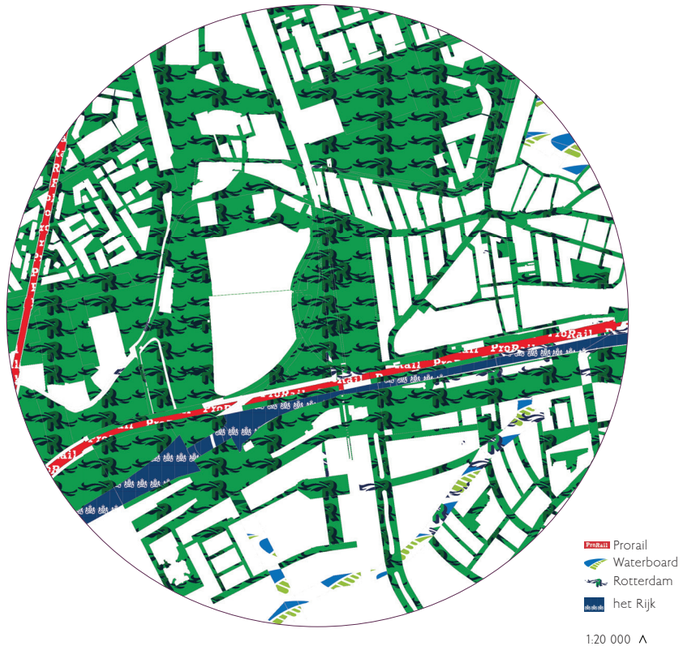


Figure 47. Institutional ownership
Source: Author, deduced from data from the BAG, Gemeente Rotterdam,

The ownership is estimated for the parcels of the Kadaster. They are informed by properties allocated to the municipality of Rotterdam, housing agencies or private owners as designated by the BAG, maintainenance as specified by rijkswaterstaat.



Figure 48. Building ownership
Source: Author, generated with data from BAG

Based on ownership the stakeholders in the area are: the Municipality of Rotterdam for larger plots and infrastructure, and a range of individual private owners for primarily the residential units. Notably, three different social housing agencies own properties in the area but make up only 26 family homes (Havensteder and Vestia) and 1 Complex (Stichting Maaszicht).

PLOT SIZE

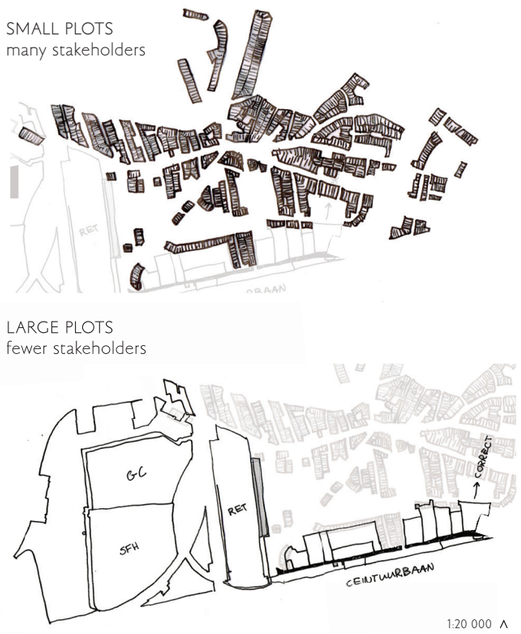


Figure 49. Distribution of large and small sized plot ownership.
Source: Author, traced from Kadaster 2022



Figure 50. private terrain
Source: Author

SOCIAL HOUSING

The map of properties owned by social housing companies show clusters in north, west and south but only minimally in Hillegersberg and Overschie.



Figure 51. Social housing Rotterdam
Source: Author, Data from BAG and BGT

3.4 DEMOGRAPHY

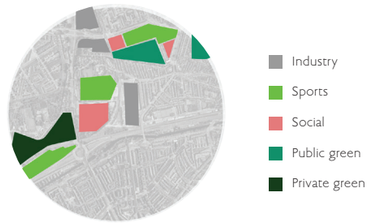
DEMOGRAPHY

Though the 'bestemmingsplan' for kleiwegkwartier explicitly mentions 'gentrification' as an applicable strategy(Gemeente Rotterdam,2017). This needs to be approached carefully as densification under this preface may foster an exclusion. Particularly in a neighborhood that at first glance does not contain a diverse range of inhabitants.
Hillegersberg Zuid has a population of a little over 8000 boasting about 1.2% of the total population of Rotterdam(CBS, 2021).

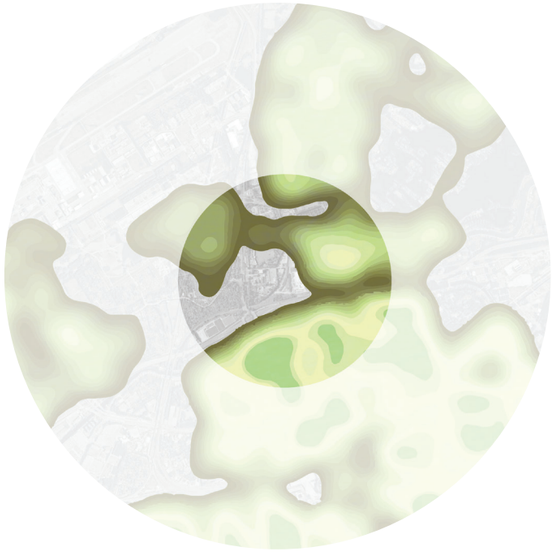
The majority of the population are young adults between 25 and 45, however when considering the number of schools and high birthrate in the area the children below 15 are stil comparably low, with a municipal average amount of households with children 30% and 43% one person household.

ECONOMIC

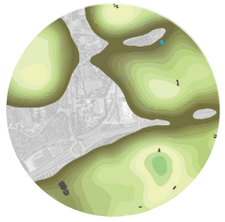
In 2018 Hillegersberg Zuid had a relatively low percentage of inhabitants earning a low income 30%, in a municipality with 53% of the residents on a low income (CBS, 2018). This is additionally notable when the bordering neighborhoods in Rotterdam Noord and Schiebroek have a significantly higher percentage of low earners, suggesting a socioeconomic border in the existing residential area of Hillegersberg Zuid.



FUNCTIONS OF INBETWEEN SPACES



POPULATION



CHILDREN 0 - 14
+ SCHOOL LOCATIONS



ELDERLY 65+

Figure 52. Heatmaps of population concentrations
Source: Made with data from CBS vierkantstatistieken 2021 and DUO, Google earth

3.5 ACTIVATED SPACE

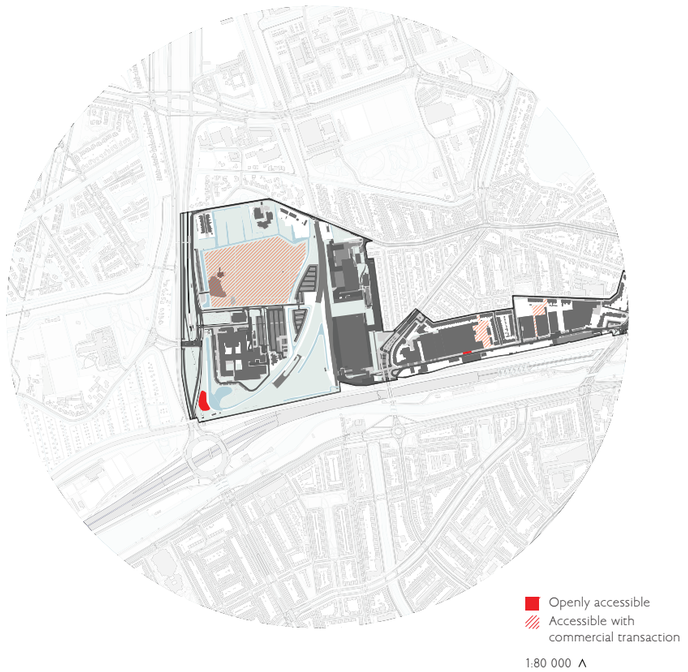


Figure 53. temporary spaces
Source: Author, made with data from BGT and site observations

The neighborhood organization of the Kleiwegkwartier mentions the social cohesion as one of their primary objectives. They state: "people should be able to meet each other want to connect to one another (BOK,n.d.)
Though a number of formal social gathering spaces exist around the area, there are a few spaces transformed to allow temporary interaction. They range from limited accessibility (the golf course, Hoogvliet and Alblas have a gateway that opens and closes at opening hours) to accessible spaces mostly used when opening of a venue (Monk placed benches and a climbing wall outside on the former parking lots) to completely bottom-up transformation of space (the hidden dirt bike track under the tracks by Schieplein).



Figure 54. Improvised dirtbike track between Schieplein and the Hospital
Source: Author

3.6 EDGE AS A BORDER



Figure 55. Barriers
Source: Author, made with data from BGT and site observation



Figure 56. Barrier walk RET, Hospital & Golfcourse
Source: Author

THE SHELL AROUND THE HOSPITAL, GOLF COURSE AND RET

Through a walking excersize around the RET, Hospital and Golfcourse the accessibility was tested by trying to penetrate the physical barriers around the site. This encompassed an area covering not only the three institutes but also a section of the Noorderkanaal to the south and residential pastures to the north. This impermeable block within an already fragmented area may deter residents in Hillegersberg Zuid from utilizing functions such as Sint Franciscus tramline.



THE GRADUAL ISOLATION OF THE CEINTUURBAAN

The Ceintuurbaan initially boasted a fairly accessible location for boat, car and visiting customers alike. Throughout the years the access to the Ceintuurbaan has slowly been closed off.

Both by the industries not using the Noorderkanaal as a primary form of transport and the highway blocking the access the canal disconnected from the Ceintuurbaan.

The RET capped the west side.

The extended landing of the Rozenlaanviaduct and the busy thoroughfare of the Straatweg navigates visitors from the city away from entering the Ceintuurbaan

Where rail tracks used to connect up to the current police station and a direct entrance from the Rozenlaan residential buildings have been built. Gradually the Ceintuurbaan is seen losing porosity and slowly closing shut. Though the area used to house industries widely known, such as Industria, it now consists of multiple gyms, a hardware store and a few abandoned buildings,

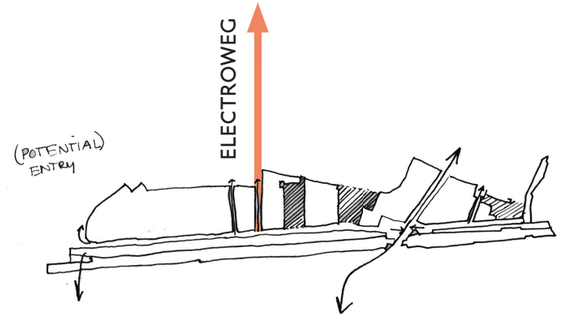
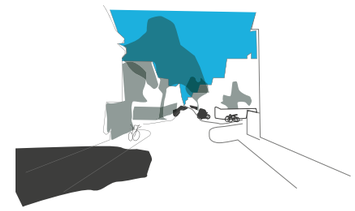


Figure 58. porosity Ceintuurbaan
Source: Author

Lisbloemstraat

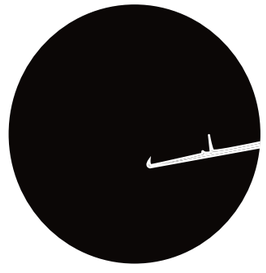


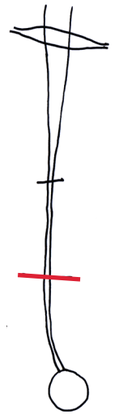


Electroweg



Figure 57. Sections of two roads connecting Kleiwegkwartier to Ceintuurbaan.
Source: Author





UNDER THE N471

Just besides the hospital to the west a three lane road connects the Kleiweg to the Overschiese Kleiweg. This road received its own name the “Dwarskleiweg” but serves only as a traffic junction. the 150m it spans is marked by concrete and greenery. A significant amount of signs can be found attempting to direct the users.

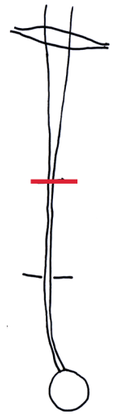
THE NODE OF A MILLION SIGNS



Figure 59. Crossing Overschiese Kleiweg and Dwarskleiweg
Source: Author



Figure 60. View Dwarskleiweg towards Sint Franciscus
Source: Author



OVER THE N471

The Pedestrianbridge crossing the G.K. van Hogendorpweg initially was part of the former tram stop Sint Franciscus until it was moved to it’s current location in 2010.
With the severed tram stop the positioning of the bridge doesn’t serve a clear function anymore nor do the connecting points have a clear indication who they service and where they lead. On a Monday afternoon (28 Nov 2022) from 4–5 p.m. 3 people used the bridge of which one mentioned he used it to “cheaply park on the other side and then walk to the hospital”

FORMER TRAM STOP



Figure 61. Tramstop by
Source: Stadsarchief Rotterdam

CURRENT TRAM STOP



Figure 62. Tramstop Sint Franciscus
Source: Author

According to a neighboring resident the new tram stop is completely unnecessary and adjusting the current stop would have been a lot cheaper. Furthermore, the new stop is not connected with the neighborhood as the old stop was by means of a pedestrian bridge. The stop is now only for the hospital, according to the resident. The hospital disputes this (Gunneweg, 2010).

FROM NOWHERE TO NOWHERE

1975



2023



CROSSING







LANDING



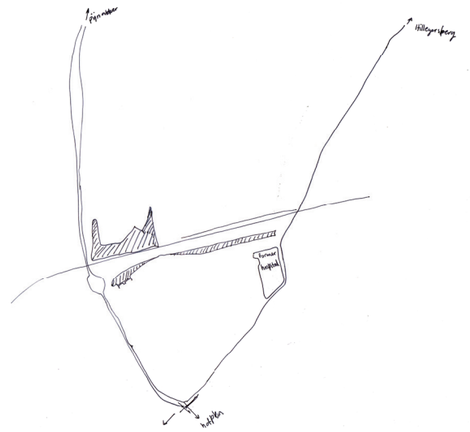




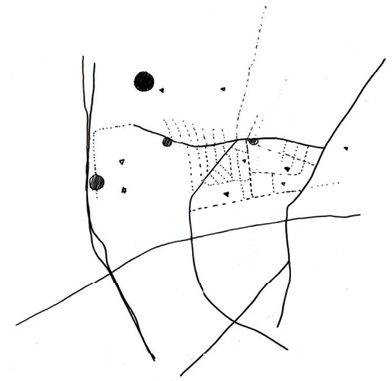


Figure 63. Crossing the Pedestrian Bridge in 2023
Source: Stadsarchief Rotterdam, Author

Bypass from main axes from Rotterdam North



paths, landmarks and nodes



Bridges over and along the A20

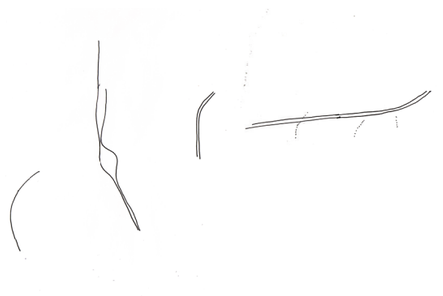


Figure 64. Analysis sketches
Source: Author

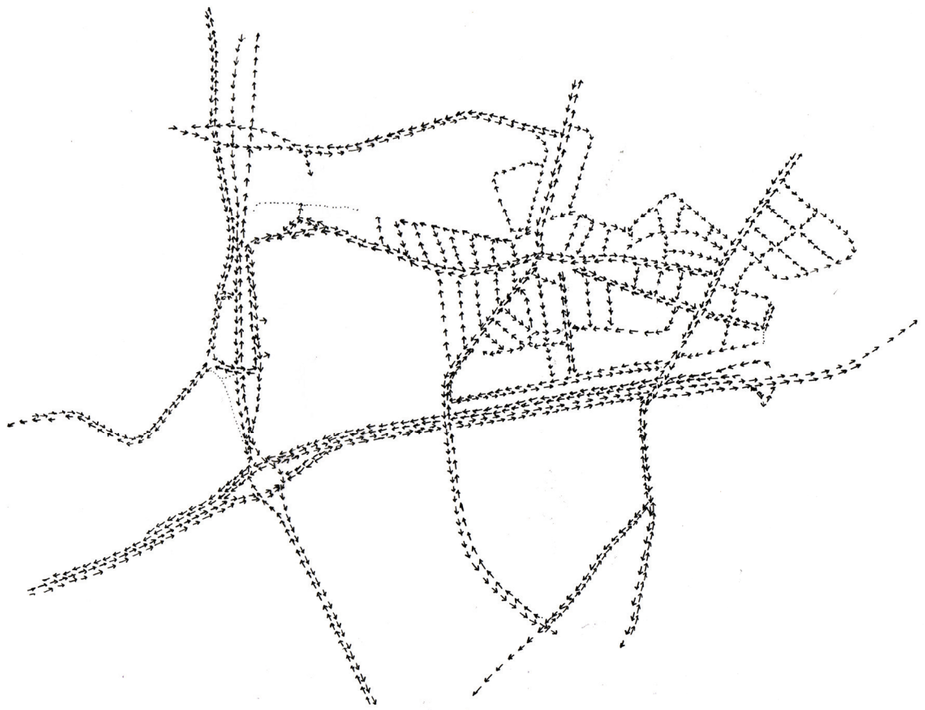


Figure 65. Road (car) flow
Source: Author

DEFINING A NODE

The term node can be found in many different fields.

One of them can be found in wave physics nodes define points at which the wave has the lowest amplitude. Standing waves in which the nodes correlate can cause resonance, but other interference patterns continuously move the nodes of the new superimposed wave. Projecting this definition of a moving node onto an urban node formed by of different individuals meeting we may imagine transformable spaces shaped primarily by the interactions created within them.



Figure 66. Interference pattern snapshot if the hospital, golfcourse, RET and Ceintuurbaan were emanating waves.
Source: Author, wave simulation generated with Ripple Tank (2–D Waves) Applet by Falstad.

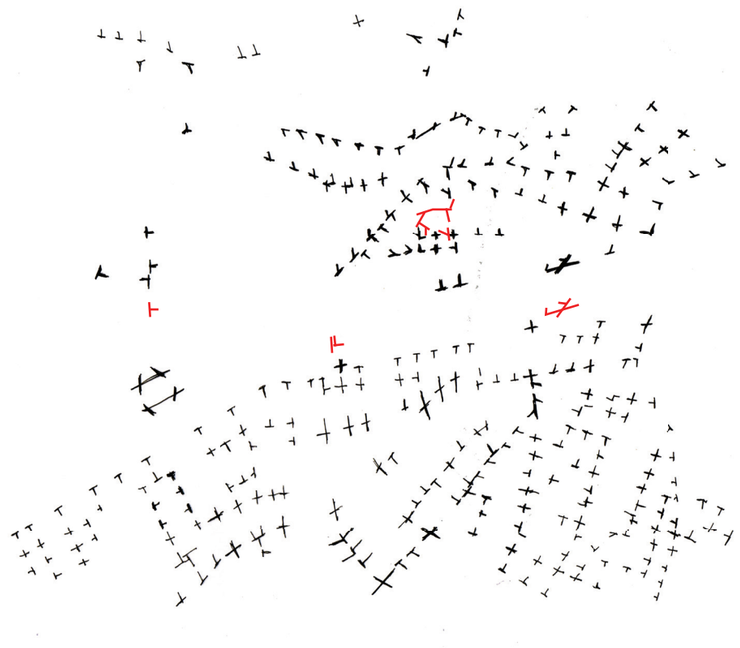


Figure 67. Junctions
Source: Author

FROM JUNCTION TO CONCENTRATION

Lynch elaborates on nodes as simply a crossing of paths or, by means of a convergence of a specific character, become concentrations, even becoming the focus of a district(1960).

Categorizing the junctions in the area in this way presented a challenge. Many intersecting paths appeared to be just that, even though the scale, character and flow through them differed. When a node exists as an appendage to another function (such as a hospital or train station) but doesn't have a defined focus independently may they be considered of lower concentration than a slightly defined square where convergence of a specific action takes place (such as eating or shopping), even when this action is of less significance and focus to the greater area?

Creating a conclusive definition of what is included in a node is beyond the scope of this project. This brief assessment however did emphasize the lack of clear convergence points in the area.

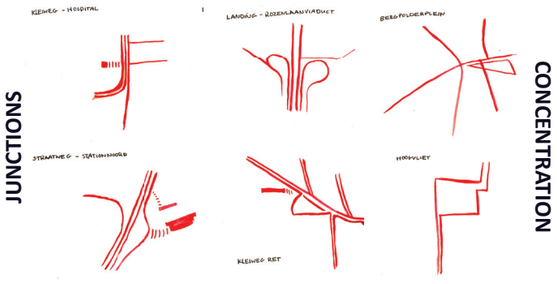


Figure 68. Selected nodes in the site categorised in a degree from junctions to concentrations
Source: Author

3.8 SYMBOLOGY

TRANSPOSED IDENTITY

Only a few monuments can be found in the area at the end of the Bergweg and beginning of the Straatweg. The site however houses a number of structures with a rich history from other parts of the city, bringing with them their affected meaning. Correct moved their entire business due to downscaling, Sint Franciscus required upscaling and the RET required both expansion and later modernization. Though the site may not have had a cohesive programmatic design it has developed meaning throughout its formation. These symbolic references shaped the spatial qualities in the landscape and allow us to build upon or react to them.

ODONYMS

One type of symbol bearer in the area can be found in the streetnames(Nas, 2006)
To contain the scope, a few names are elaborated upon within their socio-spatial context. This does not mean it is a comprehensive overview but a way to explore the area through these symbol bearers.



Figure 70. Migrating institutions
Source: Author, made with data from CBS and BGT





Figure 69. Correct on the Ceintuurbaan looking out over its former residence on the Bergweg
Source: Author

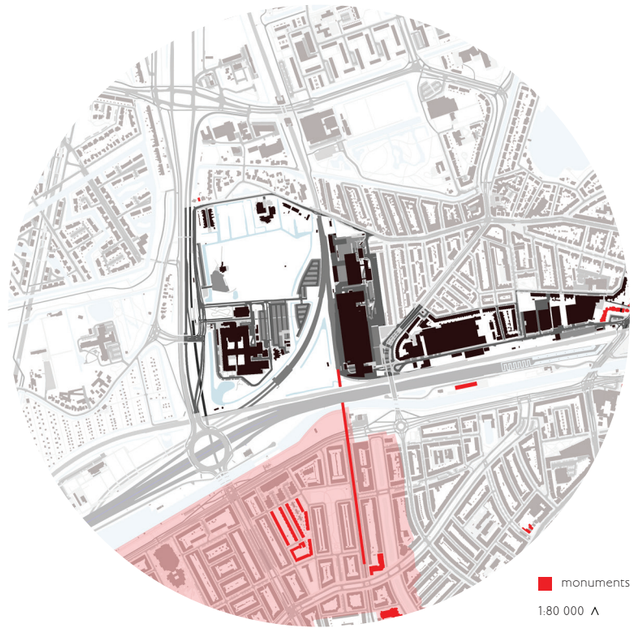


Figure 61. Monuments
Source: Author, made with data from Cultureelerfgoed and BGT



EMPHASIZING BORDERS

The roads that define the area are the Kleiweg, (Clayroad) along a former creek (Gemeente Rotterdam, 2018), the Straatweg leading to the Hillegersberg and the Ceintuurbaan.

The spatial border between Hillegersberg Zuid and Liskwartier is further affirmed by framing it with the Ceintuurbaan on the north and the Gordelweg on the south. Both 'ceintuur' and 'gordel' being synonyms for a belt ensuring the divisive structure.



CLASS STRUCTURES

When considering the development of Hillegersberg Zuid in the early 20th century the street names of the first section of the neighborhood refer to Dutch royalty and nobility reflecting the early 1920's plans to build homes for the well-off. After the neighborhood had to aim towards housing for the middle class, we see references to flora and gemstones.

It is not coincidental that during the occupation the Oranje van Nassaustraat was renamed to Philips Willemstraat positioning the NSB quarters for Hillegersberg in the newly named street(joodserfgoedrotterdam.nl, n.d.). Though it could be referring to Dutch nobility Filips Willem van Oranje (who spent years in Austria and returned a bit distanced from his family as a devout Catholic) the lack of last name may suggest it was named after the German duke Fillips Willem van de Palts.

INDUSTRY

The importance the industry played early on in the area can be seen in the naming of Electroweg, after the N.V. Elektriciteit Maatschappij Electrostoom who moved there in 1914 (Koetsveld, 2019). The North-South oriented street initially fit within the plan of Moliere, in which an industrial block would have dominated the area central to Hillegersberg Zuid.



XERXES

Though the current Xerxesweg is located in Zestienhoven a former resident designates the street name to a crossing over the tracks from the kleiweg to the city via a wooden bridge, corresponding with archival documentation(Bewonersorganisatie Kleiweg, 2013)
Though likely named Xerxes after the soccer team. This reference to the Persian king alludes to a case of generational wealth and nepotism. Xerxes was infamous for his attempt of crossing of the Hellespont and defeated by his own hubris (Stoneman, 2015).



Figure 62 Former suspected Xerxesweg and the soccerfields in 1943
Source: Cropped and edited from Stadsarchief Rotterdam



Figure 63 Xerxesweg crossing
Source: Stadsarchief Rotterdam



MOUSEHOLE

The passage under the trains between Oude Noorden and HIllegersberg, initially coined by locals, was a small opening to an entrance to another world. Whether intended or not the word muizengaatje, besides being a small entranceway it also suggests infiltration, a gap in a private home allowing for pests and others to enter.



Figure 64. Mousehole
Source: Stadsarchief Rotterdam



VILLAPARK

The Villapark built in 1909 commissioned by Johannes Eckert Dulfer and designed by Jan van Teeffelen, was built just three years after they worked together on Villapark Wagner in Kralingen, in which Dulfer named the villas after Wagner's operas or characters in them. (architectuurgids.nl - Wagnerhof, Jan van Teeffelen, Rotterdam, n.d.).
It is difficult to dismiss Wagner's political ideologies from the golden lettering now adorning these buildings. As is it difficult to not consider the placement of a prominent David star on the villa immediately bordering the Wagnerhof, supposedly put up by the Jewish residents in 1935, as a retaliation. (www.joodserfgoedrotterdam.nl)
Though the villas in the Villapark in Hillegersberg carry seemingly innocent quotes such as "Elke Morgen nieuwe Sorgen" and "Geselligheid kent geen tijd" it would be ignorant to not take the background of Dulfer into consideration and why he would decide to build a villapark at the main opening of the boundary between Rotterdam North and Hillegersberg. This Villapark falls in line with the plans to create a peripheral commuter's neighborhood for the well off. (SHSS,n.d.)



Figure 65. "Every morning new worries" on a monumental building in the Villapark. What worries is it reffering to?
Source: Author



SAINT FRANCIS OF ASSISI

This Catholic saint chose to care for lepers that lived in exile on the periphery of Assisi and is famously known to cross fighting lines during the Fifth crusade and opt for a civil dialogue with the Muslim Sultan of Egypt (Freeman,2016).
Notably, this display of searching discomfort in ambiguous social environments and his interest in trying to understand different types of people was seen as rebellious from the Catholic modus operandi of the time. However, this attitude could be extrapolated directly to Sennet's call for more empathy through subjunctive communication between people (Sennet, 2018).
In the mere association to Francis of Assisi it would appear that the Hospital would symbolize acceptance and inclusivity. Spatially however, the singular entrance to an enclosed island does not suggest this.
Even though its namesake alludes to understanding others regardless of their heritage, religion or health, the Hospital was initially provided care for poor Roman Catholics (St Franciscus, n.d.)

3.9 CONCLUSIONS

URBAN DEVELOPMENT OF THE IN-BETWEEN

Though all urban environments are, to some degree, shaped by their (temporal) context, much of the development of this area appear to have happened as an afterthought to regional planning and (unexpected) societal urgencies

Social unrest led the wealthy in the early nineteen hundreds to look for a residential area separated from, but in vicinity to, the rest of Rotterdam. Economic unrest pushed the development to be redesigned multiple times between the 20s and 30s. Political implosion caused a survivalist attitude and displaced entire communities to the area.

Though the area hosts diverse functions servicing a large area in the Rotterdam region the immediate cohesion between them is not evident and it does not appear to have been the focal point within its developmental planning.



4 CONCENTRATIONS

4.1 THE HOSPITAL

Due to expansion needs the Sint Franciscus Hospital constructed a new Hospital in Hillegersberg South, where they moved to in 1975.

The new building by Kraaijvanger architecten was designed in the Breitfuss typology or so called 'tower on a podium' in which the ground floor houses most of the clinical functions and the beds are stacked in a centralized monolith (Mens & Wagenaar, 2010). Built in a period of large population growth and increased medical- advancements and access, hospitals were popping out of the ground and constructed in ever larger scales. Breitfuss hospital buildings allowed for a singular entrance and the accommodation of both intensive- and specialist care.

Current development plans of the Sint Franciscus Gasthuis, in which an adjacent building to the west is planned, appears to be designed as an isolated additive. This is further emphasized by Sint Franciscus Gasthuis & Vlietland explicitly stating that "The construction is completely limited to the grounds of Franciscus." and "The entrance of the area remains unchanged in comparison to the current situation." (pg1. 2022)

When we consider the recent developments of comparable hospitals such as the Sint Clara Hospital in Rotterdam South and the Zuyderland Medisch Centrum in Heerlen we may wonder why a more integrative approach of the area was not taken. In both cases the original building was torn down.

Similarly to the Sint Franciscus Gasthuis, Sint Clara and Zuyderland Medisch Centrum were built between the 60s and the 70s following the Breitfuss typology. Sint Clara merged with Zuiderziekenhuis and the old Breitfuss building was torn down to make place for a multi functional hospital boulevard that has the potential to be re purposed flexibly in the future.
Zuyderland Medisch Centrum took a phased approach adding and removing functions gradually (architectenaandemaas.com, n.d.). In both cases the original building was torn down.

The entrance to the hospital is currentlly on the west from a single side along the Kleiweg for all modes of transport.

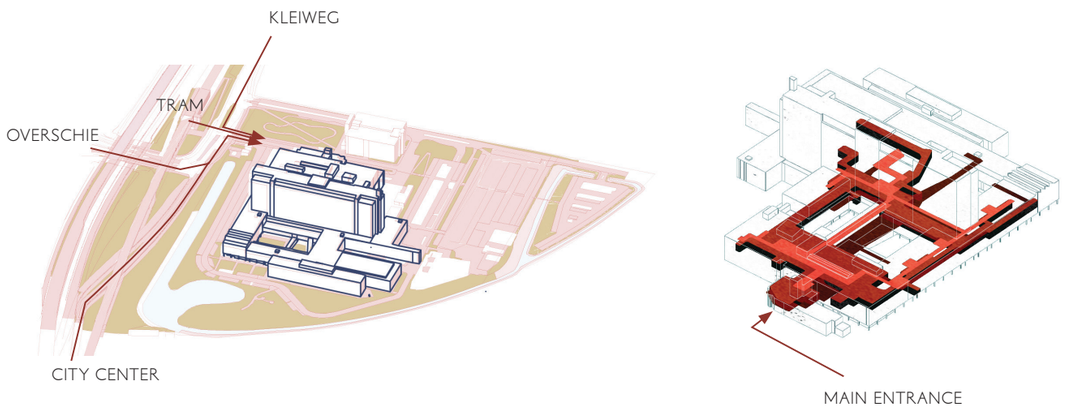


Figure 66. Isolated development of st Franciscus and internal routes
Source: Author, informed by Sint Franciscus Gasthuis



Figure 67. St Franciscus Gasthuis in 1976
Source: Stadsarchief Rotterdam



Figure 68. grim, uninviting passage from the tramstop to entrance of St Franciscus Gasthuis
Source: Author

BED TOWER ENGULFED BY TRAFFIC



Figure 69. view on and from the St Franciscus Gasthuis bedrooms, winter and spring.
Source: Author

MEANING IN A DIGITAL ERA

The existing names discussed previously serve as signifier of past societal ways of thinking. Moving forward in an evermore digital erra the associative qualities of those same names live on in the virtual space. The consequences are manifold and not within the scope of this project. However, to briefly touch upon the subject a prompt for the AI word to image system DALL-E 2 was given:

Monolithic Breitfuss hospital engulfed by traintracks and highways

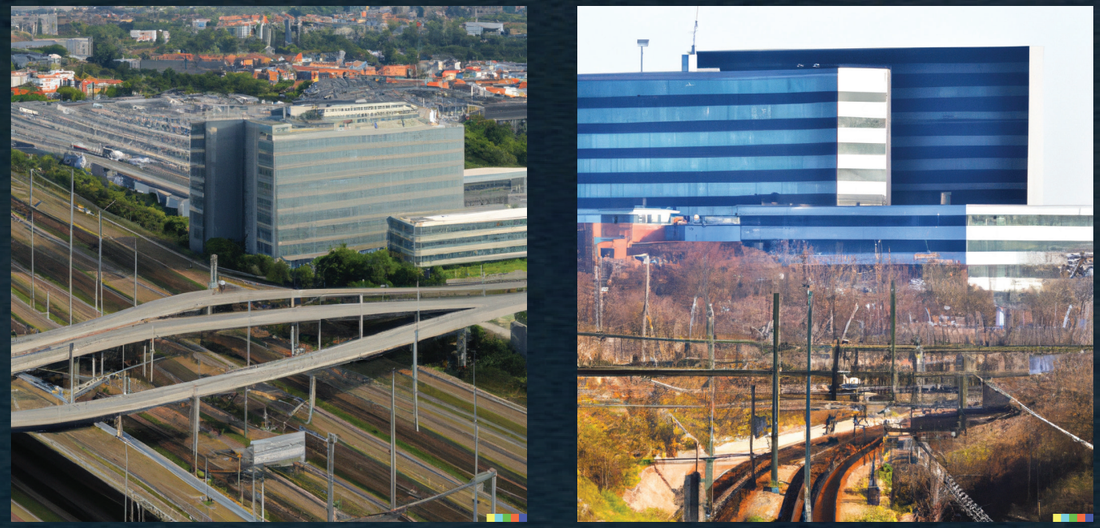


Figure 70. Images generated on the prompt
Source: Created with DALL-E 2

4.2 THE RET

In a preliminary exploration of the Hofbogen Crimson presupposes that the RET Remise will move towards the new headquarters opening up potential for residential development (2008). This is also briefly referred to in the bestemmingsplan Franciscus of 2016, but herein the construction plans for the new building of the RET are already confirmed (Gemeente Rotterdam). In the Betsemmingsplan Kleiweg 2018 A road connecting to the Ceintuurbaan is suggested but also that there are no plans made to accommodate this in the its bordering bestemmingsplan.





Figure 71. The Tram remise before its renovation in 2009
Source: Stadsarchief Rotterdam

4.3 THE CEINTUURBAAN

The Ceintuurbaan has a long history of housing differentproduction based industrial buildings, amongst which the lightbuld factory Industria which supplied many of the streetlight, a pharmaceutical company, woodworking companies. Currently only a few production companies are left and the majority of the buildings are assigned to commercial retailers or exersize facilities.





Figure 72. Dead end island
Source: Author

4.5 THE USERS

As theDESITINATION VISITORS

SINT FRANCISCUS GASTHUIS
- Patients
long- and shortterm
- Visitors
family, friends, spouses
- Employees
medical: doctors, nurses, anesthesiologists.
technical: information, food, cleaning, mechanics

RET
- Employees
of the RET, Mechanics/office workers and drivers
- Travelers

GOLFCOURSE
- Golfers
hobby, busines networking events

- Employees

LOCALS
- Residents

CLIMBING WALL
- Climbers

VSITORS

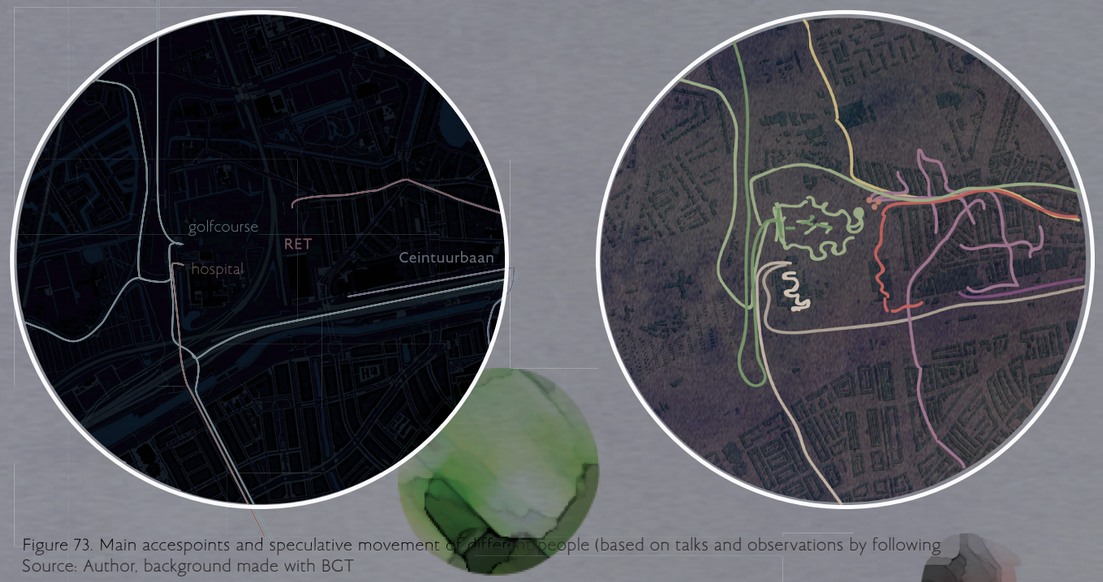


Figure 73. Main accespoints and speculative movement of different people (based on talks and observations by following
Source: Author, background made with BGT



Figure 74. Potential future users
Source: Author, edited from Skalgubbar, MrCutout

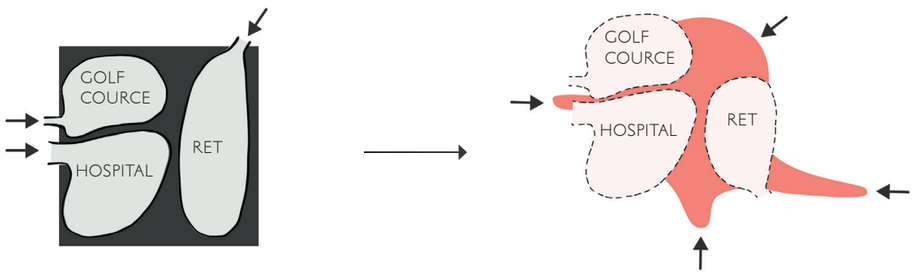
5 DESIGN

BOUNDARY AS A MEMBRANE

The existing borders in the area present themselves as contributing to the fragmentation. One of the main design goals is to create more permeable boundaries and then activating the space which can improve empathy bewteen different groups of people(Sennet, 2018).
The internal backsides of the hospital RET and Golfcourse are accessed to first dissect the functions to then create a permeable membrane between them.
The existing barriers are stiched with the space created bewteen these functions Herby this edge exist as a node, not by abolishing it from its qualities that characterize it as an edge but by allowing the edge, as a boundary, to become a stimulating point of decision, a node as a permeable but structured access through the edge.

SYNCHRONIC SPACES

MIxed functions and ways of living. Golfers, hospital patients, residential, commercial, leisure are all tied to different timeframes and targetgroups. Creating spaces in which they allow to overlap and interact.



FROM FUNCTIONBLOCK

TO PERMEABLE CORE

Figure 75. Transformation Scheme
Source: Author

TYPOLOGICAL ELEMENTS

HOUSING
Cooperative buildings with semi-private raised courtyard spaces offer a mid to high density, accommodating the growing trend in one person households, as well as creating intergenerational spaces.
More Intimate low rise streets are built on the raised platform covering the metro, thereby echoing the neighborhood typology in a crucial point of stitching the area while minimizing structural loads.

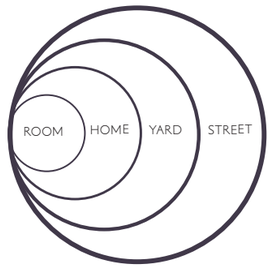
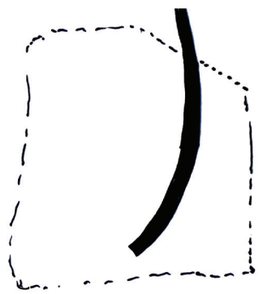


Figure 76. gradual levels of private and public dwelling
Source: Author

RAISED PLATFORM
Asa metro crosses through the area, a way to cross it is by bridging. Building community in height responds to the existing structure of the underground metro that raises above ground in the middle of the site. Rather than redeveloping the metro line the raised level of the Hofbogen Zoho and drawn into the site. A new pedestrian bridge more easily connects to the Sint Francisus tramstop.



THE METRO COMES UP IN THE SITE

Figure 77.Barrier in the site due to metro
Source: Author

BUILDING UPON CONTINUITY

As the existing functions on the site have a wide outward range but minimal local connection inverting the main accespoints to the new inner core aims to both maintain the existing external draw whilst also allowing local individuals to more easily acces the space. Maintaining some continuity of the existing functions responds both to formed networks within each of these functions and is done with consideration of material sustainability of recently developed projects such as the RET(2019) and the extension to the Sint Franciscus currently being built.

Building upon existing plans such as the Hofbogen allows the site to be more integrated from the start. Principles applied in the ZOHO development indicate a future public that may make use of the node.

For each of the four existing concentrations a strategy is further elaborated upon. These are:

ST FRANCISCUS GASTHUIS

Spread out and increase MXI

RET REMISE

Compact and show off

CEINTUURBAAN

Slow traffic makers boulevard

SEVE GOLFCOURSE

Lower threshold to golf

5.2 MODEL SKETCHES



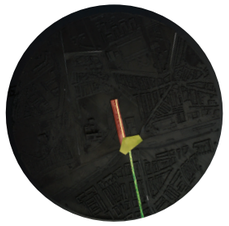
Connecting the tram to the Hospital in a raised platform could improve the connection between the tram stop and the hospital, allowing a possible entrance on the higher levels of the hospital to aces the upper level space more efficiently.



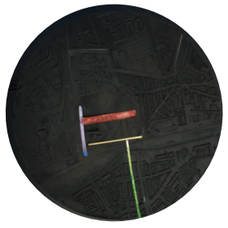
Creating an enlarged park allows for smaller pathway connections to meander along the buses, hospital golfcourse and reopen the former field.



Radiating functions emanating from the Hofbogen.



Extending the Hofbogen axiom. A former seperator towards a main boulevard from which all other functions extend.

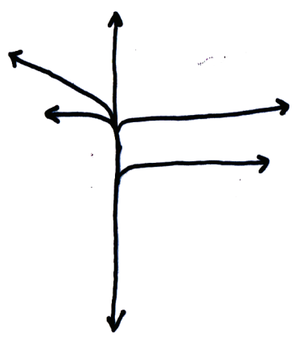


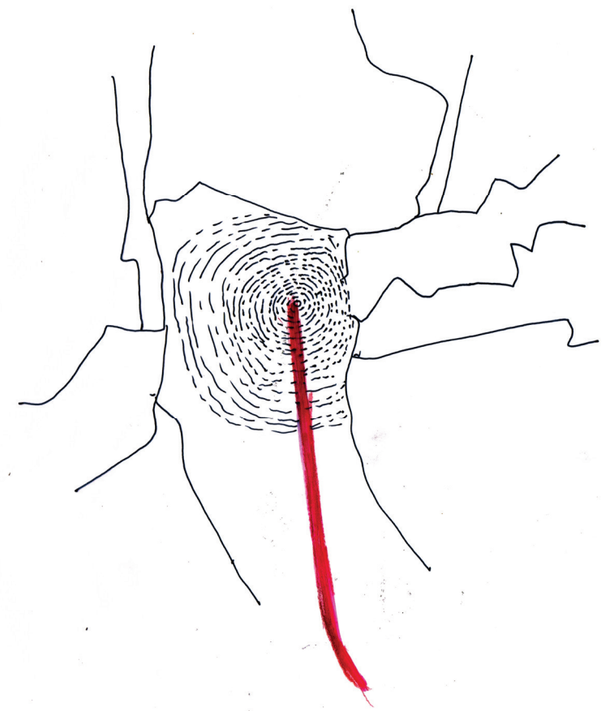
East west axis to connect the tramstop and hospital



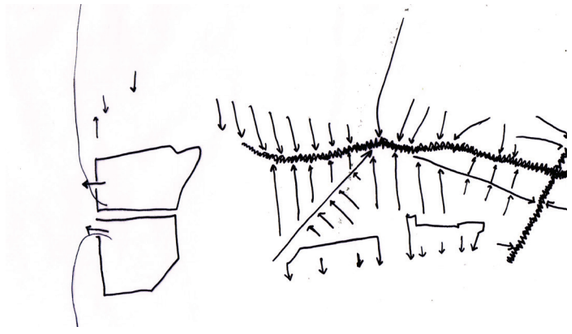
The Hofbohen landing in a waterbasin park.

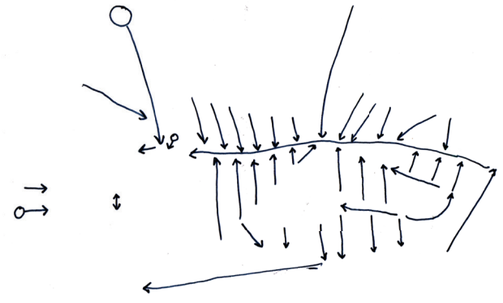
Figure 78. Model sketches
Source: Author





HOFBOGEN LANDING - LINKED SPACE





CURRENT and NEW ORIENTATION

Figure 79. Essence Sketches
Source: Author

ST FRANCISCUS

SPREAD OUT AND INCREASE MXI

From the current functions in the hospital a few specializations could slowly move towards the Erasmus MC. Cross generational care already present could be maintained relating to immunodeficiencies, pregnancy, weight, and care for the elderly. These allow for both low impact care and a diverse range of able patients to be present in the area.

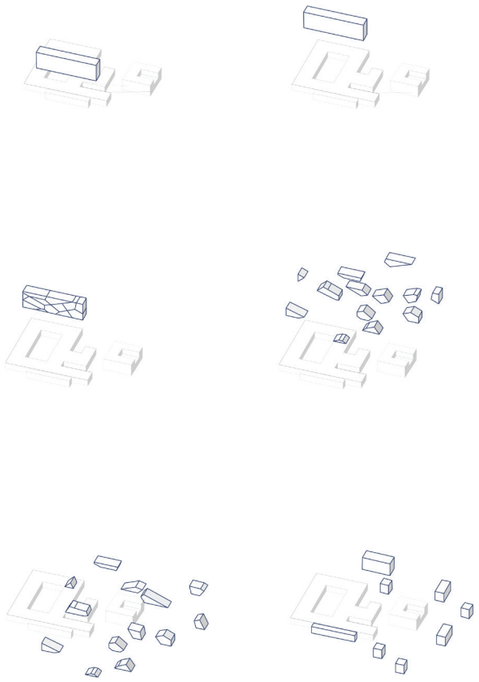
MINIMIZE STRESS IN ACCESSING THE HOSPITAL:

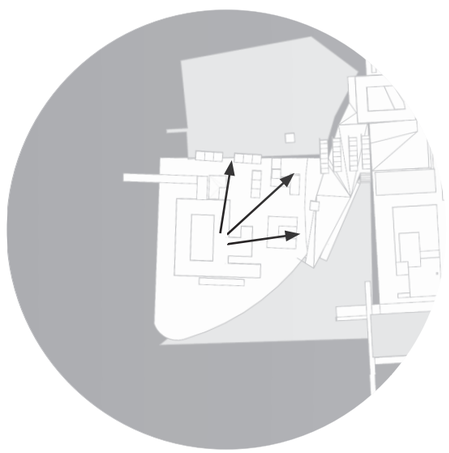
TRAMLINE PLEASANT WALKBRIDGE
ACCES FROM CORE
BACKEND ACCES FOR EMERGENCIES

MOVE BEDTOWER

- View on green instead of highway
- intergrate with higher MXI

FOCUS ON INTEGRATED CARE, SPECIALIZED FUNCTIONS





SPREADING LONG TERM
STAY OVER THE AREA

LIGHT PEDESTRIAN BRIDGE
CROSSING THE KLEIWEG

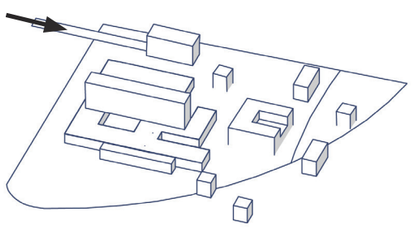


Figure 80. exploding the bedtower to integrate with the rest of the site
Source: author

RET

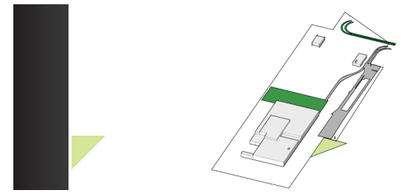
COMPACT AND SHOW OFF

MOVE BUS PARKING

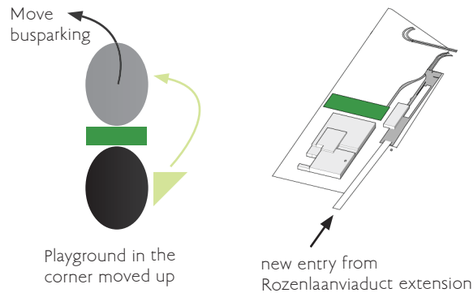
MAIN ENTRANCE TO SOUTH
Away from tramstop
Easily accessible from center of city
and Ceintuurbaan

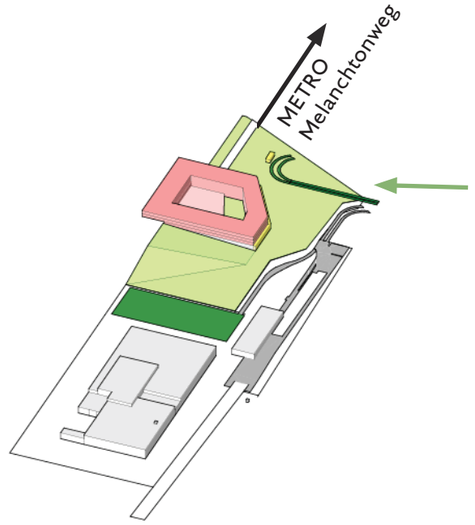
STACK OFFICE OVER PARKING
Lookout over park (not over backyards)

TRAM AS AN ATTRACTION
The old tram storage is a museum.
Tram sorting as entertainment
Take a (food) tram into the park.



CURRENT BLOCK





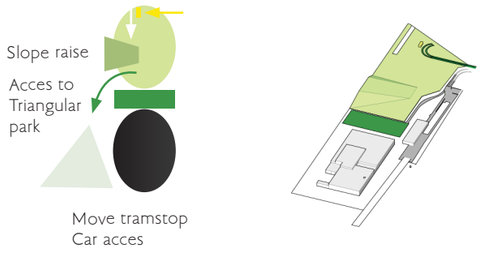


Figure 81. RET transformation plan
Source: author

CEINTUURBAAN

SLOW TRAFFIC BOULEVARD

WALKABLE BOULEVARD

MAKERS ENVIRONMENT
hommage to the industry of the past

CONNECTION TO STATION NOORD

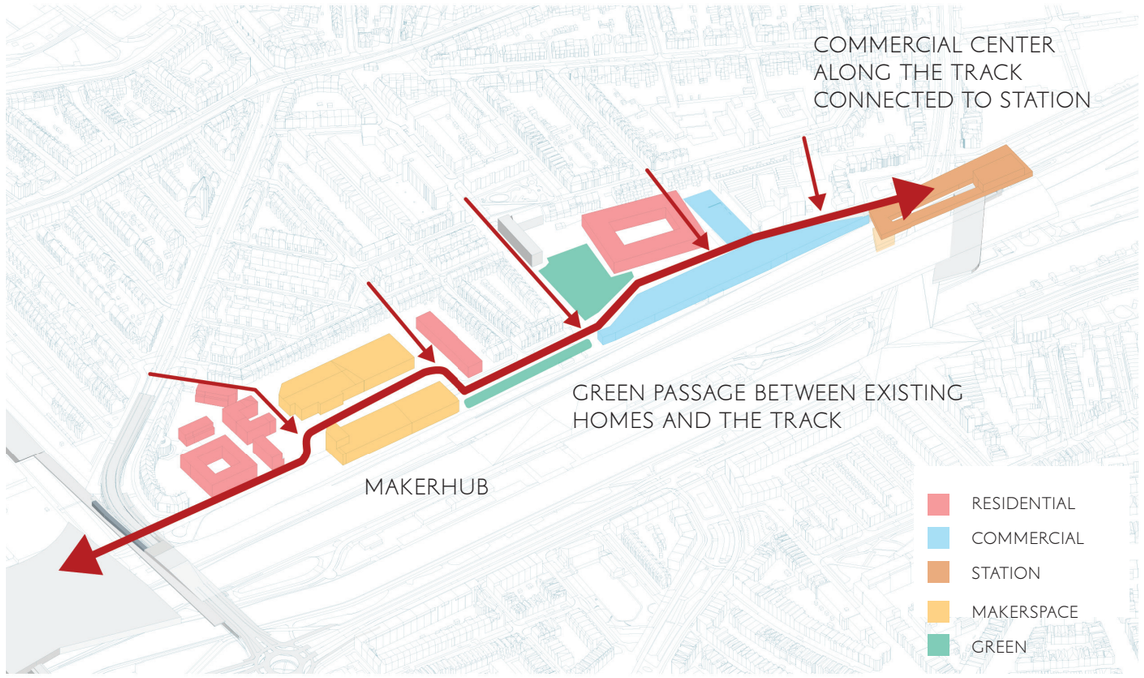


Figure 82. Ceintuurbaan boulevard
Source: author

GOLFCOURSE

LOWER THRESHOLD TO GOLF

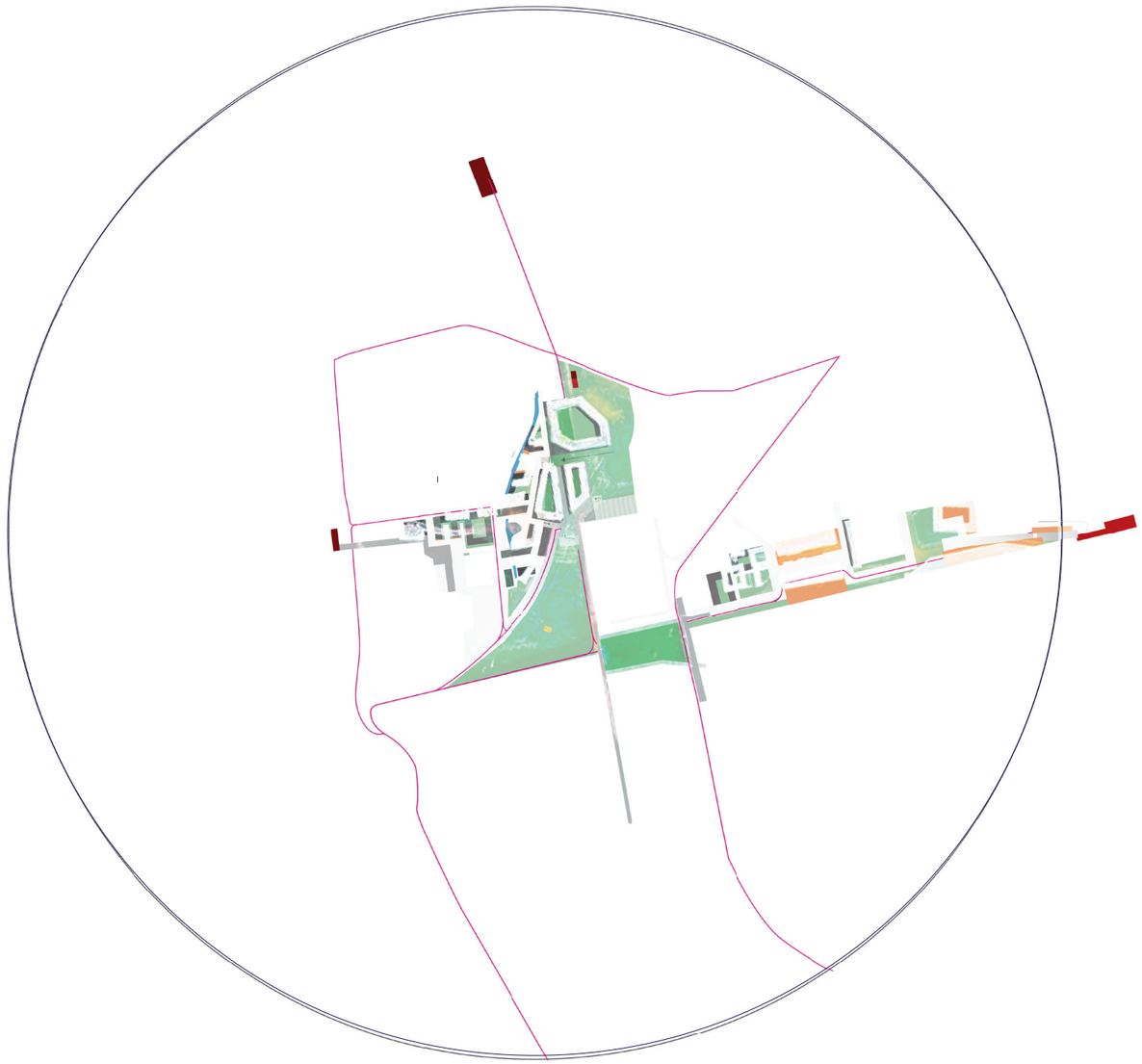
As the main entrance of the Golfcourse is currently geared towards car traffic it predetermines which group of people might easily acces the space and play golf. By opening up the golfcourse towards space more easily accible by foot and near other amenities it may allow a more casual interation and participation of the sport.

EASILY ACCESSIBLE FOR WALKING PUBLIC
- Access for pedestrians from core
- Accommodate less mobile
- Maintain car acces from back

GOLFCOURSE AS VISUAL GREEN FOR THE IMMEDIATE SURROUNDING
Though the green of the golfcourse does not have a particularly high ecological value due to its use and protective netting, havin a view on green space has been shown to help mental health.
This could be particularly usefull for those that spend more time in their interior spaces due to mobility limitations.



Figure 83. Golfcourse new acces
Source: author



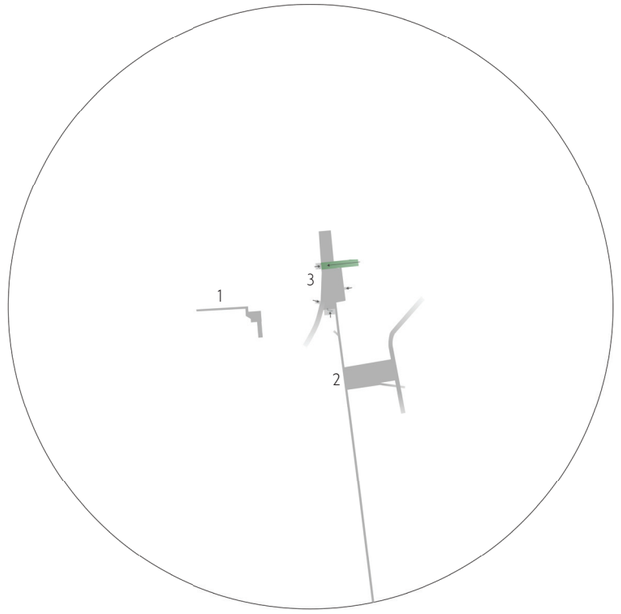
RAISED PLATFORM

Three raised areas are introduced to:

1. Build a direct entrance from the tramstation Sint Fransiscus.
This pedestrian bridge is level to the station at 4m. Allowing to enter a new main entrance on the second floor of the hospital.

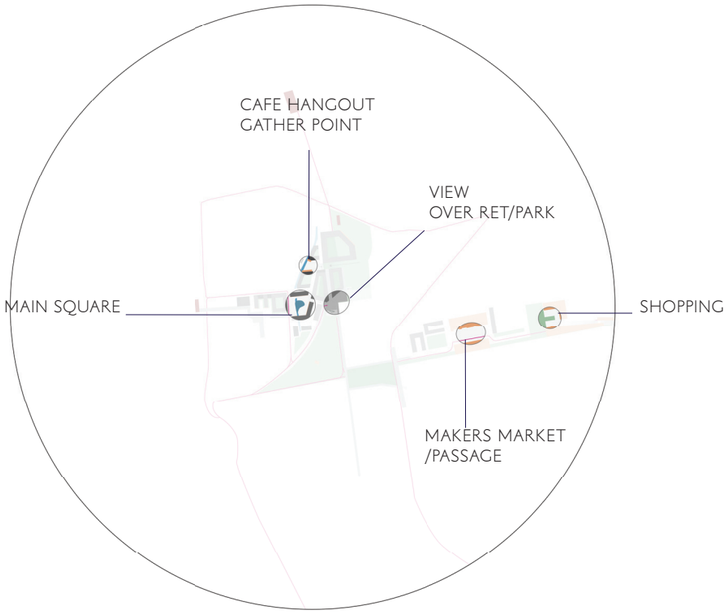
2. Connect the Hofbogen to the Rozenlaanviaduct and the Ceintuurbaan.

3. Bridge the resurfacing Metroline



SQUARES

Five main squares cater to different needs, they are positioned strategically to draw in destination visitors whilst directing passerbys allong spaces they may not seek out. A commercial area is the first area found when exiting the station and walking along the ceintuurbaan. The Makers passage is placed along the same boulevard yet intimately accesible for the neighbourhood.
When crossing over the Kleiwegkwartier towards the hospital and the golfcourse you pass a cafe square allowing a leisurely brake between each of the different functions.



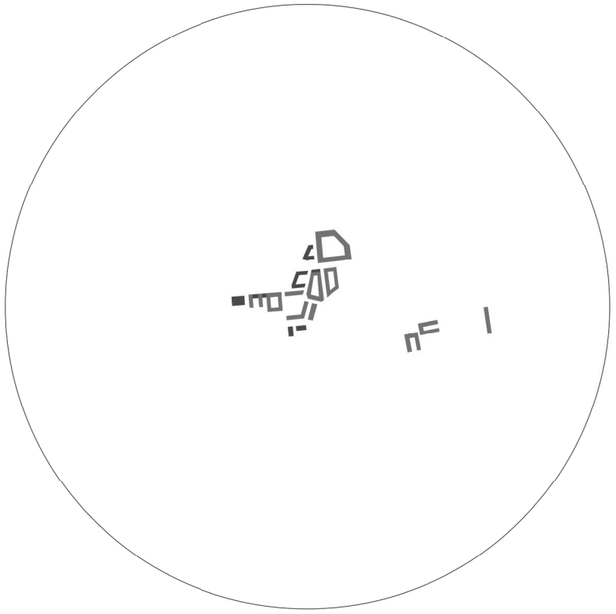
DWELLINGS

Estimated added housing
35% social housing

70 app. Cooperative living
40 rowhouse. raised streets
20 ground floor maisonette
75 care app. near hospital
20 ground floor app.
30 + 15 courtyard rowhouse

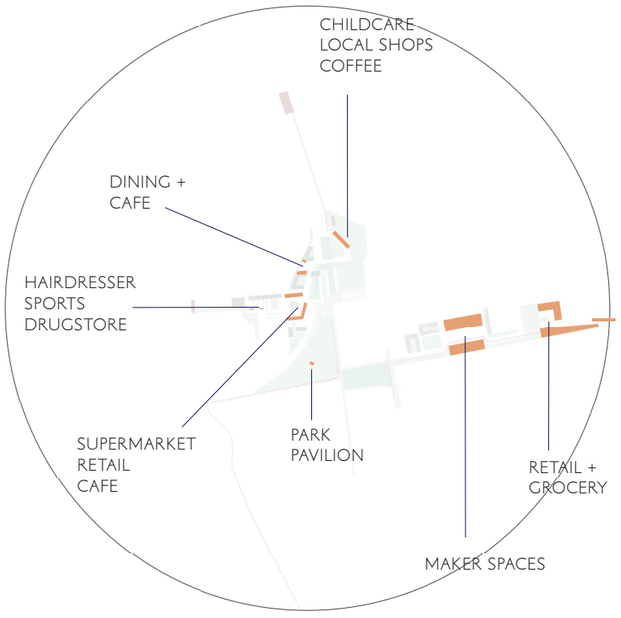
Ceintuurbaan:

80 apartments
15 row houses



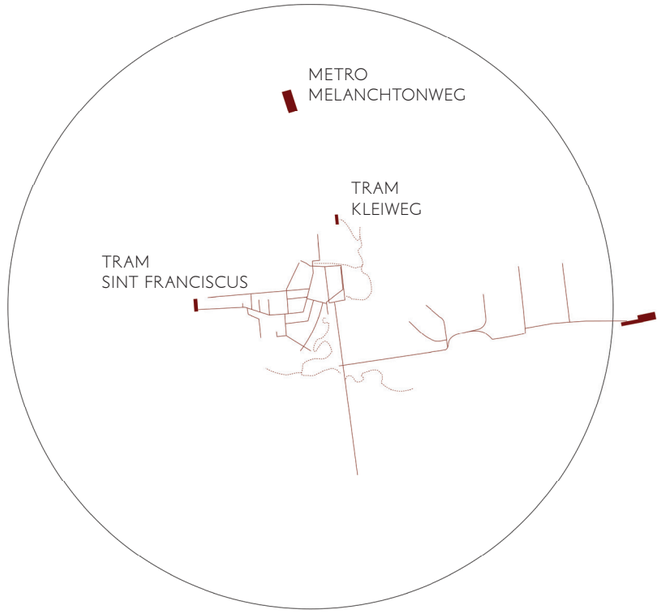
SOCIAL/COMMERCIAL

The different amenities cater to the community of the Kleiwegkwartier, allow for easily accesible and normalized care of the hospital residents and give space to the creative and commercial needs of the wider area.



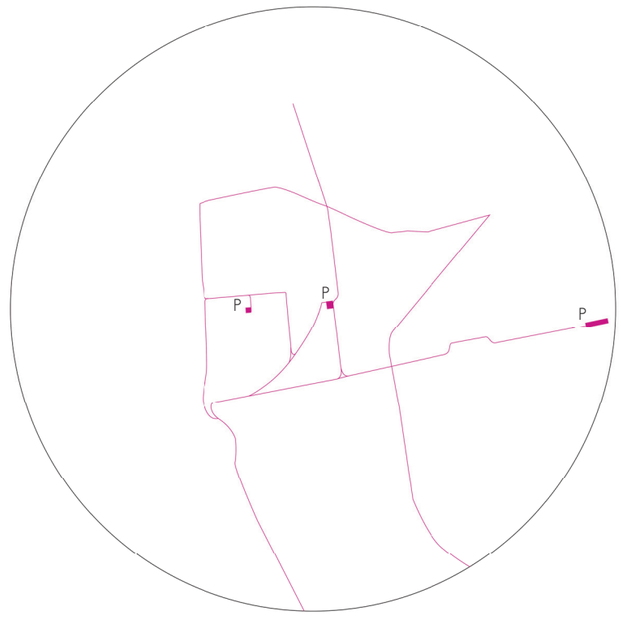
PEDESTRIAN ROUTES + PUBLIC TRANSPORT

Pedestrian routes throughout the area at different levels creates vanes through the previously innaccesible space and connects the public transport stops.



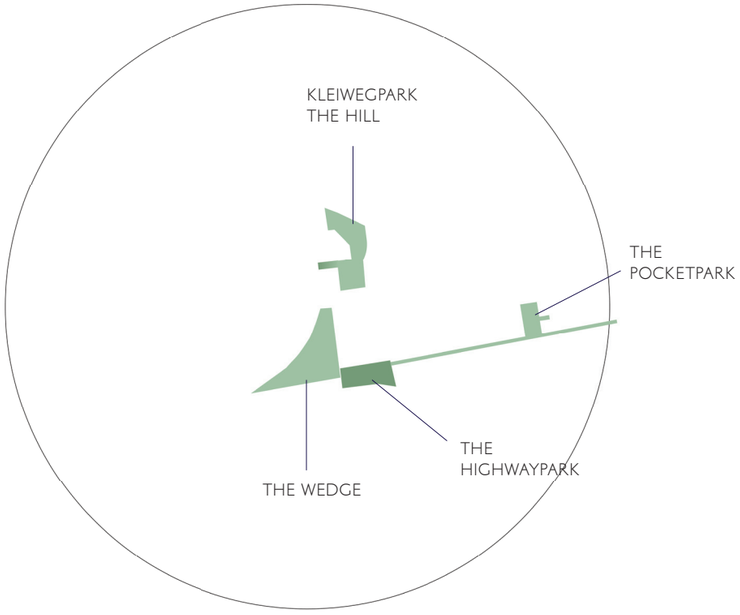
BIKE ROUTES

The bikeroutes cross through the area, using the rise of the metro as a slope to bridge the height difference. Large bycicle parking by the hospital, under the hill and by the station designate these areas as central emanating points to continue on foot or transfer to a car or train.



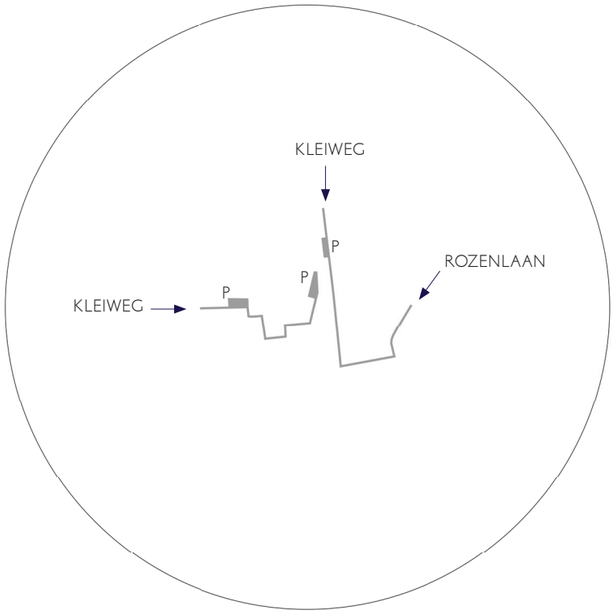
PARKS

Four main public parks connect the space in different ways. The Kleiwegpark/the Hill allows immediate acces from the Kleiwegkwartier residents,

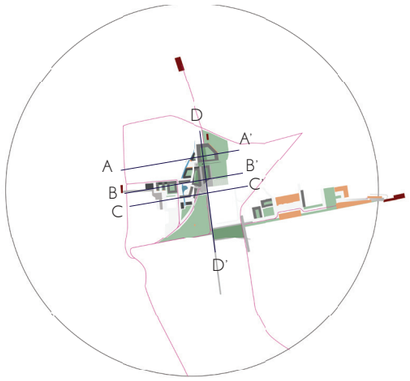


CAR ACCES

To minimize car traffic two car routes leading to parking spaces allow for the necessary emergency vehicles to acces the area without allowing for thoroughfare.



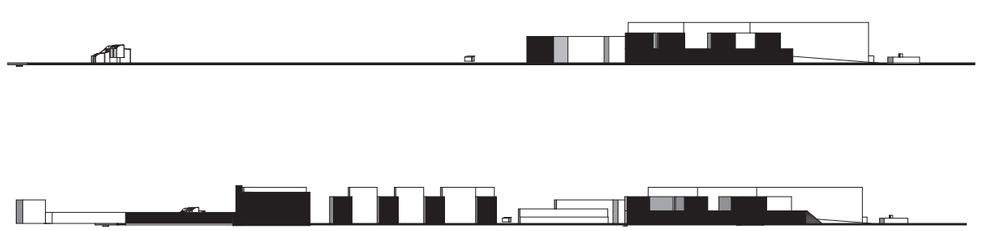
SECTIONS



A-A'



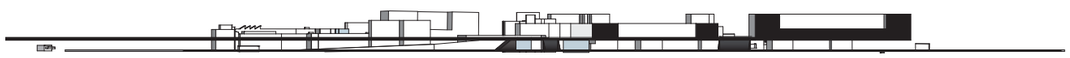
B-B'



C-C'



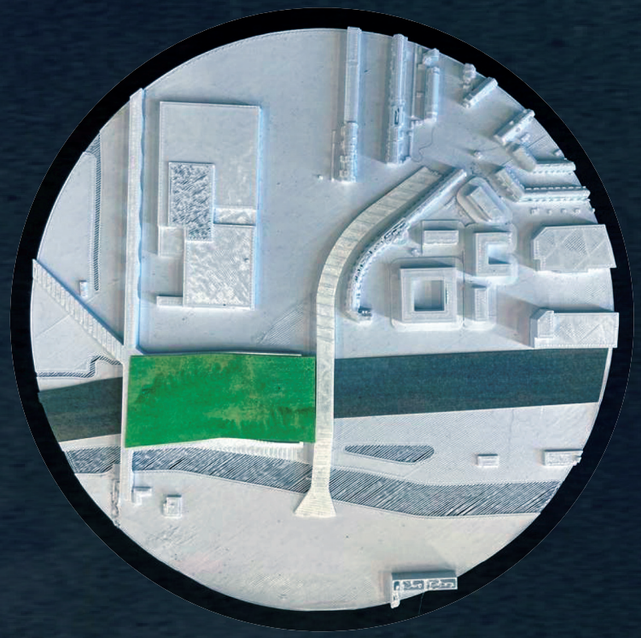
D-D'



LOCATION MODELS



THE BRIDGING OF THE METRO



THE HIGHWAY PARK



THE HOSPITAL AREA



THE TRAINSTATION





BALCONY TO LOOK OVER GOLFCOURSE GREENERY

PATH TO NEW GOLFCOURSE ENTRY

RESIDENTIAL STREET TO-WARDS THE MAIN SQUARE

The graduation studio in which this thesis is conducted, Design of the Urban Fabric, was chosen for its distinct focus on design implementation within contextual urbanism. This allowed for an exploration between phenomenological site visits, theory and design research in a practice that would hopefully result in a product closely meeting a real-world application. The pragmatic aspect of the studio was of particular interest to me, with a background in the arts often rooted in an introspective practice.

To position the line of questioning within a contemporary framework the thesis sought out to address the current Dutch housing crisis and its social implications. Responding to the urgencies regarding the inequality on the housing market (Hochstenbach, 2022) and the increasing trend of single person-households (CBS, 2022). With the intention of including recurring site visits into the research, finding an accessible site (within covid measures) was important. As the initial subject matter was a national trend, concentrated in urban areas, the city of Rotterdam was explored aided by the Omgevingsvisie Rotterdam (2021), positioning the research within current policy. Though the selection may have initially appeared somewhat arbitrary the structure of Hillegersberg Zuid continuously left questions unanswered eventually re-framing the entire research.

The initial subject matter moved away from the interior and how housing may influence the surrounding structure towards the ways in which the existing urban environment implicitly shapes the ways we live together. As a consequence, this thesis does not directly respond to the overarching societal urgency for housing but unpacks urban patterns that may occur through hasty ill-considered development. By using the precedent of Hillegersberg Zuid the importance of a wider perspective during development is attempted to be highlighted. The scale of the site allows for a direct human understanding that could potentially communicate between fields. Herein the layered influences of historic structures, symbolic meaning and current use are supplemented with a design proposal to emphasize the absurdity as well as its potential.

METHODS

The methods used were based in site observation, design research, and study by design.

Photographic documentation and sketching for instance helped highlight the disconnect in the infrastructure and illustrate how individuals made use of unintentional space. Physical models helped spatially respond to new (and old) design interventions. The major benefit of the model, in contrast to designing digitally or sketching, was that its playful nature motivated the production of iterations and supported in understanding proportions.

For the research to truly land in human perception and (inter)action one of the missed opportunities was gathering the emic perception of the environment through comparative interviews and mental mapping. Though I was able to speak to a few residents, climbers, and Minna Liu from the Urbanisten, the line of questioning was not consistent diminishing the academic applicability to include them as a qualitative research method. Currently the potential users of the space within the research are informed by anecdotal references found online and in brief encounters but are still largely imagined personas, likely influenced by my own biases. With a broader and more systematic input from the (new) users of the area the foundations would have been more reliable. This would have required more preparation early in the research process.

Rather than employing the methods in answering a cohesive research question from an objective perspective, the observational nature of most of the methods allowed for an intuitive narrative to form that may endanger the academic quality of the thesis.

PROCESS

The research was not executed in a focused state. The time frame within with this research was done included a major pause and other work obligations that stretched the project longer than intended. This had consequences in keeping up to date with any changes surrounding the subject. Amongst others this meant keeping track of the Novi extension, Woonvisie critique, St Franciscus expansion and Hofbogen plans. It also however informed my participation in Ministerie van Maak in which the 'million houses' quota that has been thrown around to combat the housing crisis is questioned.
As the process occurred a bit haphazardly making it difficult to compare and combine earlier documentation. To some degree this non-linear process has been considered innate to design research (and in the case of this thesis arguably limited some of the obstructive pre-suppositions such as the significance of symbolic toponyms (Jong, 2002)) the chaos made communicating explicitly during the research process complicated, a skill I struggle with as it is. As urbanism touches upon many different fields, such as sociology, geography, linguistics, and philosophy, none of which I have fully mastered, I found the process of this thesis continually opening new possible contexts which seemed important to consider. As others were able to express what I could only intuitively glimpse (Ingles, 2013).

ETHICAL CONSIDERATIONS

Though this reflection looks back on the thesis within the academic field I found that my personal experience influenced the thesis to such a degree that I cannot distance it from the outcome. I questioned to what degree our responsibility lies between objective research and guiding action when we see politicians lie and distort research (Tweedekamer, 2022) and when we cut off "the capacity of beginning something anew," (Arendt, 1958, p. 9). The space between a research paper and its real-world implementation is influenced by the meaning each responsible party places on it. In part this informed the decision to explore some of the symbolism of the site.
The influence of the writer should be considered in any research, in this case is means interviews and collaborative methods should have been included to formulate more rounded conclusions. Particularly as the subject matter discusses the interactions between different personas the speculative nature of my interpretations of them as design researcher is one of superficial sympathy.

REFERENCES

architectuurgids.nl - Wagnerhof, Jan van Teeffelen, Rotterdam. (n.d.). http://www.architectuurgids.nl/project/list_projects_of_architect/arc_id/1543/prj_id/1578

Berghauser Pont, M., & Haupt, P. (2010). *Spacematrix: Space, density, and urban form.* Rotterdam: NAI.

Bewonersorganisatie Kleiwegkwartier. (2013, November). Buurtkrant. Https://Bokrotterdam.Nl/Wp-Content/Uploads/2020/04/Buurtkrant-Bewonersorganisatie-Kleiwegkwartier-39-201306-November-2013.Pdf.

Boverket (2020). *Urban Density Done Right*. https://www.boverket.se/en/start/publications/publications/2017/urban-density-done-right/ Hämtad 2022-05-28.

BZK. (2020, September). *Nationale Omgevingsvisie*. https://www.denationaleomgevingsvisie.nl/publicaties/novi-stukken+publicaties/handlerdownloadfiles.ashx?idnv=1760380

Centraal Bureau voor de Statistiek. (2018, 2 June). *Woonoppervlakte in Nederland*. https://www.cbs.nl/nl-nl/achtergrond/2018/22/woonoppervlakte-in-nederland

Centraal Bureau voor de Statistiek. (2019, 26 August). *Veranderend bodemgebruik Nederland 1996–2015.* https://www.cbs.nl/nl-nl/maatwerk/2019/35/veranderend-bodemgebruik-nederland-1996-2015

Centraal Bureau voor de Statistiek. (2019, January 2). *Bevolkingsgroei in 2018 vooral in de Randstad.* https://www.cbs.nl/nl-nl/nieuws/2019/01/bevolkingsgroei-in-2018-vooral-in-de-randstad

Couperus, S. (2020). *The People of New Jerusalem: Narratives of Social In- and Exclusion in Rotterdam After the Blitz of 1940. In M. Kindermann, & R. Rohleder (Eds.), Exploring the Spatiality of the City across Cultural Texts: Narrating Spaces, Reading Urbanity* (pp. 167-183). Palgrave MacMillan.

Crimson Architectural Historians. (2008). *Toekomstvisie De Hofbogen Het langste gebouw van Rotterdam.* http://www.hofbogen.nl/wp-content/uploads/2017/09/Toekomstvisie-2008.pdf

Franciscus Gasthuis & Vlietland. (2022, 26 mei). *q_a_omwondenavond_mei_2022* [Press release]. https://www.franciscus.nl/uploads/tekstblok/q_a_omwondenavond_mei_2022.pdf

Gemeente Rotterdam. (2017). *Kleiwegkwartier: Toelichting.* www.planviewer.nl. https://www.planviewer.nl/imro/files/NL.IMRO.0599.BP1083Kleiwegkwart-va01/t_NL.IMRO.0599.BP1083Kleiwegkwart-va01.html

Gemeente Rotterdam. (2021, December). *De Veranderstad.* https://www.ruimtelijkeplannen.nl/documents/NL.IMRO.0599.OV2021Rotterdam-va01/d_NL.IMRO.0599.OV2021Rotterdam-va01.pdf

Google. (n.d.). A20 [Photograph]. Retrieved from Google Streetview
Google. (n.d.). Hart van Zuid [Photograph]. Retrieved from Google Earth
Google. (n.d.). Hillegersberg Zuid [Photograph]. Retrieved from Google Earth
Google. (n.d.). Ijsselmonde [Photograph]. Retrieved from Google Earth
Google. (n.d.). Monk Bouldergym [Photograph]. Retrieved from Google Streetview
Google. (n.d.). Rotterdam [Photograph]. Retrieved from Google Earth
Google. (n.d.). Schiebroek [Photograph]. Retrieved from Google Earth
Google. (n.d.). Voetgangersbrug Overschiese Kleiweg [Photograph]. Retrieved from Google Earth

Gunneweg, J. (2010, 20 December). *Nieuwe tramhalte voor het Sint Franciscus gasthuis.* rijnmond. https://www.rijnmond.nl/nieuws/9986/nieuwe-tramhalte-voor-het-sint-franciscus-gasthuis

Harbers, A., Spoon, M., van Amsterdam, H., van der Schuit, J. (2019, May) *Ruimtelijke Dichtheden en Functiemenging in Nederland* (*RUDIFUN).* PBL

Hamers, D. (2020), *Binnen- en buitenstedelijk bouwen in Nederland: een reflectie*, PBL

Hochstenbach, C. (2022). *Uitgewoond (1ste edition).* Das Mag Uitgeverij B.V.

Legeby, A. (2013). *Patterns of co-presence : Spatial configuration and social segregation* (PhD dissertation). Retrieved from http://urn.kb.se/resolve?urn=urn:nbn:se:kth:diva-133678

Lynch, K. (1960). The image of the city. MIT Press.

Maasstad Ziekenhuis. (n.d.). *Historie*. https://www.maasstadziekenhuis.nl/over-maasstad/de-organisatie/historie/

Marcuse, P., & Madden, D. (2016). *In Defense of Housing* (1ste edition). Adfo Books.

Mens, N. & Wagenaar, C. (2010). *Architectuur voor de gezondheidszorg in Nederland* (1st edition). Macmillan Publishers.

Movisie. (2017). *Kwetsbare groepen in beeld.* https://www.movisie.nl/sites/movisie.nl/files/publication-attachment/Kwetsbare%20groepen%20in%20beeld%20%5BMOV-222017-0.3%5D.pdf

MRDH, (n.d.). *Verstedelijking in de metropoolregio.* https://www.mrdh.nl/project/verstedelijking-metropoolregio

Koetsveld, H. (n.d.). *Een eeuw Kleiwegkwartier.* BOK. https://bokrotterdam.nl/wp-content/uploads/2020/03/Een-eeuw-Kleiwegkwartier-Henk-Koetsveld-Rotterdam-1919-2020.pdf

OHCHR. (z.d.). OHCHR | *The human right to adequate housing.* https://www.ohchr.org/en/special-procedures/sr-housing/human-right-adequate-housing

Platform Wederopbouw Rotterdam. (n.d) *Rotterdam in Nood!*. https://wederopbouwrotterdam.nl/artikelen/rotterdam-in-nood

Rijksoverheid. (2022). *Omgevingswet.* Rijksoverheid.nl. https://www.rijksoverheid.nl/onderwerpen/omgevingswet

Rijkswaterstaat. (2015). *Ontwerp-Tracébesluit A16 Rotterdam: Deel III Toelichting.* Retrieved October 22, 2022, from https://www.platformparticipatie.nl/a16rotterdam/ontwerptracbesluit+17/relevante+documenten+56/

Saint-Exupéry, A.d. (2018). *The little prince.* (I. Testot-Ferry, Trans.). Wordsworth. (Original work published 1943)

Sennett, R. (2018). *Building and Dwelling: Ethics for the City.* Allen Lane.

Sociaal Cultureel Planbureau. (2021). *Burgerperspectieven 2021* | kwartaal 4. https://www.scp.nl/publicaties/publicaties/2021/12/27/burgerperspectieven-2021--kwartaal-4

Spoor Tijdlijn Nederland. (n.d.). https://www.spoortijdlijn.nl/

UNHCR|Emergency Handbook. (n.d.). emergency.unhcr.org. https://emergency.unhcr.org/entry/57186/shelter-solutions

Vereniging Deltametropool.(2021) *The New Planning Manifesto.* https://deltametropool.nl/longread-the-new-planning/

Verstedelijkingsalliantie. (n.d.). *Projecten.* https://www.verstedelijkingsalliantie.nl/projecten/

vzinfo (n.d.). Volksgezondheid En Zorg. https://www.vzinfo.nl/ziekenhuiszorg/regionaal/bereikbaarheid

SURFACE COVERAGE, p.34

GIS data was used from the Basisregistratie Grootschalige Topografie (BGT) downloaded in gmllight from PDOK on the 25th of May 2022. Historical entries up to this date were removed by filtering out all values containing entries in “eindregistratie”. The data was clipped to the project site and surface areas calculated by adding a column in the meta-data with the field calculator using the geometry function; $area. The meta-data was then exported and the area column summed up in Excel per dataset. bgt_wegdeel , bgt_wegdeelondersteuning, bgt_tunneldeel are used for roads and its supporting infrastructure. Both overground and underground elements are considered in this calculation as the underground structures currently determine the overground use in this particular area. In future calculations this may need to be modified., bgt_waterdeel for water and bgt_begroeidterreindeel were used for green. Possible changes need to be considered due to the date of calculation and missing data from private areas as the BGT is maintained by the Kadaster.

RESIDENTIAL SURFACE PP, p. 101

The difference between the total FSI as calculated per building block by the PBL (2019) and the FSI when only considering residential functions reiterate the minimal functional presence of residential housing within the project area. When combining the residential FSI to the population density an indication of the space resided in per person is compared to the national- and Rotterdam municipal average of 65m2 and 53,85m2 respectively (CBS, 2018)

As the amount of residents per building is not openly available the residents per block were deduced by grouping the PC6(Postcode level 6) CBS data to the building blocks as defined by PBL. This was done by joining the attributes of the PC6 by location of the building blocks, summing up the amount of inhabitants (_Inwoners) of the PC6 allocated to the same block and linking this metadata to the existing PBL Rudifun dataset. Where the postcode areas covered more than one block, the data was coupled to the block covering the largest area of the PC6. Where there was no data or null data on _Inwoners only the the valid numbers were summed.

Revision may be necessary for more accurate results as the RUDIFUN data contains inaccuracies at a smaller level(PBL, 2019)

Network Analysis, p 47 fig. 46.

The network reach analysis was executed in Qgis with help of the QNEAT plugin. Using the road centerlines based on the NWB road dataset of 2022 and adapted to include missing connecting pedestrian roads. All highways, double parallel roads and otherwise inaccessible paths for pedestrians were removed. The centerlines were then unlinked at any bridges and other disconnected overlapping paths. A walking speed of about 5km/p hour was used to select a distance of 800m to be covered in 10 minutes, with a contour-interval of 100m . For the public transport routes the travel time from each respective stop to the tram stop Sint Franciscus was deducted from the reach analysis started from each stop. The results were then overlapped by averaging the values of the contour interval.

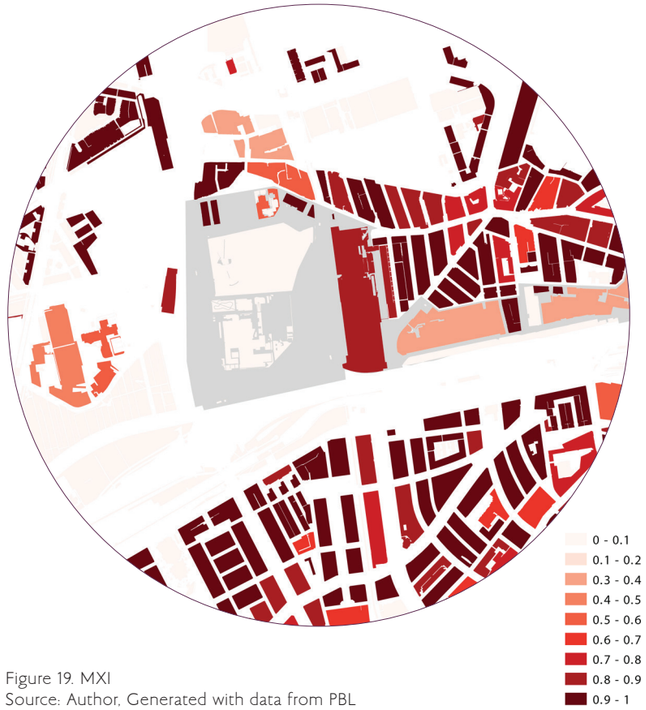
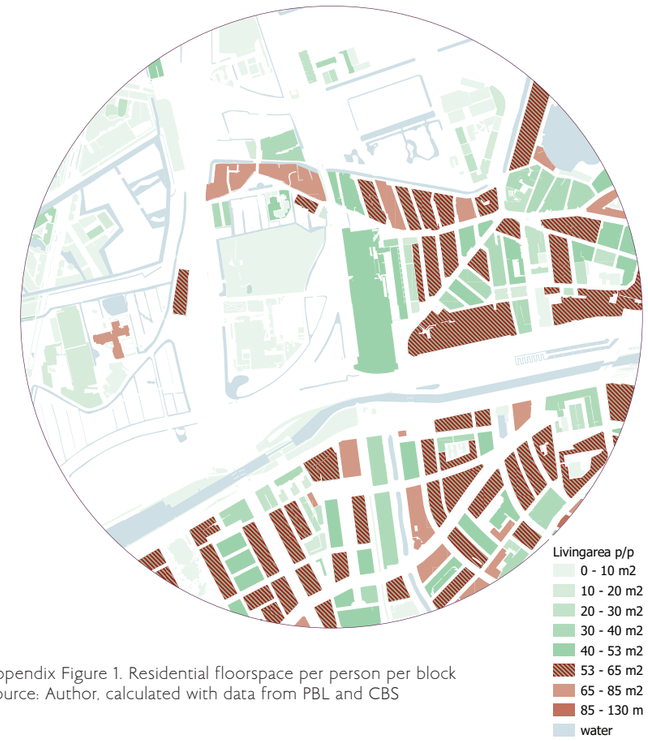


Figure 19. MXI
Source: Author, Generated with data from PBL

MIXED USE INDEX

Mixed used functions are important for a sustainable urban environment (Boverket, 2017). The Mixed Use Index (MXI) is one way of assessing the diversity in function by dividing the residential surface area by non-residential surface area in buildings(PBL,2019)

The MXI as calculated by the PBL indicates a balance in mixed use and residential area along the Straatweg and Kleiweg suggesting the most dynamic activity to take place. This mixed function continues down into the Electroweg.

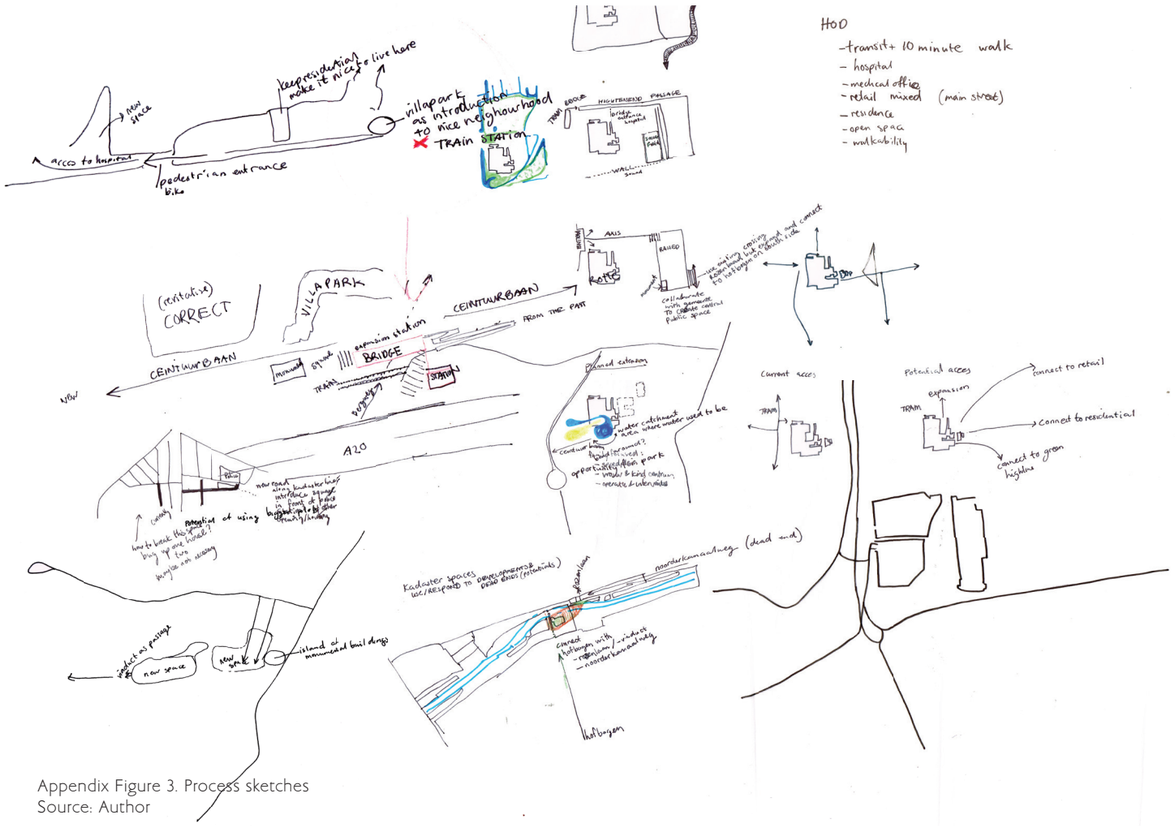


Appendix Figure 1. Residential floorspace per person per block
Source: Author, calculated with data from PBL and CBS

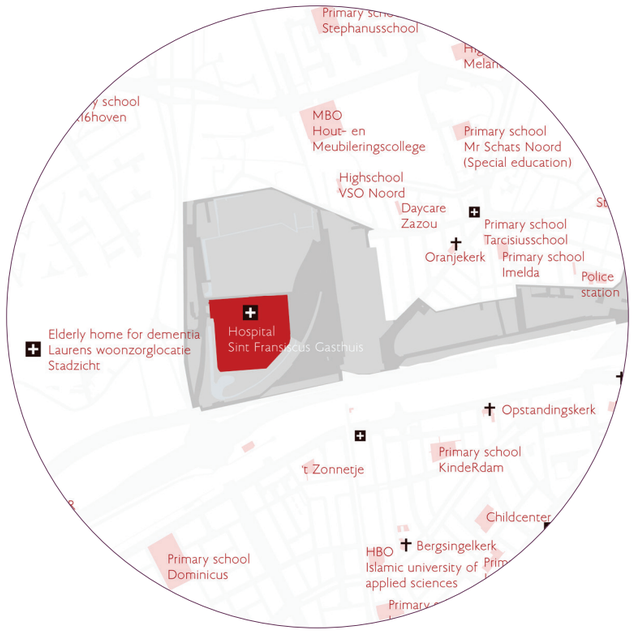
RESIDENTIAL FLOOR SPACE PER PERSON

With a total of 8100 residents (CBS,2021) living on a total of 533436 m2 residential surface area as calculated from PBL(2019). Hillegersberg Zuid boasts just above the national average of 65m2 per person.
When considering the surface area per block the highest residential areas are clustered along the west and along the Straatweg.

Calculations can be found in the appendix



Appendix Figure 3. Process sketches
Source: Author

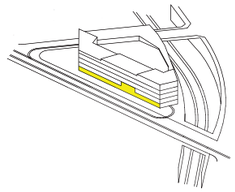


SOCIETAL



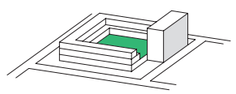
social
project area
1:80 000 ^

Kalkbreite Zurich



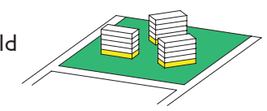
- activated ground floor
- semiprivate inner courtyard
- high GSI

Coinstreet London



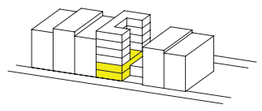
- dead ground floor facade
- semiprivate inner courtyard
- high GSI

Spreefeld Berlin



- activated ground floor
- low GSI (high OSR)
- publicly accessible open

Shuc Seattle



- activated ground floor
- semiprivate inner courtyard
- full GSI

Appendix Figure 2. co-housing case studies
Source: Iso drawings by author, site made with BGT



over the RET
Stacking Functions
Accessibility Public Transport



Next to Hospital
Walking for Elderly



On Golf course
Maker space



Row House renovation
Lively Plinth



LEISURE



sports
mixed / commercial
project area
1:80 000 ^

Appendix Figure 5. Social and Leisure functions in the area
Source: Author, Traced over data from Kadaster and Google maps

Thankyou Teake for your endless patience and attempting to maintain some sense of consistency.

Thankyou Cor for sharing your extensive knowledge

Thankyou to all the other inspiring people i met and got to learn from at the TU. In particular Bardia, Frits, Simon, Rachel and Martine.

Thankyou Eveline, Lucas and Thom for the support in the chaos.

Thankyou Vers for the (dys)functional family dynamics.

Thankyou Trog vol kamperfoelie for being solid.



