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P1 Research Report

The Lasting Notion of Street : Vary, Adapt, Engage. Transforming Eilandenbuurt Apartments

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P1 (revise)

**the last
notion of
street**
Eilandenbuurt

Abstract

As the ideology changes through time, the Dutch portiek-housing blocks, emerged from the 1930s and massively built after the war, has been generally considered outdated in some perspectives.

To deal with collective housing blocks that is physically outdated or socially problematic to the city, the conventional solution is to demolish and rebuild the whole block. Yet such approach became less feasible when the private and public sectors withdraw their investment in large-scale urban renewal after the economical crisis in 2008.

This project seeks an alternative way to sustain the use of old housing blocks in Rotterdam Zuid with architectural modification. This project took a RMIT approach but expanded from single building to a larger scale – the urban landscape and neighborhood.

Revise version note:

The text part in this revise P1 report are almost re-wrote. For clearance to reading the original text are showed in blue and the new add and edited text are showed in black.

Most drawing plates are original but with new legend and text explanation.

Introduction

A RMIT research and design approach on contemporary urban issue

After the crisis, bottom-up, small-scale approaches that require less capital became the norm of new experiments in urban renewal and conduct by municipalities, housing corporations, architects, and most important of all, the local inhabitants.

Today in the cities local organizations play a role as a bridge between municipality, schools and the inhabitants. Veldacademie is one of such organization in Rotterdam and Carnisse district is one of the major target area in their research projects. Transforming Housing Heritage, an RMIT studio in architecture TU Delft, cooperated with veldacademie in the Transforming Housing Heritage studios.

In the first Transforming Housing Heritage studio and individual research done by Veldacademie members and associated master students including architecture and urban aspects. Topics including from house merging, urban small business, the VvE structure, to the potential networking methodologies.

My research topic

The Last Notion of Street is the topic if my design thesis and looking for the urban and social values brought by the physical street form, as implemented according to Witteveen and Van den Broek. The

qualities in street level that is present in the Eilandebuurt before and after the 1940s is a potential to be reinforced as a pivot to solve problems presented today. Such qualities are unique today in the national scale as the design ideology has been forgotten after its compilation.

In this P1 report I will compare the street pattern in the first 30 years of the 20th century and the with the pattern of portiek housing blocks design by Witteveen and Van den Broek, in the west half of Rotterdam Zuid.

Such approach should fit into the general theme of Veldacademie that research and experiments in micro-scale design methods that require no huge investment in capital and construction, and the training of RMIT that architectural interventions without total demolition of the existing structure can not only apply to monumental buildings, but also benefit the social economical conditions when apply to residential building blocks.

Monumental Values of Eilandebuurt

For monumental buildings, the values are focus on their significant features in history or aesthetic. Mass-produced between-war and post-war residential buildings through out the Netherlands are usually been under estimated in their in aesthetic and history. The Eilandebuurt is an exception. When

Witteveen layout the urban fabric of Rotterdam Zuid in the 1930s he continued the urban design idea of Berlage and planned Zuid base on a traditional street scale. Van den Broek's vision of the primitive minimal housing units are linked with the street level with a portiek that is more transparent then their portiek-housing and flat predecessors. Such ideas are implemented and together makes a unique urban landscape in Eilandebuurt compare to other portiek-housing neighborhoods in the Netherlands.

Research Method in P1

Any physical built architecture can not be looked and categorized without the contextual societal body in mind. In the structure of the ordinary J.N. Habraken uses the term "type" to define any long lasting system that can be recognized in the built environment. Thus, typology is not only the categorization of physical shape but also the human activities and culture within.

In this essay I would like to use typology as the research stem to identify, compare and distinguish the types of built structures and street-level space in Eilandebuurt with other parts of Carnisse, Rotterdam Zuid.

Problem Statement

"[...] Modernism's preoccupation with systems approaches to building produced numerous highly detailed and minutely documented technical and architectural systems of great logics and invention. But such systems were rarely fully appropriated into a larger social body. Consequently, they ere never implemented. That failure cannot adequately be explained solely on technical or economic ground"

J. H. Habraken *The Structure of the Ordinary*

Small scale economic activity and the dynamism of old and new, cheap and expensive can contribute to what is nowadays termed a sustainable group of occupants and users who are both willing and able to continue living and/or working in a district.

Susanne Kommosa *The Dutch Urban Block and the Public Realm*

The architect was paid for designing these houses? They are just boxes!

Sustainability of a Neighborhood

The Housing blocks in Eilandenbuurt designed by Rotterdam-base architect J. Van den Broek from 1938 are no doubt monumental in Dutch architectural history. But the neighborhood they sit within have been have a controversial evaluation.

Carnisse district of Rotterdam has a large proportion of its housing blocks design by or influenced by Van den Broek. But in the municipal report it is listed as one of the most problematic area in Netherlands. Criteria like its high moving rate, low employment and fragment ownership makes it unappealing to the municipality. However, a field-oriented research done by Jurrian Arnold reveals another face of the neighborhood: Self-run community organization in a permanent meeting places which organize activities with its own newspaper and a community garden.

Inhabitants

According to the interview of inhabitants, the first generation of house owners in Eilandenbuurt from 1938 to late 1940s are harbor workers and their family. Many of the them become unemployed later when the harbor moved to the west.

Today the houses in Eilandenbuurt attracts mostly starters. One of the reason is the price lower then average, and another is the limit of space - plan of the housing unit is about 50 square meter – are not sufficient for families with children in today's standard. So it is good for young couples to buy their first house but as they have children and money they moves to larger house, which is few in this neighborhood.

Problem: social

The high moving rate of starters is a disadvantage when consider the inhabitants' investment on maintaining and improving the physical building in the neighborhood. It is also disadvantage to form the mutual social bond between the neighbors.

The introducing of new inhabitants from immigrated ethnics also add an disadvantage relating to social coherence. In Carnisse there are 41 percent non-Dutch origin people lives in the housing units originally designed for Dutch labor nuclear families according to the 1930s' ideology and norm.

This phenomenon are not necessary a disadvantage for an urban area. The issue to be address is that the building at its original design setting are not adaptive to such phenomenon.

Problem: physical

Van den Broek experimented a new building technique using a lot steel components. As the building tectonic of steel are not maturely developed, the rusting of these components damaged the part of the building structure. Depend on orientation and construction contractors, some blocks suffer a more serious damage and maintenance work in the past decades can be easily seen.

Position

The stair and floor in the portiek-housing can be seen as an extension of the street, with its characters and social opportunities.

Type

1. The portiek-housing is a type of residential building with following features: repetitive stacked house-units, which are accessed from the street level by a shared staircase. A close-portiek is those with an extra door control the accessibility to the shared staircase.

The building and street configuration in Carnisse can be seen as the last notion of street. Portiek-houses design by Van den Broek are sitting in the urban plan by Witteveen, with a close configuration with the street. This makes the portiek houses in Carnisse unique from other portiek-houseing urban blocks planned and built in the post-war era though the Netherlands.

The sharp interface between the portiek-housing and street in Carnisse minimised of transitional space between house and street, which can be seen as an ideological imitation of traditional town house configuration: the facade of the building is right next to the street. Doors are next to each other but lead to different levels, and gardens hide behind the houses in the middle of a block.

Yet compare to traditional house in Carnisse, the

street level of portiek house lack of porosity from visual to accessibility as the shops are limited in individual corner boxes. Therefore, the minimised of transitional space between house and street does not bring much social interactions like the traditional house type do.

Issue

2. Today a large proportion of Carnisse residents are starters and immigrants. One of the problem is that social cohesion is not easy to bound between neighbours as the people are moving fast. There for, design that support social cohesion between neighbours are more needed as the houses are originally not designed to deal with such social aspects.

A research done by a group in Utrecht* focus in social cohesion in Tarwewijk, Eilandenbuurt and Zuidpark shows that small social activities like greetings are not less important as activities. (and small neighbourhood parks are more desired than big parks.)

Design Approach

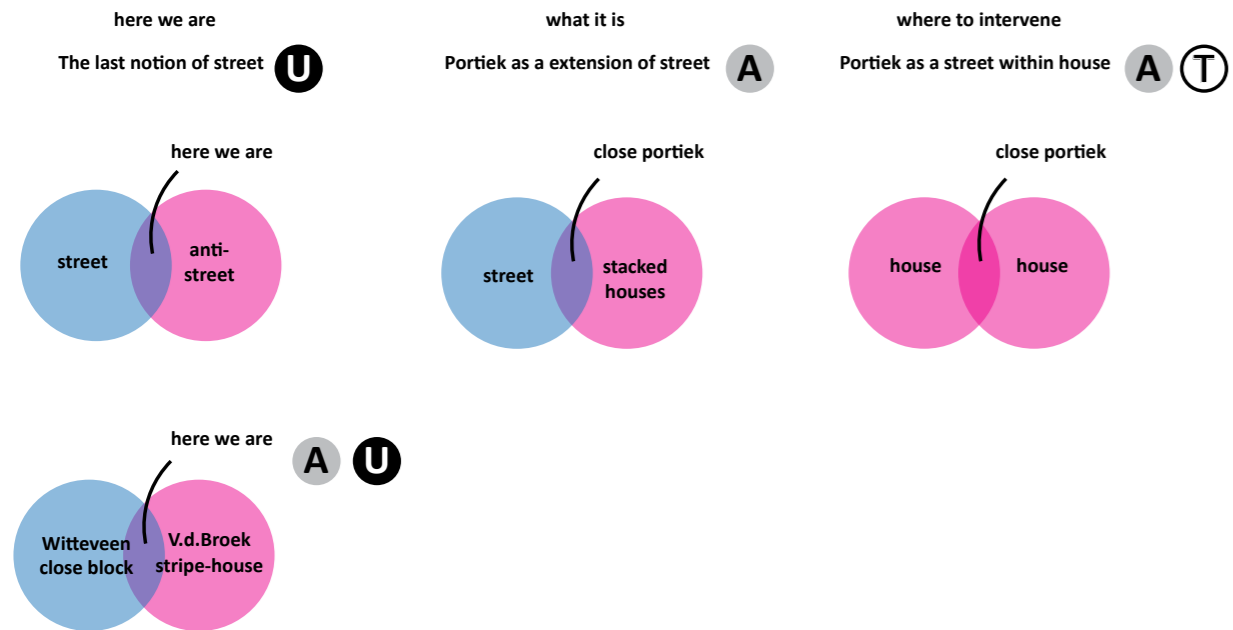
3. In this design project I explore the design and transformation of a more spacious and social-able portiek within the existing building.

The approach I took is first to see the stair and floor in the close portiek can be understand as an extension of the street whose accessibility is controlled by the door on street level.

As the spatial quality is limited for interactions between neighbours, it is the main problem to be addressed. Other values to be add include opportunities for small business using the existing ground floor and basement space.

Research approach

Where to intervene



In the P1 research phase I focus on the definition and position of the subject into the context. The first chapter defines the type of Eilandenbuurt street pattern and building type in the historical and ideological context. In chapter two the portiek-housing is considered as a successor of traditional street and house configuration. The conclusion leads to the intervention, which is not fully addressed in P1 report but will be deepen in P2 phase.

Content

Position

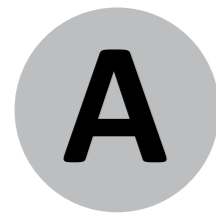
- U** **A** I Types and patterns 5
- A** II Architecture qualities 8
- T** III Technology, construction, and mirror bay 20
- IV Conclusions 30
- 36



I Types and Patterns



urban



architectural

Edit note:

The original report is late in the argument text explanation of the plates, they are re-organized and added in this version. Text about fabric is placed in the essays of street and I move them to this architectural part.

The problem of today's Eilandenbuurt is not easy to be defined as we have a more diverse theories base on different perceptions on urbanism, each may lead to a different conclusion. In this situation the design intervention need a more cautious position.

has been mostly shaped, and the architectural ideology

As a beginning of the project I start with the observation and examination of the existing physical environment of Eilandenbuurt, in hope to approach both the positive value and potential problematic within the built neighbourhood.

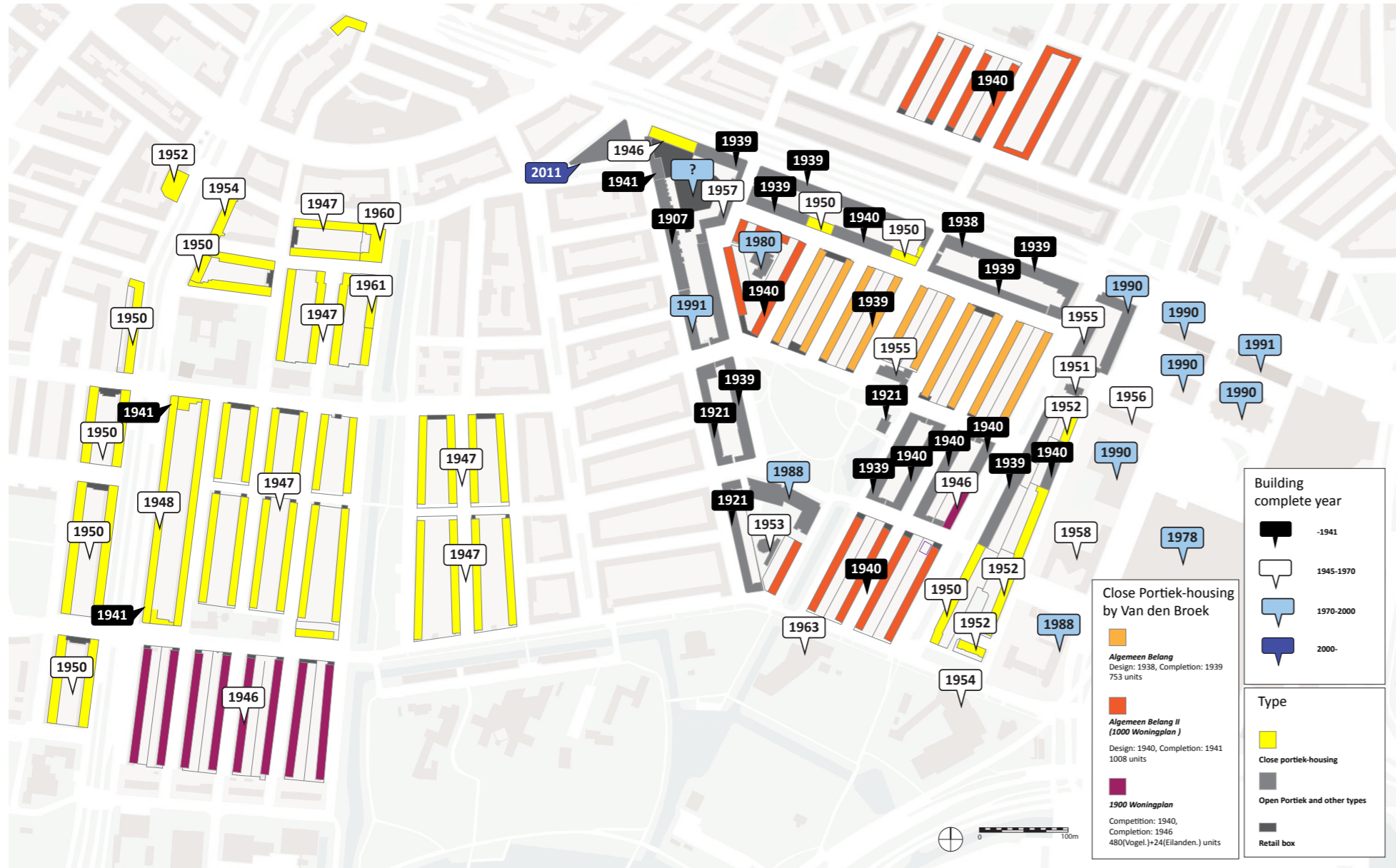
The ultimate goal of such approach is to answer one question: Can we find solution for the social issue today by searching within the values of the 1940s portiek housing in Carnisse?

In the structure of the ordinary J. N. Habraken uses the term "type" to describe a repetitive configuration between building components that can be seen in a specific region.

In Rotterdam Zuid there are two recognizable types: the street-building-garden profile configuration and the stack-up portiek-housing.

To look into the what shapes these types, this part explore the original topographical structure, planning strategies, design ideologies before 1940s, in which era the present urban form of Eilandenbuurt

I Types and Patterns - Eilandenbuurt and surrounding



Building time and Typology

U A

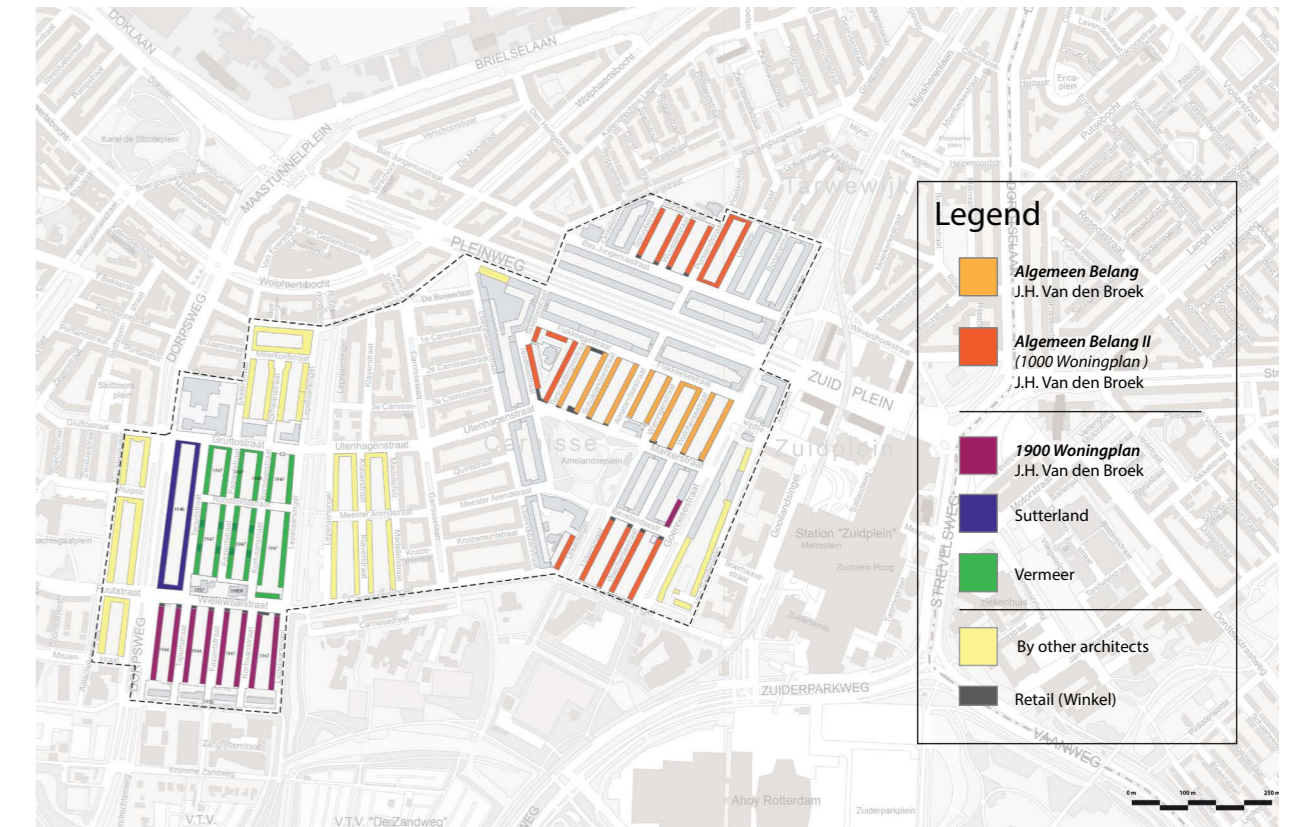
Except the paused between 1941 to 1945. Portiek-housing (portiekwoning) in Eilandenbuurt and rest part of Carnisse district are rised in a short time between 1938 to 1950.

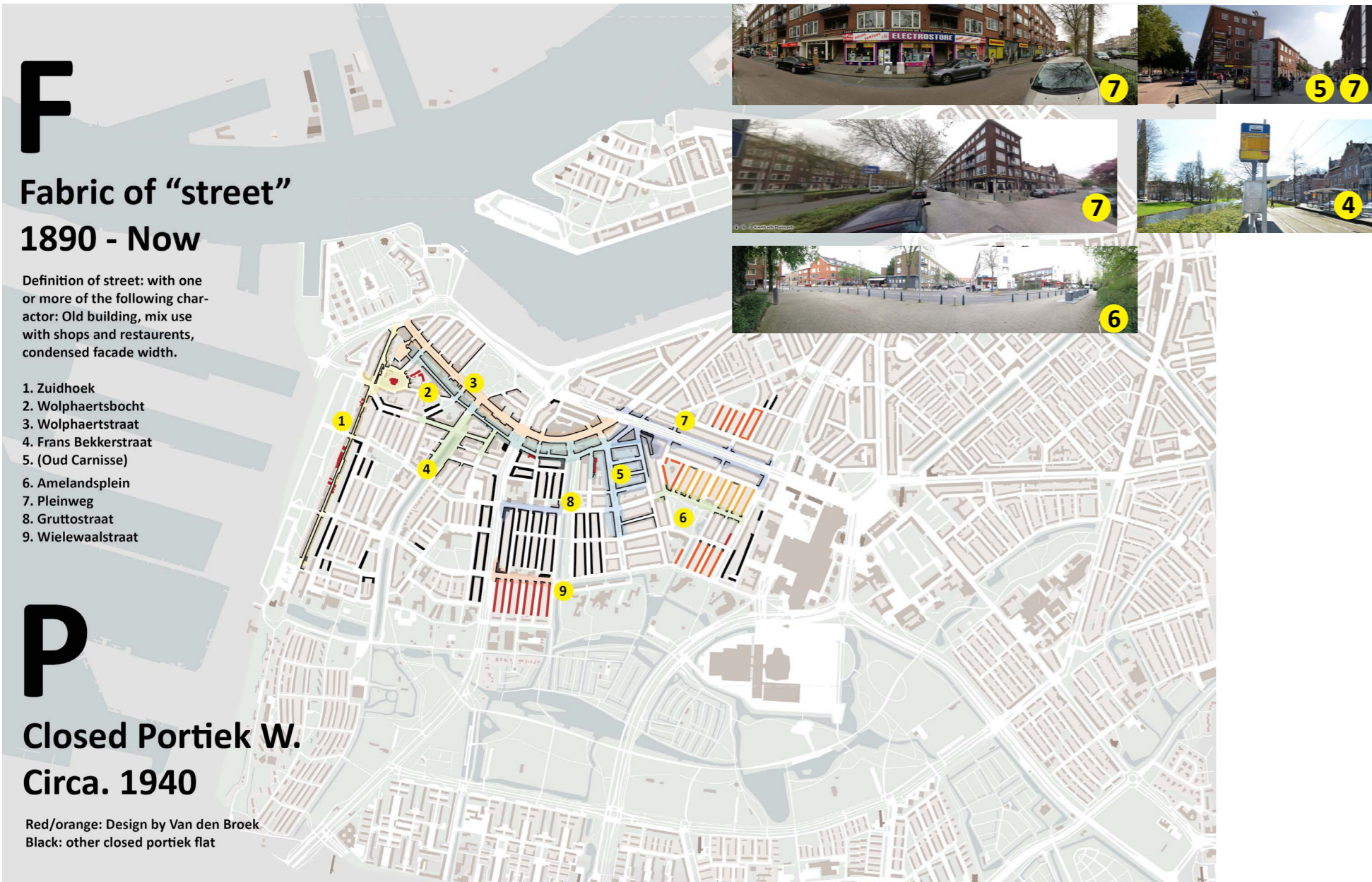
The portiek housing type can roughly seperate into twosub-types: open portiek, generally know as "Haagse Portiek", and close portiek, which is our topic.

In Eilandenbuurt close portiek-housing are mostly design by Van den Broek in two phases, the first Algemeen Belang between Takkersestraat and Amelandseplein, and the Algemeen Belang II, filled out the rest plots in Eilandenbuurt, south from Urk-single noth to a part in Tarwewijk.

Before 1938 the dominant building type constructed in Carnisse are two stories town houses built around 1920s with two entrances, which present in the Oud Carnisse blocks west to Eilandenbuurt. To the east is an area with much different urban fabric, with free standing buildings including the Zuidplein shopping mall and bus terminal built around 1960s according to a much different design ideology.

In the far left this map shows the Vogelbuurt, which follows van den broek's portiek typology and the design is done by him and four other architects.





Fabric

U

Urban Fabric composed by Street patterns

The modern urban fabric of Rotterdam Zuid is no exception as other typical Dutch cities, with multiple layer that reflects the pattern of reclamation and urbanization process in time. Bases on the dyke and polder system later transformed into street and urban green, Witteveen extended existing fabric with North-south urban-block pattern, links them with East-west routes, and connect to the metropolitan with a super road structure.

Intro - Compositional Approach

The urban fabric of Eilandenbuurt is a part of a larger picture includes Carnissa and Charlois and part of Tarwerwijk.

This fabric is woven with three basic layers: the original town street of Charlois, the residential blocks and the artery road system that urban theorist Frits Palmboom describes as super structure.

according to Susanne Komossa, the city planner Willem Gerrit Witteveen, who made extension plan for Rotterdam Zuid in 1936, follows the idea of “compositional approach” that use the original water system in the polder as the new urban green.

The curved street is originally formed along a dyke and today most of the small shops and super market

are concentrate along this curve
The residential blocks are extending from north to south, this pattern gives every houses building along the long edge of the block sufficient sunlight through out the day.

Beside picturesque experience of open and close geometry, the east to west routes transport the passenger from Zuidplein and also provide business for the retail boxes that built on the edge of residential stripe houses.

The artery road links the Zuid to the centre, but for the neighbourhoods it is more like a solid boundary that cut the area into three pieces.

Old Dyke streets

Before Witteveen, the town street in today’s Oud Charlois is developed along two dyke lines: the Zuidhoek extended from Oud Kerk to south, and Wolphaertsbocht curved toward the west and the east. The West part of Wolphaertsbocht is later demolished and developed into modern port area, yet the East wing is absorbed into Witteveen’s plan as one of the main urban axis.

Most commercial activities today are still concentrated along Wolphaertstraat, including small shops and big supermarkets. Oud Carnisse is another area where traditional street pattern are visible. Short-width houses are still existing and extends part of the commercial activities from Wolphaertsbocht.

Residential Blocks

Possibly in concern of the sufficient capture of sunlight, Witteveen’s new residential urban blocks for the Zuid follows a visible pattern that is longer in the north-south axis and short in the east-west axis. As a

result, the residential part of the urban fabric shows a tendency of north-to south strips.
Commercial streets

Of most portiek house here, the corner on the street level are left for commercial use which can be seen as a continuity of the traditional Dutch town street pattern.

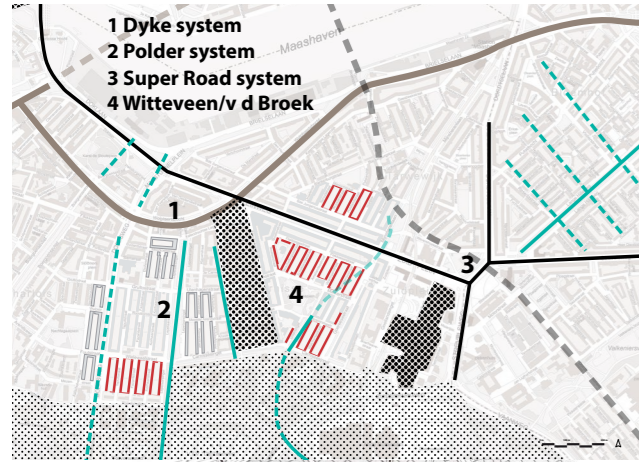
In the residential blocks

Another type of commercial street is the tram routes. The space where to-way rail site is also an green space but not for people to use and cross freely. The actual street are separate into two streets on each side of the rail.

Artery Roads (super structure)

The artery roads are a solid boundary for the neighborhoods. It looks like open space but not serve the pedestrian like other urban open space but for cars only. The smaller “street” on the two side of the roads are mostly residential. Except some small offices, most commercial space today are concentrate on the block corners especially the corner connects to Wolphaertstraat.

Background - Carnisse and surrounding



Systems and layers

There are four systems decided the urban fabric of Rotterdam Zuid: Dyke, polder, super road structure, and the residential blocks.

“Kom”(bowl) is a feature of polder structure in Zuid The irregular typography of its clay base soil. Unlike the parallel structure of the north, the parameter of polder system in Zuid are cut into individual areas by higher dykes.

Witteveen’s revised plan for Zuid, 1936

The street system largely follows the original dyke system. In this plan The dyke and large drainage became the main street and road. The inner area of the “bowls” becomes the residential district. On top a new road system for car traffic connect (and separate) each district and links the metropolitan area.

The existing street pattern in the old Charlois and Carnisse are also included in the new composition.

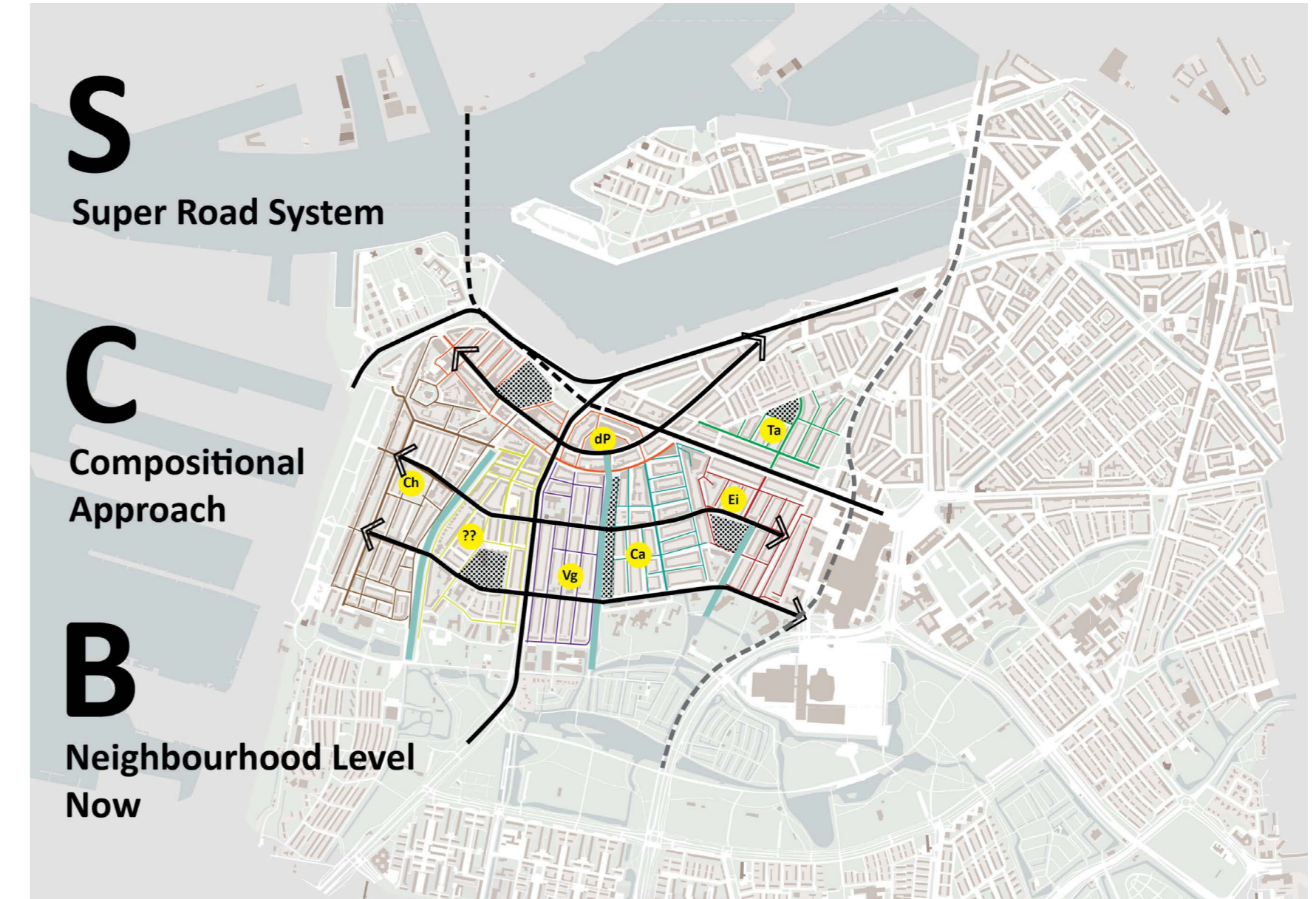


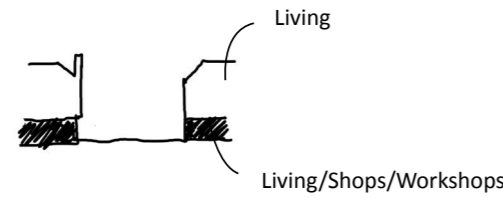
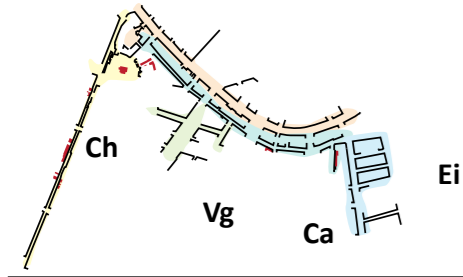
The portiek housing blocks

Except the existing buildings before the implement of new plan, the new buildings are dominated by portiek-house. The north to south orientation of stripes forms the repetitive pattern of building layer.

Among these portiek-house Van den Broek’s won work and other similar close-portiek are the dominant type in Carnisse.

Types and Patterns - Witteveen’s Compositional design





T
Traditional Street

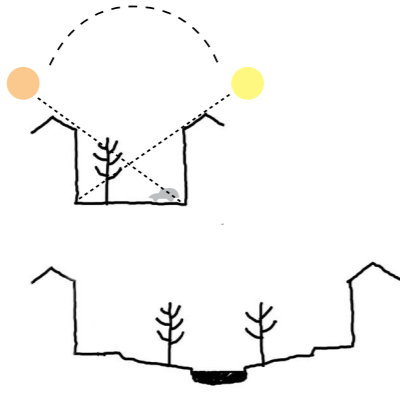
The buildings are individually built with narrow width. The street level is a mix of residential and commercial and workshop spaces.

T
Basic Street Profile Types Before and After Witteveen

Although the building types are updated through 20th century, the original street fabric of settlement can be observed in Charlois and the curve links to the West edge of Eilandenbuurt.

Witteveen presented his urban plan in 1936 and laid the structure of future expanding of Zuid. The plan is implemented down to the detail of Witteveen's vision on building types.

Under this plan, architects build the function-separated housings and incorporated limited shops in the building profile.



P
Parking Street

The base level of urban fabric. Beside provide sufficient sunlight for houses, the street serves little function then access to individual house.

S
Singel Street

An alternation of traditional Dutch *gracht* pattern with picturesque landscape image.

VdB

V.d.Broek Retail Street

Van den Broek's idea of retail space is a separate box that sit on the end of housing strips. Sit beside bus routes, the retail boxes next to bus stops have more opportunities to sustain their business.

T

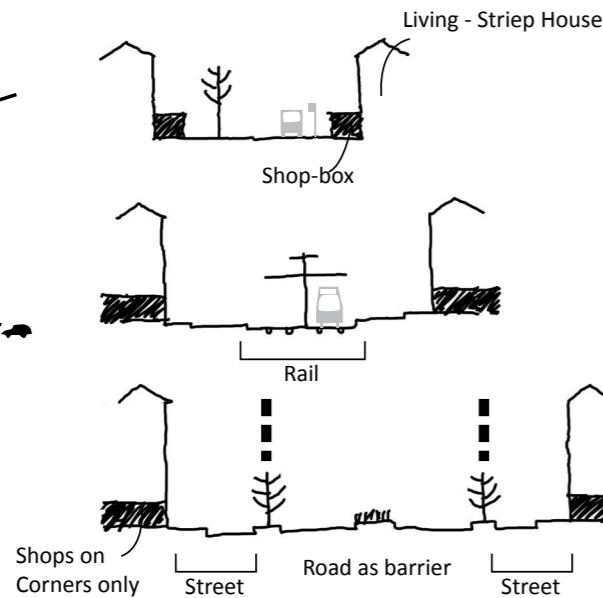
Tram Street

These street are divided in the middle by tram rail and are actually two individual streets.

A

Artery Road Street

The artery road is a solid barrier of the two sides. Unlike typical European cities, the retail spaces are only planned at the corner of blocks and the rest of the street level are residential.



Leidsestraat in Amsterdam, where pre-war street form and the mixture of living, commercial and retail functions are preserved until today.

Street

1. Street as a Type in Dutch Culture

The historical context of Holland makes its unique house and street pattern and is still visible today. Although abrupt by Modernism for a short period, the building and street pattern are in its revival today.

Definition of street

In Oxford American dictionary we can find the typical definition of street:

1. a public road in a city, town, or village, typically with houses and buildings on one or both sides.
2. (the street/streets) the roads or public areas of a city or town
3. relating to the outlook, values, or lifestyle of those young people who are perceived as composing a fashionable urban subculture: London street style.

Thus, we can see the three meanings of the term in physical form, ownership and culture: In physical form, a street can be identified as a pathway with buildings enclose it from sides. The path can be varied in size and use. It can let pedestrian, cars or trams, and even waterways in most Dutch cities. A street can also support functions other than access, for example, temporary market, public speech, and political demonstrations. But the enclosure buildings decides when we use the term instead of "road", the later merely means a traffic path than a (linear) enclosed space.

In politics: In compare to the private controlled houses, the street is the public shared section in town and city. In a public area the freedom and control of the individual are limited. The influence of the private can temporarily extend and occupies the street, like the restaurant seats in sunny European days, if the public has a common agreement to allow it.

In culture and societal: street embodies the informal, un-orthodox activities and values. The orthodox values and power control are usually powered and protected by the buildings (the city hall, the police station, the factories and corporation offices), and the "street" is the place for the alternatives and oppositions to be exist.

In this chapter we will go through the emerging of Dutch streets in physical form perspective. The other meanings of the street will be discuss in chapter 2: Street as public realm, and 3: Street as public domain.

Typical Dutch street Dyke ,riverside and gracht /singel

In react to different geological conditions, The early settlement in start their first street(s) in three types:

River/canal street

The two Dutch major cities and the smaller cities with a "drecht" or "tricht" in their names started on the spots where a smaller river stream confluences into a larger river. Amstel and IJ to Amsterdam, Rotte and Maas to Rotterdam are typical examples. The streets in these cities are built on the embankment of the stream. Delft is an alternation which built along a drainage canal. These cities usually develop into a trading

spot as their main street serves both water and land traffic.

Gracht /Singel street

As the Dutch trading cities expand they dig branch canals, gracht, for water traffic webs for transporting goods. Singels are dug around the walled city.

The clue of the mutual importance between the water and street can be found in the naming trend. The street right next to the waterway are named after them, ending with gracht, single, or in cases like the Oud Delft which takes over the name of the drainage canal itself. If both the banks have a street, they share the same name.

Features of typical Dutch street

Embankment, streets and buildings are closely ensembles as a “type” that each element should not be independently seen and valued. The buildings have two access, one on the land side and one on the water. Is another feature we can see in this street type. As the profile of water-street are densely defined, the sequence of space between public street and private house are compressed. In Amsterdam the transitional space is defined by stair cases lead to the higher ground-floor level and semi-underground basement. In Rotterdam it is defined by the rise of the ground floor and the partially setback of the porch space.

The narrow width of the building façade is another typical feature of traditional Dutch house type. It supports a more intense use of the street. In the same distance, the typical Dutch street houses more shops and houses, concentrate the activities on the street.

The 19th century ideal of Street

The expansion of cities in nineteenth century is a transition of norm. Road traffic replaced the waters as the stem of urban street system. When Berlage proposed his vision for Amsterdam, what next to and enclose the streets are not typical linear houses but closed housing blocks and open squares. The city is not a functional logistic system but an ensemble of geometry landscape.

Under this new norm, and the eager need of housing stock, a new type took shape in the expansion area in Rotterdam and Amsterdam.

Conclusion- Street types recognised



Rotterdam city map (centrum) in 19th century shows the configuration of canal, street, buildings and gardens.



H.P. Berlage's plan for Amsterdam Zuid, showing the compositional approach with monumental streets and geometrical building blocks, which is adapted by Witteveen in the plan for Rotterdam Zuid.



Today's Eilandenbuurt and Pleinweg, showing the same configuration between street, closed building blocks and private gardens.

The patterns in Zuid after the 1940s are not far from the traditional Dutch city street pattern.

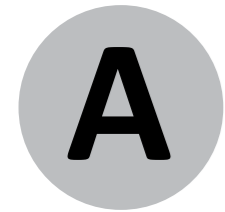
Street is the consistent theme in Witteveen's plan for Rotterdam Zuid. The junction of Zuidplein today is the only exception. In other part the Zuidplein, the street and its variations – singels, tram route, and artery road with side streets, are still the basic element that ensembles its urban fabric and have not changed from 1940s to today.

In the residential part of Zuid urban fabric the perception of street is re-enforced by the dominant

protiek housing block, reluctant to embrace the later radiant city, or anti-street ideology which place buildings on the open gardens instead of street. In the next part of the report we will go through the architectural ideology and place Van den Broek's design ideology in the history context.

III

Architectural Qualities



architectural

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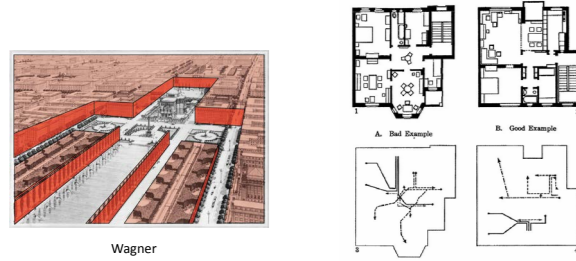
The original report is late in the argument text explanation of the plates, they are re-organized and added in this version. Text about portiek housing is originally titled "building" place after the essays of street and I move them to this architectural part. The ideology context part is an abstract of my urban level Pecha Kucha which is relevant to architecture and is added in this version.

Portiek-house is a transition between traditional town house and the "stripe house" idea as the modern collective housing flat follows, both in the building time and physical form.

But despite of the similarity in appearance of the latter, the research in this chapter tries to find: How much characteristics in Van den Broek's portiek-house are inherent from the traditional town house.

In the previous chapter we identified two types of building in and surrounding Eilandenbuurt: the town house constructed before 1920s and the portiek-house built between 1939 to 1950, and their distribution and relation to the different street patterns. In this chapter we look into the connection between house and street and how Van den Broek's design decisions preserve the traditional street characteristics in the era of ideology shift.

Monumental Urban Design vs. Functional House



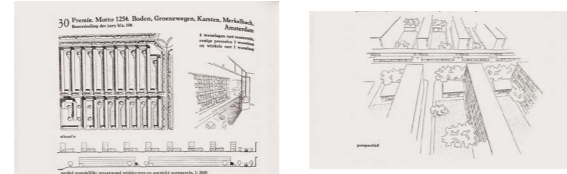
Wagner

Source: Eva Blau, *The Architecture of the Red Vienna*

In the early 20th century Vienna the urban and housing design ideology shared a similar approach. These diagram shows a clear illustration of geometry urban landscape design and the functional layout in a housing unit.



Strokenbouw / Row House



Bodon, Groenewagen, Merkelbech and Karstenm. Competition drawing, Bos aen Lommer, Amsterdam

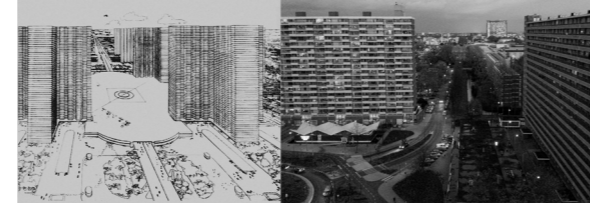
Source: Sussane Kormossa, *The Dutch urban block and the public realm*

A housing block proposal in Amsterdam dated in 1936 break the closed block into a repetitive row of flats and open gardens



In 1930s Van den Broek choose the stripe-house typology without violate the street and garden configuration within the blocks drawn by Witteveen.

Radiant City

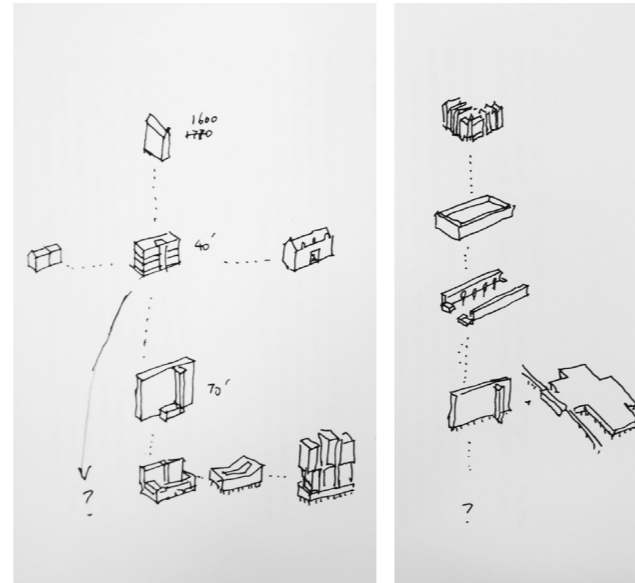


Radiant City, Le Corbusier. 1943 (Image mirrored)

Deiflandplein, Delft. circa 1960s

Source: Photo: C. LIAO, 2013

In the 1960s the norm already shifted to a anti-street configuration of green and high-rise, abandoned the traditional street form.



Portiek-house as a building type vs. Portiek house as a urban block type in the Dutch housing context.

Ideology Context

U A

The aim is to provide a large quantity of housing for new city dwellers of Rotterdam who seek working opportunities in the expending Rotterdam port. Back to the early both century the living condition of the center area is in intolerable.

There are many new ideology emerged in both the architectural and urbanism design. The seek of a more hygiene solution is one the main goal. Adequate sun light, air ventilation and accessibility are to be secured in all the housing design. Functionality is another design principle, lead to the functional segregation in urban planning and the minimal housing unit in the architectural design. Housing act implemented from 1901 allows both government and private contractor to efficiently develop an area and provide large number of dwellings.

Portiek-house is the solution came to the 1930s Zuid and fitted into the urban plan of Witteveen, who's design ideology are latter regarded old-fashion compare to the new anti-street design ideology. Van den Broek, who promote the "stripe house" instead of the closed block Witteveen prepared for him, result in the unique configuration between flat and traditional street.

Street as social domain vs. functional housing

Witteveen inherent Berlage's ideology on the social meaning of street. In his spatial composition for Zuid the street, parks and stores are not only landscape

elements but also houses certain social reference to traditional Dutch city public space. Yet in Van den Broek's took a much more functional approach to minimal/ultimate plan which regarded house more like a factory for which the efficiency of construction and use is valued higher then spatial and aesthetic reference to the Dutch tradition.

Close block vs. stripe-house

In witteveen's idea the right building form should close the whole block like a traditional Dutch city landscape with shops at the corners. As the buildings formed a "wall" surrounding the street, the void space of street is defined. Yet there will be conflict when considering the sun light and ventilation which can not be guaranteed for every room for the corner house.

The alternative solution is the "stripe-house" design and Van den Broek is promoting it. The collision of two strong ideology lead to the form in today's Eilandenbuurt and Vogelbuurt as the back gardens are open at the short side of the street and retail space are fit into independent boxes.

The collision of ideology is preserved in the built environment of Eilandenbuurt and produce certain quality which will be addressed in the later chapters.

The functional ideology is override the conservative design of Berlage and Witteveen in the post war era and the quality of traditional Dutch street and house are minimized in the 60s and 70s urban planning

and high-rise flat. The idea of functional segregation dramatically shaped the Zuidplein area next to Eilandenbuurt in the form of transport terminal and mega scale shopping mall. In Witteveen's idea

Portiek-housing

A

Ultimate/minimal housing plan

J.H. Van den Broek promoted the idea of “ultimate plan” and stripe house as a desirable new solution to mass housing in the 1930s. Unlike other architects tried to mimic traditional urban corners when combining retail space with the repetitive residential units as Witteveen desired, Van den Broek’s response is evident stripe and separate boxes. Yet he did not violet the urban block boundary by Witteveen but his architectural expression evident to his ideology.

Portiekwoning

The buildings design and built around 1940s are strictly follow one: the residential buildings are built along the longer edge and the shorter are left for shops. Most of them have a corner shop regardless it is beside an urban open space or not. In the middle are the unbuilt private gardens.

It can be explained by the ideology of the early twentieth centry. As urban population rapidly increased, the problem of crowded town houses in center and slum in the riverbank was an urgent matter for the government, and as the housing act put in active, the sufficient sunlight and ventilation is one of the main concern for the new mass housing.

In this way, the 3 to 5 level main buildings can catch the sunlight from street and garden, and each room in the house can have a good ventilation also.

The building withing are dominant by the type of portiek houses. It is due to the requirment to provide a efficiency in both design and construction to meet the rapid needs for housing in the early twentieth century cities.

In the perspective of urban geometry, they are repetition units stack together. The commissioned architects may give the industry-like boxes different rendering according to their own aesthetics. Most of them choose a more traditional style with ramped roof and stone decoration. As a result, the color and style of new facades are not so distinctive to of existing buildings if compare to the buildings after 1960s in the same area.

Algemeen Belang I

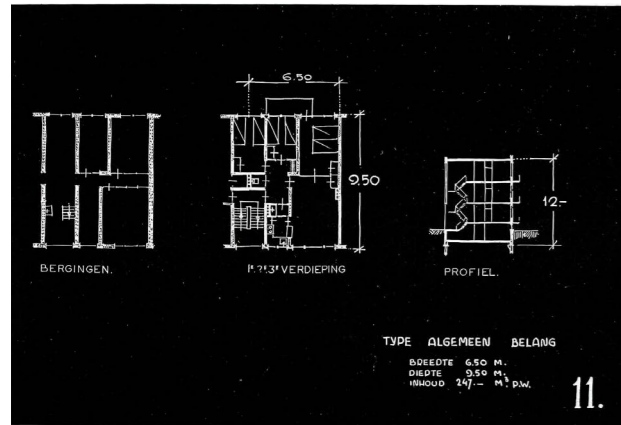
Algemeen Belang II
(1000 Woningplan)

1940 Woningplan

J.H. Van den Broek

J.H. Van den Broek

J.H. Van den Broek et al.

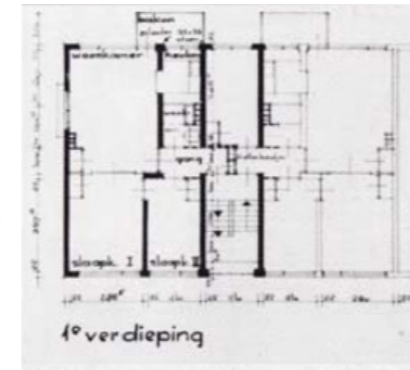


Van Tijen en Maaskant; Brinkman en van den Broek.
Woonmogelijkheden in het Nieuwe Rotterdam. 1941.

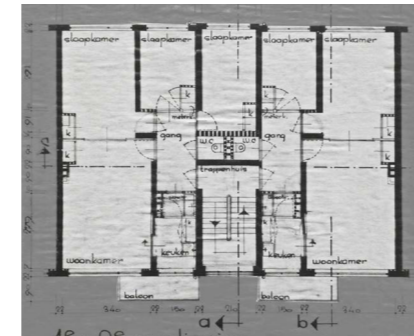
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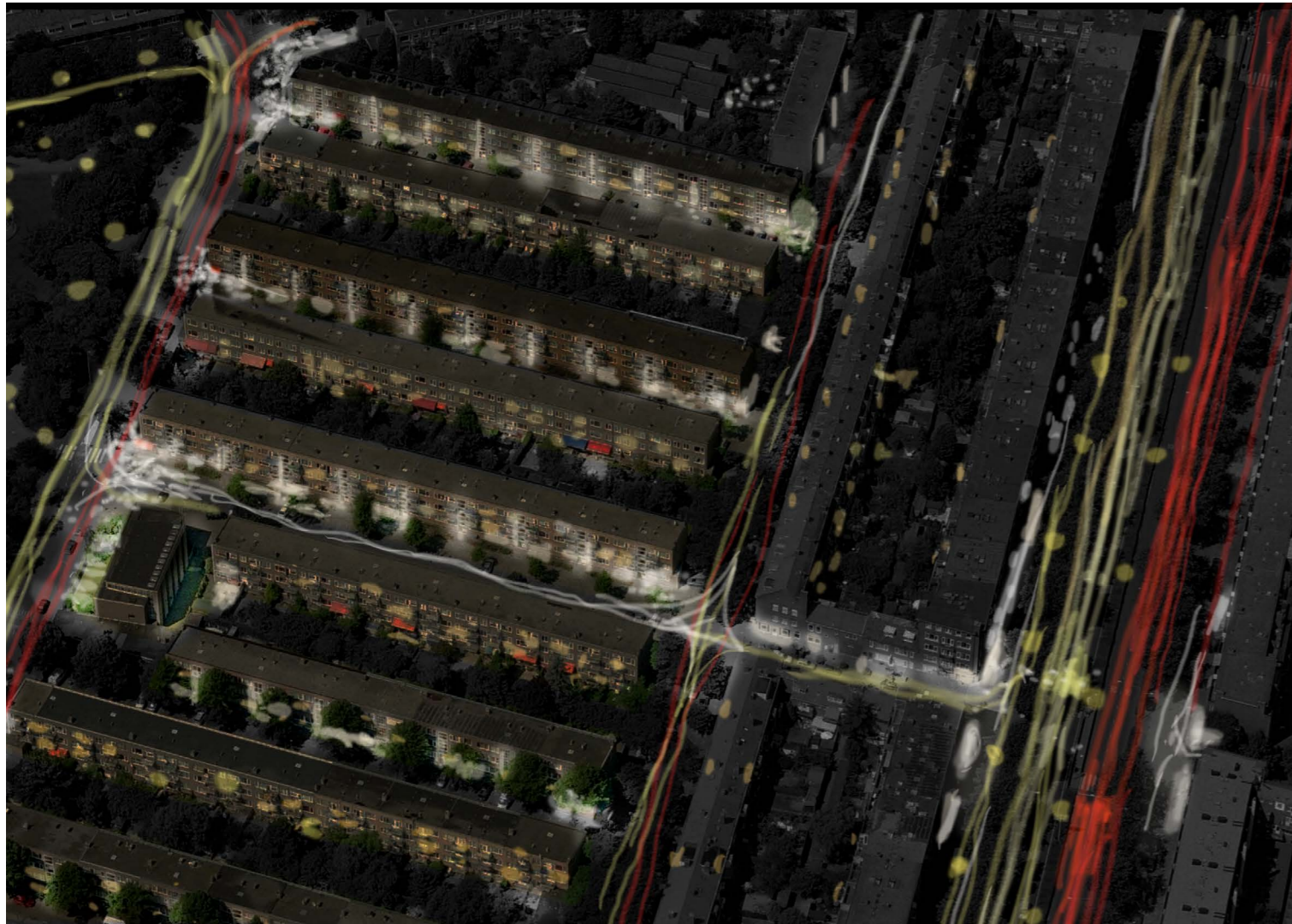
1938-39



1940-41



1950

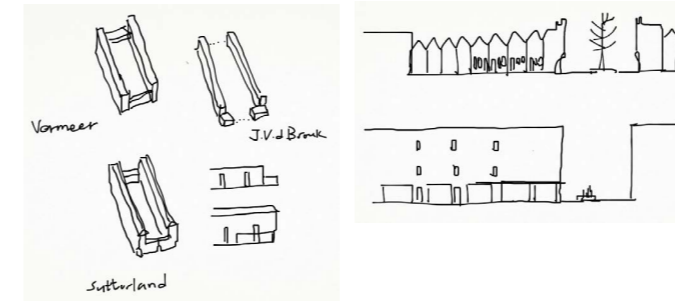


Visualization: Lanteren Venster

One of Van den Broek's answer to the street is the high portiek window that works like a lantern during the evening.

Unlike the onventional design, Van den broek made the window as wide as the whole staircase with steel framing, similar to a glass curtain window that is later popular in public buildings and factory design.

This gives his buildings a strong charactoristic that can be identify among other close portiek flats and also provide an design opportunity to let the buildings coresponding with the street life.



Building as a Component of Street

Van den Broek's interpretation of mixture in living and retail.

Due to a transition of ideology between traditional urban block type to the modern "stripe house", Van den Broek's had his own interpretation of Witteveen's block and urban geometry. He use boxes that is attached to the "end" of his stripe house and let the garden visible from the street instead of built a "wall" of retail houses to close the block to be appear like a traditional town block.

Thou he took an stripe house approach, but he still place the building façade close to the edge of block and forms a street space. Unlike the later "Anti-street" stripe houses we can see in other area of the Zuid, Van den Broek still preserved part of the functions and characters of the "street" that Witteveen have in mind when laid down the city plan.

Today these boxes serve the passenger from the Bus stops and formed small scale commercial hot spots along the bus route.

The juxtaposed doors is one of the feature of Dutch town house in Rotterdam Zuid until 1920s. One door leads to the individual house on street level and another link to the first floor with a stair right behind the door. Doors are right next to the street with no porch space. Therefore each house have a direct access to the street.

In Van den Broek's "closed" portiek-house an extra space - the staircase with a door on street level - is added between the street and the house doors for access to the stacked housing units. The social and territorial characteristic of this shared space is arbitrary. It is used by the people of its six house units and the maintenance is financially support by the house owners' association (VvE). In Van den Broek's design the large high window allowed the high visual connection between the street and the individual doors in the portiek. But the front door on the street level controls the access of non-residents. The lighting of the staircase also provide extra luminance on the street at the evening. (Illustrated at left page)

This unique design and the arbitrary visual/ territorial definition is a potential space for design intervene. With the close configuration between the building and the street, the answer to the social isolation issue addressed at the beginning of the report may find answer in this point.



Materialization

A T

Steel

The materialisation of Van den Broek's Algemeen Belang I and II composed with a lot H and U and L channel profile steel as both structural and aesthetic elements. H beams and columns are used to support wide span window and floor, which is partially visible beneath the balconies. Smaller profile steel are used to framing portiek high windows, stair handrail and the attic beams for pulley.

Although they gives a special identity in the materialisation of the two projects, yet such aesthetic value is not easy to maintain and lasting.

Today these steel parts, exposed to air or hide in the brick facade, suffer from rusting and even damage the brick facade.

With some unclear reason Van den Broek design the facade he chooses to hide the steel beams behind the brick and wooden window frames. As the use of steel parts is still in a relatively new at the time, such experiment is not perfect in architectonic design and lead to difficulty in waterproofing and draining.

Damage and past maintenance is visible form facade in many of the blocks and the treatment are not necessary success. At the place where the steel beams hide, most block shows a row of replaced bricks, indicate the trace of opening for treatment on the steel. Some of the balcony steel cantilever beams are covered with concrete.

Brick

Brick is the other major element used in Eilandenbuurt. The compositional design of facade walls are done with the articulating by different orientations and faces of bricks. A Different colour of bricks are used on the basement level to show an appearance of foundation.

Compare to other houses built in the same period in Eilandenbuurt, Van den Broek's brick facade design does not compose with concrete lintels and ornaments.

The colour of bricks in all Algemeen Belang buildings are not united, different from project phases, original contractor, maintenance and treatment by individual VvEs in the past 60 years.

They are generally yellowish and show a sandy and crystal appearance.

Wood

The original high windows are steel framing yet the normal windows are made with conventional wood frame, which is rare but still present in Eilandenbuurt, some with good condition.

Today many of the windows, both high windows and normal windows are replaced with plastic and aluminium products and the original design of fram-

ing composition (division) are not replicated after replacement.

The original design of portiek door and mail boxes are not easy to identify as they are changed in most blocks, but the composition is preserved.

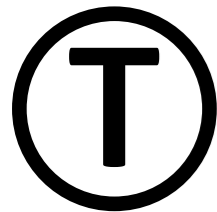
In the interior the wood doors and partition and ornament are largely used. As they are solidly built, mostly of them preserved through time if the owner do not change the partition.

Other material

Glazed tiles for window and and lead plats roof drainage is used but in a minimal proportion. Terrazzo are used in portiek stairs and floors to decorate the concrete.

The materialisation described here are not exactly the same from blocks to blocks due to the construction are fragmentally divided and contributed to small contractors in the Algemeen Belang projects.

IV Technology, Construction, and Mirror Bay



building
technological

In the two phase of Algemeen Belang project Van den Broek experimented different level of flexibilities and orientations in each block. The differentiation of construction contractors and later maintenance also enriches the varieties in appearance and architectonic details within single building type in Eilandenbuurt.

Bulding technology used in Van den Broek's three-level portiek-house are mainly inherent from existing load bearing brick structure with wooden flooring. However technologies like steel framed high window and steel beam and column are partially applied to the structure system. The Overall structure are still s load bearing system.

In this chapter we research in how Van den Broek maximise the flexibility on the floor plan for a mass produced urban block.

I Types and variations - orientation and mirroring bay



Algemeen Belang II 1940
 Texel. Z.O. (A2) (B) (Dr) Texel. N.O. (A2) (B) (Dr) Flekee. Z. (A2) (B) (Dr) Terschelling. W. (A2) (B) (Dr)
 Algemeen Belang I 1939
 Terschelling. O. (A1) (B) Schokland. W. (A1) (B) Schokland. O. (B1) (B) (K) (K)

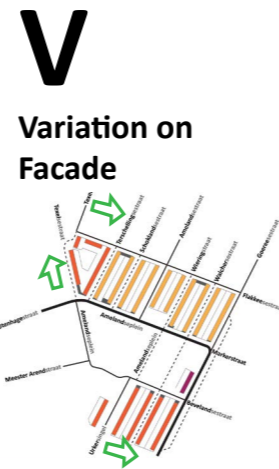


Algemeen Belang I 1939
 Amelad. W. (B1) (B) (K) (K) (Dr) Amelad. O. (A1) (B) Wiering. W. (A1) (B) Wiering. O. (A1) (B) Walcher. W. (A1) (B) Walcher. O. (B1) (B) (K) (K) Goeree. W. (B1) (B) (K) (K)



Algemeen Belang II 1940
 Urkersingel. W. (B2) (K) (Dr) Urkersingel. O. (B2) (K) (Dr) Walcher. W. (B2) (K) (Dr) Walcher. O. (A2) (B) Goeree. W. (B2) (K) 1900 Woningplan 1946 (B3) (K)

(A2) Variation Type	(K) Kitchen facing street	(B) (K) (K) Layout switch
(Yellow box) Balcony facing street	(B) Bedroom facing street	(Dr) Layout Drawing available



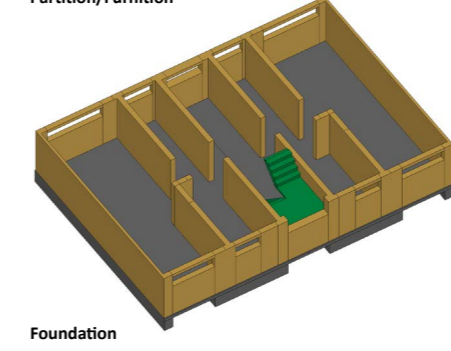
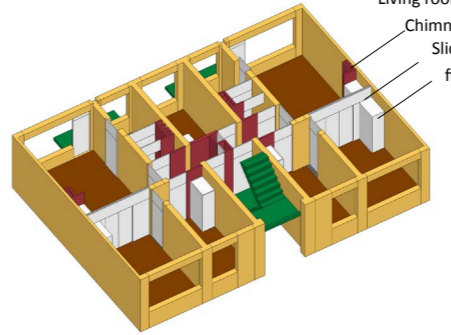
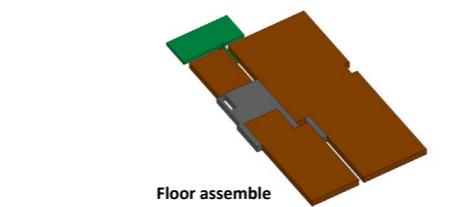
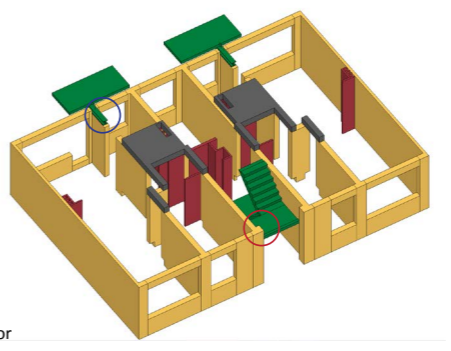
A Structural Assembling Algemeen Belang II Type A

Load bearing wall structure
 The primary structure is the 22cm brick wall. Every components are sit above each other and every floor stack on each other in a repetitive way.

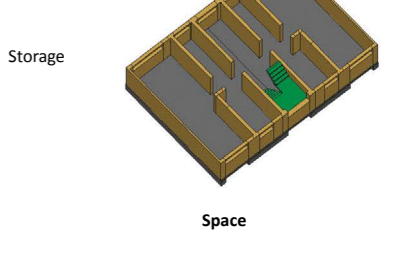
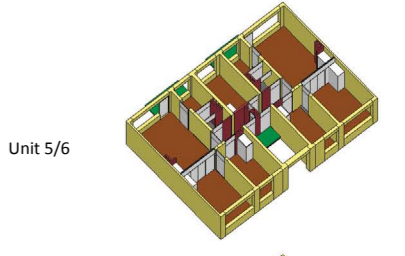
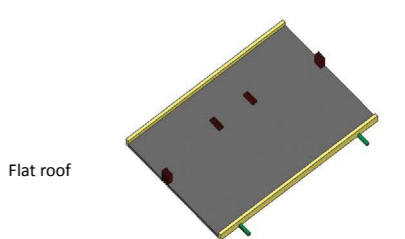
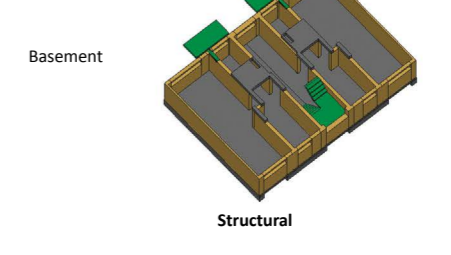
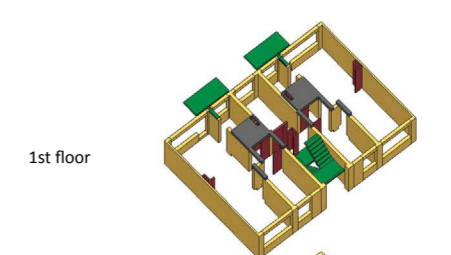
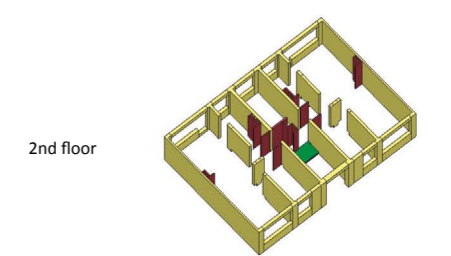
- Load-bearing wall
Th = 22 cm brick
- Partition (shear) wall
Th = 6 cm brick
- Reinforce
33*33 cm brick
- 20*20 cm H beam cantilever

Horizontal Assembling
 The floor assembling is close to traditional construction except the wet floors (kitchen, bathroom) are built with concrete. Partitions are built with either brick (on concrete floor) or wood (on wooden floors).

- Reinforce concrete stair/Balcony
Th = 10 cm
- Wood-beam floor
h = 30cm
- Reinforce concrete floor/lintel
- Doors and wood works
- Load-bearing wall
Th = 33 cm brick
- Reinforce concrete floor/beam

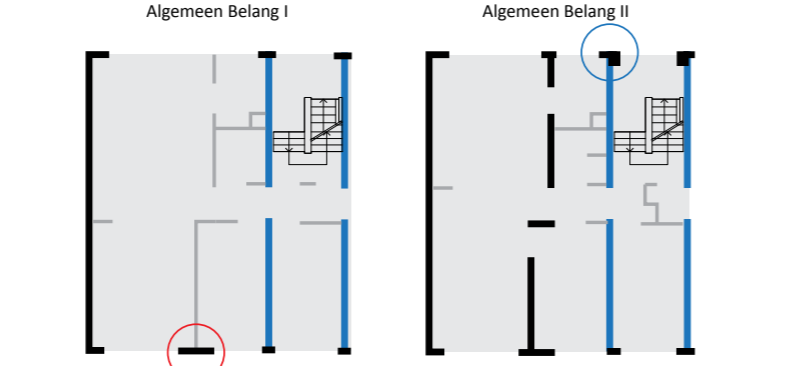
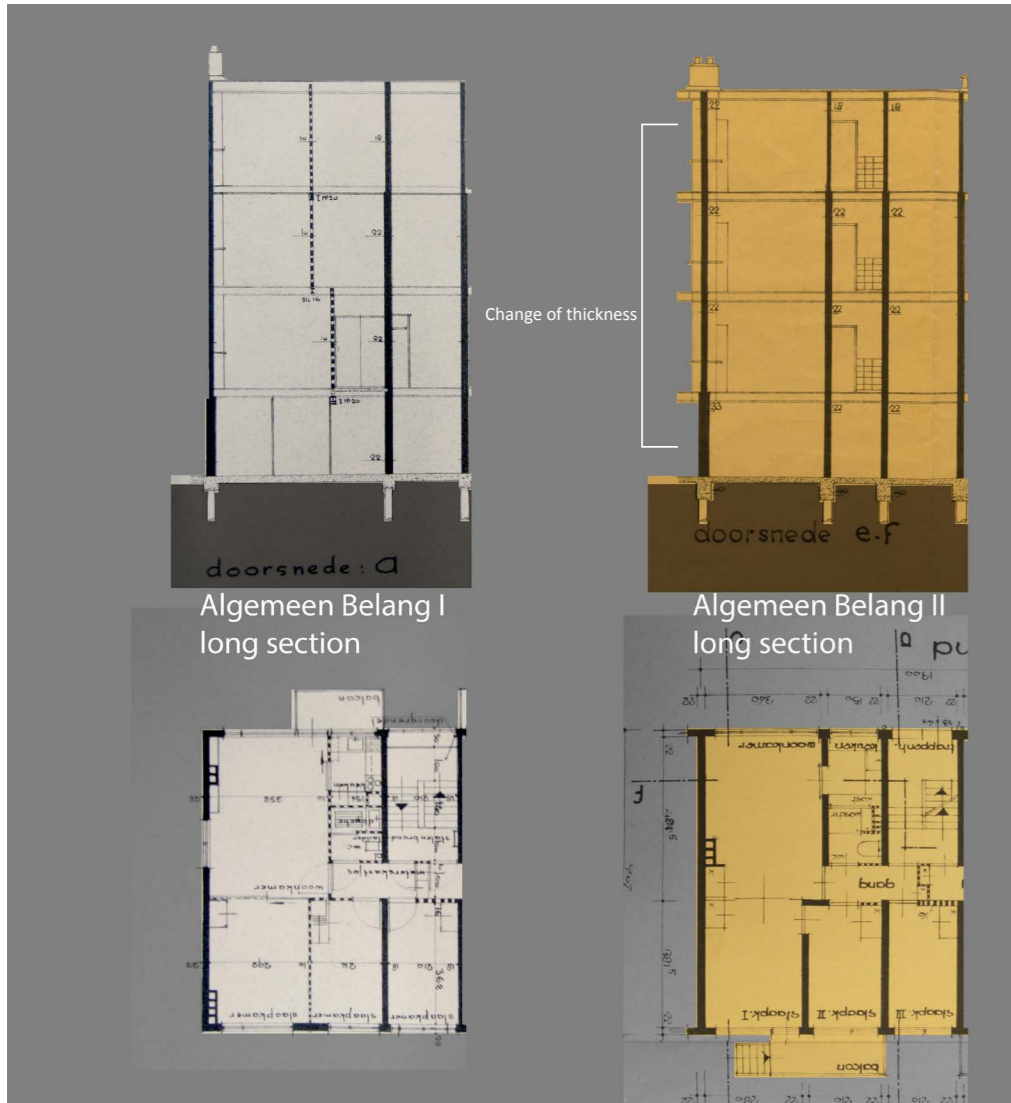


Vertical assembling
 The load bearing walls and the stair case are the only two components that continue vertically through the whole hight of the building. The partition/shear walls are also brick work yet they are sit on the concrete floor and are not continue between floors. Wood works are sit on the wood floor and is the only partition between master bedroom and living room.



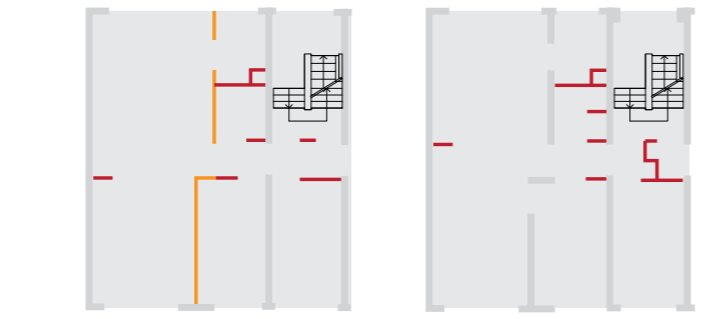
S

Wall Structural difference



- Load-bearing wall
Th = 22 cm brick
- Th = 18 cm brick at 2nd floor
- Reinforce
22 cm brick
- Reinforce work as buttress
33*33 cm brick

Longer span
The load bearing walls continue vertically through the whole height of the building and the thickness of the walls descending from 33, 22 to 18 cm to reduce the load. The partition/shear walls are also brick work yet they are sit on the concrete floor and are not continue between floors.



- Partition wall
Th = 11 cm brick
- (special) Partition wall
Th = 11 cm brick

Partition wall as shear wall
Primary structural walls, except the front and back facades, are all east-west oriented. the partition wall may also help to stabilize the shear force from north-to-south direction. The partition wall increases in Algemeen Belang II.

M

Mirroring Plan

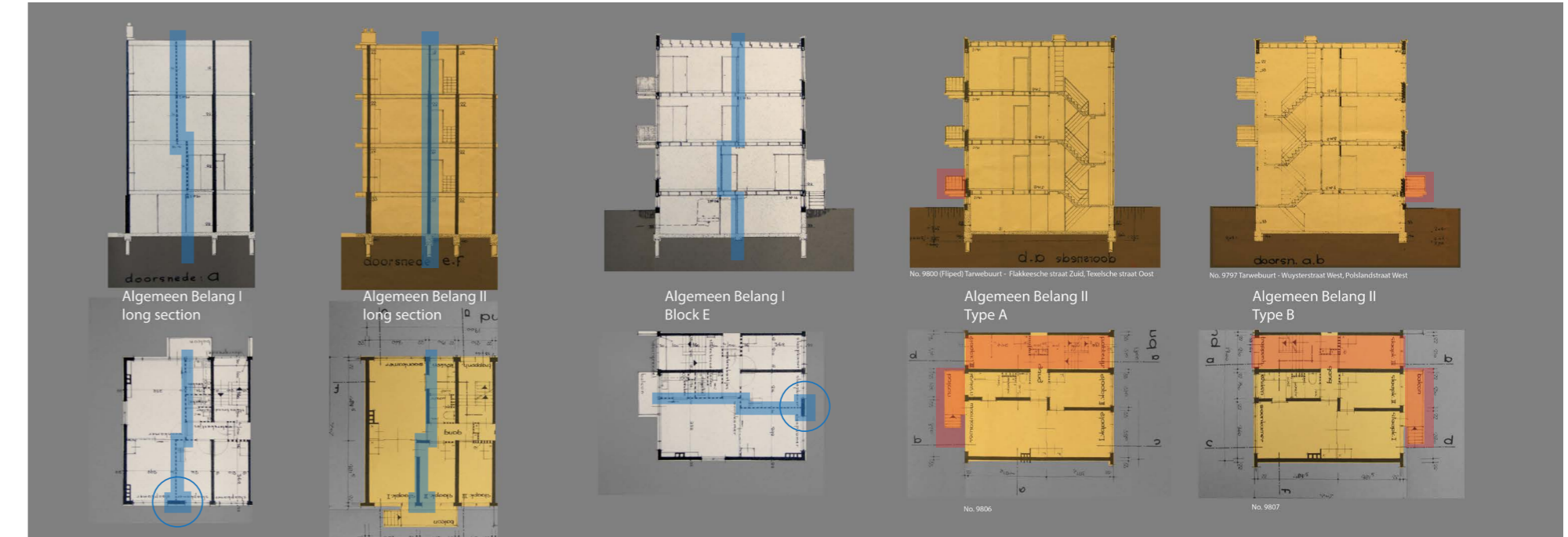
In response to the orientation of street and the sun, Van den Broek use two different strategies in Algemeen Belang I and II. Both way the overall structure is intact and only few components are adjusted.

Van den broek tried different approach in two projects. The 1938 Algemeen Belang he tried more then three types, including one that the orientation of the whole plan is mirrored between 1st and second level.

Living rooms are preferred to be placed in west, but the orientation of doors will be reverse for the house in opposite side of the street.

In 1940 Algemeen Belang II the load bearing structure is fixed and the whole portiek and balconies are mirrored, narrowed down to two types.

Balconies doesn't have a preferable side but for the street level units it is better to be at the garden side.



P
Partition wall, align or not

In the first project one of the types the relation between balcony and kitchen is fixed, so the partition wall can not be aligned vertically. Partition wall between kitchen and living room are not load bearing. The technical difficulty is higher and it is not continued in the second project

○ This part of wall is evident on the facade as yellowish stucco is applied.

F
Fixed structure and mirrored layout

The relationship between balcony and kitchen are not fixed. The orientation of portiek staircase become the moving parts in response to the side of street. In these solution the two types share the same load bearing wall structure.

Conclusion

Notions of Street concluded

1. Street and Building in Dutch Culture

The historical context of Holland makes its unique house and street pattern and is still visible today. Although abrupt by Modernism for a short period, the building and street pattern are in its revival today.

2. Street as Public Realm

Trade and living are closely joint in original Dutch buildings and cities. The mix use of street-level building space not only supports traditional trade activities but also supports the later knowledge base industries. Yet the introducing of functional divided urban planning in the 20s century brings an extinction to this long-lasting social-economical ecosystem and brings new problems to the post war urban scene.

3. Street as Public Domain

In Witteveen's 1936 plan he preserves the idea of traditional urban pattern, in the concern of both landscape composition and social ideology – street is the living room for all classes. In Carnisse, the fact that Eilandenbuurt and Vogelbuurt are dominant by private-owned houses makes the conventional housing transformation initiated by housing associations (wonincorporatie) ineffective and also makes the small changes initiated by autonomous neighborhood associations and individual entrepreneur a more relevant solution.

4. Street as structure of Urban Fabric

The modern urban fabric of Rotterdam Zuid is no exception as other typical Dutch cities, reflects the pattern of reclamation and urbanization process. Bases on the dyke and polder system later transformed into street and urban green, Witteveen extended existing fabric with North-south urban-block pattern, links them with East-west routes, and connect to the metropolitan with a super road structure.

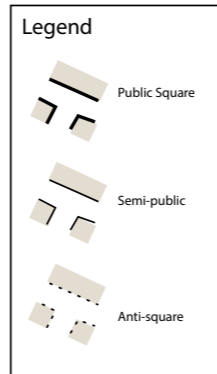
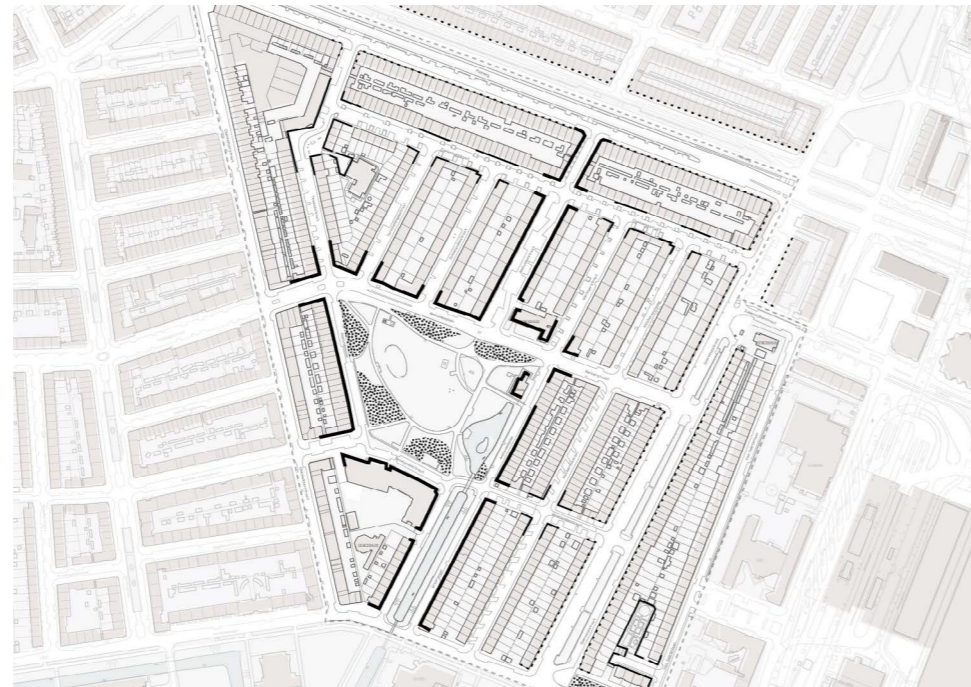
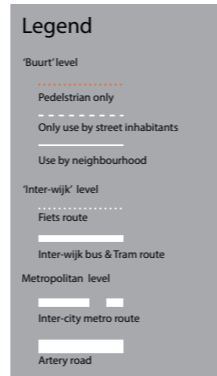
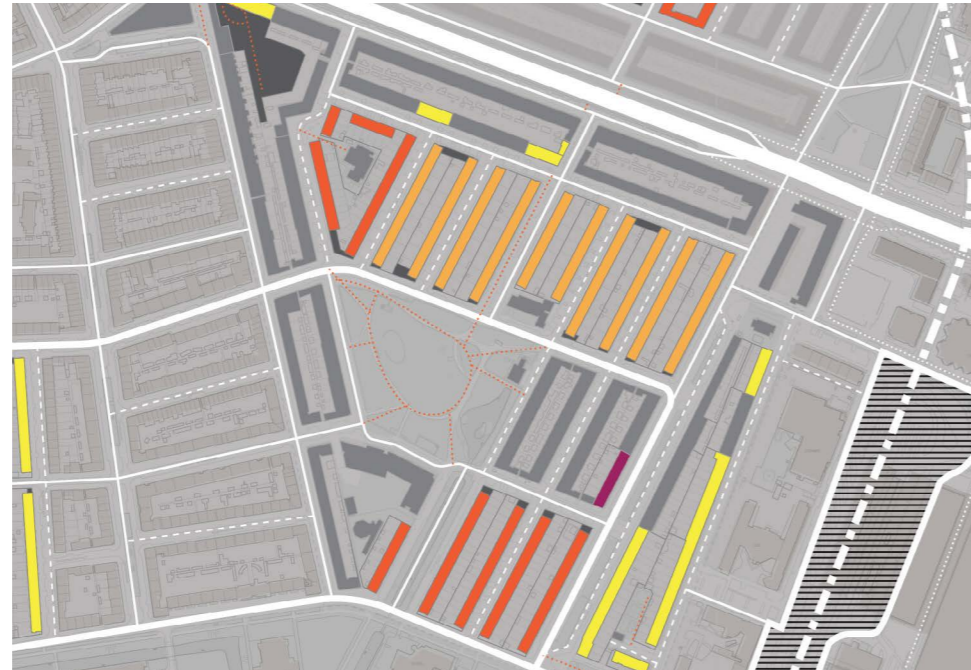
5. Building as a Component of Street

J. Van den Broek promoted the idea of "ultimate plan" and stripe house as a desirable new solution to mass housing in the 1930s. Unlike other architects tried to mimic traditional urban corners when combining retail space with the repetitive residential units as Witteveen desired, Van den Broek's response is evident stripe and separate boxes. Yet he did not violet the urban block boundary by Witteveen but his architectural expression evident to his ideology.

6. Transformation in Building Level as an answer to Street

The boundary between Van den Broek's building and the street are either sharp and soft – depends on personal aesthetic and perception in space and politics. If we promote re-vibrant the street life as

a mean to sustain the neighborhood, a diverse use of building spaces on street level of Van den Broek's housing type could be the pivot.



D

Street as Public Domain

Access Hierarchy

This hierarchy of street is based on the usage of inhabitants in levels:
 The artery road - Pleinweg - that connects Zuidplein to the Maastunnel, and the Metroline connect to Rotterdam and Den Haag, serves the traveler to Zuid.
 Then the middle level there are the bus (tram) routes that travel between "wijken", serve the inhabitants from Zuidplein to the Oud Charlois.

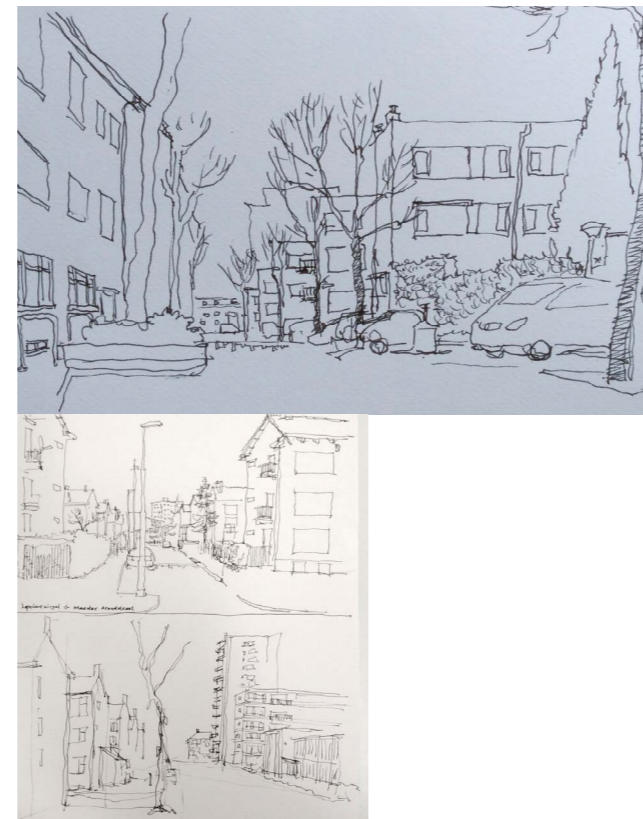
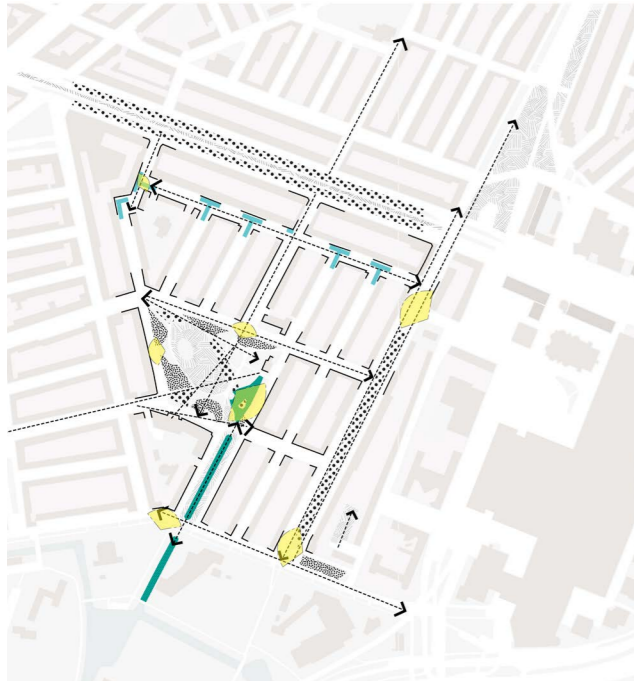
There are streets that connect the bus route to access the individual blocks, shared by the inhabitants in the neighbourhood. The lowest level in this map is the streets that only serve the inhabitants whose houses are at the street.

In relation to public domain

The street is not also a mean of access but also the "living room" of the inhabitants. For example, the lowest level street are shared by the inhabitants and gives a sense it is belonging to them. The higher street level where all shops are will be more a public area for all inhabitants from the neighbourhood of Eilandenbuurt.

I Types and Patterns - Niche in Eilandenbuurt

U A



Realm

2. Street as Public Realm

Trade and living are closely joint in original Dutch buildings and cities. The mix use of street-level building space not only supports traditional trade activities but also supports the later knowledge base industries. Yet the introducing of functional divided urban planning in the 20s century brings an extinction to this long-lasting social-economical ecosystem and brings new problems to the post war urban scene.

Back to 1920 Dutch architect Brinkmen built a street in the sky for his collective housing and the theme repeated in the CIAM conferences and later widely adapted by its member architects including Alison and Peter Smithson and Le Corbusier.

As the physical form of street are widely translated into different variation in architectural works, its urbanism quality and function are not necessarily follows.

In the essay book *The Dutch Urban block and the Public Realm* Susanne Komossa argues the transition from traditional small-scale and mix-use type to the modernism pure-functional type finally eliminate the small business from the city and cause the lose of public realm in parts of the Dutch cities. Similar argument can be seen in Jane Jacobs's writings in 1970s. The problems in cities planed under the idea of separate function has started to been examined and the traditional urban type and the importance of

street is re-considered as an answer to the problems. The traditional urban fabrics that survived the false urban renewal are appreciated again. For new large scale construction in the first decade of 21st century the refined idea and meaning of street is again introduced in building complex as an important architectural element.

The term street and its physical and non-physical qualities in these argument have a vague definition and refine from time to time. But we can conclude some basic element that is so evident that do not change in time and cultures: Streets are combinations of built and un-built, both the buildings and the open space define a street. A scale that is friendly for both pedestrian and car, a mixture of function and program, a mixture of old and new buildings, diverse activities through day and night.

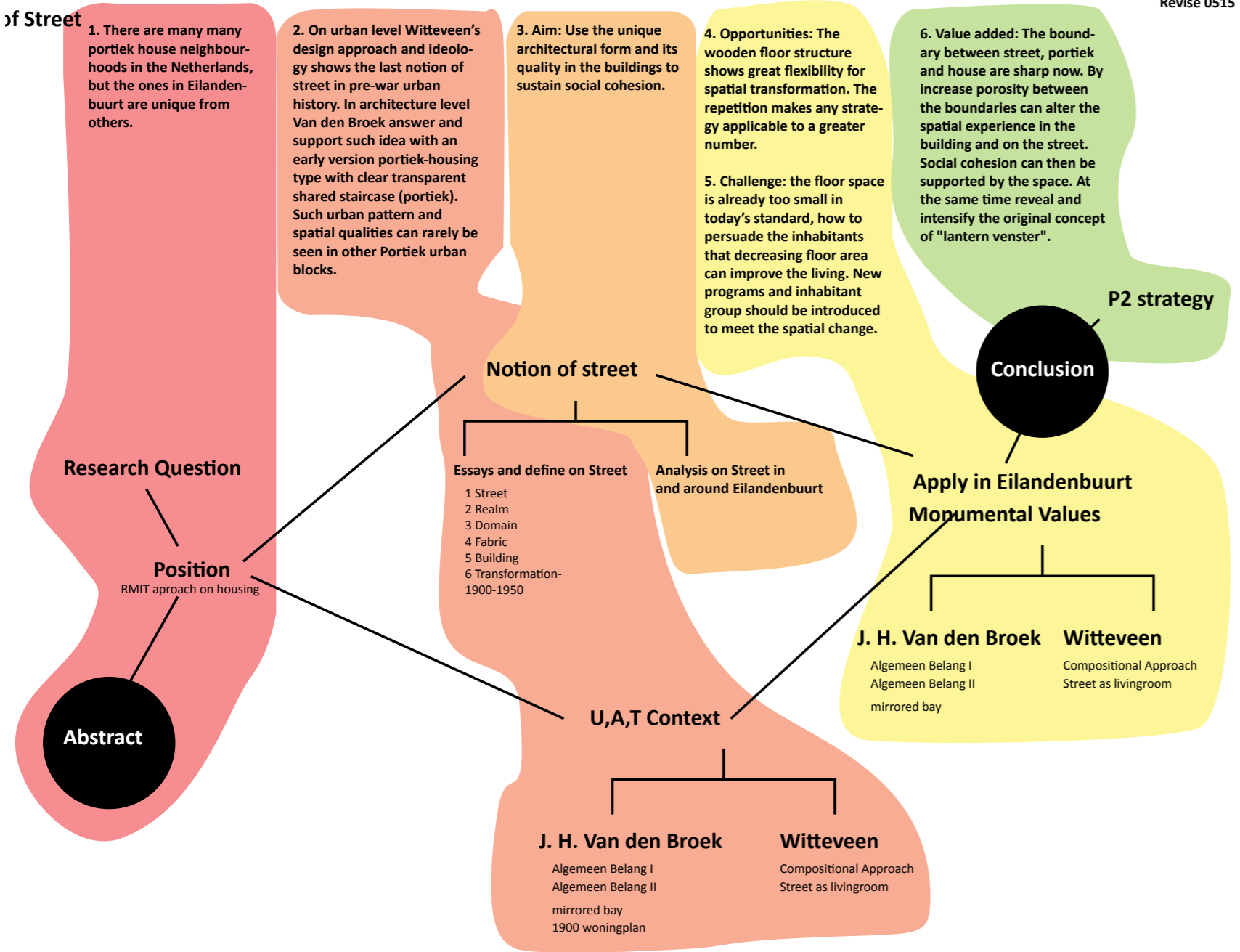
Domain

3. Street as Public Domain

In Witteveen's 1936 plan he preserves the idea of traditional urban pattern, in the concern of both landscape composition and social ideology – street is the living room for all classes. In Carnisse, the fact that Eilandenbuurt and Vogelbuurt are dominant by private-owned houses makes the conventional housing transformation initiated by housing associations (wonincorporatie) ineffective and also makes the small changes initiated by autonomous neigh-

borhood associations and individual entrepreneur a more relevant solution.

Control / Territory



P1 Conclusion

1. Value assessment:

There are many many portiek-house neighbourhoods in the Netherlands, but the ones in Eilandenbuurt are unique in its configuration with street.

2. Analysis

physical:

Base on the ideology of street life, on urban level Witteveen's urban design for Carnisse shows the last notion of street in pre-war urban history. In architectural design an early version portiek-house type design by Van den Broek answers such idea with a shared staircase closed yet visually transparent from the street. Yet the boundary between street, portiek and house are sharp compare to traditional building in the same area.

social:

The housing types in Carnisse district attracted starters and immigrants today because of the limit of floor space. A research by Utrecht University shows the desire of social cohesion between neighbours among the inhabitants.

3. Aim:

Increase social cohesion between the neighbours.

4. Opportunities:

The portiek can be seen as an extension of the street and by making it more spacious it can be use as a place to meet our neighbours. By increase porosity between the boundaries can alter the spatial experience in the building and on the street.

5. Challenge:

the floor space is already too small in today's standard, how to persuade the inhabitants that decreasing floor area can improve the living. Not only the portiek but also the house floor should be transformed.

6. Value added:

Social cohesion can then be promote by the spatial design. Secondary the street level and basement can be housing local small business which are limited in individual boxes today.

Design Approach in P2 phase:

The design and transformation of a more spacious and social-able portiek within the existing building.

The approach I took is first to see the stair and floor in the close portiek can be understand as an extension of the street whose accessibility is controlled by the door on street level.

As the spatial quality is limited for interactions between neighbours, it is the main problem to be addressed. Other values to be add include opportunities for small business using the existing ground floor and basement space.

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Carnisse

Jos Hartman *Afstudeeropgave 'Carnisse Verbonden'* , 2012

Web

N.J. Habraken's official website
<http://www.habraken.org/>