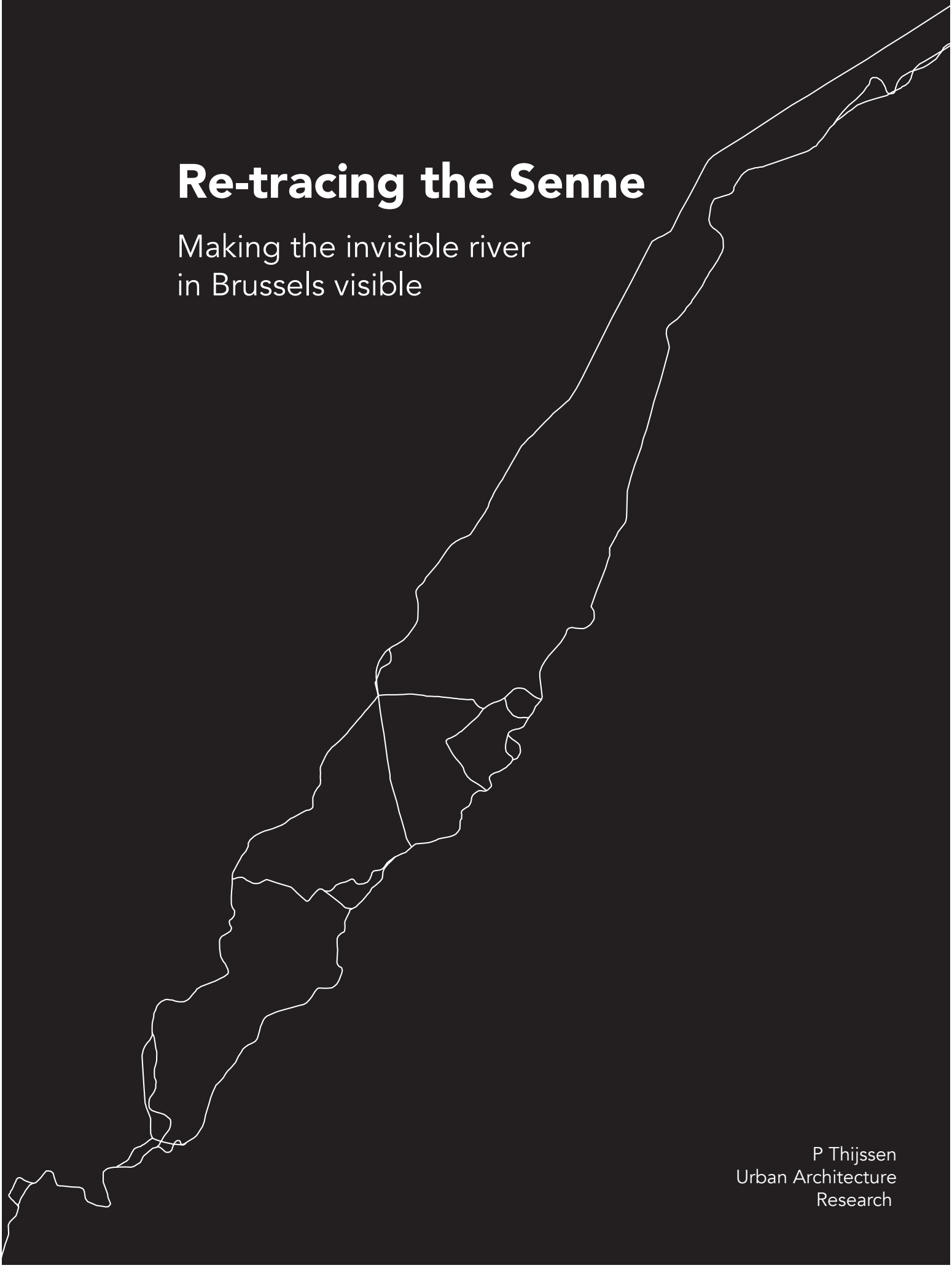
Re-tracing the Senne

Making the invisible river in Brussels visible



P Thijssen
Urban Architecture
Research

Re-tracing the Senne

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Introduction

I started the studio 'spolia' with investigating the Senne River in Brussels. Spolia means the possibility of re-using (historical) architectural pieces. In this case it was about the historical river the Senne in Brussels, which is a muffled infrastructural network. The only fact I knew was that the site for the design assignment used to be the bedding of the river Senne. The river was covered in 1865/1931-1955, because the river was polluted and it had lost its infrastructural value.[1] Many buildings have been built on the spot where the river once flowed, so the river can no longer be seen as a landscape element. In consideration with the main theme of my graduation – Spolia - the Senne is an interesting subject for research on its historical value as a potential re-usable architectural element.

The main question for this research was: which elements of the river are still visible and how can this historical fact be revaluated?

The first part (chapter 1) will answer the question: how is the covered river still visible? I started to do research from an urban landscape scale to see if there were any traces visible of the covered river in the urban fabric. After that, I zoomed in on an architectural scale to see if the river is still visible in the architecture around the former river. The next step was to zoom in to the scale of urban elements.

The next part (chapter 2) of the research I asked myself the question how history can be revaluated and what this can add to architecture? This created an answer for myself if I should re-use the history of the Senne.

In the last part (chapter 3) a zoom-out will be made to other international projects in which infrastructural networks are revitalized. Hereby the effect of redesigning urban landscapes on architecture was assessed.

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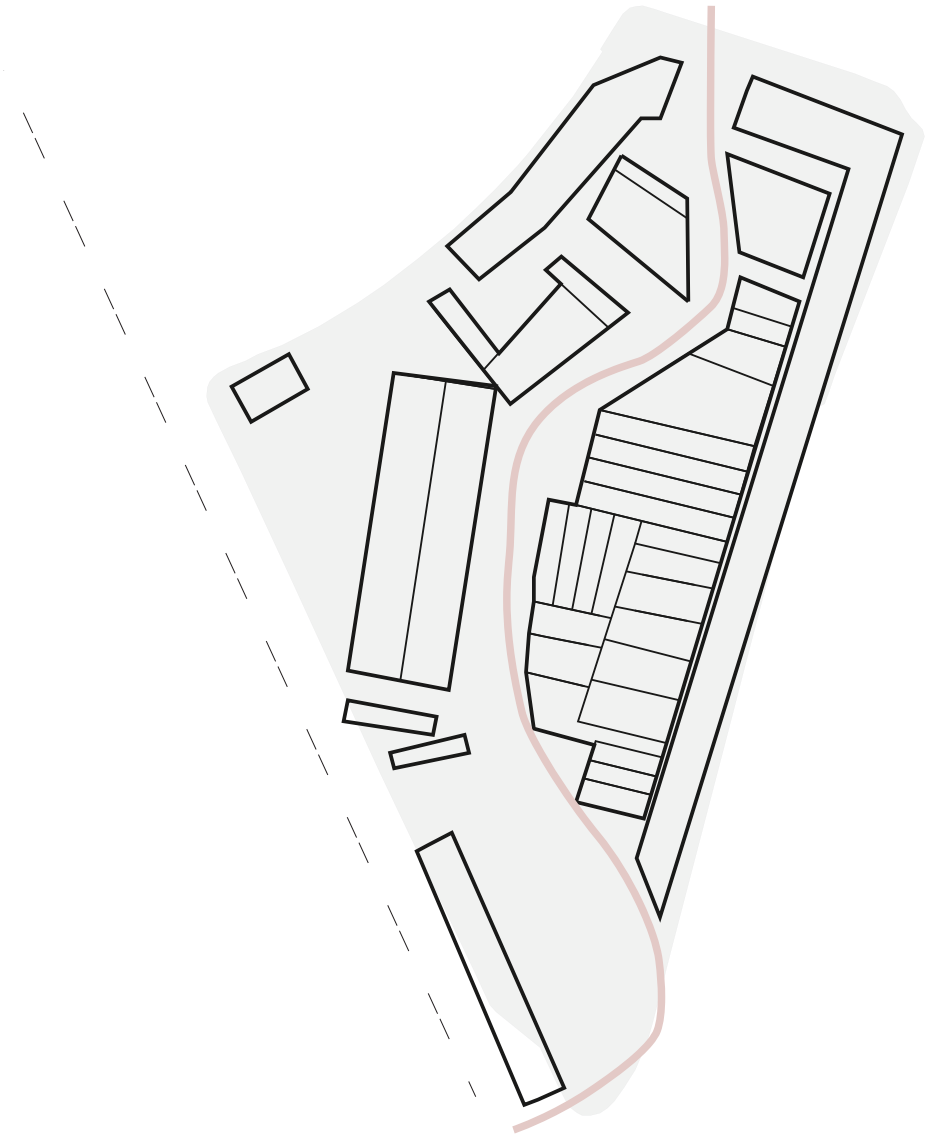
[1] Frédéric Solvel, "Under Brussels, The Senne," Brussels Life, January 26, 2015, https://www.brusselslife.be/en/article/under-brussels-the-senne.

Evolution La Senne Site, Brussels, 1930.



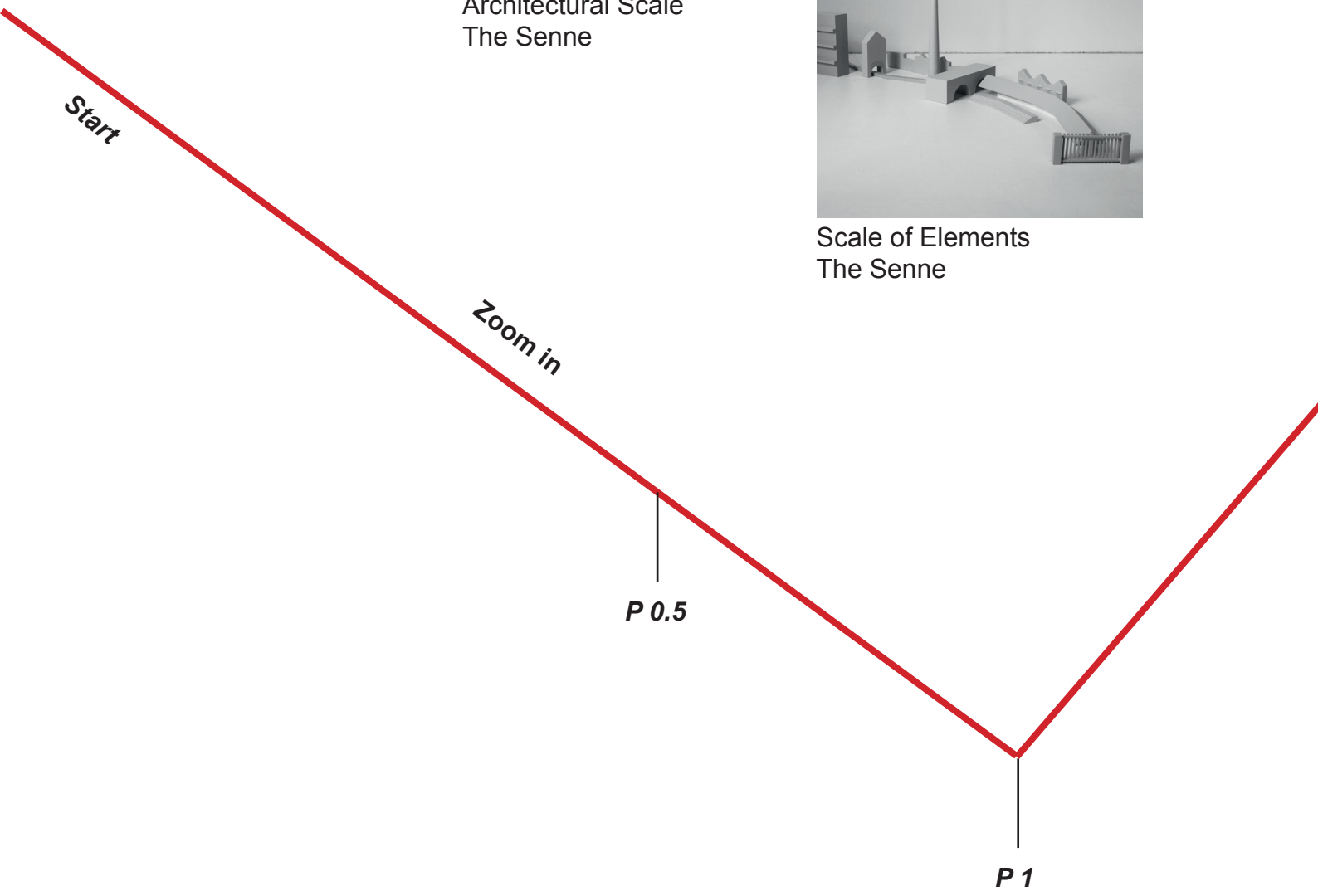
1930

Process of the research

Urban Scale
The Senne

Architectural Scale
The Senne

Scale of Elements
The Senne



International Scale
The High Line
vs Senne Park

Detailed Scale
The High Line

Zoom out

Zoom in

P 1.5

P 2

1

LA SENNE

Bruxelles-Anderlecht. — La

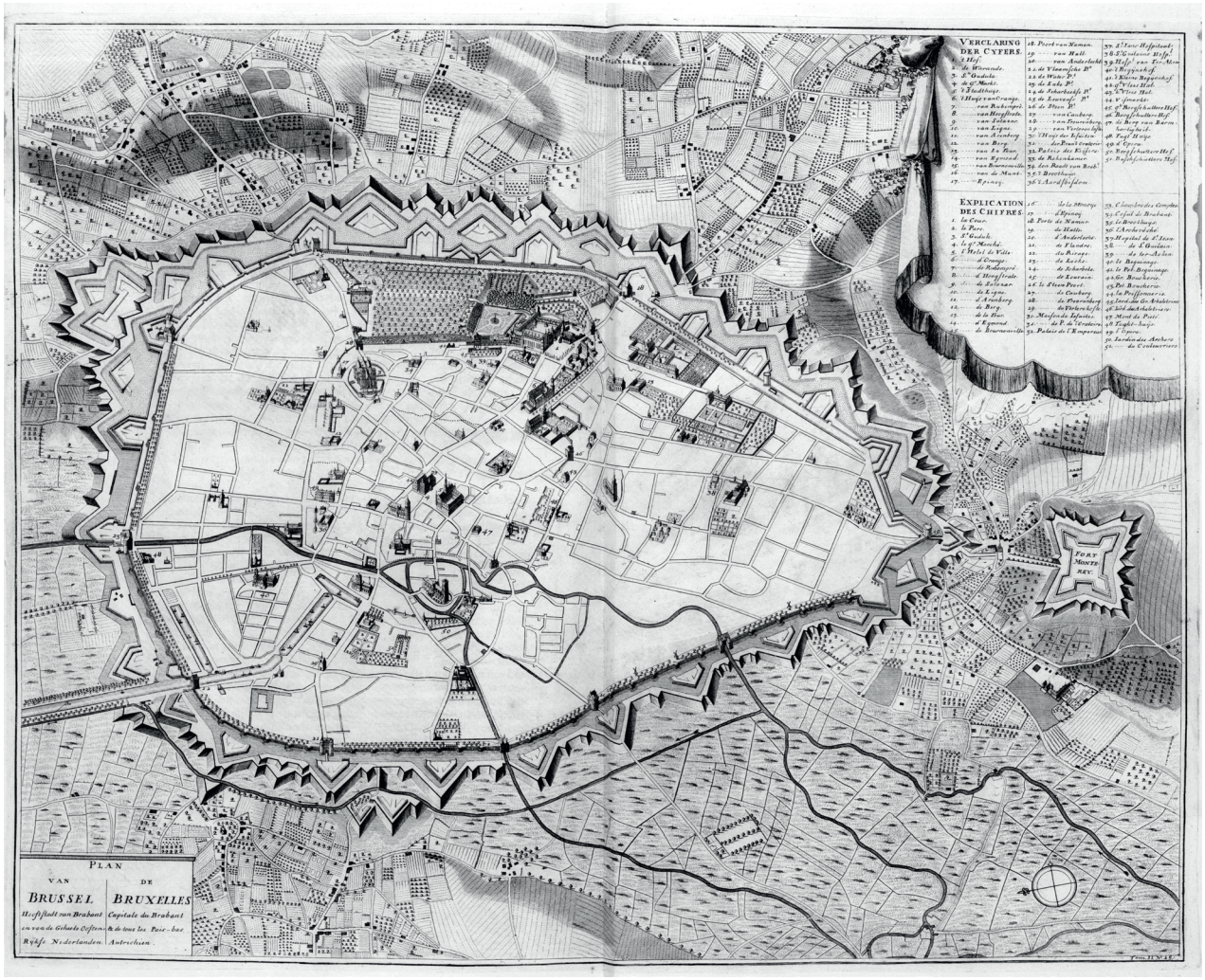
La Senne, Date Unknown, Archives de la Ville de Bruxelles.

1.1 The Start

To research something which doesn't exist anymore, I started with desk research. I searched for available information about the Senne river on the internet and in archives. The archives contained historical maps of how the river had once flowed. The Senne is the source where Brussels originally started. It was the place for breweries, tanneries and other industries. The city was built up along the twists and turns of the river.[2] This river also had many islands, which can be seen on the historical maps.

From a bird's-eye view, the internet was used to analyze if there are any places in the structure of the city where traces of the old river can be seen. Google Maps was used to analyze this. This unveiled many places in the city with visible 'voids' in the urban fabric at the place where the river once flowed. Finally, 30 case studies were determined where the river was still visible in the urban fabric. The next step was to see how the river was still visible in the streetscape.

[2] Frédéric Solvel, "Under Brussels.



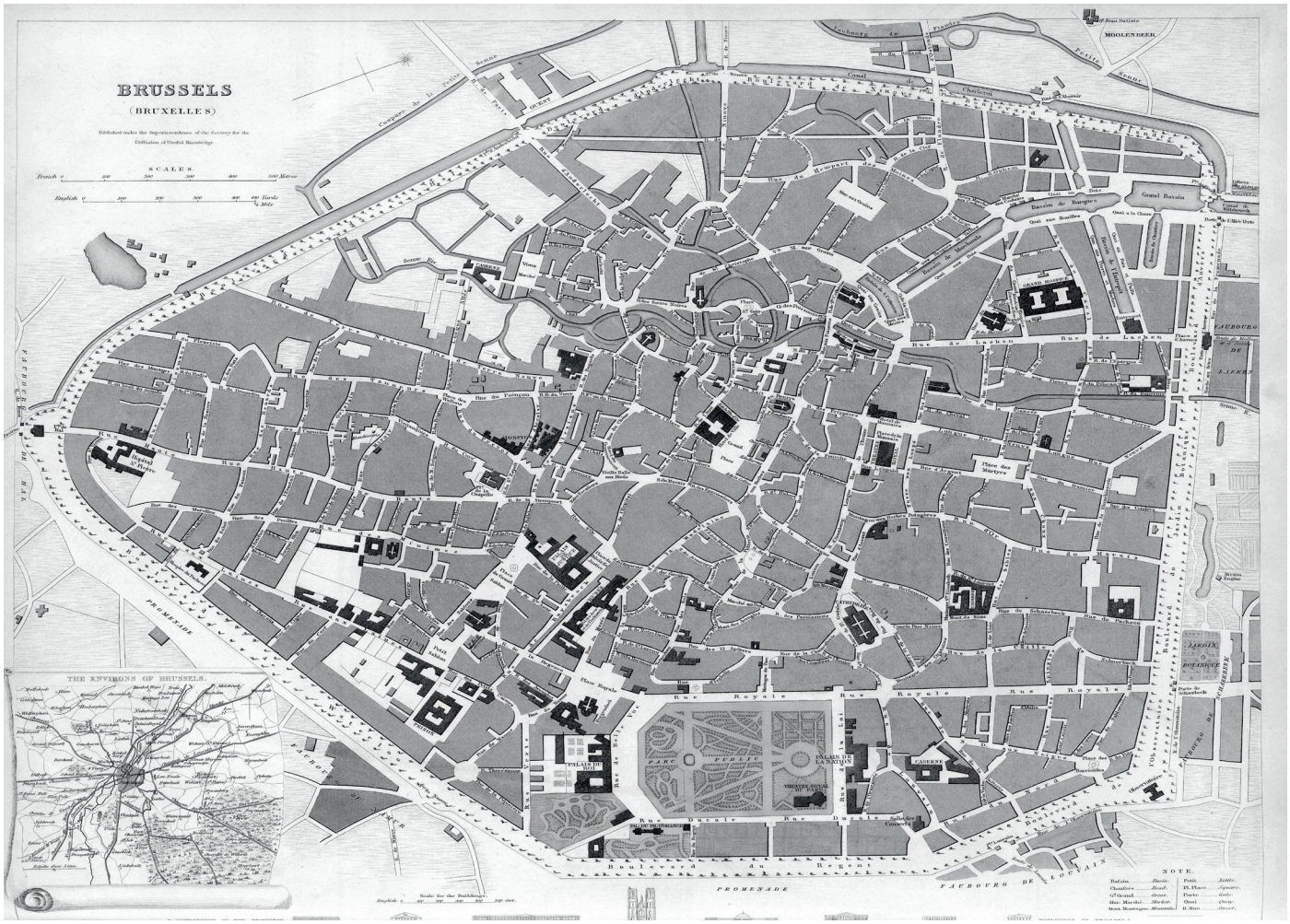
Map Brussels, 1625, Archives de la Ville de Bruxelles.

Map Brussels, 1657, Archives de la Ville de Bruxelles.

Map Brussels, 1600, ,Archives de la Ville de Bruxelles.

Map Brussels, 1609, Archives de la Ville de Bruxelles.

Map Brussels, 1652, Archives de la Ville de Bruxelles.



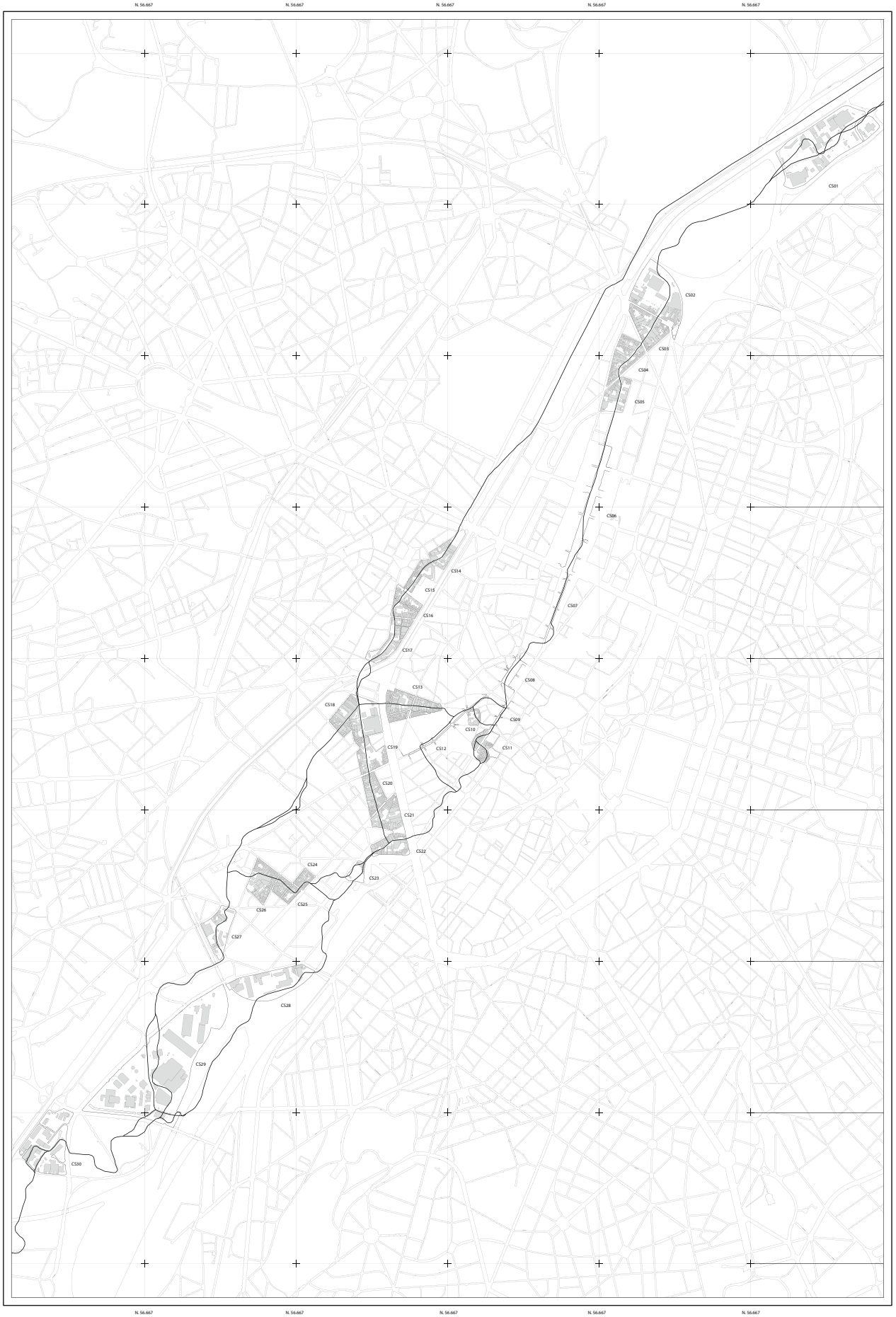
Map Brussels, 1837, Archives de la Ville de Bruxelles.

Casestudies of The Senne, Brussels, 2019.

Urban Architecture graduation studio 2019-2020

BRUSSELS

The Senne



SCALE 1:12'500

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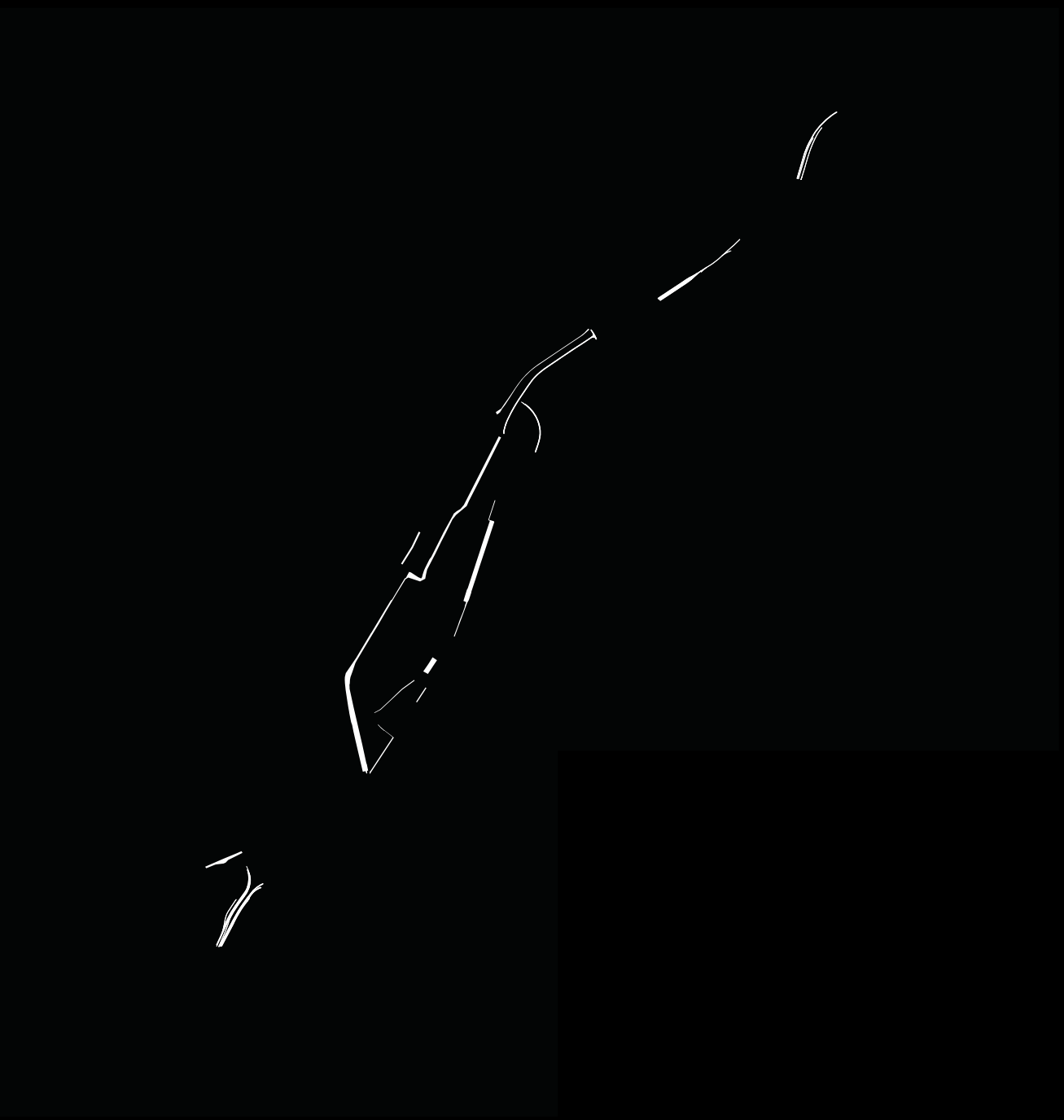
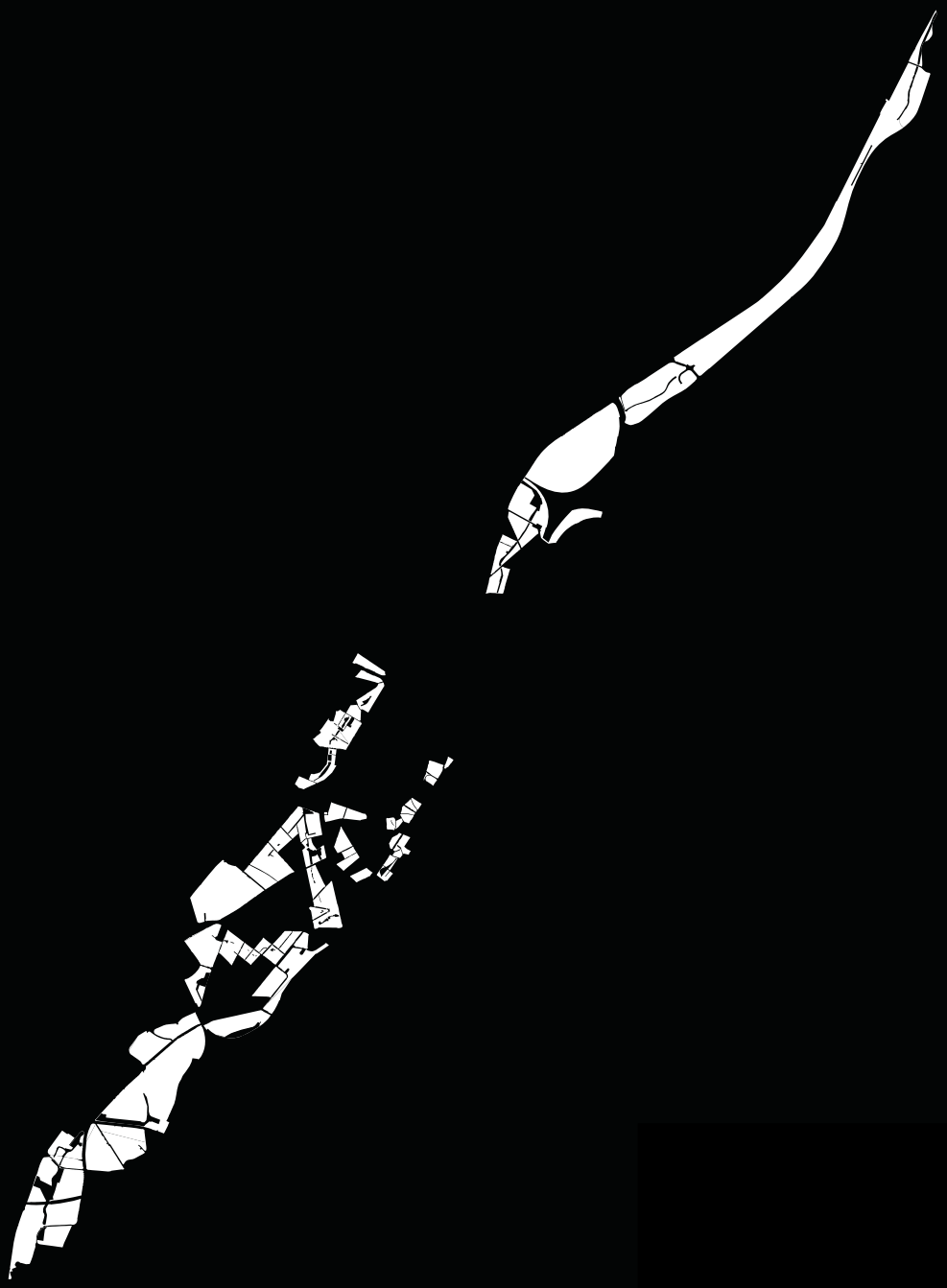
30 case studies as an expedition through the city.
Traces of the original course of the Senne before
its covering in 1871.

Spaces in between the Blocks , The Senne, Brussels, 2019.



Roads and Railways , The Senne, Brussels, 2019.



Blocks , The Senne, Brussels, 2019.

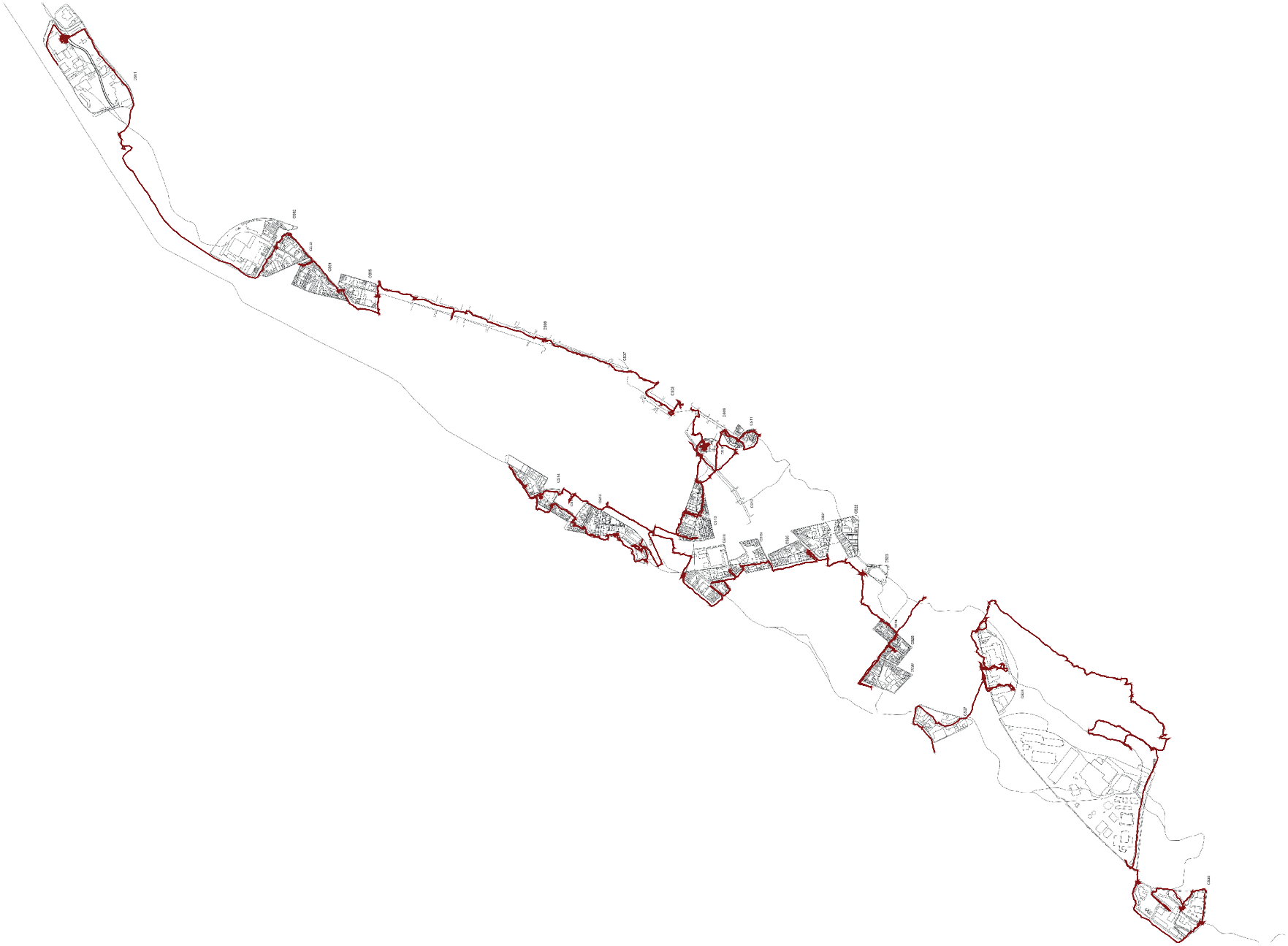
1.2 The Expedition of the Lost River

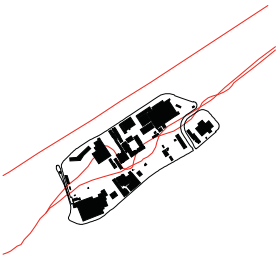
As a method to research how the river was still be visible in architecture, a street expedition was done. From an urban scale (the line of the river how it had once flowed) I zoomed in more and more to an architectural scale (the interventions of the river at building level). For three days, an expedition along the covered river took place. This took a total of 50 kilometers from North to South Brussels. The questions I asked myself during this expedition were: what are the architectural conditions of the fragmented river? And what is the architectural relationship between the river and the architecture around the covered river? During this expedition I looked at how the traces of the river were still visible. I didn't look at how the users used the trace, but how the architecture followed the covered river. So the architecture as an object in particular was analyzed. Field research was the eye-opener. Entering the 'field' provided many new insights.

The observations were made during the fieldwork by means of photography. Other observations were converted into drawings, such as sections and plans. This led to the discovery of typological patterns. Typology is described as: 'the study of types, or a system of dividing things into types.'[3] Patterns that were discovered (mainly by observation through photography) were the repetition of certain elements along the covered river. Factory chimneys, for example, were often found along the covered river. This indicates the industrial character of the former river. A pattern was also discovered in which façades were suddenly a lot lower than the neighboring façades. The river used to flow here. The way in which facades were shaped also turned out to be influenced by the bed of the river that once flowed there. Research showed that the river is still subconsciously visible in the streets.

[3] Cambridge Dictionary, 'Typology', 2019, https://dictionary.cambridge.org/dictionary/english/typology.

Track Expedition of the Lost River, Brusssels, 2019.





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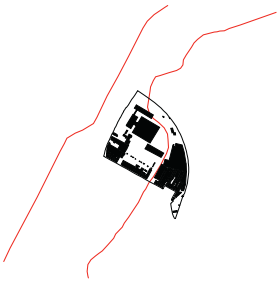
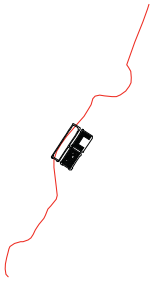


CS_02

CS_03

CS_07



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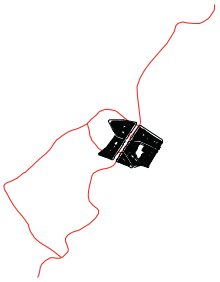

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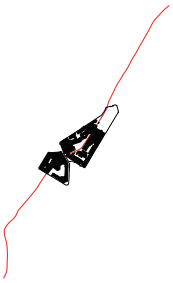
CS_13



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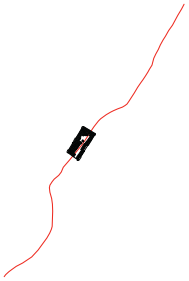

CS_15

CS_19

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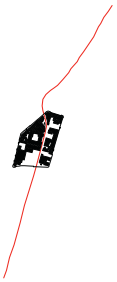
CS_26

CS_27

Casestudies of The Senne, Brussels, 2019.

CS_04



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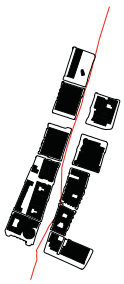

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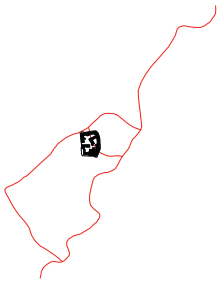
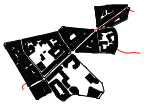


CS_10

CS_11



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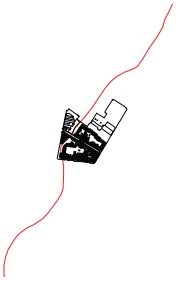

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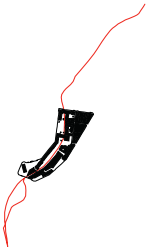


CS_17

CS_18

CS_22

CS_23

CS_24

CS_28

CS_29

CS_30

Expedition of the Lost River, Brusssels, 2019.

Expedition of the Lost River, Brussels, 2019.

Expedition of the Lost River, Brussels, 2019.

1.3 Results

1.3.1 The Catalog

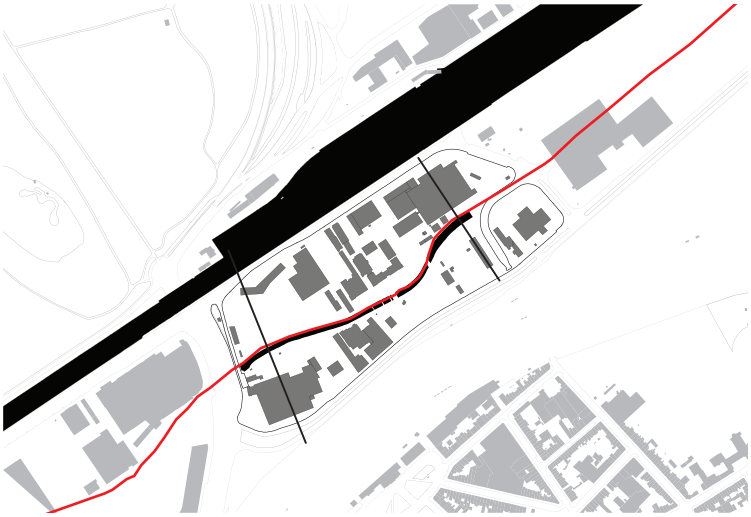
Making the invisible river visible resulted in many products. For example, the catalog. In this catalog the 30 case studies became visible. By making this catalog the differences between the traces became visible, but also the similarities. The case studies are presented by photography, sections and plans. It shows that the river is still visible because of the empty spaces left behind, which in some cases are used and in some cases are still vacant.

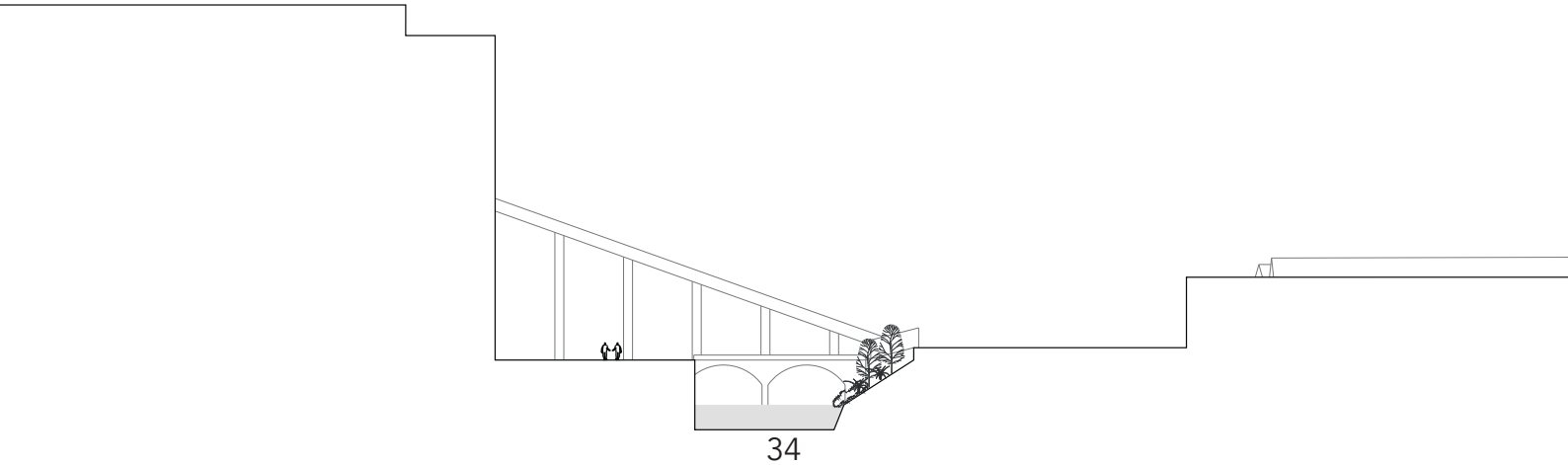
Catalog La Senne, 2019.

Brussels, 2019.

cs_01

Industrial area
River not-covered
River

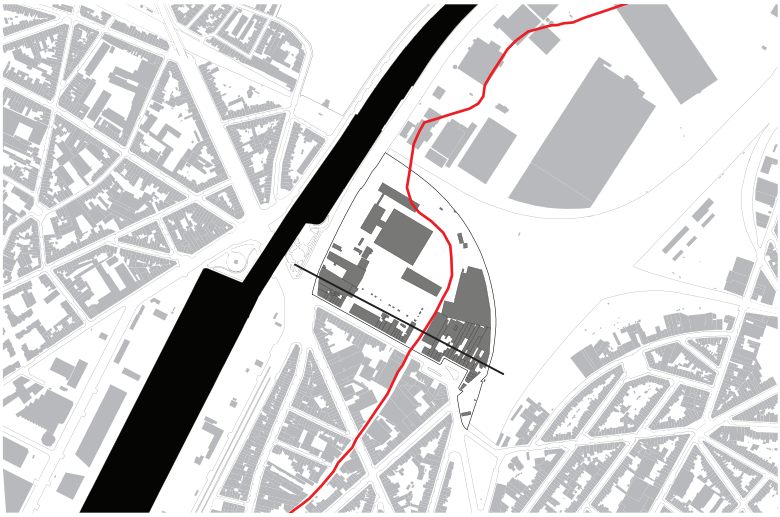


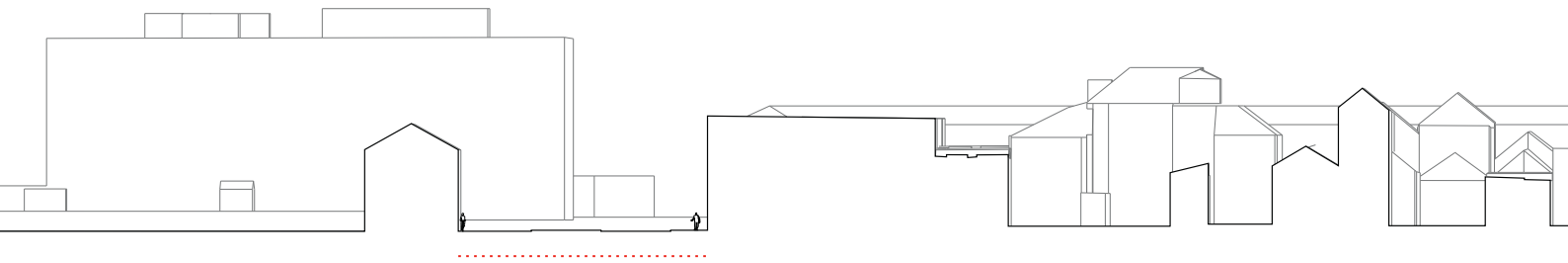


Brussels, 2019.

cs_02

Industrial area
River covered
Private space

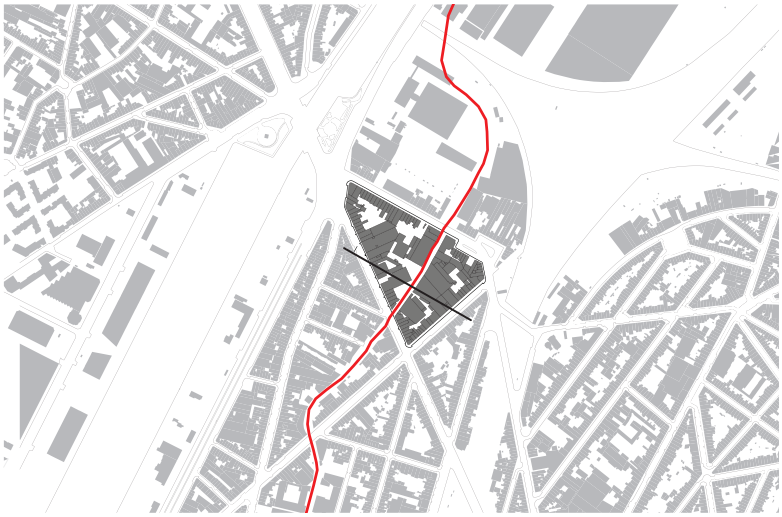


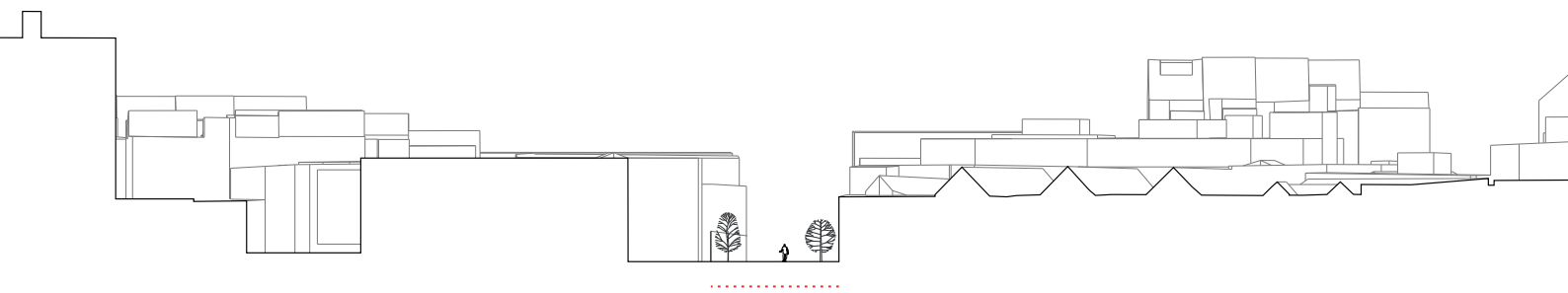


Brussels, 2019.

cs_03

Dwelling area
River covered
Park

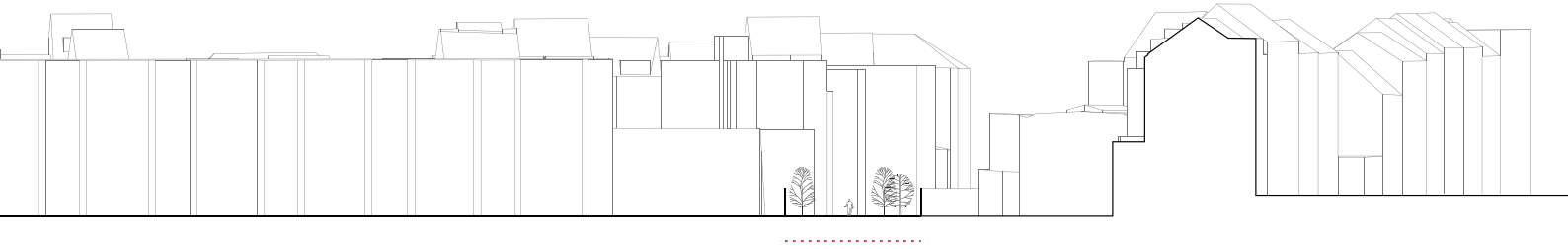




Brussels, 2019.

cs_04

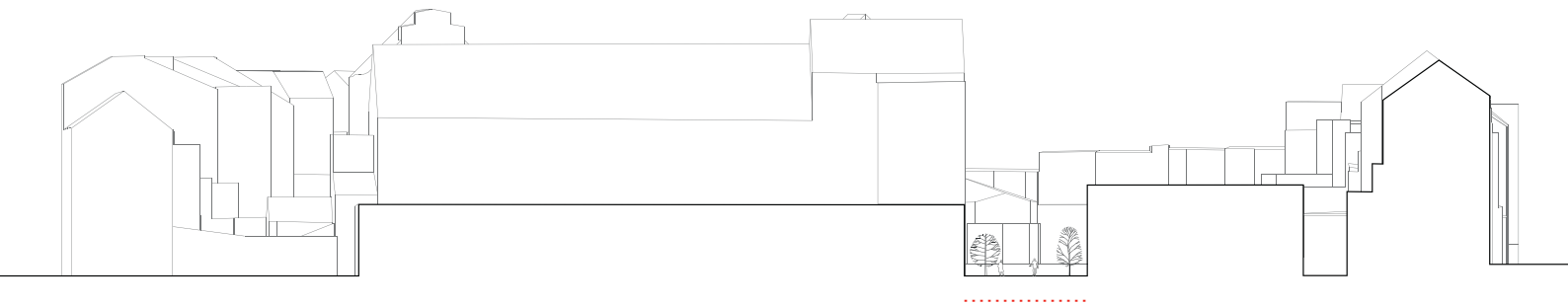
Dwelling area
River covered
Park



Brussels, 2019.

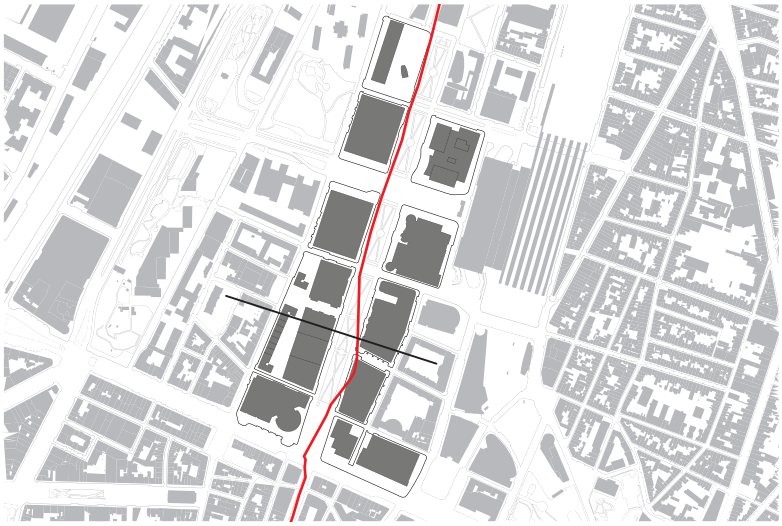
cs_05

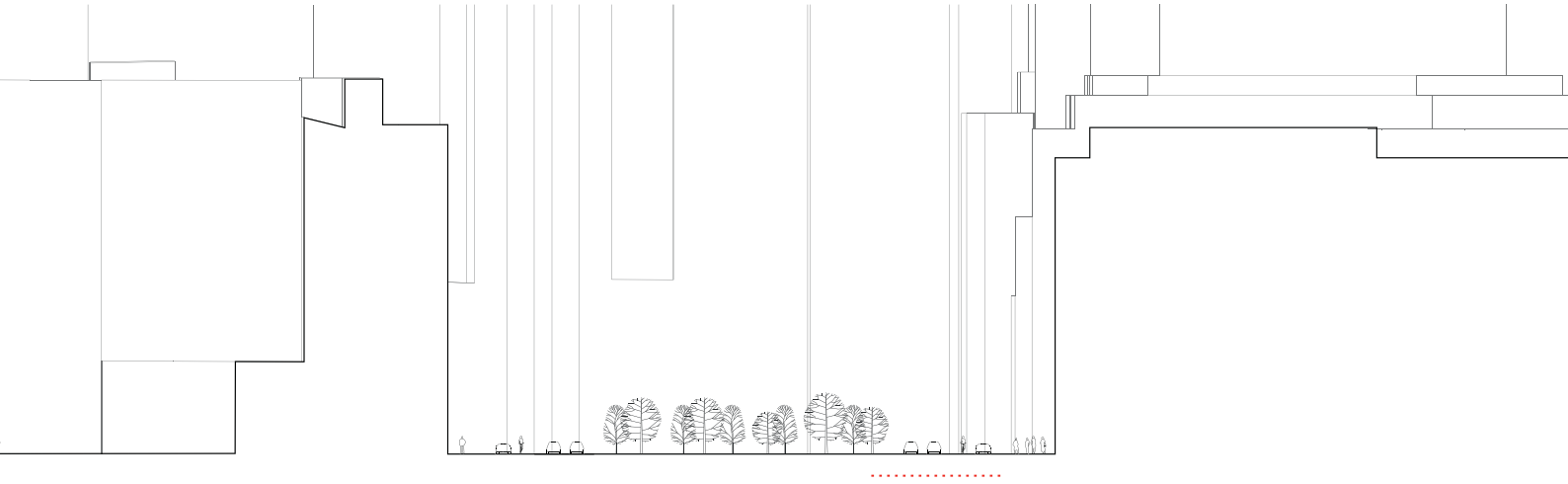
Dwelling area
River covered
Park



cs_06

Office area
River covered
Park

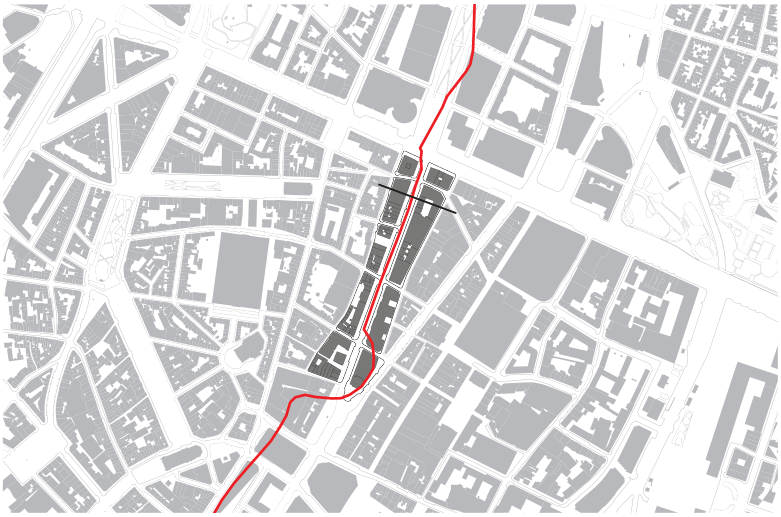


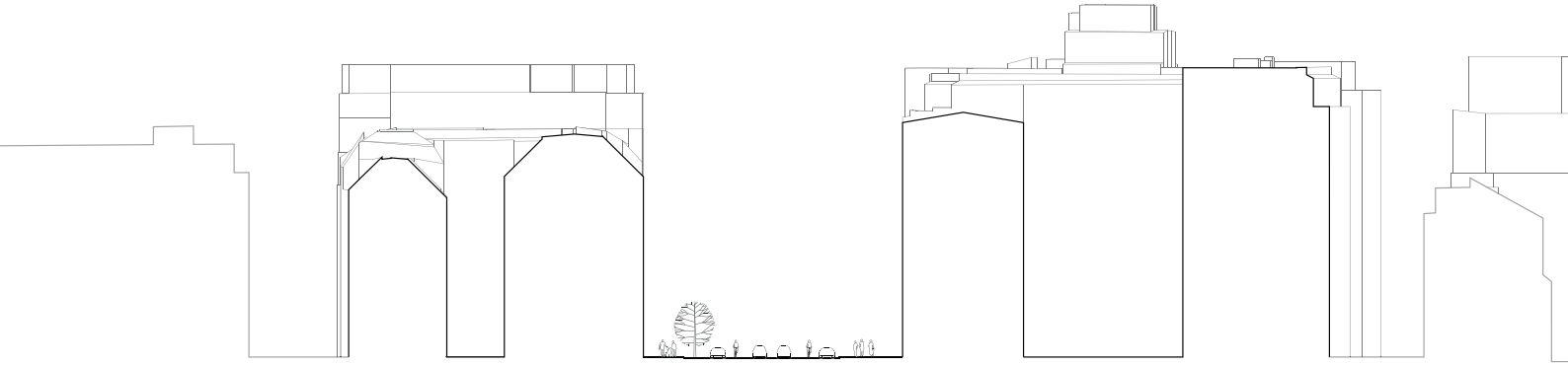


Brussels, 2019.

cs_07

Commercial area
River covered
Street

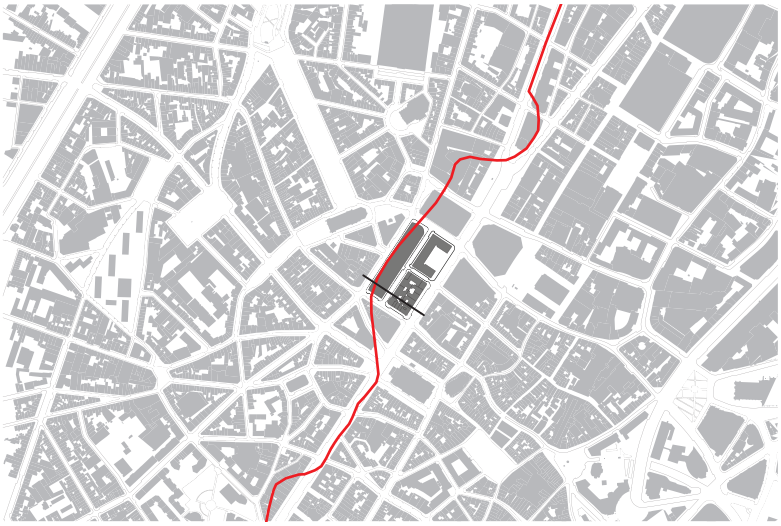


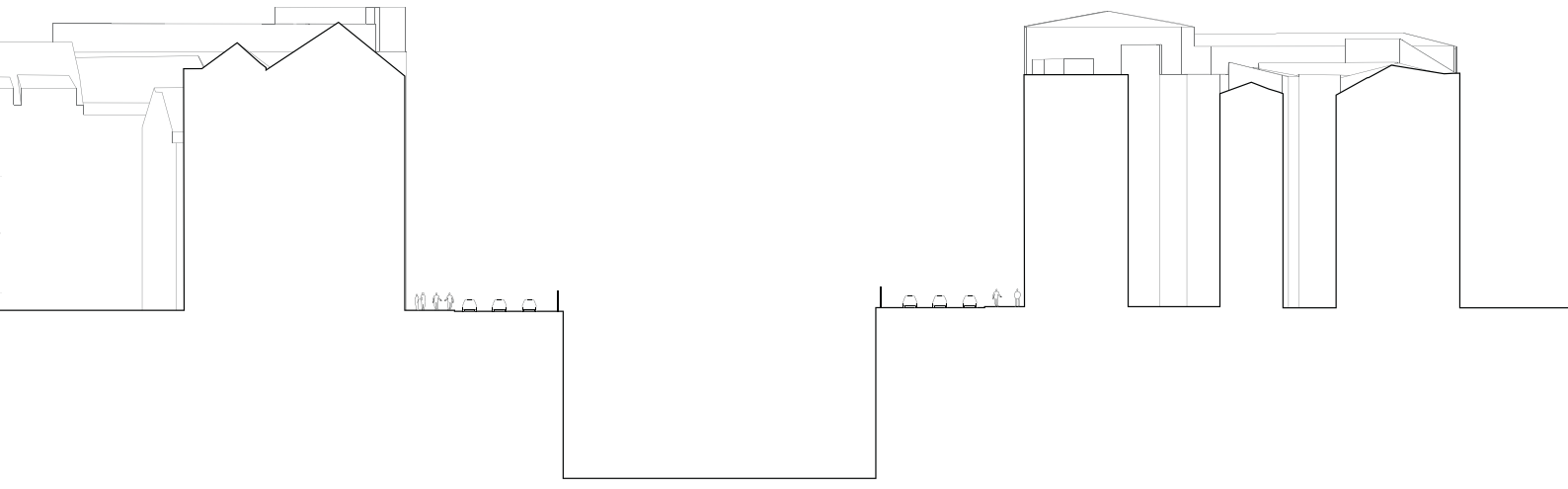


Brussels, 2019.

cs_08

Commercial area
River covered
Parking

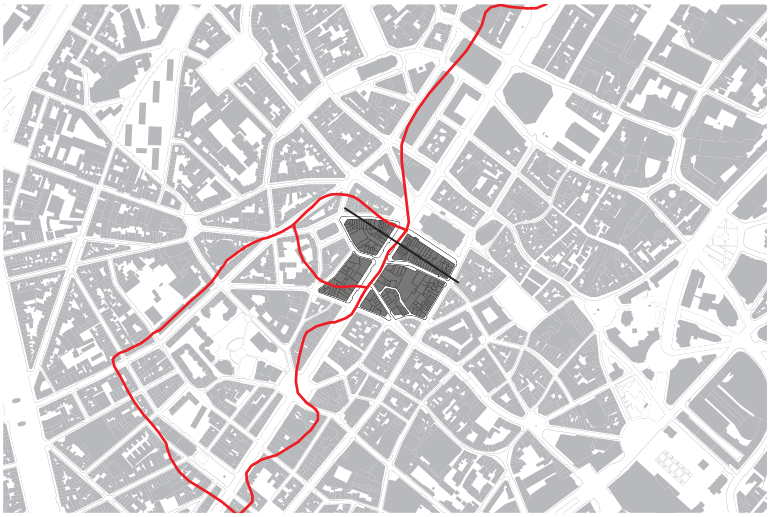


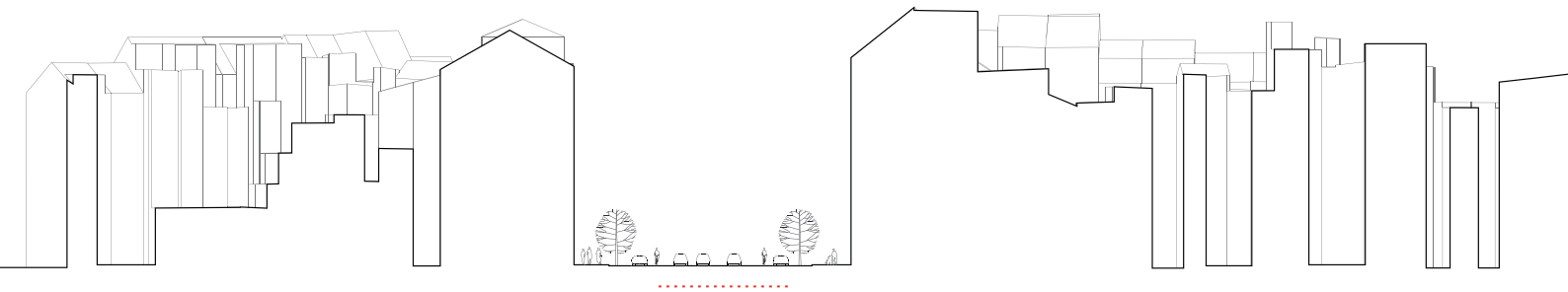


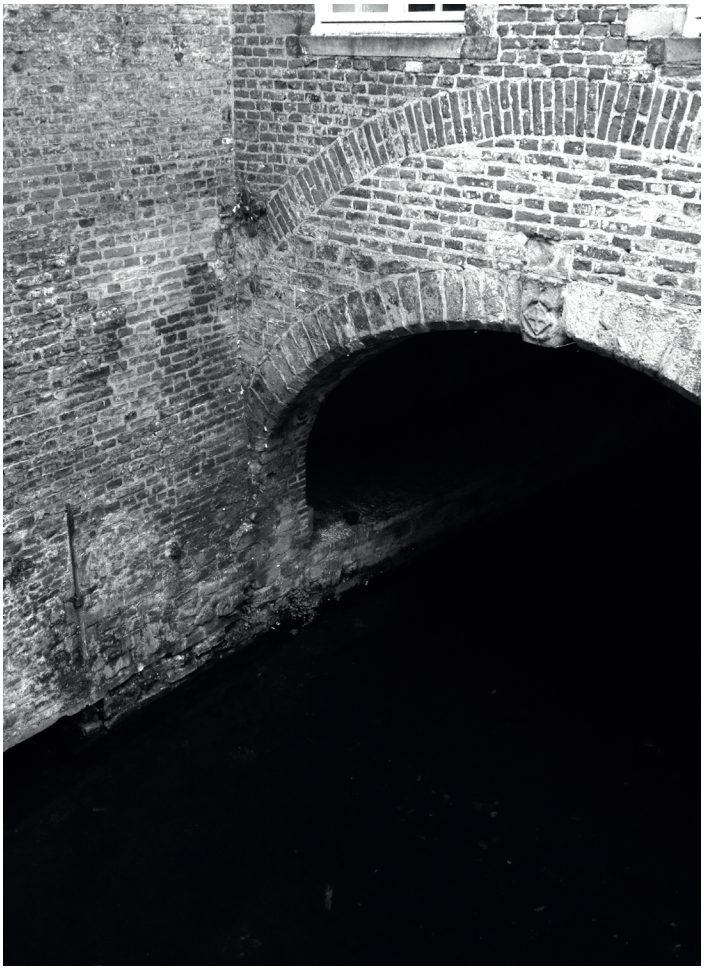
Brussels, 2019.

cs_09

Dwelling area
River covered
Street



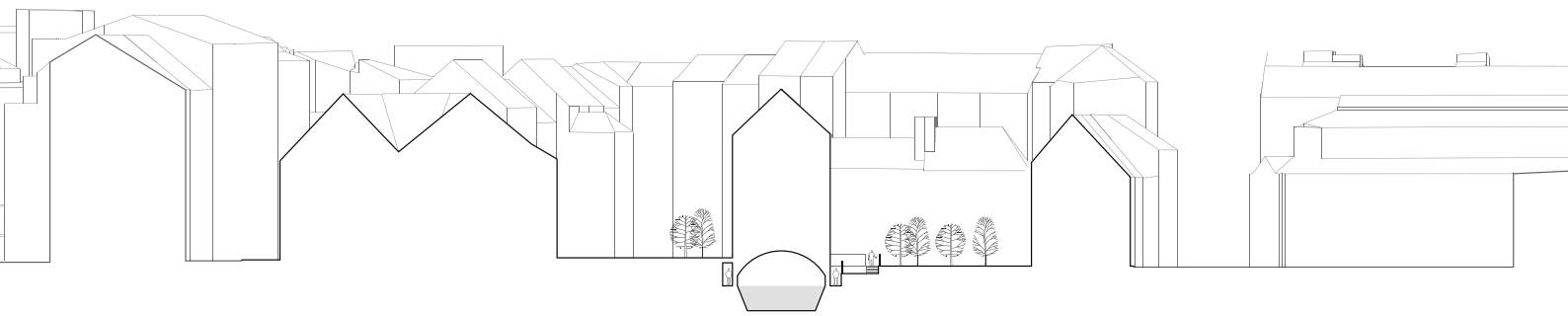




Brussels, 2019.

cs_10

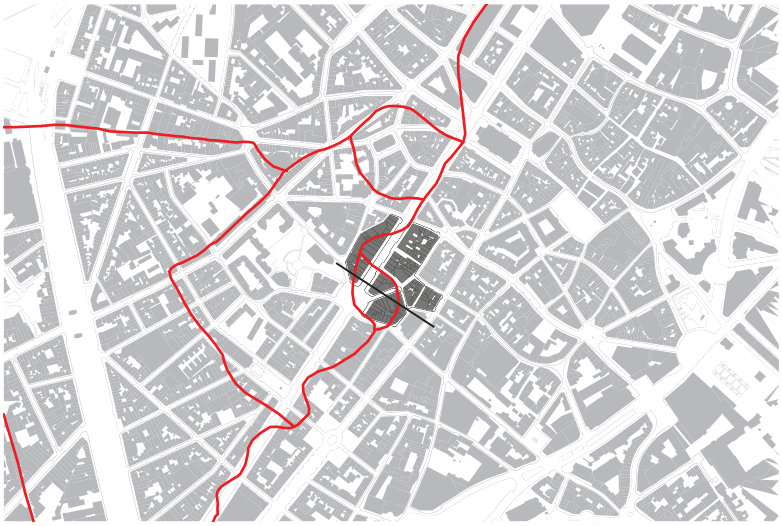
Dwelling area
River re-opened
Courtyard

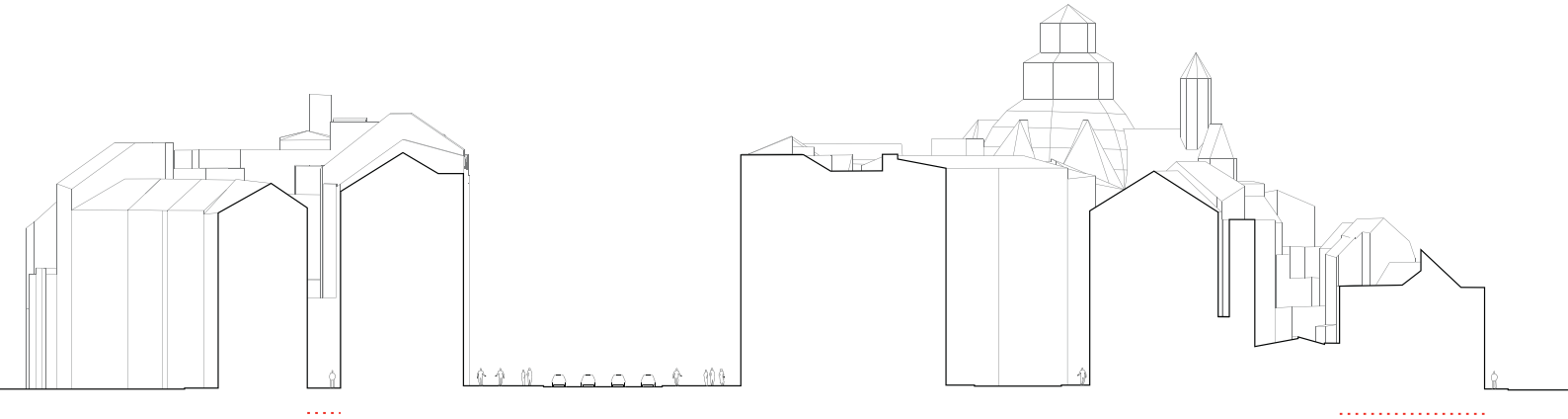


Brussels, 2019.

cs_11

Dwelling area
River covered
Street

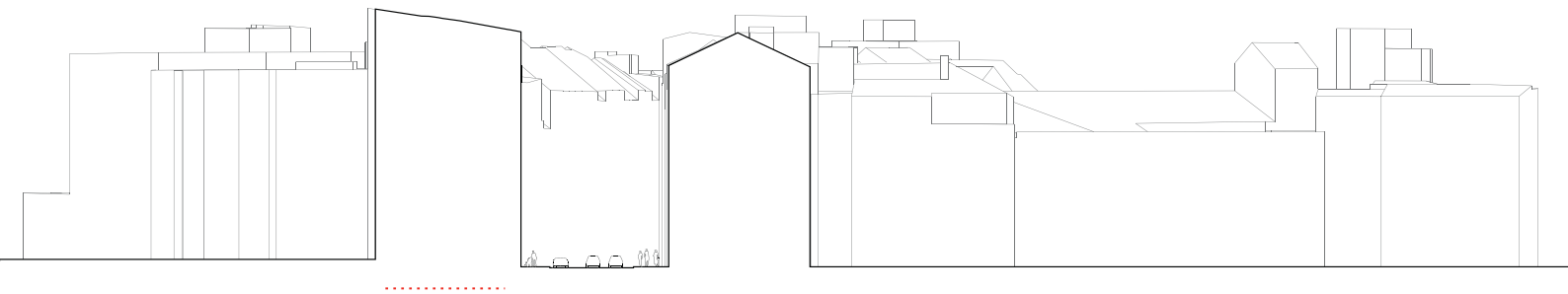




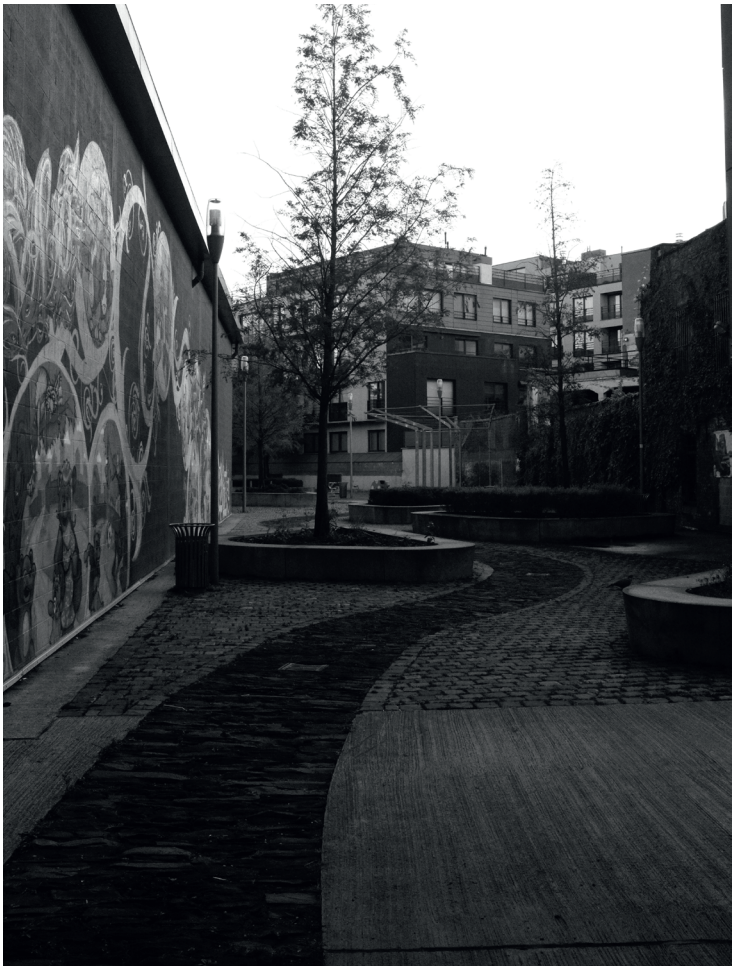
Brussels, 2019.

cs_12

Dwelling area
River covered
Private space

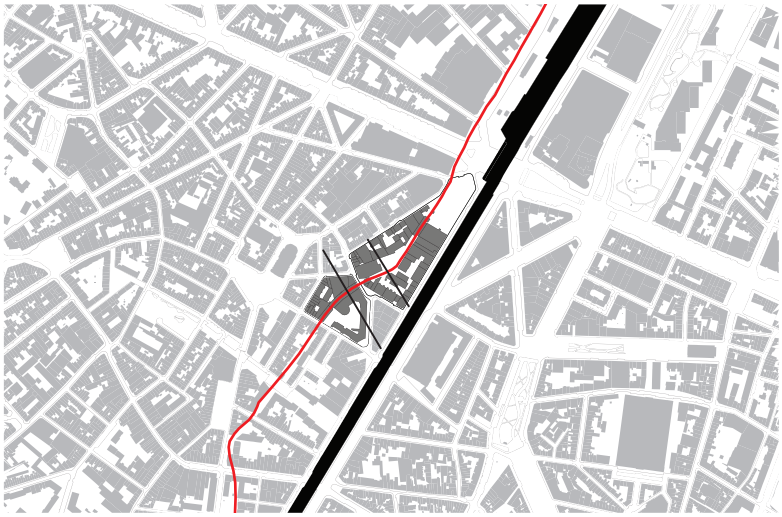


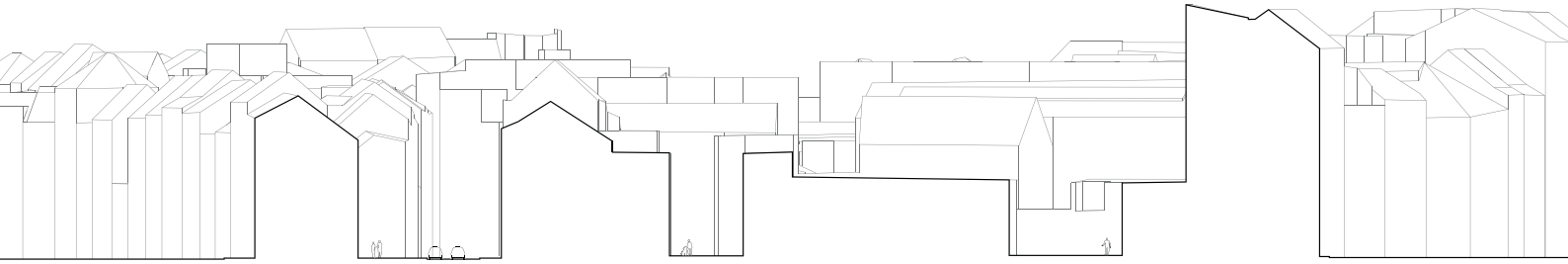
Brussels, 2019.



cs_13

Dwelling area
River covered
Park

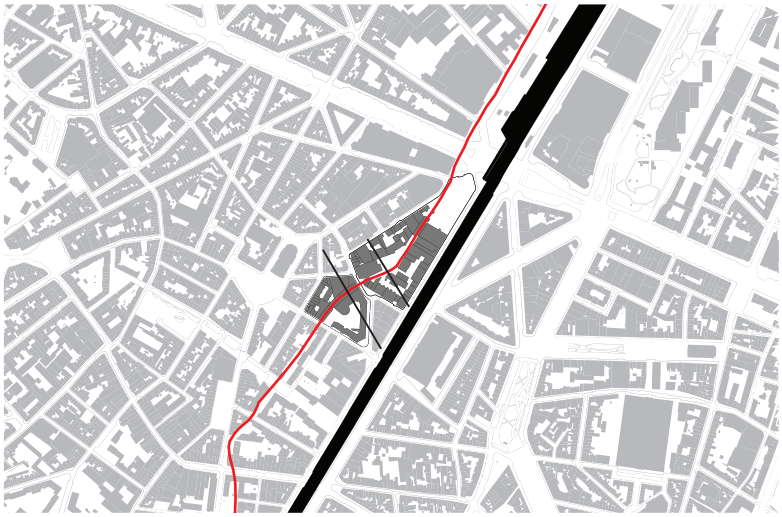


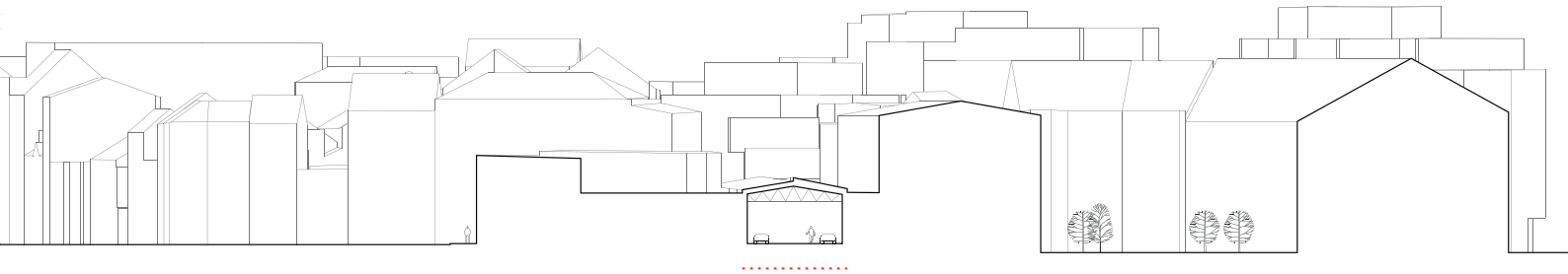


Brussels, 2019.

cs_14

Dwelling area
River covered
Parking

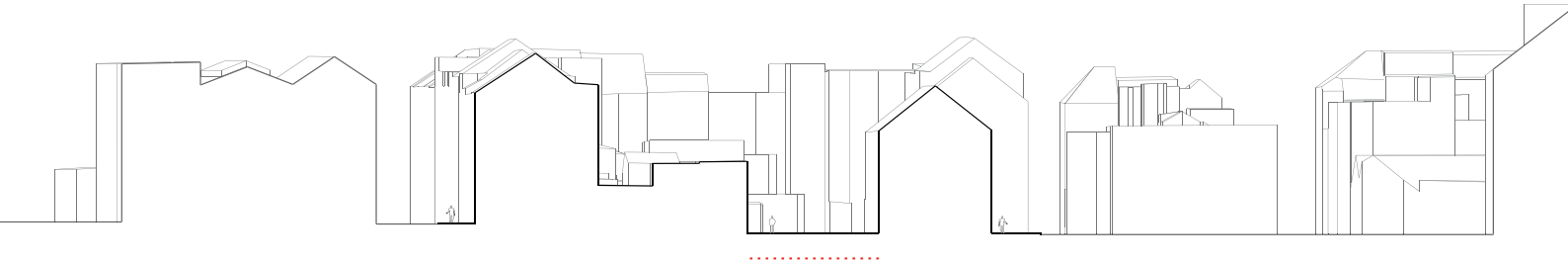




Brussels, 2019.

cs_15

Dwelling area
River covered
Garden



Brussels, 2019.

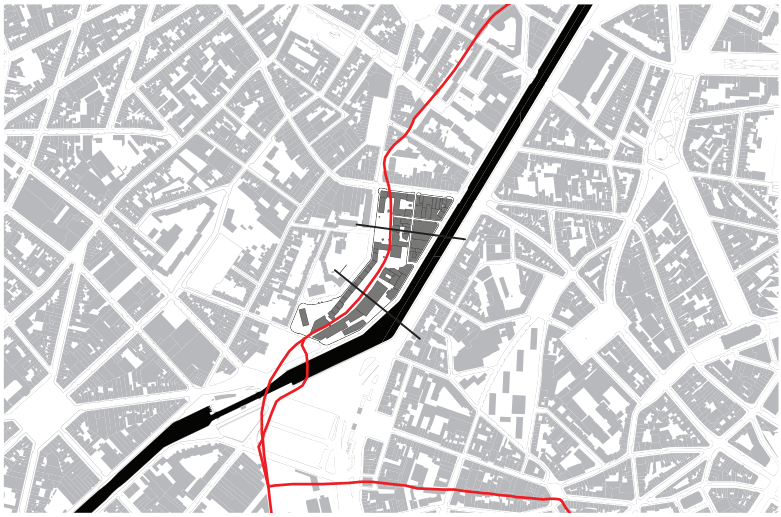
cs_16

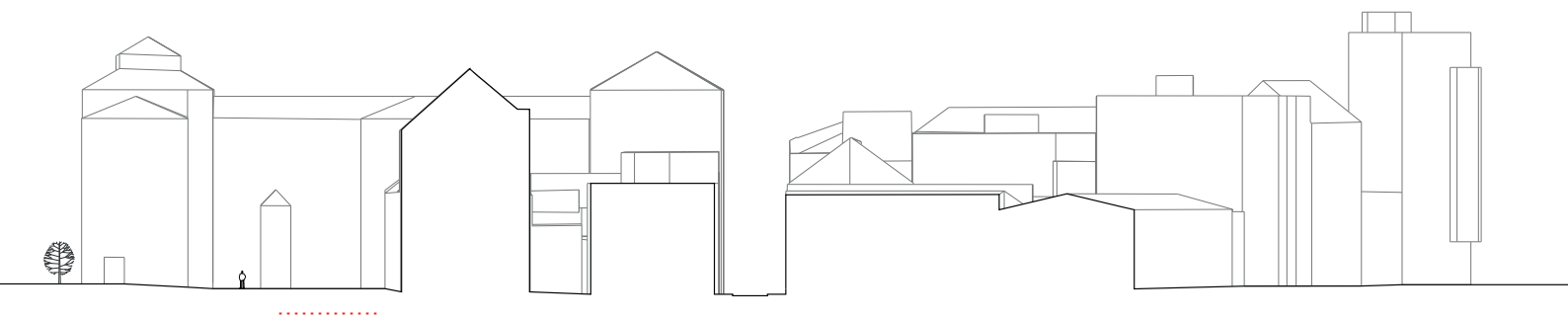
Dwelling area
River covered
Street

Brussels, 2019.

cs_17

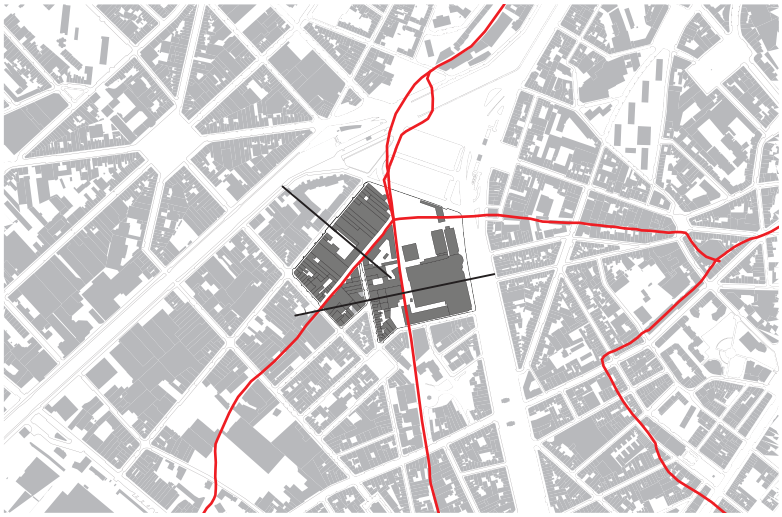
Dwelling area
River covered
Urban garden

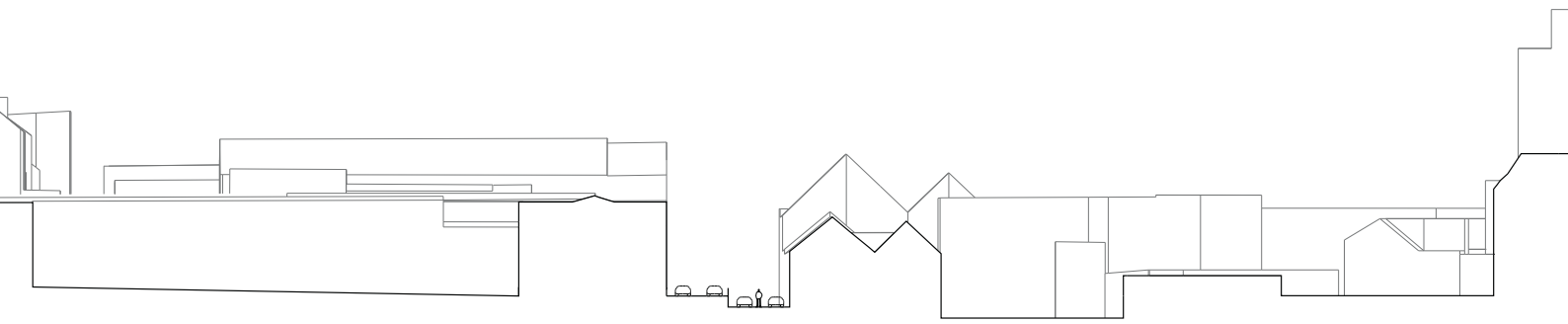




cs_18

Dwelling area
River covered
Parking

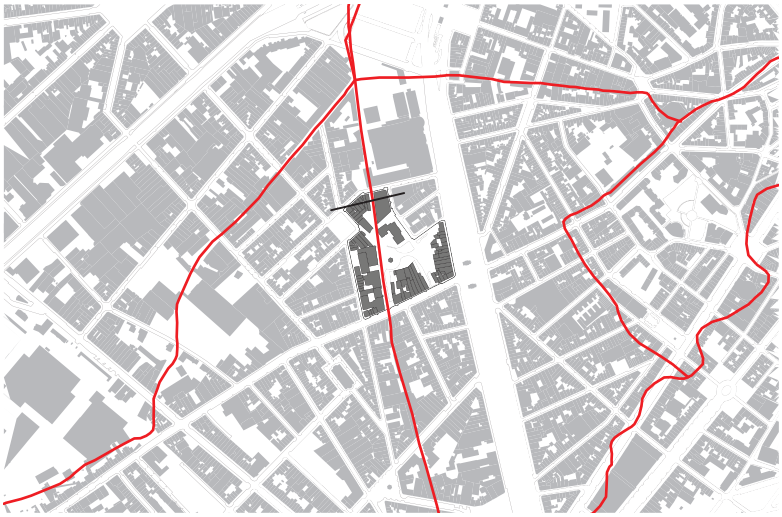


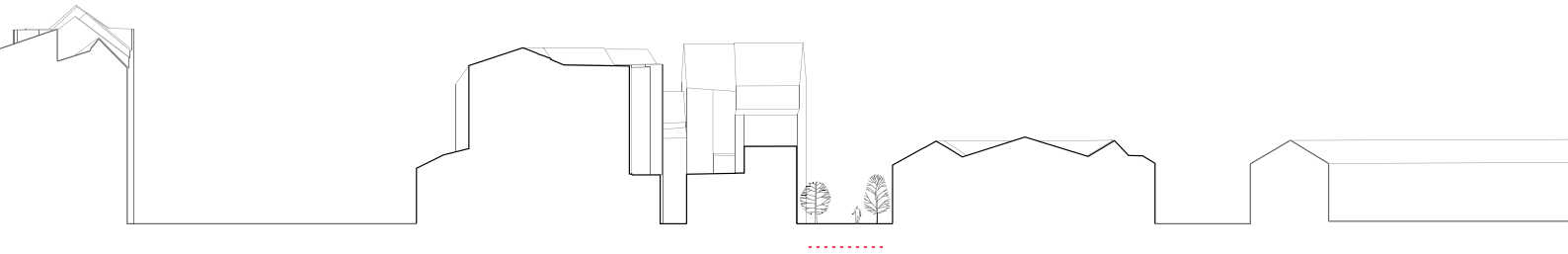


Brussels, 2019.

cs_19

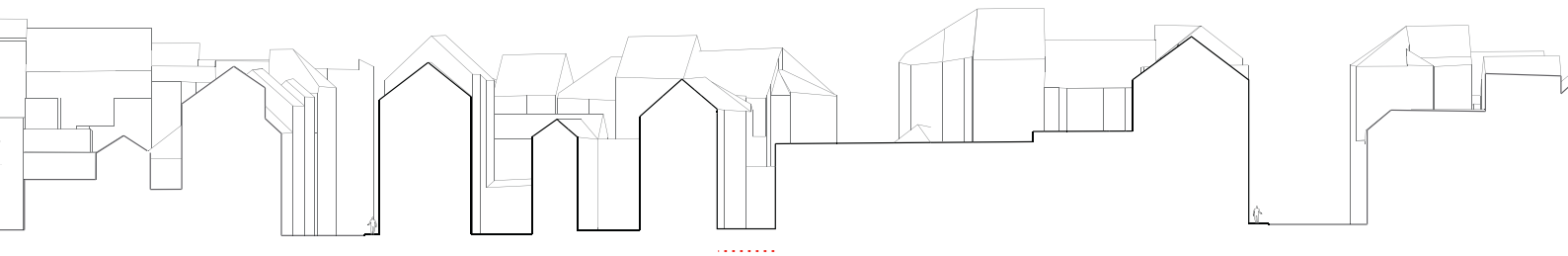
Dwelling area
River covered
Vegetable garden





cs_20

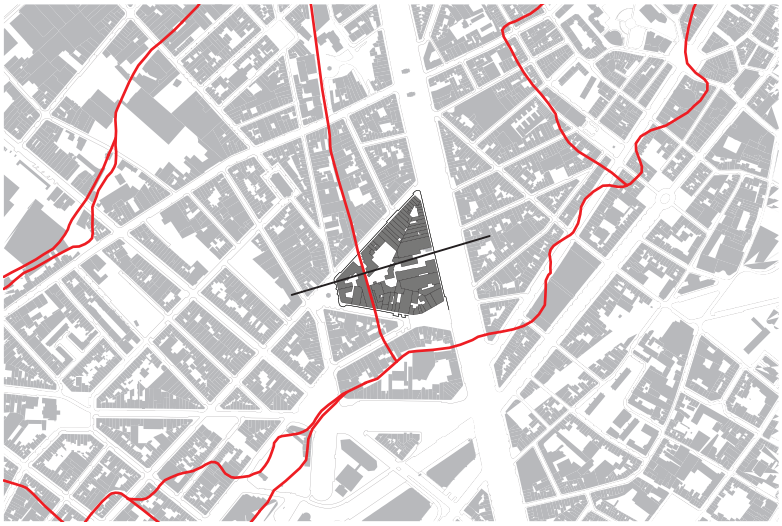
Dwelling area
River covered
Private space

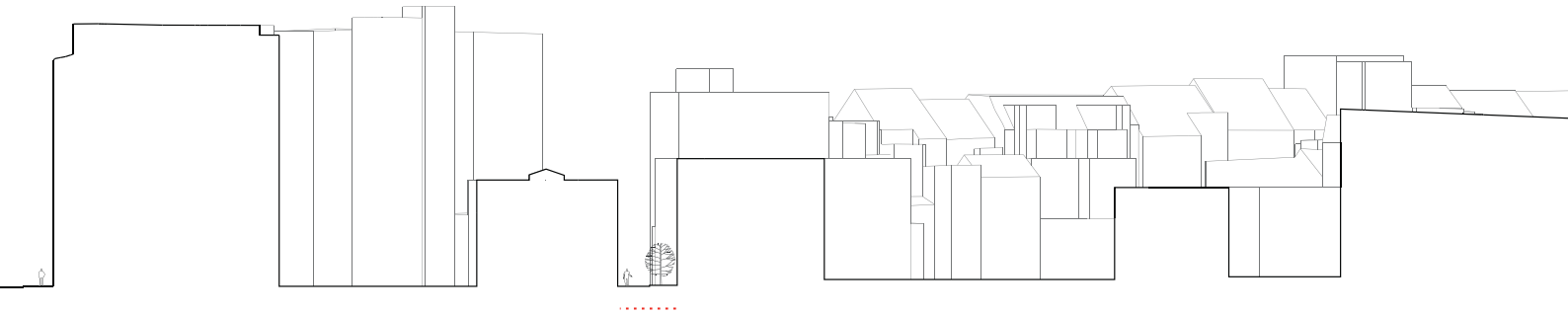


Brussels, 2019.

cs_21

Dwelling area
River covered
Private space

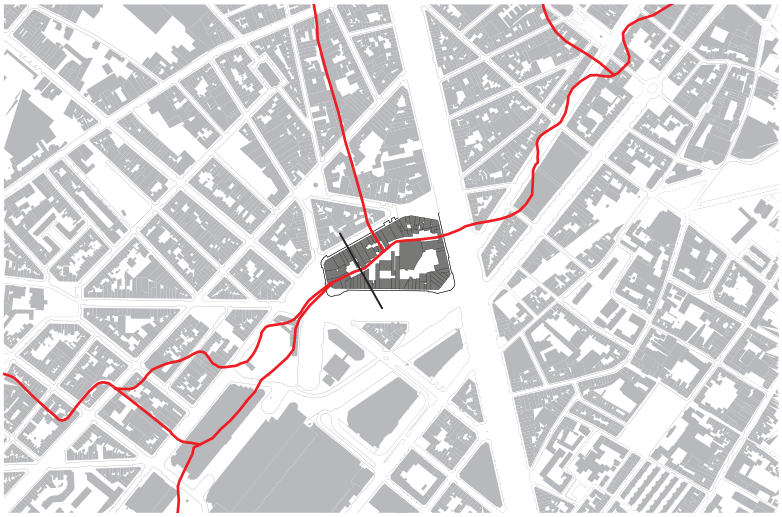




Brussels, 2019.

cs_22

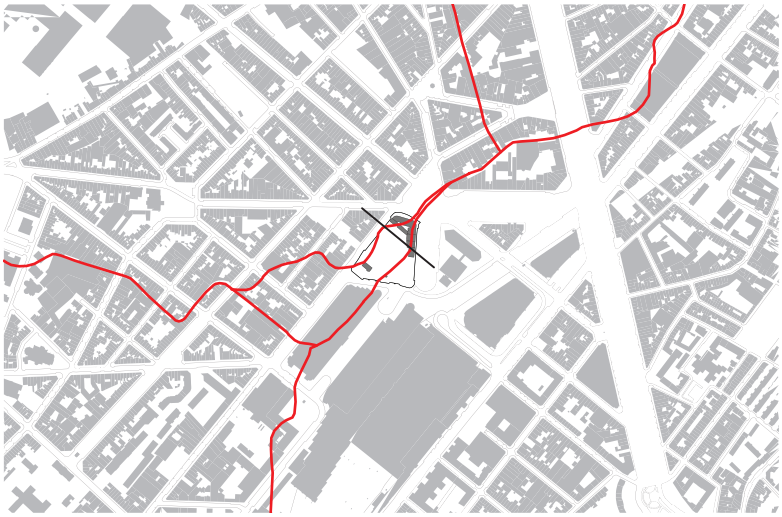
Dwelling area
River covered
Private space

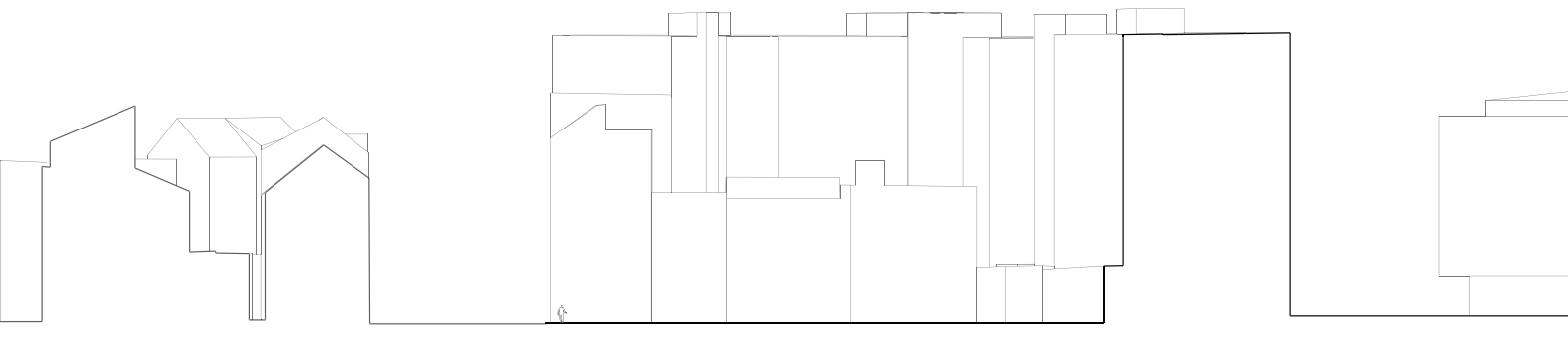


Brussels, 2019.

cs_23

Dwelling area
River covered
Private space

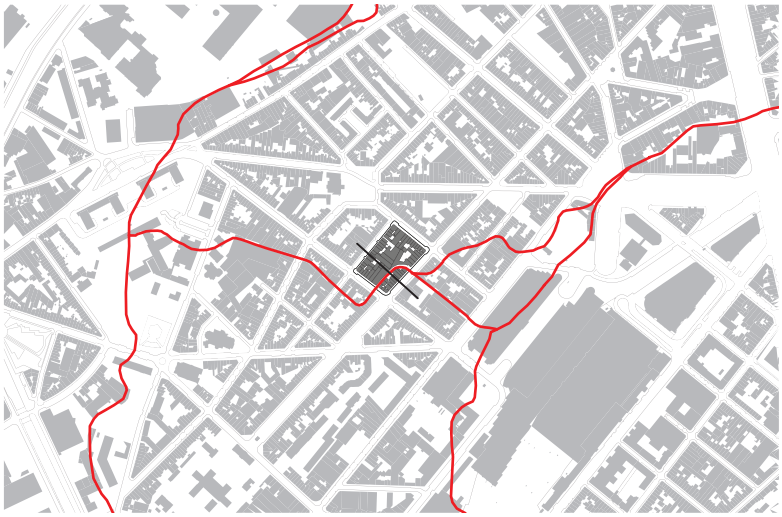




Brussels, 2019.

cs_24

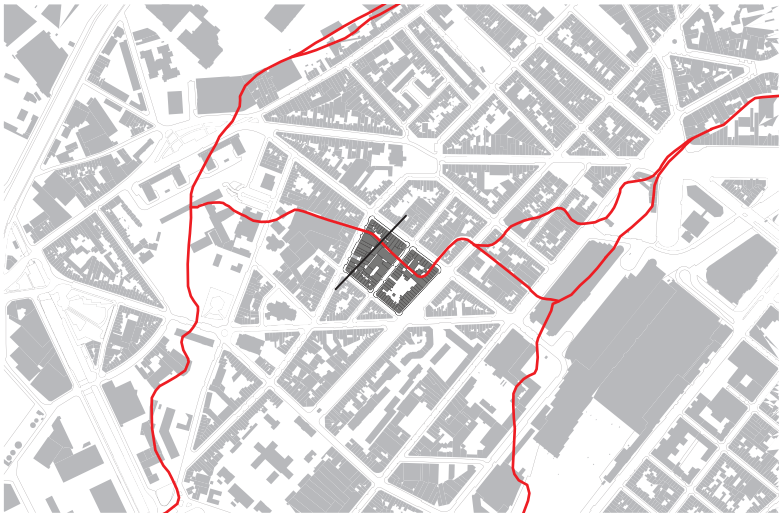
Dwelling area
River covered
Private space

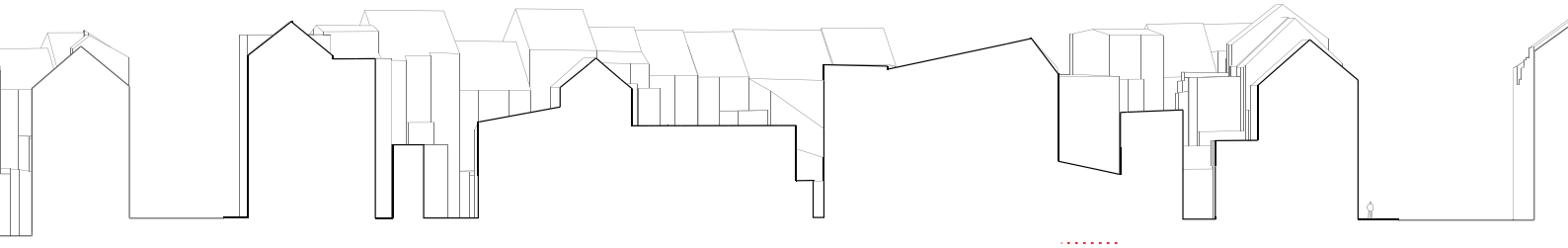


Brussels, 2019.

cs_25

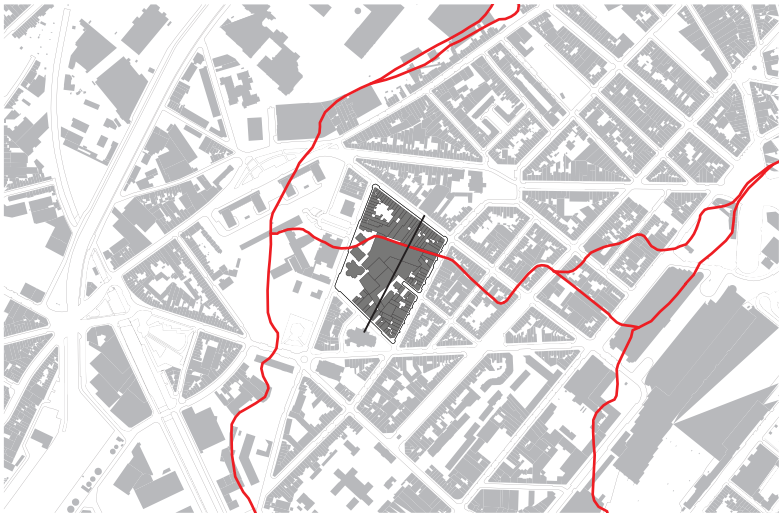
Dwelling area
River covered
Private space

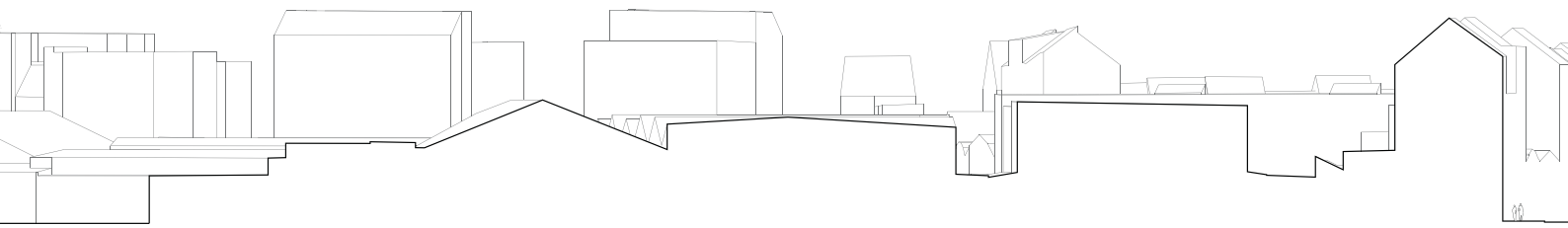




cs_26

Dwelling area
River covered
Private space

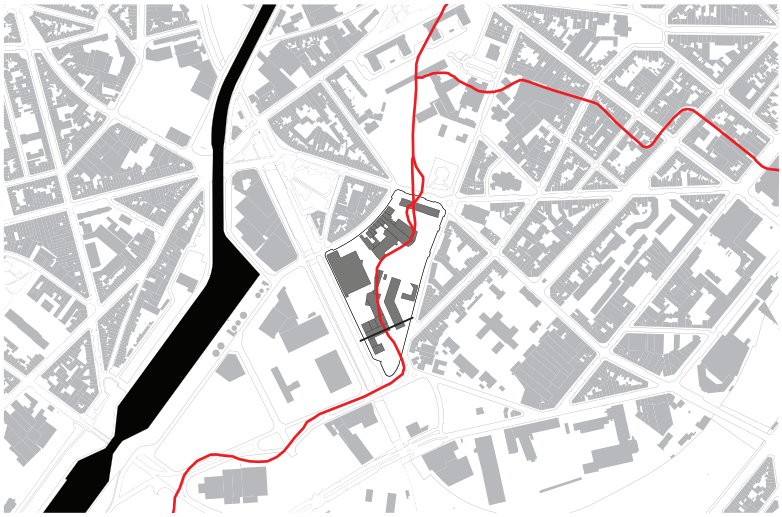


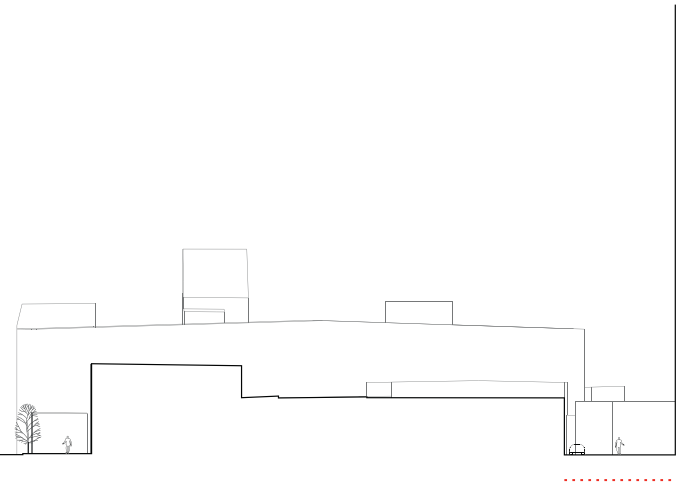


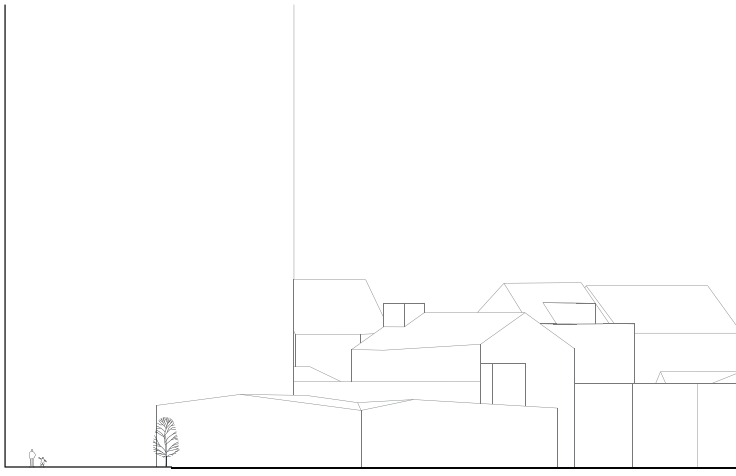
Brussels, 2019.

cs_27

Industrial area
River covered
Park/Parking



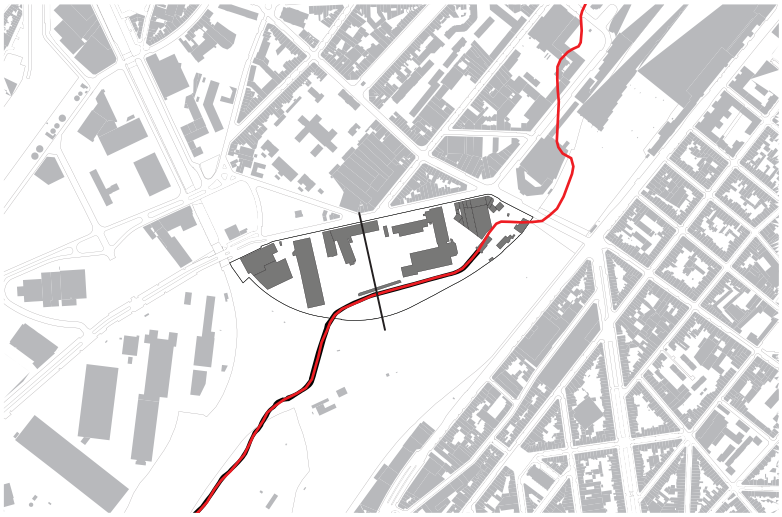


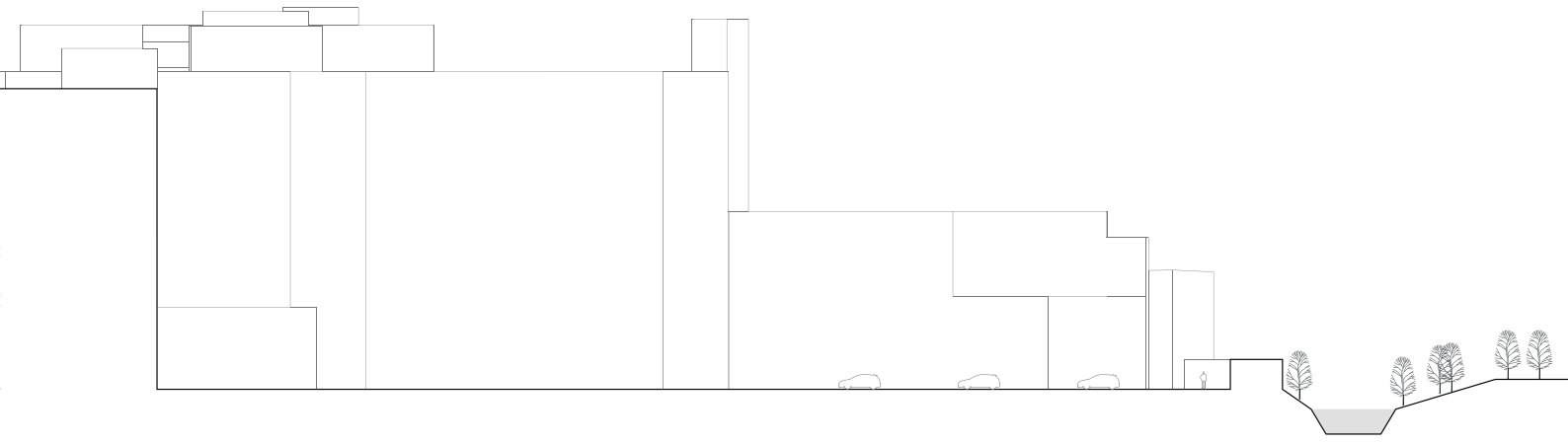


Brussels, 2019.

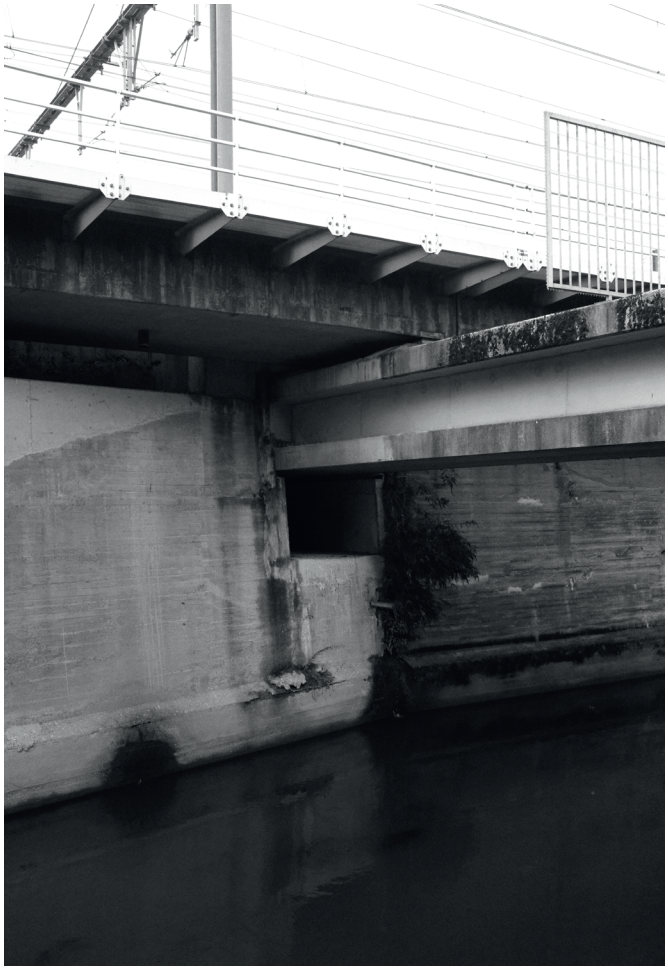
cs_28

Industrial area
River not-covered
River



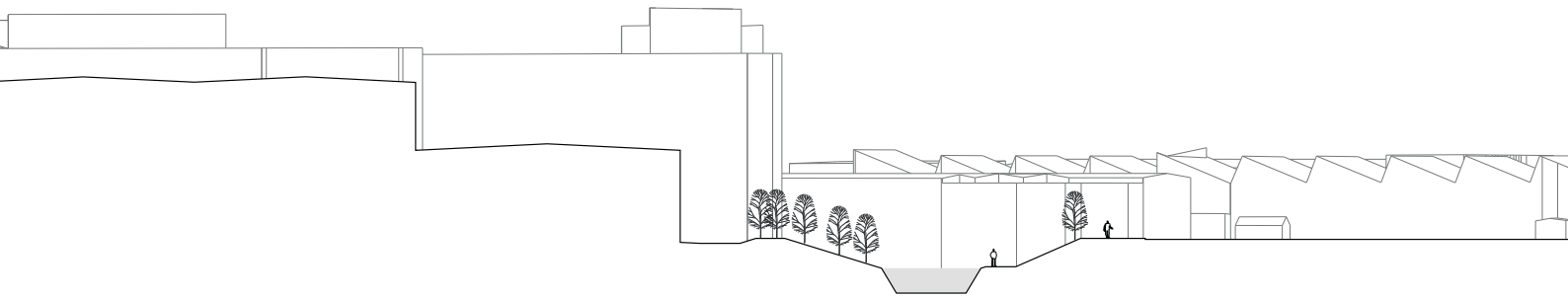


Brussels, 2019.

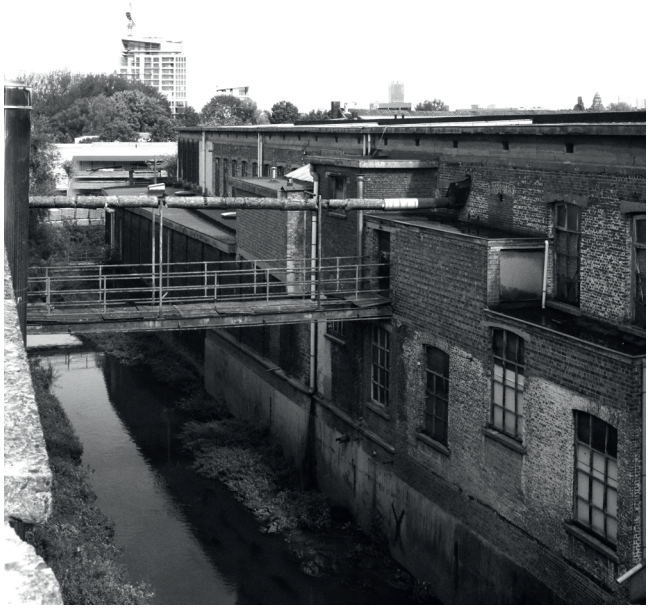


cs_29

Industrial area
River not-covered
River

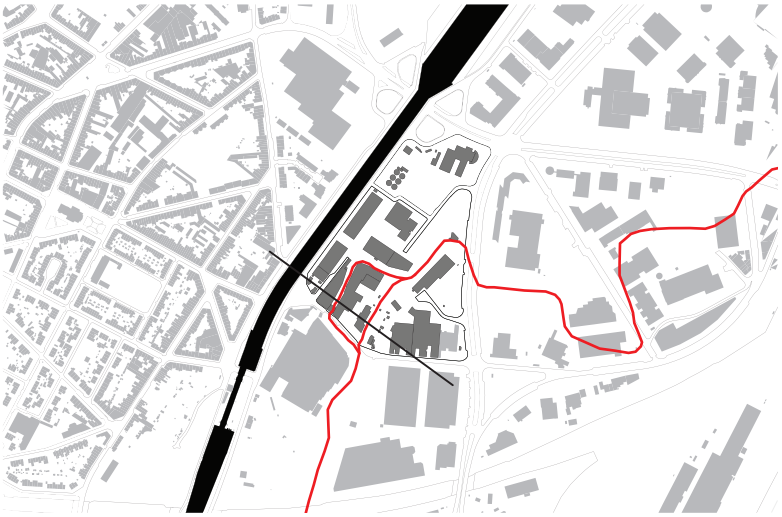


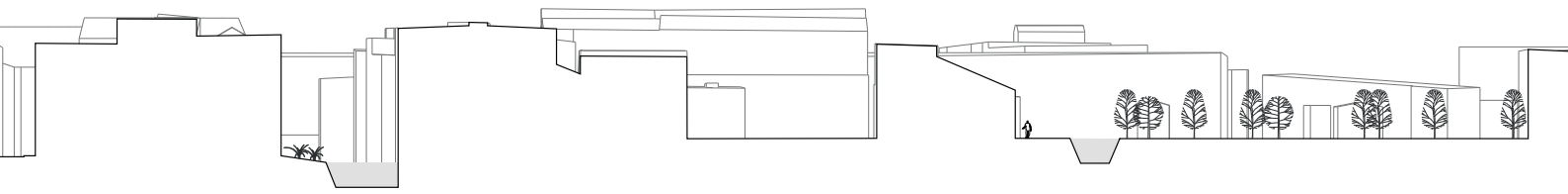
Brussels, 2019.



cs_30

Industrial area
River not-covered
River





1.3.2 The Endless Void

During the expedition, one of the repeating elements which was visible in architecture was the voids in architecture. It's a dead zone, as a kind of spirit of the river that has been gone. It's a negative that will be visible by repeating this empty space. In this visual representation of the river Senne, repetition shows that it's an endless empty space that seems to have no end.

1.3.3 The Matrix

A conclusion of all results found during the 'expedition of the lost river' are summarized in a matrix. The similarities between the case studies are summarized under themes. For example, the theme 'Production (transformational)' is one of the things that came back during the expedition. The middle of the block is often used as production, which mostly is inaccessible. The use of this production is often by means of urban farming or the creation of shared allotments.

The second matrix focuses more on the theme of traces and edge conditions. The traces are the physical memories of the river Senne. It's a print made visible by the built environment. An example of this is the formal trace, when an architectural form is generated by the river the Senne. The edge condition simply states the location of the traces. For example, the inner edge condition indicates that the trace is only visible from the interior of the urban block. The trace of the site for the design assignment is a formal trace, so the architectural form is generated by the river Senne. It also has a permeable edge condition, which means that the trace is visible from both the outside and the inside of the urban boundary.

The Endless Void, Brussles, 2019.

EXPEDITION OF THE LOST RIVER:
MAKING THE INVISIBLE VISIBLE

EXISTING FRAGMENTS: CELBRATED OR NEGLECTED?

TRANSFORMATIONAL ELEMENTS

ARCHITECTURAL ELEMENTS CAN BE MORPHOLOGICAL TRACES, HOWEVER, THEY ALSO HAVE THE CAPACITY TO TRANSFORM THE SPACES IN WHICH THE RIVER ONCE OCCUPIED. THIS ROOF FOR EXAMPLE FOLLOWS THE PATH OF THE SENNE.

FACADES TRACES (INNER CONDITIONS)

THE INNER CONDITIONS OF THE BLOCK OFTEN CONTAIN TRACES. FOR EXAMPLE THE FACADES: THE FRONT FACADES FACING THE STREET AND THE REAR FACADES FACING THE INTERIOR OF THE BLOCK ARE TREATED DIFFERENTLY - FRONT BAROQUE? AND REAR INDUSTRIOUS CORRESPONDING WITH THE BLOCK TYPOLOGY. THIS BRINGS FORTH AN ARGUMENT THAT THE REMINENCE OF THE RIVER CAN BE READ THROUGH THESE REAR FACADES.

LEISURE (TRANSFORMATIONAL)

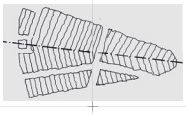
TRACES SUCH AS THE CHANNELS BETWEEN BLOCKS HAVE NOW BEEN RECOGNISED AS AREAS FOR URBAN DEVELOPMENT. DIRECT ROUTES THROUGH BLOCKS HAVE BEEN IDENTIFIED AND FASHIONED AS GREEN SPACES FOR PEOPLE TO SIT AND RELAX. THE PARC DE LA SENNE IS AN EXAMPLE OF THIS, WHEN THE MEMORY OF THE SENNE IS MADE VISIBLE BY TRANSFORMATION.

PRODUCTION (TRANSFORMATIONAL)

AS EXISITING (DETAILED BELOW IN INTERMEDIACIES OF CONDITIONS) AT THE CENTRE OF THE BLOCK, WHERE THE RIVER ONCE RAN, THERE IS MORE OFTEN THAN NOT AN INFIL OF PRODUCTION, HOWEVER MOST OF THIS IS INACCESSIBLE. AS SEEN ABOVE THERE ARE DEVELOPMENTS FOR PRODUCTION AVAILABLE TO THE MASSES, SUCH AS URBAN FARMING OR CREATION OF SHARED ALLOTMENTS.

MORPHOLOGICAL TRACES

TRACES CAN BE FOUND NOT ONLY IN THE FORMS OF BUILDINGS (THE CURVED BUILDING IN THE PHOTO ON THE RIGHT REFLECTS THE EDGE OF THE RIVER) BUT IN THE FORM OF THE BLOCK. THE DIAGRAM (BELOW) SHOWS THE LINE OF THE RIVER AS A PIVOT POINT FOR THE DIRECTION OF BUILDING WITH IN THAT BLOCK. THIS IS A VISIBLE TRACE IN THE WAY YOU READ AND ORIENTATE YOURSELF IN THE CITY.



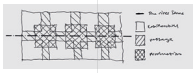
INFRASTRUCTURAL TRACES: SCALE

THE LARGEST OF CASE STUDIES IS THE CITY'S INFRASTRUCTURE - ROADS AND RAILWAYS - ALTHOUGH EASILY READ ON A MAP, WHILST WALKING THROUGH THE CITY, TRACES ON AN ARCHITECTURAL SCALE SEEM NON-EXISTENT.

ROADS: THE NORTH/SOUTH BOULEVARDS CUT THROUGH THE CITY - THE RIVER HAD A PROFOUND INFLUENCE ON THIS HAUSSMANN-ESQUE PLAN FOR BRUSSELS. THE BOULEVARDS CONTAIN MEMORY OF THE RIVER SENNE. AN INTERESTING TRANSGRESSION IS THAT BETWEEN 1931-55 WHEN THE RIVER WAS REDIRECTED IT WAS THE ROADS THAT DICTATED ITS REROUTING. **RAILWAY:** IN SOME LOCATIONS THE RAILWAY LINES FOLLOW THE RIVER - THIS IS SEEN IN COVERED SECTIONS OF THE RIVER AND REMAINING FRAGEMENTS.

INTERMEDIACIES OF CONDITIONS: PASSAGES AND GATEWAYS

BETWEEN THE OUTER AND INNER CONDITIONS OF A CASE STUDY CAN BE FOUND INTERMEDIACIES SUCH AS PASSAGES AND GATEWAYS. THESE PENETRATED THE BLOCK CONNECTING THE INNER AND OUTER. AT THESE LOCATIONS (AS INDICATED IN THE DIAGRAM BELOW) ARE THE ENTRANCES TO THE INDUSTRY AT THE CENTRE OF THE BLOCK. THE INFIL OF PRODUCTION/INDUSTRY SITS ABOVE THE COVERED SENNE.



INNER AND OUTER CONDITIONS: COURTYARD + STREET

THE COURTYARDS OF CS10 - COUVENT DES CHARTREUX HAVE BROUGHT FORTH A PARADOX AS ANOMOLY WITH IN THE CITY OF BRUSSELS. TYPOLOGICALLY THE CITY HAS A TENDANCY TO UTILISE THE INTERIOR OF THE BLOCK FOR PRODUCTION, STORAGE AMONG OTHER COMMERICAL OR INDUSTRIUS ACTIVITIES WITH RESIDENTIAL FACADES FACING THE STREET. BOTH DEAL WITH THE CONCEPT OF LIVE AND WORK AND THE CORRESPONDING CIRCULATIONS IN DIFFERING WAYS.

ELEMENTS AS TRACES

ALONG THE MEMORY OF THE SENNE CHIMNEYS, BRIDGES, AMONG OTHER ARCHITECTURAL ELEMENTS CAN BE FOUND. THESE ELEMENTS CAN TRACE BACK TO THE THE PERIOD OF INDUSTRIALISATION ALONG THE SENNE. ALTHOUGH THE CHIMNEYS ARE NOW INACTIVE, THEY REMAIN THROUGHOUT BRUSSELS, EVEN AT THE CENTRE OF THE CITY.

ACCESSIBILE / INACCESSIBLE

ACCESSIBILITY TO THE SENNE IS LIMITED AS THE LOCATIONS OF THE REMAINING FRAGMENTS ARE OUTSIDE THE CITY CENTRE IN MORE INDUSTRIUS AREAS. FOR EXAMPLE THE STRETCH THAT RUNS FROM PAEPSMELAAN TO THE SOUTH STATION IS EXPOSED HOWEVER LARGELY INACCESSIBLE. THERE ARE HOWEVER CERTAIN INITIATIVES THAT ARE DEVELOPING ALONG THE RIVER IN THIS LOCATION (AS SEEN ABOVE) AS THE CITY EXPANDS AND RESIDENTIAL BLOCKS ARE ERECTED THERE BECOMES A GREATER NEED FOR GREEN SPACE AND TO MAKE THE RIVER ACCESSIBLE.

FACADES TRACES (OUTER CONDITIONS)

TRACES CAN BE FOUND IN THE OUTER EDGE CONDITION OF THE BLOCKS - AS SEEN IN THESE IMAGES - THE FACADES OF THESE GARAGES ARE COMPRESSED TO ONE STOREY IN COMPARISON TO THE NEIGHBOURING BUILDINGS. THESE CAN BE FOUND IN THE LOCATION OF WHERE THE RIVER ONCE PENETRATED THE BLOCK.

TYPOLOGICAL + AESTHETIC TRACES

SUCH AS THE ELEMENTS CONTAIN THE REMINENCE OF THE SENNE SO TOO DO THE TYPOLOGICAL OR AESTHETICAL TRACES. BY THIS, THE SENNE, TO AN EXTENT, BECOMES VISIBLE. AS A VAST AMOUNT OF INDUSTRY - 19TH CENTURY BRICK FACTORY ASETHETIC - WAS LOCATED ALONG THE SENNE, THE RIVER CAN BE READ THROUGH ITS BUILDING TYPES OR STYLES?

TRACES & EDGE CONDITIONS

TRACES ARE THE PHYSICAL REMINENCE OF THE RIVER SENNE. IT'S IMPRINT MADE VISIBLE THROUGH THE BUILT ENVIROUMENT.
EDGE CONDITIONS MOST SIMPLY STATE THE LOCATION OF TRACES. WHERE THE IMAPCT OF MEMORY IS MADE VISIBLE. THE TERM URBAN BOUNDARY IS TO BE UNDERSTOOD AGAINST THE SCALE OF THE CASE STUDY OR THEME.

INNER EDGE CONDITION

THE INNER EDGE CONDITION IS THE LOCATION WHERE TRACES ARE VISIBLE FROM THE INTERIOR OF THE URBAN BLOCK OR BOUNDARY. THE INNER EDGE CONDITION DOES NOT NECESSARILY IMPLY THAT THE TRACE LOCATION IS ON THE PATH OF THE SENNE.

OUTER EDGE CONDITION

THE OUTER EDGE CONDITION IS THE LOCATION WHERE TRACES ARE ONLY VISIBLE FROM THE EXTERIOR OF THE URBAN BLOCK OR BOUNDARY. AS URBAN STRUCTURE IS NOT ALWAYS VISIBLE FROM STREET LEVEL THIS CATAGORY ALSO CONTAINS TRACES VISIBLE ON A MAP.

REVERSE CONDITION

A REVERSED CONDITION IS APPLICABLE WHEN A TRANSFORMATION HAS OCCURED. THE TRANSFORMATION FROM AN OUTER EDGE CONDTION TO AND INNER EDGE CONDITION OR VISE VERSA.

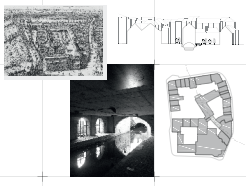
PERMEABLE EDGE CONDITION

A PERMEABLE EDGE CONDITION IS WHEN THE OUTER CONDITION IS PENETRABLE TO THE INNER CONDITION. THEREFORE TRACES MAY BE VISIBLE FROM BOTH THE INTERIOR OR EXTERIOR OF AN URBAN BOUNDARY.

FORMAL

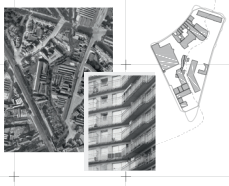
A FORMAL TRACE IS WHEN AN ARCHITECTURAL FORM IS GENERATED BY THE SENNE.

CS10 - COUVENT DES CHARTREUX



CS24

CS27 - RUE DES GOUJONS



MORPHOLOGICAL

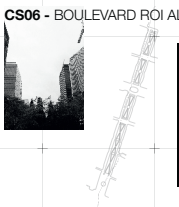
A MORPHOLOGICAL TRACE IS WHEN THE URBAN GRAIN IS DICTATED BY THE SENNE.

CS13 - RUE DE LA SENNE

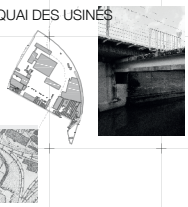
MORPHOLOGICAL: INFRASTRUCTURE

A MORPHOLOGICAL TRACE IS WHEN THE URBAN GRAIN IS DICTATED BY THE SENNE. FOR THIS CATAGORY THE URBAN GRAIN IS MORE SPECIFICALLY FOCUSED ON INFRASTRUCTURE.

CS06 - BOULEVARD ROI ALBERT III



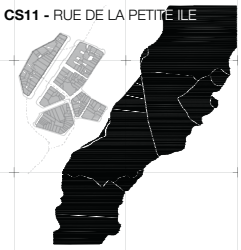
CS02 - QUAI DES USINES



MORPHOLOGICAL: ARCHIPELAGO

A MORPHOLOGICAL TRACE IS WHEN THE URBAN GRAIN IS DICTATED BY THE SENNE. FOR THIS CATAGORY THE URBAN GRAIN IS MORE SPECIFICALLY FOCUSED ON THE CITY AS AN ARCHIPELAGO. THE CITY COULD BE INTERPRETED AS A SERIES OF ISLANDS.

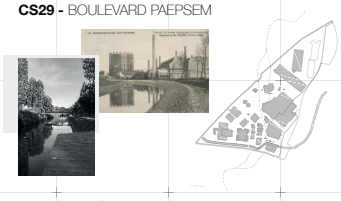
CS11 - RUE DE LA PETITE ILE



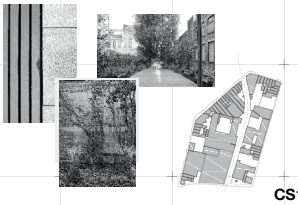
TRANSFORMATIONAL: LEISURE

A TRANSFORMATIONAL TRACE IS WHERE THE PAST LOCATION OF THE SENNE HAS BEEN TRANSFORMED. FOR THIS CATAGORY THE TRANSFORMATION IS SPECIFICALLY FOCUSED ON LEISURE.

CS29 - BOULEVARD PAEPSEM



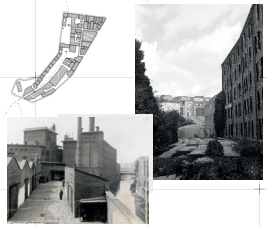
CS05 - PARC DE LA SENNE



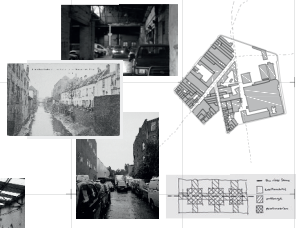
TRANSFORMATIONAL: PRODUCTION

A TRANSFORMATIONAL TRACE IS WHERE THE PAST LOCATION OF THE SENNE HAS BEEN TRANSFORMED. FOR THIS CATAGORY THE TRANSFORMATION IS SPECIFICALLY FOCUSED ON PRODUCTION.

CS17 - RUE DE LA PETITE SENNE



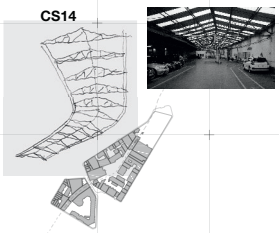
CS18 - QUAI DE L'INDUSTRIE



TRANSFORMATIONAL: ELEMENTS

A TRANSFORMATIONAL TRACE IS WHERE THE PAST LOCATION OF THE SENNE HAS BEEN TRANSFORMED. FOR THIS CATAGORY THE TRANSFORMATION IS SPECIFICALLY FOCUSED ON ARCHITECTURAL ELEMENTS.

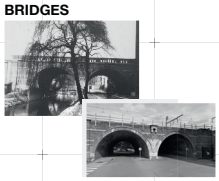
CS14



ELEMENTS

ELEMENTS AS TRACES ARE VISIBLE ALONG THE SENNES PATH - FOR EXAMPLE BRIDGES OR CHIMNEYS.

BRIDGES

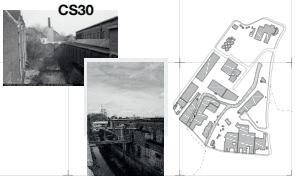


CHIMNEYS

TYPOLOGICAL

AS INDUSTRY ONCE LINED THE BANKS OF THE SENNE, ONE CAN READ ITS TRACES IN BUILDING TYPES - MOST COMMONLY INDUSTRIOUS BUILDINGS. TRACES MADE VISIBLE THROUGH MATERIAL, AESTHETIC AND PROGRAMME.

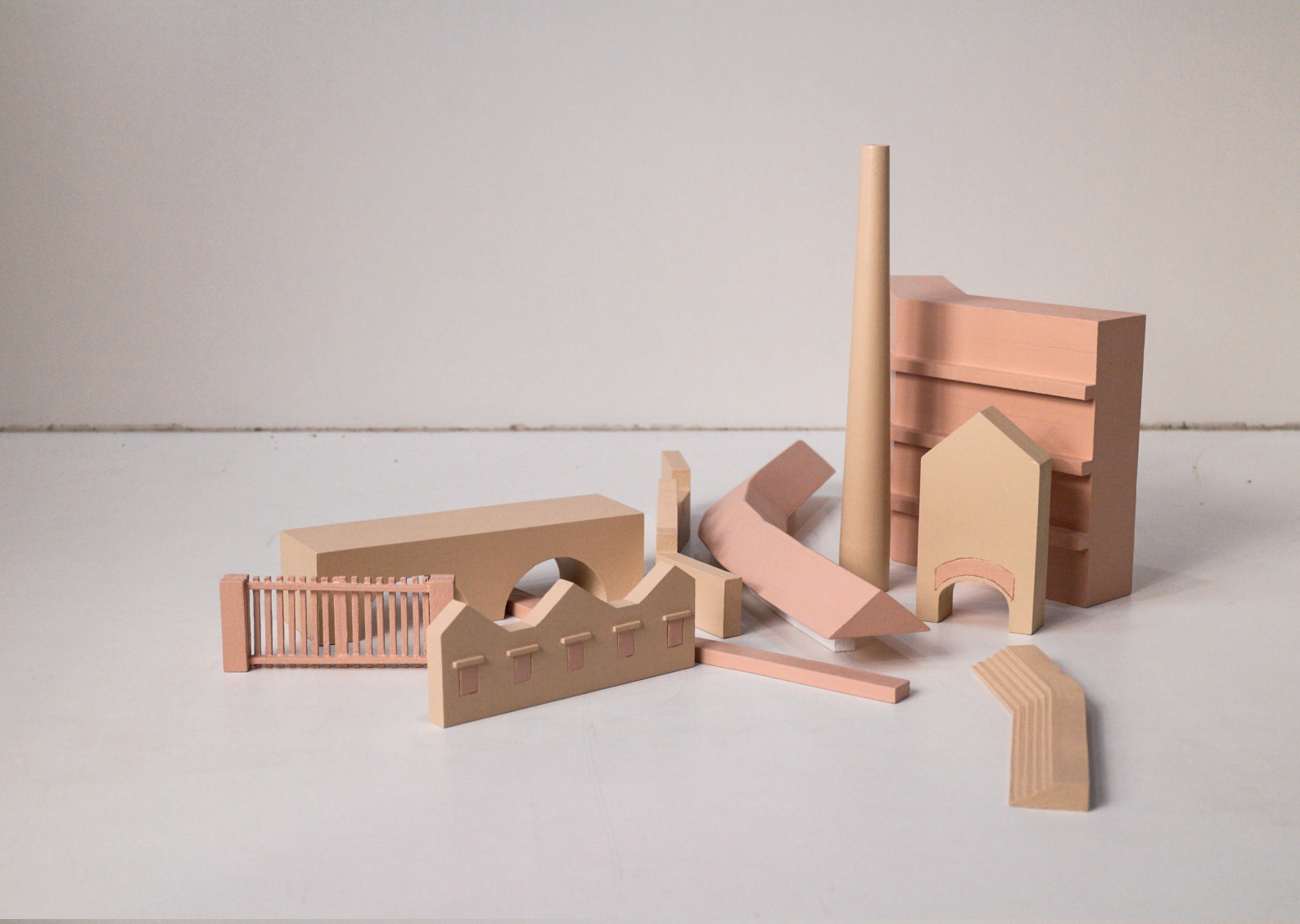
CS30

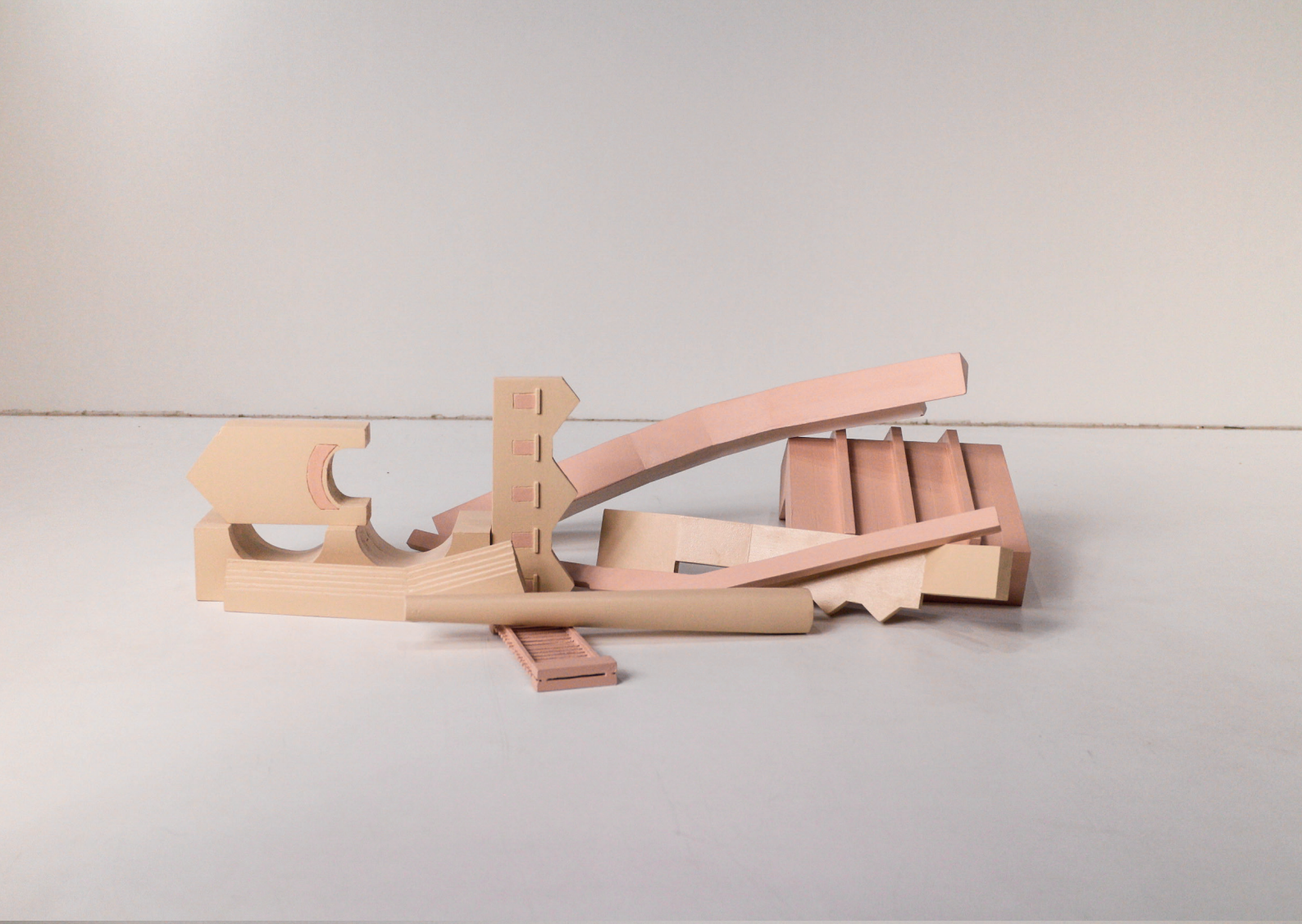


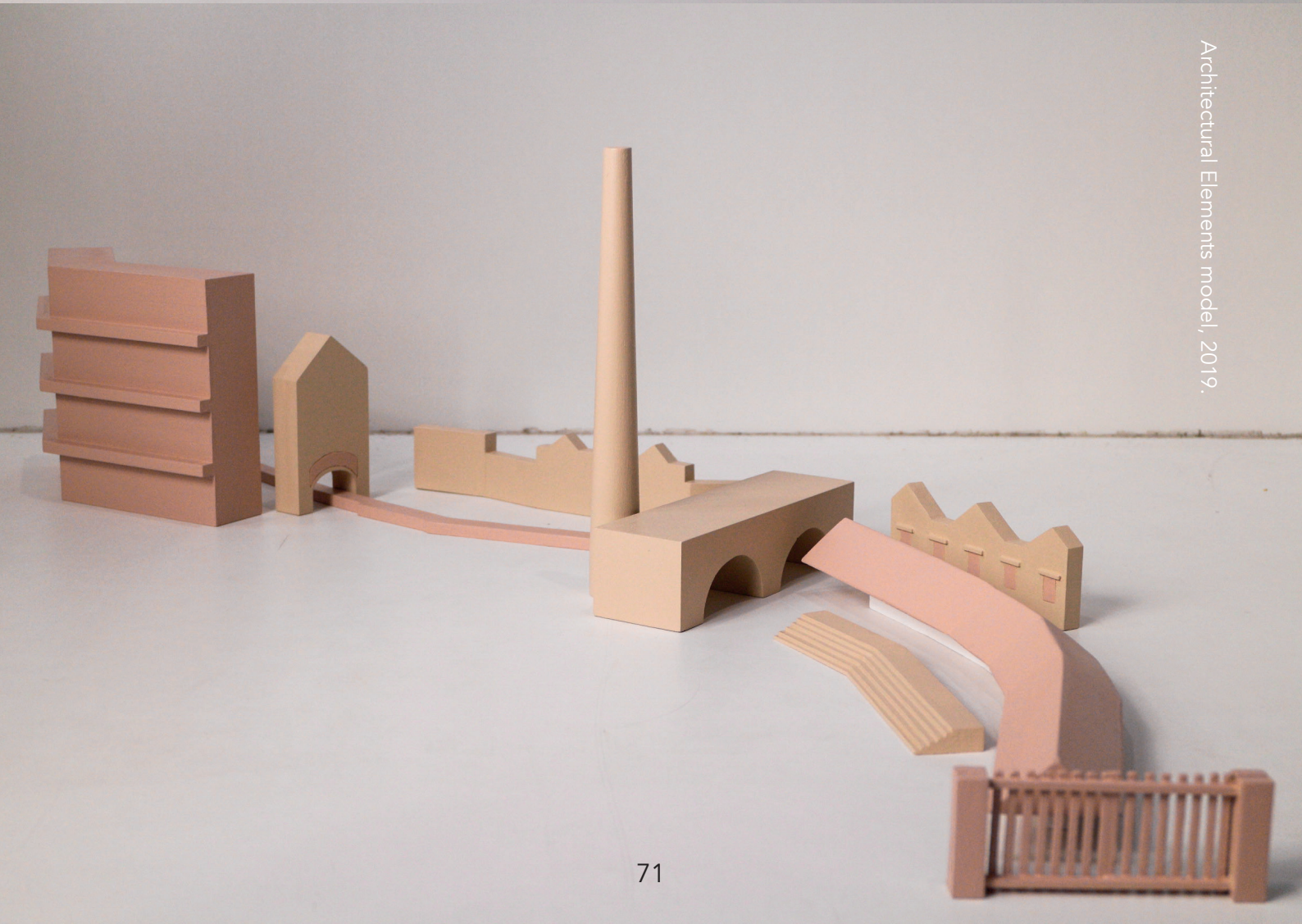
1.3.4 Architectural Elements

The last model is a zoom in to a scale of elements. Architectural elements are presented in this model which all have a reference to the river Senne. An example of this is the building 'The Goujon' which is located on the site of the design assignment. This building has a strange shape, but what seems to be the case is that this building has adopted the shapes of the river Senne. Another example is the return of chimneys where the river once flowed. This shows that the river was once an industrial river along which a lot of production took place. The pink elements were built after covering the river. The beige elements were built for covering the river. So there are many references of elements in the current streetscape that show that the river was once there. The model can be composed in several ways. The question this model raises is: how should we deal with these architectural elements of the past? This model is an experiment to think about what to keep, what to lose and what to propose for the design assignment. This model raised the question of whether re-appropriation of elements from the past is appropriate. Should this be treated as a gimmick or as a substantial gesture? And can these elements be repositioned or relocated to an alternate context? What does this mean? This model has thus led to questions that will be answered further on in the research.

Architectural Elements model, 2019.







Architectural Elements model, 2019.

1.4 Exhibition

On the 1st of November the research was presented by an exhibition at BK-city. The leading object of this exhibition was the river on the floor. This line was also the leading element and the starting point for the research. This huge line of the river shaped the city, of which only fragments are still visible today.

Through this research, I have understood the endless quality of the river. The river is invisible, but what makes the river visible is the buildings around the covered river with for example strange shaped facades. Where the river used to flow there are still in between spaces, voids, which are interesting to transform to a new function.

P. Thijssen, Expo Urban Architecture, TU Delft, 2019.

Leeke Reinders, Expo Urban Architecture, TU Delft, 2019.

Leeke Reinders, Expo Urban Architecture, TU Delft, 2019.

Leeke Reinders, Expo Urban Architecture, TU Delft, 2019.

Leeke Reinders, Expo Urban Architecture, TU Delft, 2019.

Leeke Reinders, Expo Urban Architecture, TU Delft, 2019.

Leeke Reinders, Expo Urban Architecture, TU Delft, 2019.

2

REVALUATE

THE PAST

2.1 How Brussels dealed with the Past

The spatial quality of the river trace had been made visible, but for me I still had the question if re-appropriation of the past is appropriate and what re-appropriation of the past can mean for the urban architecture of the area?

Brussels is not the best reference on the subject of re-using the past. It can actually be said that they've ignored history. In the 60s and 70s of the 20th century different urban developments took place in the city of Brussels. The urban developers of that time ignored the historic buildings when creating a new urban plan. This is called the brusselization (in French: bruxellisation). The term 'brusselization' was used to describe the landscape transformation in districts where investments were lacking in esthetics and substantial parts of the historic center were demolished and replaced by office buildings. Some of the districts, the Northern and Leopold Quarter was demolished and replaced by office buildings without any architectural connection to the existing urban tissue. Public protests arose against the demolishment of the historical quarters. The Maison du Peuple, designed by Victor Horta and opened in 1899 was demolished for an office block. The brusselization changed the different functions of the city. This resulted in fragmentation and an inefficient planning system. This also led to an urbanisme sauvage ('wild urbanism'). This divided the city space into different zones and diminished the vitality of many parts.[4] And this is nowadays still visable in the city Brussels. The brusselization is also still visible in the combination of styles in the facades in the Northern district. But also in the contrast of new buildings and old buildings on the same plot, which have nothing common in style nor function nor scale. Re-using the past which has survived can be an addition for the city. My design assignment has to do the opposite of what brusselization once did and embrace the historic buildings again to stimulate urban integration.

[4] Katarzyna M. Romańczyk, "Transforming Brussels into an International City - Reflections on 'Brusselization,'" *Cities* 29, no. 2 (2012): 126–32, https://doi.org/10.1016/j.cities.2011.08.007.

K. Romanczyk, View from the rear of the North Station, showing a contrast in redevelopment of the Northern Quarter, 2010.

K. Romanczyk, Private house at the back of the European Parliament in the European Quarter,, 2010.

2.2 The Importance of History for Architecture

I asked myself: do we need to know our architectural history in order to practice architecture? According to Nietzsche he says in the book 'Architecture Re-assembled' by Trevor Garnham that 'we do need history for life and action.' By this he means that the past should not passively be copied, but that you should creatively and actively look for lessons about a living culture, a culture of the present, that fits with the times. History may be necessary to create 'for life and action'. The past is relevant to the present. Historian John Tosh says, 'In all areas of life, from personal relationships to political judgements, we constantly interpret our experience in terms of time perspective. The very fact that we live together with people older than ourselves makes us aware of the past'. Nietzsche says that a copy of the past will be destructive 'of life' of our time.[5] So, making replica's is not the best way to re-use the past, the past should always come brought back with a twist. According to architect Arna Mackic there is a grey area between making replicas and ignoring history. "It is our responsibility to at least investigate how we can find our way in it. There is always history. As an architect, it's your job to think about how you should relate to it. She gives the example of Zoetermeer in the Netherlands. They just thought: we're starting a city here and we don't care about that history. This lack of identity has not worked out well."[6]

[5] Trevor Garnham, *Architecture Re-Assembled : The Use (and Abuse) of History* (Abingdon: Routledge, 2013).
[6] Marcel Wiegman, 'Architect Arna Mackic wil publieke plekken die niemand buitensluiten,' *Het Parool*, April 5, 2017, https://www.parool.nl/nieuws/architect-arna-mackic-wil-publieke-plekken-die-niemand-buitensluiten~bb91051f/.

La Senne, Date unkown, Archives de la Ville de Bruxelles.

The desire to go back to the past is a theme that plays a role in society. A pessimistic view of the future often translates into a desire to the past. Nostalgia is applied in many ways, for example in politics. There are two different kinds of nostalgia. Personal nostalgia is the first form of nostalgia and the second form is collective nostalgia that has been identified by recent research by Smeekes. With collective nostalgia, a person does not long for an individual past, but for shared experiences with a certain group. The desire for such shared experiences does lead to a positive identification with one's own group, but not with other groups. The underlying reason why people become nostalgic in any way is universal: they feel they have lost control over their lives and their future.[7]

On the other hand, can history be something for generations of people to be proud of. And it can be something to start a dialog, the book 'The Power of Places' by Dolores Hayden described this as 'dialog history', which can be important for communities.[8] The memory of the Senne is still alive in the Brussels in many ways. Many references are made to this river in streetnames. But also the Senne is used as a branding tool. The 'Brasserie de la Senne' is proud of using the river name for their brewery company name. And people from Brussels are called 'Zinnekes', that means 'Senne people'. So the history of the river Senne is already embedded in the culture of Brussels, but it still must be highlighted.

[7] Hidde Boersma, 'Hoe komt het dat we terug verlangen naar vroeger,' *Volkskrant*, March 4, 2017, https://www.volkskrant.nl/nieuws-achtergrond/hoe-het-komt-het-dat-we-terugverlangen-naar-vroeger~b30b19c4/.
[8] Dolores Hayden, *The Power of Place : Urban Landscapes As Public History* (Cambridge, Mass.: MIT Press, 1995).

Streetnames and brandnames related to the Senne, Brussels, 2019.

3

REVITALIZE

THE PAST

3.1 Redevelopment of Infrastructural Networks

Re-using the past can be an addition for the city. Where the river Senne used to flow there are still in between spaces, voids, which are interesting to give new life to by transforming it into a new function. Revitalize old historic buildings and infrastructural networks etc. is a global trend. This is a trend to breathe new life into infrastructures and to give new meaning to it.

There are lots of examples how infrastructural networks are brought back to life. In The Hague, for example, MVRDV wants to bring back the canals in different types, in the original state as a canal, but also in the function as a park. Their goal with this project is by reopening the lost canals to boost the area ecologically and economically.[9] Another project in The Netherlands about re-using infrastructures is de Hofbogen in Rotterdam by ZUS Architecten. With a length of 1.9 kilometers, the roof of the Hofbogen is the longest roof in the Netherlands. A public park where the track of the train used to be, was designed on top of the vacant Hofplein Station.[10]

One of the most interesting re-designed infrastructures is the High Line in New York, where a train line has been transformed into a public park.[11] By transforming this track, the neighborhood improved impressively. The neighborhood was given a new impulse. An abandoned element of the past created a living and leisure element in an area mainly characterized industrial buildings and warehouses. The back of the buildings facing towards the Highline became the front of the buildings. I visited this in August 2017. What struck me the most is that transforming an infrastructure can offer an impactful new perspective on architecture.

[9] MVRDV, 'The Hague Canals', The Hague, 2019, https://www.mvrdv.nl/projects/407/the-hague-canals/.
[10] ZUS Architecten, 'De Hogbogen, Luchtpark', Rotterdam, 2017, http://www.hofbogen.nl/luchtpark/.
[11] The High Line, 'History', New York, 2019, https://www.thehighline.org/.

MVRDV, Canals of The Hague, 2019.

ZUS Architecten, Hofbogen, Rotterdam, 2006.

P. Thijssen, High Line, New York, 2017.

No Standing
Except Trucks
Loading & unloading
MEATPACK

P. Thijssen, High Line, New York, 2017.

P. Thijssen, High Line, New York, 2017.

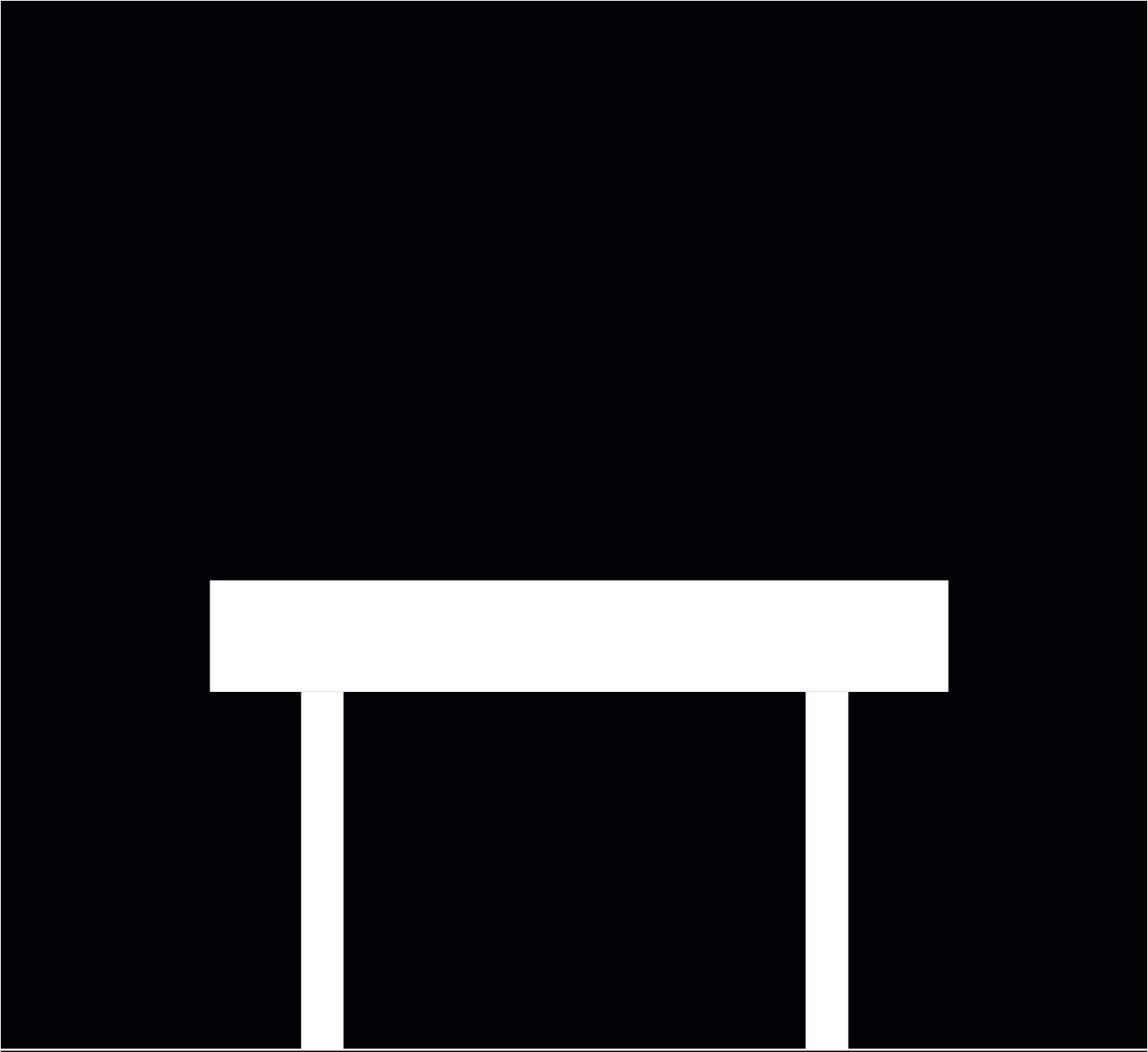
P. Thijssen, High Line, New York, 2017.

3.2 The High line vs the Senne Park

For my design project the main question is how to translate the trace of the Senne into an architectural and urban design? Where the river used to flow there are still in between spaces, voids, which are interesting to transform into a new function. An example on how the covered river the Senne is transformed into a new function is the Senne park, in the North of Brussels, where a park has been created on the spot where the Senne used to flow. In this part the Senne Park and the High Line will be compared.

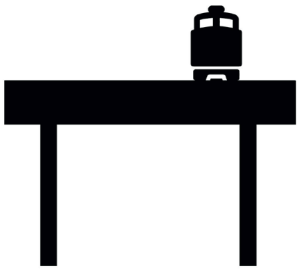
The High Line and the Senne Park have similarities but are also each other's opposites. The High Line and the Senne park are negatives of each other, one is an above ground and the other is underground. The High line is extremely visible in the streets, the Senne Park is on some spots even invisible. The stages of both parks have some similarities. The high line was first a train line, later it became vacant and after all it was transformed into a park. The Senne Park was a river, later is was covered and finally it was transformed into a park. In order to continue the comparison, research has been done into the effect of transforming vacant infrastructures.

P. Thijssen, Senne Park, Brussels, 2019.



Negative The High Line, New York, 2019.

Negative The Senne Park, Brussels, 2019.



Metro
1934-1980

Vacant
1980-1991

Park
2006-

The High Line stages, New York, 2019.

River
1000-1867

Covering
1867-1955

Park
2014-

The Senne Park stages, Brussels, 2019.

3.3 Effects of Transforming a Vacant Infrastructure

The High Line and the Senne Park can't be compared in length. The High Line is a success because it isn't a small intervention but a large one. It is a park of 2.1 km. Because of this length it has had a big impact. The scale of a transformation is also important. On the Map of the Senne already some interventions on the location where the river used to flow can be seen. In the North, in the middle and in the South some parks and vegetable garden are already made on the spot where the Senne used to flow. The site for the design assignment will be in the South of Brussels. This site can connect the fragments of parks. In the book 'Nieto Sobejano: Memory and Intervention' by Fuensanta Nieto and Enrique Sobejano an example was given on how people memorize things.[12] The book gives an example of a text where a lot of letters were deleted. Still the text could been read. So this gives the example that even though all those fragments of parks are not directly connected to each other, they can be experienced as a line gradually. Just like that, a line will be created that can make an impact.
I looked at both parks to see what the effect is of changing the function, form an infrastructure into a park. Effects can be seen at many levels.

3.3.1 Economical Effects

House prices rose dramatically after transforming the train line into the High Line. The New York City Economic Development Corporation did studies on the value of the properties before and after developing the High Line. Before the development of the High Line the residential properties were valued 8 percent below the overall median for Manhattan. It wasn't the most attractive place to live. Between 2003 and 2011, property values near the park increased 103 percent.[13]

[12] Fuensanta Nieto and Enrique Sobejano, *Nieto Sobejano : Memory and Invention* (Ostfildern: Hatje Cantz, 2013).
[13] Jeremiah Moss, 'Disney World on the Hudson,' *The New York Times*, August 21, 2012, https://www.nytimes.com/2012/08/22/opinion/in-the-shadows-of-the-high-line.html.

The price for living in the apartment of Zaha Hadid is 5 million dollars.[14] That's also the power of place, what's has been described in the book 'The power of Places' by Dolores Hayden. In this book the example of New York was given. Nowhere else in the world except for New York there's a craziness in wealth. It's typically to this location.[15] The insanely rising prices is not something specific to Brussels. People have less to spend. So rising prices is not something what's happening at the Senne park. And that's not what fits Brussels, where not a lot of people can afford an expensive house.

3.3.2 Commercial Effects

The High Line became a park which attracts millions of visitors each year. That's why it's a great spot for commercial functions, such as luxury hotels and stores. The High Line is from its nature also a spot which attracts creative businesses. It's a great place to get inspired. The High Line also attracted a lot of art galleries.

Walking on the High Line creates a wide view on buildings and streets. That's why it's also a good spot for advertising. Along the High Line a lot of advertisement posters can be seen. This phenomenon is something what's not included along the Senne Park yet, but maybe also doesn't suit the nature of the Senne Park. It's rather more a park with some visitors in comparison to the High Line with a couple of million visitors each year.

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[14] Karrie Jacobs, 'The High Line Network Tackles Gentrification,' *Architect Magazine*, October 16, 2017, https://www.architectmagazine.com/design/the-high-line-network-tackles-gentrification_o.

[15] Dolores Hayden, *The Power of Place*.

3.3.3 Cultural and Social Effects

The High Line became the place to be for people to meet, to see (people but also art), to express (hotel), to gym.

The High Line became one of the most famous places to make wedding pictures or to date. People are coming here to get inspired an to get surprised. Along the route there are a lot of art installations and graffiti art on the walls. Walking through this park creates new views on buildings. The Standard Hotel became the place for exhibitionism. Naked men and women showed themselves to the visitors by standing behind the window in the hotel rooms.[16] The High Line also became a special place for events and sports. Yoga, dance classes and many other forms of sports are practiced every week in this park.[17]

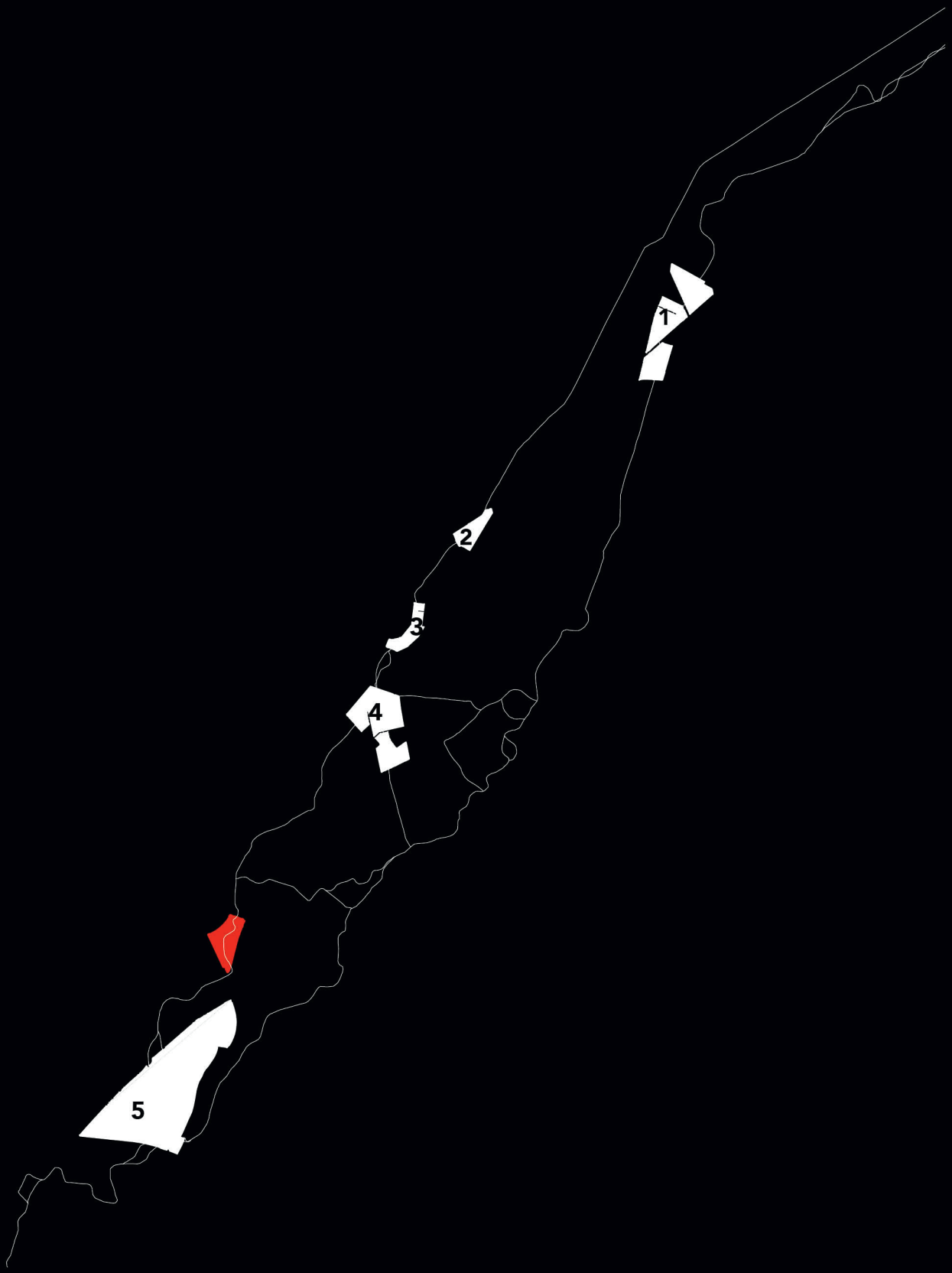
A place like The Senne park will become a multifunctional space. The Senne Park is a place to meet, to sit and relax, but everything on a smaller scale than the High Line.

3.3.4 Architectural effects

The architectural effects where huge at the High Line. A lot of new buildings where built after redeveloping the High Line into a park and the existing building got adjustments. According to architect-developer Cary Tamarkin the high line 'A walk along the park became going to the zoo for starchitects.[18] The Architectural effects will be further more detailed described in 3.4: 'An Architectural zoom-in'.

[16] James Corner Field Operations, Diller Scofidio Renfro, and Phaidon Press, *The High Line : Foreseen, Unforeseen* (London: Phaidon, 2015).
[17] The High Line, 'About', New York, 2019, https://www.thehighline.org/.
[18] Anthony Paletta, 'High Line's New Towers: Hit or Miss,' *The Wall Street Journal*, May 4, 2014, https://www.wsj.com/articles/high-lines-new-towers-hit-or-miss-1399256009.

P. Thijssen, High Line, New York, 2017.



Interventions Parks along the Senne trace, 2019.

Public space interventions along the Senne

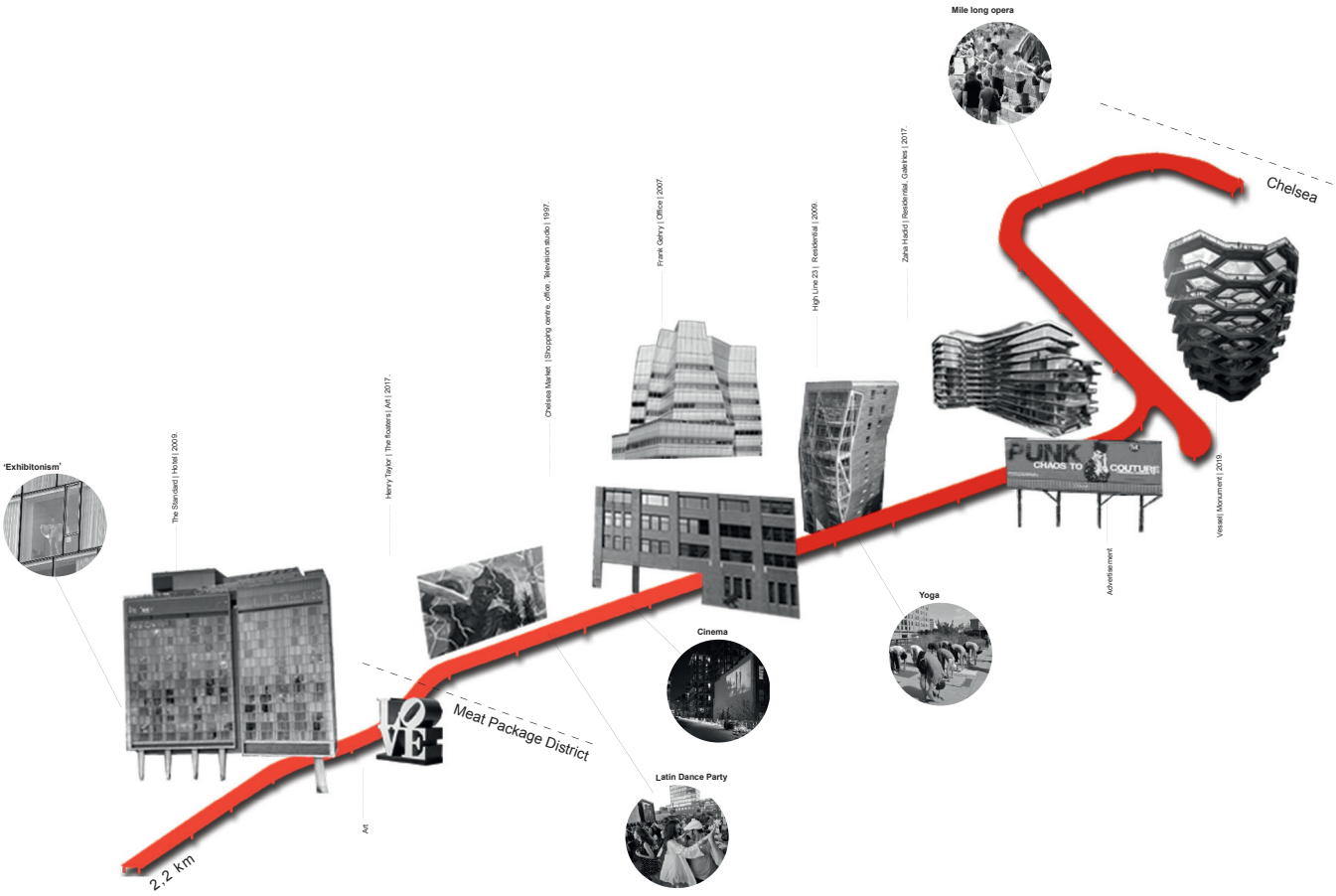
1. Senne park

2. Little Senne park

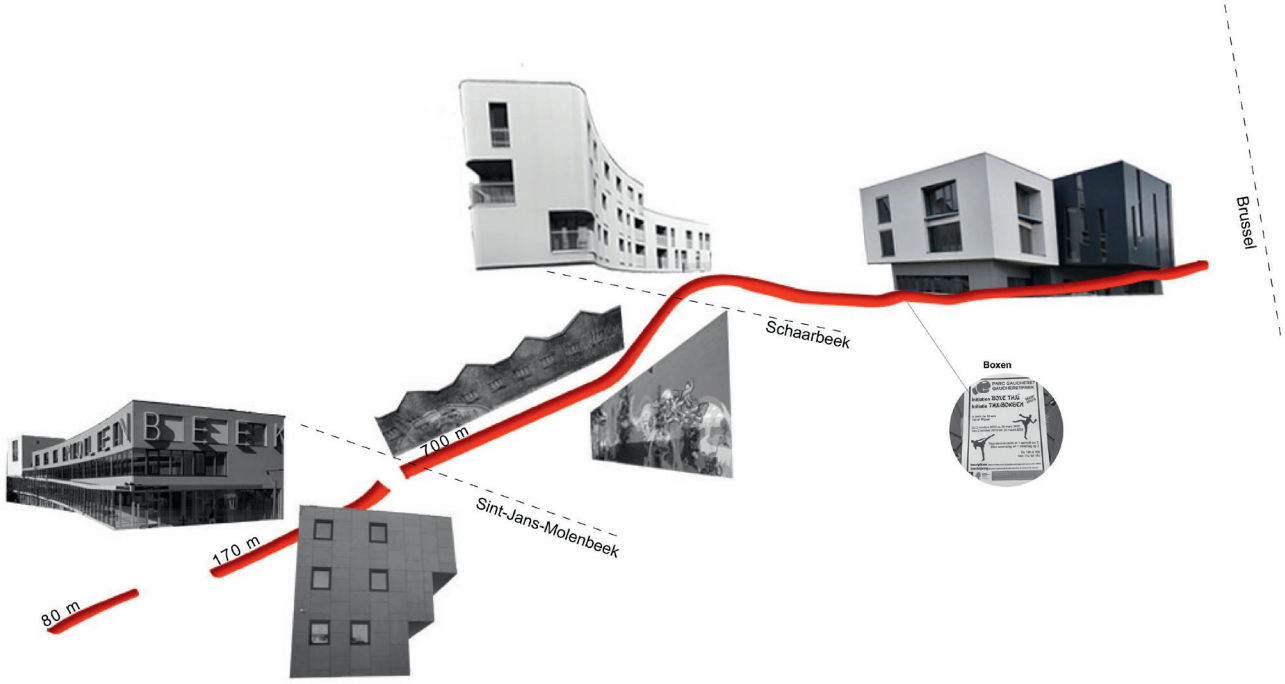
3. Zin To park

4. Douw park

5. Waterfront Senne



The High Line effects, New York, 2019.



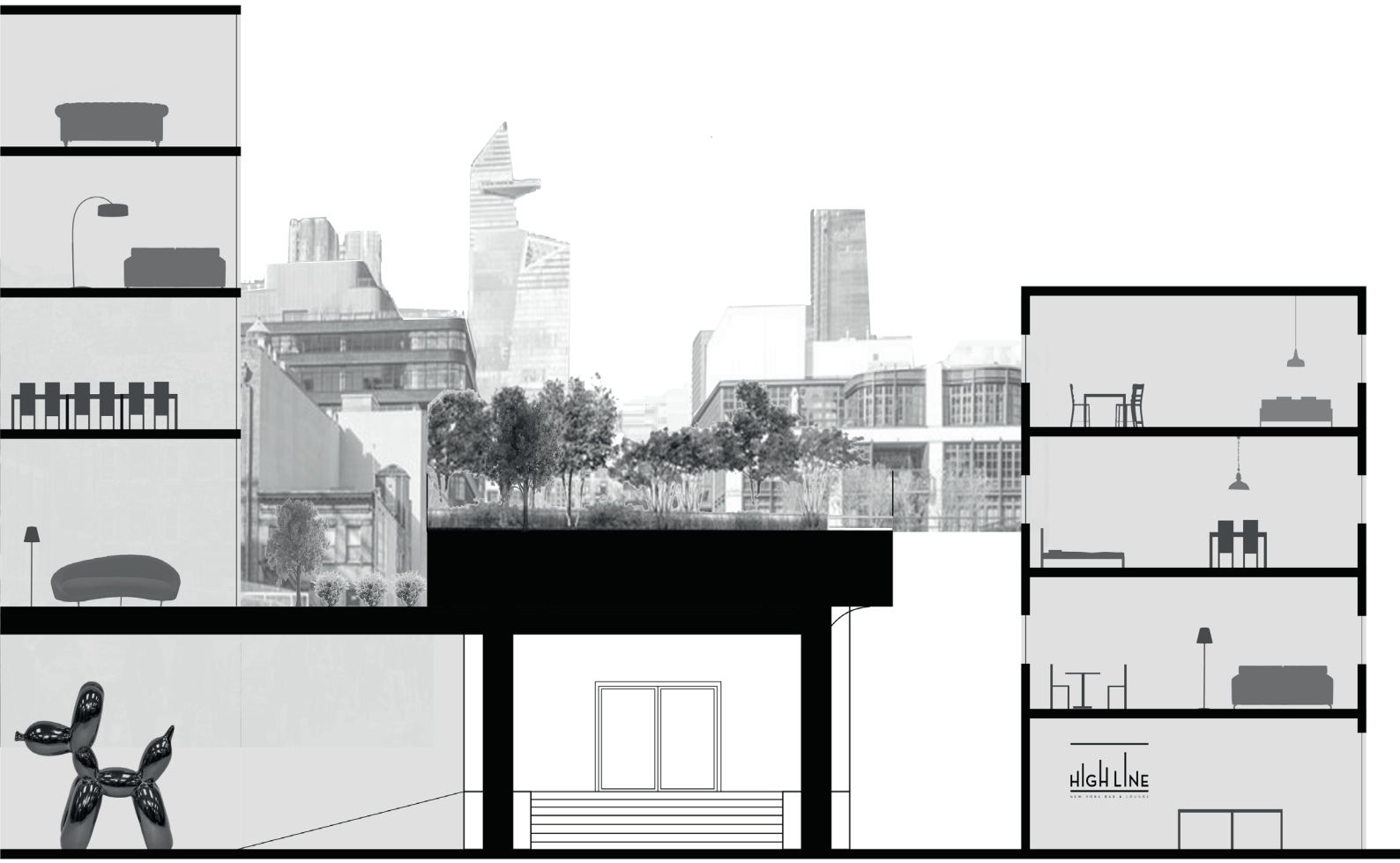
The Senne Park effects, Brussels, 2019.

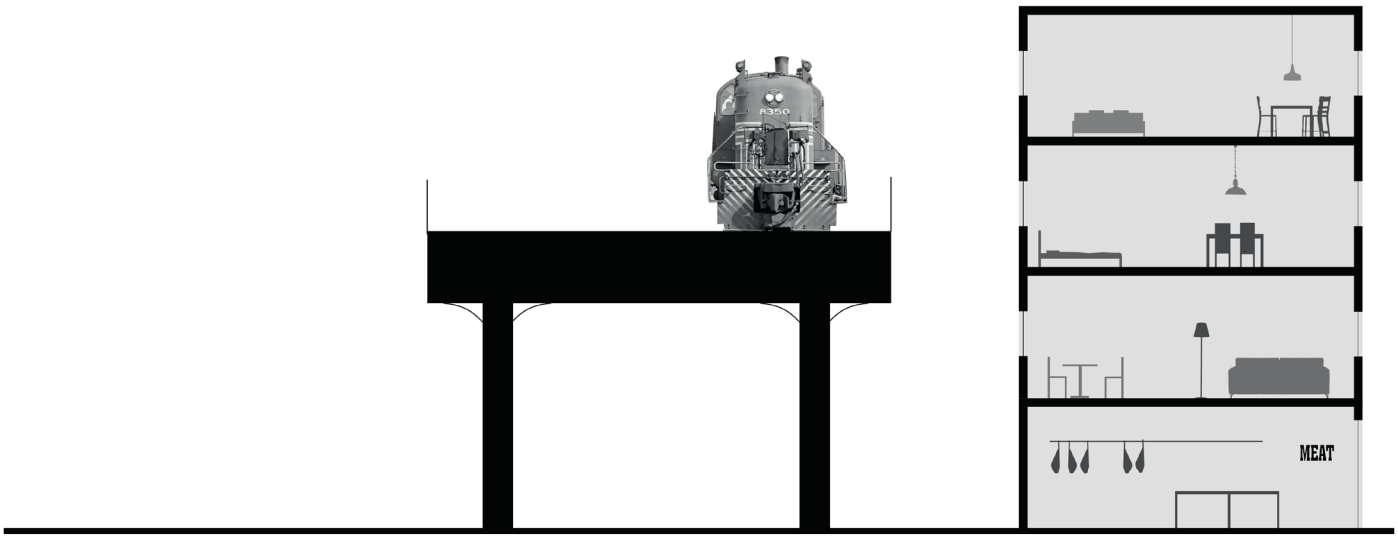
3.4 An Achitectural Zoom-in

As further research I zoomed in on the architectural effects to show the effect of an urban development on architecture. A section as a study was made to visualize those effects. In the sections can be seen that a new building was built with private gardens attached to the park. Vacant space became filled up and new functions were created. But most important: there urban landscape created a different view on the existing architecture. In the existing buildings the back of the building became the front of the buildings. The current residents are also going to look at the building differently. So it is not only the architect who decided where a new building will be placed, but also the residents themselves will make adjustments to the existing architecture and use the space differently.

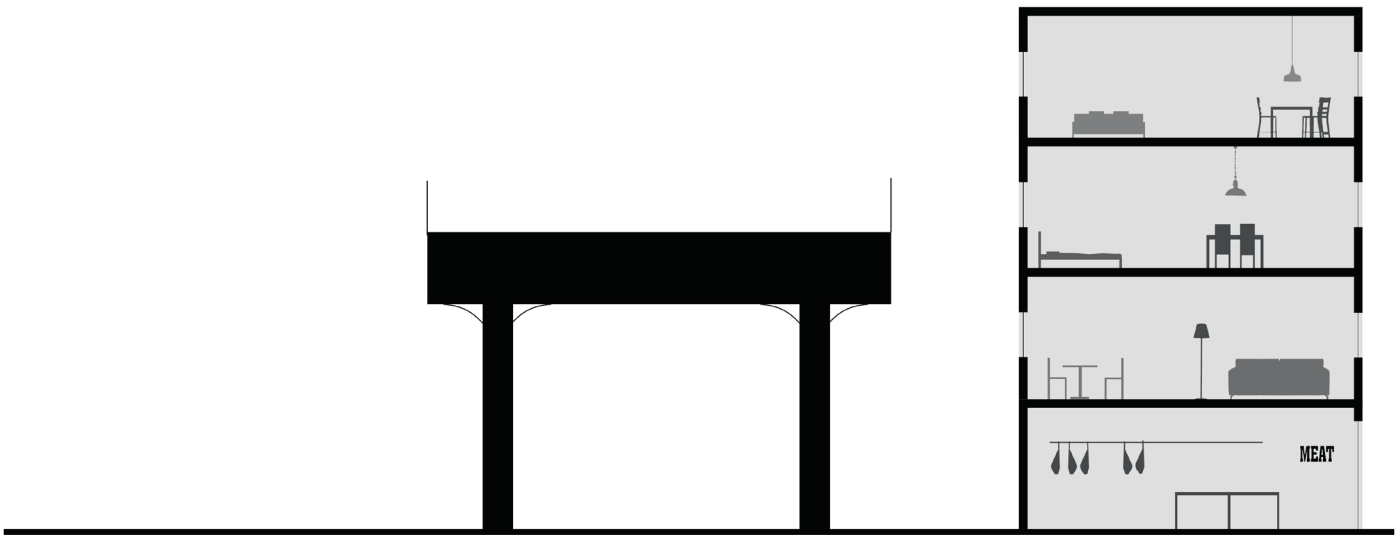
Urban landscape will make a better environment not only for the new residents, but also for the existing houses. It's a strategy that gives both new and old a chance. That's a lesson learned which I took into account for my design proposal.

The High Line Architectural Zoom-in, New York, 2019.

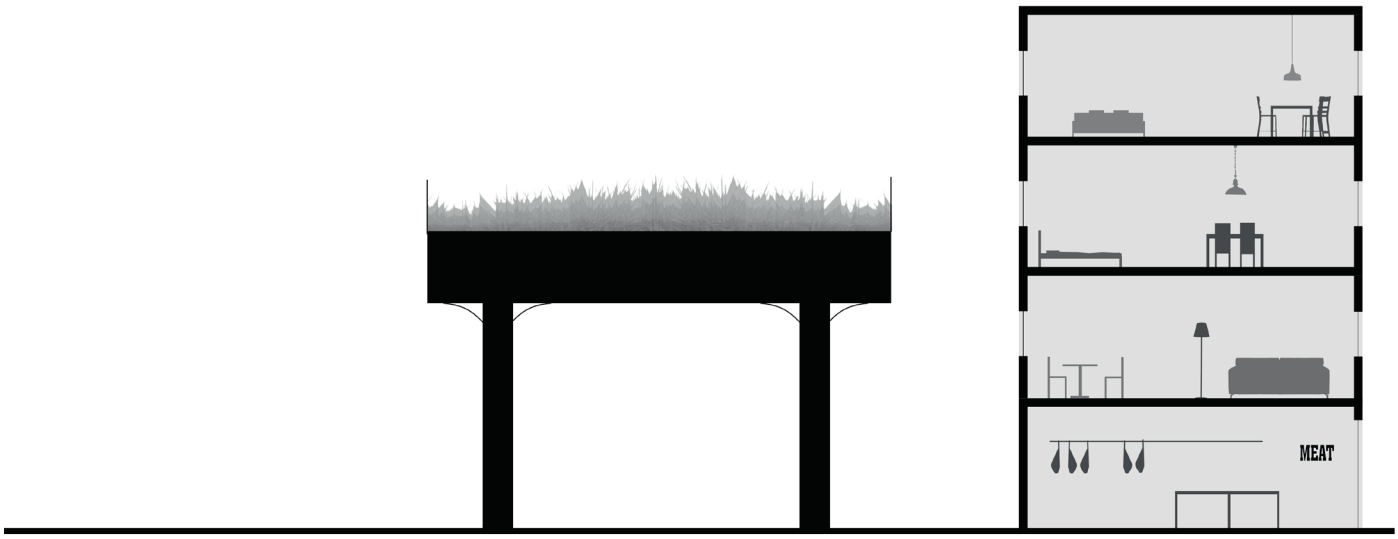




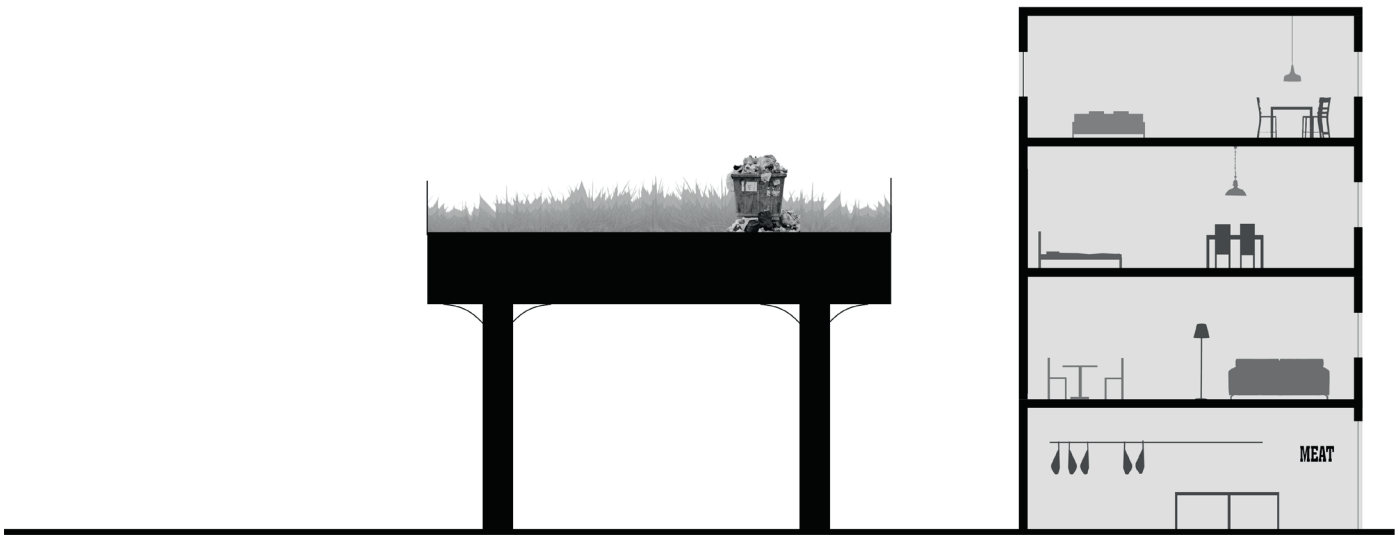
High Line, Train Railway, New York, 1933.



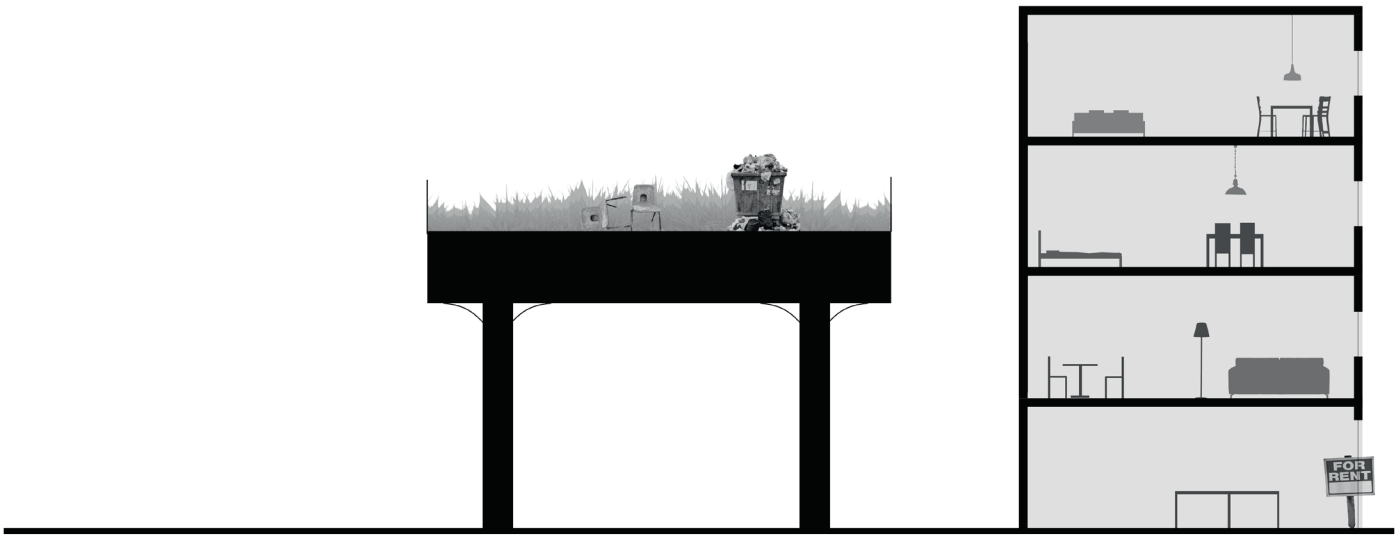
High Line, Vacant, New York, 1983.



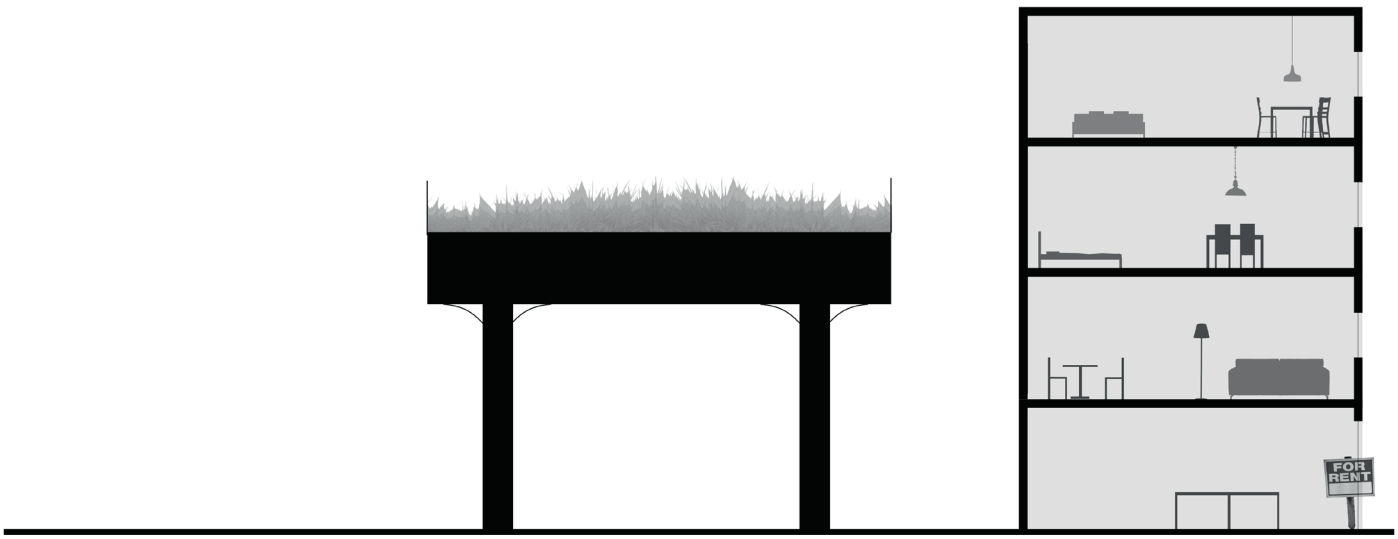
High Line, Vacant, New York, 1983.



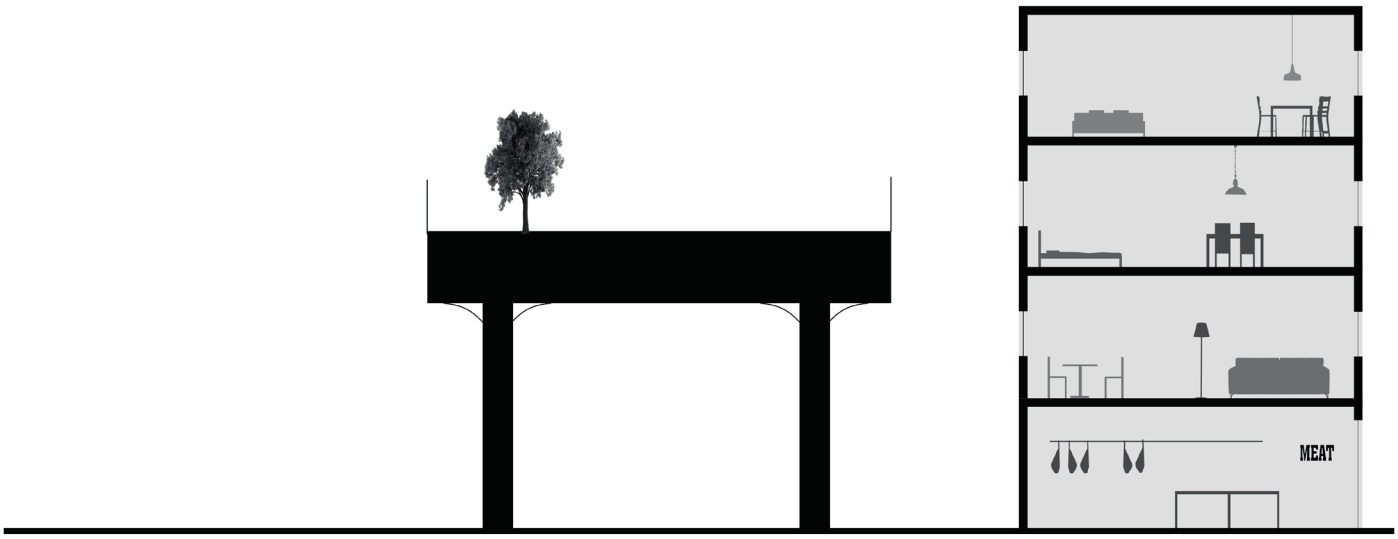
High Line, Houses seclude from the High Line, New York, 1983.



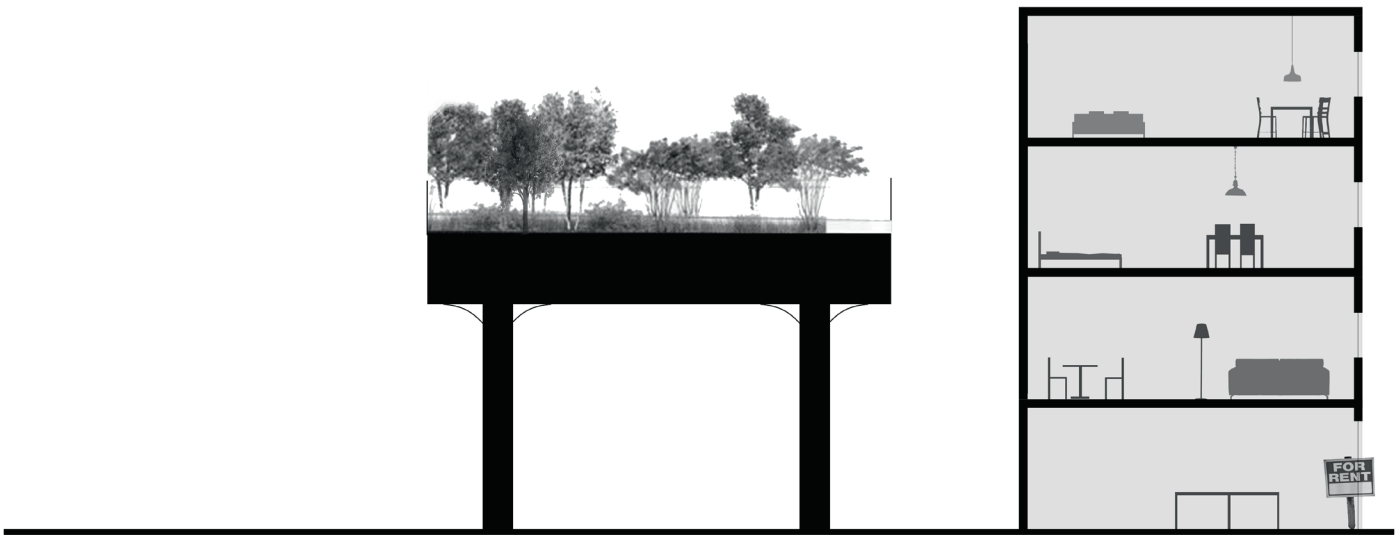
High Line, Shops became vacant, New York, 1983.



High Line, Start High Line, New York, 2006.



High Line, Start High Line, New York, 2006.

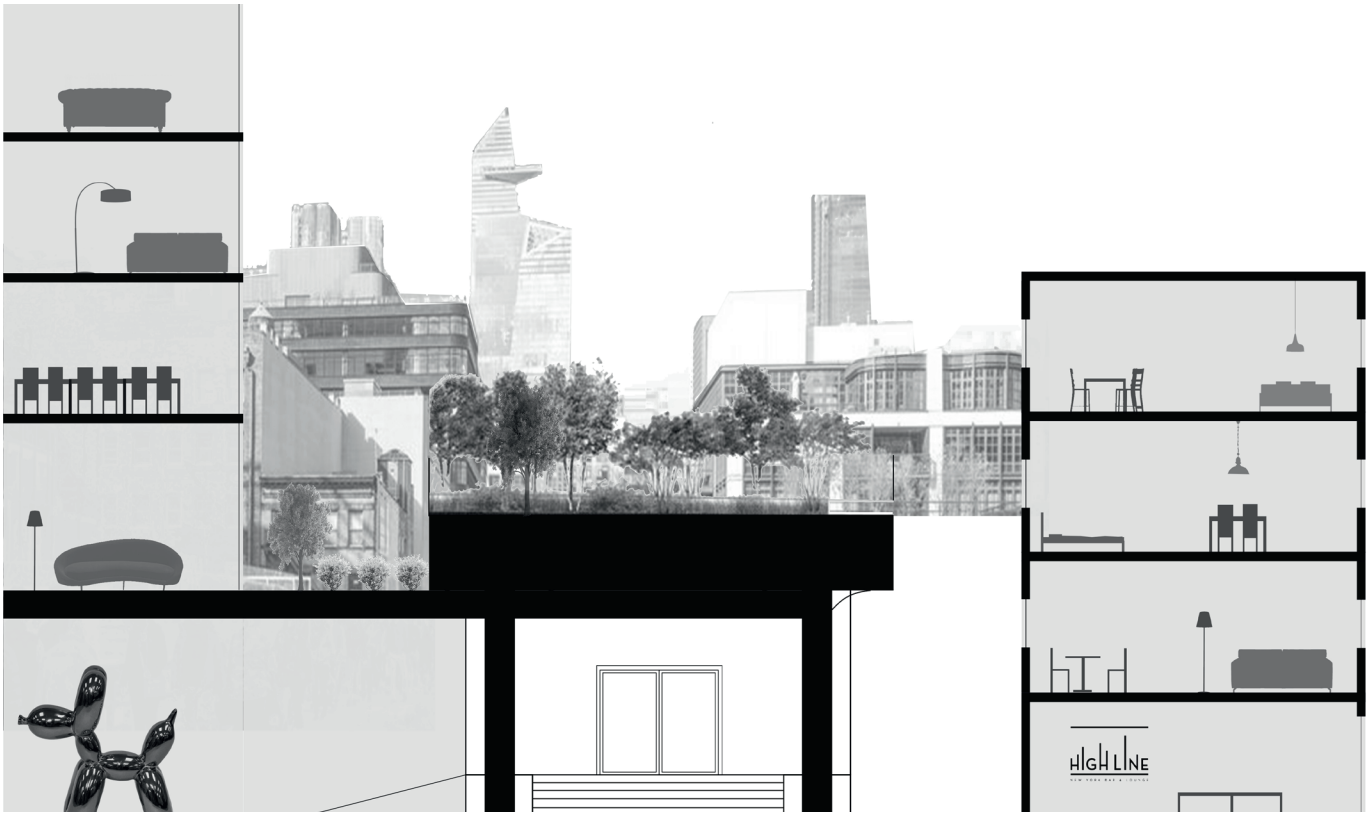


High Line, Finishing the High Line, New York, 2009.

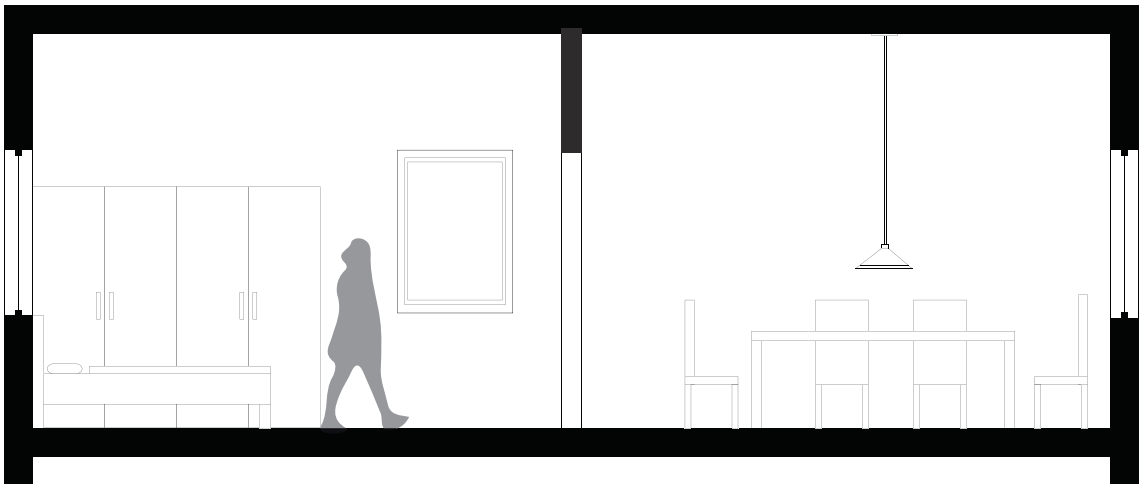
High Line, New buildings with gardens as an extension of the park, New York, 2010.

High Line, New galleries, New York, 2010.

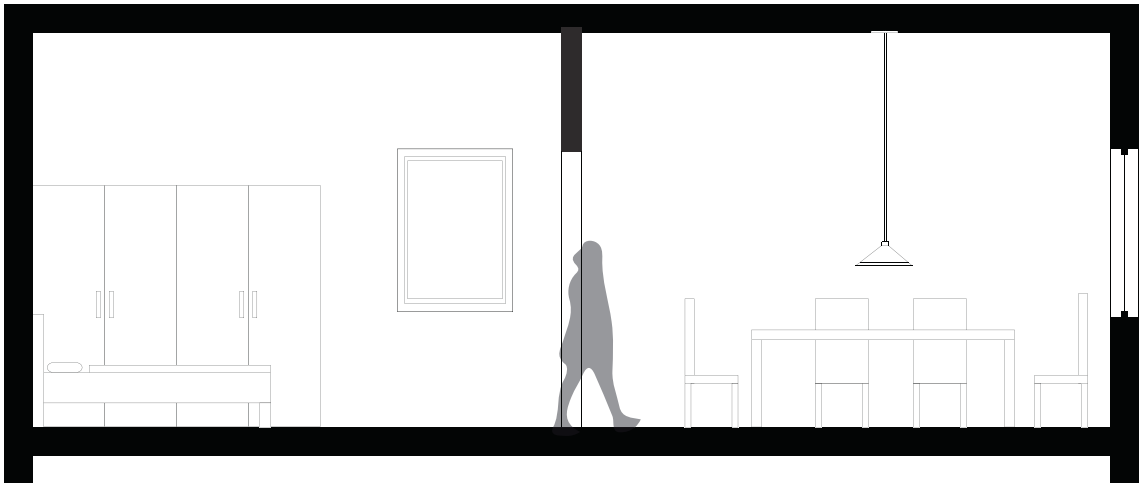
High Line, Luxury homes are created, New York, 2010.



High Line, New York, 2019.

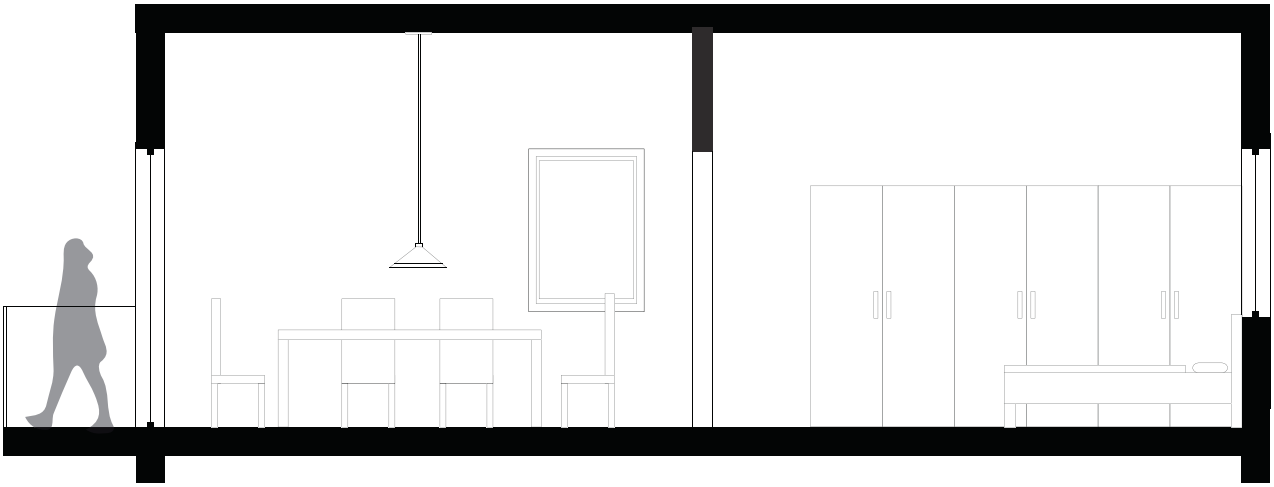


High Line, Apartement zoom-in, New York, 1933.



High Line, Houses shut off the windows from the vacant High Line, New York, 1983.

High Line, Houses consider the High Line as an extension of their houses, back sides became front sides of the houses, New York, 2009.



High Line, Balconies have been used as an extension of the High Line, New York, 2010.

Conclusion

This research brought a lot of new insights. The first chapter showed the architectural quality of the traces of the river Senne. The second chapter answered my question why re-appropriation of the past is important for architecture. And the last chapter showed the effects of re-designing an infrastructure and what it could mean for new and existing architecture.

To end this research, the relevance of research will be described. The main theme of the studio is Spolia: the possibility of re-using (historical) architectural pieces. The reuse of historical elements is something I consider important for the future use of urban environments. It's not only commercially interesting, because it can create an identity and attracts investors. It is also sustainable, because the past is not thrown away. What's also important is the emotional connection that generations have with the past. There is always history in our environment, relevant knowledge about the past can be used as a resource for architecture. The desire to go back to the past is a theme that plays a role in society. Revaluating the past and emphasizing history is important because heritage gives identity, contributes to social cohesion and psychological well-being. That's why I want to bring back the river to which the city of Brussels once originated and let architecture relate to it. The architect has the power and responsibility to determine how to deal with history.

Masterplan Site, Brussels, 2019.

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Appendix Methodology

The study of typology has been done by context-led research with field work as a method.
The typology is a form of conceptual thinking. A concept is a principle or idea.[19] For me, a concept acts as a guide that allows you to analyze in a structured way. It is an abstract way of approaching the building. Robert Alexander Gorny describes it as a: 'It's a very characteristic – peculiar – way of looking at buildings and built form, architectural arrangements, or spatial configurations, and the social organizations pertaining to them, investigated through plans or axonometric drawings often highlighting certain architectural objects or elements and their multiple structures and layers.' If we define 'type' as a category of things based on the definition of characteristic formal or structural characteristics, then 'typology' is the knowledge system that belongs to this logic.[20] It is seen as a reductive way of investigating. What I see as the strength of typology is that you can decide for yourself which part of a building you think is the most important, and with that you can distinguish yourself as an architect. Because by doing so, you indicate the area of your interests. In my research, different types have been discovered, such as buildings that have been shaped by the former river. As a designer you can approach these types hierarchically: which one do you think is the most important? I took the typology 'shaped by the river' as the starting point for my design.

The context led research, together with the field research as a tool, has been an important method for this research. The field researcher is described in the book 'In the field' as: 'the field researcher is a methodological pragmatist. He sees each research method as a system of strategies and operations

[19] Cambridge Dictionary, 'concept', 2019, https://dictionary.cambridge.org/dictionary/english/concept.
[20] Robert Alexander Gorny, 'Typologies', Tu Delft, October 3, 2019, Lecture.
[21] Robert G. Burgess, *In the field: An Introduction to field research* (UK; Taylor and Francis, 2006), 2-5
[22] 123test, 'Beroep architect', Accessed 2019, https://www.123test.nl/beroepen/beroep-architect/.

- at any time to get answers to certain questions about events that interest him.'[21] I'm a systematic designer, where field research has allowed me to do a structured research into the covered river. Within architecture, field research is seen as a standard element for an investigation. When Googling on the internet, 'field research' comes up as a standard task that an architect does.[22] It is a tool that is underexposed. During the Lecture of Eireen 'Material Culture', attention was paid to field research. She highlighted great importance to field research as a tool for an architect to do his research. It is important to experience the space yourself, most of the time it's different from what you expect on paper. It is also a way of seeing how the space is used. By observing and being close to the user, investigation can be done at the user's request or it can be adapted to the demand. For me, that is the added value of field research. Usually more than one instrument is used to collect data. As a result, the data is of a higher quality.[23]

Context-led research is a research method in which the context is taken as the starting point. Context is described as: 'the situation within which something exists or happens'.[24] The way of context-led research is applied in a lot of sciences included social, economic, environmental, technological and industrial applications of science.[25]

Context-led research can be implemented in several ways. In architecture, it's practiced by e.g. case studies, fieldwork, etc. to investigate the context. The history of the use of context research goes back a long time. The origin of the current application of both fieldwork and case studies comes mainly from

[23] Adi Bhat, 'What is field research: definition, methods, examples and advantages', Accessed 2019, https://www.questionpro.com/blog/field-research/.
[24] Cambridge Dictionary, 'Context', 2019, https://dictionary.cambridge.org/dictionary/english/context.
[25] Frances Wilson, Steve Evans and Sarah Old, 'Context led Science courses: A review', *Research Matters*, Issue 19 (Winter 2015),

the social application of anthropology and sociology. In the beginning of the twentieth century, it was mainly the ethnological way of research that was applied. Between the 1920s and 1950s, case studies were applied by anthropologists at the Chicago School of Sociology (known as The Chicago School) using field observations on groups to understand their social and cultural life.[26] The Chicago School became famous for its use of fieldwork methods.[27]

In ethnography, the researcher examines an ethnic group of people, such as a tribe, to see how they live.[28] The aim was to gain insight into the way in which individuals interpreted their experiences. It was carried out in the natural setting, i.e. the original context. The outcome was presented as narrative or descriptive. It was a way to reconstruct their world.[29] It is a qualitative way of doing research. This is an interpretive way of doing research in which data is collected, analyzed and reported in a systematic and verifiable manner.[30] Qualitative methods allow researchers to 'get close to the data' and offer them the opportunity to derive their concepts from the collected data.[31]

At the end of the 1950s, a qualitative field research method of the Chicago School of Sociology combined with a quantitative methods of data analysis were mainly applied. This led to a revival of case study research in the 1960s, with its application in the social sciences, education and the humanities.[32]

The combination of case studies and fieldwork has been applied in many more disciplines in the last

[26] Helena Harrison, Melanie Birks, Richard Franklin and Jane Mills, 'Case Study Research: Foundations and Methodological Orientations', *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, Volume 18, No. 1, Art. 19 (2017), 2-5, http://nbn-resolving.de/urn:nbn:de:0114-fqs1701195.
[27] Dave Randall, Richard Harper and Mark Rouncefield, *Fieldwork for Design Theory and Practice* (London: Springer-Verlag, 2017), 31
[28] Marieke Berkers, 'Praxeology', Tu Delft, September 12, 2019, Lecture
[29] Harrison, Birks, Franklin and Mills, 'Case Study Research', 2-5.

years. It is originally a social way of doing research to analyse your context. It is a way of making a reconstruction of reality. Within architecture, making a reconstruction of reality is important. Observing and reconstructing the reality is a way to get a grip on the context. A good example of the combination of context-led research by means of fieldwork is the book 'Concise Townscape' by Gordon Cullen. This book represents a coherence in a tangle of buildings, streets and space that form the urban environment. By means of drawings and photographs gained during fieldwork, Cullen groups different buildings by means of certain characteristics (types). This book has provided a lot of inspiration for city planners, architects and other designers who develop the look of cities.[33]

Fieldwork is seen as a standard element, but it can be used more intensively. For example, for the design of the train station in Breda the architect took a good look at how the place worked. And how people lived and used the space, in and around the station. The way in which the context could be connected which the surroundings was examined. Not only how the logistics could be connected to the context, but also how the choice of materials fit within the environment.[34] This is one of the projects that inspired me. And I want to apply this way of field research further into my research. Writing this has ensured that I keep sharpening, comparing and thinking and also adding things to my research process. It has taught me the added value of the way of doing research for my design process and that the use of research can support my positioning as a future architect.

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[30] T. Plochg, R.E. Juttmann, N.S. Klazinga and Johan P. Mackenbach, 'Kwalitatief onderzoek', *Handboek gezondheidszorgonderzoek* (Houten; Bohn Stafleu van Loghum, 2017), 77-78.
[31] Burgess, *In the field*, 2-5
[32] Harrison, Birks, Franklin and Mills, 'Case Study Research', 2-5.
[33] Gordon Cullen, *Concise Townscape* (UK&USA: Architectural Press, 1961).
[34] Prorail, 'Video: Station Breda door de ogen van de architect', published September 5, 2016, video, https://www.prorail.nl/nieuws/video-station-breda-door-de-ogen-van-de-architect.