

**NEW YORK  
HONG KONG  
BARCELONA  
AMSTERDAM  
VENICE**

Second year students Urbanism  
O2a (U) Urban instruments 2020-2021

**Amsterdam Academy of Architecture**



# Urban Metabolism

New York

Hong Kong

Barcelona

Amsterdam

Venice

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Tutor: Andreas Mulder

# INTRODUCTION

Wiki definition of metabolism: “*Metabolism (/məˈtæbəlaɪzəm/, from Greek: μεταβολή metabolē, “change”) is the set of life-sustaining chemical reactions in organisms. The three main purposes of metabolism are: the conversion of food to energy to run cellular processes; the conversion of food/fuel to building blocks for proteins, lipids, nucleic acids, and some carbohydrates; and the elimination of nitrogenous wastes”.*

This booklet shows the urban metabolism of five different cities around the globe. From small, Venice, to extra large, New York. We took the city as the human body; integral, dependent on multiple organs and based on comprehensive flows. Mobility, typology, nature and history go hand in hand in the total package that shaped each city to what it is nowadays.

Each week, all groups studied their city on the hand of the following themes

1. Metropolitan Size and Positioning
2. Relation Infrastructure and Landscape
3. Urban Typology
4. Public Space
5. City Centers
6. Relation Between History and Growth
- ~~7. Covid-19 outbreak~~
8. Bonus drawings

# CONTENT

**06.** NEW YORK

**22.** HONG KONG

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**50.** AMSTERDAM

**66.** VENICE

## Oswin Noordergraaf & Iaroslava Nesterenko & Wout Velthof



Favourite city: Monschau  
Want to go to (city): Tokyo or  
Montepulciano

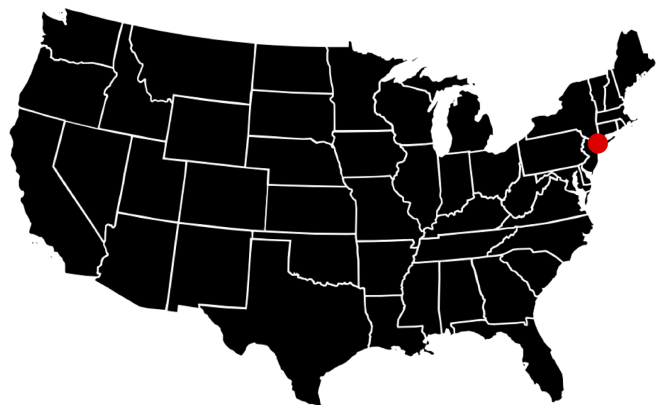


Favourite city: St Petersburg  
Want to go to: te araroa trail



Favourite city: New York  
Want to go to (city): Tokyo

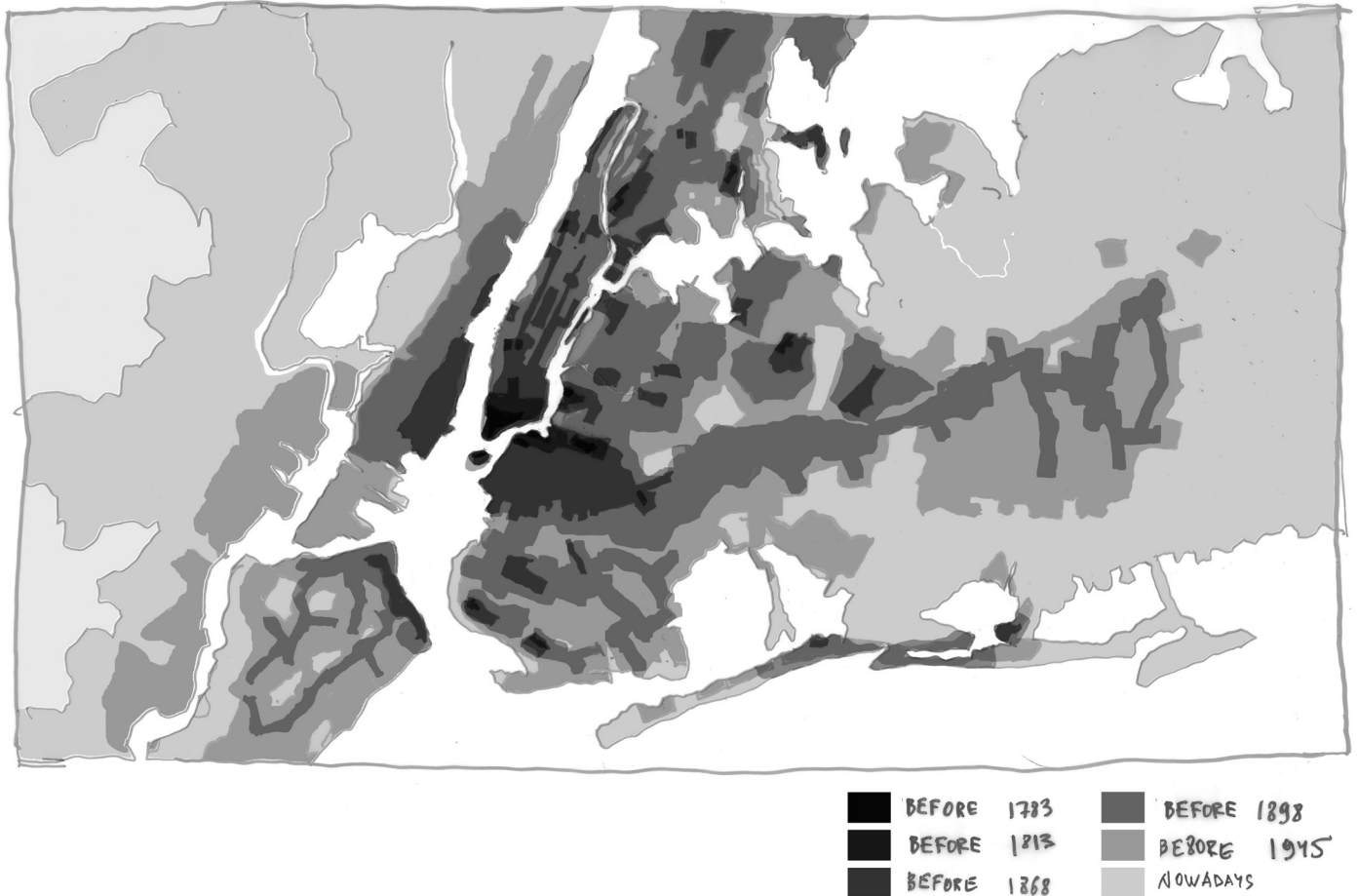
# NEW YORK



# 1. Metropolitan Size and Positioning

1:500.000

## The historical growth of metropolitan area



Growth can be divided into several stages. In the very development takes place around water and first is compacted downtown. With the influx of migrants in the 19th century and the development of industry, settlements formed around industrial territories.

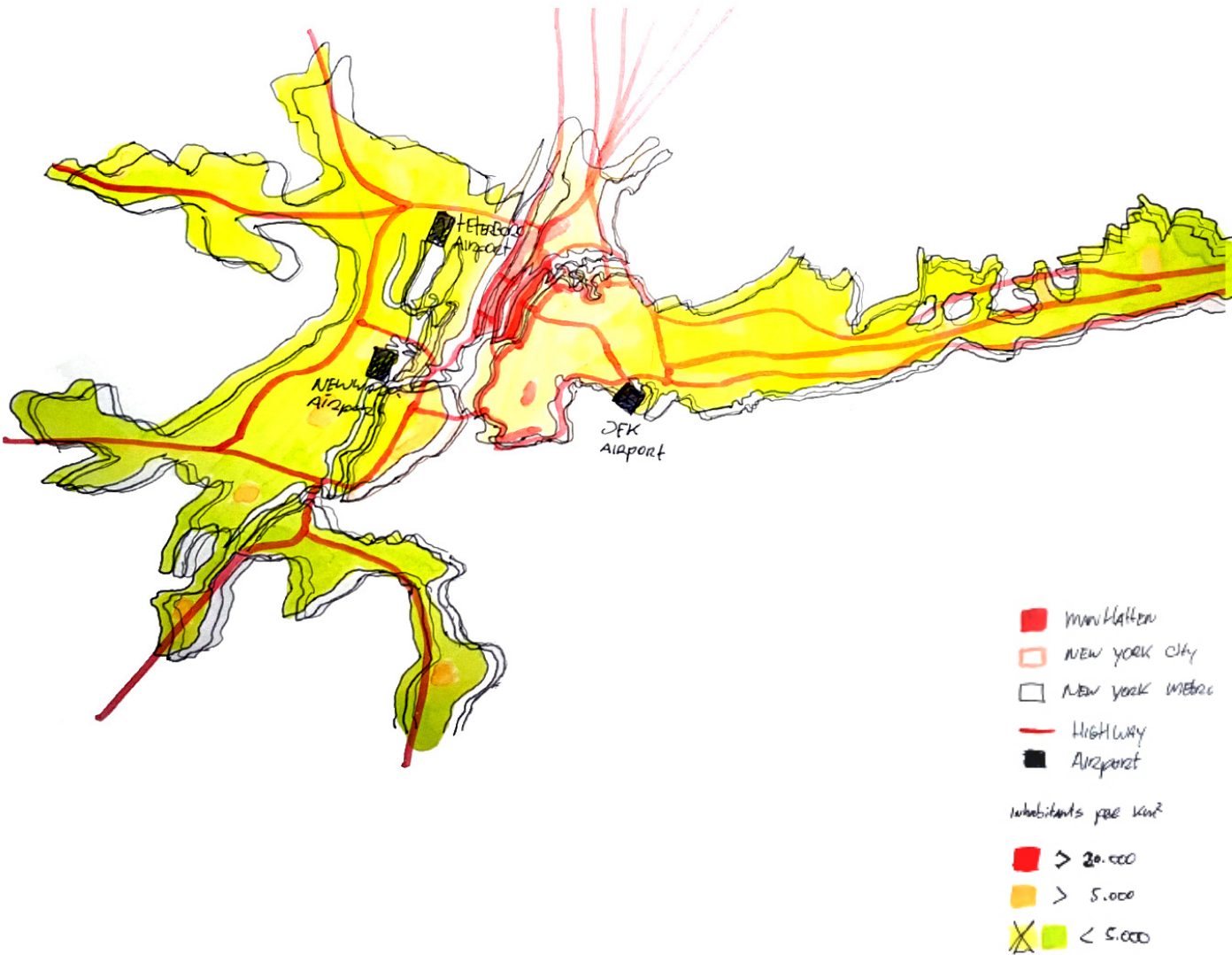
The next stage - the development of vehicle infrastructure - provokes development along major highways.



The New York metropolitan area originated from the first colonial settlement on the tip of Manhattan island. Over the years New York gradually grew outwards and started sprawling all over Long Island and Staten Island. Throughout those years, the original starting point of New York remained the core of the city. This is where New York is at its most dense and all the mayor infrastructure is oriented towards it.

1:200.000

Population Density



## 2. Relation Infrastructure and Landscape

### Downtown Infrastructure

1:20.000



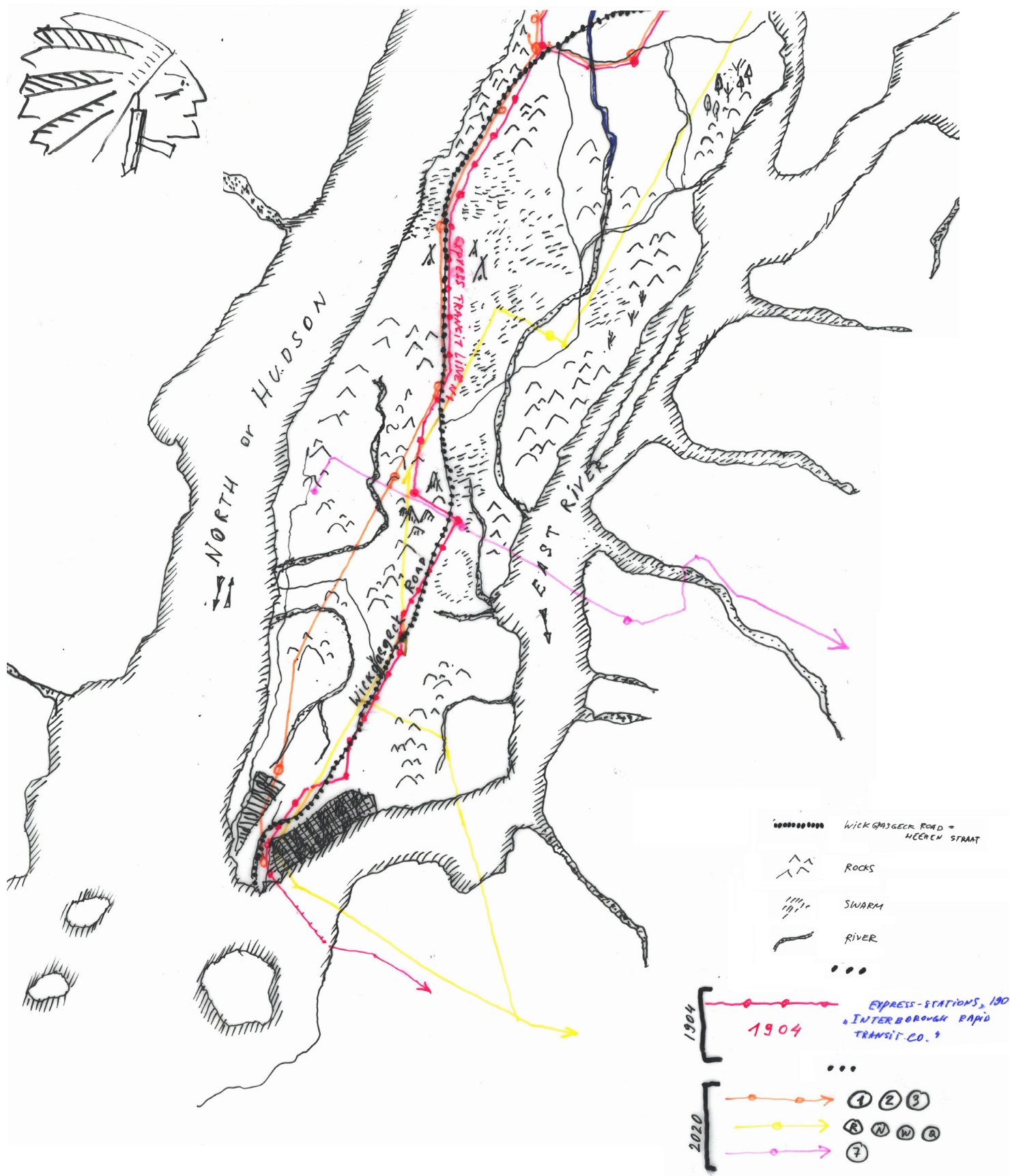
Manhattan has a busy ring road that runs along the edge of the island. Several bridges cross deep into Manhattan, making the city accessible from Brooklyn. The major roads in Manhattan are linked to these bridges.



The first line of high-speed rail - the progenitor of the metro goes along the Broadway. The attitude to the landscape in this case is dictated by the fact that Broadway runs along a historic Native American road running from north to south and enveloping historical swamps, mountains and rivers. Thus, the infrastructure of New York is connected with the historical landscape.

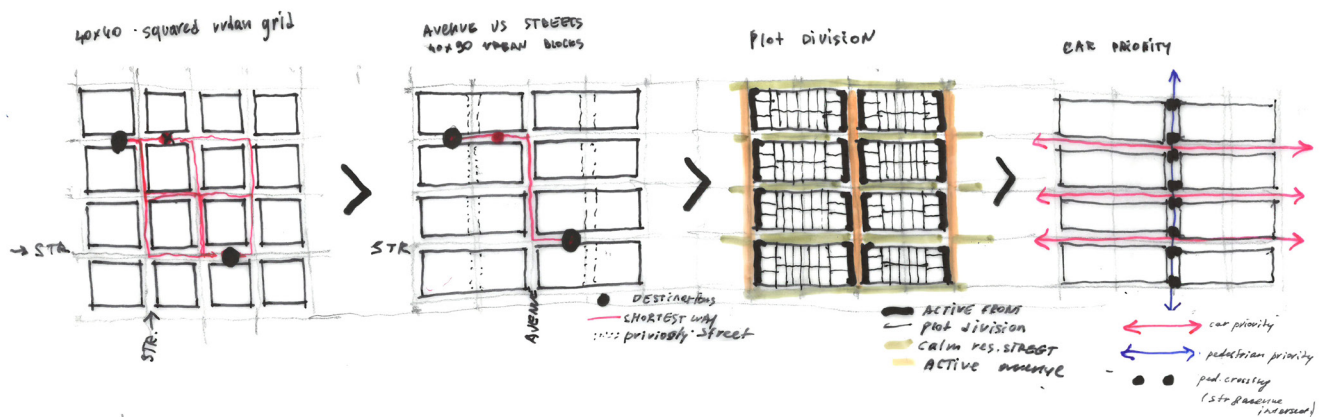
## Wickguasgeck road = first metroline

1:200.000

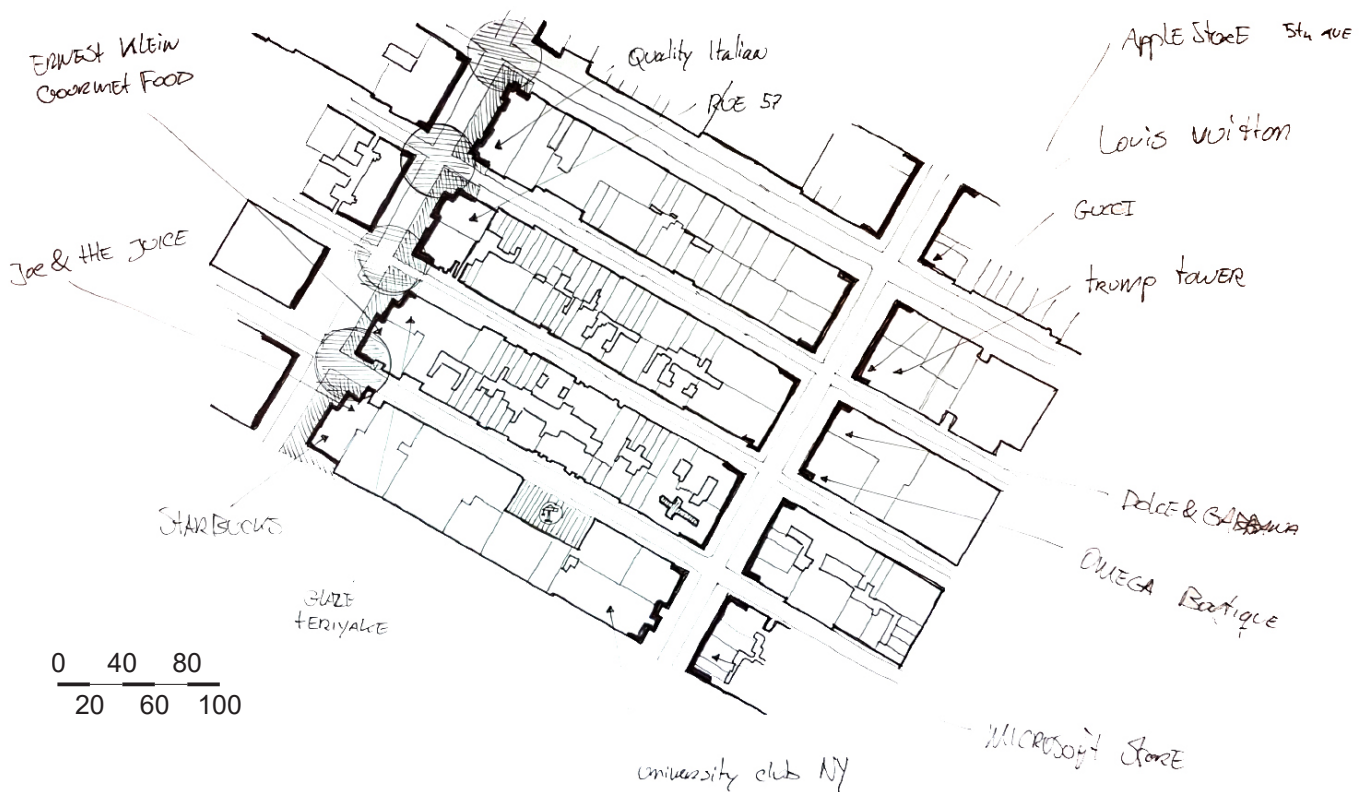


### 3. Urban Typology

#### Main principles



#### Streets & Avenues



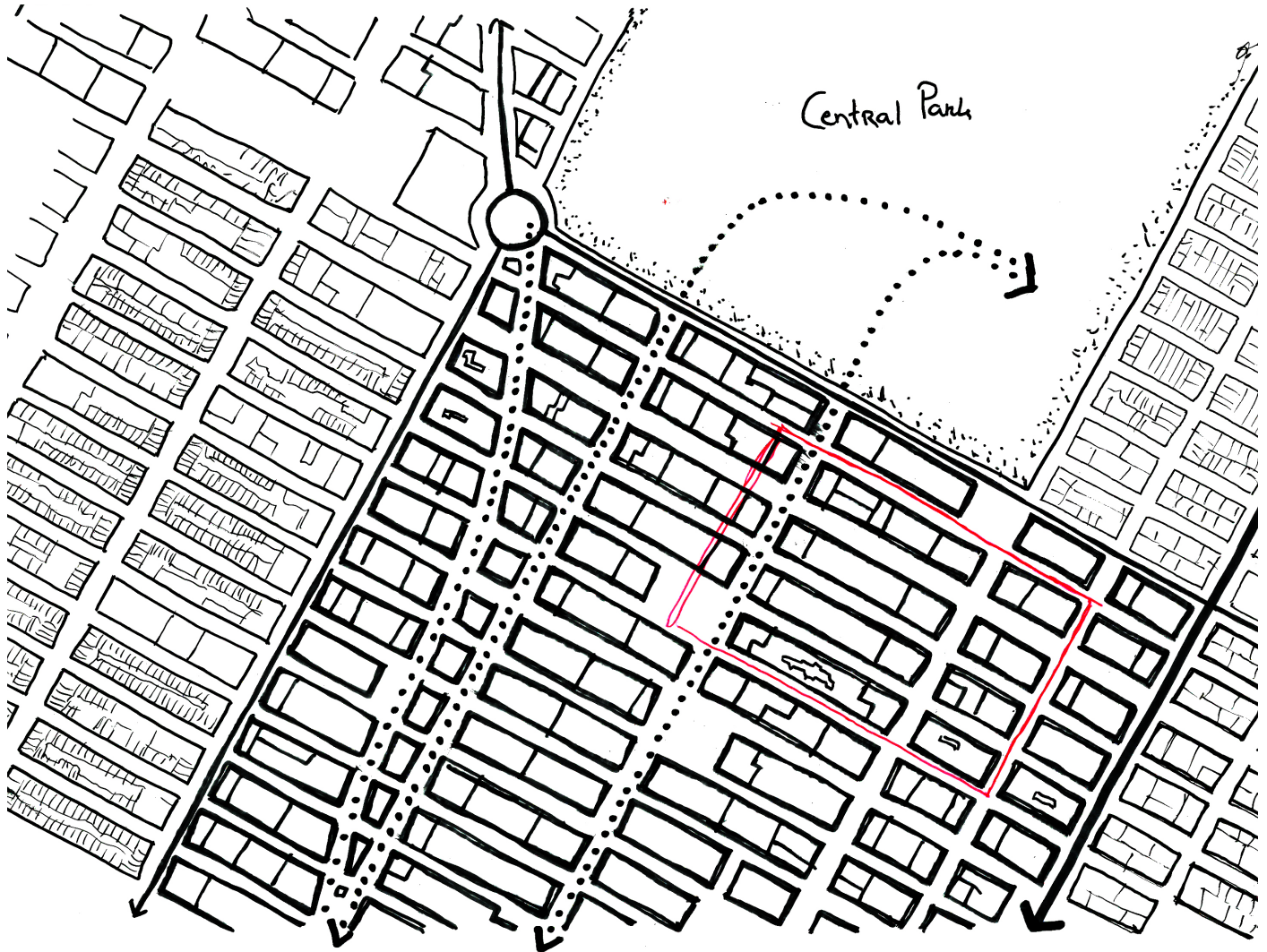
The New York grid is formed by its avenues and streets. Each of these grid cells is filled with a multitude of different high density typologies. Larger typologies are oriented towards the avenues on the side of the cells. While in the middle of the cell the grain size is strongly reduced along the streets.

Some of the avenues have a different character from each other as well. In the drawing you can see 1 avenue with food oriented functions, this avenue is shaped different in order to fit more terrace spaces. While the other avenue is focused towards maximizing store front shopping area.

The boundaries between different neighborhoods in Midtown Manhattan are defined by different urban typology and density.

1:10.000

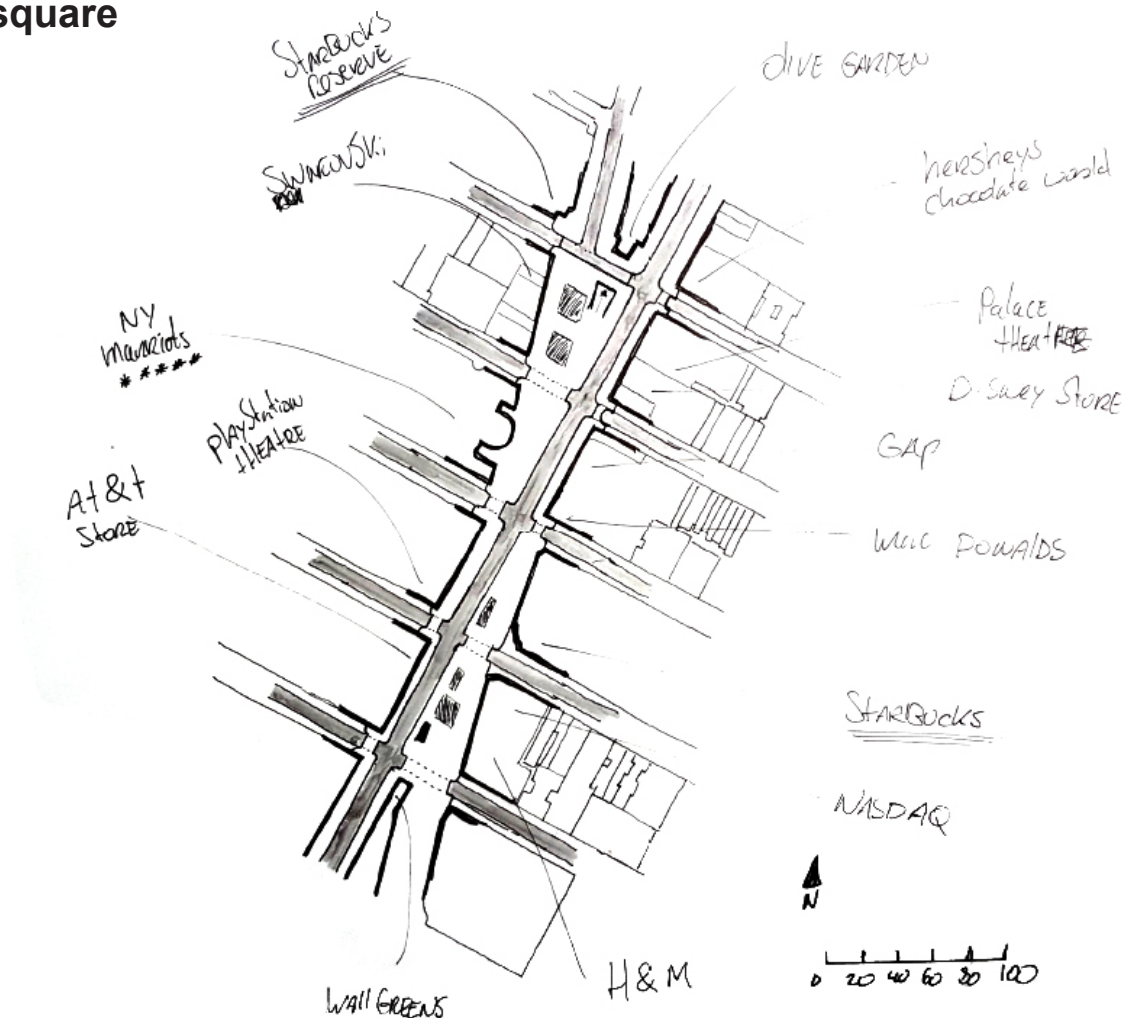
## Borders between districts



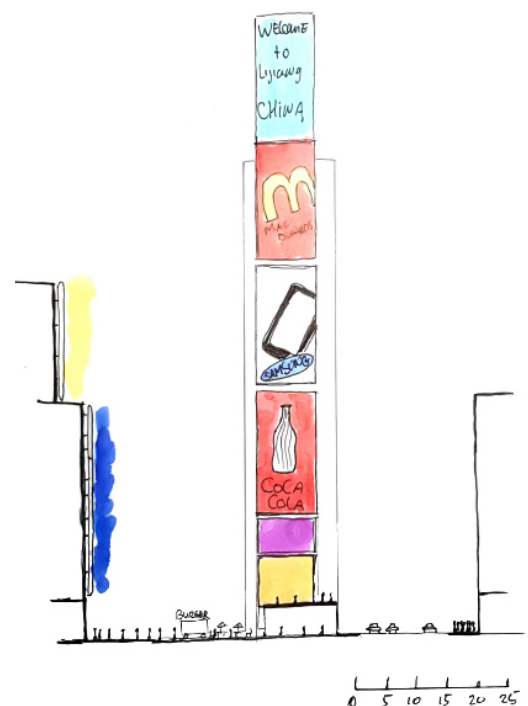


## 4. Public Space

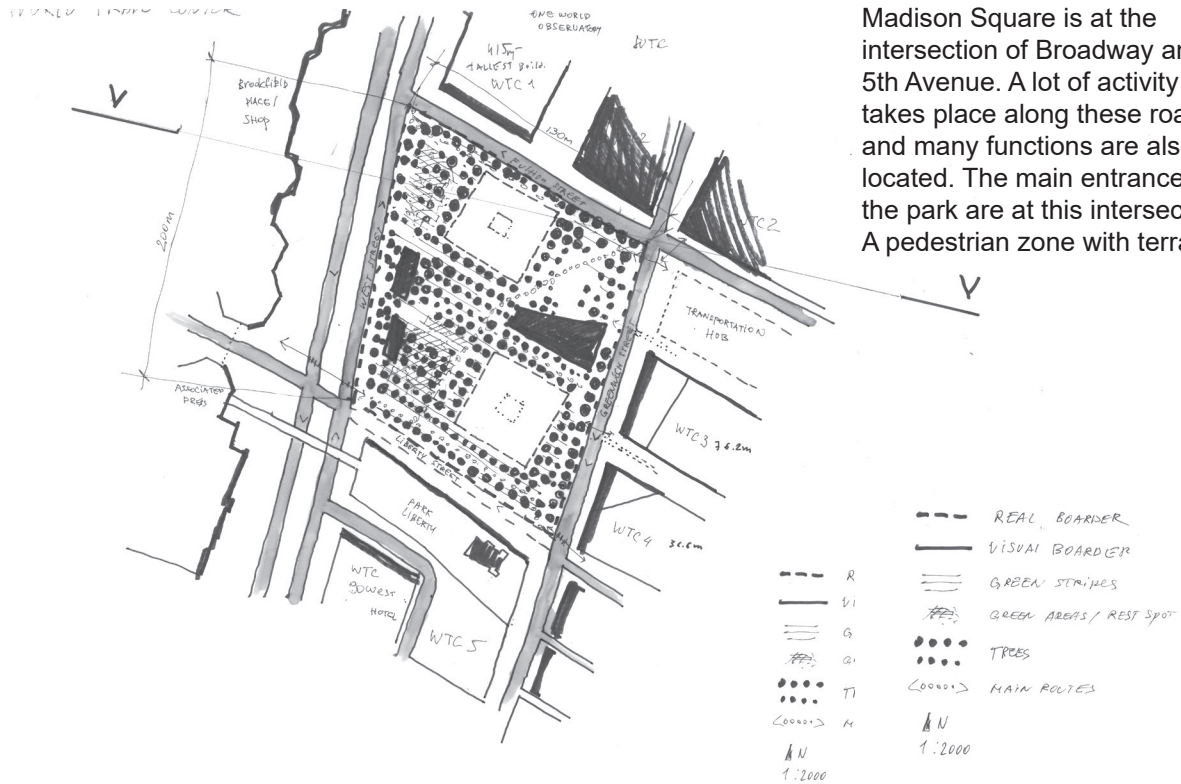
### Times square



Times square or Times junctions or Times billboard. Which one is it. Times square is unique in NYC as in the design of the public space, this is one of the only places where pedestrian is ordered above the car in design. But a real public space for the citizens of New York it is definitely not. Its more a tourist attraction and location for big companies to promote themselves with flagship-stores and expose their desired corporate image on giant billboards. Times square, in my opinion, is a billboard itself.

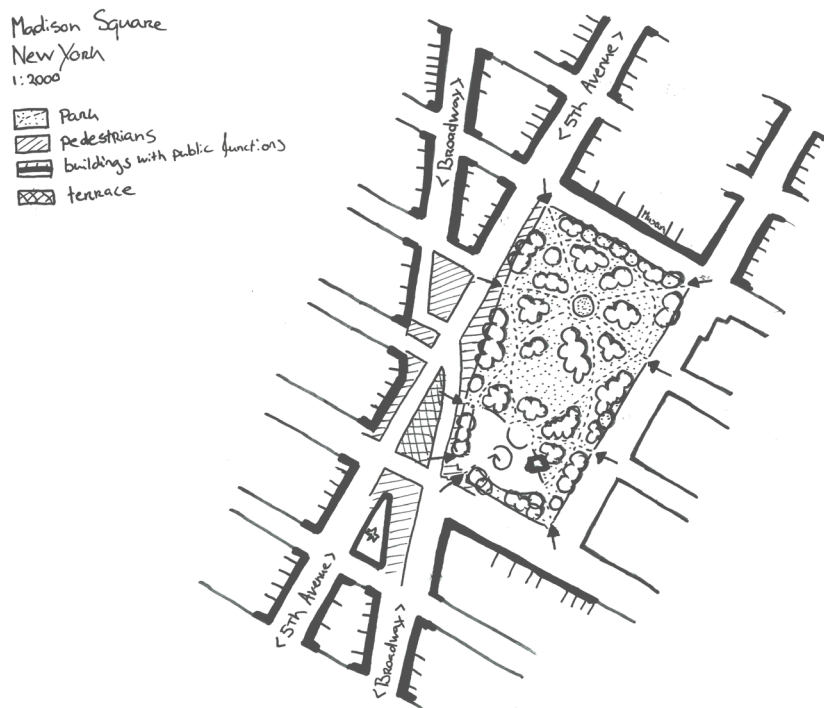


## World Trade Center Square



Madison Square is at the intersection of Broadway and 5th Avenue. A lot of activity takes place along these roads and many functions are also located. The main entrances to the park are at this intersection. A pedestrian zone with terraces

## Madison Square



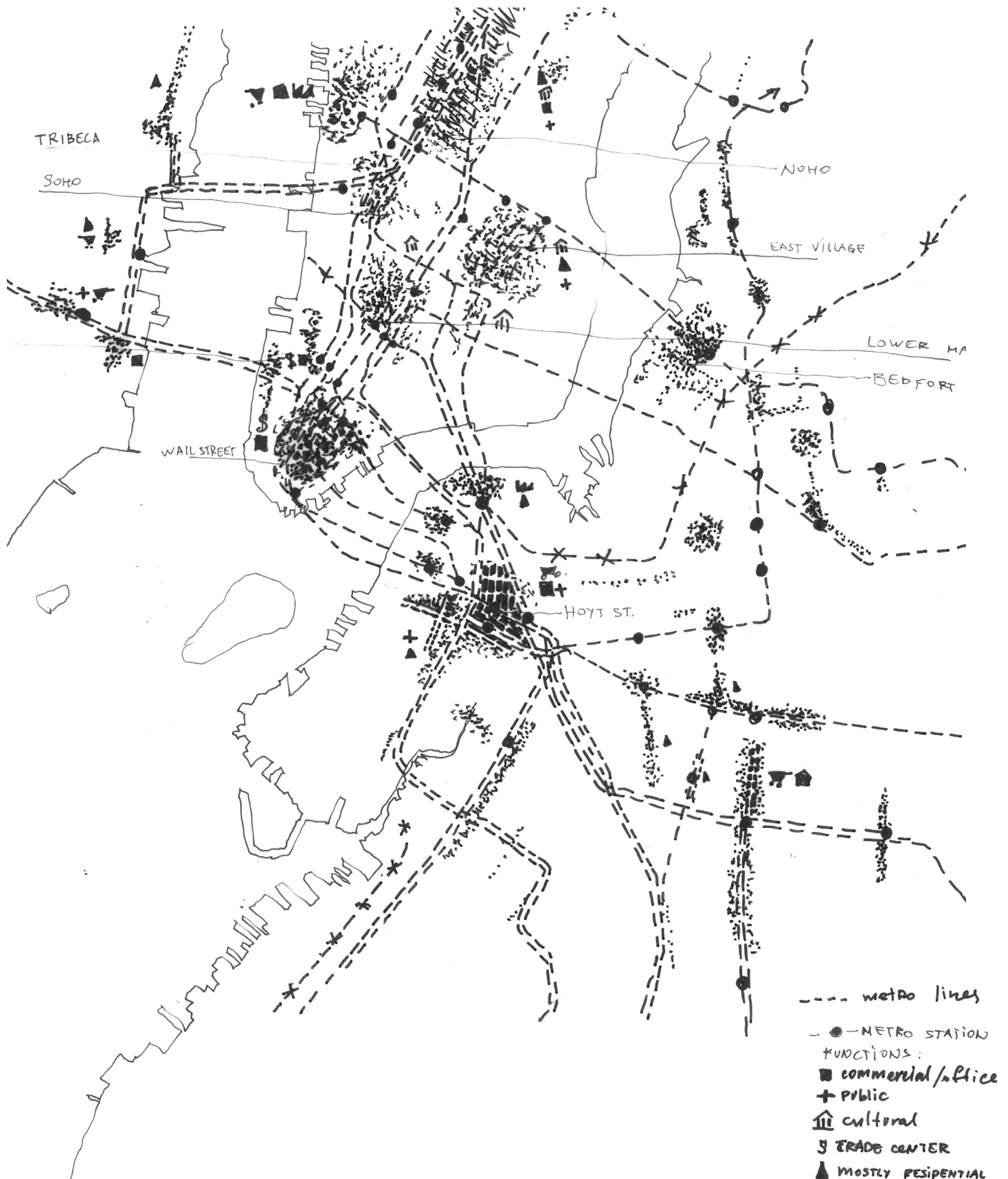
Madison Square is at the intersection of Broadway and 5th Avenue. A lot of activity takes place along these roads and many functions are also located. The main entrances to the park are at this intersection. A pedestrian zone with terraces forms the transition from the street to the park.

The park is characterized as an English landscape park with various walking routes. The entrances connect to the grid structure.

## 5. City Centers

1:500 000

### Public activities in relation to subway infrastructure



Downtown New York city, once the first starting point of the colonial settlement. Currently the worlds center of capitalism, dominated by all the big banks and off course the New York stock exchange on Wall-street. Apart from some old churches amids all the modern financial services oriented developments, there is not much left that reminds you of the history of this place. Over time New York has become a city of money, the core of capitalism.

1:200 000

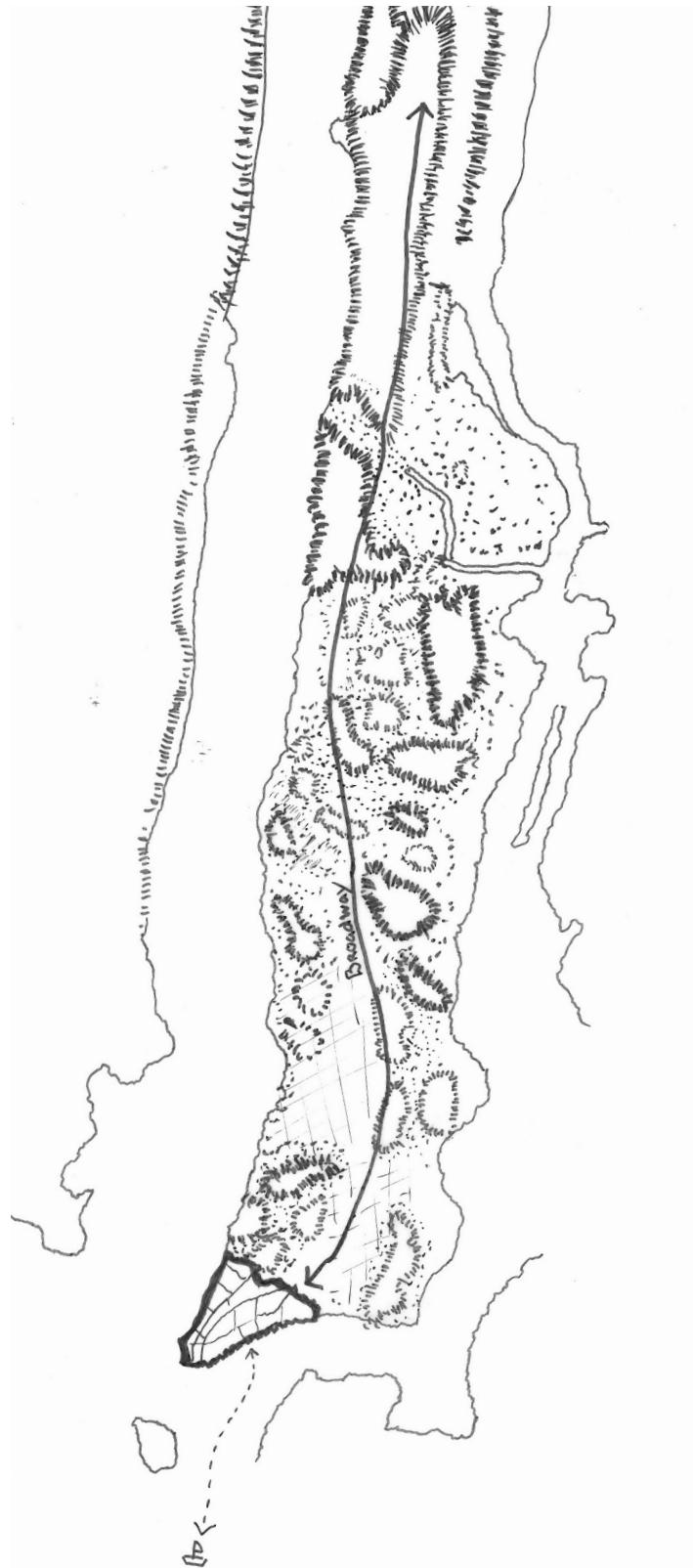
## New York - City of Money



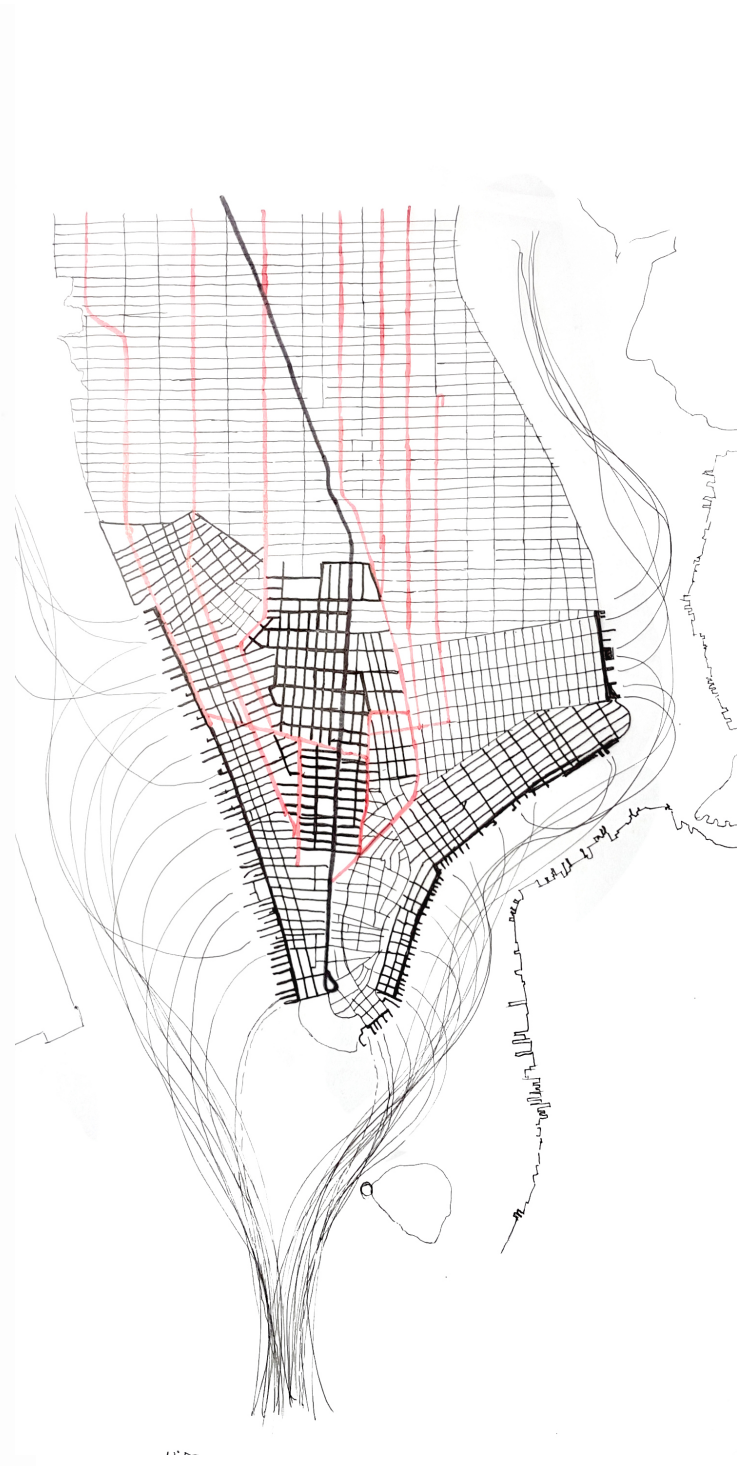


## 6. Relation Between History and Growth

Original landscape



Collage of grids



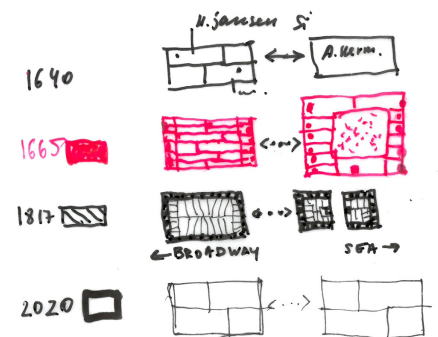


During the first expansions of the city, the landscape was still very much present in the area. Farms were still part of the city. There were also several parks that formed the transition from the city to the landscape

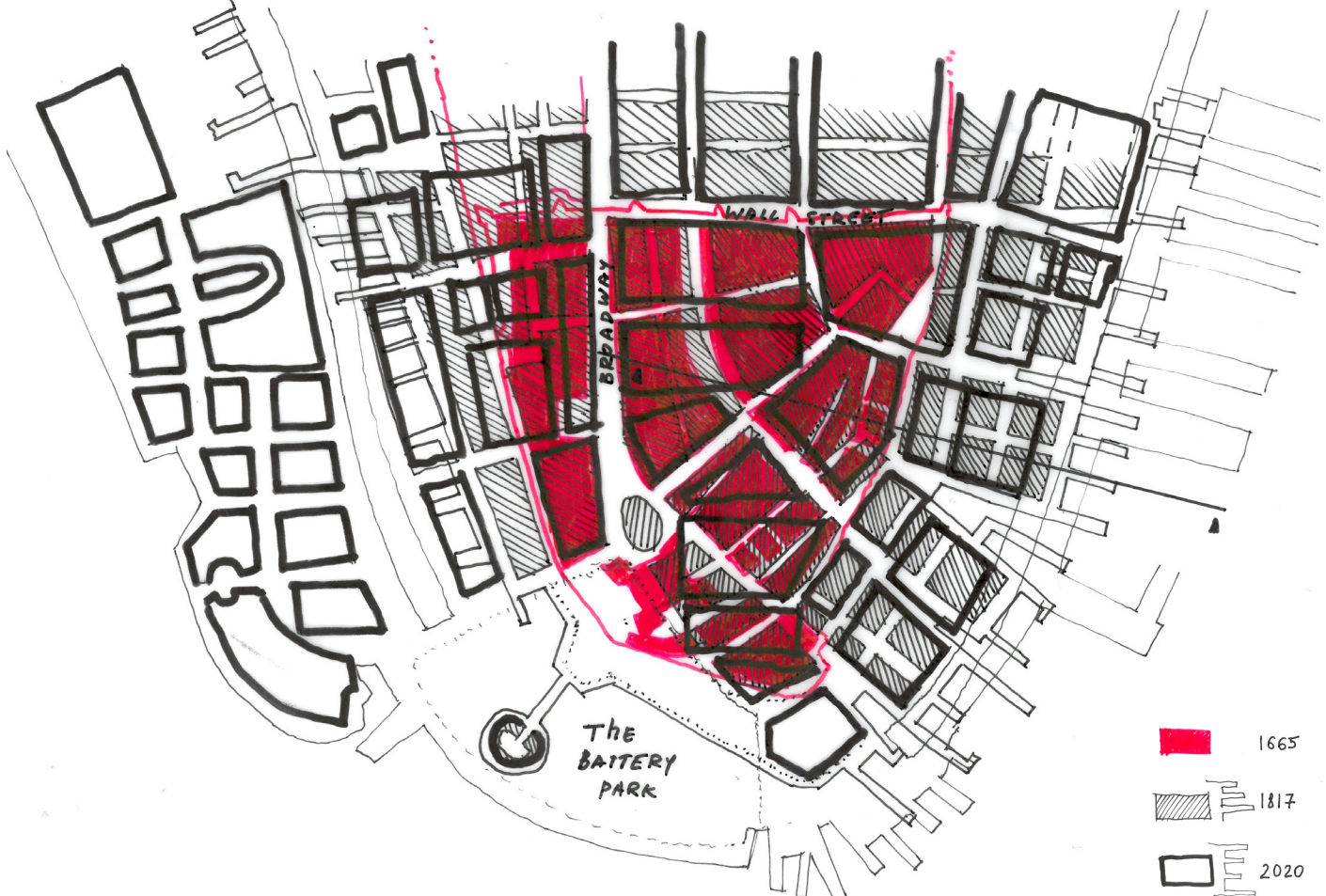
## The growth beyond the Wall



## Downtown plots development

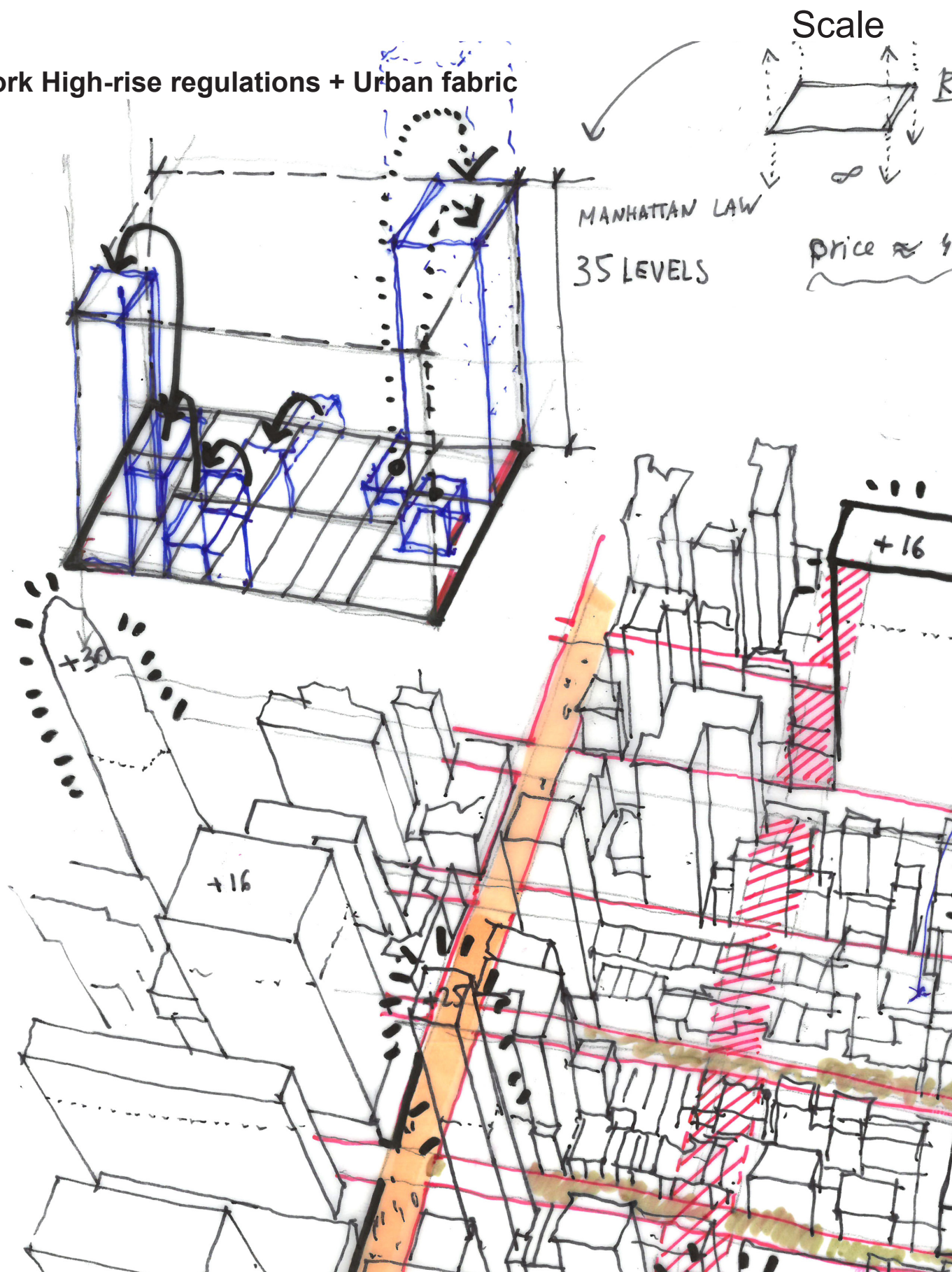


## Downtown layers



## 8. Title Bonus Drawings

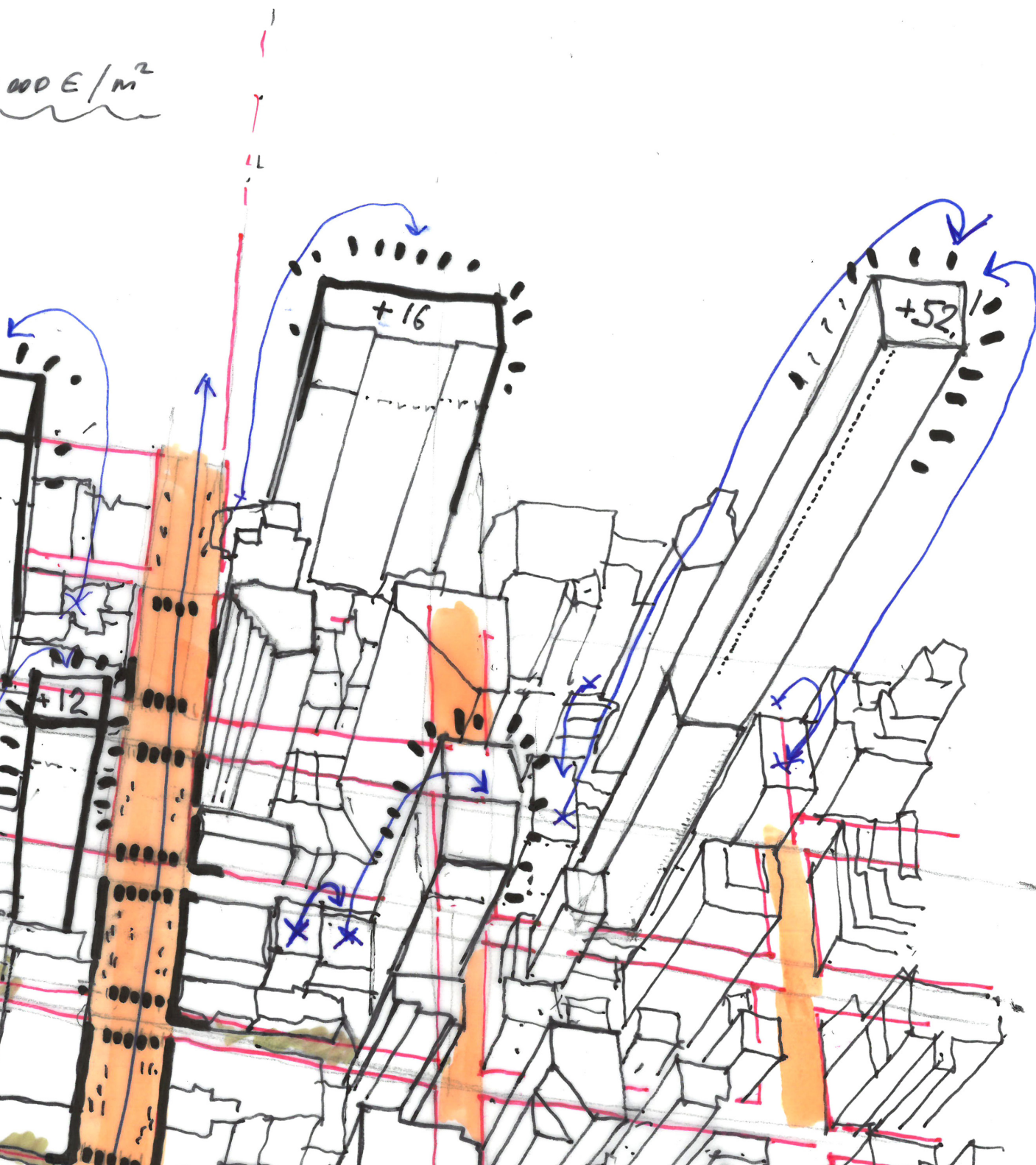
New York High-rise regulations + Urban fabric





ROMAN LAW

$000 \text{ E/m}^2$



# Saskia Kleij and Roelof Koudenburg



Favourite city: Christchurch (NZ)  
Want to go to (city): Sint Petersburg

What did you learn about Hong Kong?

To be honest, before I didn't know a lot about Hong Kong. But what I found out and thought was very interesting fascinating were the extreme steep hills that surround this huge metropolitan city. Extreme high buildings stand side by side these beautiful mountains. This contrast between an extreme urban environment and this nature area is quite fascinating. Also the immense scale of the city and its huge towers became clear to me when we compared some sections and maps with other cities. Walking around in Google maps during the O2a classes showed that this city was extremely packed and multilayered. It was not just some functions in the ground floor, as we have in Amsterdam. There were functions everywhere: under the ground were metro stops with shops, above that more shops and restaurants, then some layers of offices on top of that housing. Although the city was sometimes a bit hard to analyse, I liked it to dive into a completely different city than the cities I know well.



Favourite city: Sydney  
Want to go to (city): Rio de Janeiro

What did you learn about Hong Kong?

I learned that the urban grid can be very deceptive to the scale and design of a city. Looking at Hong Kong in the top view looks like a typical grid city; however, when you look at the city in a 3D perspective, you realize the immense density and height of the built environment. Also the project made me realize that the cityscape is in other countries very dependent on one shaped by the local relief. Furthermore, whilst doing the function analysis on the neighbourhood level it was eye-opening to me to realize what influence old neighbourhood functions from centuries ago still have in today's function.



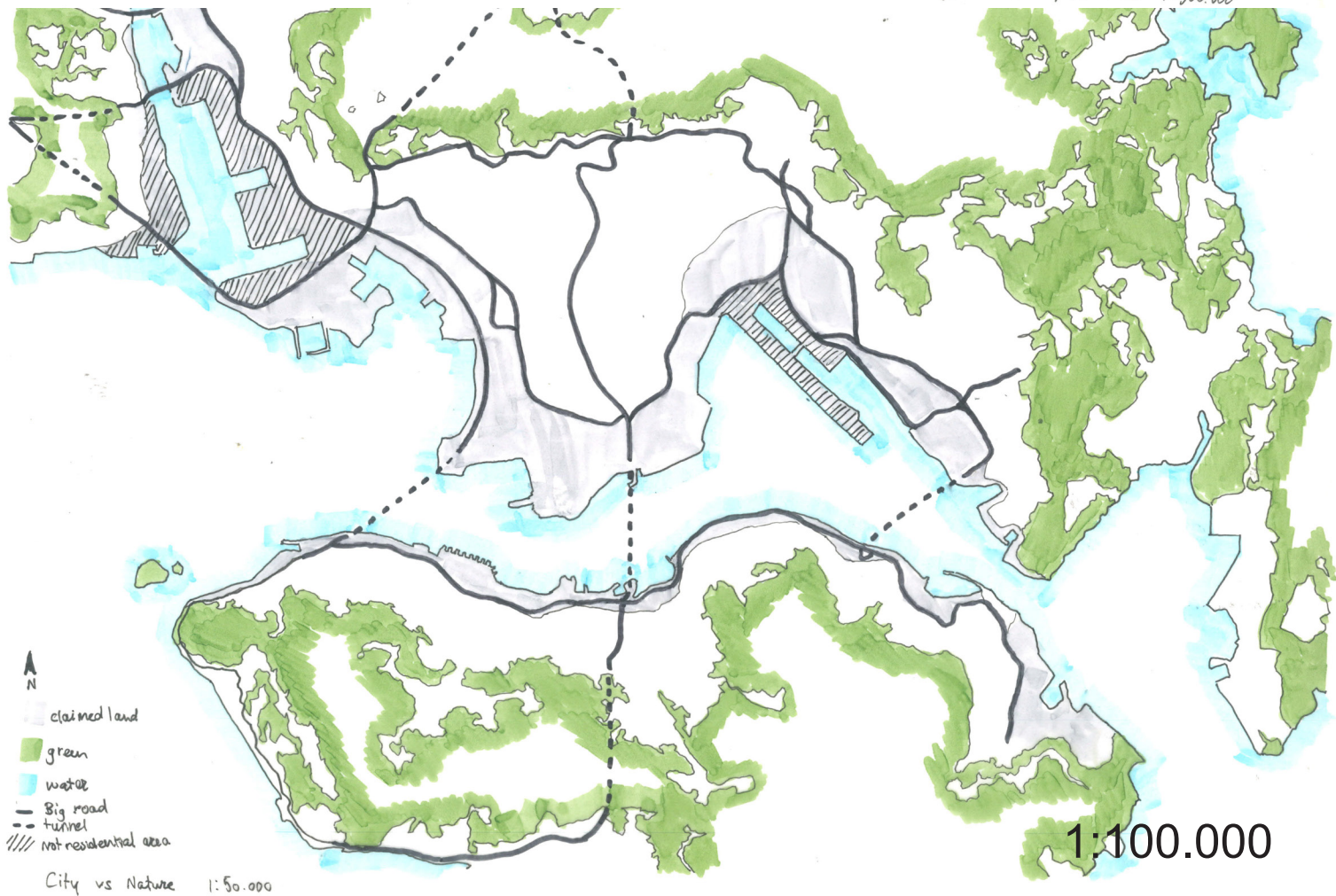
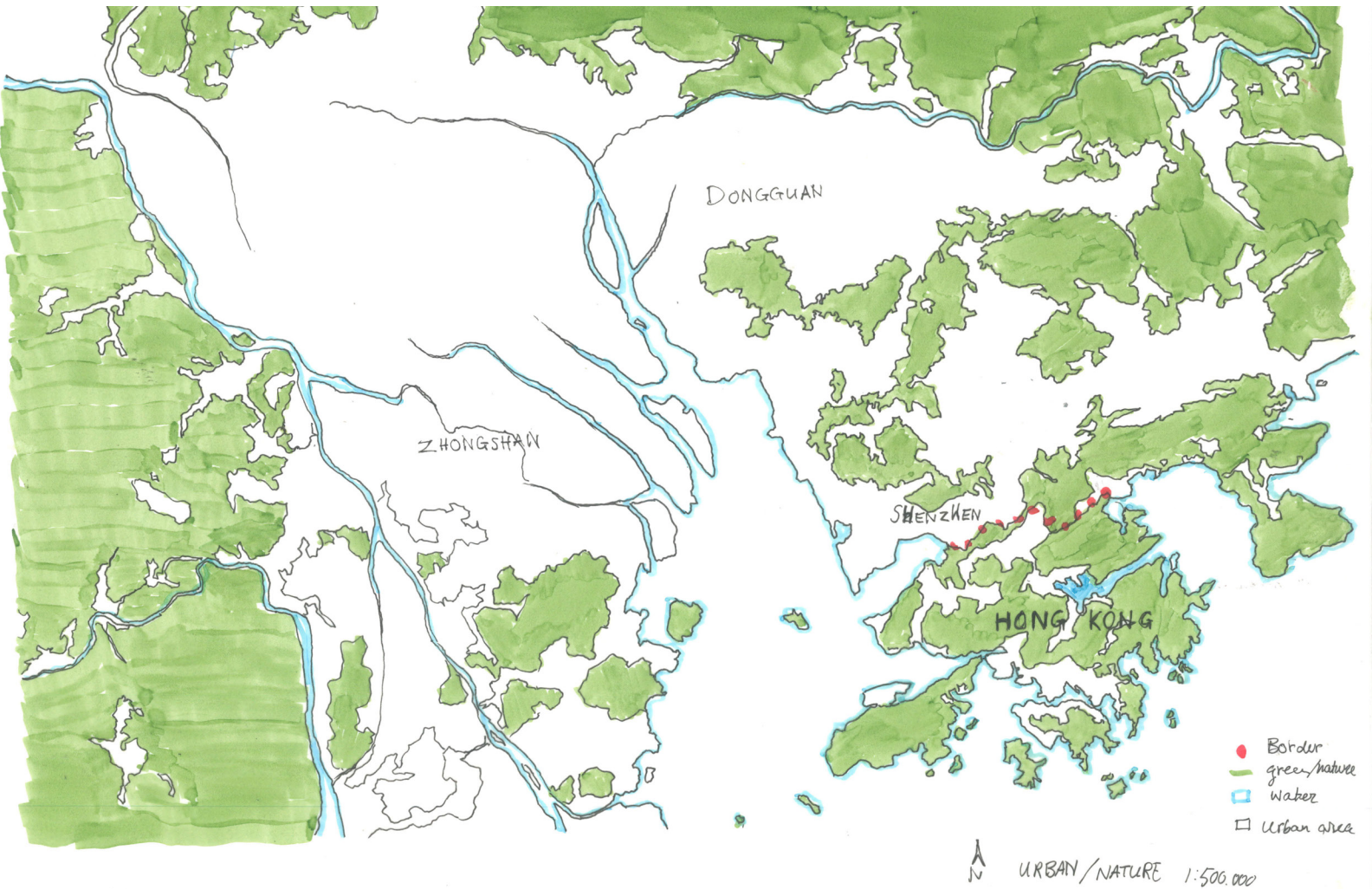
# HONG KONG





# 1. Metropolitan Size and Positioning

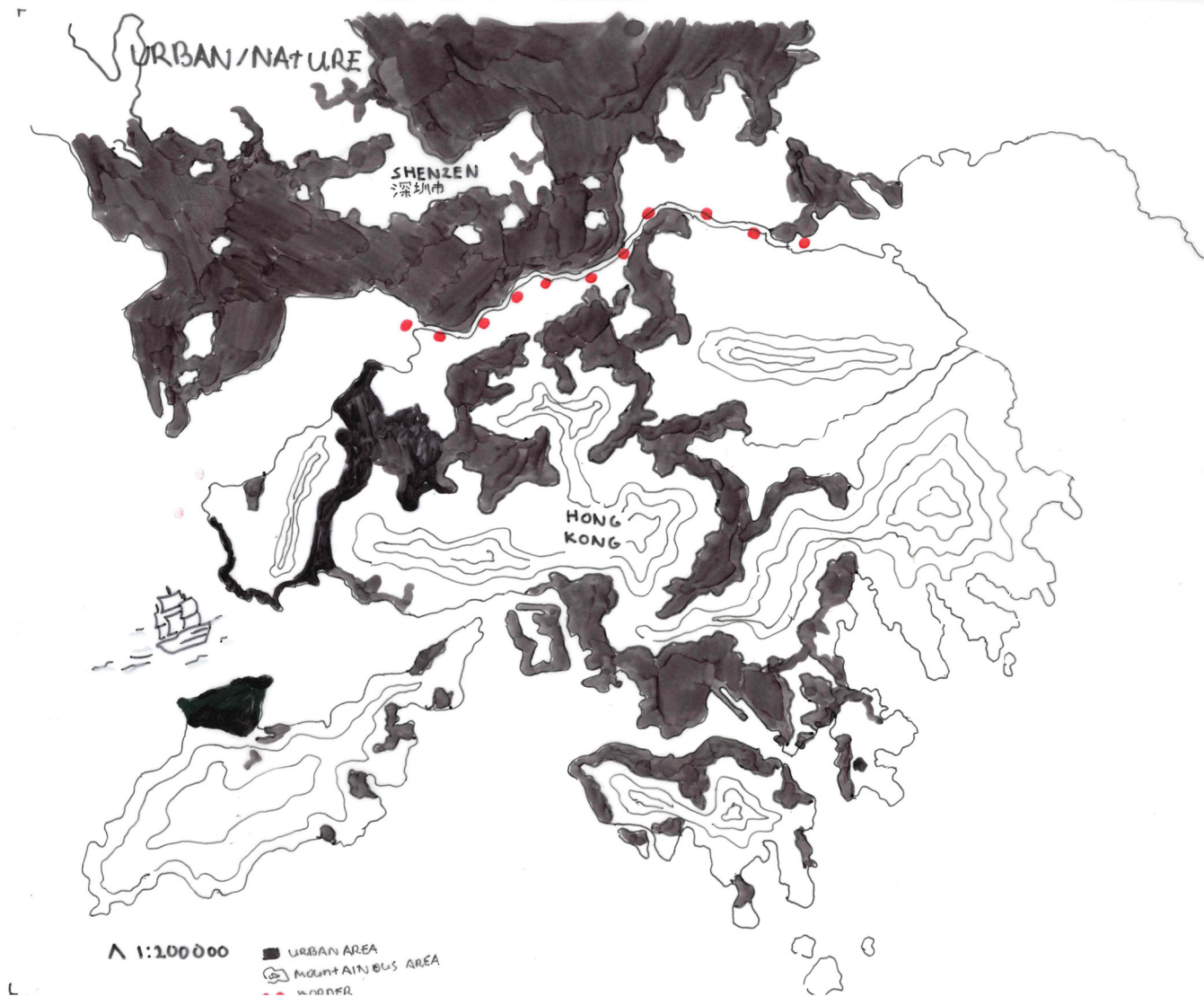
1:1.000.000



We scaled all the drawings by 50% because it wouldn't fit otherwise, so the scale written on the drawing itself is not correct

- City is very dominantly shaped by its surroundings/relief. The steep hills make it impossible to build into the mountainous range.
- It can clearly be seen that Shenzhen is more draped around the border between Mainland China and Hong Kong. Hong Kong is not as much focused on mainland China and only has two main border crossings.
- Because of the steep hills, Hong Kong could not grow into the mainland, so it had to grow towards the water-side. Therefore the people reclaimed a lot of land.

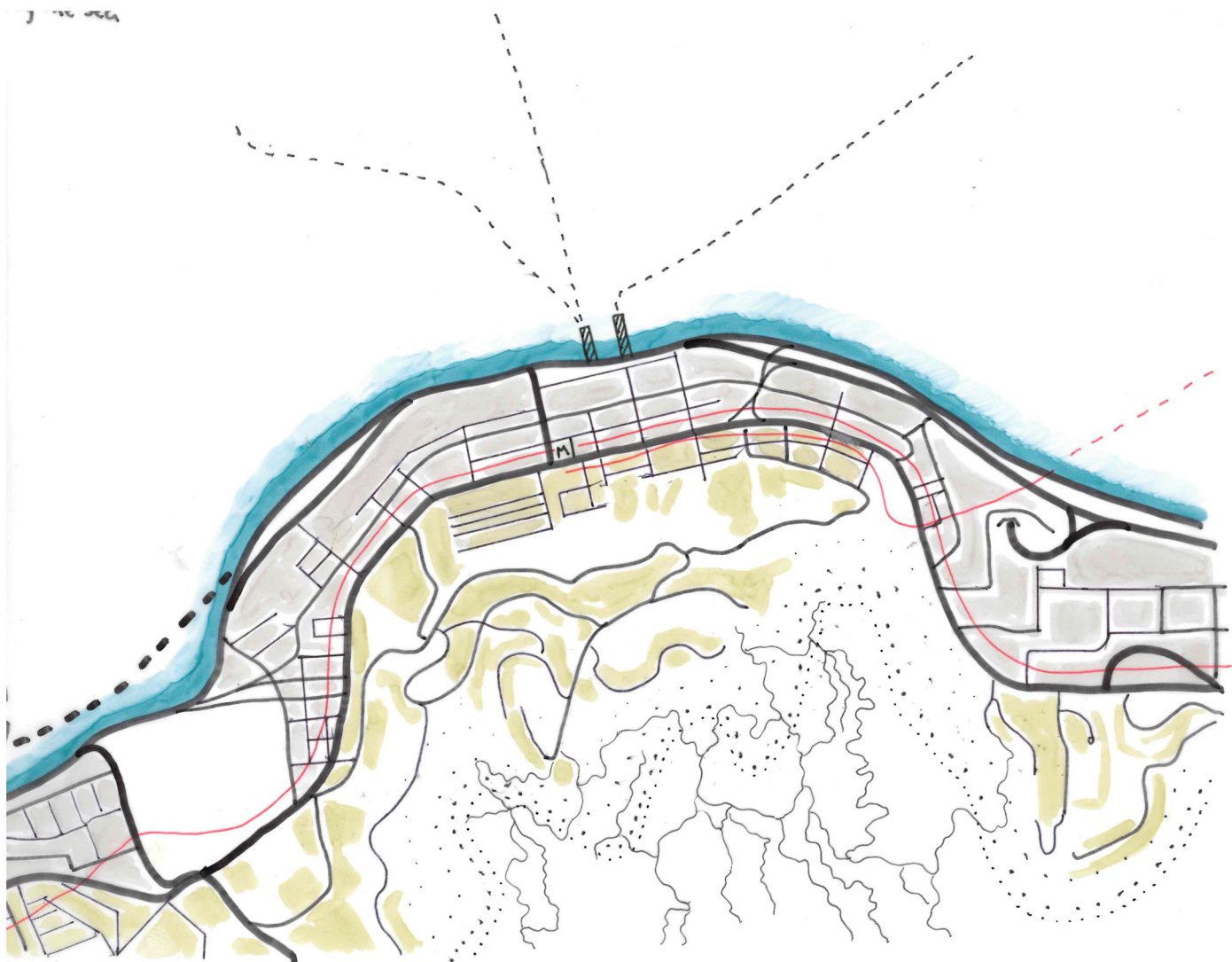
1:400.000





## 2. Relation Infrastructure and Landscape

1:20.000



A 1:10.000



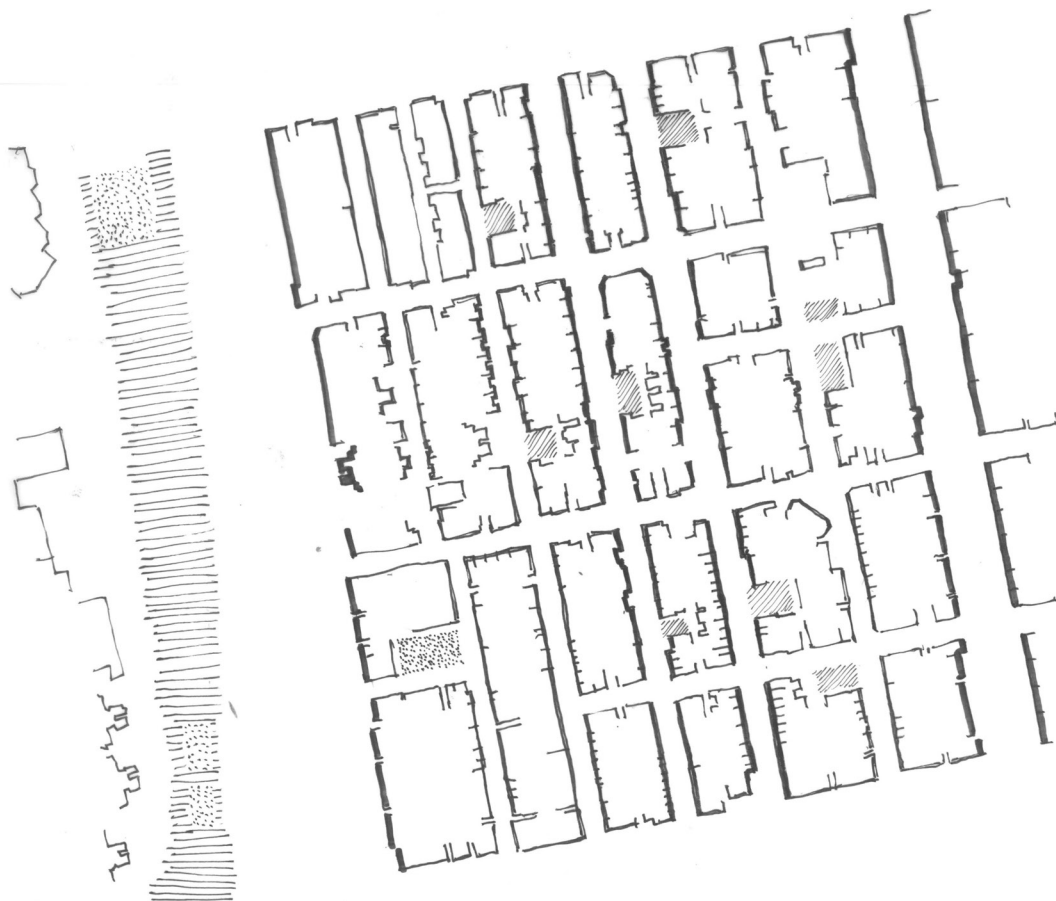
- Hong Kong has a clear grid structure where smaller alleyways form secondary routing between the highrise (service ways).
- The harbourfront visible nowadays often did not even exist a few decades ago! A lot of land has been reclaimed to be built upon.
- clear division between grid structure and curved road in the hinterland
- The grid structure of the streets contrasts with the almost randomly organized parcelation. But we can find some logic: The largest streets contain large parcels with big shops and 'western' restaurants like the McDonalds. Behind these main roads there are secondary roads with a lot of small shops. The parcelation is not so structured. In between the buildings there are small alleys, sometimes a few shops can be found here.

1:4.000

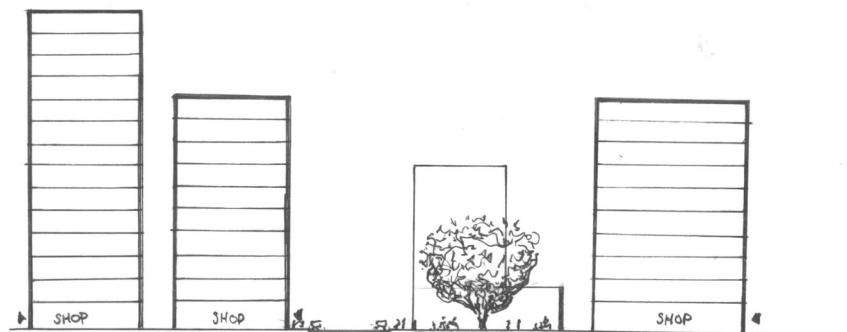


### 3. Urban Typology

1:4.000



1:2000  
 ↑ N  
 Green along the ROUTE  
 == Green park    // SQUARE    . . . SPORTS

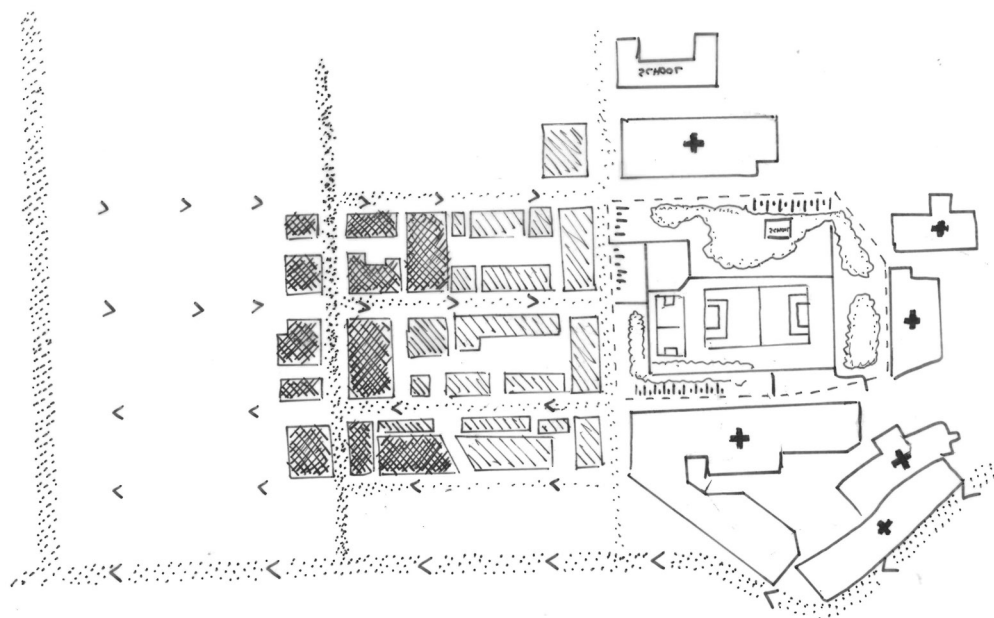


Section 1:500

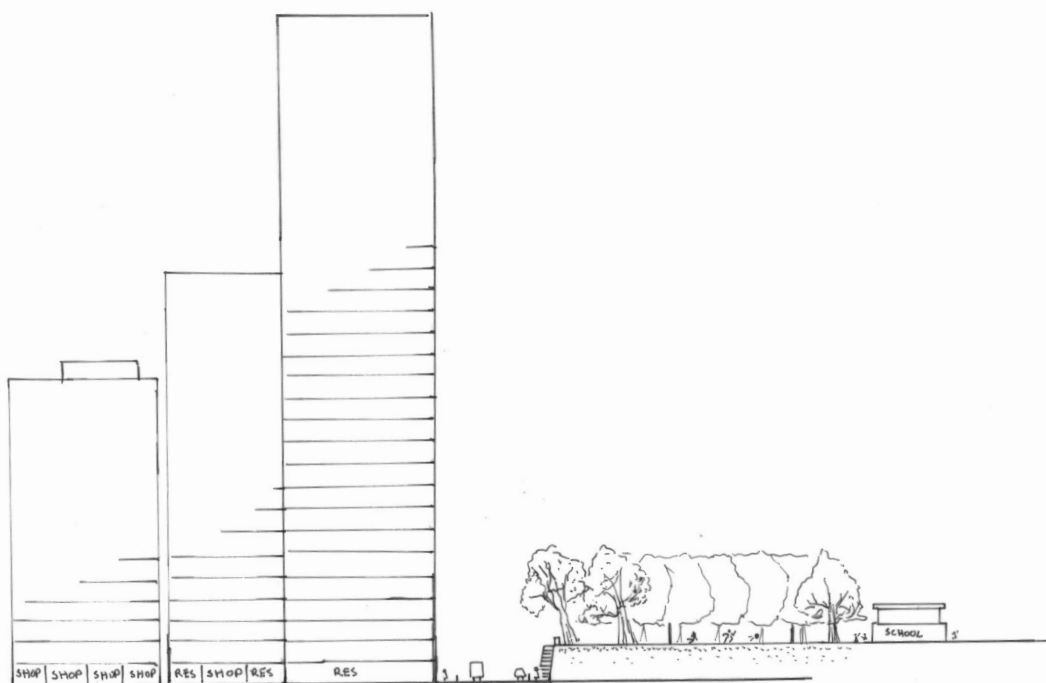
1:1.000

- Some districts have a clear relation to there past and have evolved from the old colonial zoning. For example old hospital districts often still have the same function and display a cluster of educational and hospital facilities.
- A lot of greenery is not accessible on ground level and the greenery is patchy and scattered throughout the city.
- The main shops are located at the main road. Near the parks is mostly residential
- Small pocket parks interrupt the walls of the high rise buildings in Hong Kong. Not all the 'parks'are real parks. They are mostly squares with a tree. These pocket parks itself are surrounded by the high walls of the buildings. They function as a resting place for the people on the street. The more green, leisure and sport parks are locat- ed closer to the residential area.

1:1000



George V mem. park

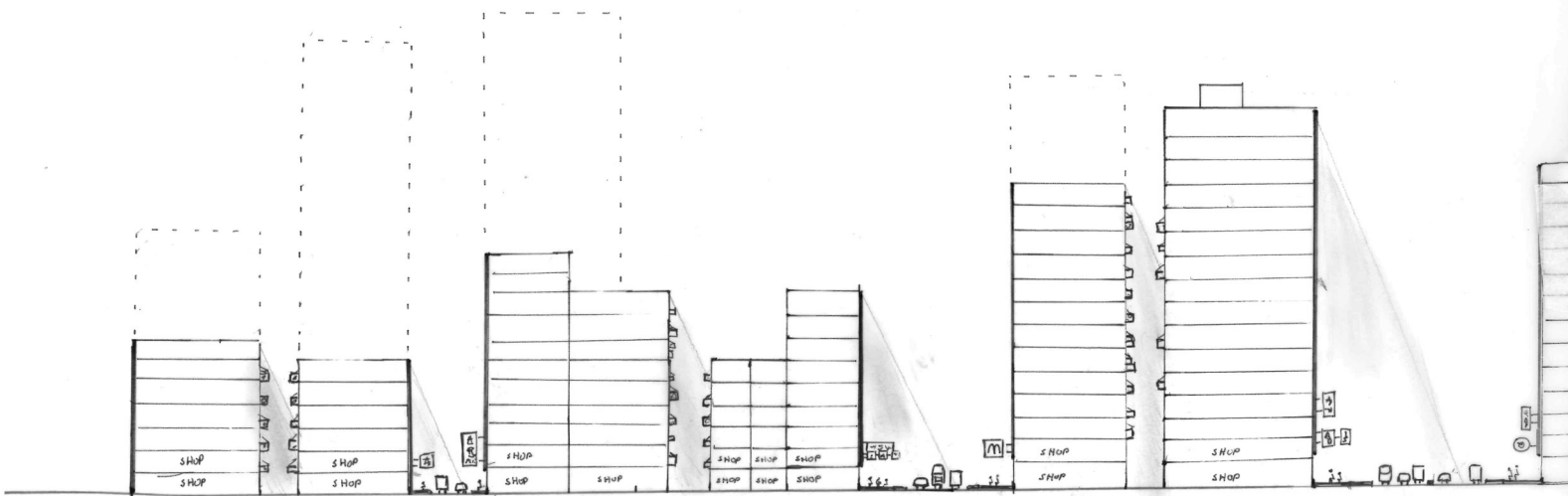
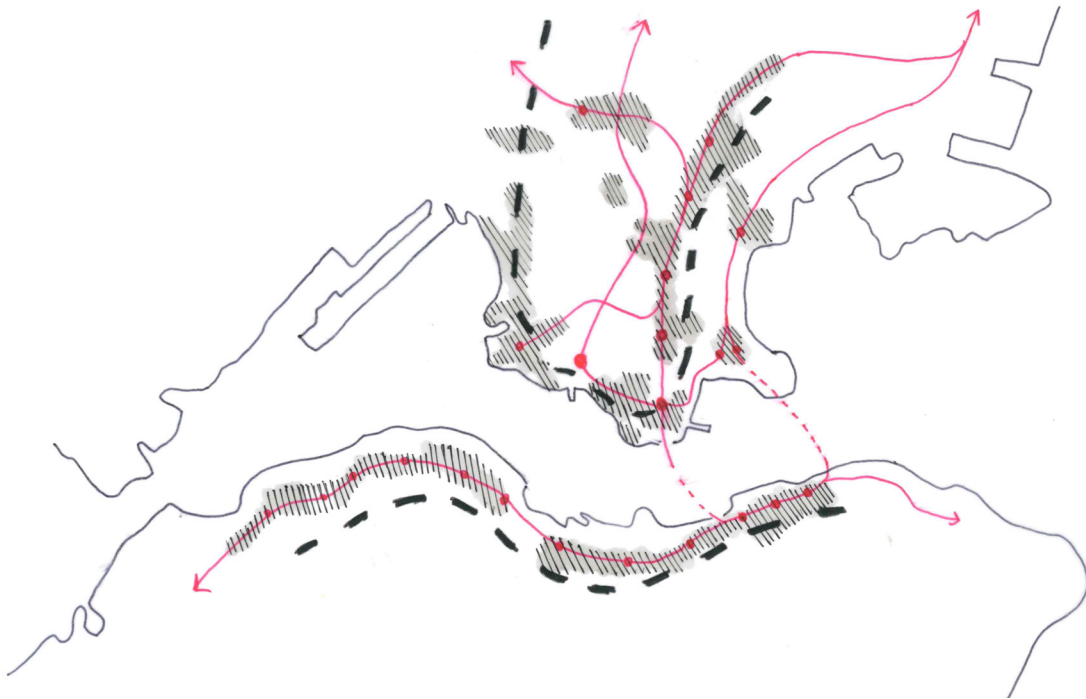


1:1.000

1:500

## 4. Public Space

1:100.000

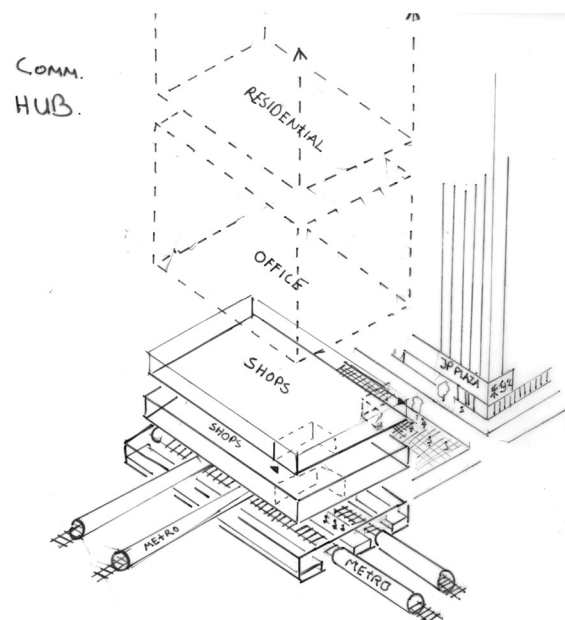
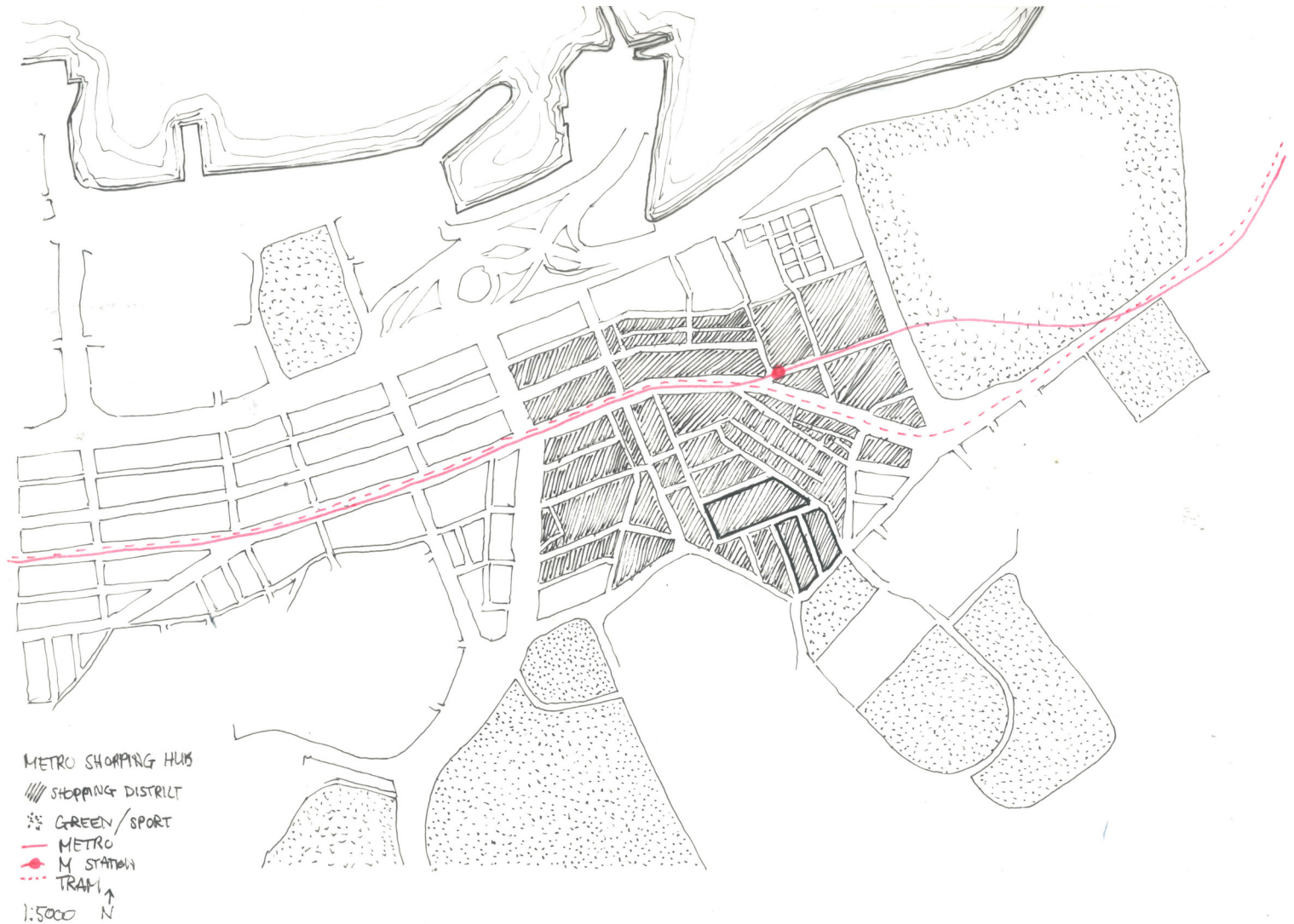


② ②

1:1.000

- Shopping districts often centre around the existing metronetwork. Almost the entire ground floor in the city is occupied by shops or offices
- On top of a lot of train stations there are shoppingmalls place on tops with subsequent housing or offices placed on top.




1:10.000



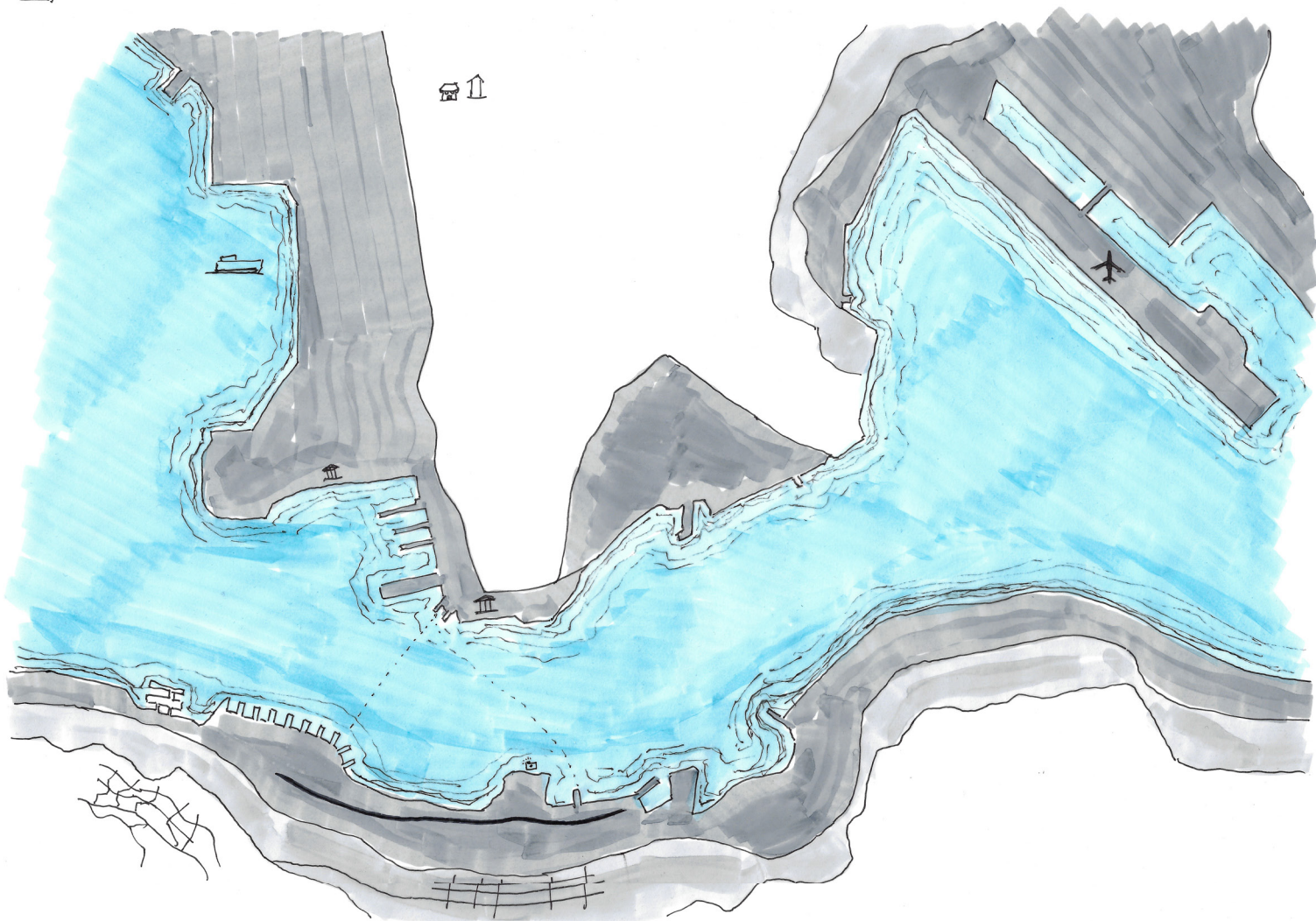


## 5. Relation Between History and Growth

1:40.000

-  Land position before 1900
-  Reclamation 1900-1950
-  Reclamation 1950-now

GROWING INTO THE WATER  
1:20.000



The reclamation of land already started at the end of the 19th century, but from the 20th century on it happened in extreme large areas. The lighter grey area in the drawing was claimed in the first half of the 20th century. You see a clear difference in the structure of the streets. The reclaimed land contains a grid structure and the inland has got meandering roads following the landscape. Especially in the second half of the 20th century Hong Kong claimed a huge amount of land. The reclaimed land in this area contains a lot of touristic functions and big infrastructure. Also the large logistic functions like the harbour and the airport are located here.

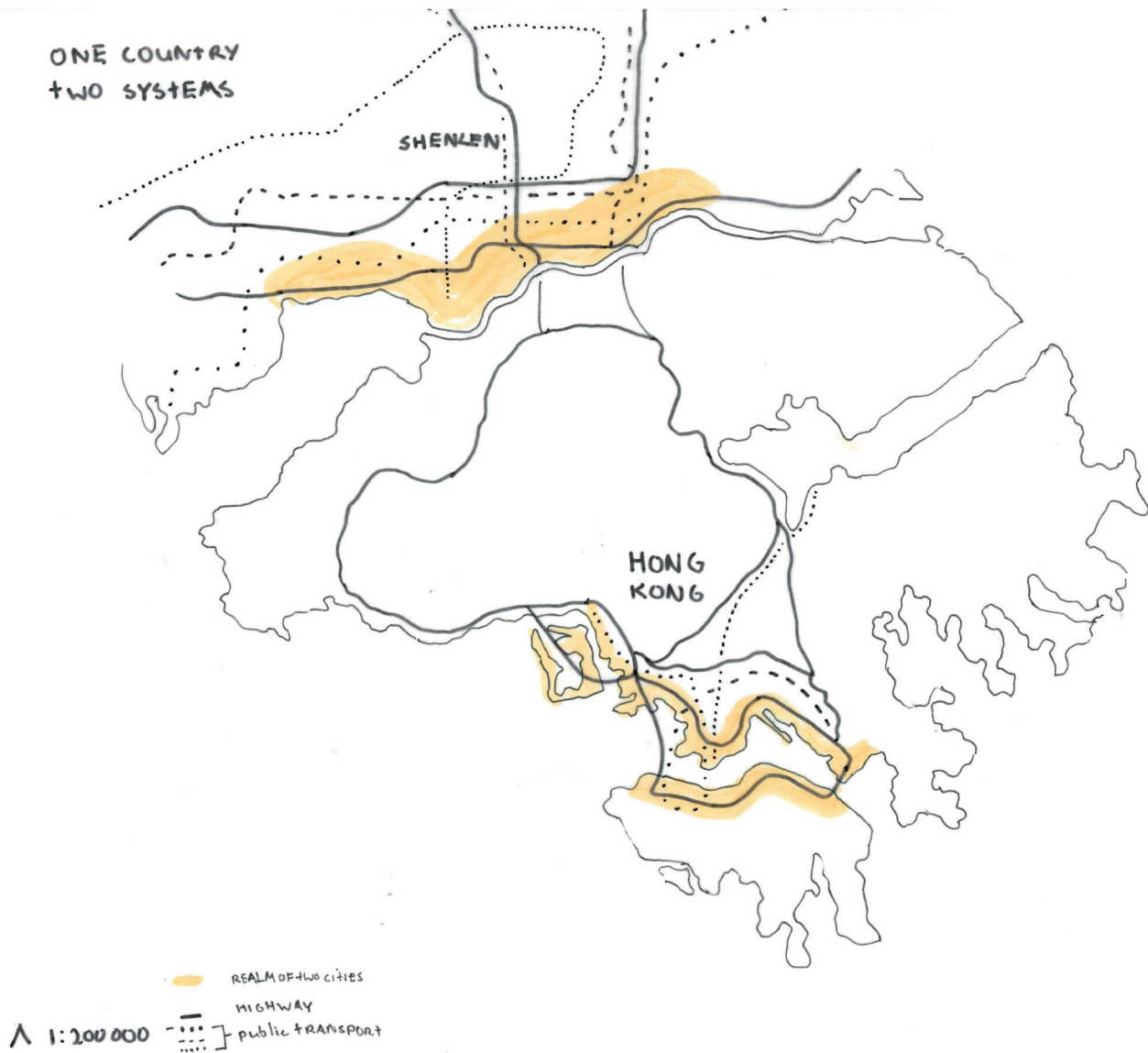
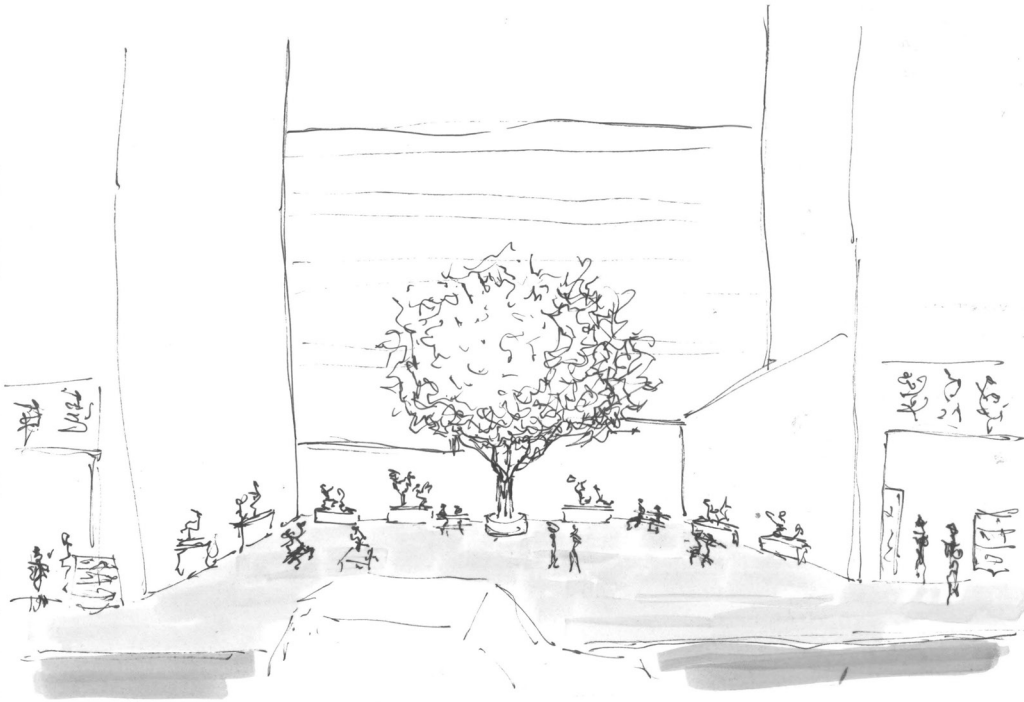
## 6. Title Bonus Drawings & Positioning

- New York
  - Just as polycentric
  - Also strong grid structure but less messy in back alleys
  - Different zoning laws resulting in vastly different architecture
- Amsterdam
  - The density in Hong Kong is much higher
  - More residential function on ground floor
  - Buildings not shaped (or hardly) towards relief of the land.
- Barcelona
  - Reclaiming of land is done on much bigger scale
  - Also strong grid structure
  - Doesn't feature large shopping malls on top of metro stations.
  - Had green structure between superblock envisioned.





-The small sketch shows a pocket park, or pocket square. You can see it is surrounded by high walls and interrupts the shopping street.



## Van der Möhlen & Barnhard



Favourite city: Zurich  
Want to go to (city): Dubai



Favourite city: Bangkok  
Want to go to (city): Reykjavik

# Barcelona





# 1. Metropolitan Size and Positioning

1:500.000



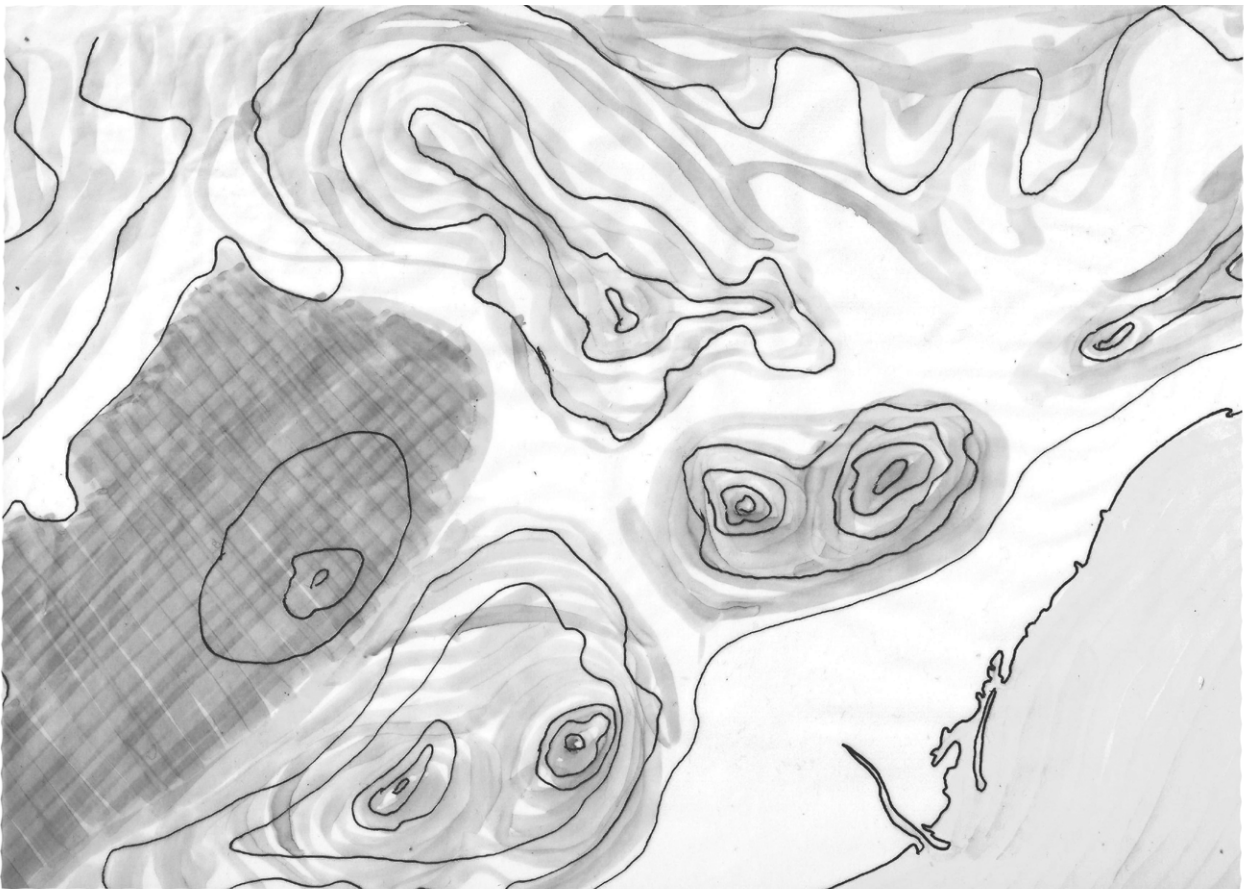
Cultivated area

The cultivated area map shows how the mountain ranges and the sea (white) define the cultivated (light grey) and urbanised (dark grey) area.

Landshaped Barcelona is about how the origin of Barcelona started in between two estuaries. And how it's currently bordered by mountains which keeps it from extending inland.

The surrounding defines development and growth borders of city

1:200.000



## 2. Relation Infrastructure and Landscape

1:100.000



Network by landscape



Network by landscape VS landscape by network shows how the strict 'uncontextual' Cerda grid relates to the landscape in a very contextual way.

Patched Barcelona tells a story on how the different patches of extensions interact with each other via traffic.

We see there is a relationship between the Cerda grid and it's context.

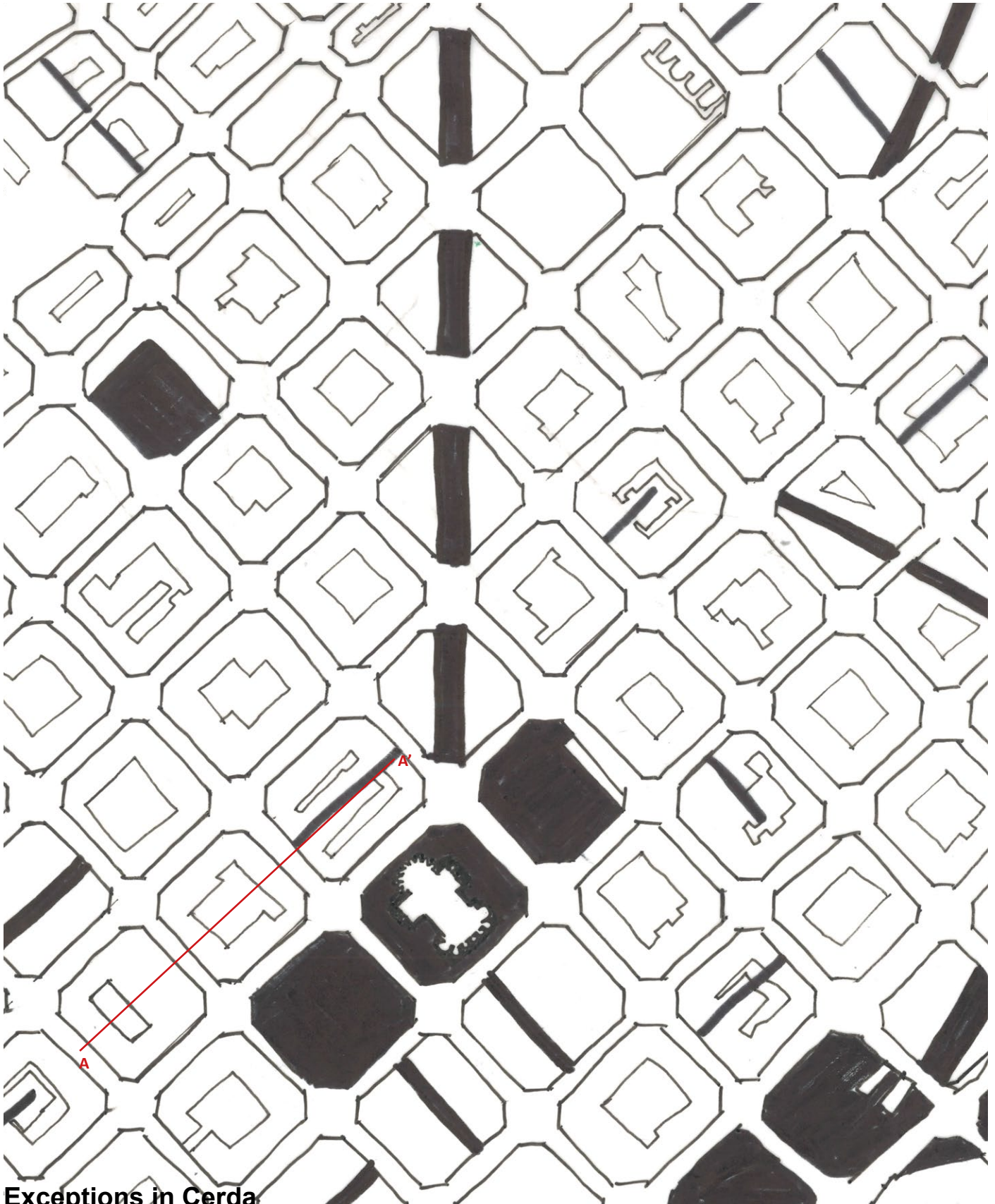
1:15.000



**Patched Barcelona**

### 3. Urban Typology

1:5.000



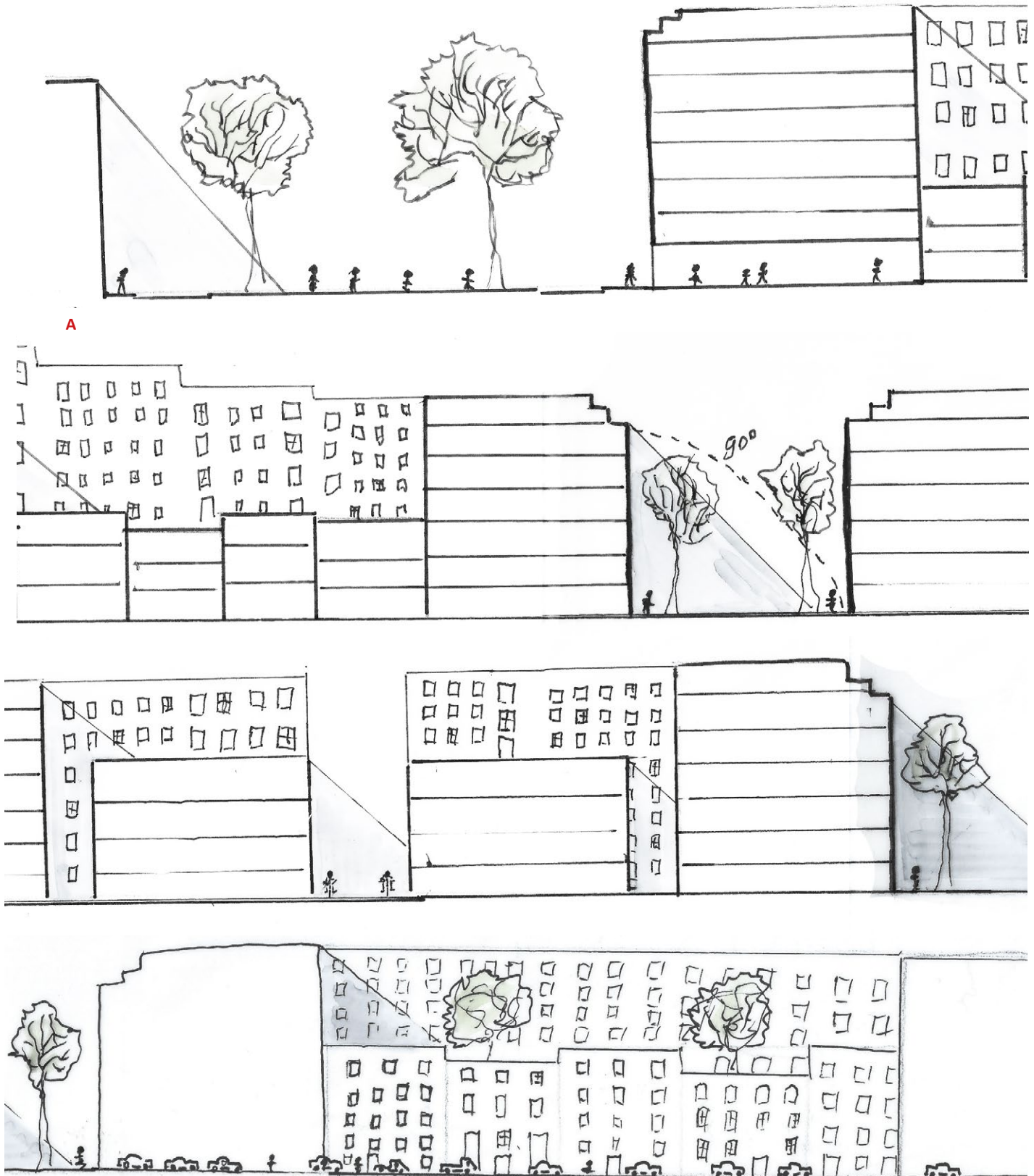
Exceptions in Cerda

Exceptions in Cerda shows the public life that evolve in the left out spaces of the grid with the different typologies that are involved.

Internal differentiation shows in a section that even though the facades are similar the inside of each block is very personal. Where it varies from smaller buildings to a green oasis.

Exceptions in the grid define unique urban atmospheres and their usage

1:500

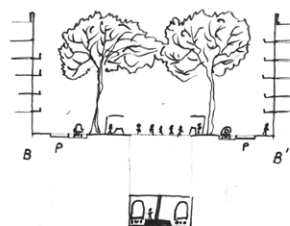
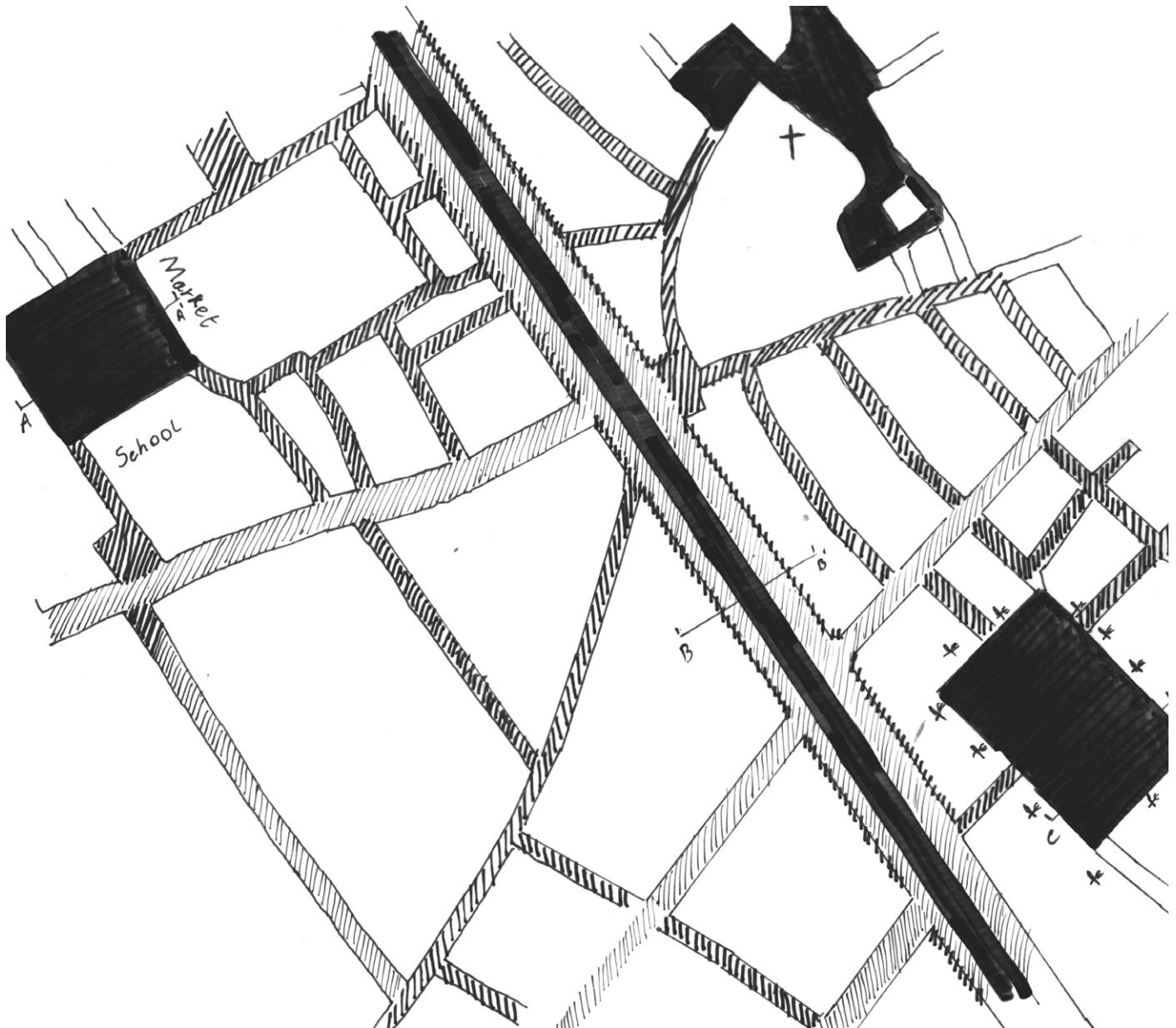


Internal differentiation



## 4. Public Space

1:2.500



La Rambla

## A minor setback

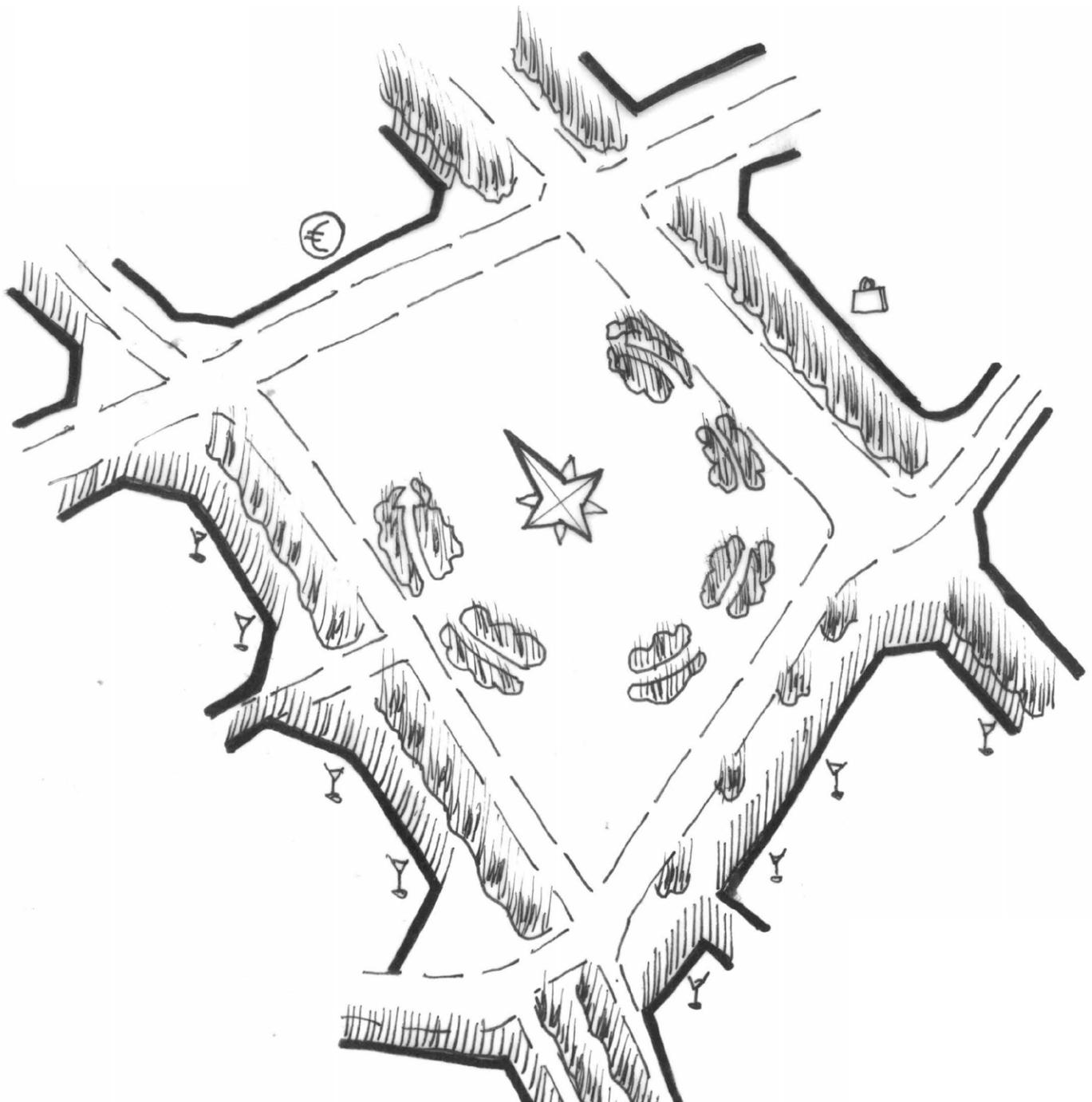
1:500

A minor setback shows how the public squares of Barcelona are not next to the main public road. As shown in the sections we can also see a big variety in usage of those spaces.

Shadow life shows the relation between public life and shadows and at the same time the socio economic factor for the bank and how the square relates to that.

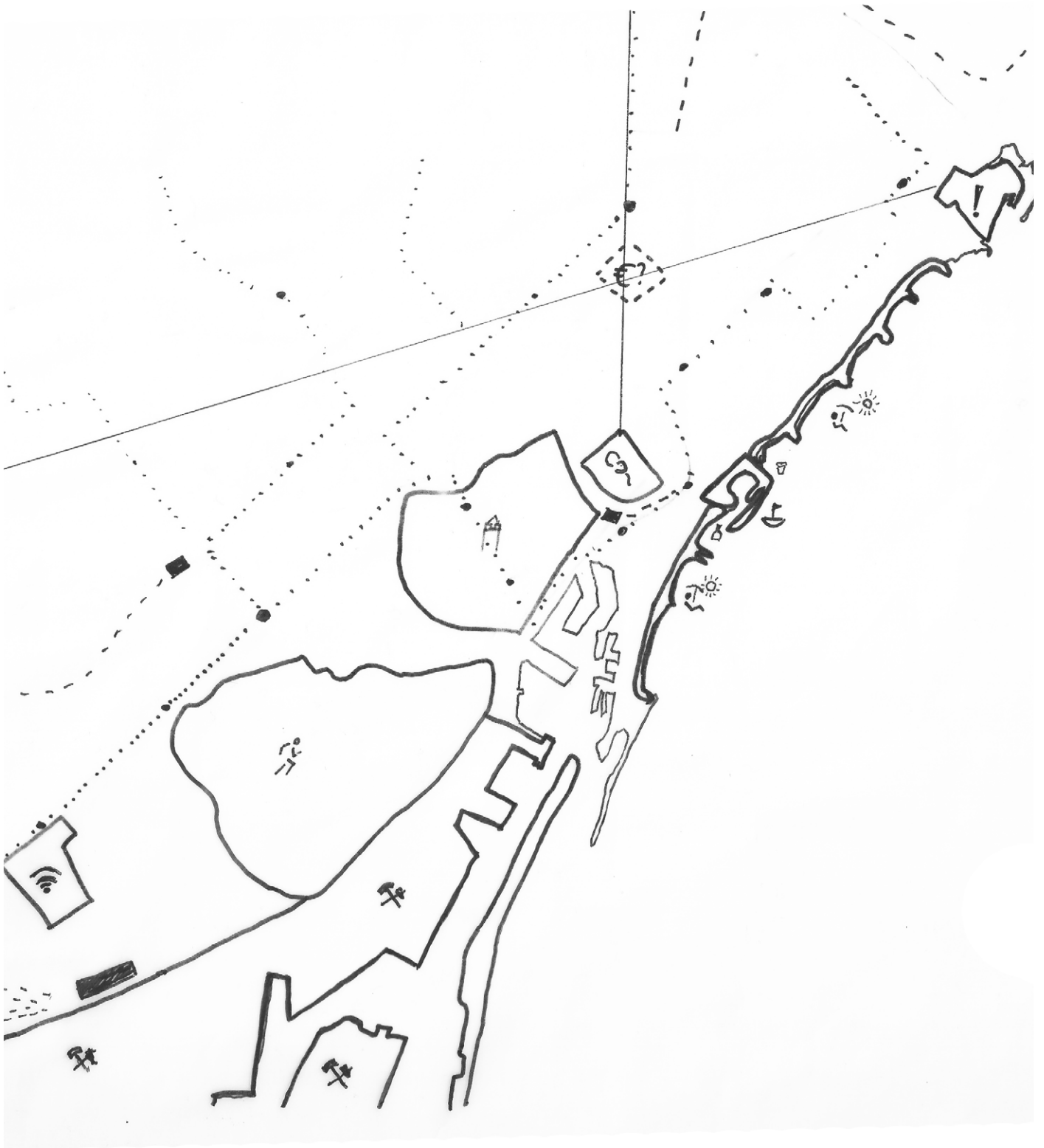
Big public spaces lie away from the ramblas, with an exception of the Plaça de Catalunya

1:2.000



## 5. Centers

1:50.000



## Pushed out districts



Pushed out districts relates the functionality of the city to its grid structure. This grid has very little space for big interventions. Therefore those functions are pushed to the edges and the waterfront.

Road Pockets at Parc del Form. Here you can see different typologies emerging within the pockets that are formed by the Cerda lines.

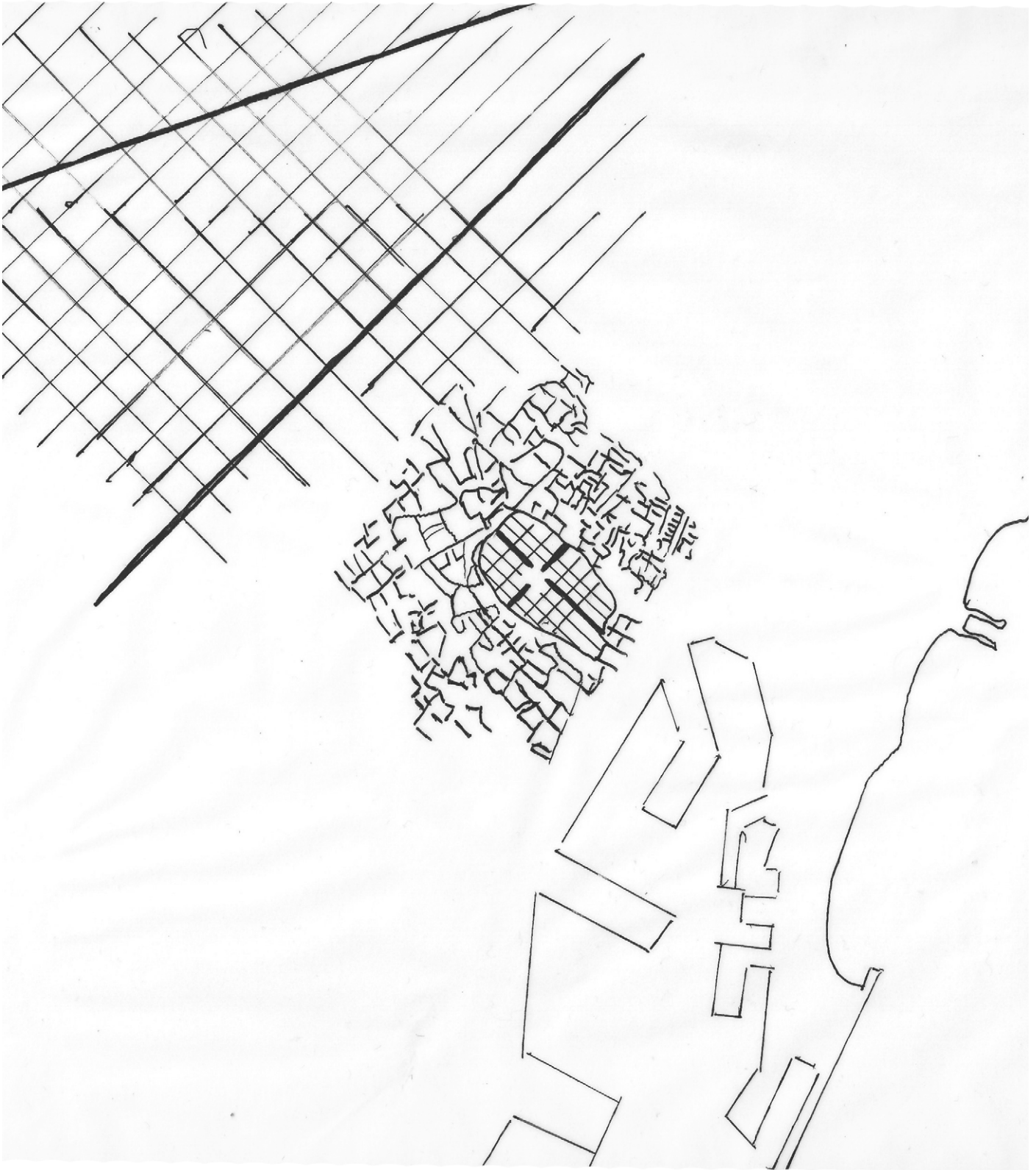
With the strict grid structure, centres are developed in the exceptions

1:10.000



## 6. Relation Between History and Growth

1:20.000



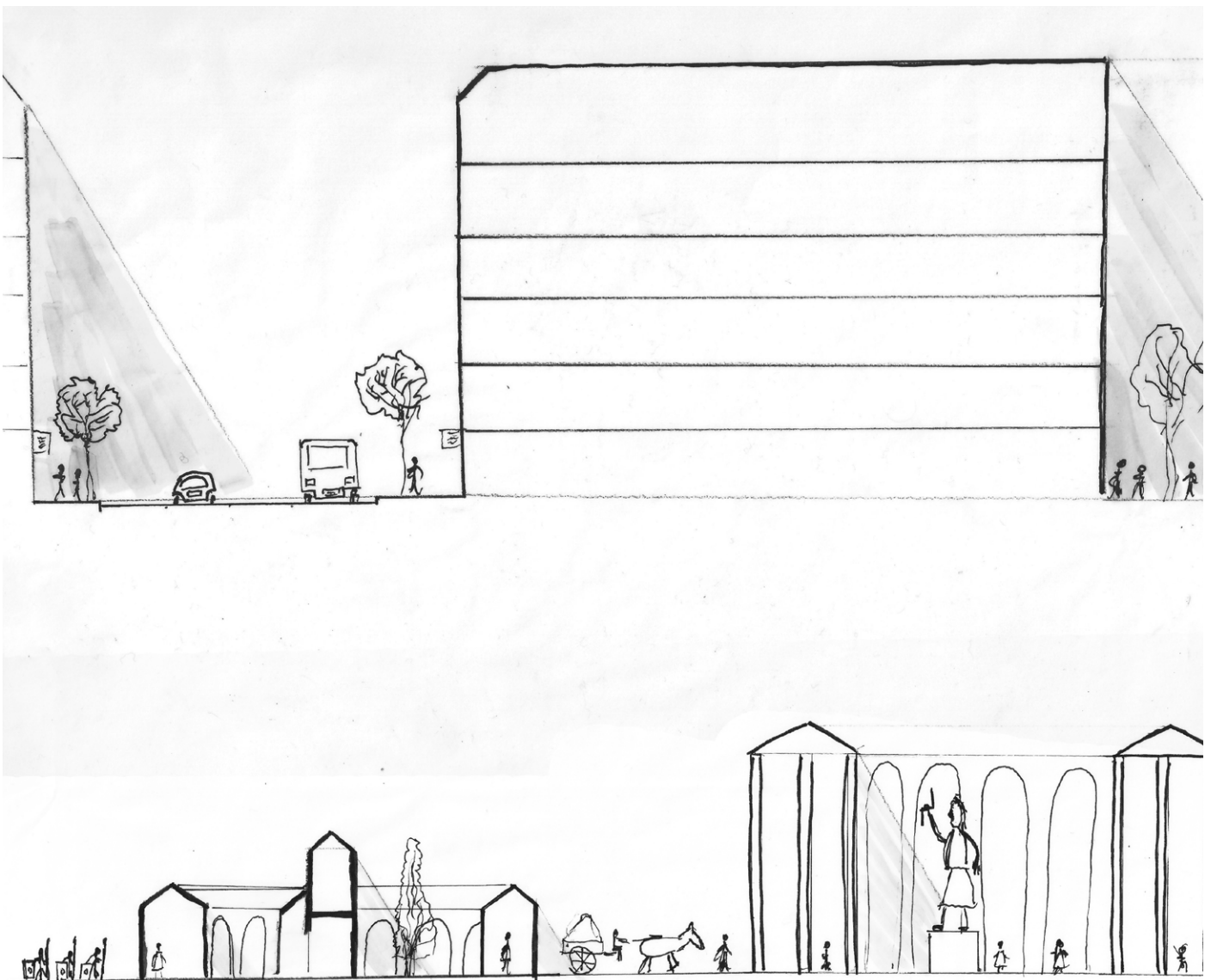
Grid to grid

Barcino grew into Barcelona. As a Roman fortress became foundation for the city was realised. In the growth of the city we see a connection between the old and new grid structure. Even though the scale is much larger.

A similar comparison can be made to the inside of the blocks compared to the villa's. Public life next to the facade and the private live in the courtyard.

The origin of Barcelona is repeated in the Cerda's expansion. The blocks work similar to the Roman villas creating poetic links to history.

1:300





## Romy van den Berg & Samer Fadel

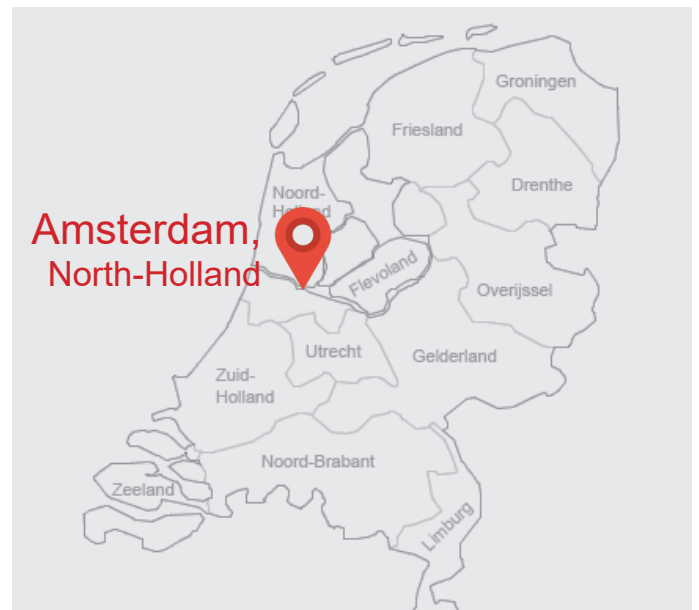


Favourite city: Not found yet  
Want to go to (city): Barcelona



Favourite city: Pyongyang  
Want to go to (city): Tanta

# AMSTERDAM





# INTRODUCTION

## The Characteristics of Amsterdam

Sketch



### Legend

- (1)  high density city centre
- (2)  canals of Amsterdam
- (3)  "green fingers" parks
- (4)  neighbourhoods
- (5)  polder landscape



# Recap

## Character

Amsterdam is known for its city center, with the many functions, amenities and its night-life. A very popular area within Amsterdam, not only for its own residents, but also for visitors.

The striking image of Amsterdam is created by its distinct network of canals. This canal-structure was one of the first steps in the development of Amsterdam. Unsurprisingly, the most historic part that comprises the city limits within the ring is also the most dense of the city when you look in terms of both residences and amenities.

## History

The city grew like an onion and expanded by creating land. These expansions were later connected by the main ring-road which resulted in a newer 'inner-city.' The expansions that followed thereafter -the 'outer-city'- have a rather different feeling and **typology** than those of the inner-city. The density is much lower on these outskirts as the garden city movement took its course. The closed building blocks with their inner courtyards remained as a typology for the inner-city, while the outer-city got built with ground bounded row houses that had their own private outdoor spaces and apartment flats.

## Landscape

The total city, with all its expansions, is surrounded with polder landscape and through this landscape the green structure of the country reaches into the city. The so called "green fingers" of Amsterdam. Within or, better said, between the different neighborhoods in the city itself, parks were created. These parks were mainly intended for the people living in the high density areas which had little to no private outdoor space.

## Public space

Besides the public parks, there is a lot of public space in the form of squares. Most squares are lined with retail and commercial functions and are typically the vantage of any night-life-scenery. These squares tend to be occupied very often where people gather for a variety of activities; as well as the strategic placement of most major public transport hubs. The squares in the neighborhoods and suburbs cater mostly to the residences surrounding the square; such that they are mostly used by the locals to play or sport and to meet, sit and talk.

## Mobility

The inner-city is really focused on public transportation such as the underground metro, trams and buses; not to mention the great attention given to the bicycle network infrastructure that activates the streets and breathe life into the city. Of course because of the many amenities in the inner-city people often opt to use their bikes or walk anywhere rather than rely on other means of transportation. The outer-city, on the other hand, can be seen to pay more attention to car traffic, streets and highways. Use of cars is predominant and the most common mode of public transportation is buses.

The combination of public transport, the many functions and amenities and the parks make the inner-city that much more attractive to live in and forms a strong image of the city of Amsterdam.

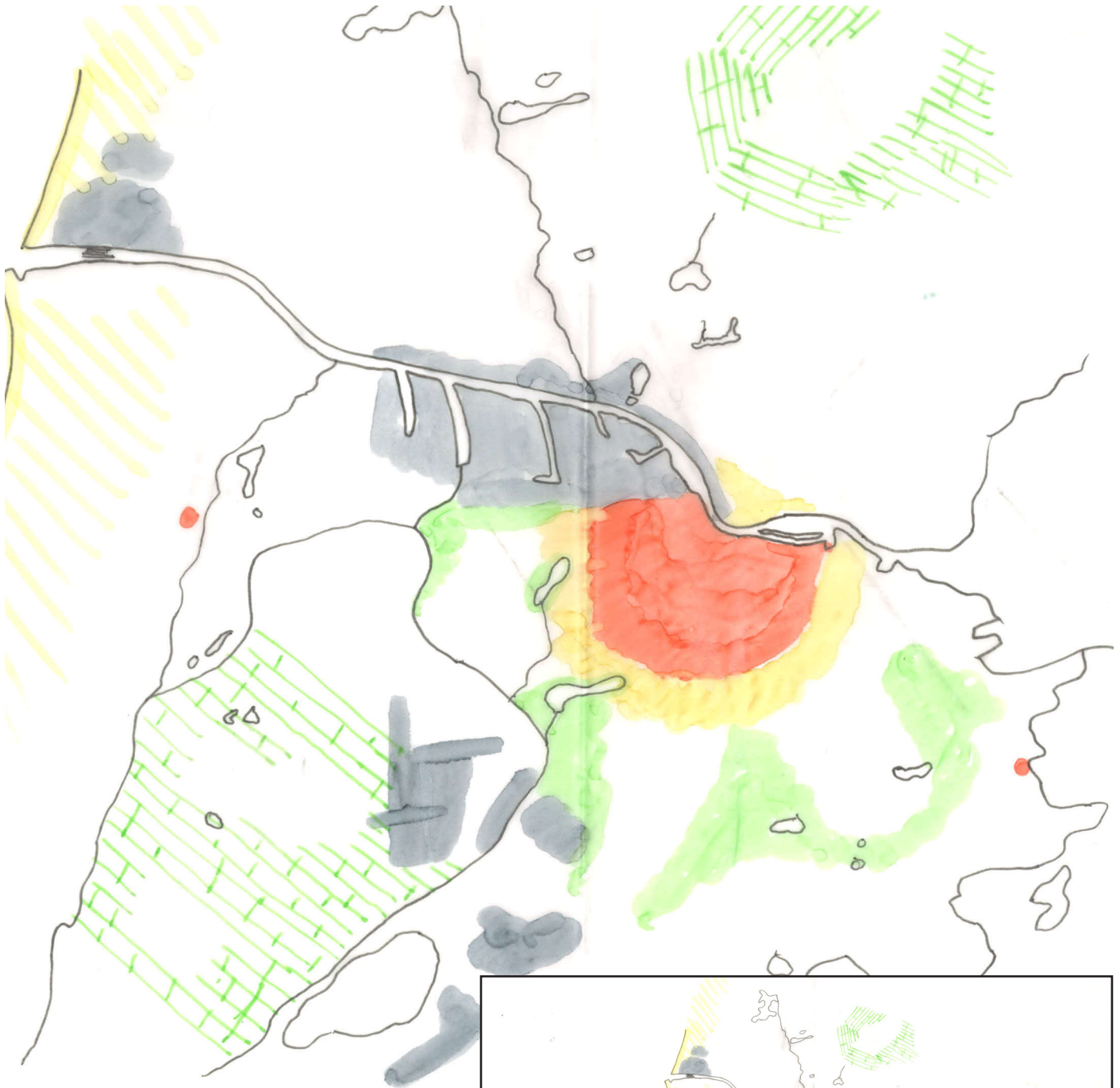
## 1. Metropolitan Size and Positioning

1:250.000



Amsterdam is positioned along the North Sea Channel in North Holland, the Netherlands. The city center of Amsterdam is highly dense, surrounded with lower dense neighborhoods. Harbors along the channel result in more industrial areas around them; while the city is surrounded by polder landscapes; created land. Through this polder landscape the green structure of the country, the so called “green fingers”, reach the city. Other historical city centers nearby, like Haarlem and Weesp are much smaller then the historical heart of Amsterdam.

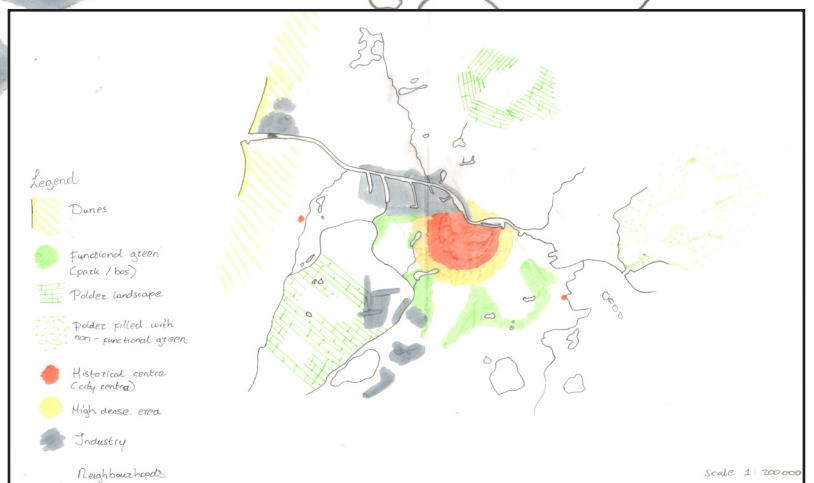
1:200.000



### Legend

- //// Dunes
- Functional green (parks)
- ▨ Polder landscape
- Non-functional green
- Historical city centre
- Lower density area
- Industry

1:800.000

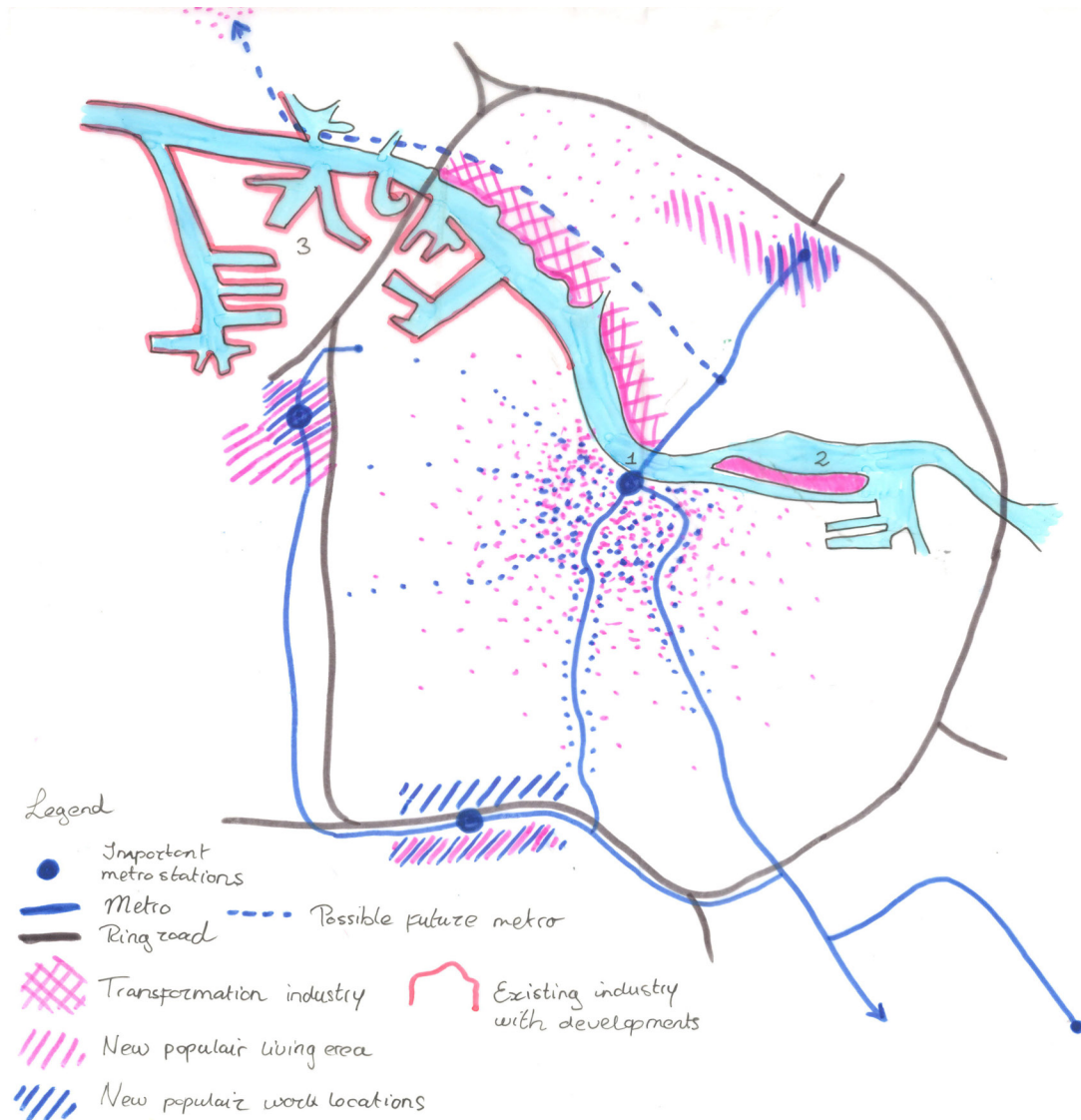


Scale 1: 800.000

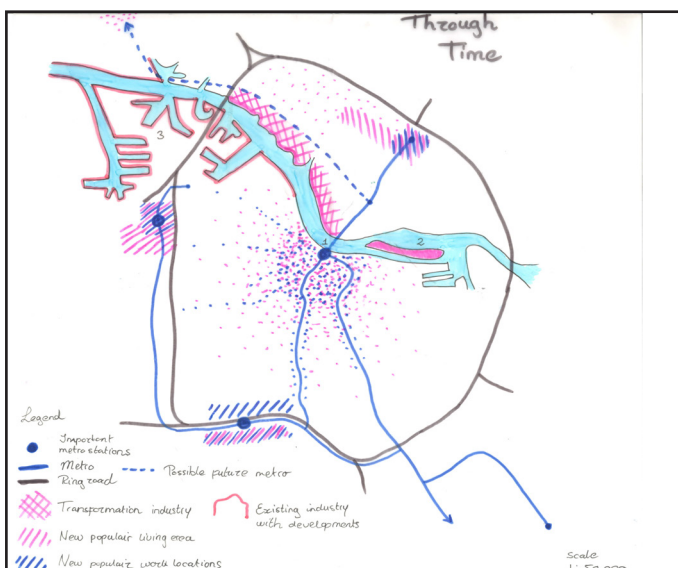


## 2. Relation Infrastructure and Landscape

1:100.000

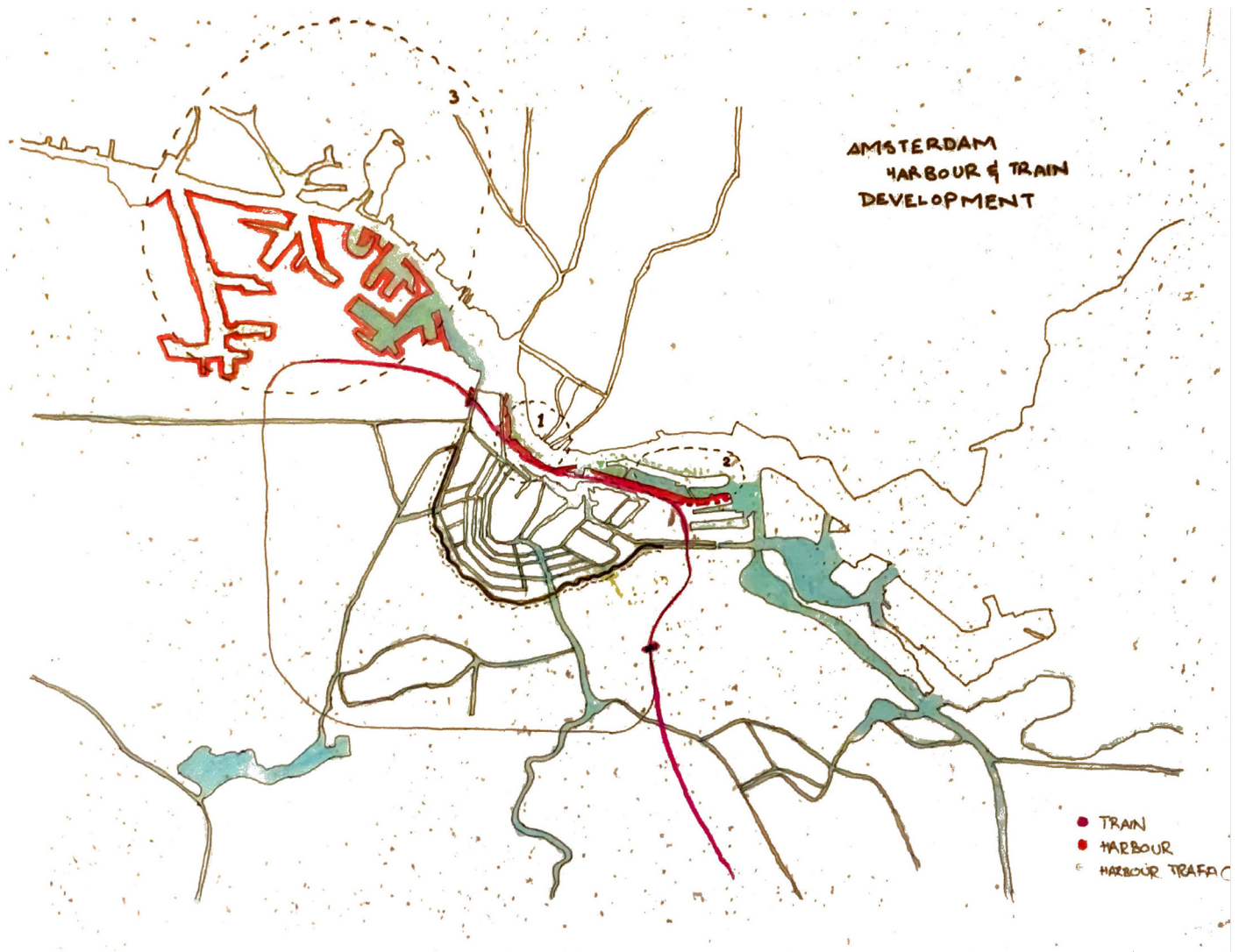


1:200.000



The main ring-road that goes through and partially surrounds Amsterdam is very present in the city and on the city maps. The train track follows this ring-road to a great extent. The train stations are interconnected with the subway stations that reach into the city center and, since recent, Amsterdam North. These stations are big hotspots of travelers and are mainly located in areas with a lot of offices and work functions. The city center is the exception where the train station is located at the edge, near the channel.

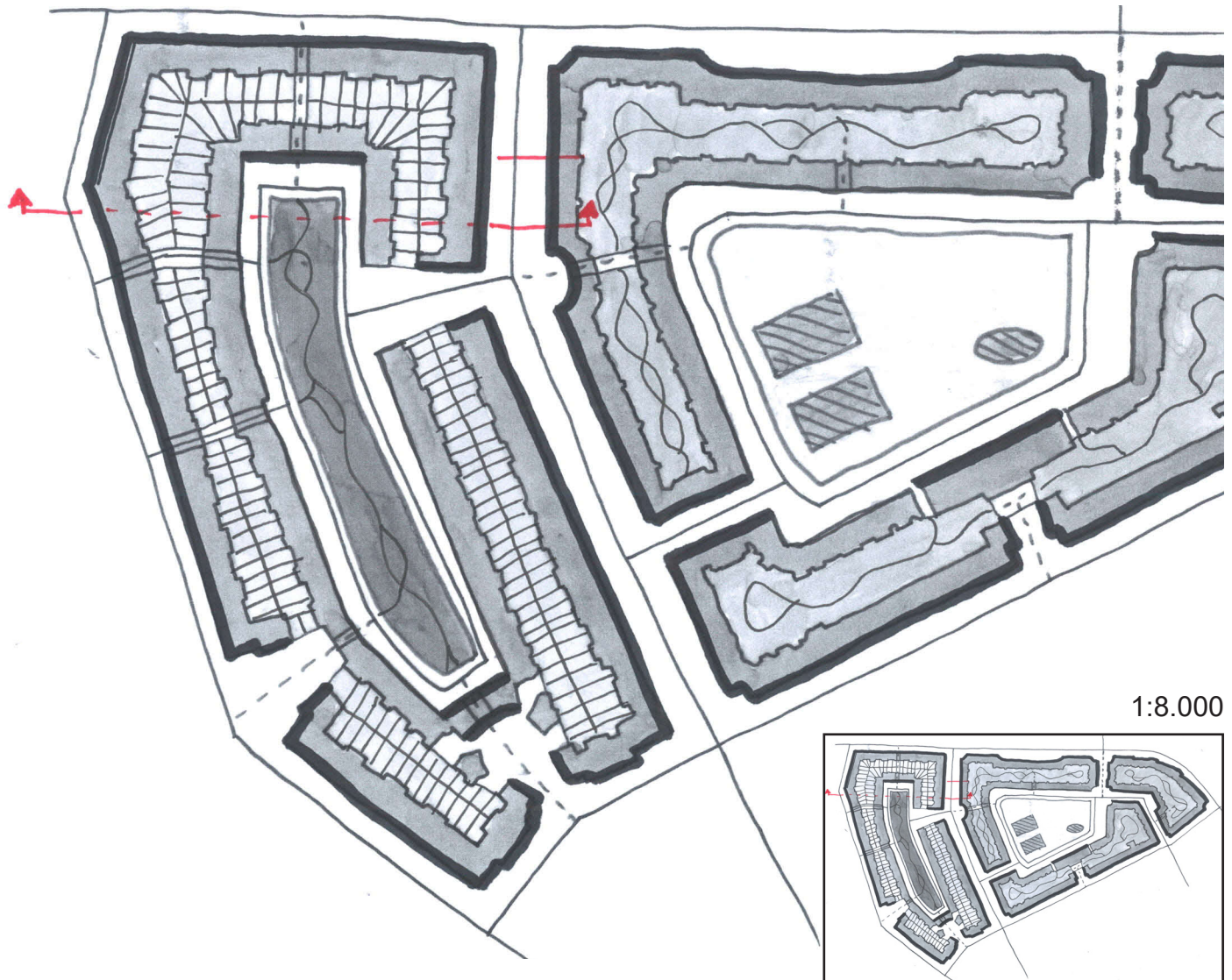
1:100.000



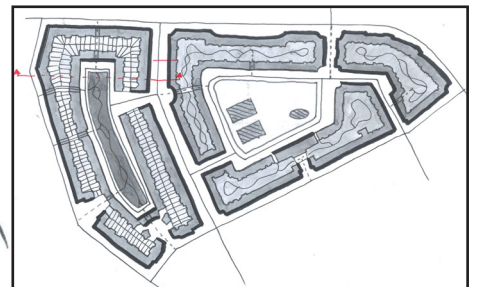
### 3. Urban Typology

1:2.000

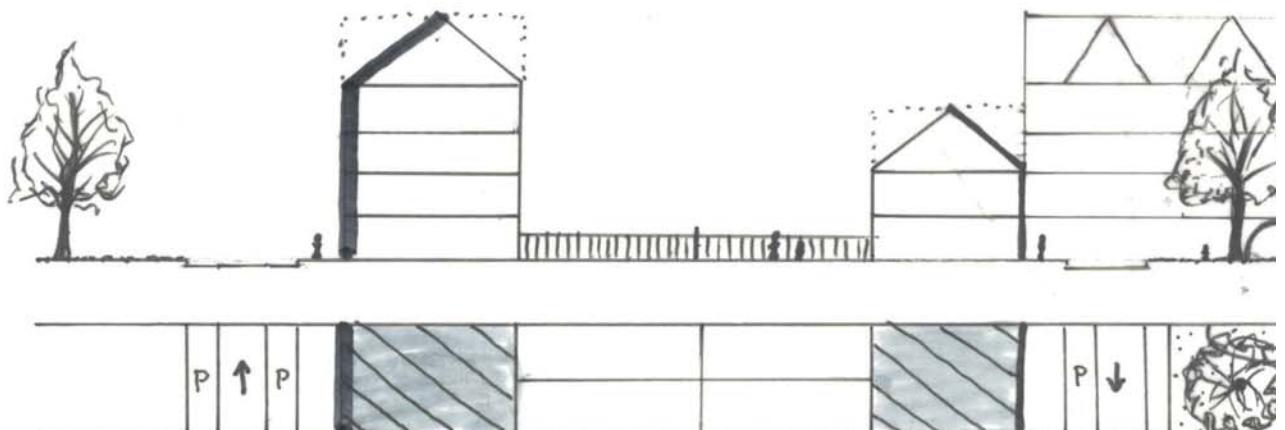
Spaarndammerbuurt



1:8.000



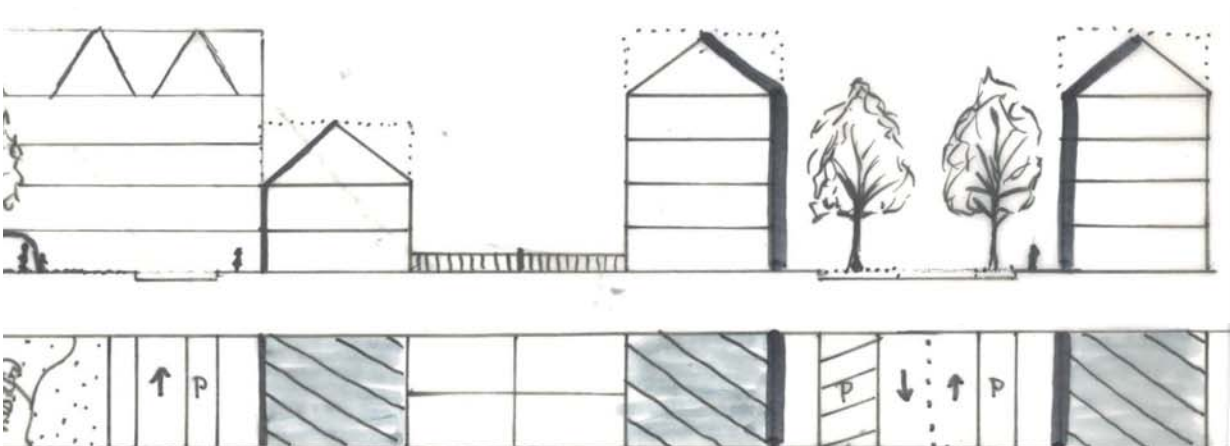
1:2.000





Amsterdam consists of a lot of different types of neighborhoods. In the city center, the predominant typology is that of the closed blocks with inner courtyards; most of which have gotten privatized over time. The Spaarndammerbuurt is a good example for different types of courtyards. Some of the courtyards are completely privatized and others are semi-public, meaning that the people living in the block can all use the courtyard, but other people can not. Public spaces are often found between the blocks and square typically serve different functions.

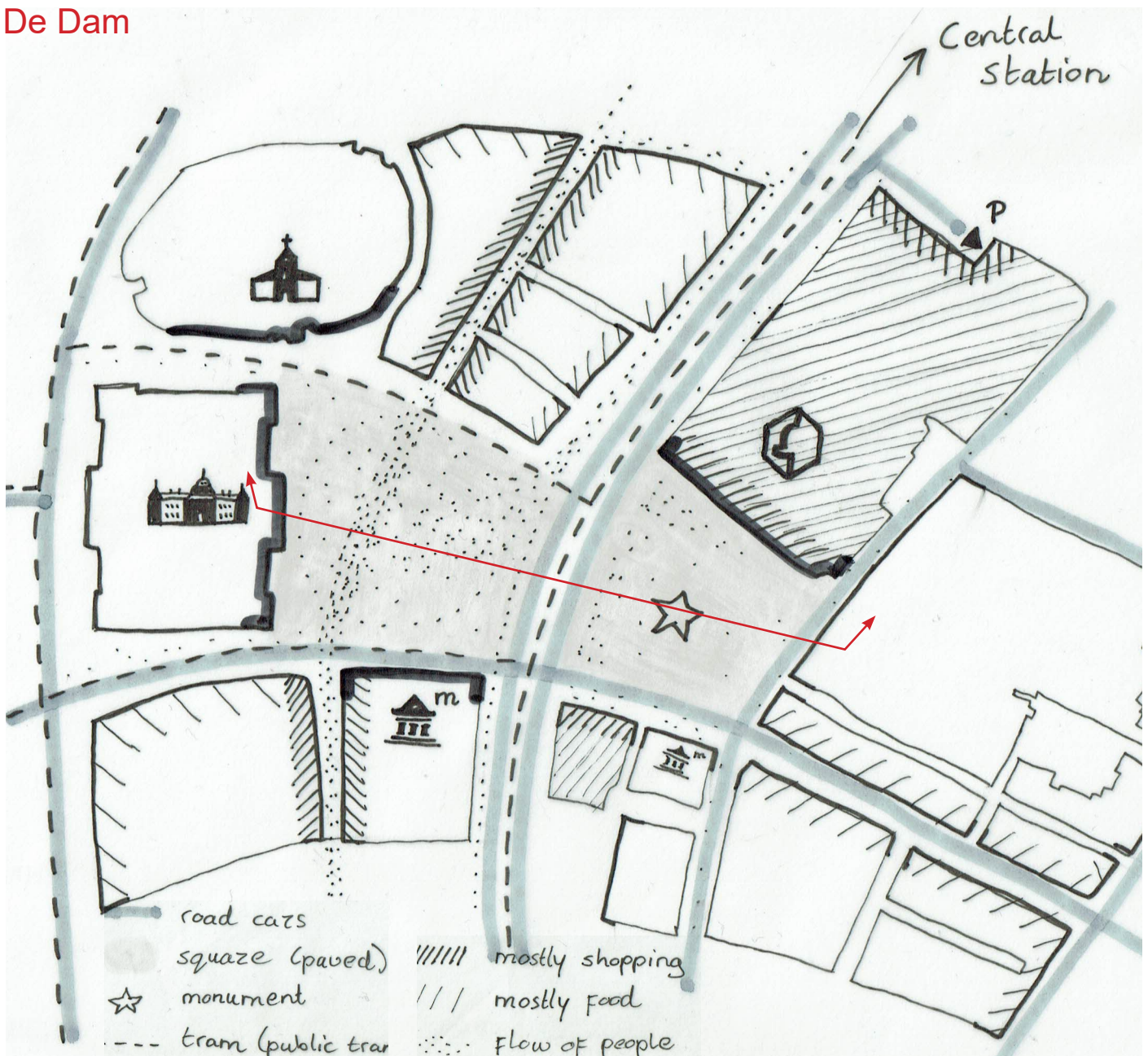
1:8.000



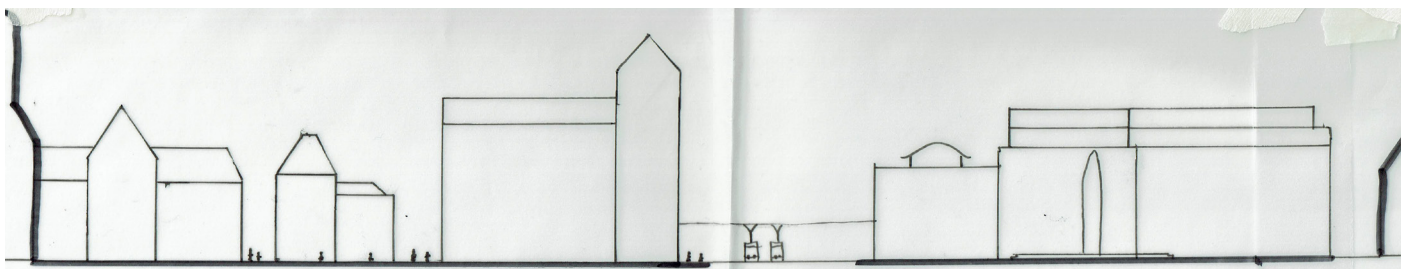
## 4. Public Space

1:2.000

De Dam



scaleless

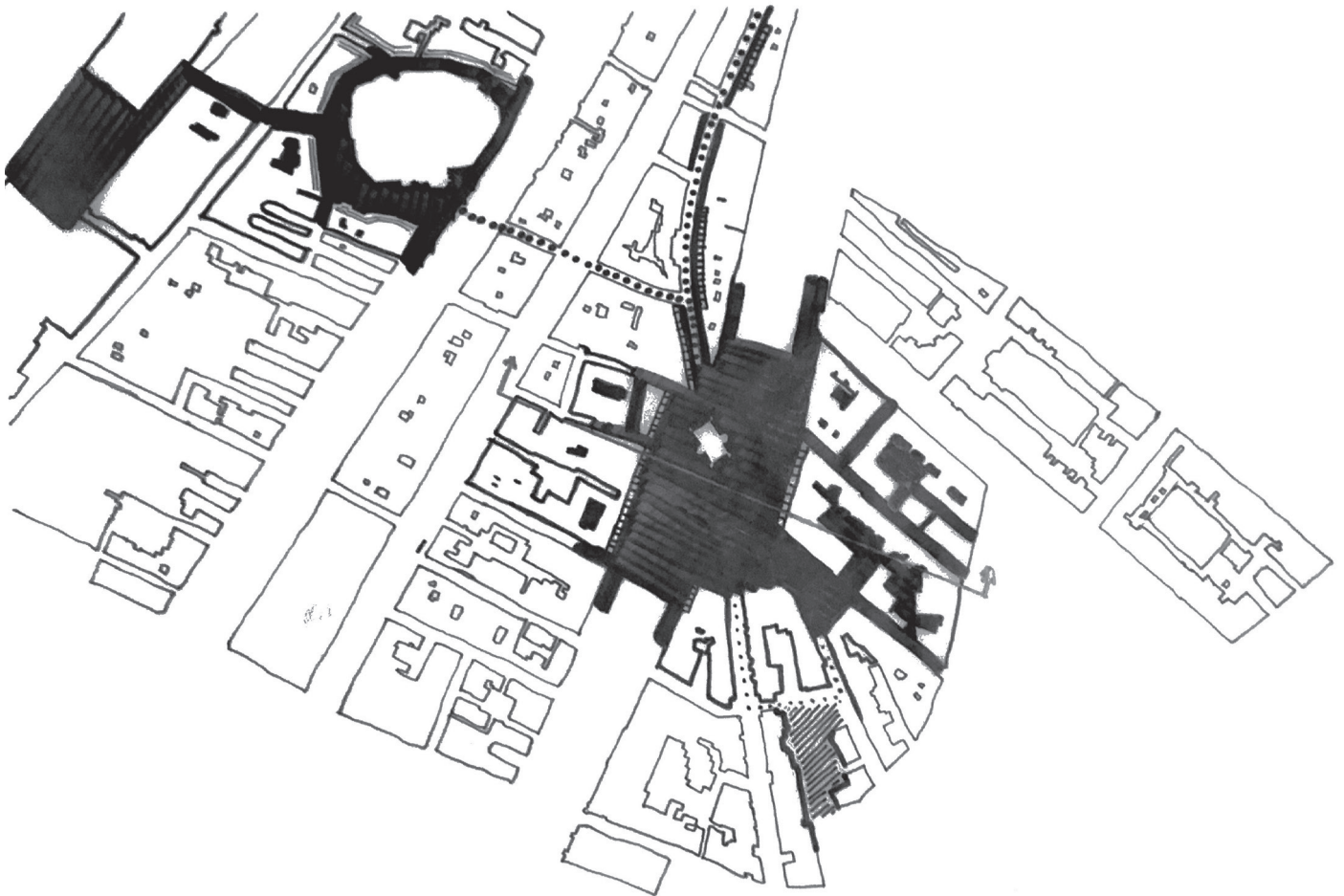


100 m

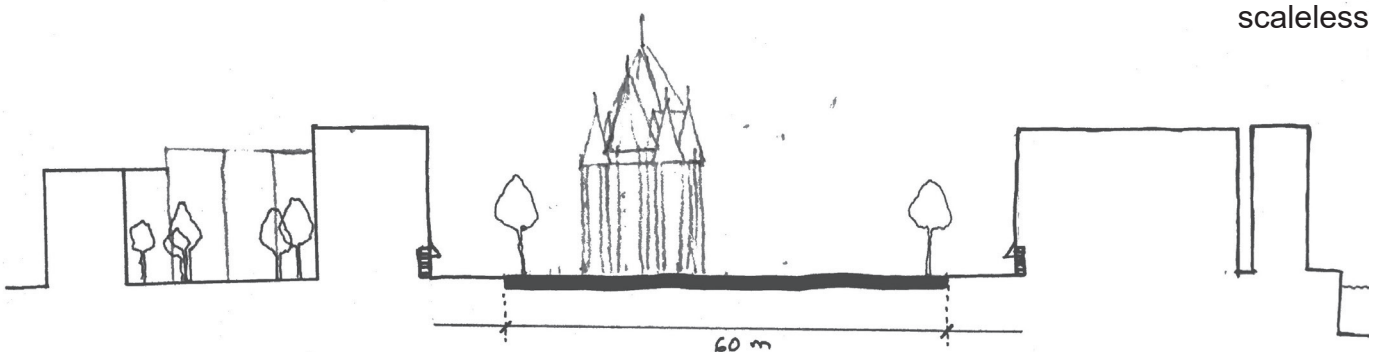


Public space in the city center is abundant. Squares are often located at busy areas that are filled with not only houses but espacially with amenities like shops and cafetarias. Most public squares have at least one or more "iconic" buildings: The Dam for exaple there are a few distinct buildings, like the palis, church and musea as well as a statue. Besides the iconic buildings, most of the squares have large traffic flows: pedestrians, cyclists, public transport and cars.

1:5.000



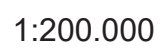
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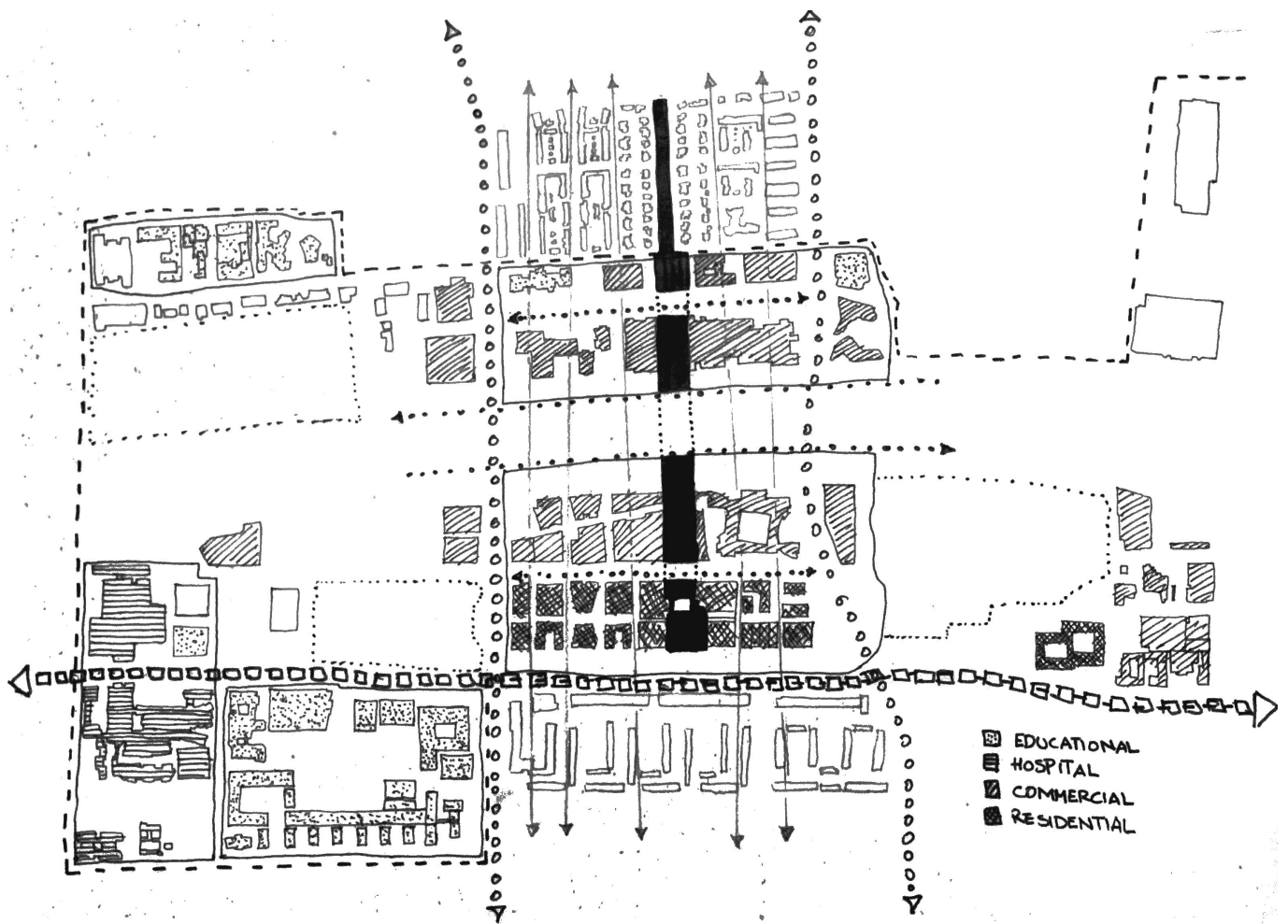
# Zuidas

# Zuidas



Amsterdam also has a lot of different sub-city-centers, or alternative centers that serve some specific function. For example Sloterdijk, Zuidas and Bijlmer all function differently from the historic or main city center as well as each other where one finds a financial and economic center in Zuidas, an industrial center in Sloterdijk and a suburban center in Bijlmer. Public transport is what ties them together the most. Zuidas is known for its high standard of offices and national functions like RAI and the arena. And upon further examination, one sees how Zuidas is also connected with the rest of the city by the structure of the public space and squares.

1:10.000



## 6. Relation Between History and Growth

Sketch





The city Amsterdam has grown like an onion. Making expansions around the historical center, doing so by creating land. With every expansion the city grew and the way of transport and mobility changed. The ring-road got developed and tied together most of the expansions. This became the new "inner-city". Outside the ring-road the garden city movement ran its course; now mostly referred to as the "outer-city". The garden city movement created these low dense neighborhoods with a lot of greenery. The housing consisted of ground bounded row houses that had their own private gardens and some apartment flats. The green structure of the country was important for the functioning of these areas. This was the place for people to go to recreate and meet other people.

## Madelon Jansen    Hyunwoo Koo



Favourite city: Rome  
Want to go to (city): Berlin



Favourite city: Florence  
Want to go to (city): Wellington

Venice the main Island in the lagune of Venice, is connected to the mainland with one highway and traintrack.

The humans started using the Island after they flee from the babarians. Venice was a city where you only can come by boat and therefore all the materials needed to be transported from the mainland towards the island. We still transport ourselves by boat towards Venice to get the “ultimate” experience and because the city centre is still only for pedestrians.

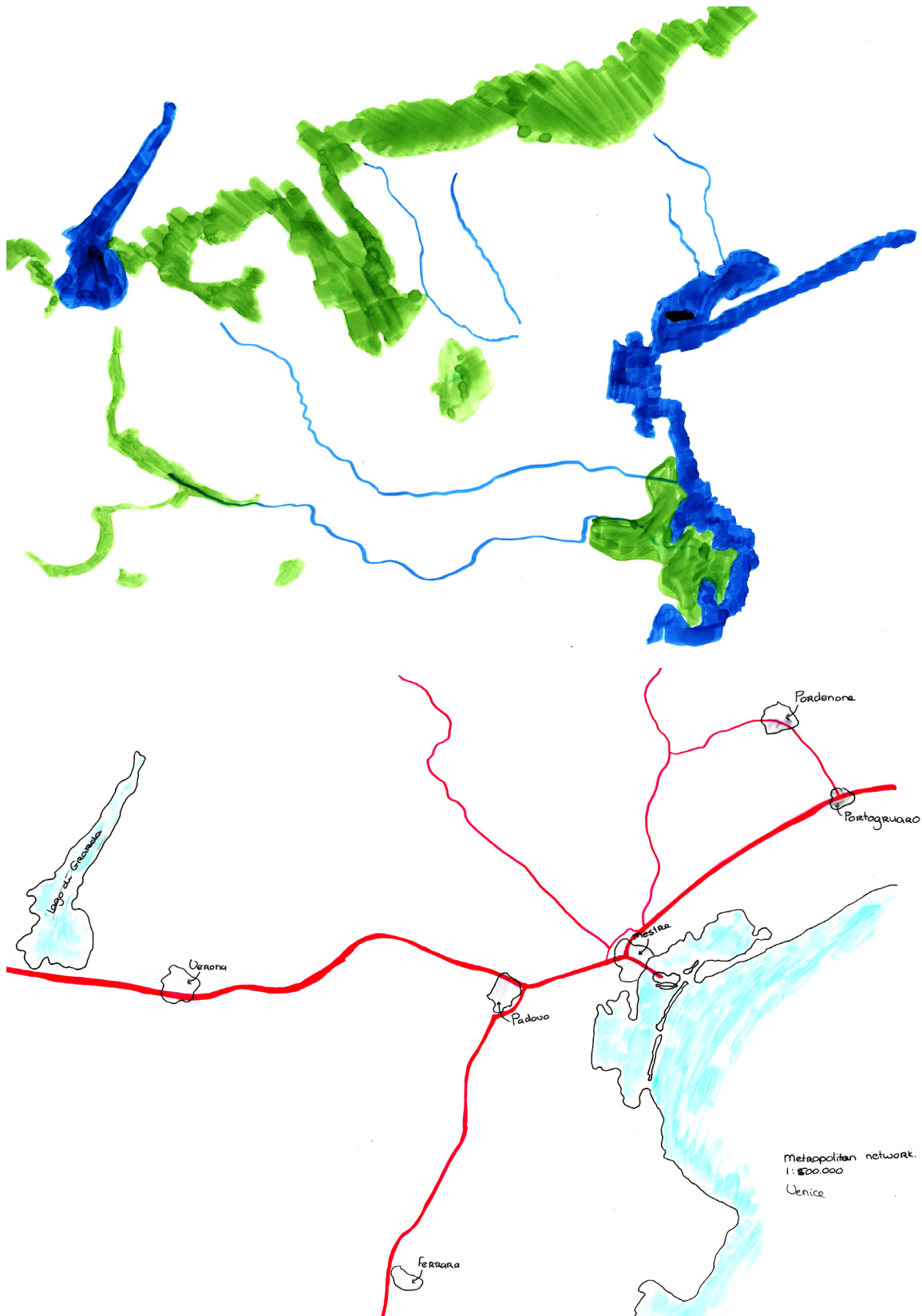
# Venice





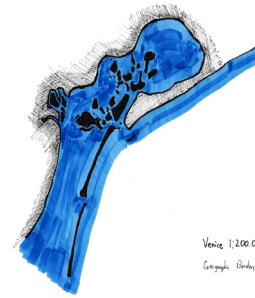
# 1. Metropolitan Size and Positioning

1:500.000



Venice is mostly derived from its surrounding landscape and location. As an island along the coast of mainland Italy, it is a center of both land and sea connections.

1:200.000



Venice 1:200.000  
Geograph. Atlas

All roads lead to Venice.

-- boat  
-- train  
-- Car Roads  
1: 200.000

train connection in to the land.  
and  
out

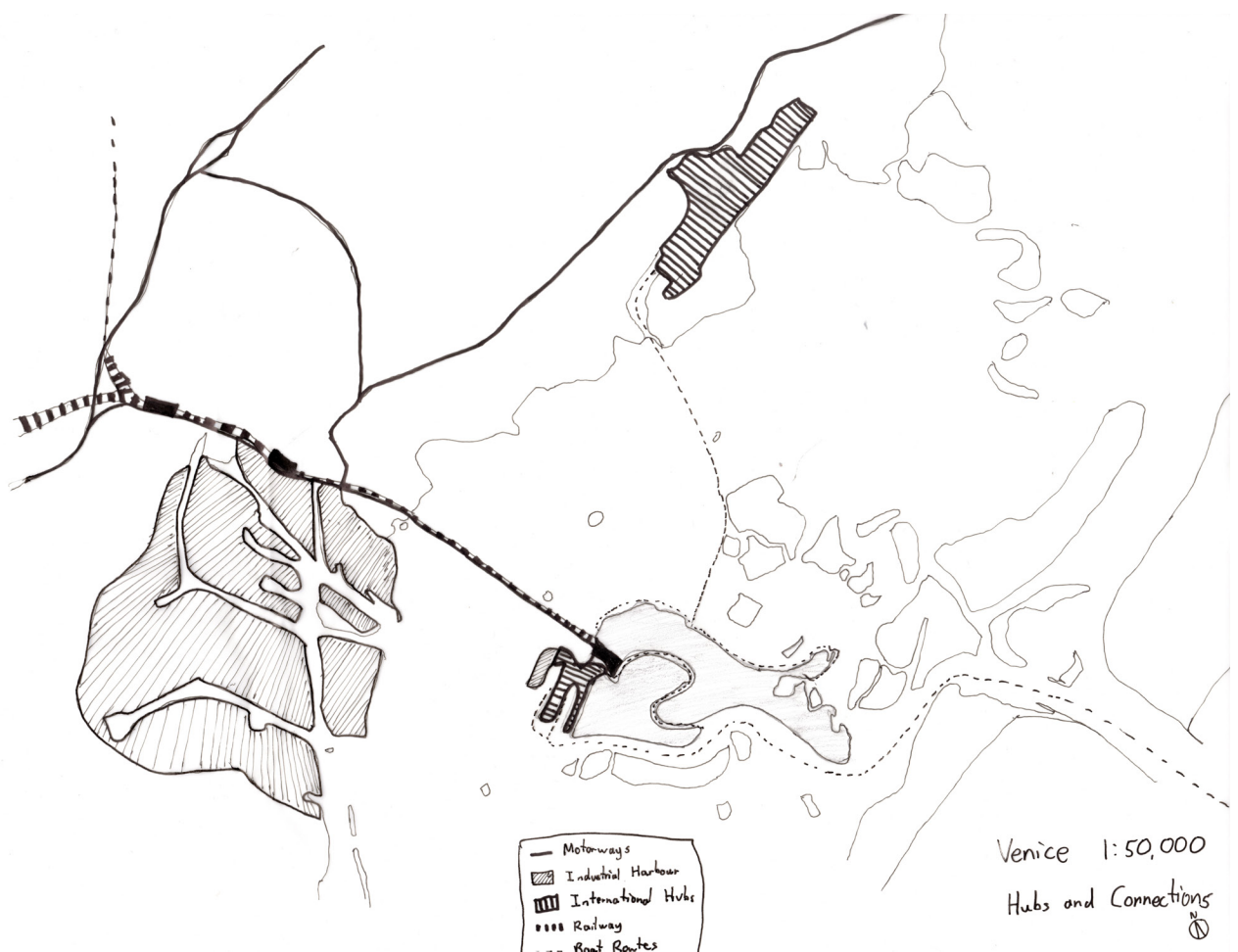


— train/care.  
--- cruise ship/  
ferry

connection to the main land.  
1: 200.000

## 2. Relation Infrastructure and Landscape

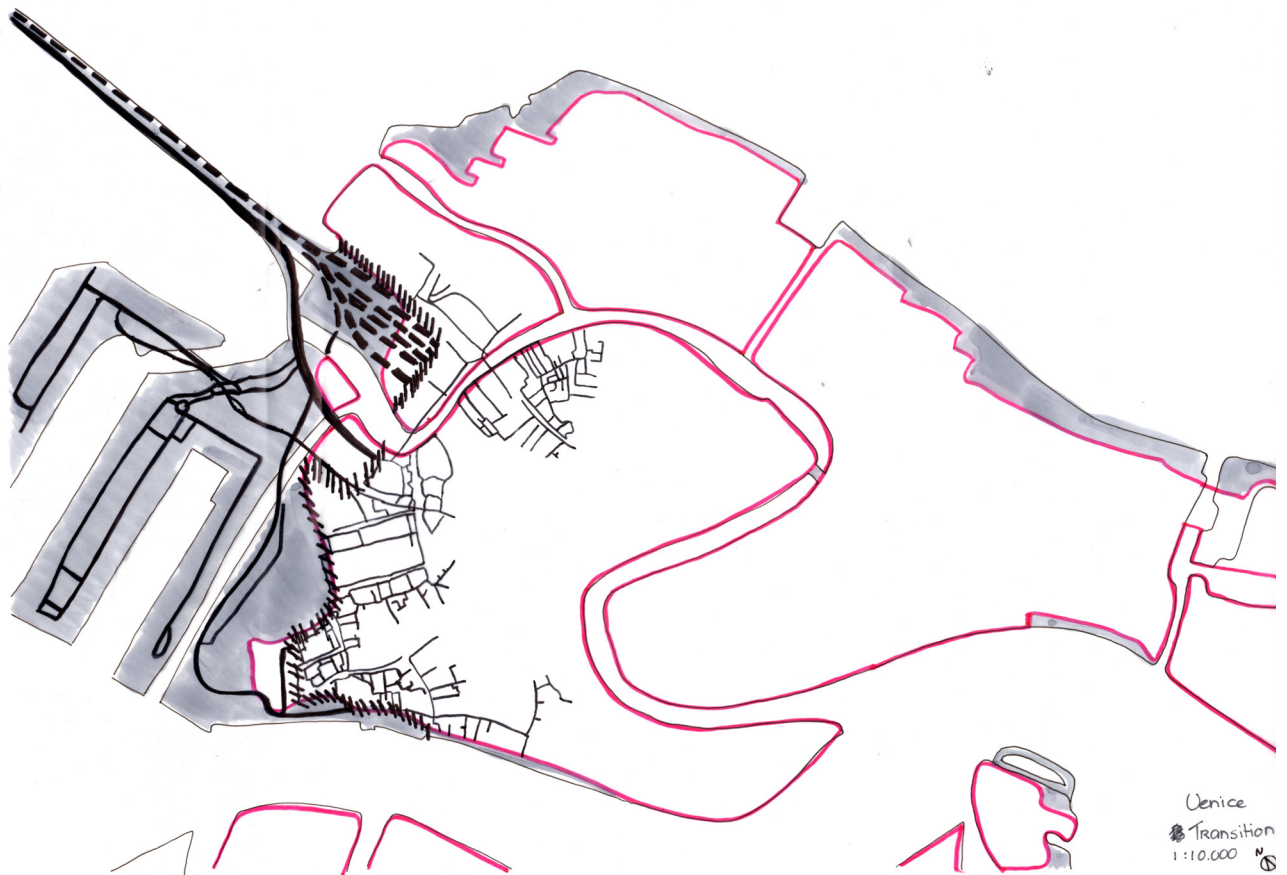
1:50.000





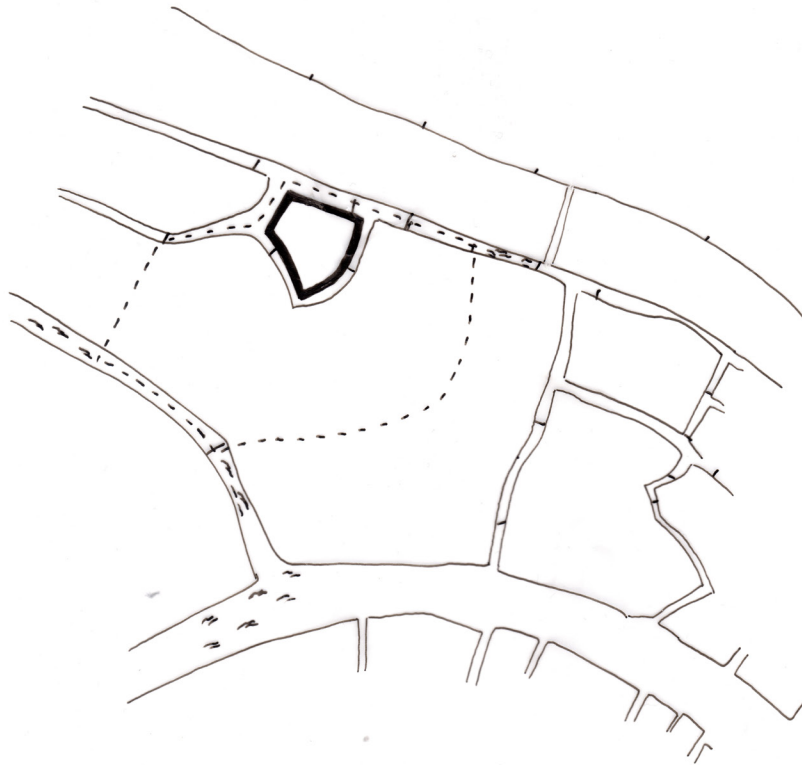
The island of the Venetian Islands are purely pedestrian on land. The main transportation are all based on boats and water routings that have been passed down since the origins of the city. The only land vehicle connection Venice has is a highway/railway that leads back towards the main land. The extensions of the city can also be seen in an expanded trading harbour and an airport.

1:100.000

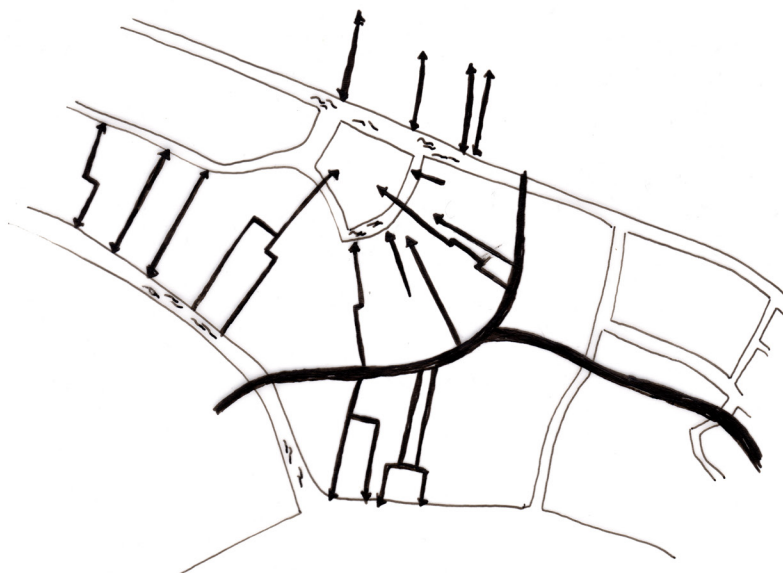


### 3. Urban Typology

1:5.000



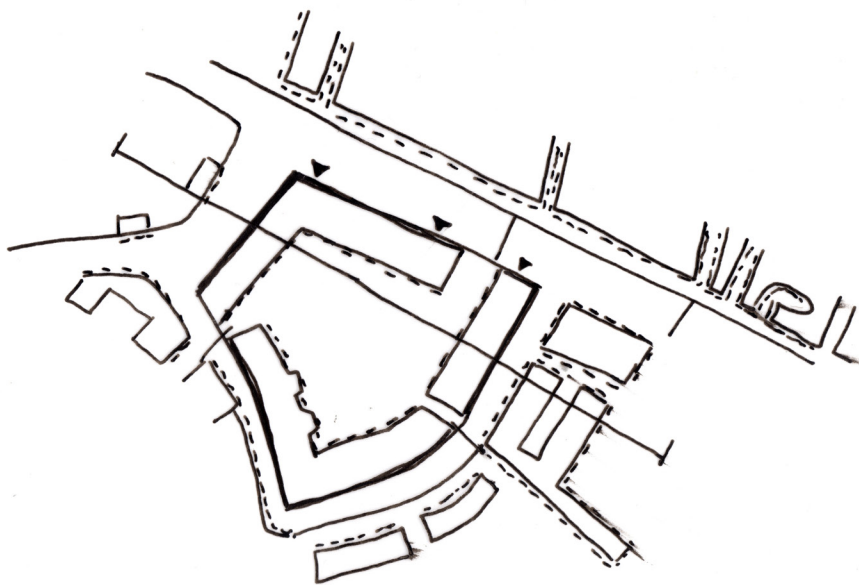
Venice  
neighborhood  
within the  
neighborhood.  
1:5.000 ①  
Cannaregio,  
Ghetto Vecchio




Venice  
Urban Islands  
1:5.000 ①  
Cannaregio,  
Ghetto Vecchio

Venice was originally made up of a series of smaller islands of communities and towns. This typology can be seen throughout the history of the city; for example the Jewish district shown below. A typological as well as a cultural distinction can be seen in this area compared to its surroundings.

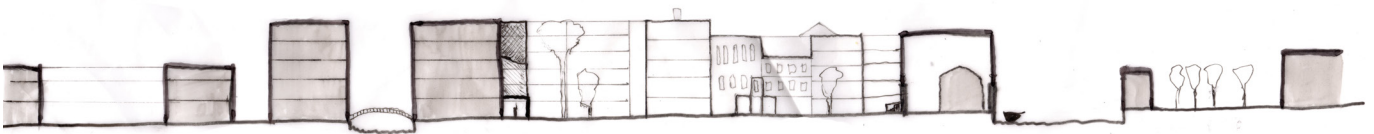
1:500



Venice

How to get in  
1:2.000 

Cannaregio,  
Ghetto Vecchio



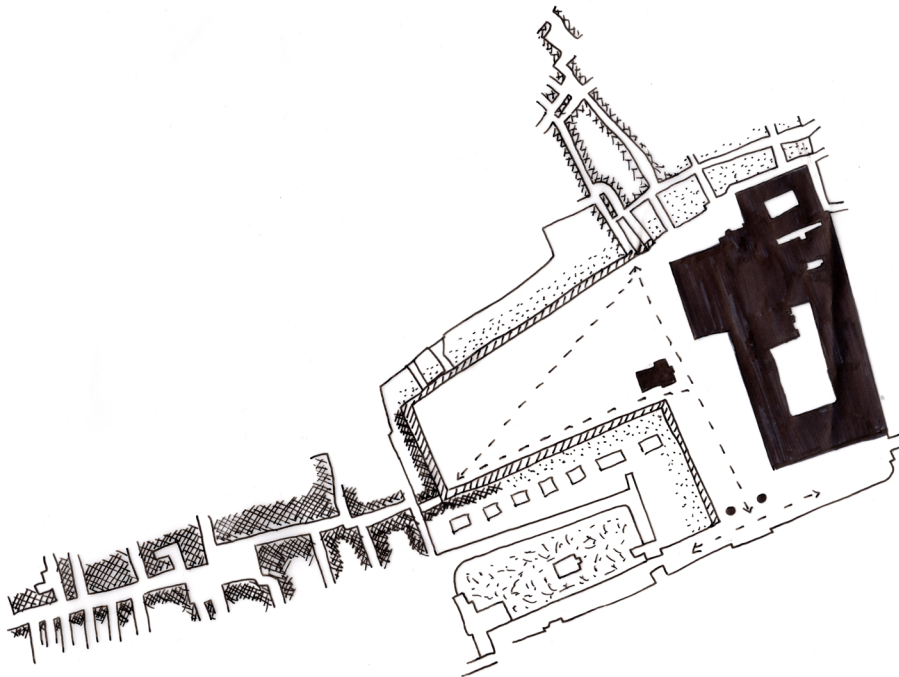
1:500 Section

Venice  
Campo del Ghetto Vecchio



## 4. Public Space

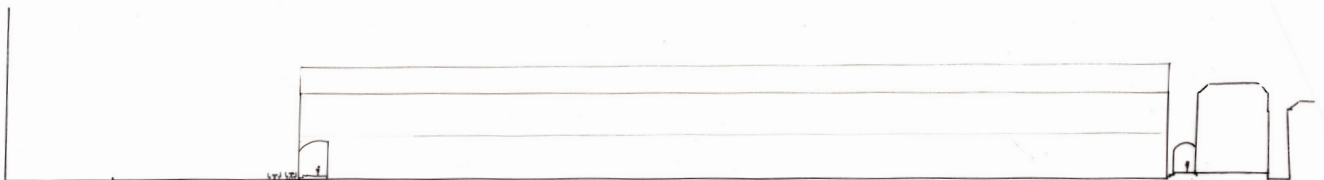
1:2.000



### Routing

-  Park
-  Restaurant
-  Shops
-  Arcade
-  Block

Venice, Piazza San Marco  
1:2000

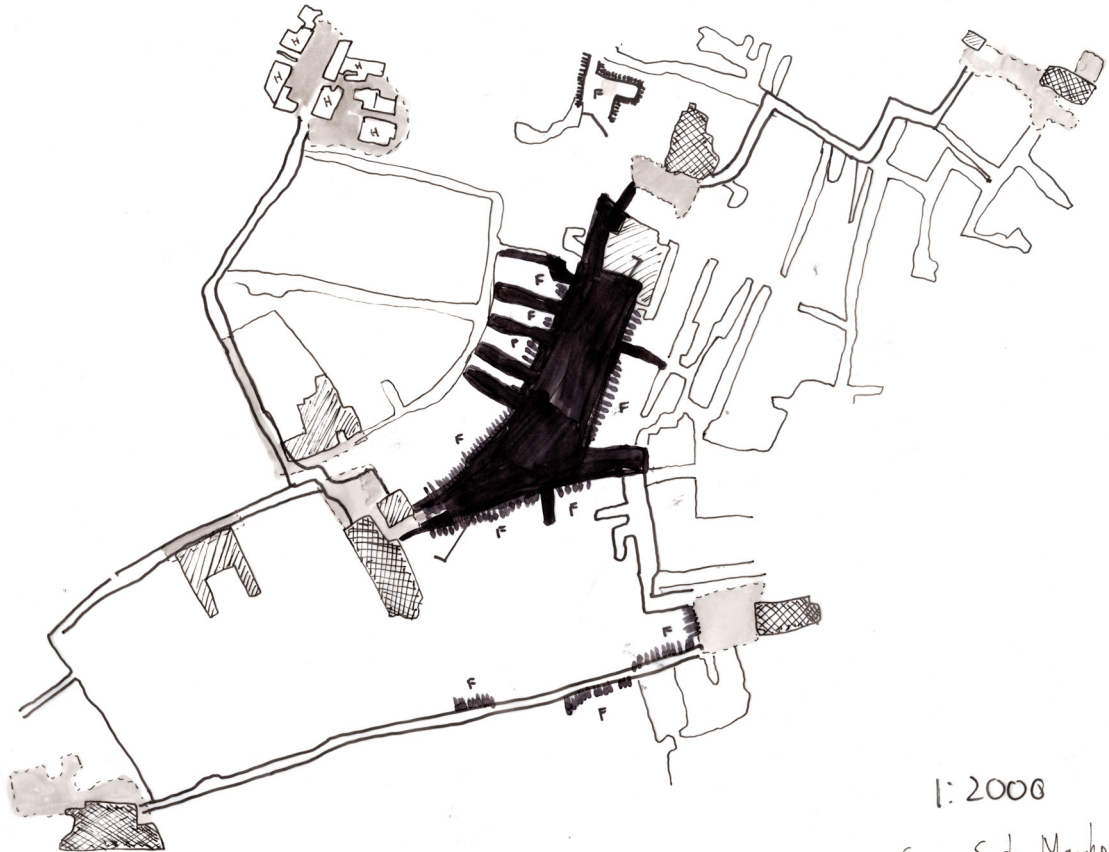


1:500  
San Marco

1:500

The public space of Venice is composed of squares and streets that lead into them. Once trading areas, church/ community gatherings, and markets, these areas have become focus points of cultural development and programming.

1:2.000



1:2000  
Campo Santa Margherita

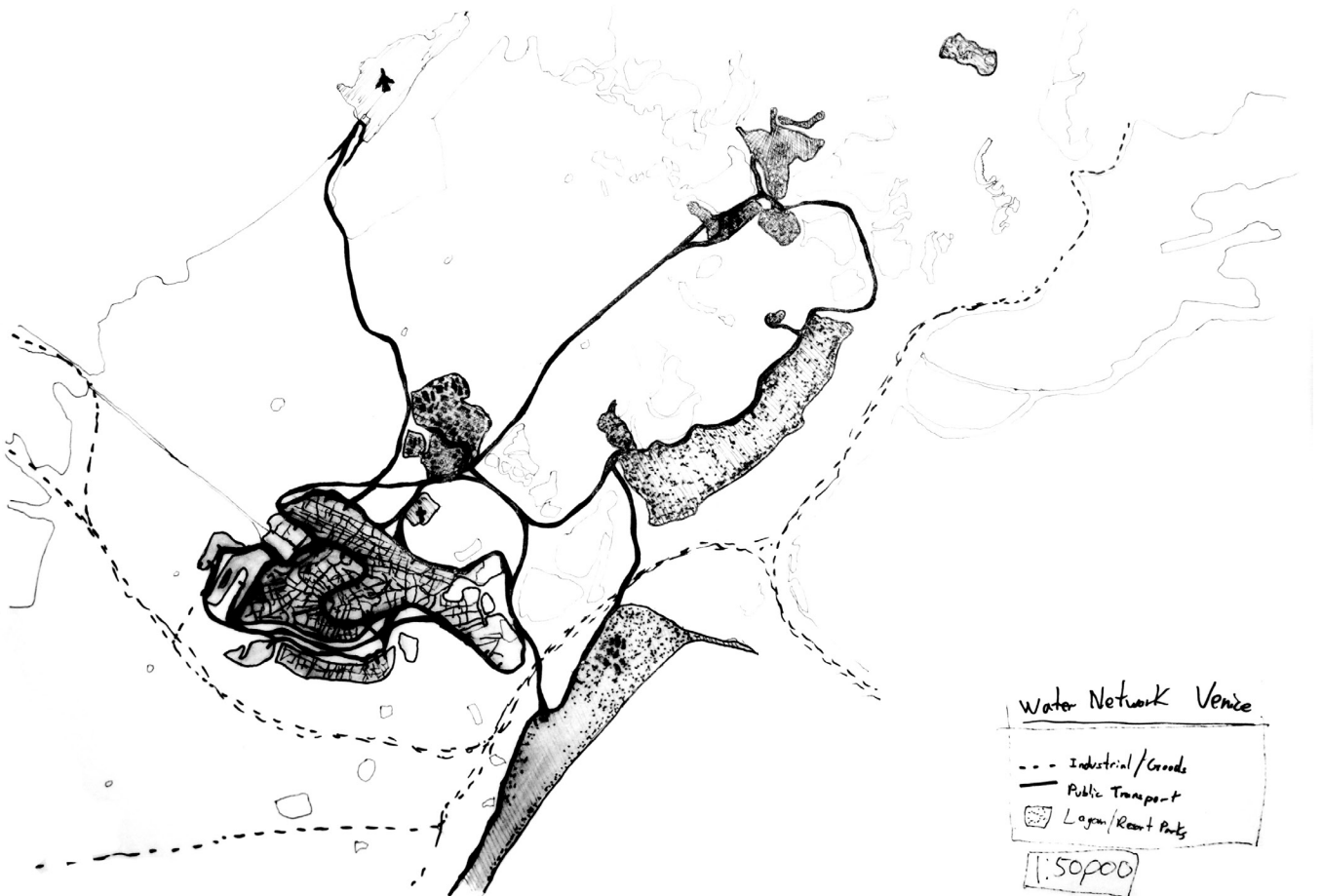


1:500

Campo Santa Margherita  
Venice

## 5. City Centers

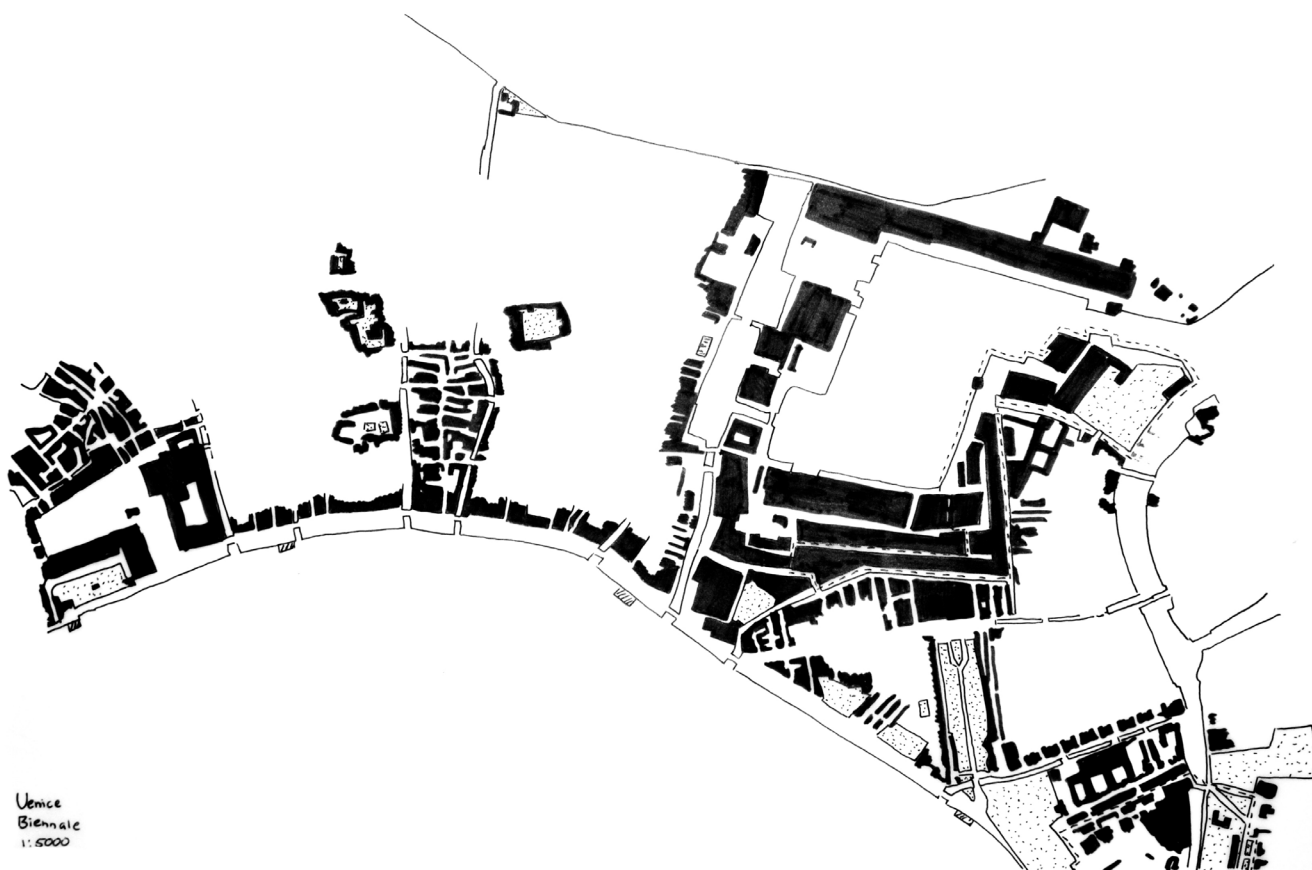
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With an extensive water network and pedestrian routing, Venice can be observed to have a diversity in centers and districts; from the urban biennale area to the more nature immersed landscapes.

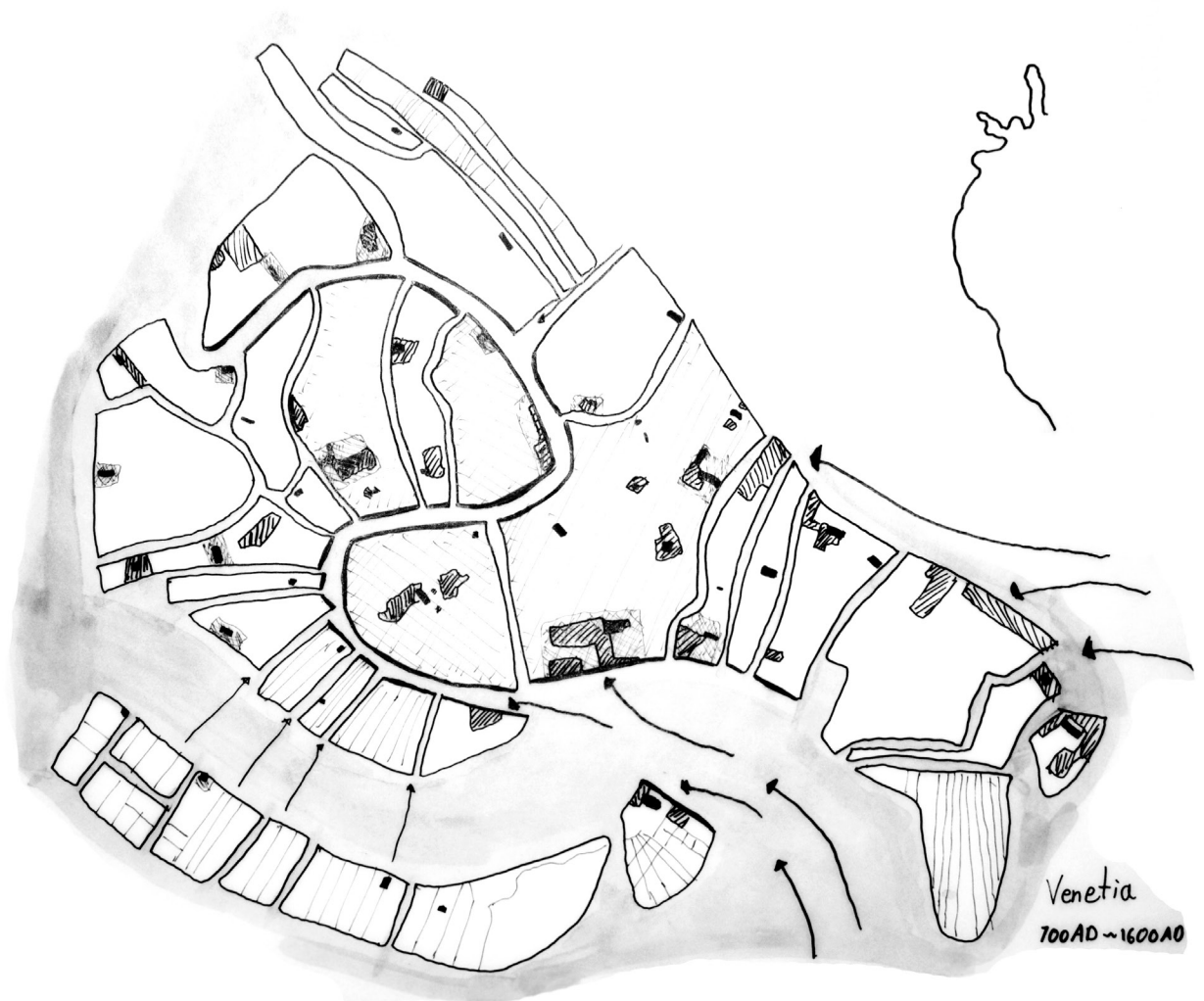
1:5000



## 6. Relation Between History and Growth



Venice is unique in that it was originally a collection of refugees that were running away from the barbarians. It wasn't until 700AD that these small towns and communities were brought together into the formation of the Venice that we know today. Remnants of these smaller pockets and spaces can still be seen, as mentioned before. As a major trading hub for trading, Venice has prospered even times of war and strife.





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**Wiki definition of metabolism:** *Metabolism (/məˈtæbəˌlɪzəm/, from Greek: μεταβολή metabolē, “change”) is the set of life-sustaining chemical reactions in organisms. The three main purposes of metabolism are: the conversion of food to energy to run cellular processes; the conversion of food/fuel to building blocks for proteins, lipids, nucleic acids, and some carbohydrates; and the elimination of nitrogenous wastes.*

This booklet shows the urban metabolism of five different cities around the globe. From small, Venice, to extra large, New York. We took the city as the human body; integral, dependent on multiple organs and based on comprehensive flows. Mobility, typology, nature and history go hand in hand in the total package that shaped each city to what it is nowadays.

