RECLAIMING A BROWNFIELD

INTEGRATE, REVITALIZE AND OVERCOMING PHYSICAL BARRIERS

Master Thesis Project in Sustainable Urban Design by Victor Ohlsson 2019

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ABSTRACT

RECLAIMING A BROWNFIELD - INTEGRATE, REVITALIZE AND OVERCOMING PHYSICAL BARRIERS.

An opportunity for cities to activate abandoned areas and re-cycle what was once an active place.

When industrial sites moves out of the city centers it can leave large open areas behind - brownfields. This can be an opportunity to revitalize areas and expand within the the city itself.

The aim of this thesis project is to analyse and propose a design for brownfield that will reclaim the area in order to expand within the city. The site is located in Odense, Denmark, that was once used as a railway yard for the central train station that is located close by. Today the area stands mainly unused.

During the project the focus has been aiming at looking into the specifik site and the local situation. The proposal extends the city centre into the site with mixed-use blocks that answers to existing structures that integrates with the surrounding. Improved connections are made into the area and helps breaking a physical barrier by prolonging pedestrian movement patterns. Further on follows the municipality's goals to become a bigger, environment-friendly, less car-oriented city with interesting public spaces.

INTRODUCTION

01

INTRODUCTION

AIM

The aim of this Master Degree Thesis Project is to analyze and propose a design for a brownfield that will reclaim an area that today is mostly abandoned.

MOTIVE

When brownfields, harbors and industrial sites moves out of the city centers it often leaves large open areas behind, witch I believe gives great opportunities for the city to revitalize and integrate the area and expand within the the city itself. These kind of areas are often connected to physical barriers such as highways, rivers, or as in this case; a railway. Therefor brownfields can often be experienced as ”cut off” or isolated, so in order to integrate such an area, my opinion is that it’s important to overcome these.

THIS PROJECT

By analysing a brownfield that is located in Odense, Denmark, this thesis project proposes a design that reclaims an area that was once used as a railway yard for the central train station that is located close by. Today the area stands mainly unused.

The design proposal extends the city centre, overcomes a physical barrier and creates an improved connection to the surrounding ongoing re-development in the city. Further on crate a sustainable design that also follows Odense Municipality’s goals to become a bigger, greener, environment-friendly, less car-oriented city with interesting public spaces.

RESEARCH QUESTIONS

The research questions has from the start been aiming at looking into the specifik site and the local situation.

- What solutions can the site accomodate that would contribute to to a more sustainable environment?
- How can local connections be improved?
- What movement patterns can be used and/or created?
- How can physical barriers be overcome?
- What physical factors can be taken advantage of to integrate with the surrounding?

BROWNFIELDS

The term Brownfields describes an abandoned idustrial site. Sometimes it means that the area has contiminated soil from its former industrial activity and sometimes it just describes an abandoned urban area that once was active. I have in this project used the term to describe an area that was once an active industrial site but is today mostley abandoned, an area that does not have any known soil contamination.

CHOISE OF SITE

ODENSE, DENMARK

As i was searching for different areas to make a degree project, my starting ideas was to find a site that is located in a city, relatively close to the city centre. Where the site can develop to a extending part of the inner city.

As i wanted to my degree project outside of Sweden but still in a country close by. I started looking at Denmark, where the main cities are growing, but are somewhat lacking of space due to the high value of agricultural soil. So it's highly motivated to densify, take better advantage of and use the possible spaces within the cities.

When looking into Odense, the third largest city in Denmark, the site caught my attention due to its closeness to the city centre and its potentials to become a prolonged part of it and work as a link across the railway, that today is a barrier, to make a improved connection between the city centre and the area north of the railway that is planned to develop into a city campus (Odense Municipality 2016).

What also cought my attetion to this area is that the size of the site is relativly large compared with the city, since I wanted to work with a site that can have a real impact on its surroundings. Also all the ongoing and future plans for Odense caught my interest.

Odense municipality. (2016). Comprehensive plan 2016 - 2028.


THE SITE
ODENSE

CONTEXT

ODENSE, DENMARK.

Odense, located on the island *Fyn*, is the third largest city in Denmark. It has about 178.200 inhabitants in the city and about 202.300 in the municipality. It is expecting a yearly increase of about 2000 inhabitants over the next four years (Odense Municipality 2018).

According to Danish Agriculture and Food Council, 61 % of Denmarks land area is cultivated, which is one of the highest percentage of cultivated land by country in the world (Danish Agriculture and Food Council 2016).

INHABITANTS

DENMARK	**5.700.000**
COPENHAGEN	**1.200.000**
ARHUS	**270.000**
ODENSE	**180.000**
AALBORG	**120.000**

TRIVIA

The Name of the city - According to nordic mythology, the viking city of Odense was home to Odin, the highest of the gods, hence the name Odense (Odense municipality 2019).

Odense in known for being the hometown of famous 19th century author H. C. Andersen. He has a museum dedicated to him and there are parks, streets and cultural buildings that carries his name and many statues are seen of him or of figures from his tales around the city (Odense municipality 2019).

Danish Agriculture and Food Council. (2016). Facts and figures, Denmark - a food and farming country.
Odense municipality. (2019). A history about Odense. https://english.odense.dk/about-odense/a-history-of-odense. 04-15-2019.
Odense municipality. (2018). Population projection 2018.

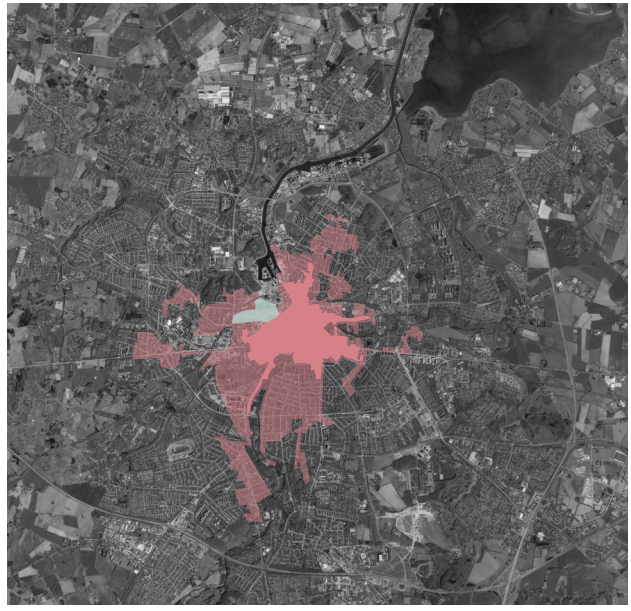

AALBORG
DENMARK
ARHUS
COPENHAGEN
MALMO
ODENSE
HAMBURG

ANALYSIS

02

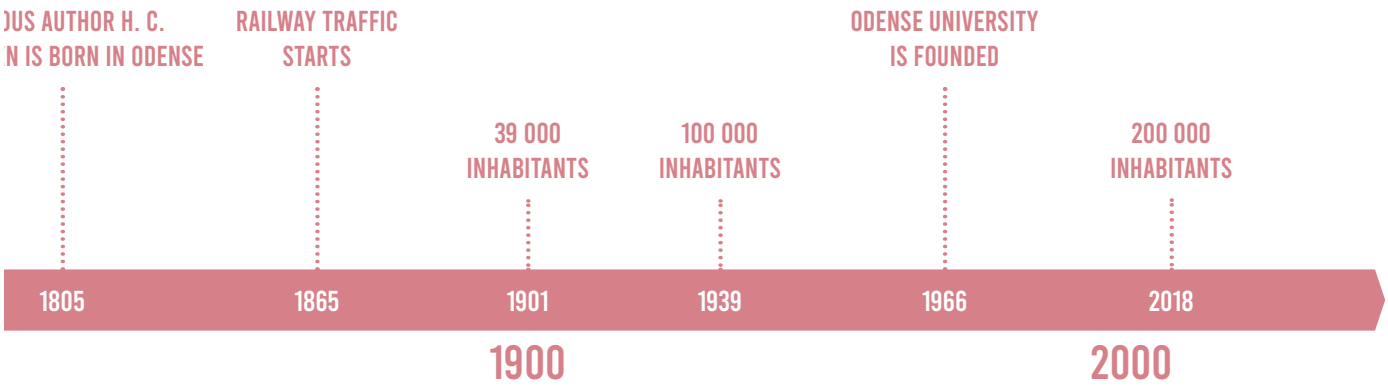
HISTORIC DEVELOPMENT

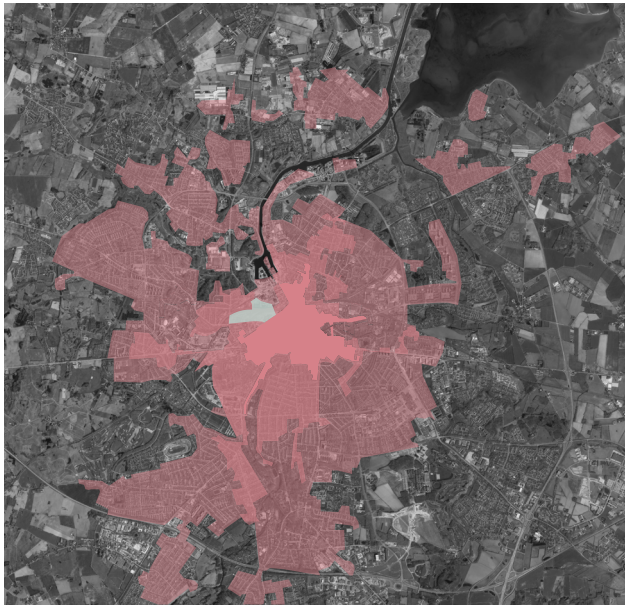
1892



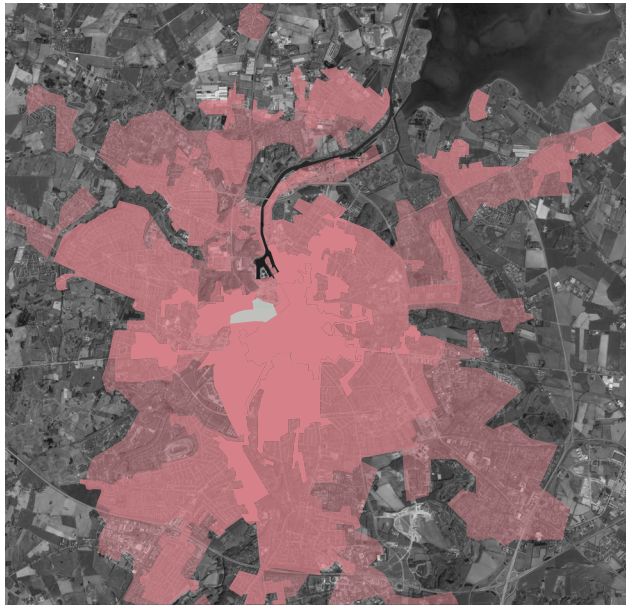
1928

Odense City Museums. (2019). History of Odense. https://museum.odense.dk/en/knowledge/knowledge-history/history-of-odense. 03-10-2019.
Odense municipality. (2018). Population projection 2018.





1977



2008

Odense municipality. (2017). Odense in numbers 2017.
Odense municipality. (2016). Comprehensive plan 2016 - 2028.

WALL PAINTING OF H.C. ANDERSEN WHO WAS BORN IN ODENSE.

ODENSE CITY CENTER

MEDIEVAL STREET

BAR STREET IN THE CITY CENTER

CROOKED STREETS

OLD

When visiting Odense I noticed all its crooked streets. What today is the core of the city, was what use to be the medieval city of Odense. The crooked street and the organic shaped grid are typical charachtaristics of the medieval structures. Sence Odense is documented to be at least a thousand year old city, these structures was ofcourse seen throughout the city core (Odense City Museums 2019).

Odense City Museums. (2019). History of Odense. https://museum.odense.dk/en/knowledge/knowledge-history/history-of-odense. 03-10-2019.

NEW

What I also noticed is that an area in the city center where there were ongoing development for mainly residential buildings, was that this element with the crooked streets were used in a characteristic way in the design which i found very interesting.

BACKGROUND ABOUT THE SITE

THE AREA

This area was once used as a railway yard for the central train station that is located near by. The area also contained several slaugherhouses. Some of the buildings that were used for these activities remains at the site, two relativly large brick buildings that are today used for a building supplier and tv-production (Odense Municipality 2016).

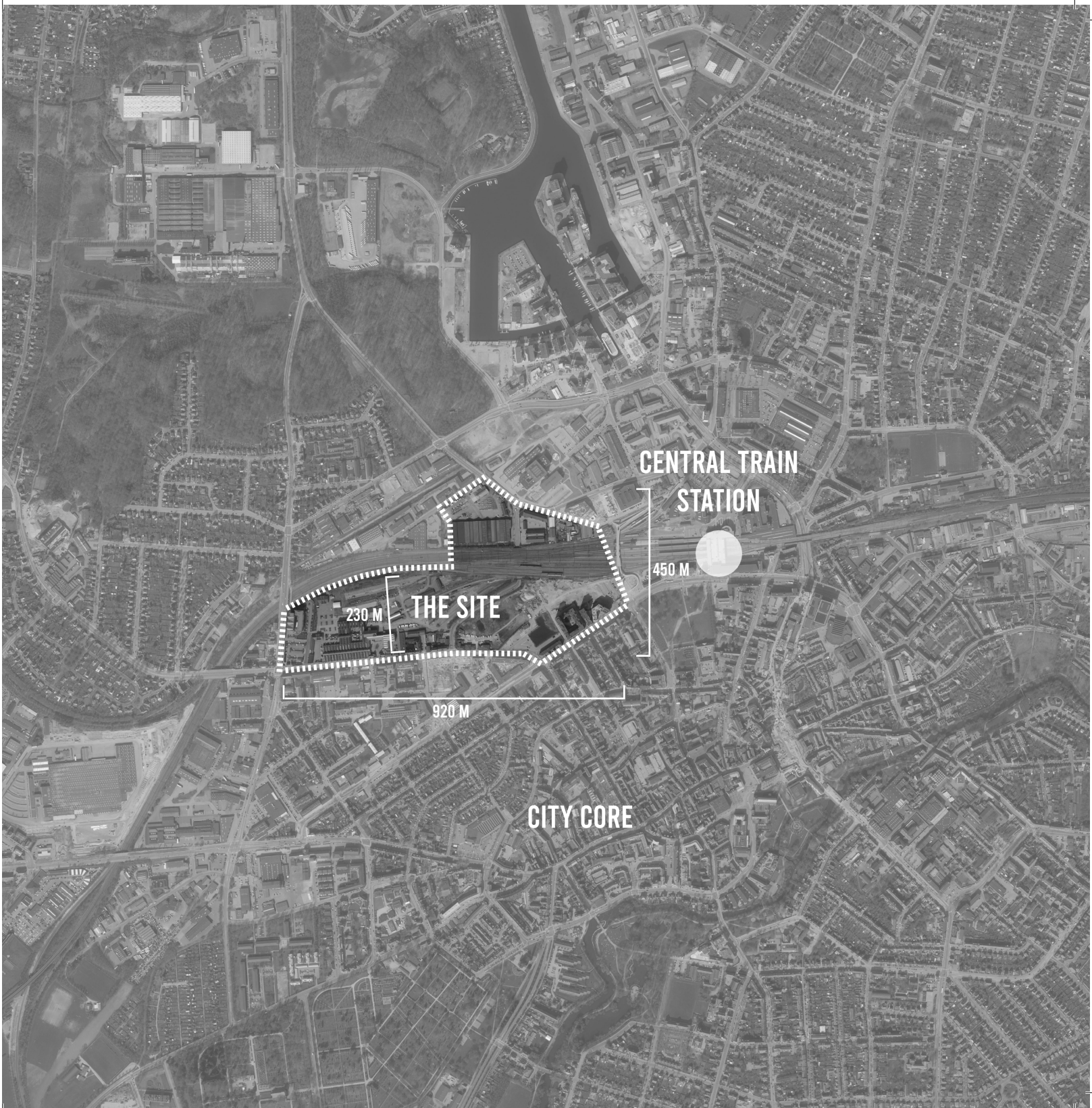
Today the site contains some semi-industrial activities but with large areas that are open and unused. The railway makes a major physical barrier not only to the site but also to the city centre. Several places at the edges of the site are being re-developed at the time of this project. Due to its location, my opinion is that this area hold's potential of becoming an integrated part of the city center with attractive public spaces.

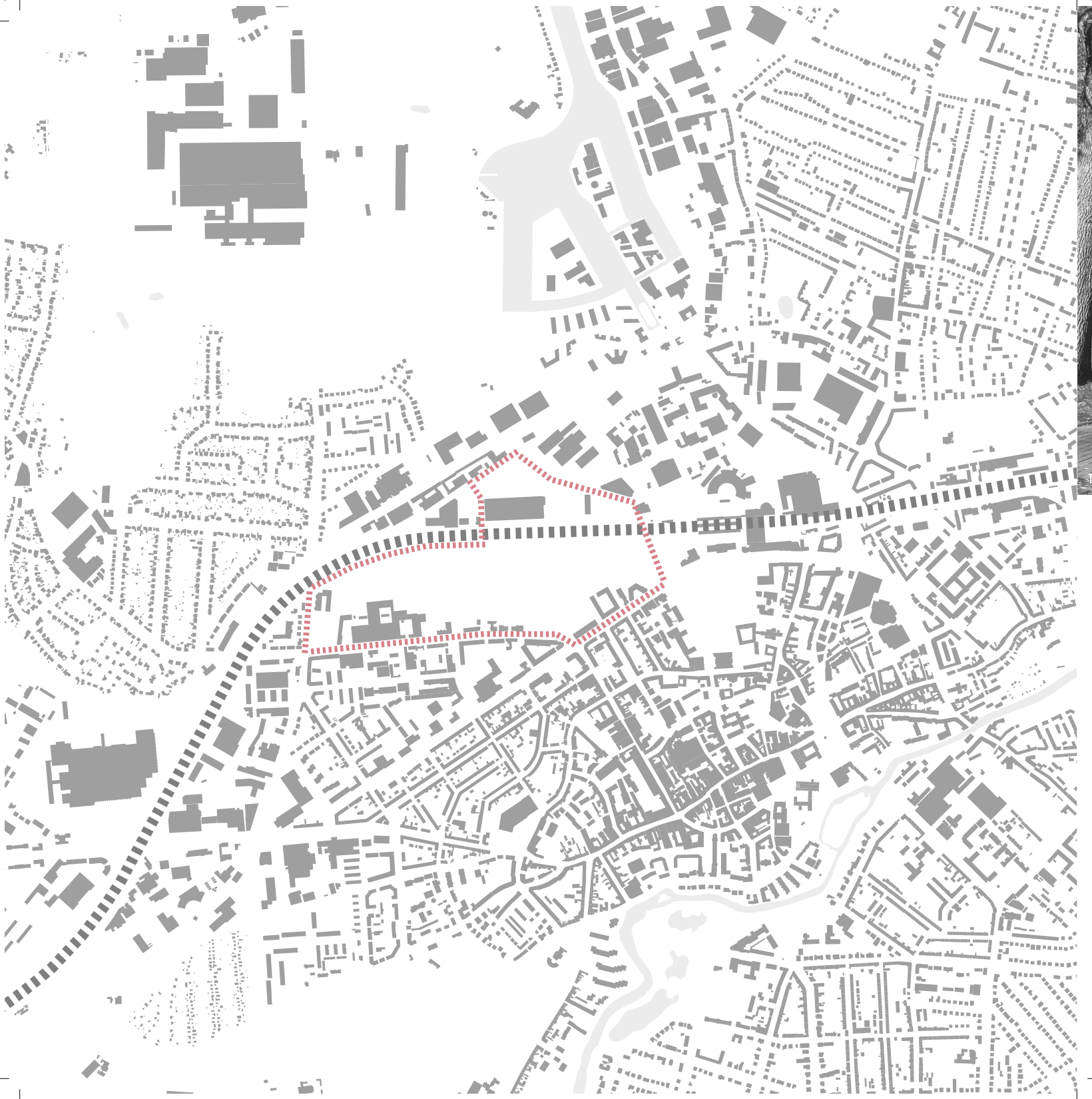
DEFINING THE SITE

SIZE: CA 28 HA

In the begining of this project the boarders of the site that I had defined did not extend north of the railway. But as one of my focus points were to break the physical barrier that the railway forms, I found it motivated to include areas north of it rather than just boarder the barrier.

Odense municipality. (2016). Comprehensive plan 2016 - 2028.


CENTRAL TRAIN
STATION
450 M
230 M
THE SITE
920 M
CITY CORE



THE PARK INFRONT OF THE CENTRAL TRAIN STATION

GIS-ANALYSIS

With GIS-analysis gathered from Odense municipality following analysis shows the site and its surroundings regarding existing activity, plans and what the municipality are aiming for in future development.

PEDESTRIAN BRIDGE

CITY EXPANSION AREA

The lightly marked area shows where the city center should expand and contain a mixed-use, city-center character according the the municipality. The darker area is most of the city core where it is important to keep the city center character when development is being done, according to the municipality (Odense Municipality 2016).

The recently built pedestrian- and bycyle bridge improves the accessibility and connection across the railway wich i belive is important for future development north of the railway. It is located at the east edge of the site, with the central train station east of it.

Odense municipality. (2016). Comprehensive plan 2016 - 2028.

ONGOING DEVELOPMENT

MAINLY RESIDENTIAL AREA

The harbour area has recently been re-developed into a mixed-use area, although mainly residential. Some areas are still under construction (Odense Municipality 2016).

FUTURE CITY CAMPUS

The area north of the railway, between the site and the harbour, is planned to develop into a city campus area. Currently the area mostly contains semi-industrial buildings and some recently built office buildings (Odense Municipality 2016). The fact that this area is planned to contain a campus area contributed to my choice of site and increases the opportunities for the site.

PLANS POSTPONED

See page 48.

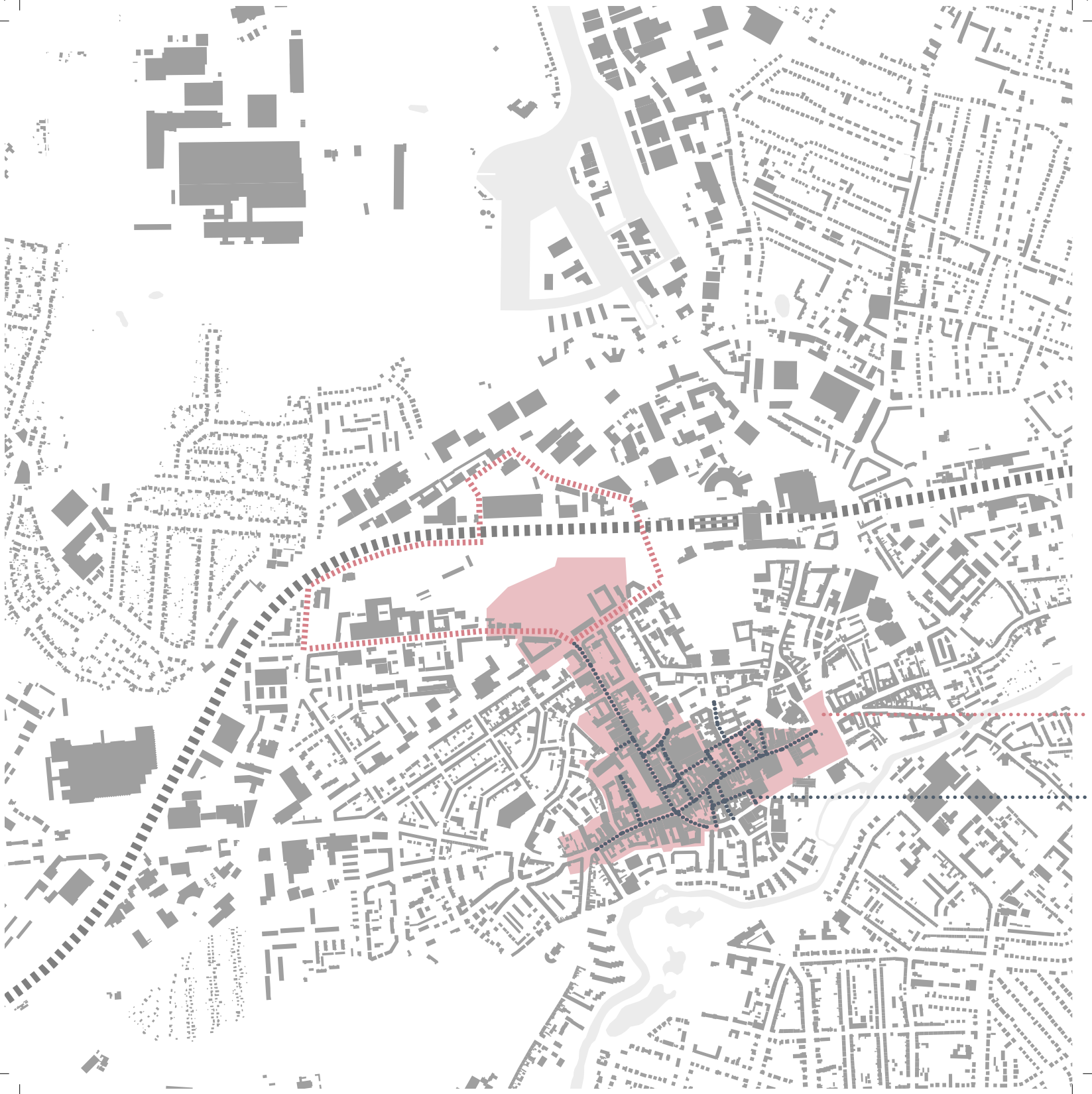
MIXED USE DEVELOPMENT

This area is under construction during this project. Several new mixed-use and residential buildings are ”filling the gaps” and densifying the area (Odense Municipality 2016).

TRAMLINE

See page 34.

Odense municipality. (2016). Comprehensive plan 2016 - 2028.



MAIN PEDESTRIAN AREA

The municipality have pointed out in their comprehensive plan the main pedestrian area in the city core, and that this area should in future development continue into the site to expand the pedestrian area (Odense Municipality 2016).

PEDESTRIAN AREA

MOST BUSY STREETS

PEDESTRIAN STREET IN THE THE CITY CENTER


PEDESTRIAN STREET IN THE THE CITY CENTER

Odense municipality. (2016). Comprehensive plan 2016 - 2028.

SHOPPING STREET IN THE CITY CENTER

LOCAL COMMERCIAL AREA

MAIN COMMERCIAL AREA

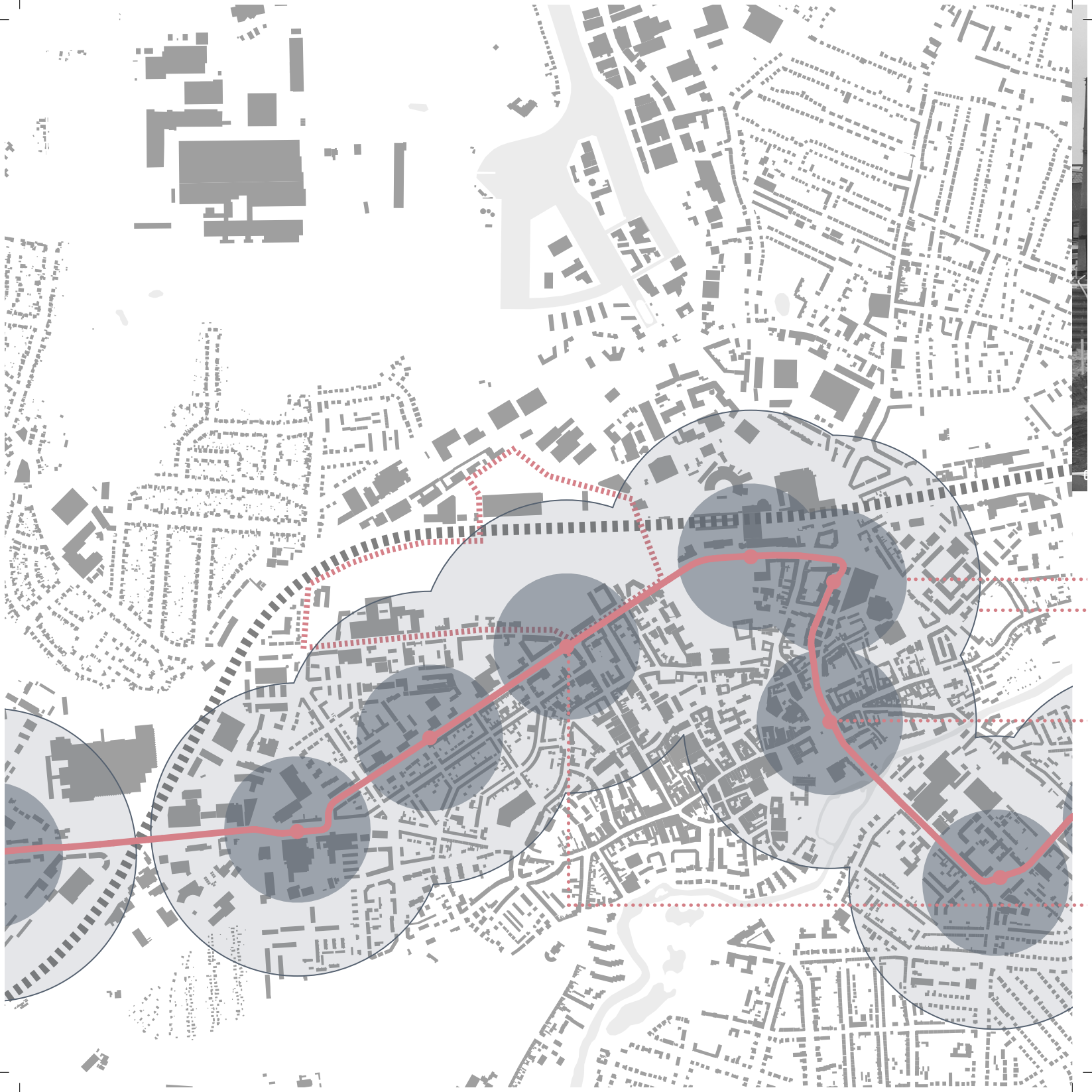
LARGE SCALE COMMERCIAL AREA

COMMERCIAL STRUCTURE

The main commercial area of the city center is where the municipality are prioritizing development that supports and strenghtens this structure. In future development car-encouraging, large scale commercal structures should not be prioritized within this area.

As for the pedestrian area, the main commercial area should also expand into the site (Odense Municipality 2016).

Odense municipality. (2016). Comprehensive plan 2016 - 2028.



CONSTRUCTION OF THE TRAMLINE IN FRONT OF THE CENTRAL TRAIN STATION

200 M BUFFER

400 M BUFFER

STATIONS

STATION AT THE SOUTH EAST EDGE OF THE SITE!

NEW TRAMLINE - OPENS 2020

Odense is currently developing a new tramline in the city which will opens in 2020. It will have 26 stations along the 14.6 km long stretch with departures every 10 minutes. Odense Municipality expects the tram to have 35.000 passengers a day (Odense Municipality 2016).

The tramline goes along the edge of the site with a stop located at the street intersection where the pedestrian street Kongensgade meets the site. This gives the site increased opportunities for mobility and connection to the rest of the city.

Odense municipality. (2016). Comprehensive plan 2016 - 2028.

AREAS POINTED OUT TO CONTAIN MIXED-USE DEVELOPMENT

The marked areas shows where the municipality wants to see development containing mixed-use activity (Odense municipality 2016).

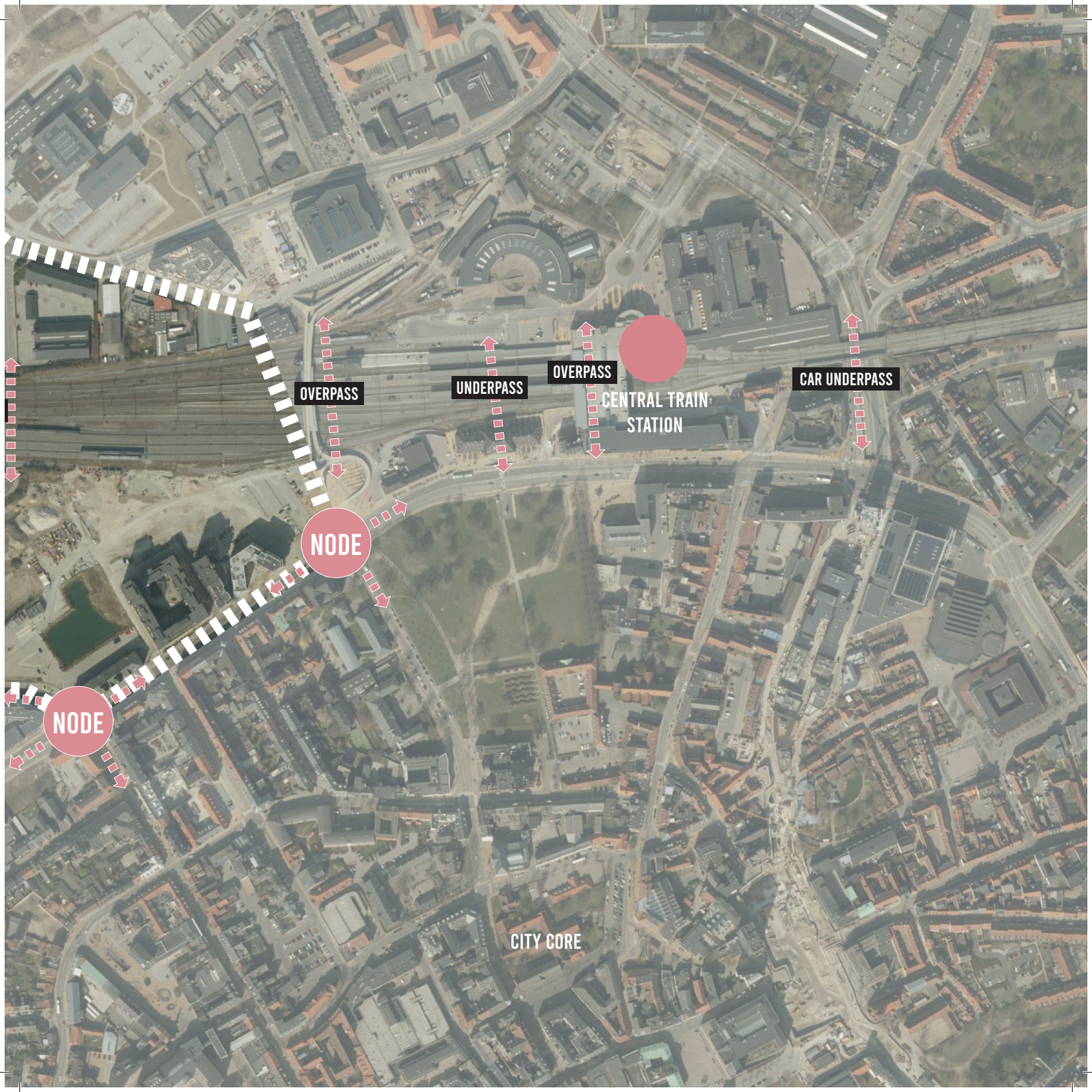
RECENTLY BUILT RESIDENTIAL BUILDING AT THE EDGE OF THE SITE WITH MIXED-USE GROUND FLOORS

Odense municipality. (2016). Comprehensive plan 2016 - 2028.

THE SITE - SEEN FROM THE PEDESTRIAN BRIDGE, LOOKING WEST.

THE SITE


THE MAIN CONNECTIONS AND RAILWAY CROSSINGS
CAR TUNNEL
CAR BRIDGE
CAR BRIDGE


OVERPASS
UNDERPASS
OVERPASS
CENTRAL TRAIN STATION
CAR UNDERPASS
NODE
NODE
CITY CORE

PHOTOS FROM THE SITE

RAILWAY YARD.

MAIN STREET THROUGH THE SITE.

MAIN STREET THROUGH THE SITE.

GRAS/GRAVEL- FIELD USED FOR PARKING.

CAR TUNNEL ACROSS THE RAILWAY.


NEW DEVELOPMENT ON THE LEFT AND FENCED OF GRAS FIELD TO THE RIGHT.


HERITAGE BUILDING THAT TODAY IS USED FOR TV-PRODUCTION.

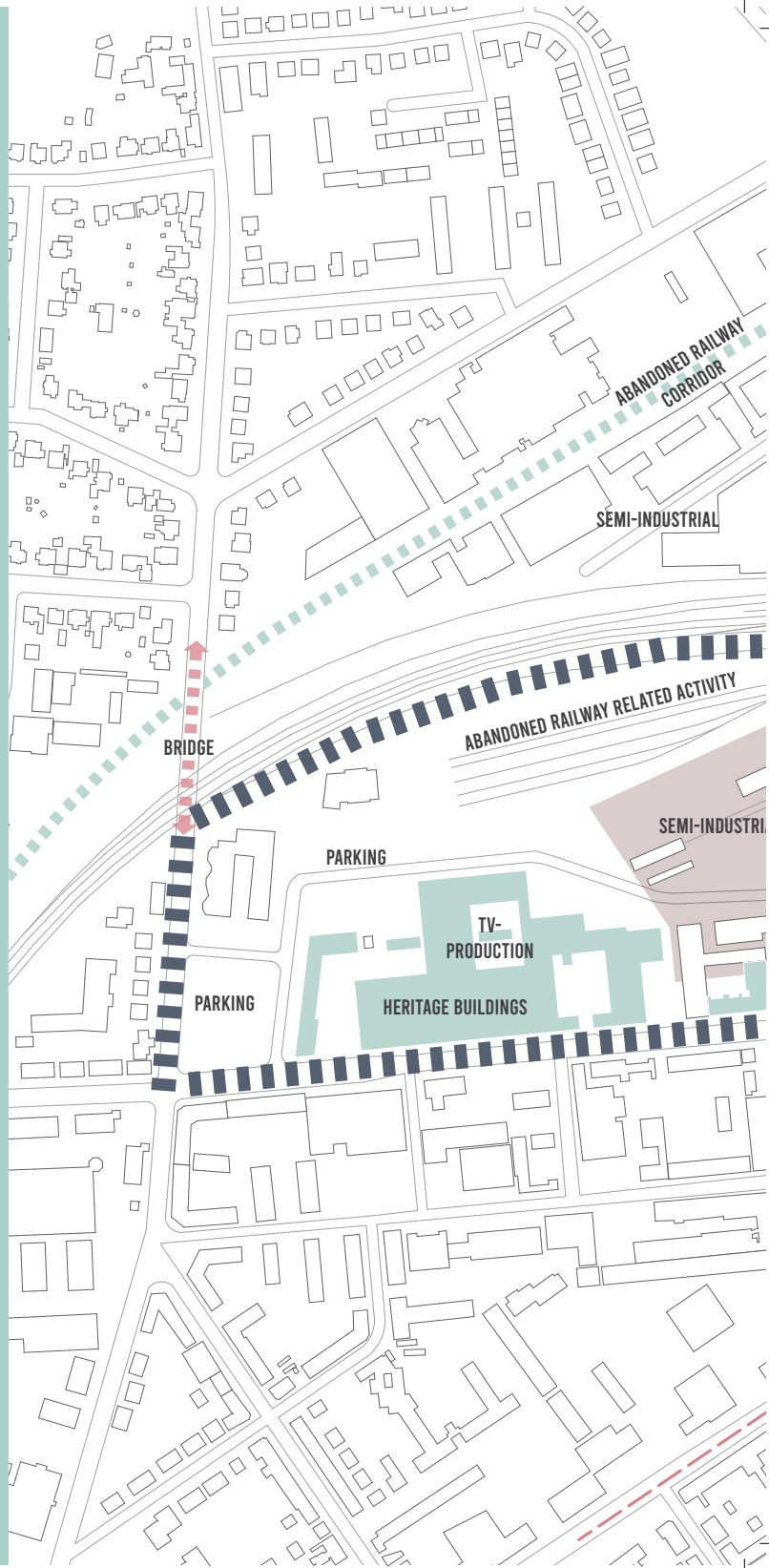

RAILWAY YARD.

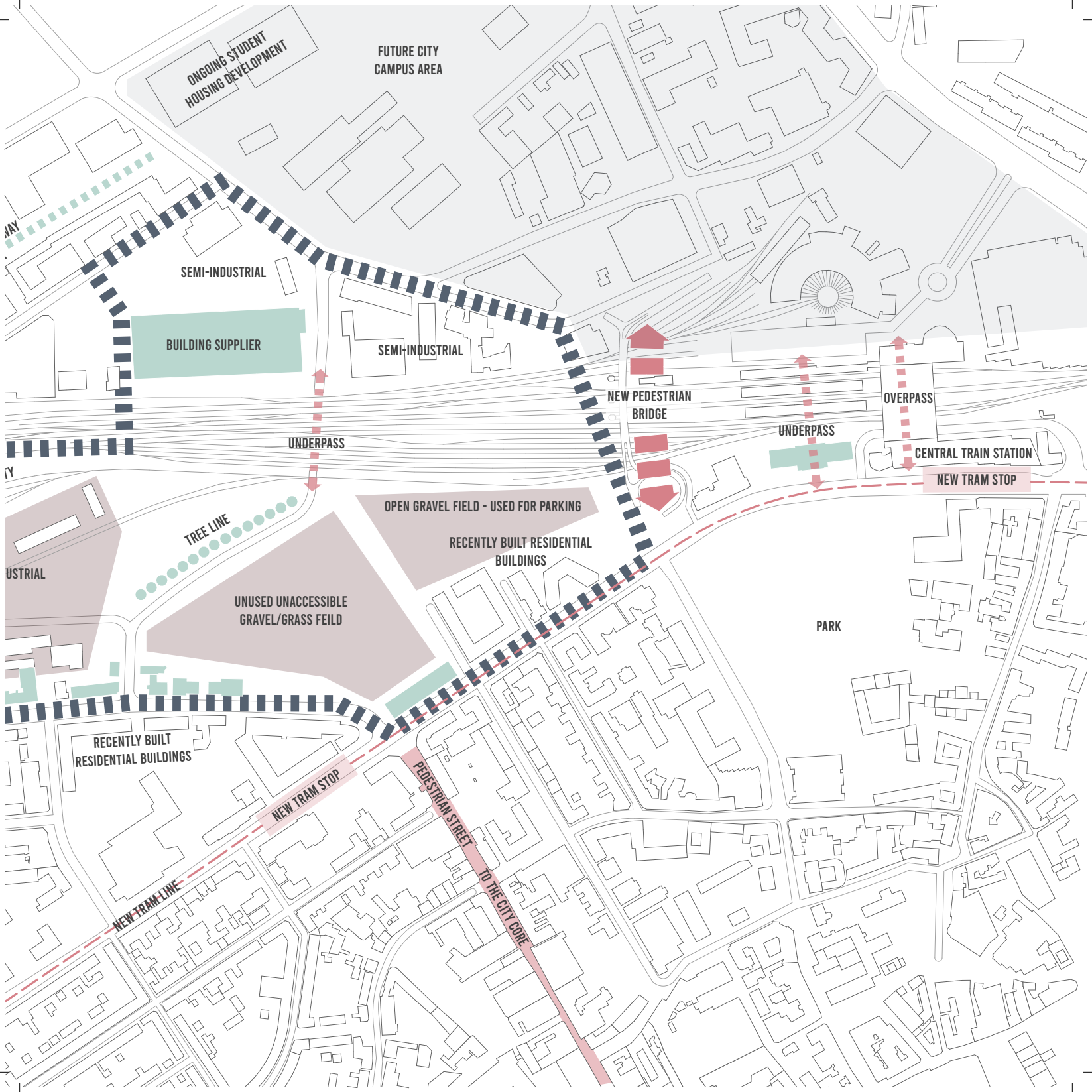
PHOTOS FROM THE SITE

GRAVEL FIELD WITH A LINE OF TREES ALONG THE STREET

EXISTING STREET

THE SITE TODAY




ONGOING STUDENT HOUSING DEVELOPMENT
FUTURE CITY CAMPUS AREA
SEMI-INDUSTRIAL
BUILDING SUPPLIER
SEMI-INDUSTRIAL
UNDERPASS
NEW PEDESTRIAN BRIDGE
OVERPASS
UNDERPASS
CENTRAL TRAIN STATION
NEW TRAM STOP
OPEN GRAVEL FIELD - USED FOR PARKING
RECENTLY BUILT RESIDENTIAL BUILDINGS
TREE LINE
UNUSED UNACCESSIBLE GRAVEL/GRASS FEILD
PARK
RECENTLY BUILT RESIDENTIAL BUILDINGS
NEW TRAM STOP
PEDESTRIAN STREET
TO THE CITY CORE
NEW TRAM LINE

PLANS ON THE SITE

SHOPPING MALL AND PARKING SPACES

There are plans for the south-east part of the site. A company have bought the area from the municipality with the purpose of developing a shopping mall and parking spaces, the project/the mall are called VIVA.

These plans has been postponed several times and raised opinion, both for and against, amongst politicians, inhabitants and different actors in the city center. Some fear it would drain the shopping life and contribute to decrease the activity in the city center (fyens.dk 2018b).

The plans of it started in 2011 and were originally planning of having it finished in 2015. It would contain 45 000 square meters of shopping which would be the biggest city center shopping mall in Denmark. According to an article in the local newspaper fyens.dk (2018a) in august 2018, the plans are postponed indefinitely.

The municipality has in their comprehensive plan formulated "frames" for future planning for different areas. In this specific area the municipality have pointed out that larger car-oriented shopping units should not be established. That the area should prolong the Kongensgade pedestrian street with cafés, stores, etc (Odense Municipality 2016).

Odense municipality. (2016). Comprehensive plan 2016 - 2028.

HOW THIS EFFECT MY PROJECT

I became aware of the VIVA-project when I initially were researching about Odense. Although this area is just a part of the whole site, it contributed to my choice of site and it motivated me even more to create a design proposal at this site.

To raise a big scale shopping mall on this location is to my opinion not the right way to develop this area because it can be, and should be, formed in a way that does not contribute to decrease activity in the city center and encourage car use into the area.

My proposal also suggests to create new shopping opportunities, but in a form that prolong and continues on the existing shopping- and movement patterns from Kongensgade with the aim of integrating the site with the city core.

NEWS PAPER ARTICLES REGARDING THE PLANNED MALL

POLITICIANS, STORE OWNERS
FOR AND AGAINST

FYENS.DK (2018a). Stadig opbakning til Viva i byraadet, 31 augusti. https://www.fyens.dk/odense/Stadig-opbakning-til-Viva-i-byraadet/artikel/3280874. 03-20-2019

FYENS.DK (2018a). Rapport: Viva center vil forvaerre butiksdoed i Odense, 30 augusti. https://www.fyens.dk/odense/Rapport-Viva-center-vil-forvaerre-butiksdoed-i-Odense/artikel/3280834. 03-20-2019

TV2 FYN (2016). Godt vi ikke har bygget endnu viva aabner maaske i 2020, 20 september. https://www.tv2fyn.dk/artikel/godt-vi-ikke-har-bygget-endnu-viva-aabner-maaske-i-2020. 03-20-2019

THE INTERSECTION AT THE SOUTH EAST EDGE OF THE SITE WHERE A TRAM STOP IS PLANNED. THE SITE TO THE RIGHT.

DESIGN

03

STRATEGY

GUIDELINES AND TOOLBOX FOR THE DESIGN

From my analysis of Odense, the site and the surrounding areas, the strategical location, the municipality's framework of goals for new development in the area and/or overall Odense, I have concluded several strategies for the changes of the site. Following are the strategical tools that I will use as a base for my design:

TO INTEGRATE:

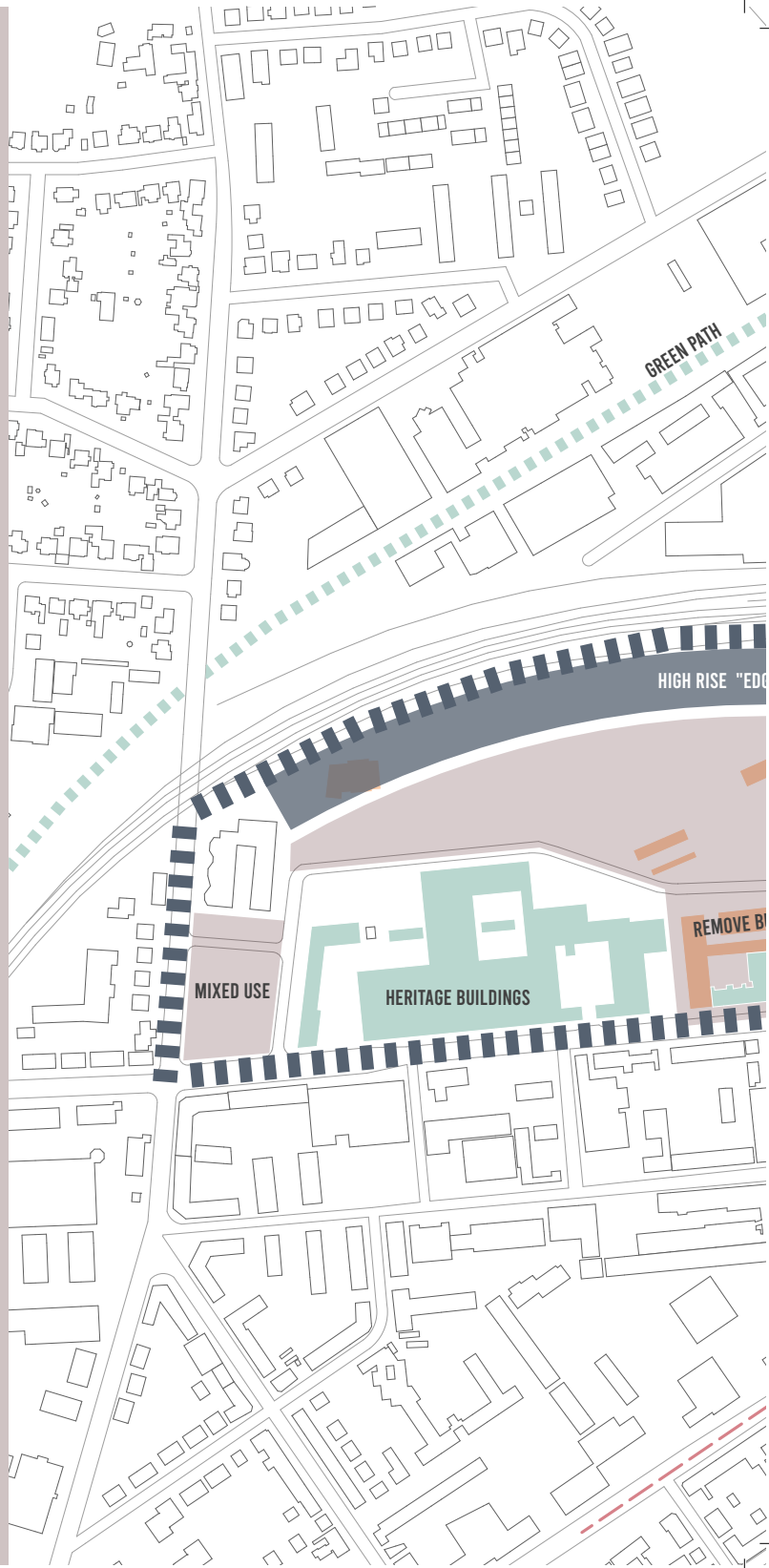
- Relate to existing street- and built structure
- Prolong existing pedestrian movements patterns
- Diverse typology

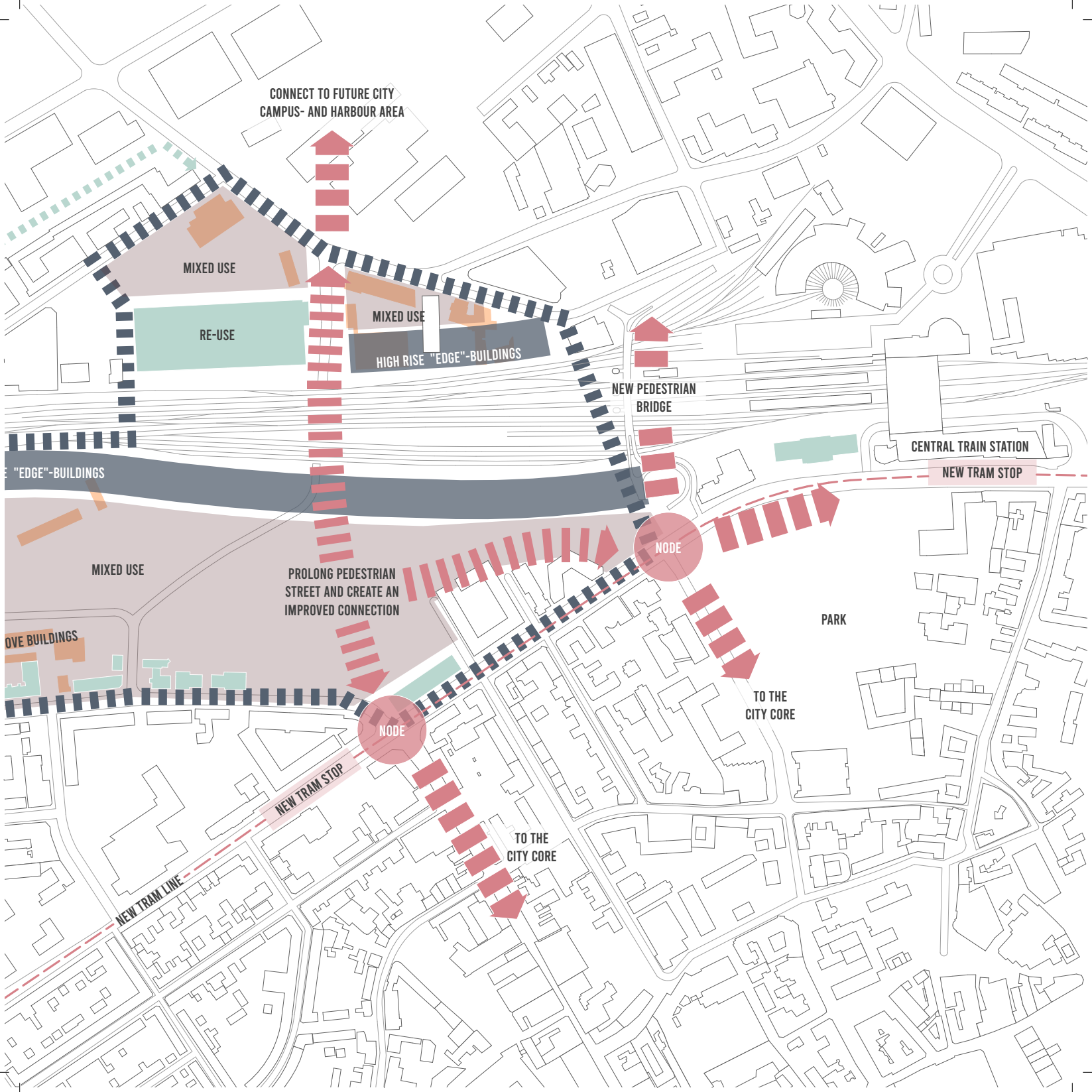
TO BREAK PHYSICAL BARRIERS:

- Easy accessibility
- Pedestrian and bicycle-encouraging infrastructure
- Connect the city districts

TO REVITALIZE:

- Create attractive and active public space's
- Diverse environment
- Spatial identity
- Mixed-use buildings




CONNECT TO FUTURE CITY
CAMPUS- AND HARBOUR AREA
MIXED USE
RE-USE
MIXED USE
HIGH RISE "EDGE"-BUILDINGS
NEW PEDESTRIAN
BRIDGE
CENTRAL TRAIN STATION
NEW TRAM STOP
"EDGE"-BUILDINGS
NODE
MIXED USE
PROLONG PEDESTRIAN
STREET AND CREATE AN
IMPROVED CONNECTION
OVE BUILDINGS
PARK
TO THE
CITY CORE
NODE
NEW TRAM STOP
TO THE
CITY CORE
NEW TRAM LINE

STRATEGY

CREATE NODES

Use the intersection at the south edge of the site (Vestre Stationsvej/Östre Stationsvej, Kongensgade and Rudgårdsvej) where a new tram stop is planned to be located as movement generator that becomes a meeting point and a node for the area.

Create an inviter from the area east of the site; the train station, the park and the pedestrian bridge that crosses the railway. This place has the opportunity the become a meeting point and a node.

MIXED-USE BLOCKS AND HIGH RISE ”EDGE” BUILDINGS

Use different typologies to separate some of the uses. The buildings that are located along the edges of the railway will be non-residential, large scale, high-rise buildings, mainly containing office and commerce activity.

CROOKED STREETS

Include crooked angled street that can give a ”whats around the corner?”-effect that charactarize the medieval city core and its main pedestrian streets.

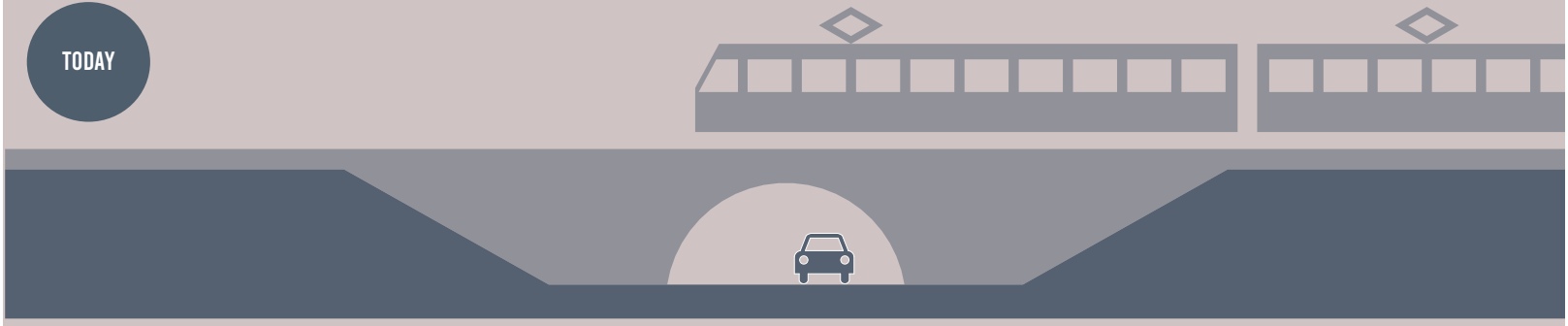
IMPROVE THE CONNECTION ACROSS THE RAILWAY

The railway form a major physical barrier, specially for the site, but also for the city in general. To improve the existing connection between the north and the south side of the railway is important for the site to decrease the feeling of a barrier. Better accessibility to the areas north of the railway (the future city campus and the recently and ongoing developed harbor area), is an important factor and strategy for integrating the whole area. By using the site to include a link across the railway the site will create improved movement pattern that gives activity and life to the site.

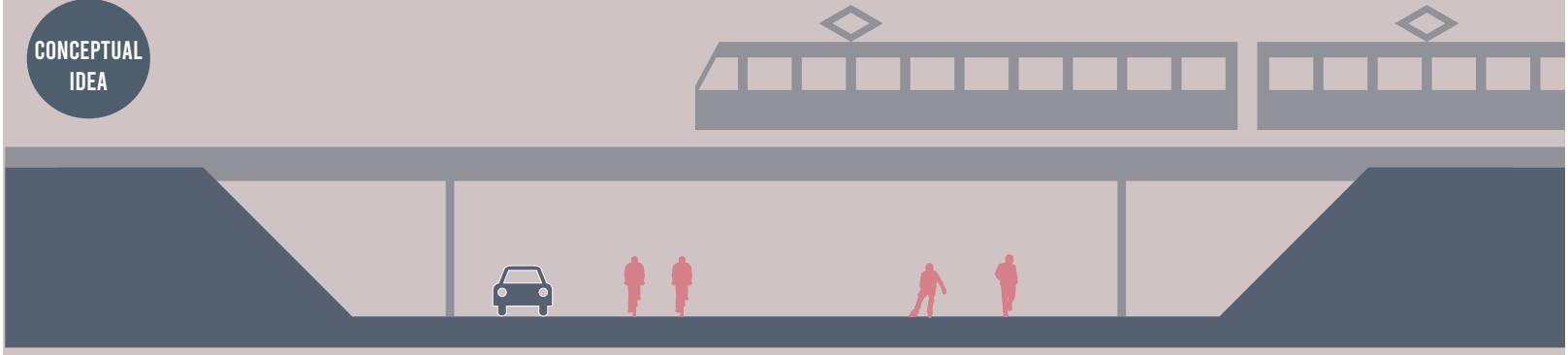
IMPROVE THE UNDERPASS

By creating an improved bicycle and pedestrian-friendly underpass by widening the space, create a gap in the middle of the tunnel "roof" that lets in sunlight and changing the design from the existing tube-tunnel for cars, the underpass gives less impression of just being a narrow and unsafe passage to the other side of the tracks.

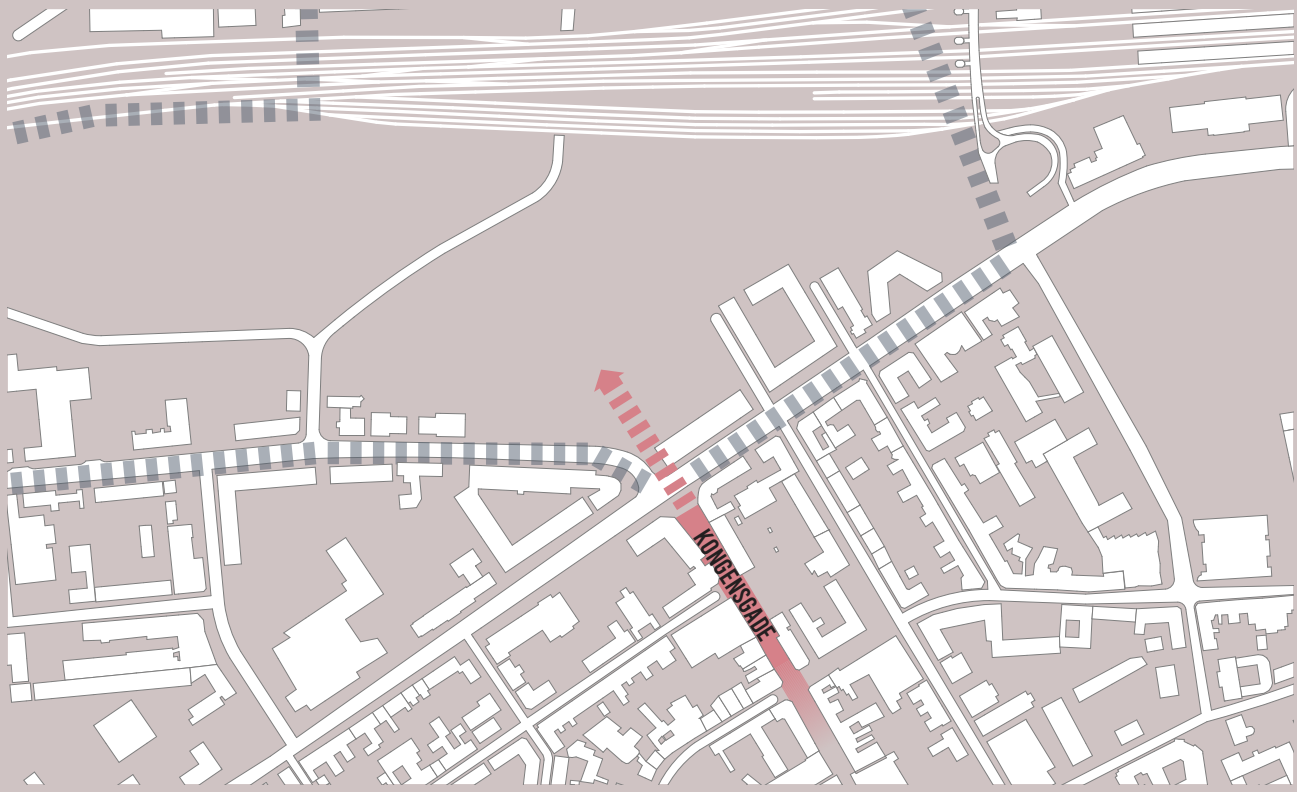
TODAY



CONCEPTUAL IDEA



STRATEGY



PROLONG THE PEDESTRIAN STREET INTO THE SITE

The main pedestrian street, Kongensgade, that runs through the city core, in north-south direction, stops at the south edge of the site. By prolonging this public space into the site, the areal integration is improved by continuing on the existing movement pattern, the site have a direct connection to the city core and the activity and commercial opportunities that follow such structures.

KONGENSGADE

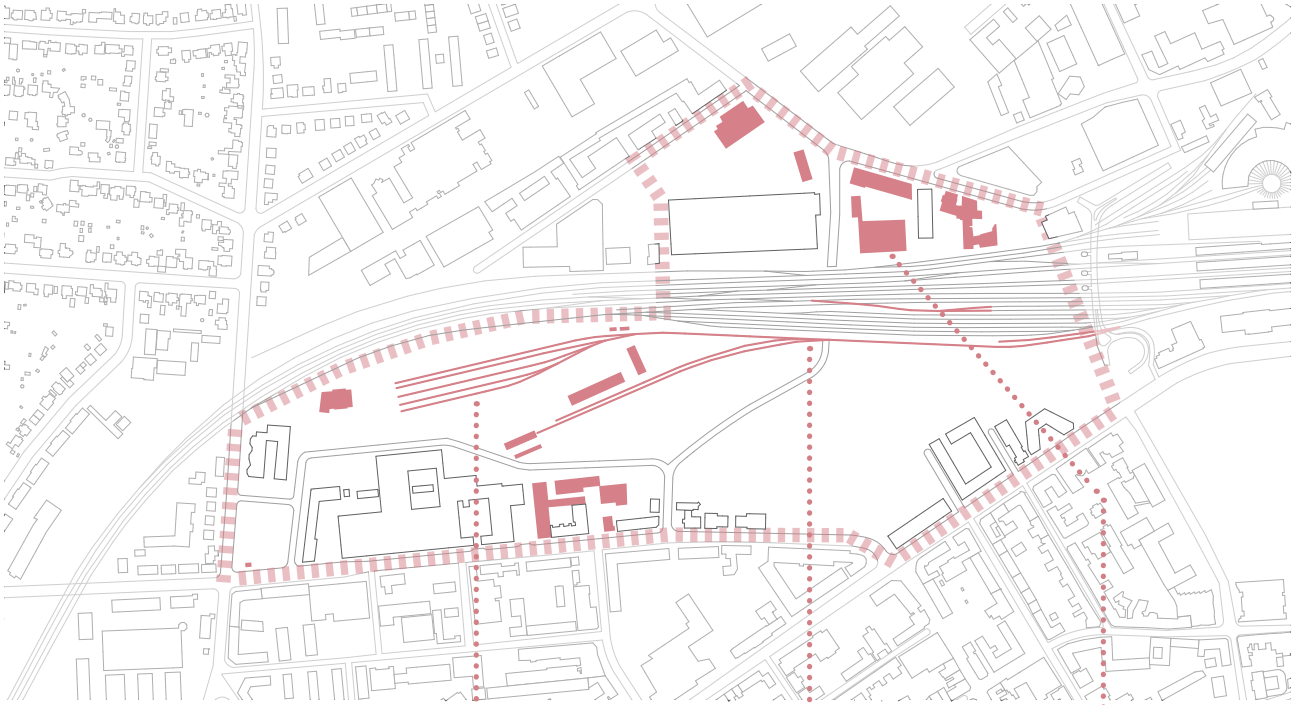
COMMERCIAL STREET AS A PUBLIC SPACE

A vibrant public space that encourages people to socialize and meet is not only socially desirable but also promotes commerce. In Stadens renässans (The renaissance of the city) by Söderlind (1998) the author argues that business and/or shopping streets can offer better market access to other actors than the dominating business chains that for economical reasons usually subscribes the access to shopping malls. A shopping street can also tie together geographically isolated areas to a larger unity. A shopping street can therefor be considered working as an integrator and at the same time possibly offer a more democratic business environment that is more heterogeneous and diverse.

Even though a shopping street, rather than a mall, can be viewed upon as more democratic and diverse from a commercial perspective. As a public space there's still a risk of making it into a space which main purpose is consumption, hence decreasing the possibilities to use public space for non-commercial use (Olsson & Wikström 2012).

Olsson, L. & Wikström T. (2012). Stadens möjligheter - platser och stråk
Söderlind, J. (1998). Stadens renässans.

REMOVE AT THE SITE

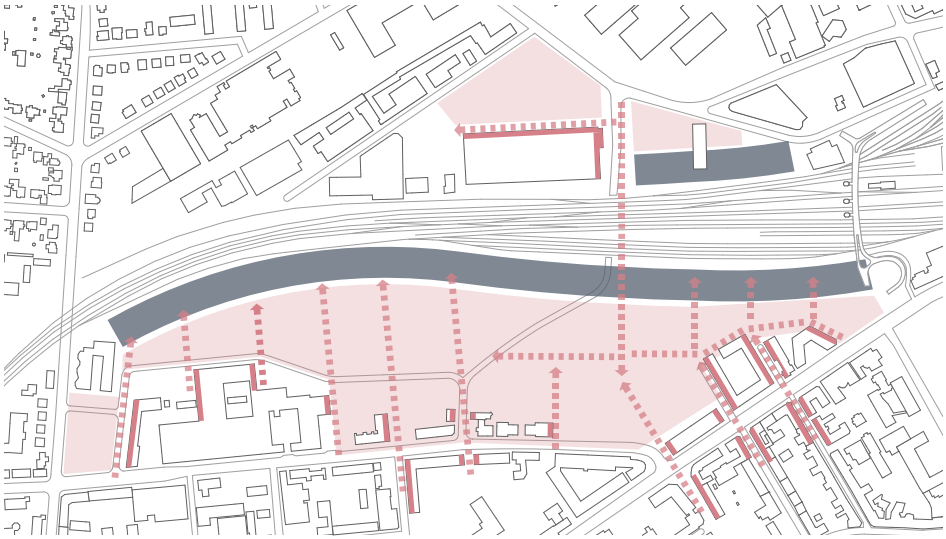


STRUCTURES THAT ARE REMOVED FROM THE SITE

From my strategical guidelines and because of the aim of the design, these existing structures are removed from the site in order to implement the changes.

The existing railway tracks that goes into the site are being removed as well as several semi-industrial buildings. South of the railway, some of the marked buildings are active and some are abandoned. On the north side of the railway, all poindet out buildings are active

DESIGN CONCEPT



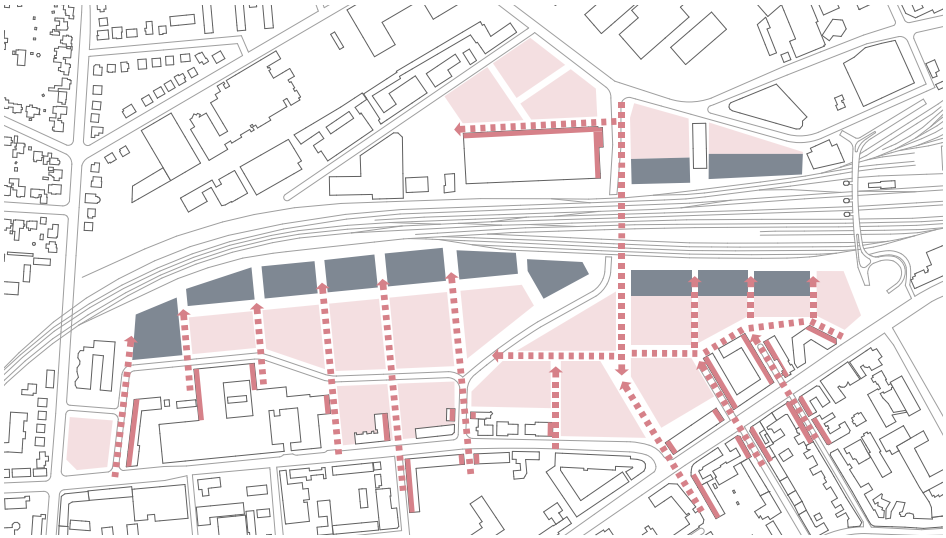
RELATE TO EXISTING STRUCTURES

By integrating the site and connect it with the surrounding areas, continuing on the existing street grid och built structures into the site, existing movement patterns can get a natural extension that follows the structures of the surrounding area.

Red marked buildings shows what structural lines that are being considered.

MIXED USE

HIGH RISE "EDGE" BUILDINGS

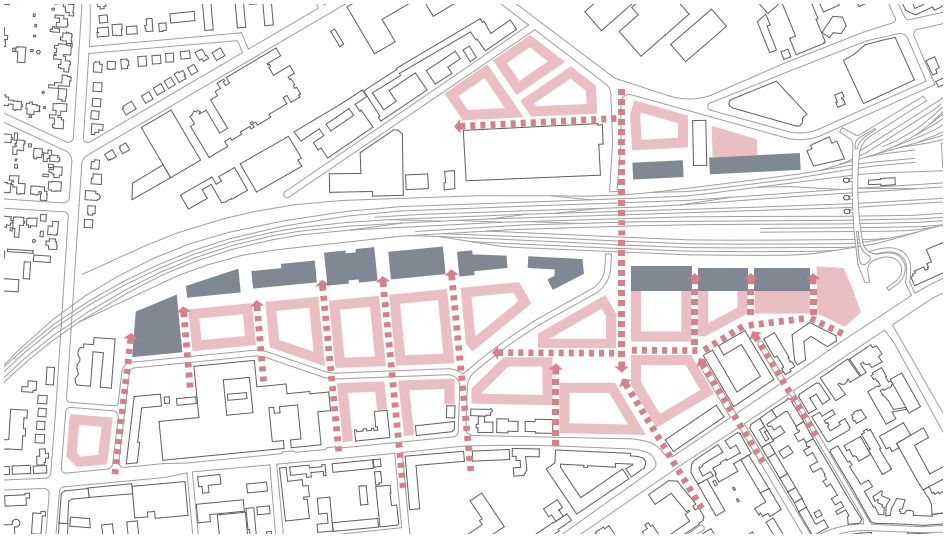


CREATE SIGHTLINES

By relating to existing structures, sightlines are created that gives a base for were to locate building blocks. With a focus on keeping the sightlines integrated with the surroundings in the north-south direction, a crooked-angled infrastructure can also be created through the site in the east-west direction.

MIXED USE

HIGH RISE "EDGE" BUILDINGS



CREATE BLOCKS

By using this structure as a guide, blocks are created that are being used ase a base for the grid design and how and where to locate buildings.

MIXED USE

HIGH RISE "EDGE" BUILDINGS

FUNCTIONAL BASE

The functional base is introduced to give quality to the site. With commercial opportunities mainly facing the main streets, the public realm gains activity and movement. This framework is made to create an active environment that offers a diverse opportunity when being in the public realm.

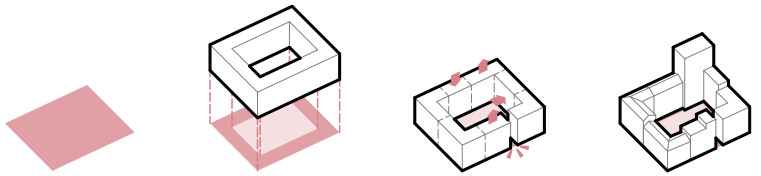
MIXED USE

MAINLY RESIDENTIAL

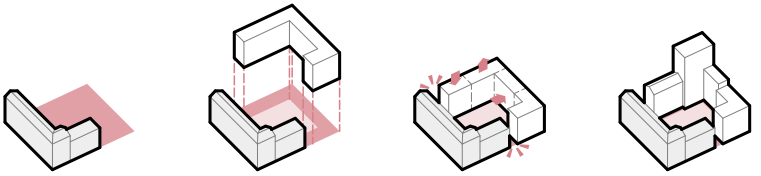
HIGH RISE OFFICE/COMMERCE

TYPOLOGIES

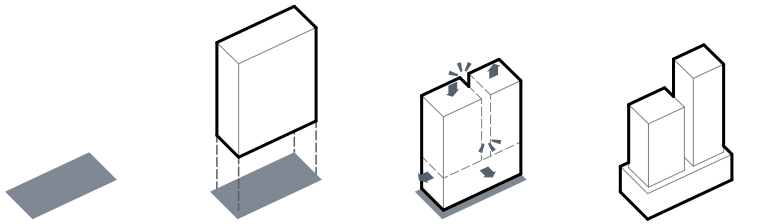
The typologies that are being implemented can be divided into four different types. On most part of the site mixed-use blocks are being used, some of them on what is today empty ground and some that togheter with existing buildings create blocks. Along the edges of the railway, high rise buildings are used, and then a few blocks that are a mix of the mixed-use block and the high rise building.



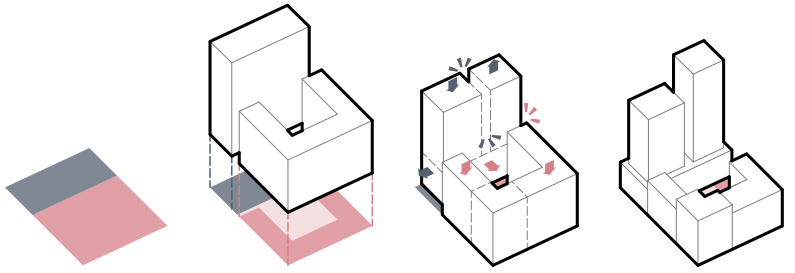
MIXED-USE BLOCKS ON EMPTY LOTS



MIXED-USE BLOCKS WITH EXISTING STRUCTURES



HIGH RISE "EDGE" BUILDINGS



HIGH RISE "EDGE" BUILDINGS TOGETHER WITH MIXED-USE BLOCK

MASTERPLAN

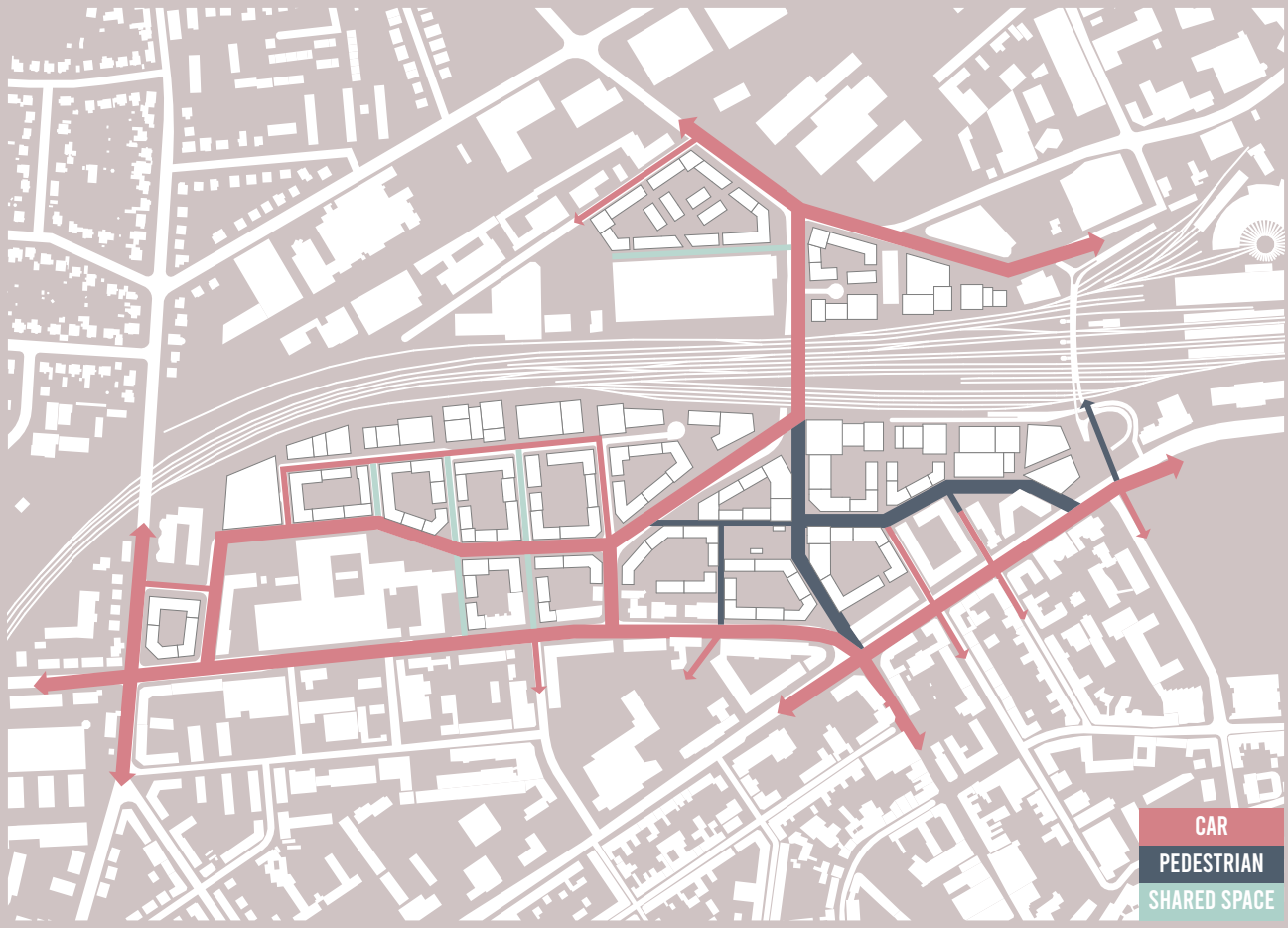
MASTERPLAN

The masterplan shows how the different block types are used, the structural integration with existing buildings and streets, specially in the north-south direction and then how a crooked pathway goes through the site in the east-west direction. Relating to existing buildings differently creates a variation of spaces.

The pedestrian oriented area at the east part of the site that continues upon the existing pedestrian network in the city center and gives a clear connection to the central train station and the park.

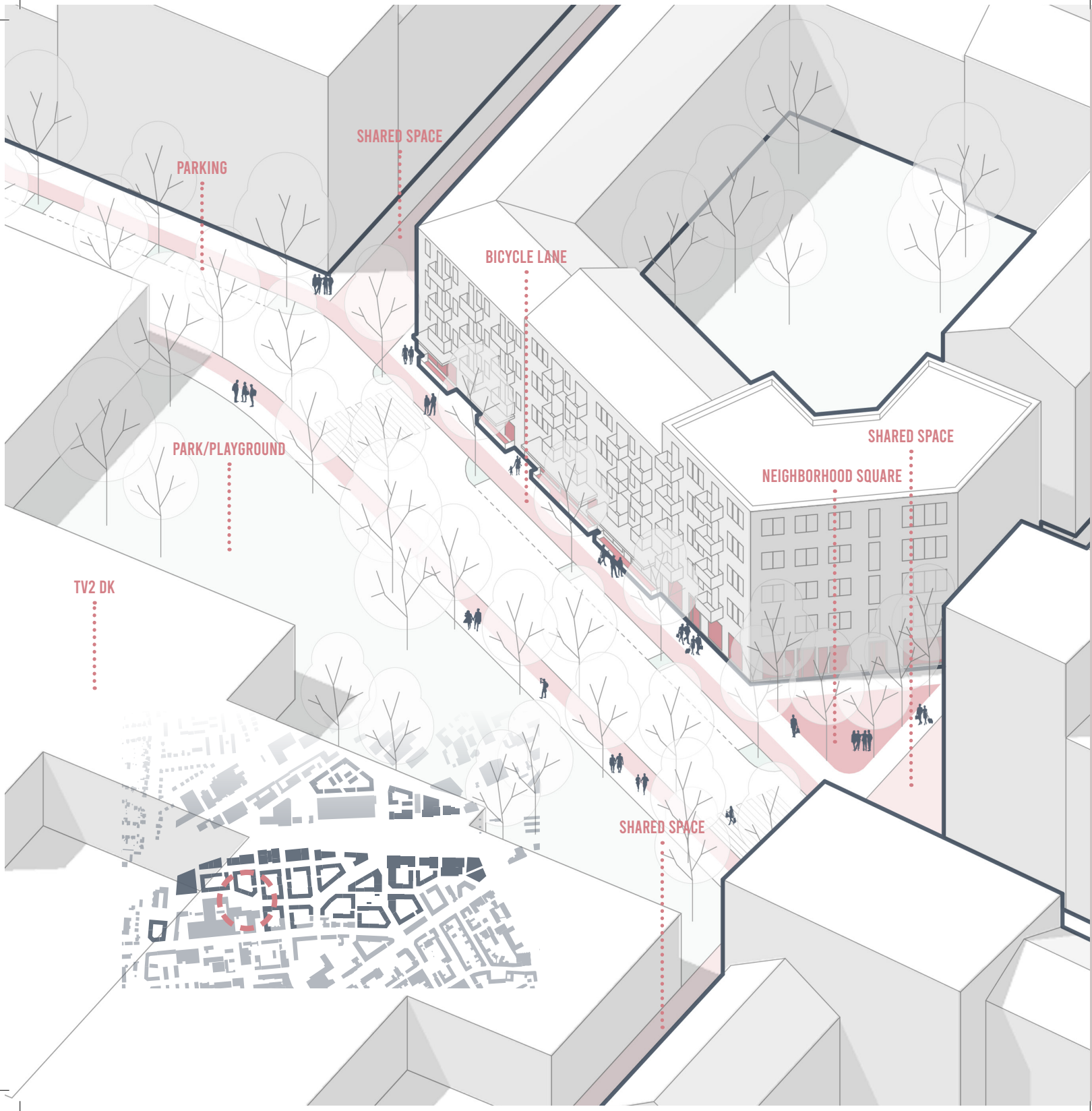
This masterplan is also showing the surrounding city to get a clear sight of how the site works with it. **Next page shows a closer view of the site.**

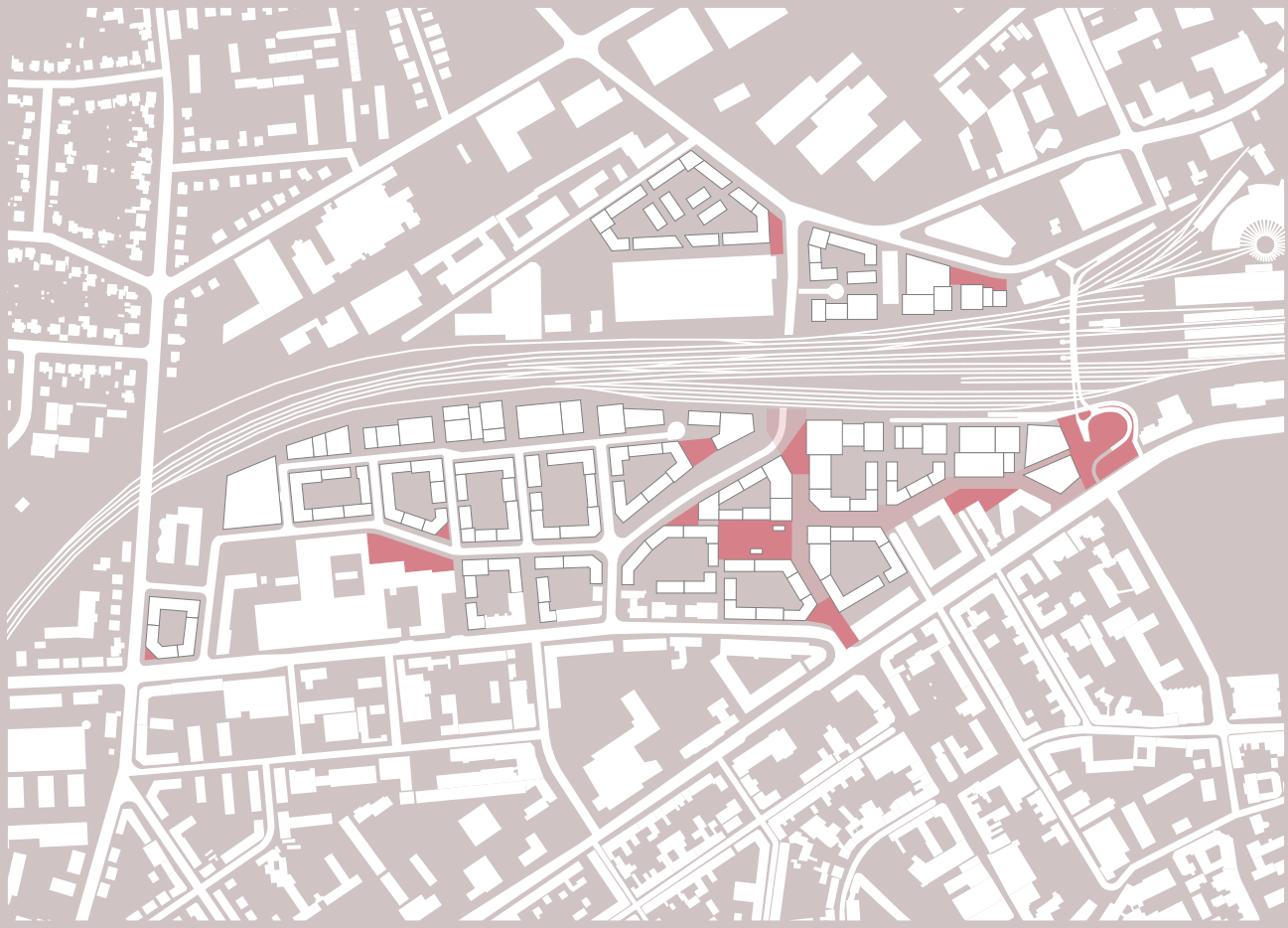
THE ARTERIAL STREET ALONG THE SOUTH EDGE OF THE SITE.



STREETGRID

The streetscape and street hierarchy of the design proposes a mix of streets. With the main street that runs through the site in a west-east direction where buildings contain mixed-use and residential. The cross streets are then Shared Space streets to create a pedestrian prioritizing street where most activity is residential related. This can also decrease passing-through traffic towards the non-residential, ”edge” buildings along the railway and create a safer environment for pedestrians. The main streets also contain bike lanes in both directions that have priority at crossings in order to simplify bicycle-use. Although the pedestrian streets are not for vehicle traffic, they do give vehicle access to the area, e.g. for maintenance or emergency traffic.


SHARED SPACE
PARKING
BICYCLE LANE
SHARED SPACE
NEIGHBORHOOD SQUARE
PARK/PLAYGROUND
TV2 DK
SHARED SPACE



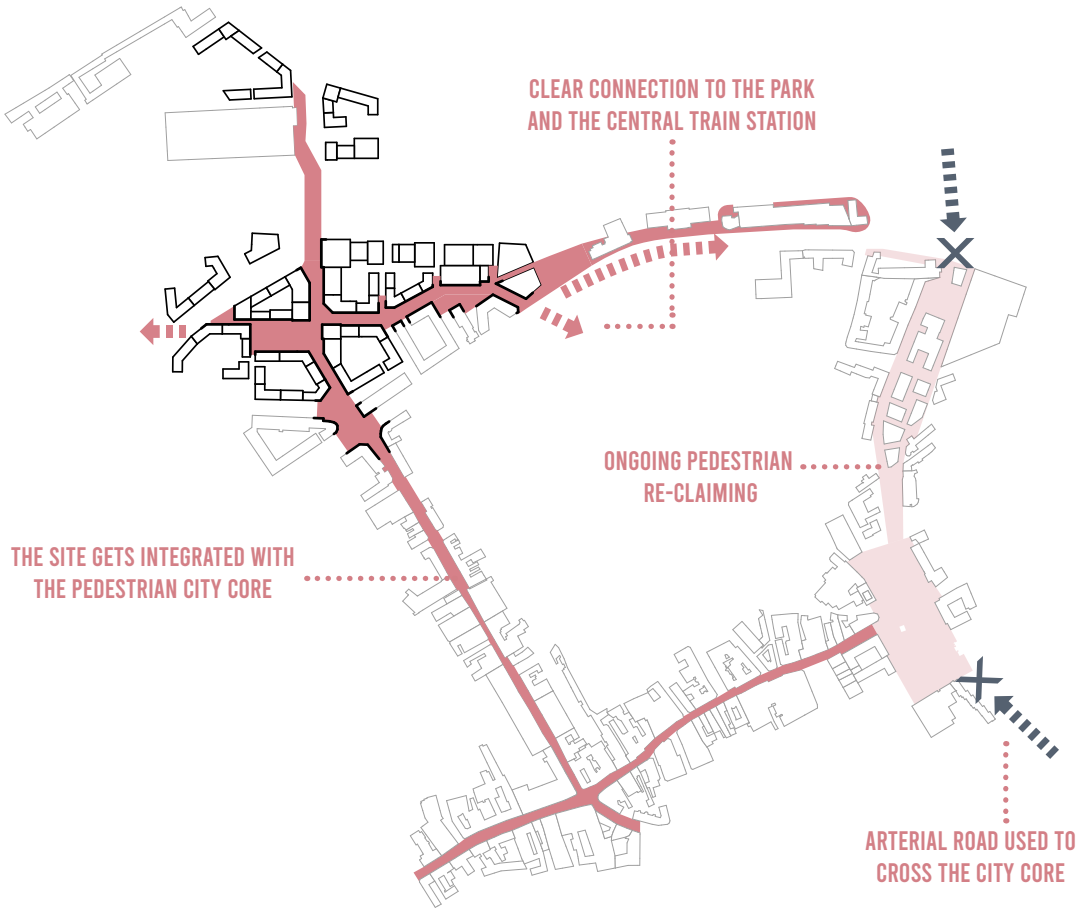
PUBLIC SPACE

Create qualitative public space's of different scales and uses. Varied and connected urban spaces can ensures flexibility and resiliency for the users and contribute to a diverse public realm.

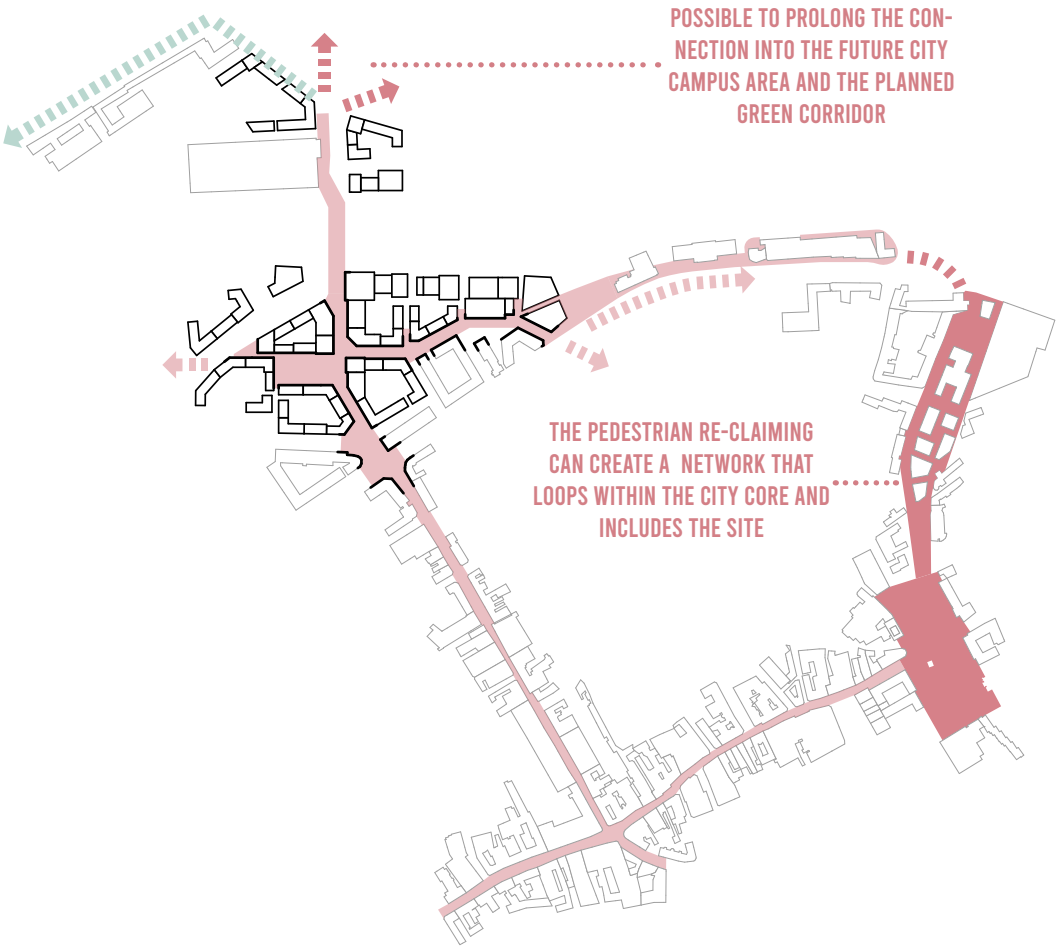
PEDESTRIAN NETWORK

WITH THE DESIGN

The existing pedestrian network in the city center is expanding and several streets in the city core are under re-development to be pedestrianized or to create Shared-Space streets. Connecting to this network is important in order to integrate the site and include it in the growing pedestrian movement patterns not only for the existing situation but also for future development as the city grows.

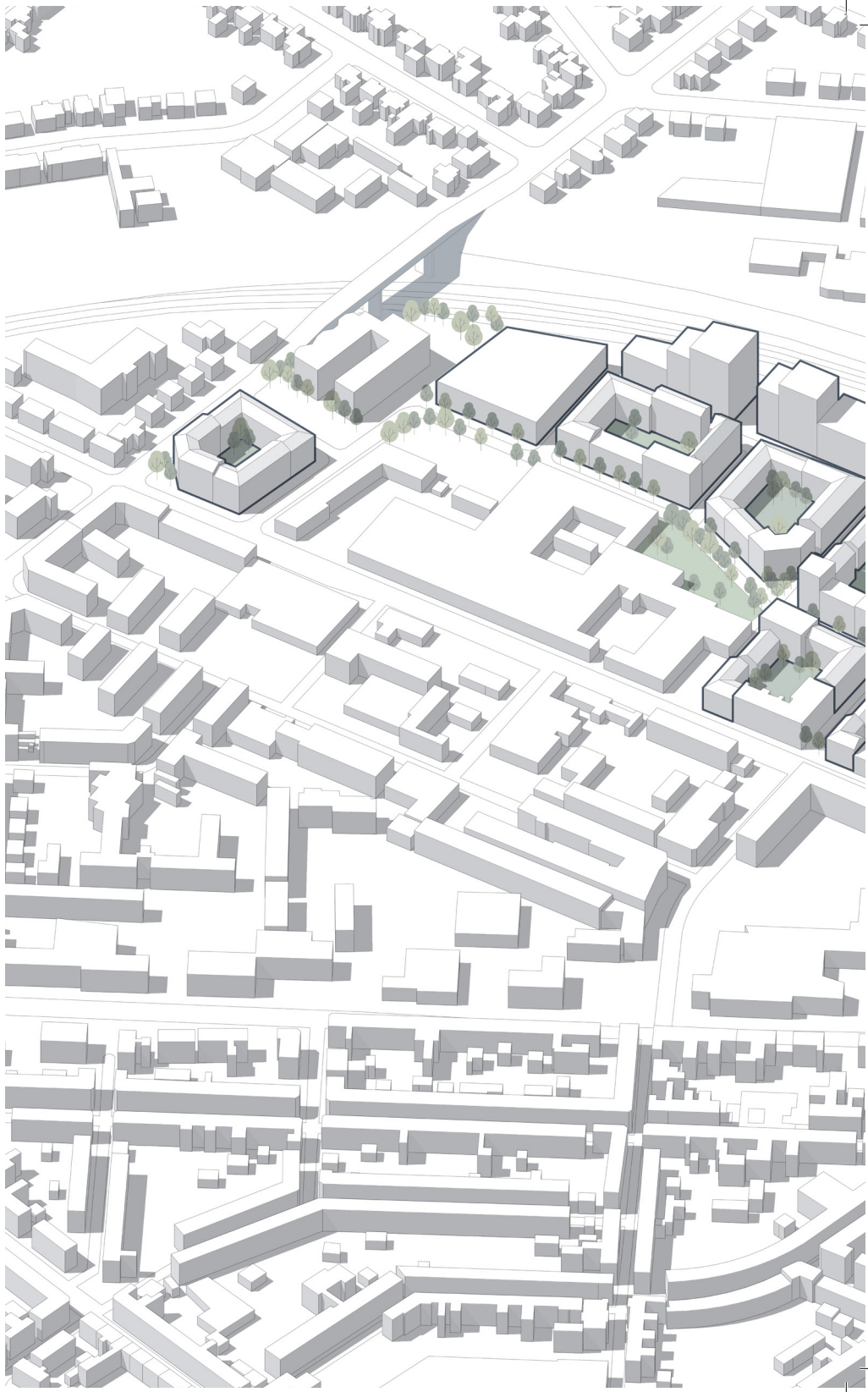


FUTURE POSSIBILITIES



AXONOMETRIC OVERVIEW

This axonometrical overview shows the volumes of the proposal and its surroundings in order to better illustrate how the mix of typologies works, public spaces of different scales and how the mixed-use blocks reflect the city core and how the high rise office buildings creates an edge towards the railway.



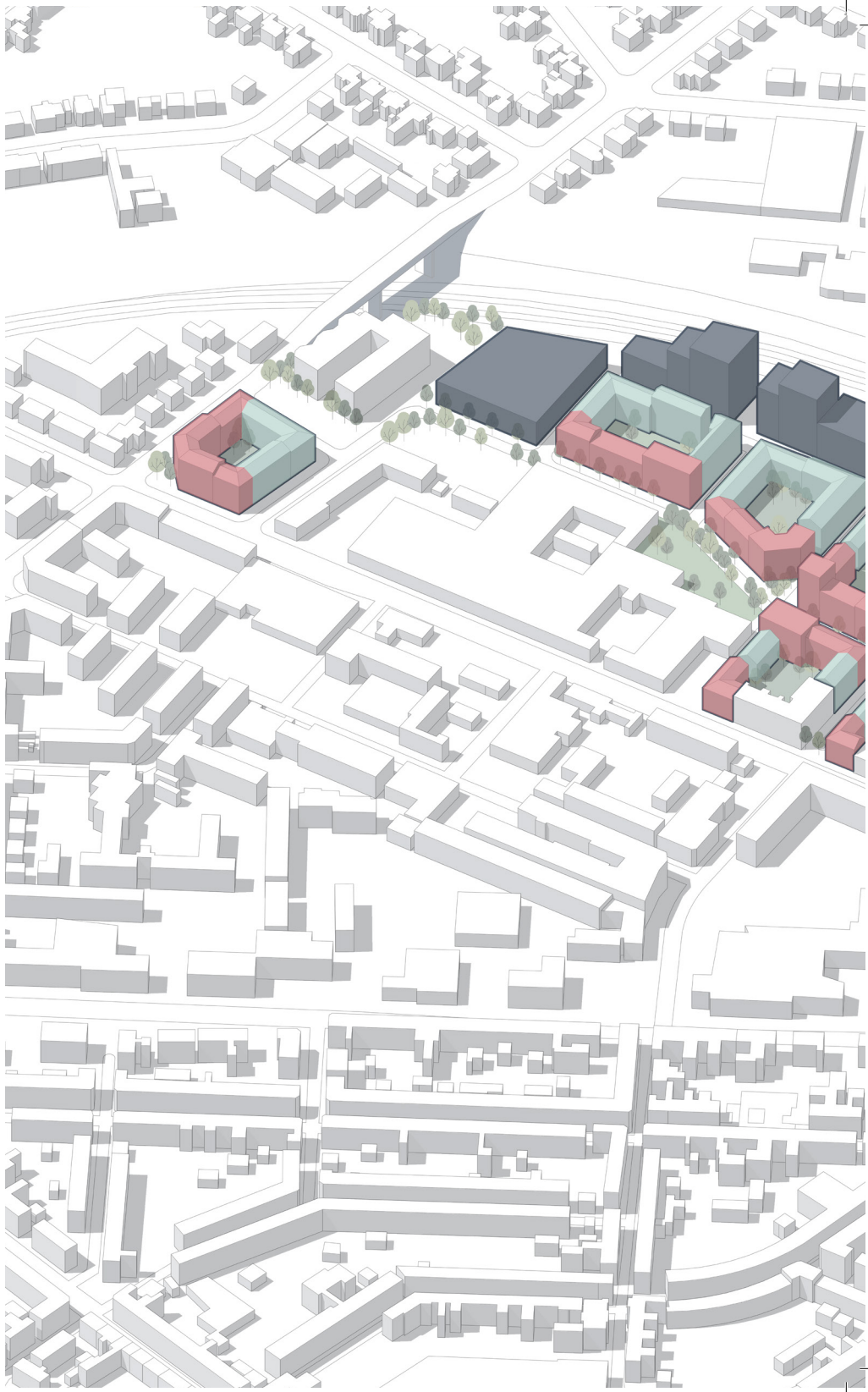
FUNCTIONS

This axonometrical overview shows how the function of the buildings can be used.

The Mixed Use buildings are concentrated at the pedestrian area in the east part of the site and towards the main streets in order to activate the main public spaces.

The Mainly Residential buildings, are also mixed-use, although its main function is residential. The reason why to divide these two are to illustrate and emphisize different focuses.

The High Rise buildings can contain mixed-use groud floors that also can contribute to activating the street infront. Although these buildings mainly contain commercial use. Offices, hotel, commerce, cenference etc.



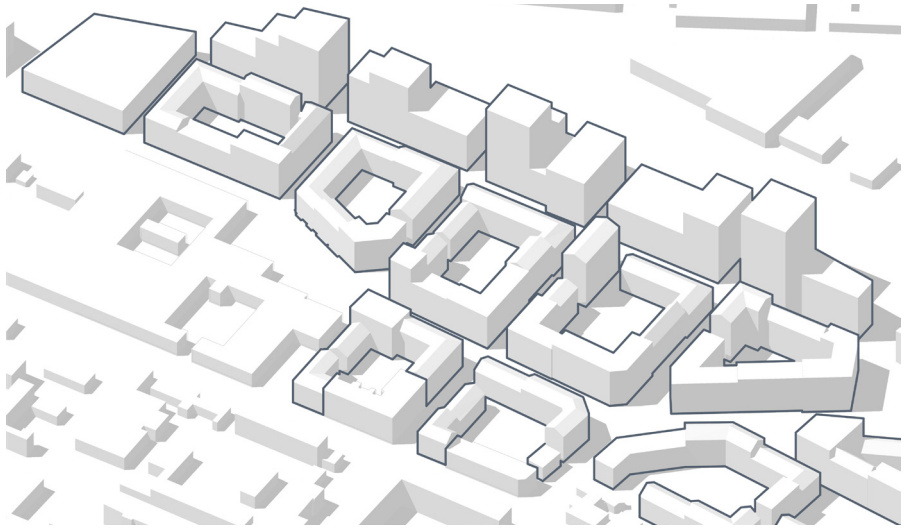
MIXED USE

MAINLY RESIDENTIAL

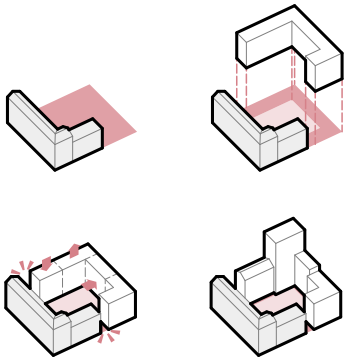
HIGH RISE OFFICE/COMMERCE

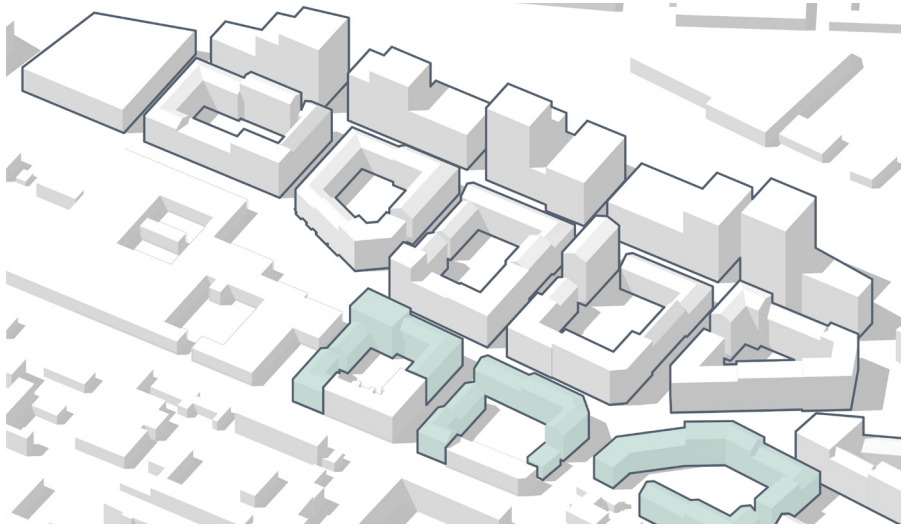
TYPOLOGY IMPLEMENTATION

These diagrams shows how the design implements some of the different typology types.

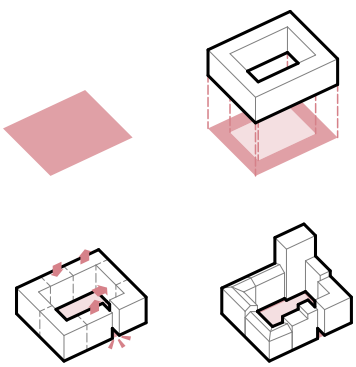


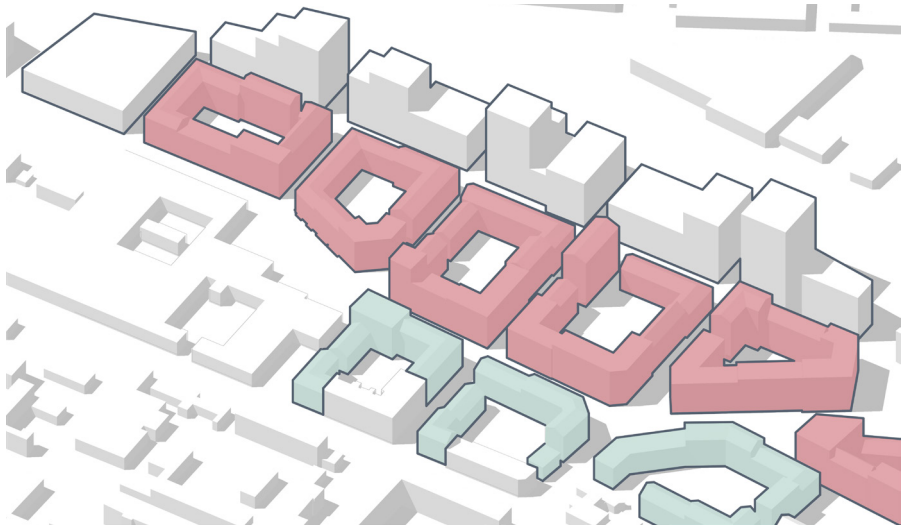
NEW MIXED-USE BUILDINGS THAT CREATE BLOCKS TOGHETER WITH EXISTING BUILT STRUCTURES.



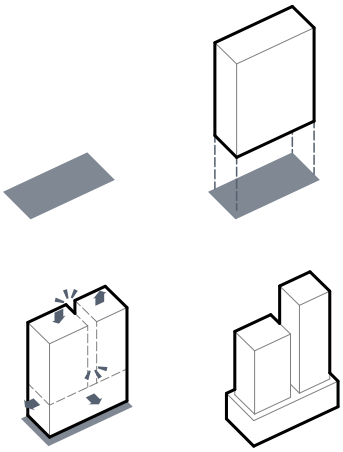


NEW MIXED-USE BLOCKS





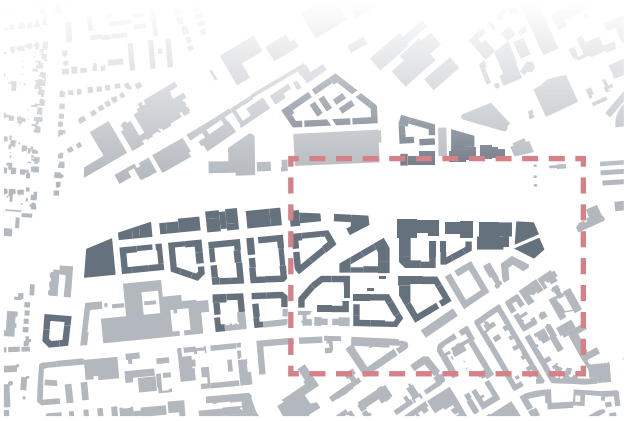
HIGH RISE BUILDINGS

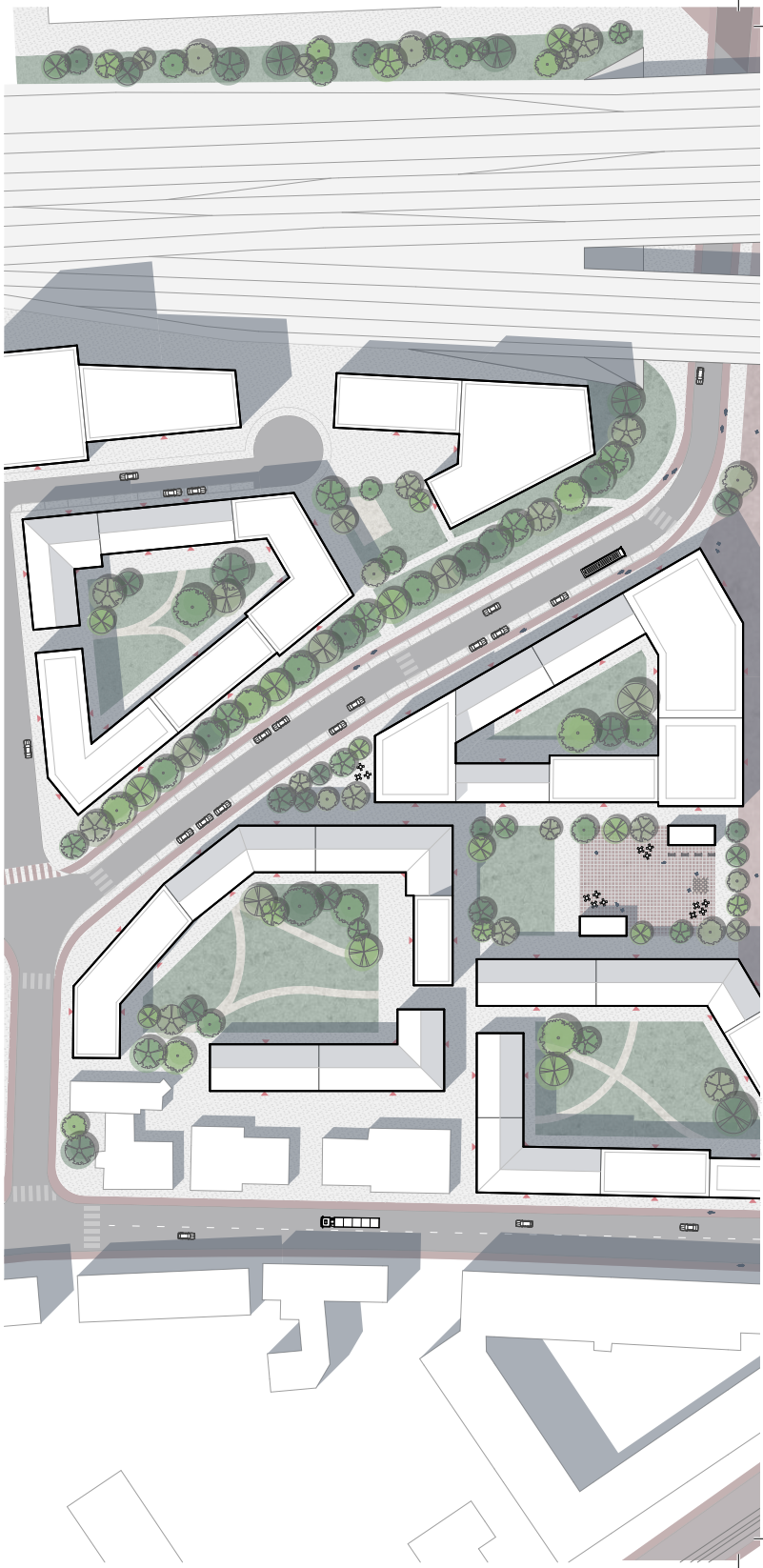


DETAILED CUT OUT

The zoomed in detailed cut out of the masterplan shows a key-area of the site where I have had more focus. This gives a more detailed understanding into how the design works.

- The pedestrian shopping street that is being prolonged into the site. How it also merges with the car street through the underpass.
- Private courtyards inside the blocks empisizes the public realm outside of them.
- Public spaces of different scales, as the square and the triangular-shaped spaces at the corner of some of the blocks. The square also shows how with surface programing the space can create spaces within spaces. One part square, one part park.
- Different block-types.
- Crooked streets.
- Wider underpass with a opening in the roof of the tunnel to let in sunlight.
- A public/university building that defines the space infront of the pedestrian brigde.
- The car streets with bicycle and parking lanes.



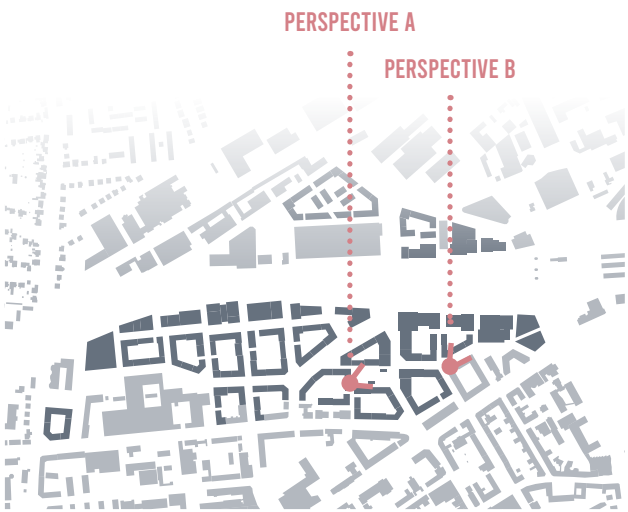



HIGH RISE BUILDINGS
PUBLIC/UNIVERSITY BUILDING
PEDESTRIAN BRIDGE
PLAYGROUND /PARK
PARK
PEDESTRIAN STREET
ARTERIAL STREET
TRAM STOP

PERSPECTIVE A - THE SQUARE

This perspective (perspective A), which is seen from the corner of the square, shows how the space can be divided into several spaces. With greenery, trees, furnitures and small buildings that can contain a pavillion or a café, Different programing gives spaces within spaces. A park, and a square.

Perspective B on the next page is showing the pedestrian street. With the same tools used on the square, this public space can programed and dedivided in order to create a more diverse surface. It also shows how the buildings ground floors are focusing towards-activating the street while the rest of the building can contain mixed-use.




ICE CREAM
CAFE

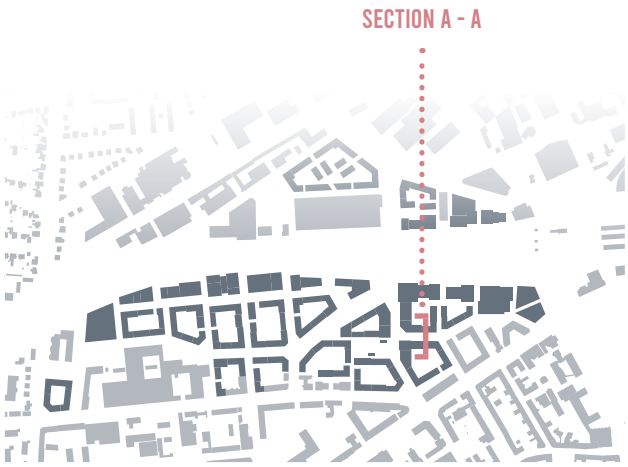
PERSPECTIVE B - PEDESTRIAN STREET


EXHIBITION
GYM
URBAN FRUITS

SECTIONS

SECTION A - A. THE PEDESTRIAN STREET

Section A - A shows the same street that is seen in perspective B, the pedestrian street, to see the measurements of the area. In focus is the public pedestrian street and the private courtyards inside the blocks. The groundfloors have a higher hight sence their main purpose are to contain commercial activity. What is also shown are the different typologies of the blocks.



SECTION A - A


COURTYARD
MIXED USE BUILDING
14 M
PEDESTRIAN STREET
16 M
MIXED USE BUILDING
12 M
COURTYARD

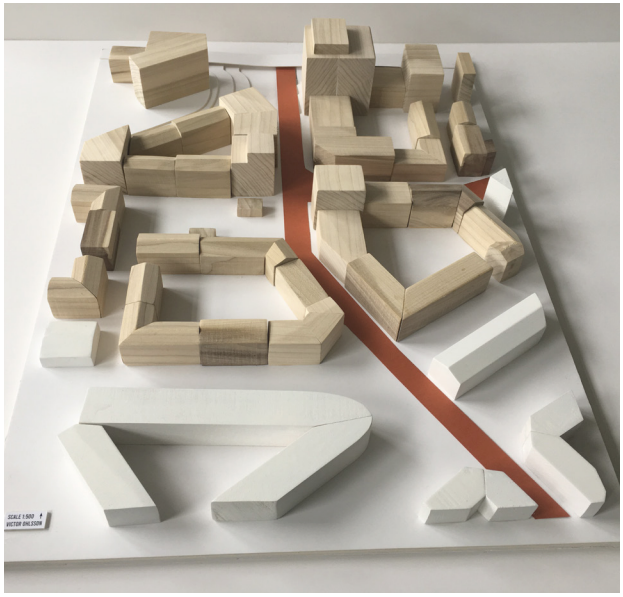
SECTION B - B. ACROSS THE SITE

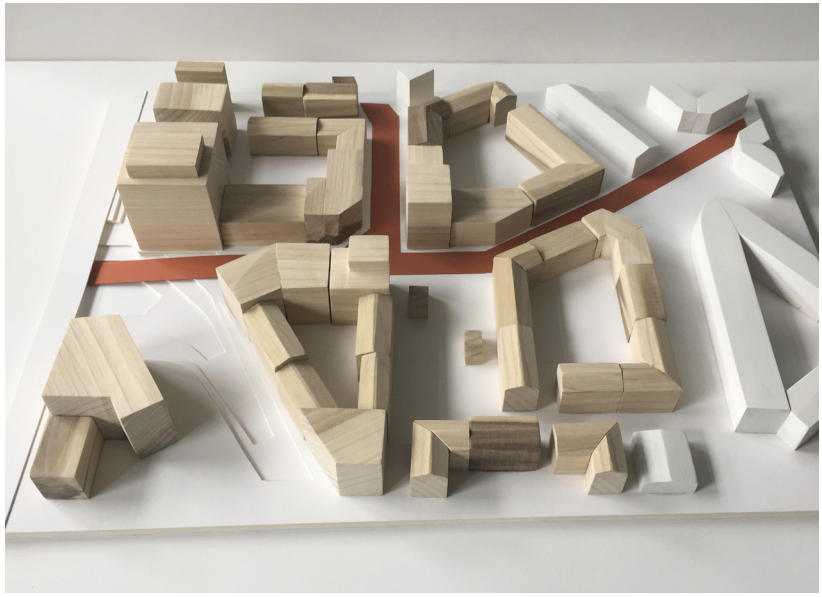
Section B - B is crossing the site in north-south direction. It shows how the proposal continues on the existing structures with the first two buildings and the arterial street on the left. Then how the proposed buildings create a block toghether with the existing building, then the main streen within the site, a new mixed-use block, a street and then the high rise building that boarders the railway. The different use of typologies illustrates the charachter of the design.

SECTION B - B


OFFICE/COMMERCIAL
RESIDENTIAL
MIXED-USE
COURTYARD
63 M
MAINLY RESIDENTIAL BUILDING
12 M
STREET
18 M
HIGH RISE OFFICE/COMMERCIAL BUILDING
32 M
DRIVEABLE COURTYARD
12 M

MODEL PHOTOS





ESTIMATED NUMBER OF INHABITANTS

In Denmark:
Average Dwelling size: 112.1 m2
Av. Dwelling size per person 52.2 m2
Av. Persons per dwelling no. 2.1

Notice that these statistics are according Statistics Denmark (Statistics Denmark 2018) considering **national** danish housing in 2017.

The site generates about156 000 m2 of housing. **This number is highly flexible** due to the number of mixed-use building in the site.

It is also counting that several ground floors are used for non-residential use.

When comparing this to the average dwelling size (112.1 m2) in Denmark that would give the site 1392 dwellings. And with 2.1 persons per dwelling this generates 2923 inhabitants at the site.

The site would according to these statistics contain:
Number of dwellings : **1392**
Inhabitants: **2923**

Statistics Denmark. (2018). Denmark in Figures 2017.

CONCLUSION

The beginning of this project started with finding a site. As I wanted to create a design for a brownfield, I looked into several industrial and harbour areas. Odense caught my attention due to the potentials I saw of it being revitalized. The size of the site in relation to the city also made it possible to have a major impact onto the surroundings.

The fact that the area north of the site, which is planned to become a city campus, and that the tramline that is being constructed, had an impact on my decision when choosing a site. I thought it held great potential for the area. When I read about the ongoing plans for a mall at the site, my opinion was that this area can be developed in a better way, an integrated part of the city center with attractive public spaces. Potentials that I think would get lost if the plan of a mall and parking spaces are realized.

The design focus on integrating the area with the surroundings, revitalize the site into an attractive and active neighborhood with diversity that also breaks a major physical barrier. With the design I continued on existing pedestrian movement patterns in a way that I believe gives activity to the site and create meeting points. With the mixed-use blocks and the diverse typology that contributes to making the site relate to the city center in a human scale.

With a different design of the underpass through the railway the proposal helps decrease the feeling of a physical barrier which I think is an important improvement that can change the interception to; ”the railway overpasses the street” instead of; ”the street tunnels under the railway.”

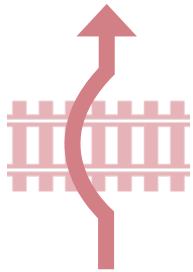
The proposal also gives future possibilities to merge with the municipal plans for the areas north of the site which give the design resilience and flexibility for future change and development.

I think that with this design, the site gets revitalized and becomes a diverse area with an active and attractive public realm. By claiming space, this project is giving space, let Odense city grow!

BY RECLAIMING THE BROWNFIELD

EXPANSION OF THE
CITY CENTER

PEDESTRIAN AND BICYCLE
ENCOURAGING INFRASTRUCTURE



BREAKS PHYSICAL BARRIER
AND CONNECTING DISTRICTS

CREATS MEETING POINTS AND
EXTENDS THE PUPLIC REALM

PUBLIC SPACE AND DIVERSE
ENVIRONMENT

MORE RESIDENTS FOR
A GROWING CITY

COMMERCIAL
OPPORTUNITUIES

FUTURE POSSIBILITIES ..

REFLECTIONS AND REFERENCES

04

REFLECTIONS

When I was researching for this project and found this site, all I knew about Odense was that it was a city in Denmark. So not only have I learned so much about the city but also about planning in both Odense and Denmark, and how much that are actually happening in Odense today regarding city planning. The citys rich culture and well preserved historic city center with its medieval architecture definitely caught my attention.

The analysis together with the site visit, also made it possible to create strategical tools for the design that would make the proposal relevant. In how to revitalize and activate the site. In how to Reclaim the Brownfield.

With support and guidance from my tutor I have during this process continuously been able to constructively reflect on the ongoing project in how to improve the work and see different perspectives which I'm thankful for. Through what feels like endless amounts of analysis, documents and sketching paper, reflecting design and function throughout the work I am satisfied with the outcome of this project.

I could't have done it without the help and support from my tutor and my classmates at SUDes. Thank you!

Victor Ohlsson

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NOTICE: Regarding documents, articles, books, publications or other literature refered to that are written in another language than english the translation is my own.

Photos are taken by myself.

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LUND UNIVERSITY

RECLAIMING A BROWNFIELD

INTEGRATE, REVITALIZE AND OVERCOMING PHYSICAL BARRIERS

Master Thesis Project in Sustainable Urban Design by Victor Ohlsson 2019


RECLAIMING A BROWNFIELD
Master Thesis Project in Sustainable Urban Design 2019 by **Victor Ohlsson**