

# A Patch of Open City

Research Booklet

AR4AD100 Dutch Housing Design Studio

Niels Timmer

**Membranes reveal something important about what 'open' means. The membrane does not function like an open door; a cell membrane is both porous and resistant, holding in some valuable elements of the city, letting other valuable elements flow through the membrane**

—Richard Sennett

**For us, the external wall is not a mirror image, a reconstruction of the construction. Instead, much like a membrane, it enables an exchange between the building and the town. Sometimes, the interior of the building seems to breathe through this wall membrane.**

—Roger Diener in *Firmitas*

**A Patch of Open City**  
Appeltjesmarkt Amsterdam

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# Introduction

High pressure on the housing market in Amsterdam is a threat for the (urban) conditions that Amsterdam is well known for: diversity, social inclusion and an innovative economy. Rising housing causes that people are closed off from the city.

What the city centre needs is affordable living and working spaces for innovative start-ups. Next to this, the city needs to strengthen its main urban qualities.

Urban conditions like density, diversity and social inclusion resound in the text *The Open City* by Richard Sennett. According to him, walls play an important role in open cities, because walls function as membranes. Sennett's idea of the wall as membrane remains rather theoretical and cannot be translated directly into an architectural design. This research is an attempt to bridge the gap between the theory of the wall as membrane and architectural designs.

This research booklet is part of a design for a living and working environment at the Appeltjesmarkt in Amsterdam. This booklet starts with a theoretical introduction to the research, then a short summary of the spatial context of the Appeltjesmarkt and ends with analytical drawings of membranes on multiple scales. The drawings compare case studies to a preliminary design for the Appeltjesmarkt.

## Amsterdam closing off

For centuries Amsterdam has been a safe refuge, a marketplace, and a tool of emancipation<sup>1</sup>. The city of Amsterdam has a long history of tolerance and diversity which contributes a lot to its contemporary character. In 2016 the European Commission awarded Amsterdam as European Capital of Innovation in recognition of its approach to innovation related to four basic aspects: governance, economics, social inclusion, and quality of life.

<sup>1</sup> Anne Seghers and Sjors de Vries, "Het publiek domein als grote gelijkmaker" *Ruimtevolk*, March 25, 2017. Accessed March 30, 2017. <https://ruimtevolk.nl/2017/03/25/het-publiek-domein-als-grote-gelijkmaker/>

Amsterdam is well known for diversity, social inclusion and an innovative economy.

But the idea of what the city of Amsterdam should be has changed over the last decades. In the so-called 'war on talent' the city tries to be a pleasant place for highly educated and successful people. Social geographer Floor Milikowski calls the city a theme park for the highly educated in *De Groene Amsterdammer*<sup>2</sup>.

The paradox of Amsterdam is that the urban qualities the city is well known for are in fact becoming its biggest threat: its popularity creates high pressure on the housing market which makes living in Amsterdam only possible for a single group: the rich and highly educated. This creates the opposite of a diverse and innovative city that is available to anyone.

In gentrified neighbourhoods the municipality works on new paving and urban parks. Social housing apartments are sold on the free housing market. Richard Sennett says about this type of urban renewal that: "Renewing' the inner city means displacing the people who have lived there thus far. 'Growth' in an urban environment is a more complicated phenomenon than simple replacement of what existed before; growth requires a dialogue between past and present, it is a matter of evolution rather than erasure."<sup>3</sup>

In the previous decades the municipality decided what types of housing would be built through their land policies. Nowadays the housing market in Amsterdam is ruled by (mainly foreign) developers that have other interests than building a diverse and inclusive city.

All these developments are symptoms of how the city of Amsterdam is more and more seen as a closed system.

<sup>2</sup> Floor Milikowski, "Van hippiestad tot pretpark voor hoogopgeleiden" *De Groene Amsterdammer*, February 15, 2017. Accessed Februari 18, 2017. <https://www.groene.nl/artikel/van-hippiestad-tot-pretpark-voor-hoogopgeleiden>

<sup>3</sup> Richard Sennett, "The Open City" in *The Endless City*, Burdett, Ricky. Sudjic, Deyan. London: Phaidon Press, 2007.



## The Closed City

In his text *The Open City* Richard Sennett describes two opposites: the closed city and the open city. According to Sennett the biggest problem of closed cities is over-determination: “Today’s ways of building cities – segregating functions, homogenising population, pre-empting through zoning and regulation of the meaning of place – fail to provide communities the time and space needed for growth”

Sennett does not see the current trend of leaving the development of cities more and more to market-parties as a good alternative to an over-regulating government: “The cunning of neo-liberalism in general, and of Thatcherism in particular, was to speak the language of freedom whilst manipulating closed bureaucratic systems for private gain by an élite.”

## The Open City

In contrast to closed systems Sennett proposes a different kind of social system, not a system ruled by private enterprises, but a social system that is open rather than closed. He derives the idea of the open city from urbanist Jane Jacobs when she argued against the urban vision of Le Corbusier and his Plan Voisin.

The characteristics of an open system or an open city are the following:

- Dense and diverse, as Jane Jacobs puts it: ‘if density and diversity give life, the life they breed is disorderly’.
- Both public and private functions
- Complexity and dissonance: in the view of Jacobs, capitalism and powerful developers tend to favour homogeneity to be able to have greater control of the outcome of their investments: determinate, predictable, and balanced in form.

These properties of an open city are also used by Emanuel Christ and Christoph Gantenbein to describe a desirable city in their text *Typology Transfer* “As complex as the ‘city’ is, daringly here we identify some of its attributes: public space, complexity, density, difference and openness. We generally regard these qualities as desirable. Reduced to a few notions, they outline the preconditions for what we call ‘urbanity’.”

The difference between the theories of Jacobs and Sennett is that Jacobs believes that an open system needs time to develop. She believes that people can best absorb, participate, and adapt to change if it happens step by lived step. She calls this evolutionary urban time. While Sennett has a stronger believe in the power of design and thinks that this evolutionary time is something that can be designed: “The visual structuring of evolutionary time is a systematic property of the open city.” Sennett describes three systematic elements of an open city:

1. Ambiguous edges - borders instead of boundaries as will be explained later in this text
2. Incomplete form - buildings that easily absorb adaptations or change of use
3. Development narratives - Designing cities without pre-determining the outcome of a design (a narrative with an unknown, and therefore surprising, outcome)

## Walls as membranes

This research focuses on the first notion: ambiguous edges. Sennett makes a distinction between two kinds

of edges: borders and boundaries. According to Sennett, boundaries are edges where things end, while borders are edges where interaction takes place. Sennett makes an analogy with a biological cell that consists of a cell wall and a cell membrane: “The cell wall retains as much as possible internally; it is analogous to a boundary. The cell membrane is more open, more like a border - but membranes reveal something important about what ‘open’ means”. Cell membranes are both porous and resistant, the membrane acts as a barrier for certain molecules and ions but it lets others pass.

At an urban or building level, this means that walls that function like membranes are holding in some valuable elements of the city or the building, while letting other valuable elements flow through.

Boundaries dominate the closed city which is segregated by large roads that isolate functional zones. “The result is that exchange between different racial, ethnic, or class communities diminishes. So we should want to build the border/membrane” claims Sennett.

## Research Question

Sennett’s idea of the wall as membrane plays an important role in his theory about the open city but this idea remains rather theoretical and cannot be directly translated in an architectural design. This research is an attempt to bridge the gap between the theory of the wall as membrane and the architectural design of such walls. The research question that should be answered is:

## What architectural ingredients determine the functioning of walls as a membrane?

The phrase architectural ingredients in this question stands for architectural elements (walls, floors, doors, windows, stairs et cetera), material and composition.

This research tries to find ingredients for the design assignment of a living and working environment at the Appeltjesmarkt. The research is divided in two parts. The first part is about how these walls as membranes could work on an urban level, the second part is about how these membranes function on the level of a single building. These two parts follow after an introduction of the site of the design for the Appeltjesmarkt. At the end of the booklet is an overview of the ingredients that are found in the case studies.



# Location

The Appeltjesmarkt is situated in the Singelgrachtzone. In the 17<sup>th</sup> century the Medieval walls of Amsterdam were replaced with a series of bastions to expand the city. These new fortifications were surrounded by a moat, called the Singelgracht. In the 19<sup>th</sup> century, the walls were become obsolete because of the Defence Line of Amsterdam (Stelling van Amsterdam), a fortification line at a larger distance from the city.

The demolishing of the bastions gave the city extra space for larger scale projects like factories, parking buildings (as on the Appeltjesmarkt), the national bank headquarters, theaters, university buildings, etc. The map shows how the morphology of the buildings in this former defence line is different from the surrounding buildings.

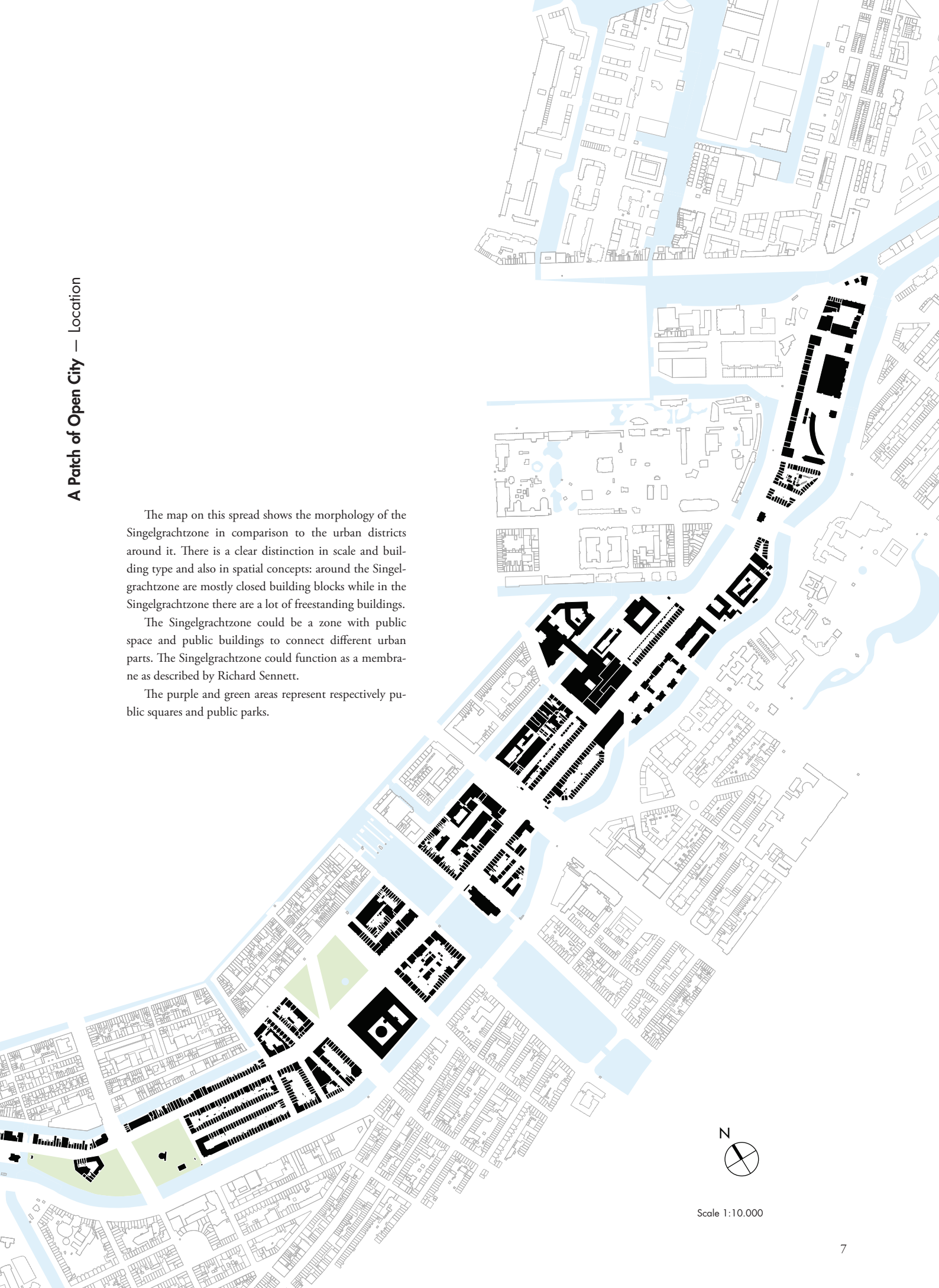
The Marnixstraat, from the Haarlemmerplein in the northwest to the Leidseplein in the south, was part of Plan Kalf, an urban expansion plan from 1876. In this plan the Marnixstraat, in that time known as the Raamschans, becomes a 19<sup>th</sup>-century boulevard.

## A Patch of Open City — Location

The map on this spread shows the morphology of the Singelgrachtzone in comparison to the urban districts around it. There is a clear distinction in scale and building type and also in spatial concepts: around the Singelgrachtzone are mostly closed building blocks while in the Singelgrachtzone there are a lot of freestanding buildings.

The Singelgrachtzone could be a zone with public space and public buildings to connect different urban parts. The Singelgrachtzone could function as a membrane as described by Richard Sennett.

The purple and green areas represent respectively public squares and public parks.



Scale 1:10.000

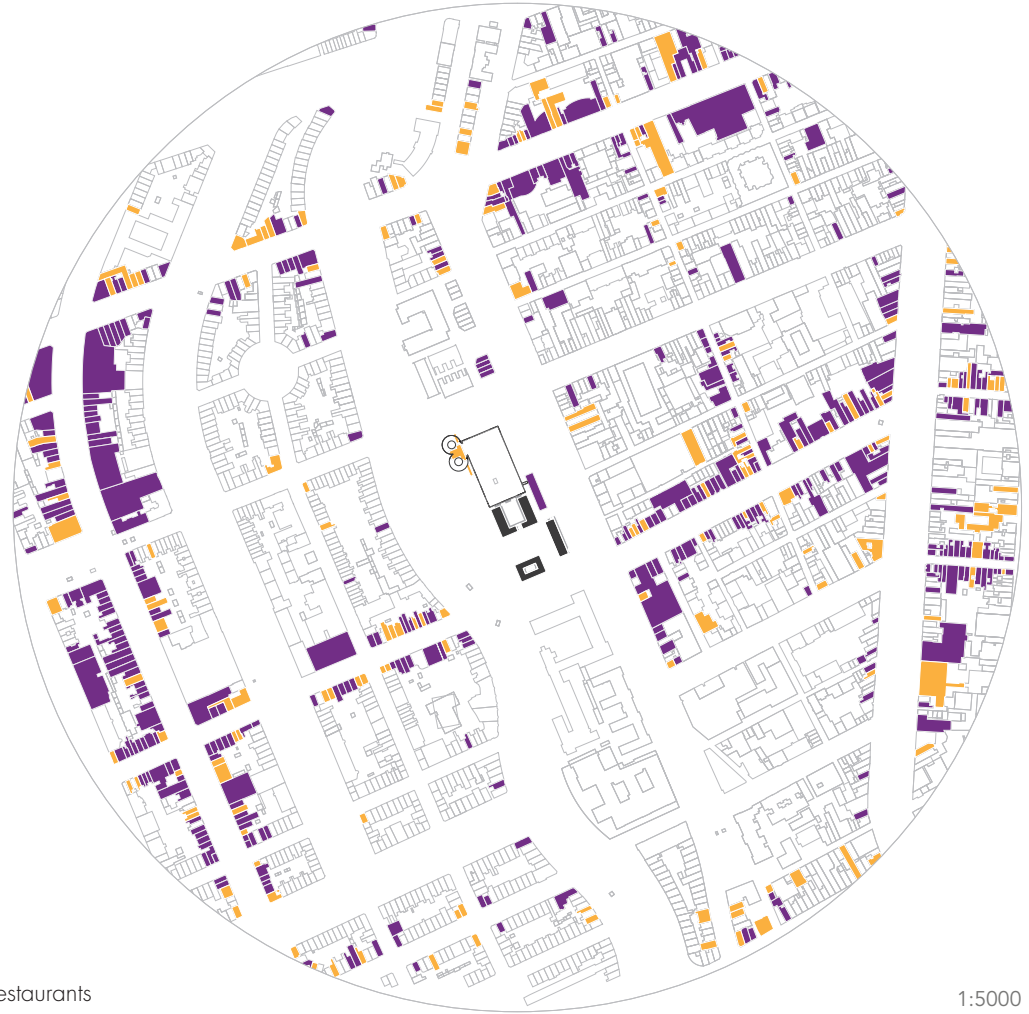


## Functions on the Ground Floor



### Legend

- Buildings
- Retail
- Cafes, bars and Restaurants

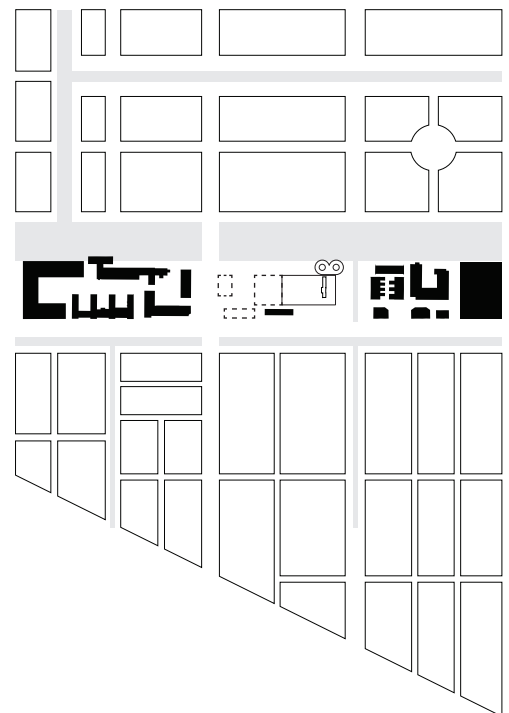


1:5000

## Schematic Urban Plan

The map of functions on the ground floor clearly shows the axes with commercial functions that are perpendicular to the Marnixstraat. One of these axes passes the Appeltjesmarkt.

The diagram on the right shows the three different spatial concepts at and around the location. The Jordaan at the bottom of the drawing and Oud-West both consist of closed building blocks that follow the lines of pre-existing water structure, but the building blocks of the latter are in a different direction: north-south instead of east-west. The buildings in the Singelgrachtzone are free-standing buildings that do not contribute a lot to the form of the public space.



1:5000

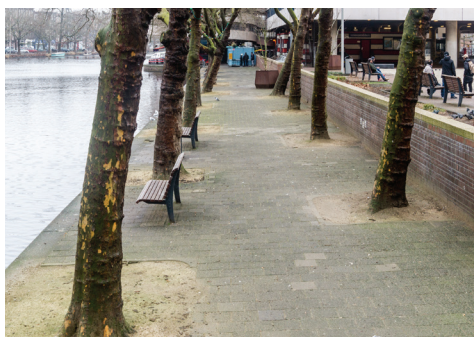
## Appeltjesmarkt in Pictures



The parking garage has a striking shape seen from the Singelgracht.



The Appeltjesmarkt is an empty public space with only a few activities taking place.



Benches at the waterside are hidden behind walls and trees, and not used often.



The lifted parking garage gives shelter for homeless people.



The Appeltjesmarkt is mainly used by homeless people that visit the Stoelenproject, a homeless shelter under the parking garage.



The parking garage has very low ceiling heights which makes it difficult to use the building for other functions.

# Membranes on an Urban Scale

According to Richard Sennett, the edges of urban areas sometimes function like walls: “The idea of a cellular wall, which is both resistant and porous, can be extended from single buildings to the zones in which the different communities of a city meet.”

The Appeltjesmarkt is located in the Singelgrachtzone, an area dominated by detached buildings. This forms a contrast with the closed building blocks of both the canal belt and the neighbourhoods from the late 19<sup>th</sup> century.

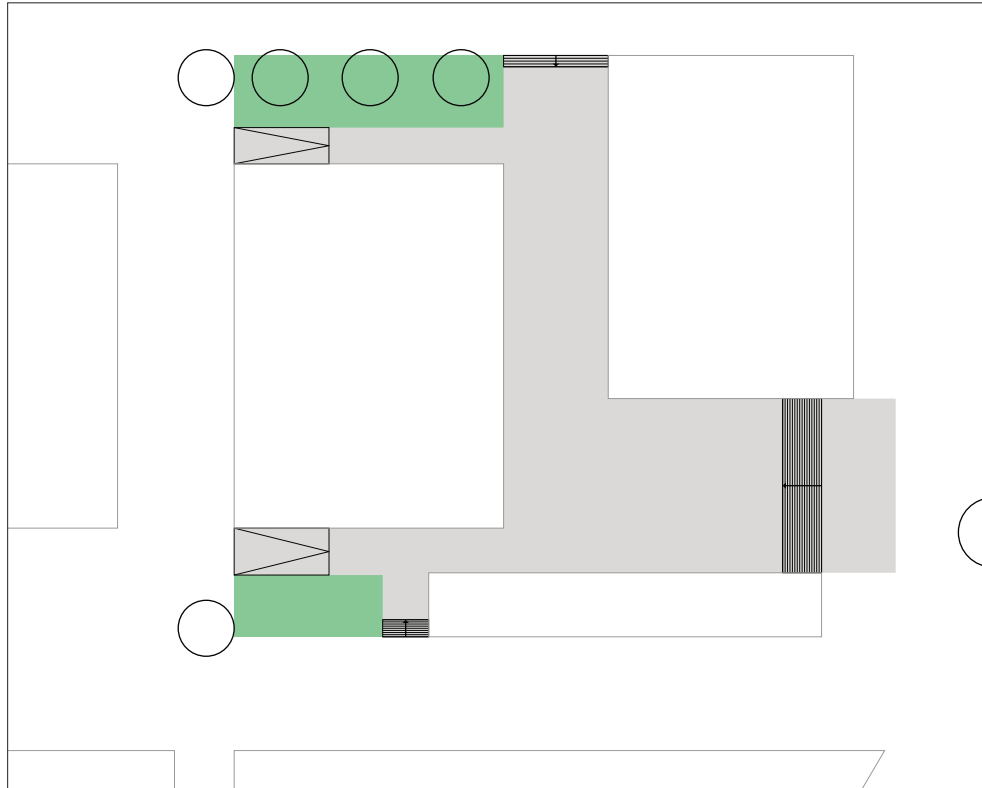
According to Sennett theories the Singelgrachtzone

should be porous: “Both porous walls and borders create liminal space; that is, space at the limits of control, limits which permit the appearance of things, acts, and persons unforeseen, yet focused and sited.” The Singelgrachtzone forms a clear urban boundary but could function as a border if it provides liminal space.

To see how this liminal space and porosity could be created with free-standing buildings, several case studies have been analysed. All case studies use the same spatial concept: free-standing buildings shape the public space.



# Piazza Ceramique



## Piazza Ceramique







Jo Janssen and Wim van den Bergh  
Maastricht, The Netherlands

2006

Scale 1:1000 Trees, stairs and ramps create transitions to a semi-public space between the buildings

In Piazza Ceramique trees, greenery, stairs and ramps are used to create a gradual transition to the semi-public space. The facades of the buildings and the pavement of the semi-public space are made of bricks.

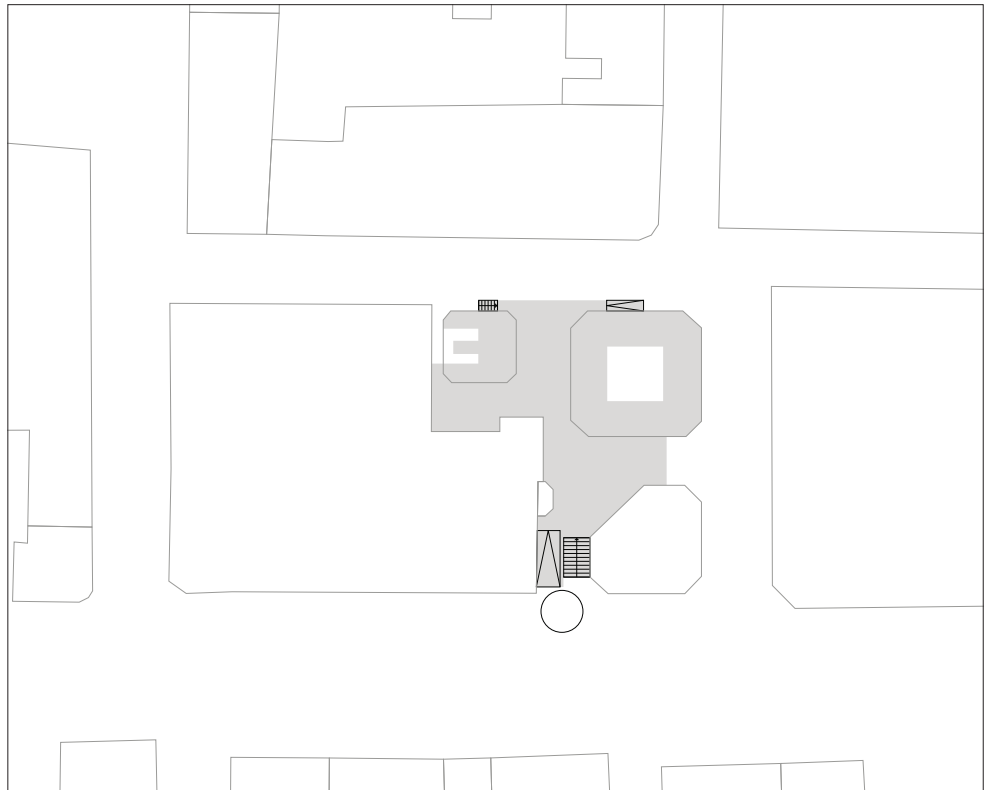


-  Buildings
-  Tree
-  Greenery
-  Ramp
-  Stairs
-  Distinct Pavement

A picture of a transition from the public space to the semi-public space in Piazza Ceramique



# The Economist Building









## The Economist Building

Peter and Alison Smithson  
London, United Kingdom

1965

Scale 1:1000 Pavement, stairs and ramps on the plaza of The Economist Building

In this project the plaza between the buildings is elevated because of an underground parking garage. Transitions to this semi-public space are created with stairs and ramps. Between two buildings and the plaza a gradual transition is created by continuing the paving of the plaza inside the buildings.

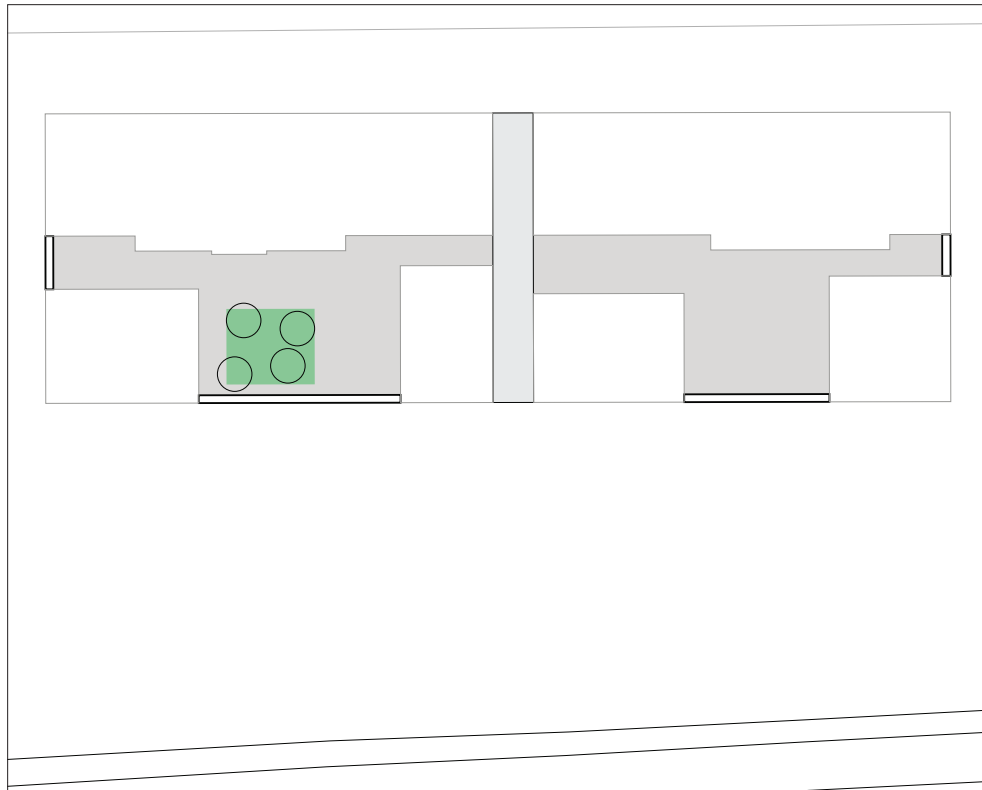
-  Buildings
-  Tree
-  Greenery
-  Ramp
-  Stairs
-  Distinct Pavement



The ground floors of the buildings connect to the plaza, only the building on a prominent corner connects also to street level.



# De Loodsen









## De Loodsen

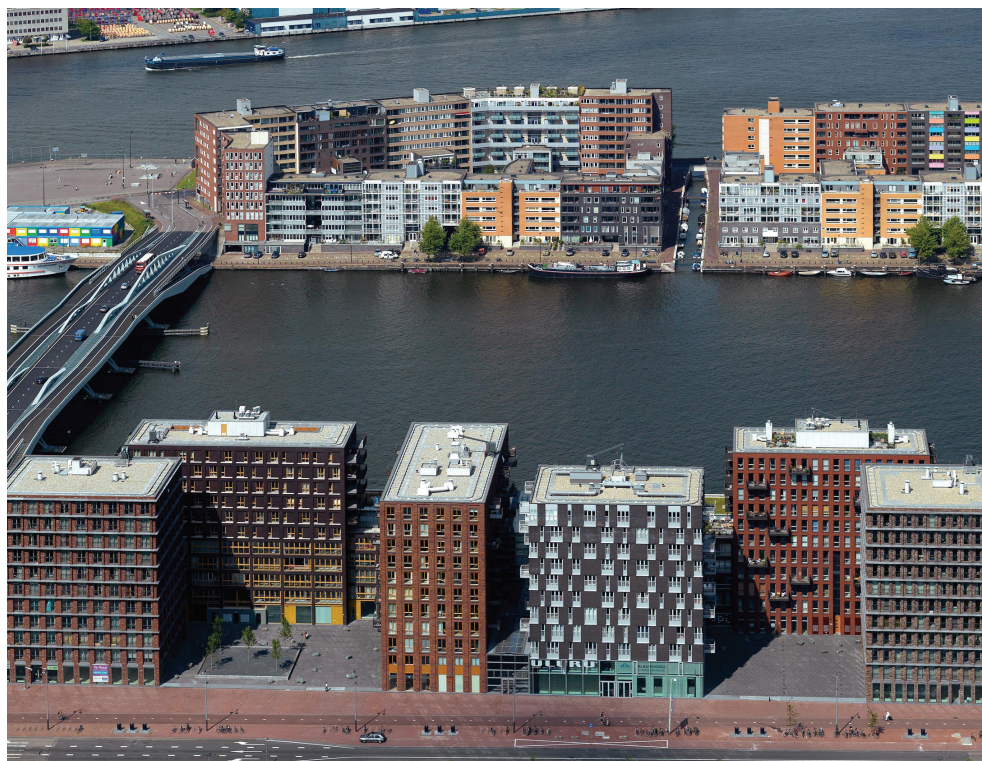
Köther en Salman Architecten,  
 HVDN Architecten,  
 Wingender Hovenier Architecten  
 Amsterdam, The Netherlands

2006

**Scale 1:1000** A small height difference creates the transition to the semi-public space. Greenery forms the square's focal point.

In this project the plaza between the buildings is slightly elevated. Transitions to this semi-public space are created with one step and ramps.

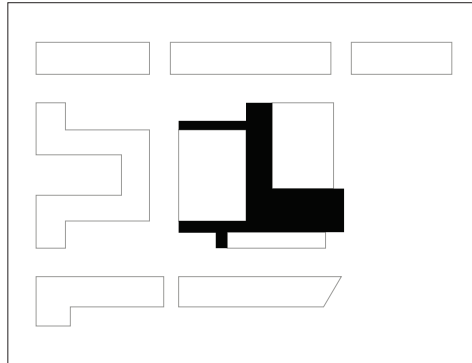
-  Buildings
-  Tree
-  Greenery
-  Ramp
-  Stairs
-  Distinct Pavement



The Piet Heinkade with the Javakade in the background

## Pavement

The pavement of Piazza Ceramique has the same material as the facades. The pavement fills the space between the buildings to emphasize the building lines. On the park side of the project the pavement steps out of the building line into the park.



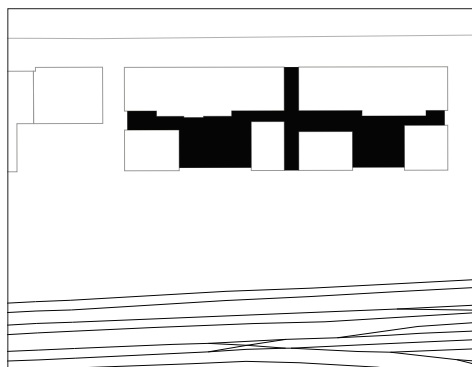
## Materials



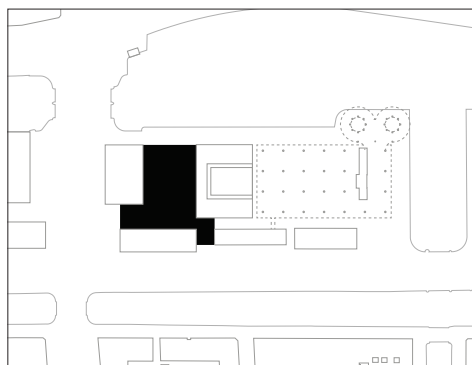
The tiles of the plaza of the Economist Building have the same material as the pilasters of the facades. The pavement enters the highest tower to create a smoother transition between semi-public and private space.



Together with the building masses the pavement forms a closed block. This way there is a distinction between public space outside the ensemble and inside the ensemble.

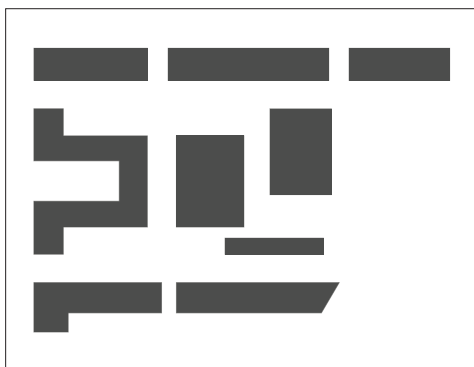


The design for the Appeltjesmarkt uses elements from the case studies to create a public space that connects the buildings of the ensemble: a distinct pavement, buildings that make use of the building lines and a slightly elevated square. Trees are positioned on the transition areas between the square and the surrounding streets.

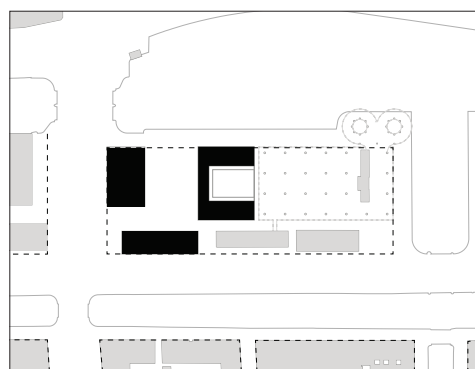
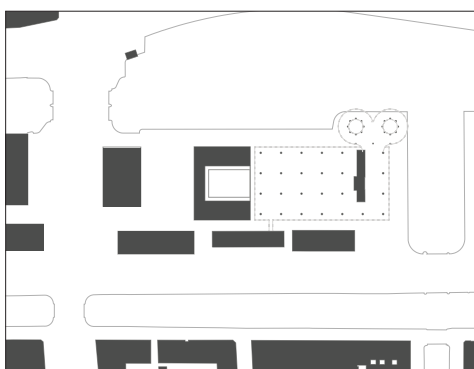
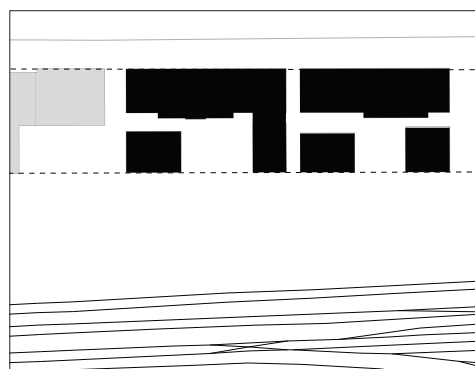
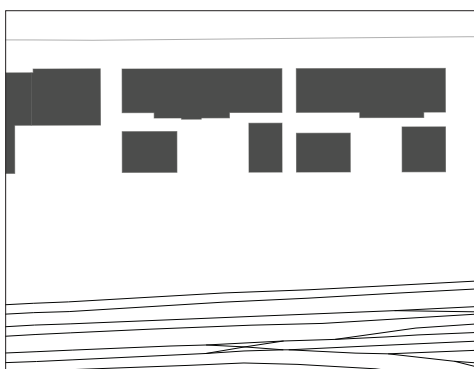
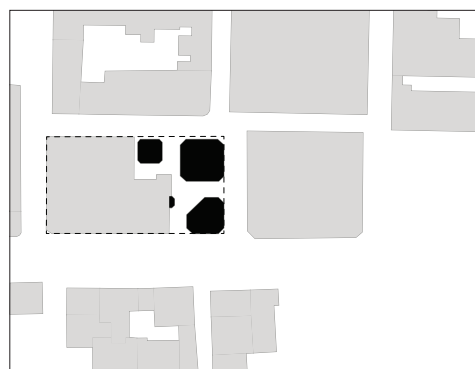
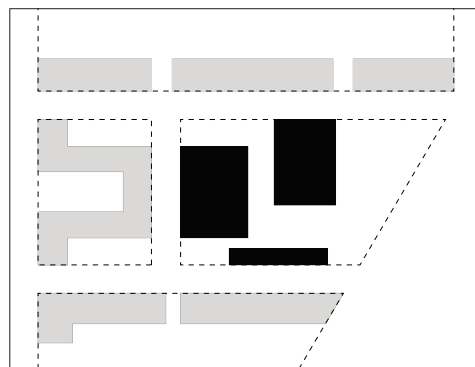




Morphology



Building lines (*rooilijnen*)



# Membranes on the Building Level

To investigate the dual quality of membranes on the level of a single building three case studies are analyzed and compared to a design for a housing complex on the Appeltjesmarkt in Amsterdam.

Richard Sennett makes a clear statement on how he thinks membranes should function on the building level: “Whenever we construct a barrier, we have to equally make the barrier porous; the distinction between inside and outside has to be breachable, if not ambiguous. The usual contemporary use of plate glass for walls doesn’t do this; true, on the ground plane you see what’s inside the building, but you can’t touch, smell, or hear anything within”.

For each case study a route is drawn from the public street to a single apartment. Along these routes one passes through a number of membranes that have a certain

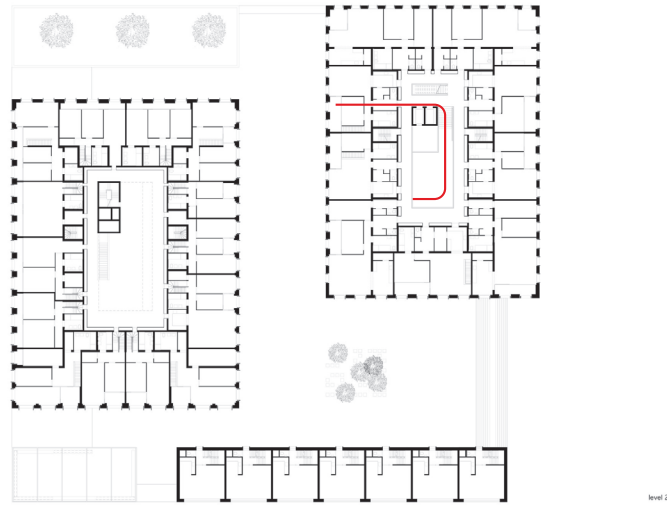
porosity. In this research is assumed that the dual quality of a membrane is determined by architectural means such as doors, windows, stairs, material, sightlines, etc.

Each membrane is drawn in plan, in an isometric drawing and in perspective. The drawings show how each membrane and the sequence of membranes function.

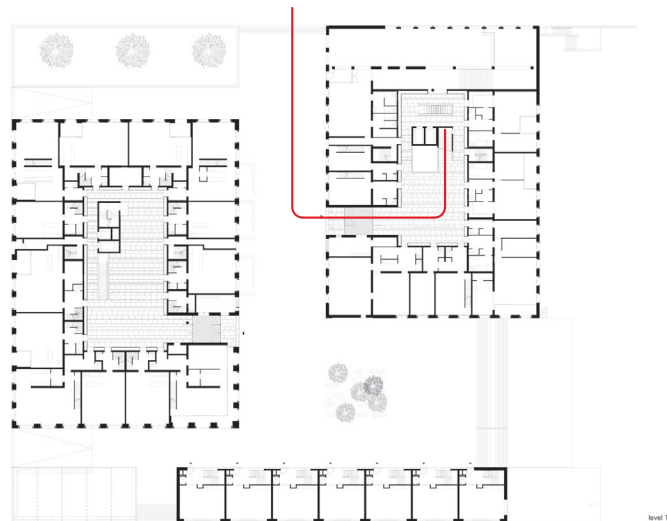
The result of this research should learn something about the means an architect could use to design walls that function like membranes.

Two case studies are selected on size, function and location: large housing projects in a Dutch urban environment with office apartments. The third case study, a canal house close to the Appeltjesmarkt, is selected because it could give an interesting local perspective on the topic of walls as membranes.

## Case Study 1: Piazza Ceramique

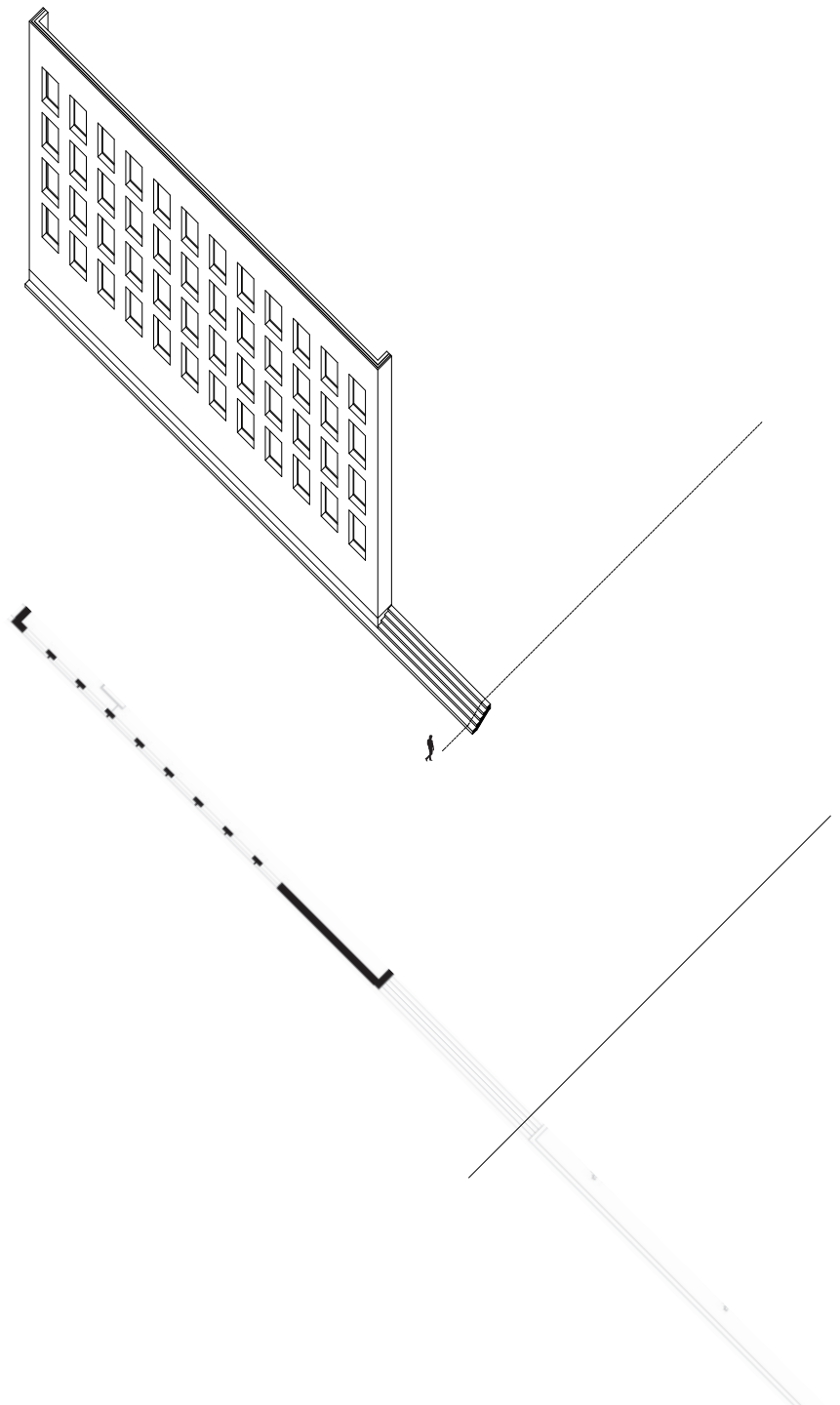


Route on the second floor, scale 1:1250



Route on the ground floor, scale 1:1250

**A Patch of Open City — Membranes on the Building Level**

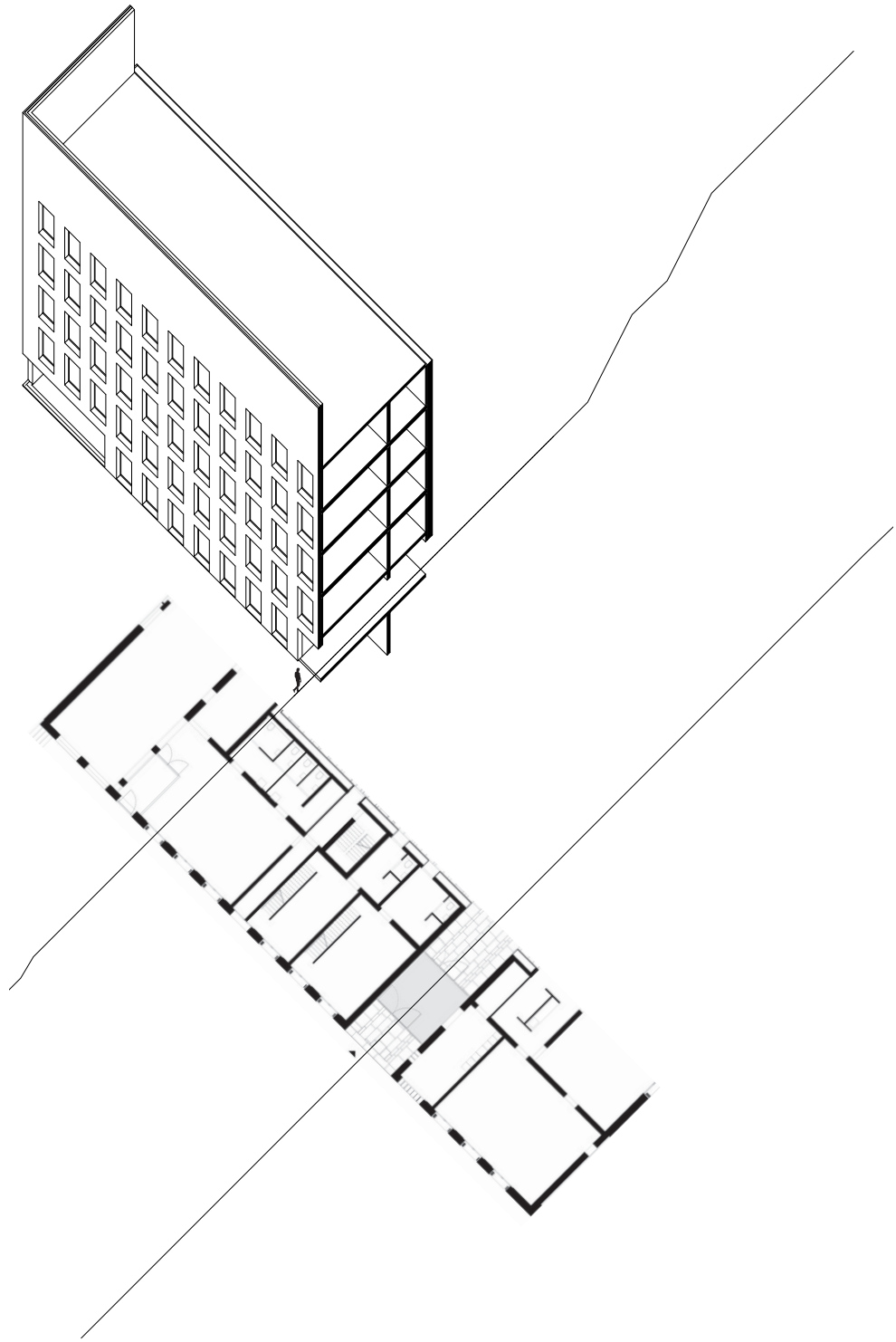


The first membrane on the route is the border between the building ensemble and the street. To enter the square, or piazza, one has to climb three steps. The building facade has a very neutral appearance and does not show a lot of what is happening inside the buildings. Individual apartments cannot be recognized.





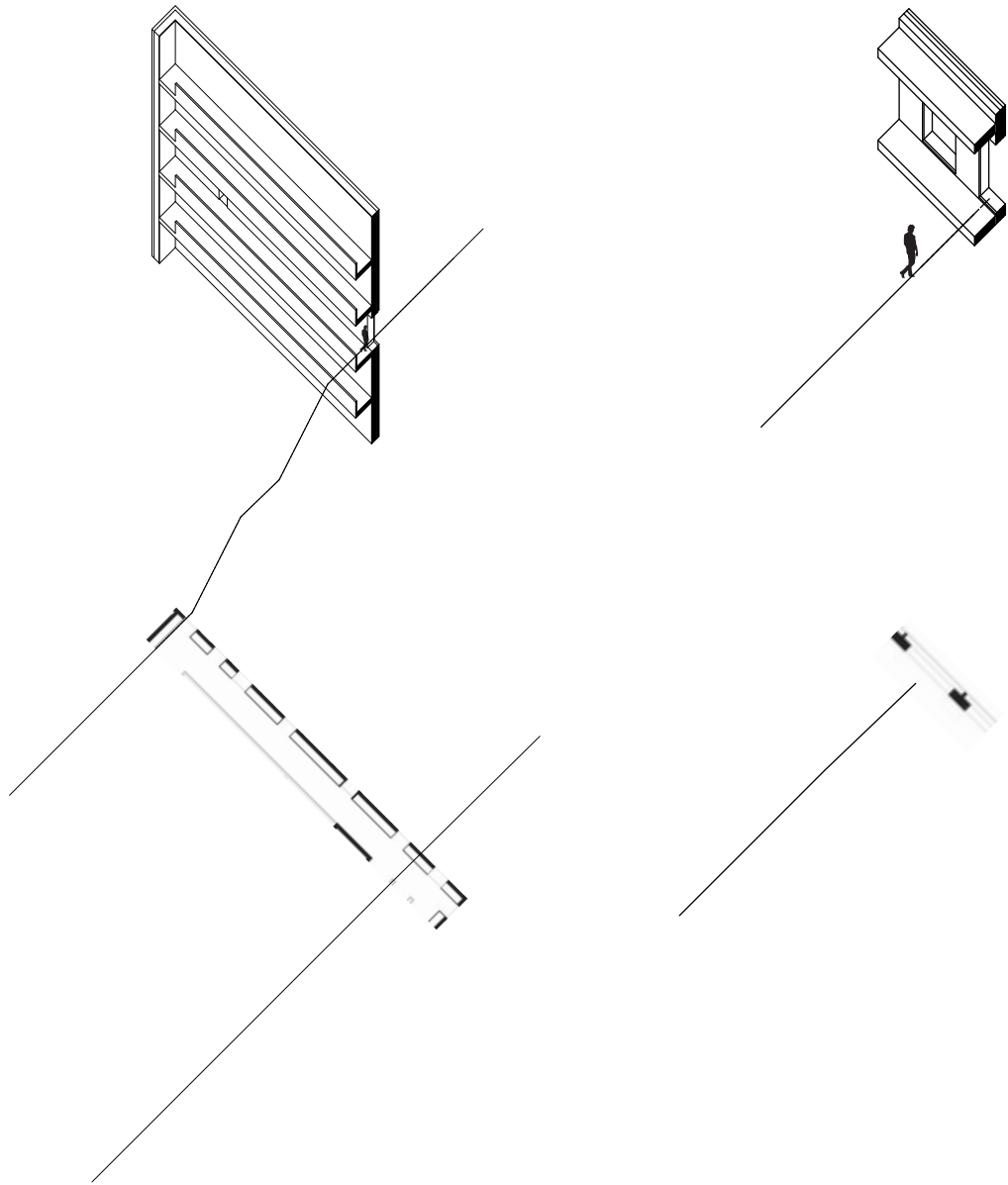
## A Patch of Open City — Membranes on the Building Level



The second membrane that has to be passed has the depth of whole apartments. One has to go through the building to enter the collective atrium from where the individual apartments can be accessed. The entrance to this atrium is discrete and fits in the pattern of facade openings.



**A Patch of Open City — Membranes on the Building Level**



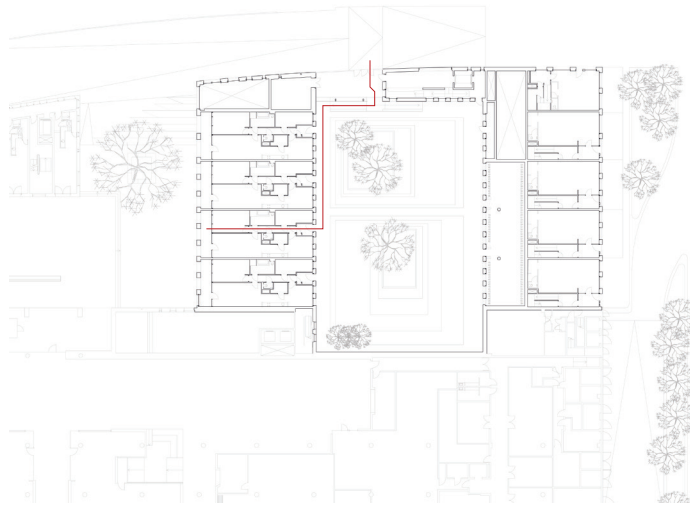
Between the galleries and the apartments is a thick wall that contains storage cabinets and has openings in the form of doors and windows to the apartments.



The last membranes separates the individual apartments from the public streets. All spaces in the apartments have the same large windows that can be closed for privacy reasons or to block the sun with shutters.

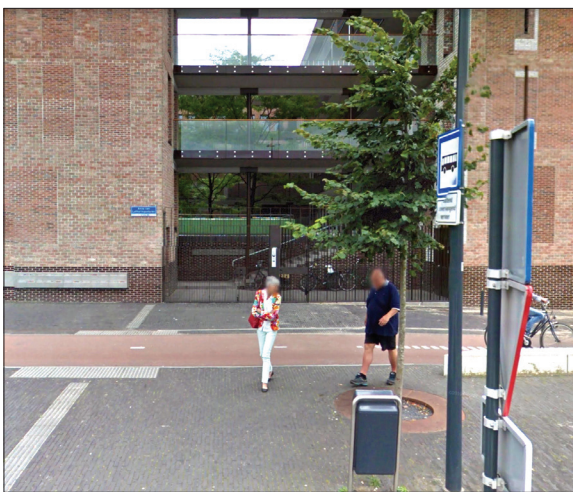
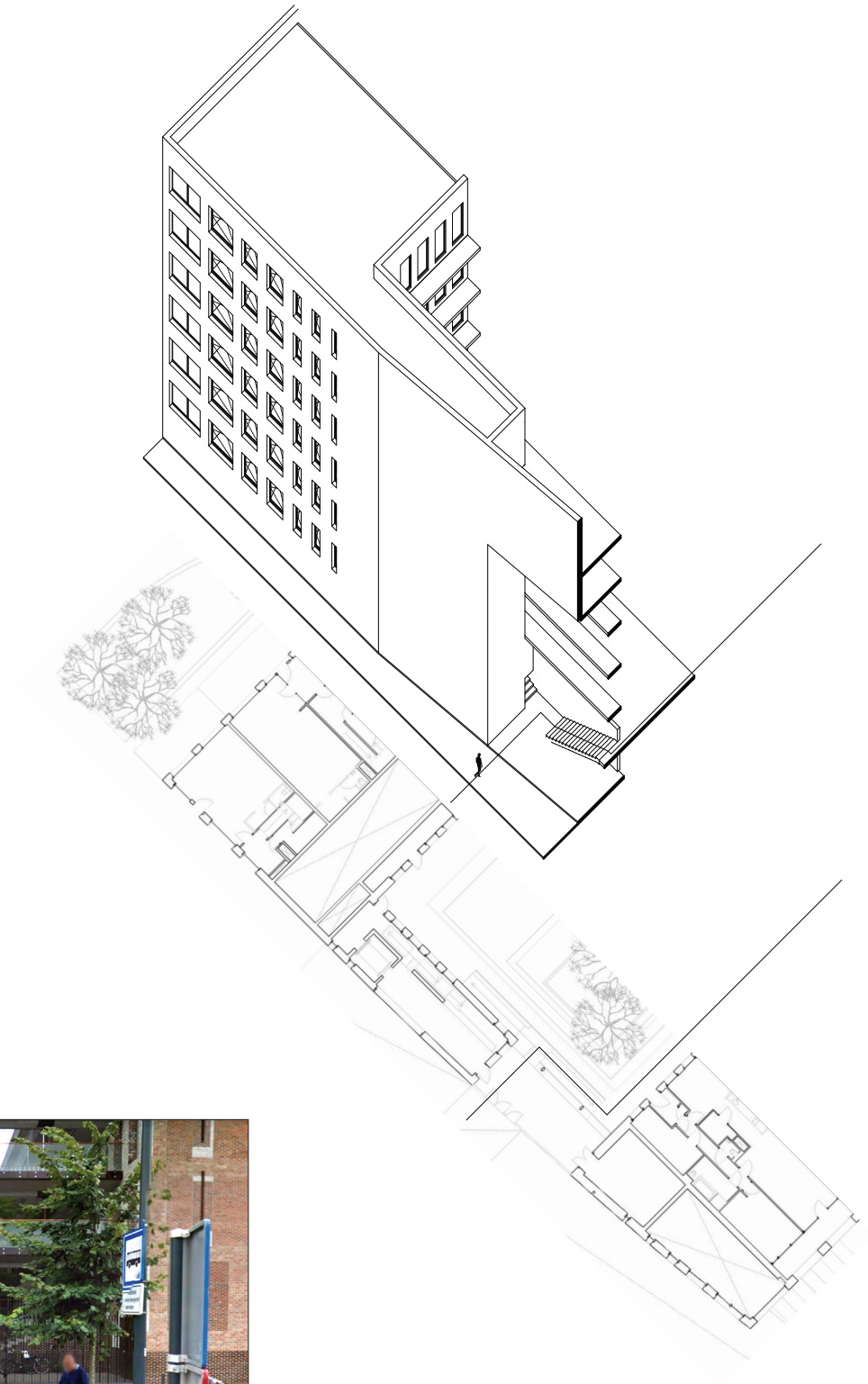


## Case Study 2: Station Breda



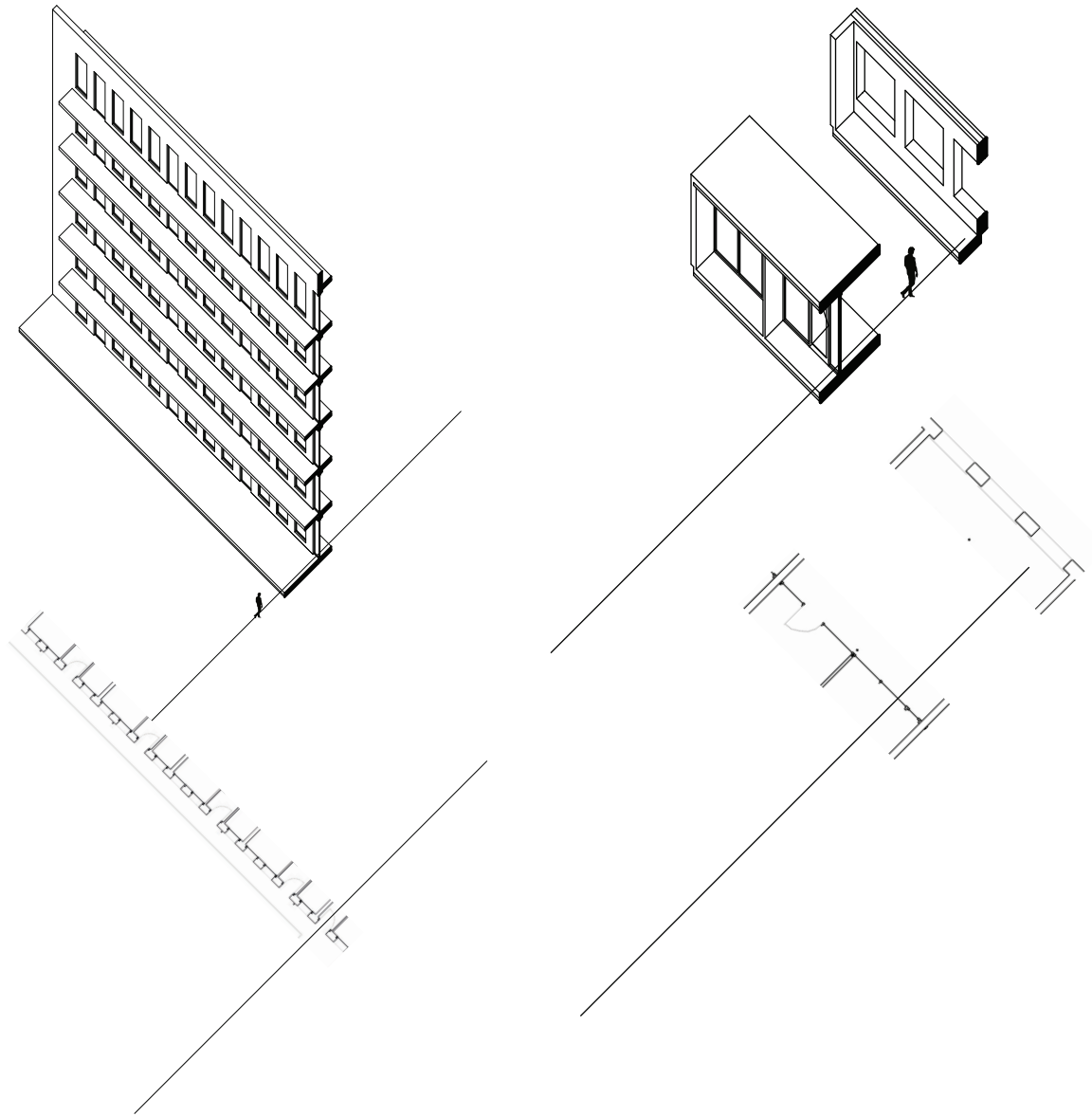
Route on the ground floor, scale 1:1000

**A Patch of Open City — Membranes on the Building Level**

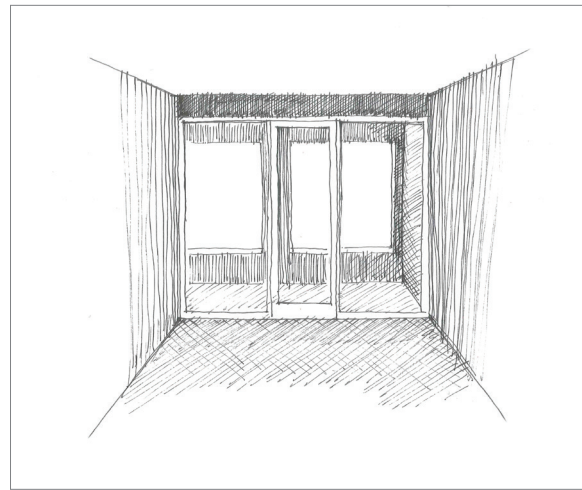


The first membrane that has to be passed in this part of Station Breda is quite similar to the second membrane of Piazza Ceramique. To enter a collective courtyard one has to walk through an opening in the building. This opening is much more prominent than the subtle entrance of the Piazza Ceramique building. The collective courtyard is almost one floor higher than street level, therefore one has to use stairs to get to the courtyard. This height difference blocks sight from the street to the collective space.

A Patch of Open City — Membranes on the Building Level

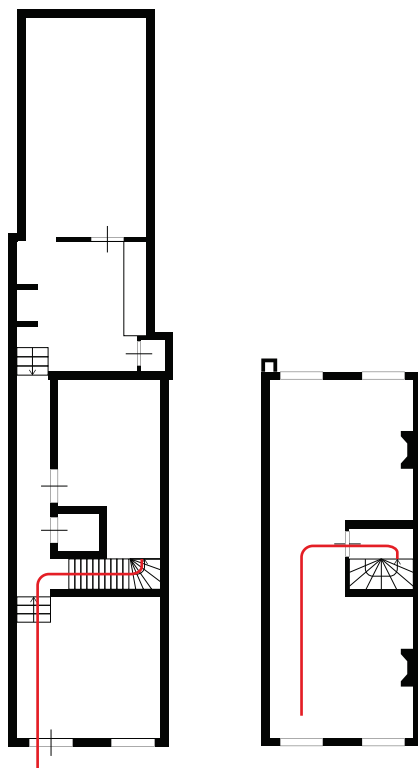


The second membrane lies between the collective courtyard and the private apartments. Openings in the facade are small and tall, the same size as the front doors. The front doors blend easily in the pattern of facade openings. The windows are placed deep in the wall to give the inhabitants privacy: when people use the gallery it is difficult to look into the apartments because of this depth and the dimensions of the windows.

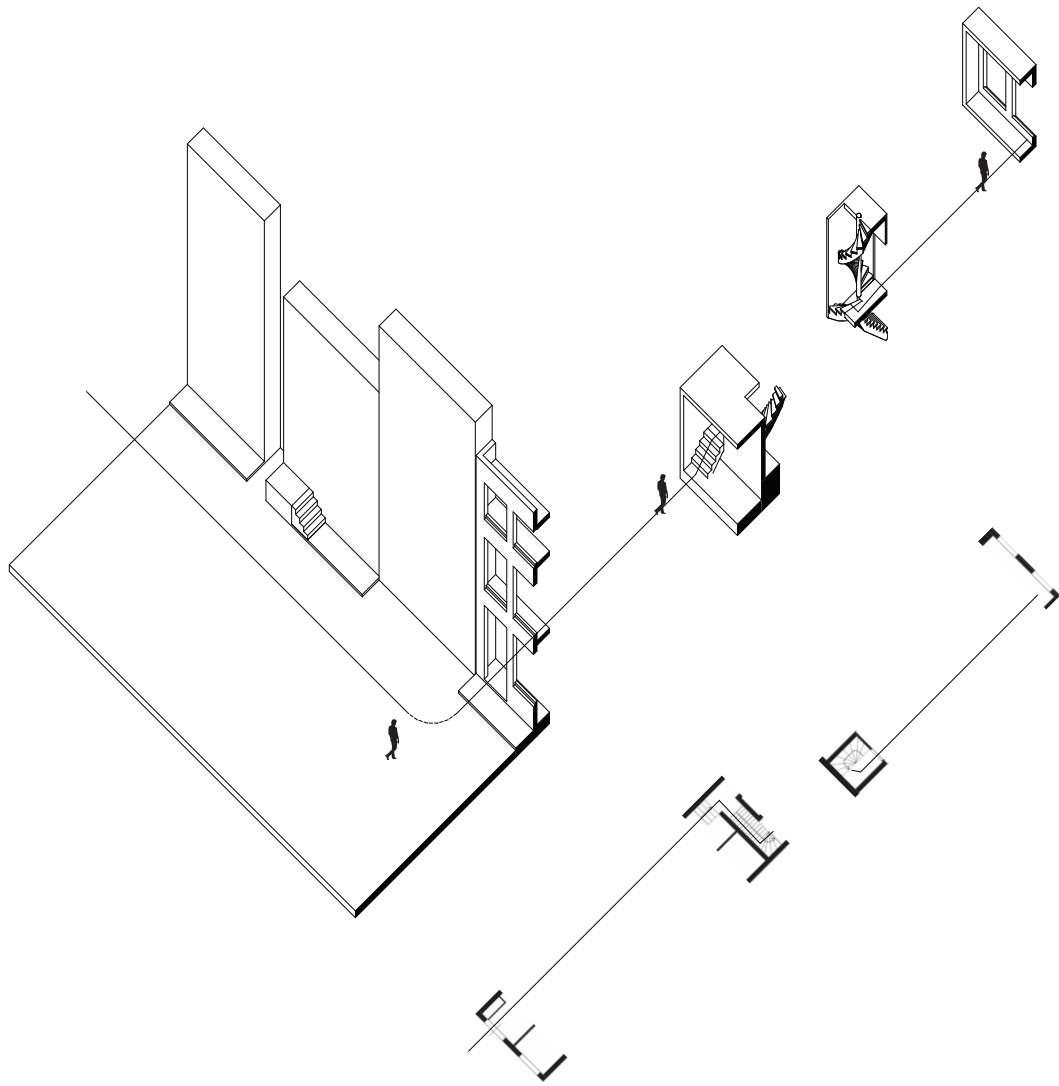


The last membrane is double-layered: a balcony is enclosed by a brick wall with large openings and on the side of the dwelling with ceiling-to-ceiling windows. From the apartments to the balconies is maximum openness, privacy is created by the brick wall that is relatively closed for the balustrade of a balcony.

## Case Study 3: Prinsengracht 580

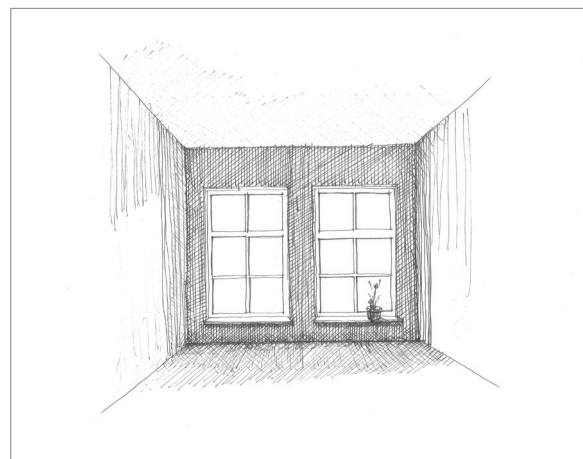


Route on the ground floor, scale 1:200



The first membrane is between the street and the anteroom. It consists of a step of one meter bluestone and a street facade. On the Prinsengracht individual buildings are recognizable. The facade of Prinsengracht 575 does not reveal the functions that are behind it.

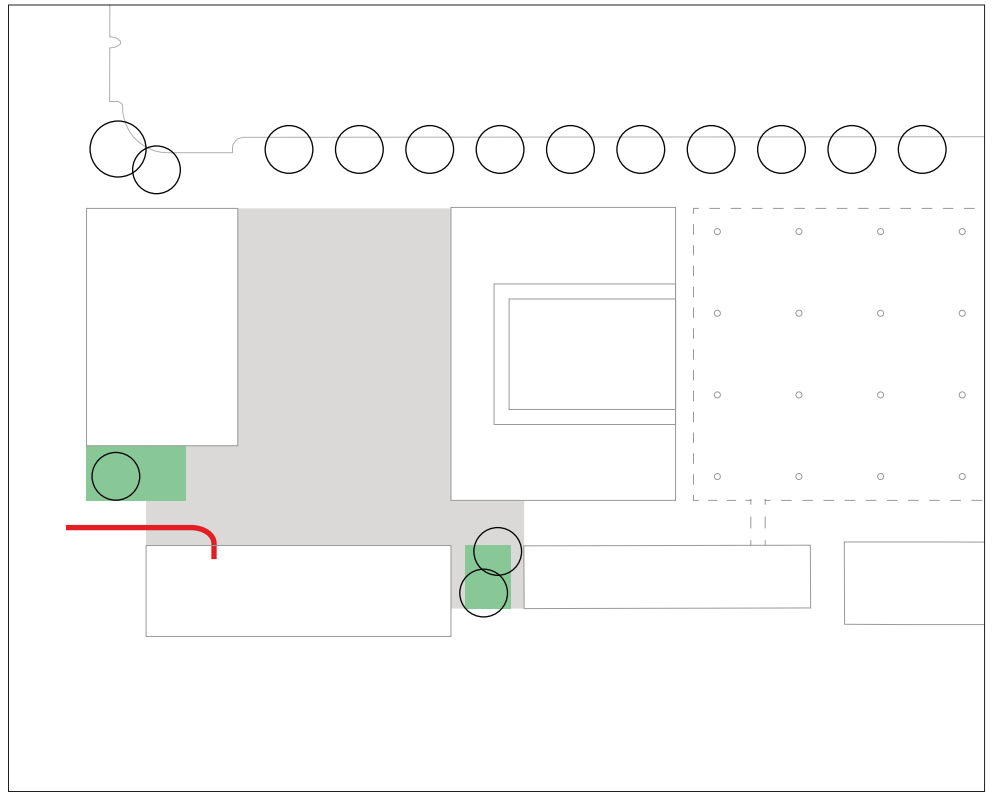
The second membrane is between the anteroom and the staircase. One has to climb a small stairs to pass the wall between the more public anteroom and the more private other rooms.



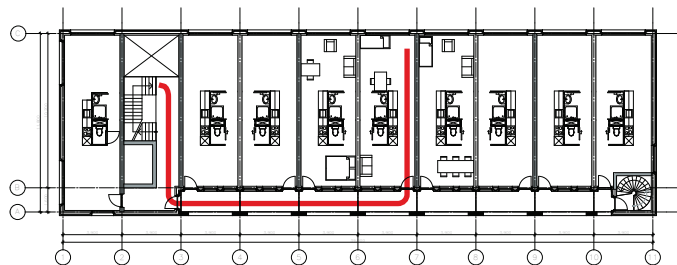
The third membrane is between the staircase and the rooms on the higher floors. The staircase is closed, this makes it possible to pass private spaces without violating the privacy of the users.

The fourth membrane is the wall between the living room and the street. Large window openings create a bright space.

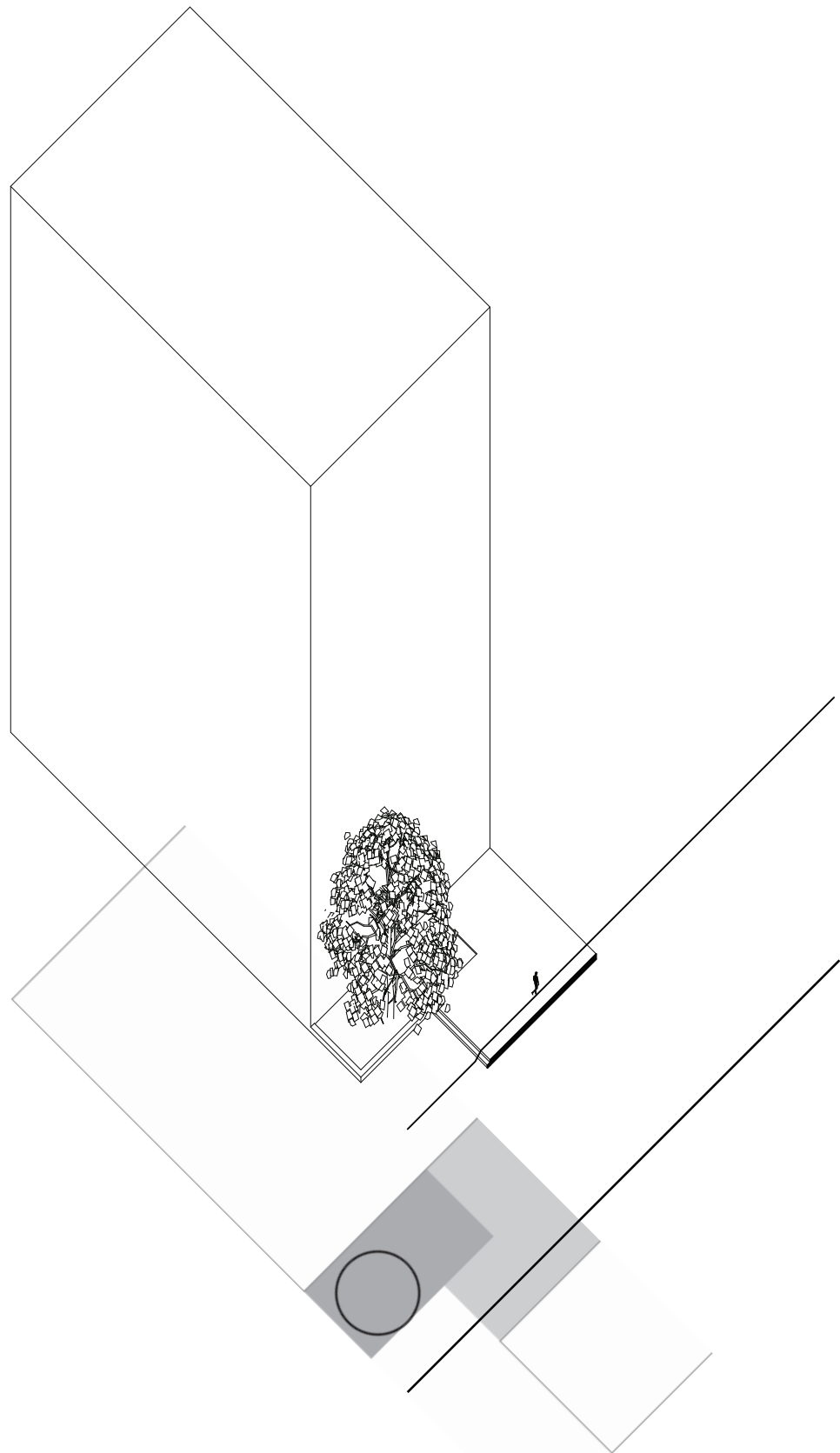
## Case Study 4: Appeltjesmarkt



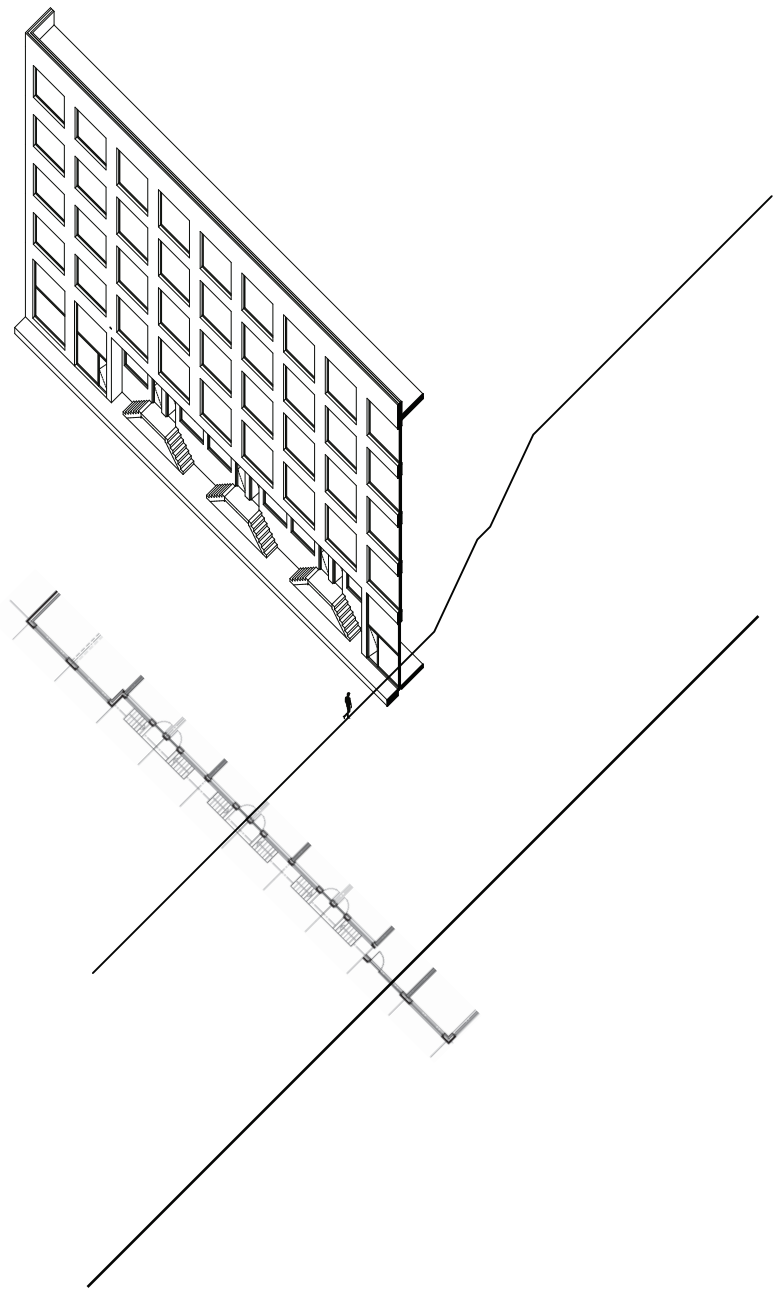
Urban plan Appeltjesmarkt, scale 1:1000



Route on the second floor, scale 1:500

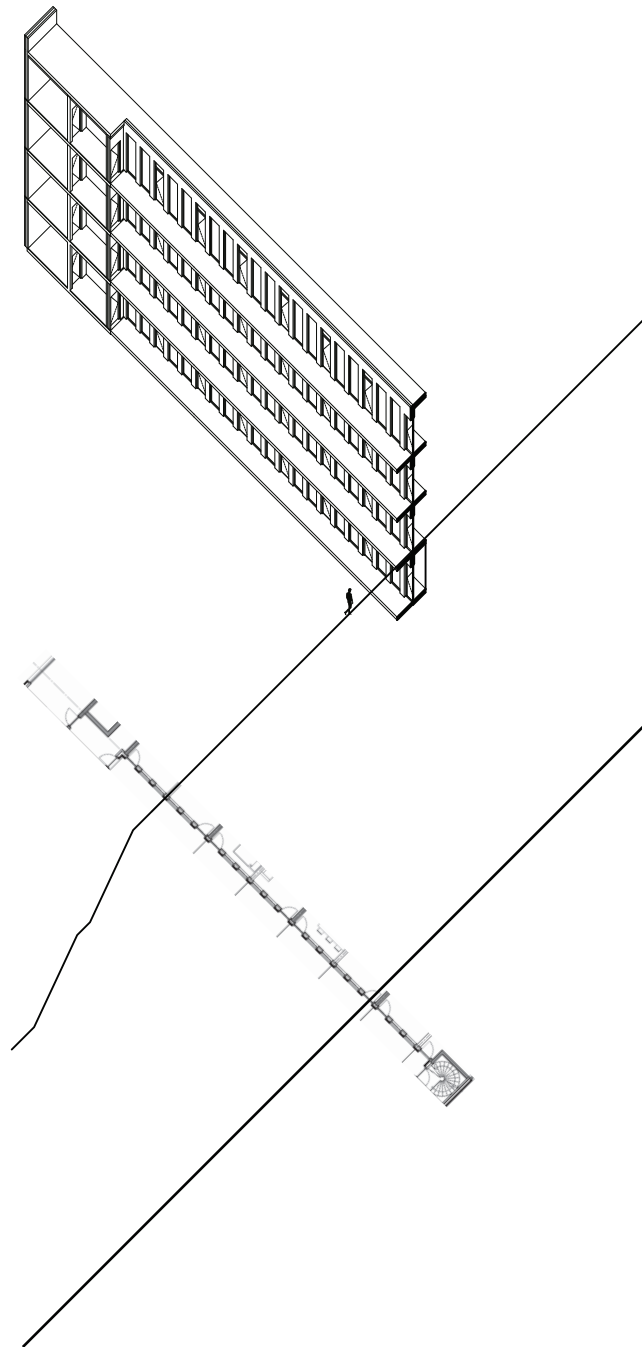


The first membrane, the transition from the street to the square, uses elements derived from the analysis of membranes on an urban level. A tree marks the entrance of the square, the square is slightly elevated and is paved with a different pavement than the street. The openings between the buildings form pedestrians to walk around the corner before they enter the square.



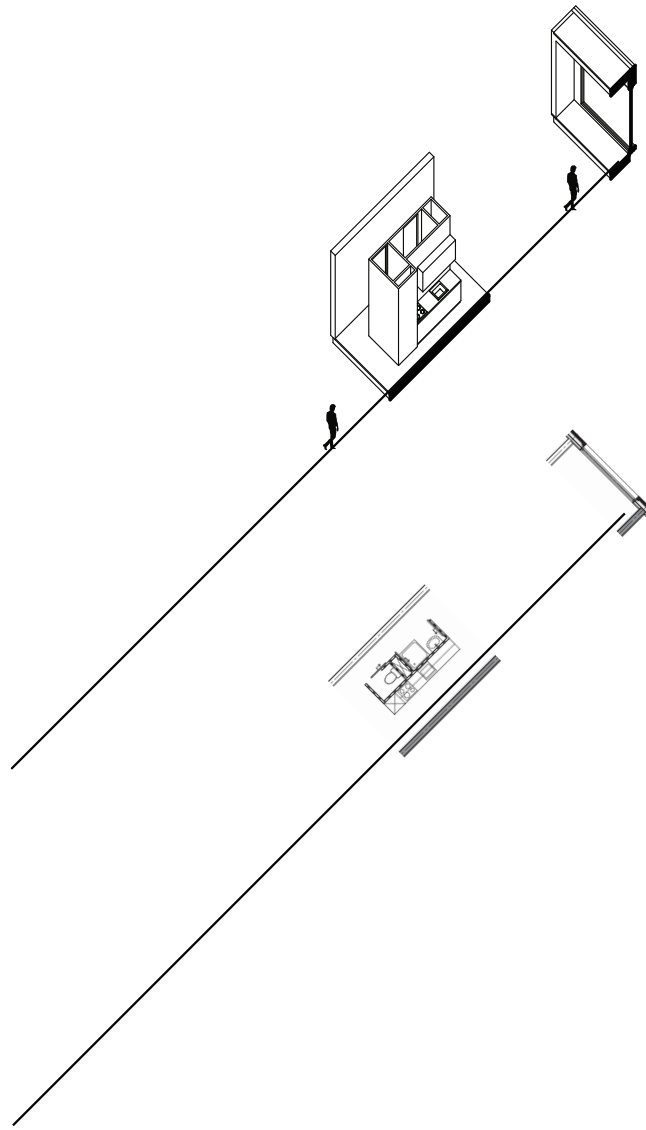
The second membrane is the facade of the building. The entrance is part of the pattern of facade openings but is more than twice as high as the regular windows.





The membrane between the galleries and the dwellings is similar to the wall of the gallery for the dwellings of Station Breda. High, but small windows give the dwellings enough daylight, but prevent that people from the gallery can easily look in the apartments.

## A Patch of Open City — Membranes on the Building Level



The dwellings are separated in two parts by a block with serving spaces. This membrane creates a very private part of the dwelling in the back of the apartment.

The last membrane is between this private room and the square. A large window creates a bright space. For this facade the current design assignment is to design french balconies and enough measures for privacy.

# Conclusions

This research is an attempt to bridge the gap between the theory of the open city by Richard Sennett and architectural design. A specific element of Sennett's theory has been researched, namely walls that function as membranes. In this booklet a first step has been taken by drawing existing buildings in such a way that to what extent they function as membranes is exposed.

## What architectural ingredients determine the functioning of walls as a membrane?

On the urban scale composition of urban masses is used to connect buildings to its surroundings and to form open space. Sometimes the masses are placed in such a way that one cannot directly enter the semi-public space but has to make turns. Direct sight onto the squares is blocked.

Different pavement material articulates the distinction between the open space that sometimes is semi-public and the public street.

Elements that are used to mark the transition between the public street and the semi-public spaces are stairs, ramps and trees. Stairs slow down the movement of people trying to enter the semi-public space. Trees form a canopy above the transition space and strengthen the enclosing

of the semi-public spaces.

On the scale of buildings architectural ingredients are used to create gradual transitions from the public street to the private interior and to create a membrane between the interior and the outside.

One should be aware of the fact that the metaphor of a cell membrane can be interpreted in many ways some interesting ways were beyond the scope of this research. The membrane-metaphor could for example be applied to the building physics of buildings or to the way they are blend in a historical context. To expand on the latter, Roger Diener uses the membrane metaphor in his essay *Firmitas*: "For us, the external wall is not a mirror image, a reconstruction of the construction. Instead, much like a membrane, it enables an exchange between the building and the town. Sometimes, the interior of the building seems to breathe through this wall membrane." Other aspects could also breathe to the facade of a building, like its history or its connexion to the spatial context.

For architects that would like to focus on designing and building open cities as described by Sennett, it is important to focus on the filtering of human contact. This means focusing on how membranes can connect spaces in order to bring people together and facilitate exchanges.

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