

Dwelling at the Station

Theme research booklet
Msc3 Dwelling Graduation Studio: At Home in the City

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In front of you lies our Msc 3 research booklet Dwelling at the Station. We have done this research within the Msc 3 Dwelling Graduation Studio At Home in the City.

Enjoy reading this booklet!

Delft, January 2013

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1. Theme introduction

The research theme we have chosen is Dwelling at the Station. We have chosen for this research topic because we all three are dealing with the same design site: Teleport O, Sloterdijk in Amsterdam. The site is located on the south-side of Amsterdam Sloterdijk, a transportation hub on the west-side of the city of Amsterdam. Even a fly-over is cutting a small piece of the site. The site is therefore dealing with the negative influences of this infrastructure, like noise and pollution. But the appearance of the station gives the site also a high potential: it's easily accessible by several transportation ways. That makes it a potential attractive residential area.

Sloterdijk, Amsterdam

In the 1980s the area around Sloterdijk was regarded as an important new secondary urban centre ('nevencentrum') of Amsterdam. Together with areas such as Amsterdam Zuidoost, Amsterdam Zuid WTC and around the Amstelstation, this area would be developed. The municipality didn't want all kind of different types of business scattered around the city, so they made a thematic zoning scheme for every area. 'Around Sloterdijk the planners saw great opportunities for the upcoming and highly promising IT and telecommunications sector, which explains the name 'Teleport''¹

Now, more than 30 years later, the area functions as an office park. Though it functions well, 'it has failed to live up to the high expectations (...)'² But because it is an office park, there are only people during business hours. 'Outside business hours the area is desolate, so in the evening and during the weekend people prefer not to venture beyond the station.'³

The question will be how to integrate dwelling in such an area. How is it possible to live next to such a busy place? And how is it already been done? First we will look at the history of the railways. How is it developed and what was and is its influence on the people? Further we focus on the area around the station and what is written about it. Two station areas in the Netherlands will function as an example.

1 Snellenberg, 2008: 23

2 Ibid.

3 Ibid.

Second, taking the current situation in the Netherlands in mind, we look at the *New Key Projects* (Nieuwe Sleutelprojecten). The major stations in the Netherlands are under development and we will look in what way dwelling is involved. Also student housing is placed around stations. A few recent examples will be mentioned.

As last part of our research we take a look at dwelling projects at the station areas from the past, today and future. As we saw in the area around station Sloterdijk, it isn't a nice place to stay during some parts of the day and the week. There is a lack of facilities which make the area not liveable. These case studies of dwelling nearby the stations will help us to investigate a relation between the residential part and the station.

Research question

The research question we formulate ourselves will be:

How is the relation between the station and public and residential part of the building organized?

This question can be divided in some several questions:

- What was the development of the railways and what was its influence and meaning to the society?
- How does the increasing mobility influence on the public and private space?
- What is the current state of building houses next to a station?
- What are the *elements* which create the relation between station and residential part?
- What is the *relation* between the chosen case studies to the station?
- How is the case study *connected* to its surroundings?

In this way we want to find out how the new designed dwelling can trigger the transformation of the Sloterdijk area towards a new multifunctional centre with residential buildings in Amsterdam.

Methodology

To answer our research and sub questions we want to use different ways of

research to get our answers:

- To get information about the historical background of the development of railway stations, transport hubs, the change of perception of travelling and its result, we do a literature study.
- To get information about the close relation between dwelling and station we want to conduct the comparative case study analysis with diagrams, drawings, regarding: functions, relation of public, private and collective space, routing, urban position.

Case studies:

The criteria for the case studies we have formulated, are:

1. dwelling building situated next to or on the station
2. mix-used areas
3. hub for public transportation (train, bus, metro)
4. multi layered (different users, different ways of using the area)

The case studies we have selected are all in Western Europe, two in the Netherlands, one in France and one in Switzerland.

- Montparnasse, Paris (1958): Jean Dubuisson
- Südpark, Basel, Switzerland (2012): Herzog & De Mueron
- New Babylon, Den Haag (2012): Meyer en Van Schooten
- Breda Centraal, Breda (2015): Koen van Velsen



fig. 1 George Stephenson

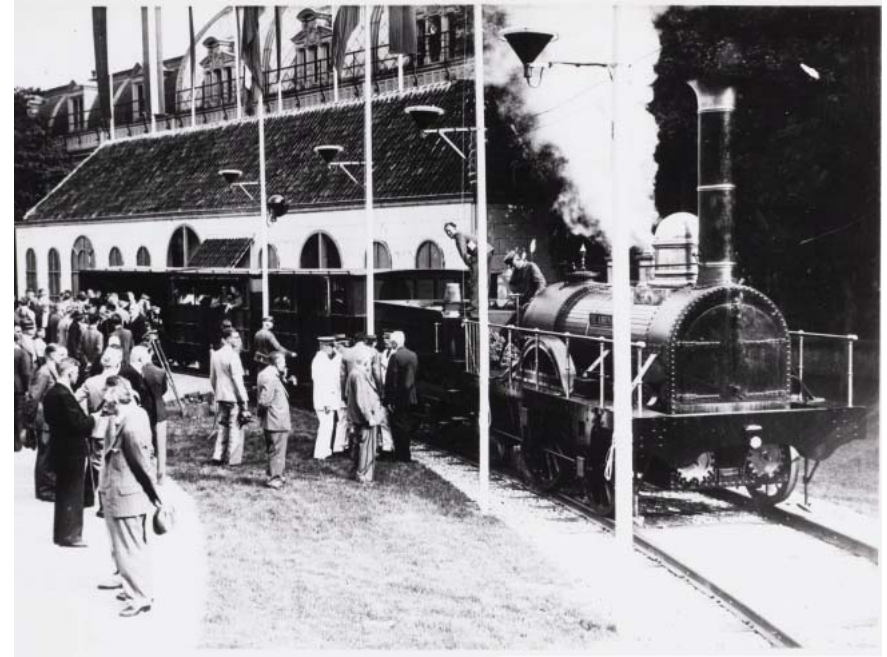


fig. 3 De Arend: first train in Holland

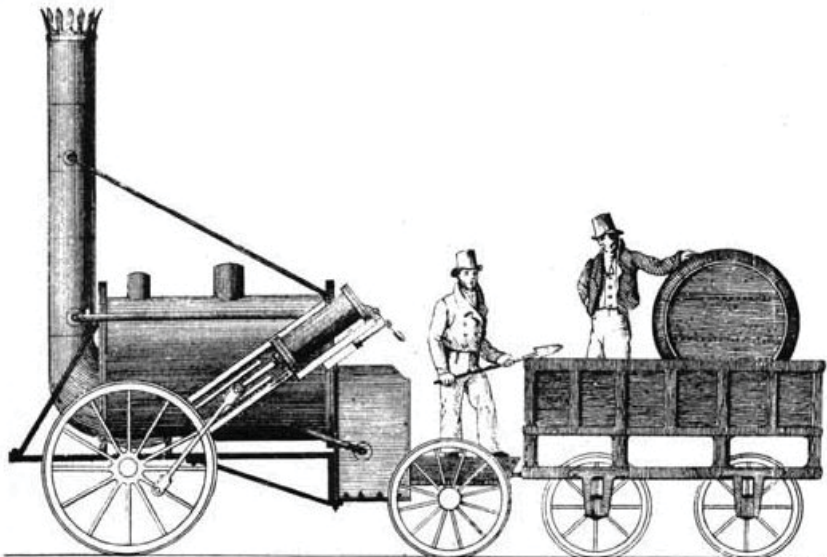


fig. 2 The Rocket



fig. 4 first railway in Holland

2. Introduction on railways

In this introduction first a social-historical view will be given on the existing of one of the first modern infrastructure elements in the Netherlands: the railway. This new way of transportation would change the way of traveling and the notion of time and distance dramatically.

This change was caused by on one hand technological inventions and on the other hand the change in the social-political structure in many Western European countries.

The year 1848 lead in many European countries to political changes. People revolted against the rulers, to demand freedom and democracy. In many cities this led to bloody riots (Paris, 10.000 deaths) and chaos.

In the Netherlands there were no revolts needed to get a revolution. The king was afraid by the foreign situation, so he approved the reformation of the constitution, also in 1848.

This year didn't bring Europe only political changes. It also marked the start of a mental revolution, *“een geestesgesteldheid die de wereld zou veranderen”*.⁴ The politics were only a part of this change. The physics and their practices got the leading role. One of the instruments to make the new established nations a success, were communication and mobility.

*“Communicatie en mobiliteit zijn vitale, essentiële voorwaarden voor economische, politieke, staatkundige en veelsoortige sociale groei.”*⁵

These new networks of communication and mobility were important for as well the development of the 19th century notion that all individuals are people, a nation together, as well the development of the state, the formal and juridical structure of the nation. The new infrastructure for the communication and mobility was an essential part of this. *“Bouwen aan de nieuwe infrastructuur was in feite ook bouwen aan de jonge staat en aan de ontluikende natie.”*⁶

One of the new infrastructural tools most European countries used, was the railway. Already in 1825 the English Blacksmith George Stephenson built a steam engine on wheels. (fig. 1 and 2) By steam power the vehicle rolled

over iron rails. In 1830 the first commercial railway was opened between Liverpool and Manchester and was 50 km long. An earlier experiment to carry people instead of coals on a railway which brought the coals from the mine to the harbour turned out to be a huge success.

In only 40 years the total length of the railroads worldwide was three times the outline of the earth. In 1890 it had grown to 15 time the outline of the earth. This has all to do that England was the biggest world power in 1870. In all their colonies they build railways to transport people and goods. Also there were many plans to connect these countries with London.

With a philosophical view you can see an on-going submission of time and space. But the reality was more practical: to build new rail networks, battles has been fought in (half-) barbaric countries and with nature. To deal with nature, new techniques, like bridges and tunnels, needed to be invented. These connections symbolized new standards. Men had become the dominant species and there were no barriers anymore to construct mass communication and mobility. Everytime a new railroad, steamboat- or other communicationline was opened, the newspapers would report it.

These messages were sent by a new way of communication: the telegraph. When the railway from New York to Los Angeles in 1869 was connected on the border of Arizona and Nevada, a message was sent by telegraph to all cities in America. The telegraph lines were parallel constructed along the railway lines. And when the tunnel under the Mont Cenis (in the French Alps) was finished and France was connected to Italy, a message was send by telegraph to ‘whole educated Europe’. These two examples were one of the first ways of mass communication. A lot of people are ‘witness’ one the same moment and they are emotionally involved to what has happened. These are the basic elements of mass communication.

You would expect that this new way of communication would become the dominant way of communcation (like e-mail and Whatsapp today). But the mail, for centuries the way to communicate, didn't become unnecessary at all. In the old days the letters were delivered by foot, horse or sailboat. Thanks to the railways and the fast locomotives, the letters were faster

4 Woud, 2006: 11

5 Woud, 2006: 14-15

6 Woud, 2006: 14

delivered. Continental railway lines carried a mail wagon in which the mail was prepared for the stops.

After the first commercial railway line in England in 1830, from Liverpool to Manchester, this new way of transportation spread around the continent. The first railway in Belgium started in 1835 (Brussels-Mechelen) and in 1839 in the Netherlands (Amsterdam-Haarlem) (fig. 3 and 4).

In the beginning the Dutch government was sceptic of this new way of transportation. The Dutch had a long history of transportation over the water. In the beginning, the opinion was that the railways wouldn't be profitable. Also there was no knowledge about the construction of railways on the wet Dutch soil.

In 1860, the Railway Act (*Spoorwegwet*) brought the change: on large scale railways were constructed through the country. The water, mainly the tree rivers (Maas, Waal en Rijn), were a big obstacle. As seen on the railway map from 1868 (fig. 6) there is a northern and a southern part of railway lines. It would take 10 years before the technique was there to build large bridges across the rivers. But now the north and south part of the Netherlands were connected with each other and with the neighbouring countries (and so with whole Europe).

The new infrastructure was named different in the European countries. Most words which indicate the railway means 'iron way'. In English the railway means litterly a 'way of trails'. In our country, where the soil is soft, cars and wagons made trails in the soil. To relief men and horse, wagons were lead through the trails of the previous traffic. The new railways were the perfect opposite of these trails.

De Economist, an economical magazine, writes in 1863 about the ongoing building of the railway. It writes that the railway has become an essential part of our economics and daily life. It connects all different kind of places and different kind of people: *"de spoorweg is een groot economisch feit geworden, hij heeft eene vreedzame omwenteling gemaakt, zoowel in den handel als in het dagelijks leven. Hij heeft niet alleen de fabrieksstad aan*

*de zeeplaats en de hoofdstad aan de dorpen verbonden, ook de burgers van verschillende rijken brengt hij op duizenderlei wijzen tot elkaâr".*⁷

The railways brought progress after 1860: mass communication and mobility. People could have contact with each other in many ways. The *Stoompost* writes in 1860: *"Hoe vele bewoners onzer hollansche, geldersche en daaraan grenzende provinciën zijn er niet, die slechts Groningen en Friesland bij naam kennen, en wederkeerig door de bewoners dier belangrijke gewesten evenmin bekend zijn".*⁸ It indicates that people now could travel to places in their country they only knew by name. The big introduction with your fellow citizens, with cities and landscapes could begin writes Auke van der Woud. *"De massale kennismaking van de burgers met hun medeburgers, met steden en de landschappen van Nederland kon beginnen."*⁹

This was stimulated by the railway companies by introducing in 1865 the so called '*volkstreinen*' ('trains for the people') or '*plezierstreinen*' ('trains of fun'). Advertisement tried to seduce the people to go on a trip to unvisited places and cities (fig. 5). A new way of recreation was born. In the meantime the individual could re-create his world: by going on a journey the traveller expanded his world. In 1883 the Economist recognized that mass mobility had become an essential part of the Western society. Even stronger: they said without mobility there was no civilization possible.

Now it was possible to go on a one day trip to another town in the country or go by train on vacation. The Oriënt Express, the train from London to Constantinopel (Istanbul now days), was a popular, luxury and comfortable way of transportation. The trip took three days, instead of weeks.

7 Woud, 2006: 327

8 Woud, 2006: 327-328

9 Woud, 2006: 328



fig. 5 advertisement for the Orient Express



fig. 6 railway map the Netherlands (1868)

Today the Orient Express is no longer operating. A railway which can be compared to this line is the world famous Transsiberie Express. This is the longest railroad (9.288 km) in the world. It will take you at least 6 days to get from Moscow to Vladivostok.

Closer to home, today lies approximately 2.800 km rails in the Netherlands.¹⁰

These tracks connect all major cities in the country. On most lines there two *intercities* and two *sprinters* (slow trains) are operating.

The government is now planning to introduce a highfrequent railway network (*Programma Hoogfrequent Spoor, fig 7*) in the Randstad. It will facilitate trains to operate without a time table. It is comparable with a subway system, where every 5 or 10 minutes a train arrives.

Another impact on the Dutch railroads is the connection to the European highspeed train network. Two lines, one newly build (HSL-Zuid) and one on the existing railway, connect Amsterdam with Brussels (and Paris) and with Frankfurt. From there you could travel further with other highspeed trains all over Europe. The ICE, Thalys and recently the Fyra link up the



fig. 7: Programma Hoogfrequent Spoor

¹⁰ Boomen, Venhoeven, 2012: 165
¹²

Together with the development with these highspeed lines, the major stations on those lines are redeveloped. These so called 'Nieuwe Sleutelprojecten' (new key projects) are the places where multimodal nodes come together with living and working. In these nodes hst, train, bus, taxi, car, bike and in some cities trams, metro, and lightrail are connected with each other.¹¹

People use the train to travel from home to work, or to visit friends or family in another city, but the train is more and more used to go on a city trip or long vacation. Popular is the Interrail pass. In 2011 more than 250.000 people used one of the different passes to travel through Europe.¹²

This increasing mobility led over the years, beside the development of the train, into a variety of transportation possibilities. About these new ways of transportation and the increasing transportation speed a lot has been written. According to many essays and books all these vehicles have one thing in common: all are in fact capsules: a closed environment which protects from (dangerous) forces from the outside.



fig. 8: Europe's high speed train map

¹¹ Cement, 2008: 4
¹² InterRail website, 2012

3. The capsule

Capsules are as old as the human being.

Because the human species have a fragile body and a sensitive nervous-system, we always look for protection devices. People hide in clothes, architecture, settlements, castles, cities.¹³

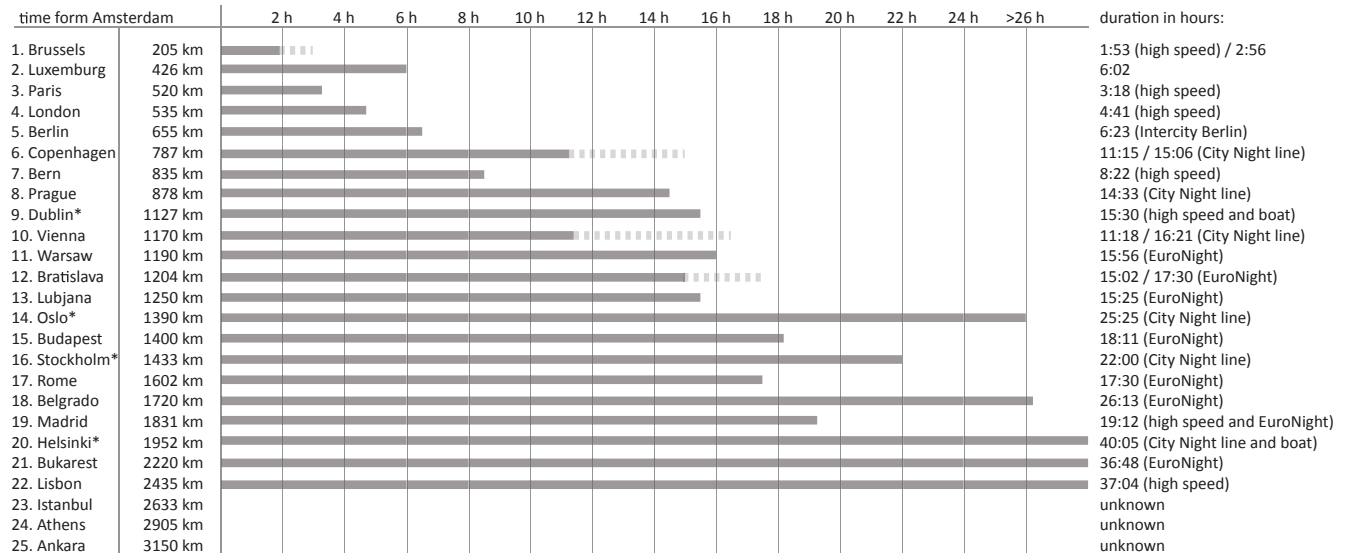
Lieven De Cauter explains the capsule in *Oase* like: “(...) a tool or an extension of the body, turning into an artificial environment that shuts out the hostile environment.”¹⁴

A little further De Cauter mentions (and also pointed out in the previous chapter) that the human being become more and more mobile. We now travel all over the world and even into space. But we can't do this without a protective capsule: “the more mobile we become, the more immobile and capsular our behaviour”. And “the more physical and informational speed increases, the more man will need capsules.”¹⁵ We drive our car with 120 km/h over the highway. We take the high speed train which brings you with at least 300 km/h to your destination. A plain flies with 1000 km/h on 11 km high. All those vehicles or capsules are necessary to allow to travel at those speed levels. Or, like Paul Virilio puts the increasing speed level in a poetic way: “(...) the higher the speed, the further the horizon.”¹⁶

Already in the '60 it was envisioned that the capsule would be the example of future living. In Kurokawa's 'Capsule Declaration' (1969), the car became paradigmatic in the way that a vehicle became an extension of the house.¹⁷

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13 De Cauter, 2004: 82
 14 De Cauter, 2001: 122
 15 De Cauter, 2001: 122-123
 16 Virilio, 1989: 139
 17 De Cauter, 2004: 81



* part of the route by boat

duration according to NS Highspeed - internationale reisplanner
<http://www.nshispeed.nl/nl/internationale-treinplanner>
 accessed on October 19th, 2012

fig. 9: time chart (by (high speed) train)

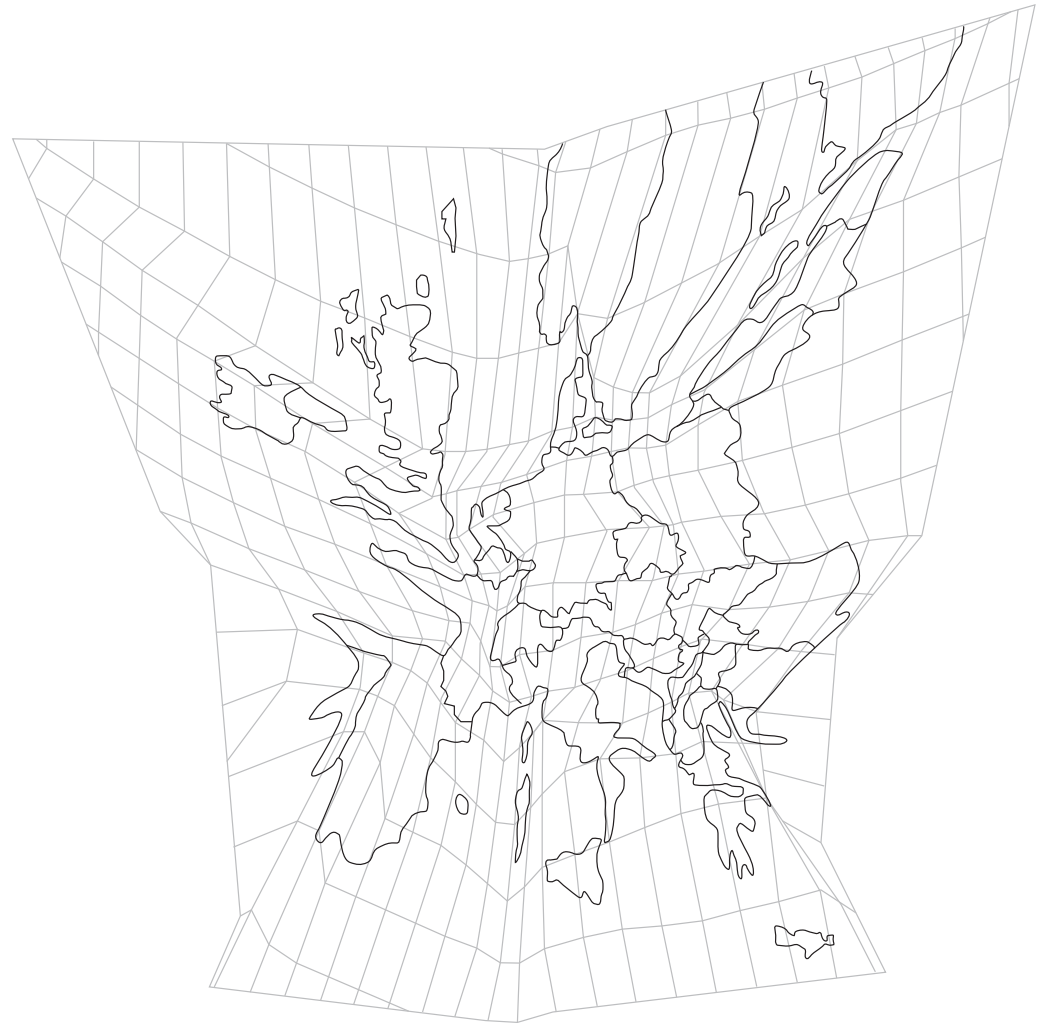
Paul Virilio goes a little bit further in his essay about *Dromoscopie*. In his essay, which is a chapter in his book *The horizon-negative (1984)*, he calls the capsule, in his case the car, a simulation machine. It means that in a capsule the reality can only be seen through a screen (like a window, tv/computer screen).¹⁸ Beside the car, today we spend also a lot of time in other capsules like trains, metro's, trams, busses and airplanes. All these are *real capsules*. We commute in our daily life via transportation capsules, from one enclave or capsule (like the dwelling) to another (campus, office, airport, all-in hotel, mall etc.).¹⁹ The last 20 years we spend also more and more time in virtual capsules, or *mental capsules*, like TV screens, computer screens, movie screens. All these capsules forming a network and “(...) all networks functioning on base of capsules (...).”²⁰ Even a house is part of a network: cables, gas, electricity, water, sewer etc. are going in and out of every house. The house can be seen as a part in a large network, as a capsule.

Sloterdijk has a lot of visible transportation networks: a rail network (train, tram, metro) and road network (car, busses, bike, pedestrian). In the ground lies state of the art communication network (glass fibre cable). Airport Schiphol is located nearby with it's extended flight network. 'Capsules' are moving on those networks, but it's waiting for the dwelling 'capsule' to connect to these networks.

18 Virilio, 1989: 134
 19 De Cauter, 2004: 86
 20 De Cauter, 2004: 90



1993: Europe 'shrinks' by the high speed train network



2020: expected 'shrunk' map; thanks to high-speed train the map shrinks further

┌───┐ 5 h

fig. 10 deformation in distance - perception through time

4. Notion of time

Nowadays the measure of movement is not necessary related to the distance. Time became a more relevant unit to indicate the speed of the movement. Because of extended transport system in West Europe the relationship between time and distance is no more constant. Unequal relation between these two values is not only the result of different speed, but also well – distributed net transport, frequency and availability play a significant role. The modern possibilities of travelling has emphasized the importance of time value and has deformed the perception of the distance between the cities.

For example a deformed map of Europe, shrunk and extended in particular areas compares the train connections. The surprisingly small space of France is a result of spread within the country TGV lines, while Eastern Europe and Scandinavia remain still remote (fig. 10).

Easy accessibility is possible only in places located nearby the nodes connecting different towns or different parts of the city. The time map of London and transformed diagram compares the perception of the distance in the city (fig. 11). Thanks to metro stations some places have approached the city centre, others extended their distance through perception of time. In a result it is possible to waste more time on short trips than on long journeys. Significantly the area nearby the waterside has shortened in time distance. In this way, the location next to the node rises the place



Time deforming distance



Distance and time

fig. 11 London: deformation by time

value in the view of hurry modern society. The diagrams also prove the fact that the distance in public transport is not perceived with length, but with a time unit. Another example are the public transport tickets, which are usually sold with particular time limit.

Public transport led to unification and standardization of the travelling. Airports and stations have comparable arrangements and use similar informative language pattern, giving instruction, guiding the passengers. Their architecture emphasises on unification, intensity and speed of travellers' movement. These places are not particular, do not refer to the location, could be situated everywhere. They devoid the variety, only the name of the location gives the significance to the place.

Thus, the infrastructure layer refers to the philosopher's Marc Augé notion of "non-places" covering the historically defined "place" layer. *'If place can be defined as relational, historical and concerned with identity, then a space which cannot be defined as relational, or historical, or concerned with identity will be a non-place.'*²¹

The sphere of "non-place" is focused on easy communication and consumption of the area. Functionality, deprived from symbolical meaning, is the priority of the "non-place". People passing through "non-places" does not have a feeling of belonging to the place and does not contribute to it. It is not a sphere that gathers society. The time is perceived linearly here, and has a high value. "Non-place" is based on technological achievements with standardization pattern and is related to decline of public human and rise of self-obsessed man.

On the other hand the "place" has an identity and memory value, it collects society and people have a feeling of existing at this particular place. The time is not measured from point A to B, but it has more ritual pattern written in circular composition.

Travelling through "place" and "non-place" has changed the perception of the journey process (fig. 12). The "place" journey takes part in localized situation, where not only the destination, but also the movement itself is

important. Paul Virilio pointed this out: *"Three stadia of departure, travel and arrival used to exist; now only two are left: the departure and the arrival. Since the transport revolution, the inbetween space has slowly gone caused by the increasing acceleration. On flight routes the 'space-distance' (in kilometers) has moved to 'time-distance'. The time it takes to travel trough a place has become more important than the place or area itself."*²²

In modern travelling the trip has become direct and its time shrunk. The passenger belongs to the special sphere and observes the meaningful landscape from the distanced airplane or train window. The limit of the perception is even more emphasized in tube metro, where the travellers cannot see the surrounding, and usually perceive the trip through the schematic map of the metro lines.

22 (Virilio, 1989: 145)

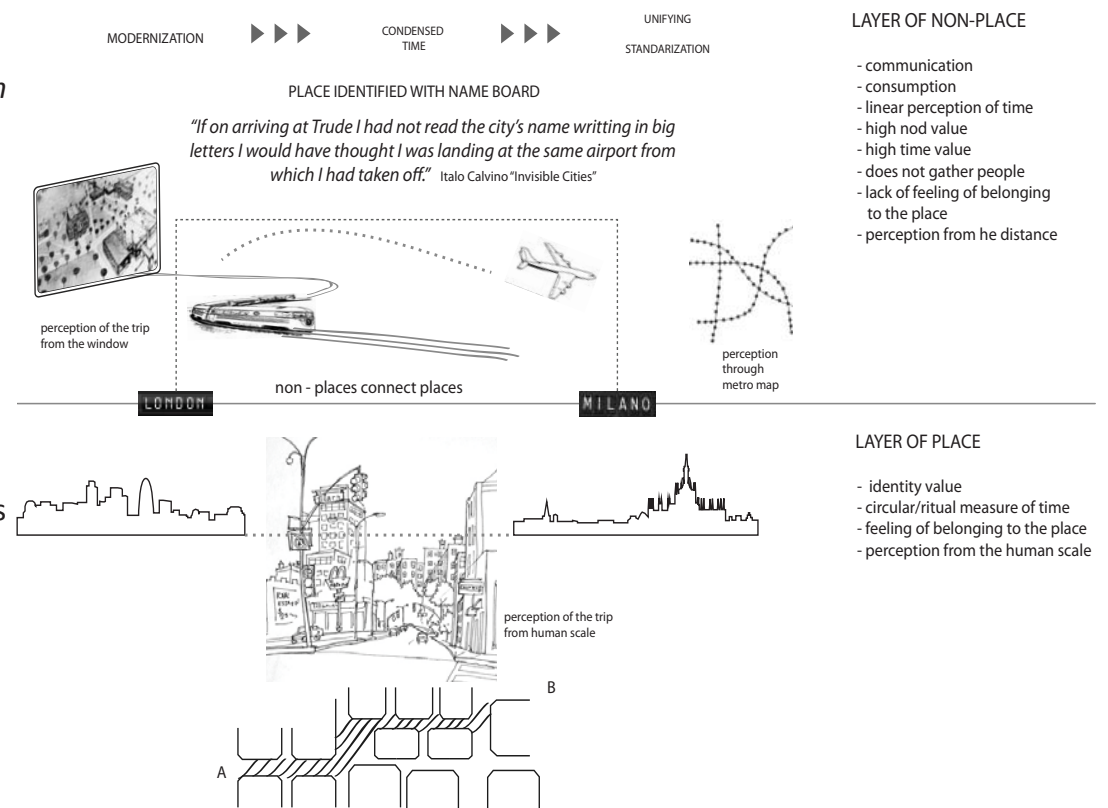


fig. 12 Places vs. non-places

The rising speed of travelling changes cities in Europe into one single and endless town and in result, the differences between the sites are disappearing. In this way journey has stopped being an exploration, but is a movement from point A to B with an interval. While in “place”, the feeling of “being somewhere” is significant, in “non-place” the crucial value is “getting there”.

Thanks to the fast connections provided by high-speed trains and planes, European capitals come closer to each other. The real distance (in km) stays the same (fig. 13, 14), but the relative distance, the distance in time, shrinks thanks to the fast connections (fig. 15). For example, the real distance between Amsterdam and Brussels is almost 200 km. By high-speed train it takes less than two hours. To Paris and London, both more than 500 km away from Amsterdam, it takes you less than 4 hours train traveling. The question “how long does it take to get there?” becomes more important than the question “how far is it away?” This is possible thanks to the connection of these cities on the European high-speed train network.

Cities which are not connected to the high-speed train network, have already a disadvantage. But it has also to do with the connections with the neighbouring countries. For example Rome and Belgrado: both cities are as far away from Amsterdam (aprox. 1700 km), but you will reach Rome ten hours earlier than Belgrado. And closer to home: Luxembourg. 100 km less far than Paris, but twice the time to get there.

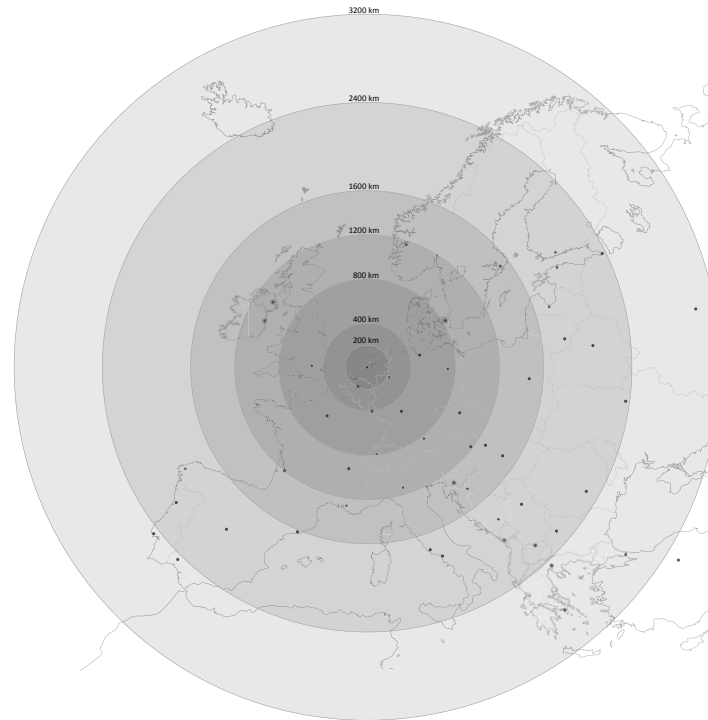


fig. 13: distances from Amsterdam (in km)

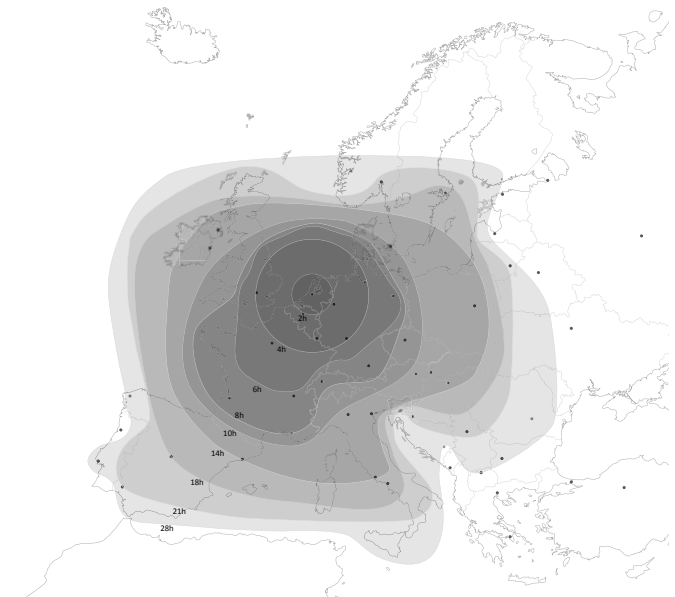
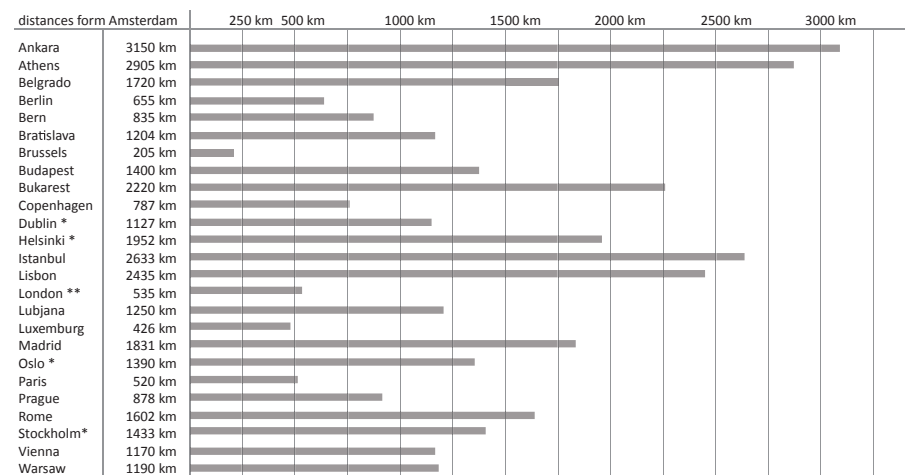


fig. 15: distances from Amsterdam by train (in hours)



* part of the route by boat
 ** part of the route by train

distances according to Google Maps
<https://maps.google.com/>
 accessed on October 19th, 2012

fig. 14: distance chart (from Amsterdam by car)

5. Node-place value model

The Marc Augé's terms of "place" and "non-place" can be compared to the Luca Bertolini's balance of "node" and "place" value of hub transport areas.

In the transportation network, nodes are physical places where you can change direction or change to another way of transportation. This can be a trainstation, but also an airport or the landing of the ferry.²³ In theory this place is the node where you get in or get out of the transport vehicle, but in reality this place attracts other functions as well. On one hand you have the different network, which come together in the *node* and on the other hand the *place* of the node. This is visible in the *node-place value model* (fig. 16)

The node-place value model, developed by Luca Bertolini, aims at correlating the degree of functionality and degree of local place qualities for nodes. According to this model, a station functions well when the node value and the place value correspond (...). The higher number of functions and services within a short walking distance from a station, the higher place value. According to Bertolini, a mono-functional node with for example only offices has a low degree of place value than a node with dwellings and offices.²⁴

The *node value* is the number of different ways of mobility and frequency during the day.
The *place value* is the number of functions accessible in vicinity of the node.

The node-place value model illustrates the optimal correlation between place value and node value. When there is a balance between this correlation it is defined to be a successful node and place (fig. 16). Often railway stations located in these kinds of places tend to be successful. As soon as either the place value or the node value is dominating, these places are defined not to be successful for nodes. The model has been tested on station areas in the province of North Holland by Gerton Pieters (fig. 17). He used the following four categories for the classification of the place and

²³ Boomen, Venhoeven, 2012: 173
²⁴ Nes, Stolk, 2012: 7

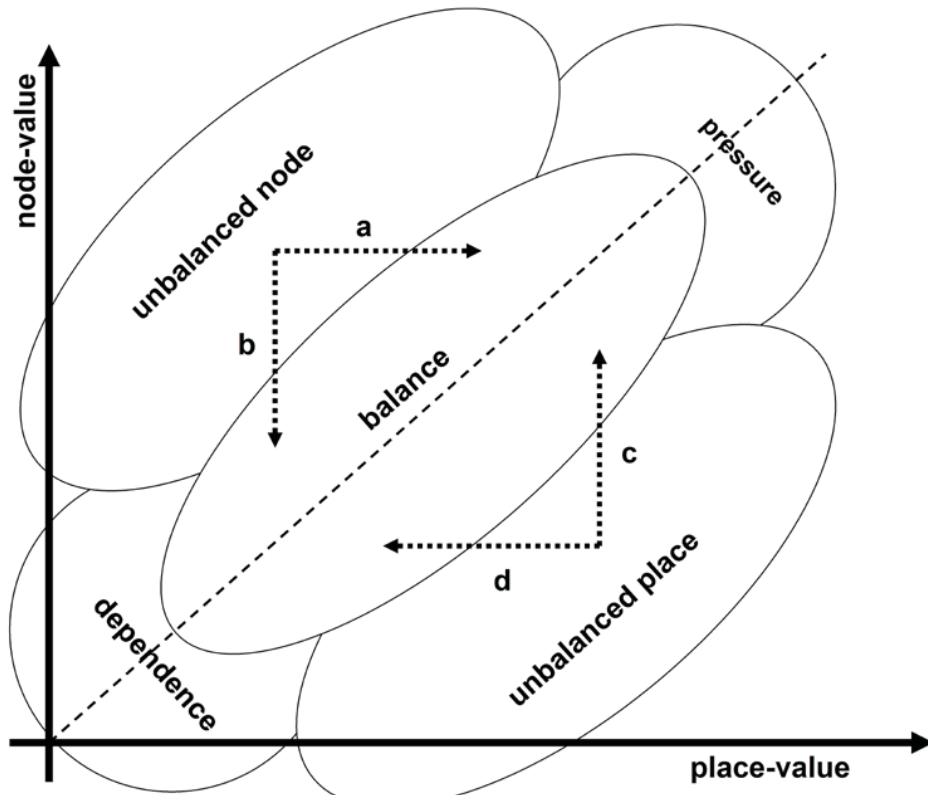


fig. 16: Bertolini's node-place value model (Nes, Stolk)

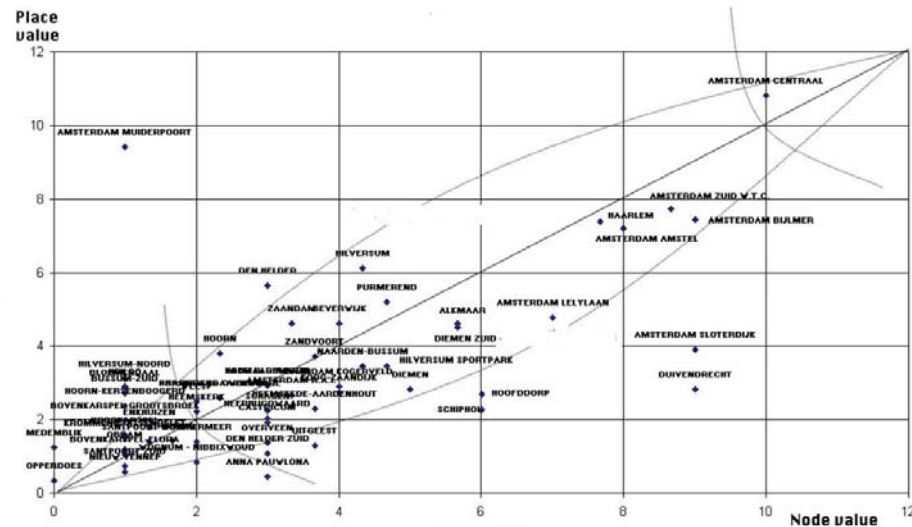


fig. 17: Gerton Pieters' analysis of stations in Province of North Holland (Nes, Stolk)

node value of a railway station: (1) large urban centre node, (2) transfer node, (3) regional node, and (4) local node.²⁵

The “node value” depends on variation in the mobility types, frequency of the public transport, accessibility to the network. The “place value” rises if the location is multifunctional in a short walking distance. The transport hub is successful if it balances these two values, and none of them is dominating. In some cases of the multifunctional suburban stations we can find the optimal correlation between these two values. Thus, the station becomes an *interface* between the node and place (fig. 18). In this manner the station may work as *catalyst* for a city and can contribute successfully to the process of decentralization.

The *Land Use Transport Feedback Cycle* (fig. 19) shows how the place and the node can strengthen themselves by accessibility and activities. When the transportation and traffic system is improved, the accessibility increases. Places, which are well accessible, are popular to invest. The ground use changes: houses, offices, shops, sporthalls, café will be built. This leads to activities: people are going to live, work, shop, sport and go out there. More people lead to more people and that can lead to improve the transport and traffic system, etc.²⁶

This tool can also be used to improve a certain area. In the case of Sloterdijk, only the ground use needs to be changed. This will lead to more activities, which makes this area part of the city.

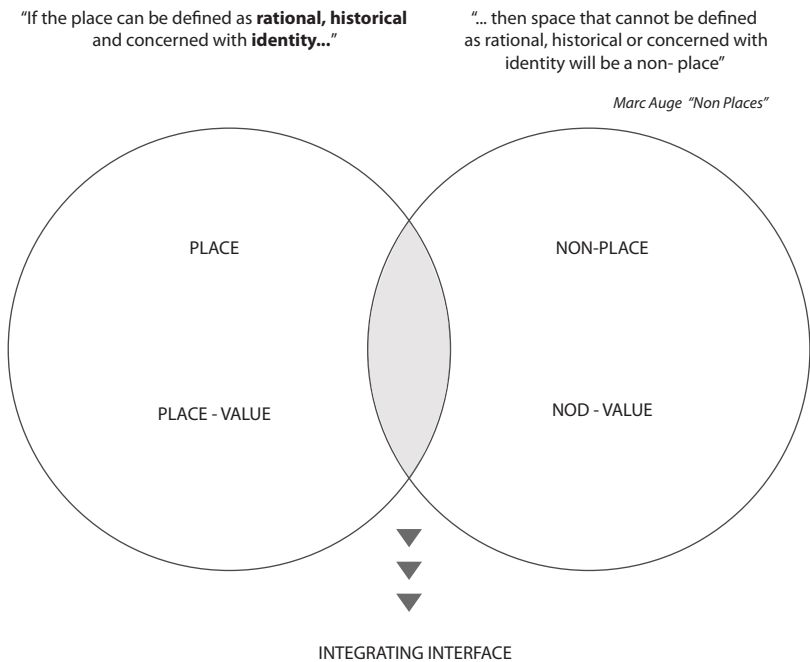


fig. 18: Place vs. non-place model

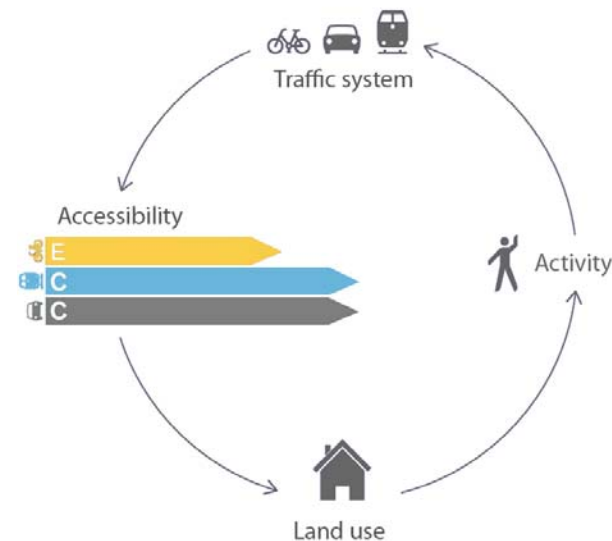


fig. 19: Land Use Transport Feedback Cycle

25 Nes, Stolk, 2012: 8

26 Boomen, Venhoeven, 2012: 131



fig. 20 Amsterdam Bijlmer Arena



fig. 21 Rotterdam Alexander
20

Since the time value in commuting to the work places has become very important, people have changed their preferences for a place to live. The society, living in the world of shrinking time and distance perception in traveling, is more interested in easy connections than in the surrounding of the in the living area. On the other hand, the high node and low place value leads to a lack of the identity of the living area, or a creation of dull and boring suburbs. The stations which work as a hub with various types of transportation can help in the process of decentralization the city, on the condition that both values are well balanced. There are many examples in the world of new well-connected stations added to the cities, which has worked as a catalyst for the city centre. These districts function as new independent centres, but strongly related to the old city. Usually they contribute to the old centre, by adding an extra function, that could not be situated in the centre.

Amsterdam Bijlmer Arena

In case of Amsterdam Bijlmer Arena the station is part of the transformation of the Bijlmer Arena area. The station lies above the Arena Boulevard which provides a promenade between the old centre of Amsterdamse Poort and the new centre area of Amsterdam Zuidoost. Arena Poort will be an area for working, shopping, sporting, dwelling and entertainment. It will become the event center of the Netherlands.

Rotterdam Alexander

The station Rotterdam Alexander lies next to the shopping centre Alexandrium. This is the biggest shopping centre of Rotterdam. The station lies on the railway line of Rotterdam to Utrecht. On city scale the station connects the city centre with shopping centre Alexandrium. On national scale it connects the city with the Randstad and the rest of the Netherlands. The area has shops, offices, dwellings and good infrastructure but the area doesn't function well on the urban scale. The shopping area is isolated by the neighbourhoods and infrastructure. The ground level is full of roads, parking and bicycles, so there is no relation between the dwellings and the street. The municipality made a vision for the area, a mixed program. But there is no money now to make some changes.²⁷

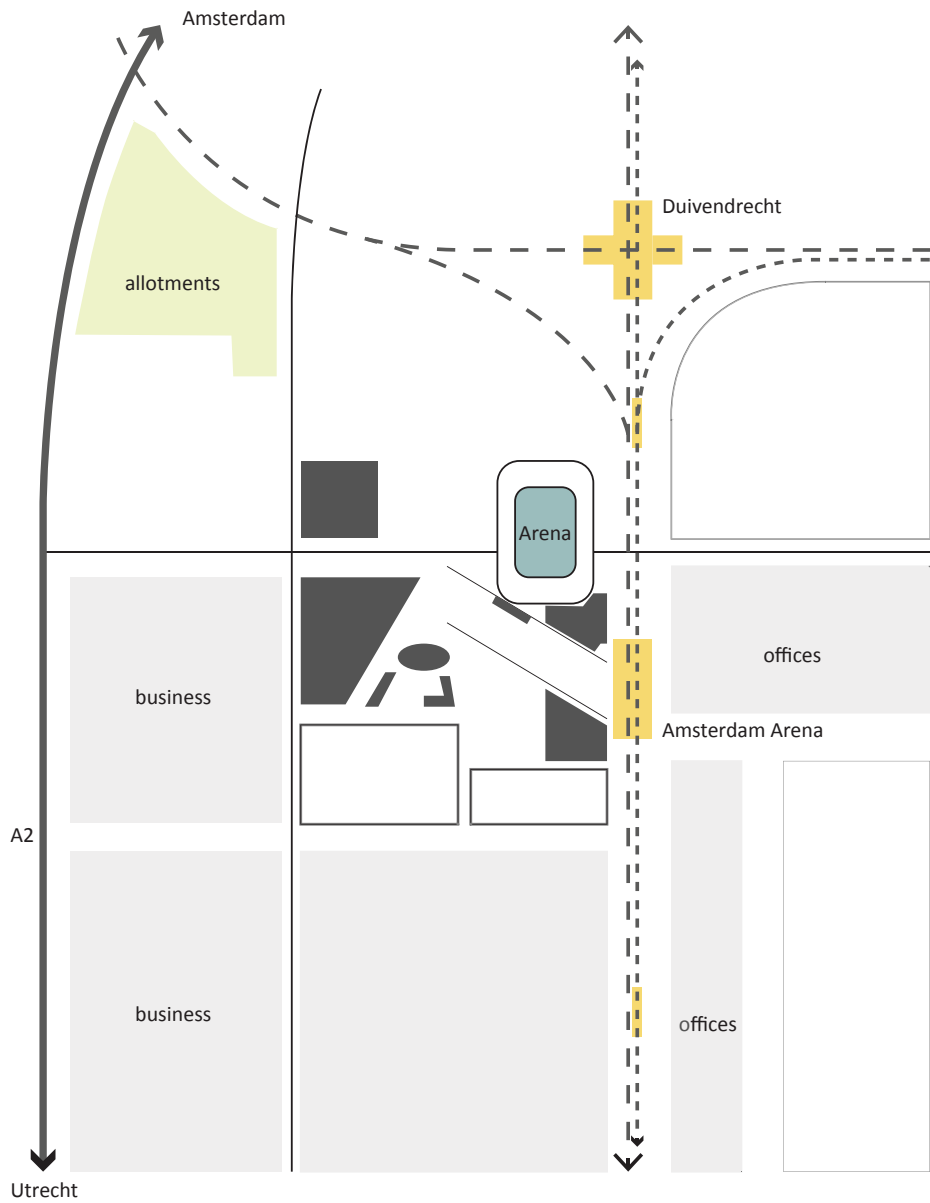


fig. 22 Map Amsterdam Bijlmer Arena

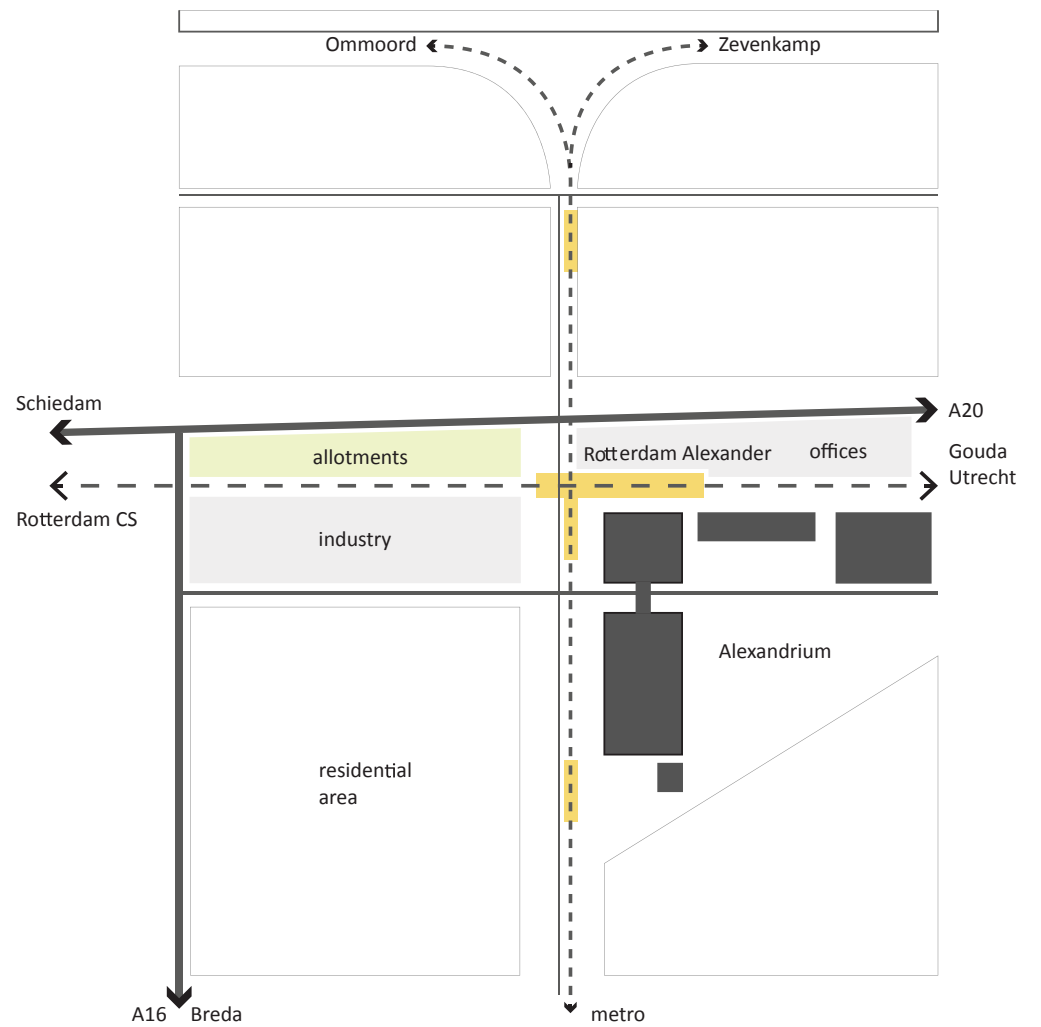


fig. 23 Map Rotterdam Alexander

6 New Key Projects

The New Key projects (Nieuwe Sleutelprojecten) hold six mayor station redevelopment projects in the Netherlands. Because of the building of the HSL-Zuid these stations are made ready for the future.

To inhabit an increasing amount of (international) visitors and travelers, the following stations are redeveloped:

Amsterdam Zuid
Arnhem Centraal
Breda *
Den Haag Centraal *
Rotterdam Centraal
Utrecht Centraal *

*dwelling involved

These redevelopments fit in the current notion about stations today. In this period of mobile society the railway stations are experiencing '*Renaissance*' and stations are becoming once again the "Cathedrals of Progress"²⁸. They are finishing the *Automobile Era* promoting the sustainable transport in the local scale and are shrinking the distances on the international scale. They work as centres where the nations meet and converge.

The new stations will also hold a mixed program of shops, offices and a passenger terminal. But in only three of the six projects, dwelling is part of the design.

New Babylon in Den Haag is recently finished; a renewed office and shopping centre with two new apartment towers, next to Den Haag Centraal. In Breda will a new station opened in 2015. In the design by Koen van Velsen, apartments are linked to the station. More information about these two projects will be in the case studies.



fig. 24 Arnhem Centraal



fig. 25 Utrecht Centraal



fig. 26 Rotterdam Centraal

In Utrecht a lot of houses and appartements are planned for 2030 around the station.

Beside the new housingproject within the key projects, also new (student)housing next to stations in other cities is or will be developed. In Den Haag (on two locations), Nijmegen and Leiden studenthousing is now built next to their mayor stations.

In Den Haag a mixed building designed by Wiel Arets is built next to the Central Station. In this building bike storage, café's, a restaurant, an auditorium, offices for the employees of the Leiden University are located on the first 4 levels. From the fift till the 21st level almost 400 student appartments are placed.

A few hundred meters further, next to station Den Haag Hollands Spoor, two towers design by Amsterdam based firm K2 architecten. The towers will be 70 meters high and will accomodate 602 student units. In the first tower 270 independend units will be realized and in the second tower 332 short stay appartments will be realized. These appartments can be transformed into 156 starters appartments in the future.

In Nijmegen students can live above sleeping beaty, a cultural centre next to the central station. The centre will have one small hall and one big hall. There will be 350 student appartments. Under the building will be a bike storage for 3700 bikes.



fig. 27 student housing Den Haag



fig. 28 student housing Den Haag



fig. 29 student housing Nijmegen

location: Anna van Buerenplein, Den Haag (next Den Haag Centraal)
 year: 2013
 programme: 400 student units
 Café's and restaurants
 Auditorium
 Offices
 Bike storage

location: Waldorpstraat, Den Haag (west side of Den Haag Hollands Spoor)
 year: 2013
 programme: 602 student units
 Tower 1: 270 independent student units
 Tower 2: 332 dependent short stay units
 Plan for the surrounding area with 150 parkingplaces
 Bike storage

location: TPG location, Nijmegen (next to Central Station)
 architect: AGS architecten, Arnhem
 year: End of 2013
 programme: 350 student units
 public bike storage
 cultural centre 'Doornroosje'
 hall 1: 1100 peopel
 hall 2: 400 people

	Amsterdam	Basel	Breda	Den Haag	Paris
name	Teleport O	Südpark seniorenresidenz	Station Breda	New Babylon	Maine-Montparnasse II
architect	-	Herzog & de Meuron	Koen van Velsen	Meyer en Van Schooten	Jean Dubuisson
year	-	2012	2013-2015	2010-2012	1958-1966
# dwellings	-	103	147	335	1011
# parking places	-	140	720	1251	348 ?
area	17.500 m ²	5.500 m ²	45.000 m ²	12.000 m ²	113.375 m ² (dwellings: 10.000m ²)
programme	-	elderly appartments nursery rooms gym, restaurant collective garden supermarket offices	train station bus station parking offices appartments	(upmarket) appartments fitness shops and restaurants offices hotel parking	appartments (mainly 3-4-5 rooms) parking

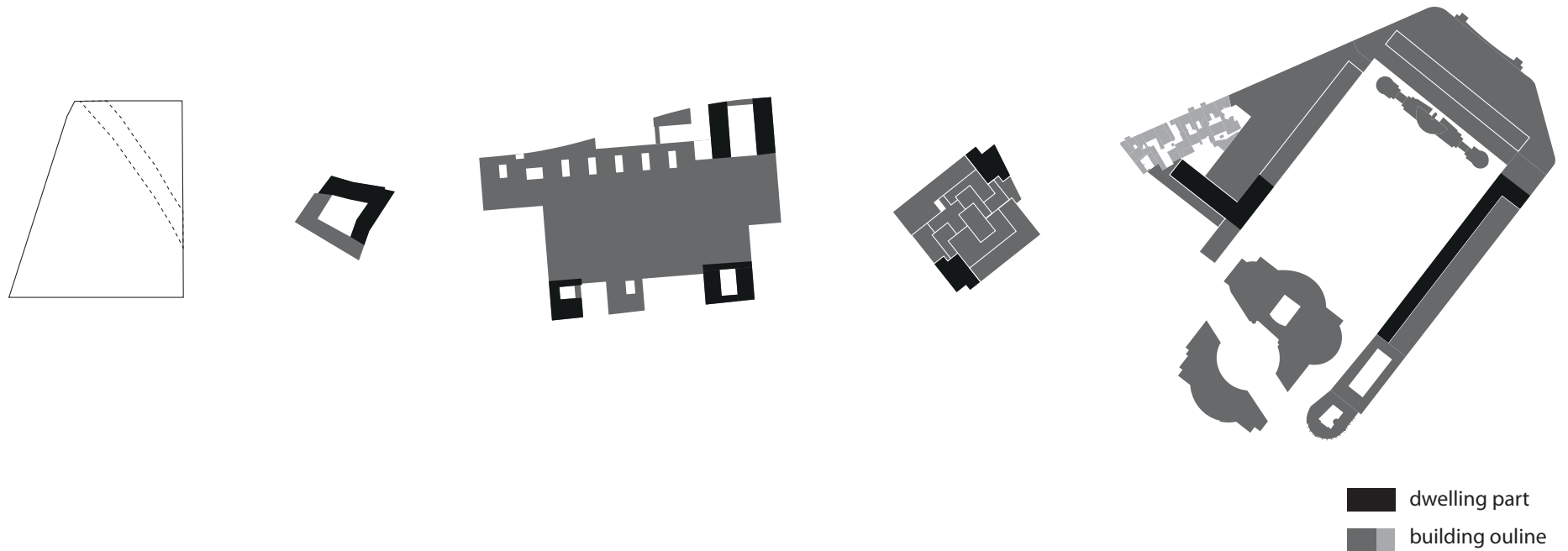


fig. 30 Sloterdijk compared with the chosen case studies

7. Case studies

In the first part of the research we saw that the development of the trains and railways had and has a big influence on the society. It led to a changing world view and shrinking world perception. People could now travel further and faster than before. This increasing mobility led also to a variety of 'capsules': protective ways of transport. By some writers this is seen as a downside of this process: we become more and more mobile and we have to protect ourselves with capsules.

Another aspect is the changing notion of time and distance. The increasing mobility and the increasing travel speed leads to a way of traveling where the duration of the journey becomes more important than the journey itself.

The same has happened with the stations. They used to be the starting point of a journey, now they have become more as a transit-place, a non-place where you pass by. For a long time, this was an unattractive place to live. Nowadays, due to a number of station redevelopments (the so-called new key projects), dwelling at the station has become an important issue. There are now several new housing projects built and will be built in the future.

Now we will focus on some housing projects on or close to the station which have built or will be build: the case studies.

The case studies we have chosen are:

Montparnasse, Paris (1958 - 1966)

Südpark, Basel (2012)

New Babylon, Den Haag (2012)

Breda Centraal, Breda (2015)

On the previous page the footprint of the case studies. For each one also a small fact list is presented. The design location Teleport O, Sloterdijk is presented on the same scale. In this way, the projects can be compared with each other and with the design location.

In the comparative research analysis we wanted to find the answer for the following questions:

- What are the *elements* which create the relation between station and residential part?
- What is the *relation* between the chosen case studies to the station?
- How is the case study *connected* to its surroundings?

In order to find the answers we analysed the following topics in each case study:

- programme,
- public/collective/private space,
- routing from apartment to the platform,
- routing within the housing segment,
- plans,
- section,
- façade.

For every case study the site plans, analytical axonometric diagrams and views, plans of apartments and sections will be used to analyze them. In the end the case studies can so be compared with each other.

Gare Montparnasse

Station *Gare Montparnasse* is one of the seven big stations of Paris. The first station was opened in 1840. During the 1960s a new station was built. The new station was part of a new development of offices and dwellings. The complex exist of three building slabs of 18 stories high forming an U-shape, with the station at head and the tracks and the platforms in the middle Two of the slabs include dwelling. The smallest slab at the Boulevard Pasteur contains 255 luxury apartments and 450 parking places.

The biggest one contains 754 apartments. The apartments vary from 32 m² till 93 m². At the Rue du Commandant-René-Mouchotte a terrace of 2 stories high forms the entrance to the apartments. Under this terrace 2 parking layers are located. Under the train tracks four stories of parking are located in the ground. The apartments were visual connected with the trains till 1995. Since then the Jardin Atlantique offers a new public accessible park to the city and made the trains invisible and inaudible for the inhabitants. The façade is a large curtain wall made of aluminium. The floors and the linear window frames form a very rigid pattern, often compared with a Scottish plaid or tartan by the Parisians.

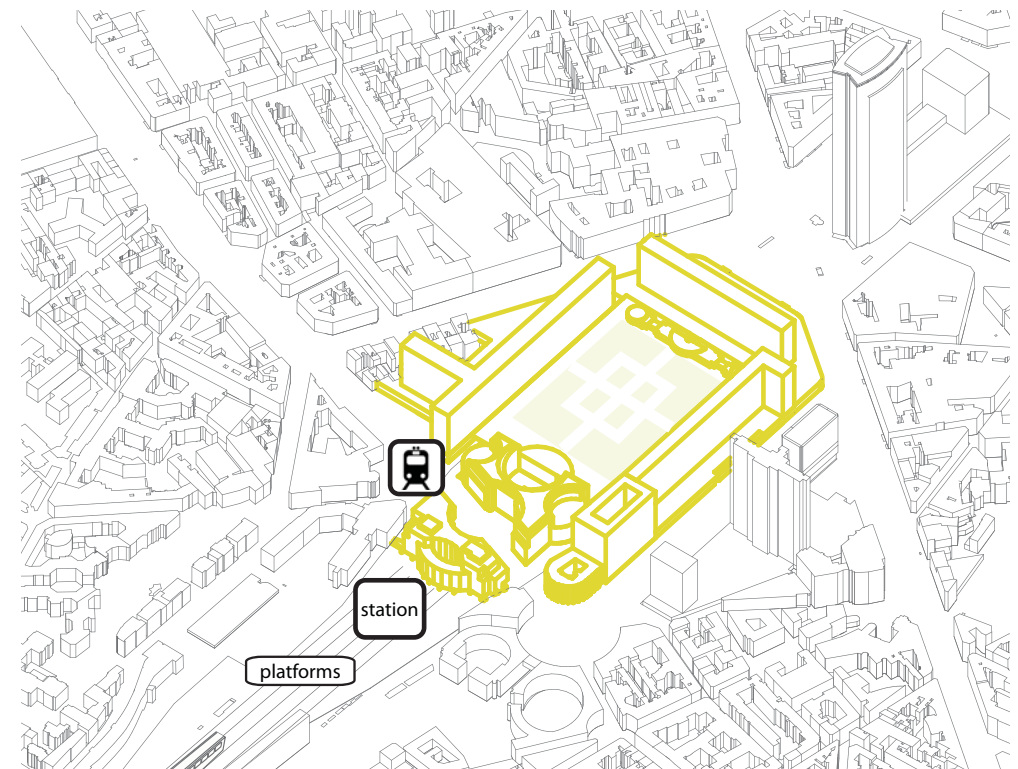


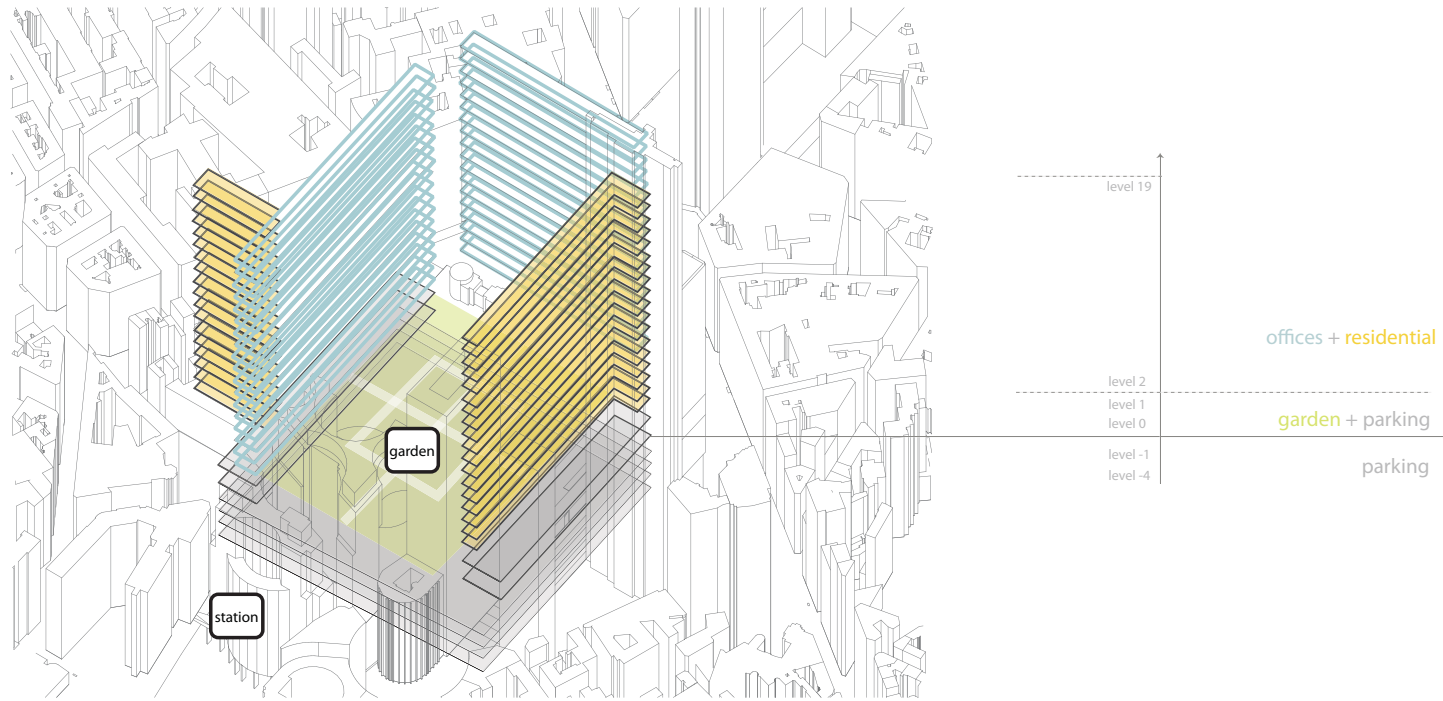
fig. 32 situation Gare Montparnasse

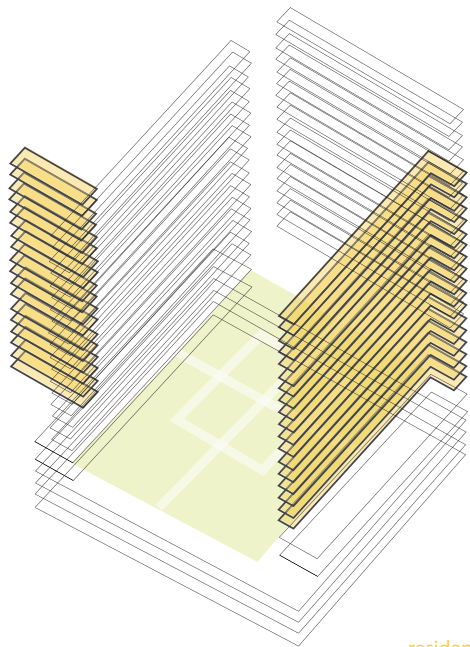
fig. 31 direct train connection from Montparnasse



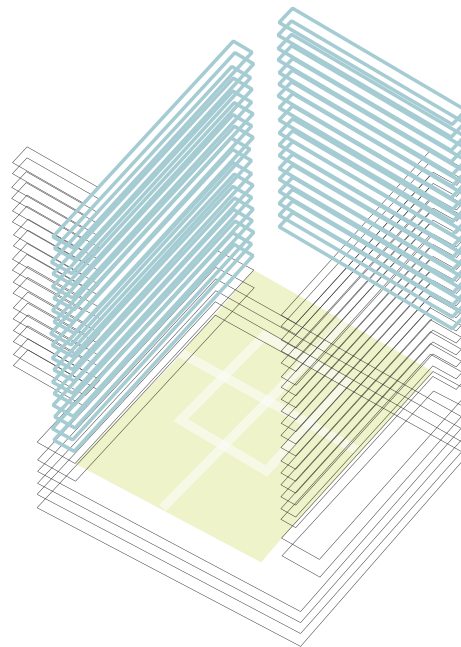
fig. 33 urban context, scale: 1:10 000

Functions analysis

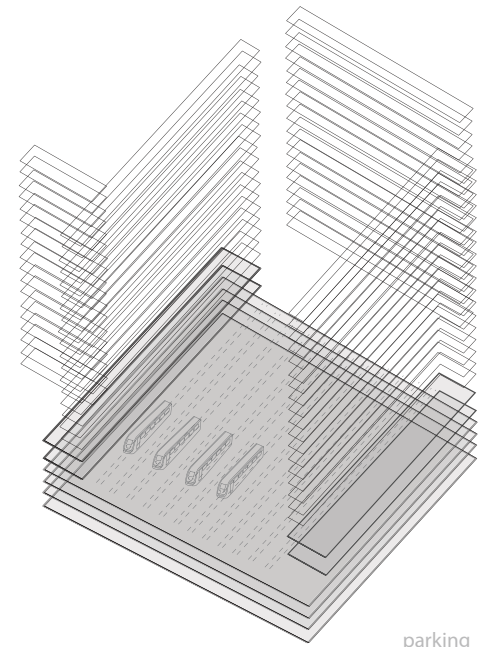




residential

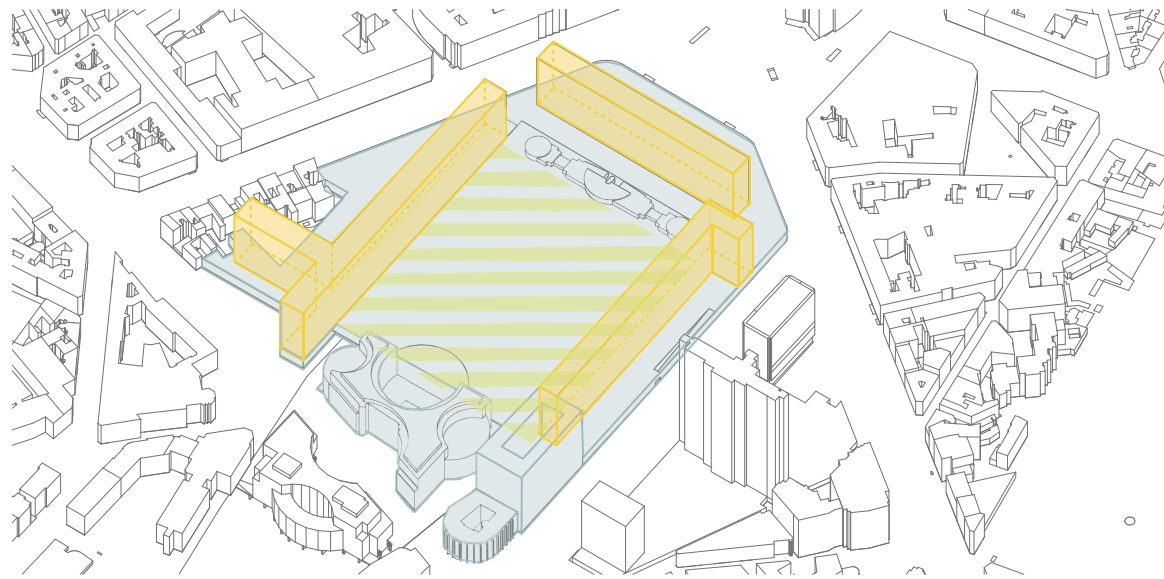


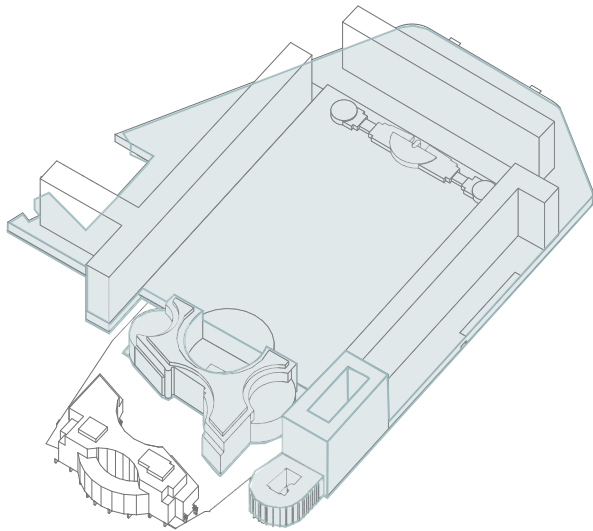
offices



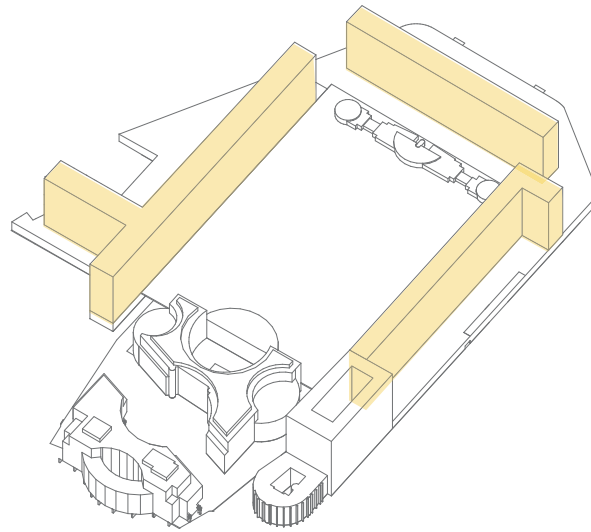
parking

Public/ Private/Collective space

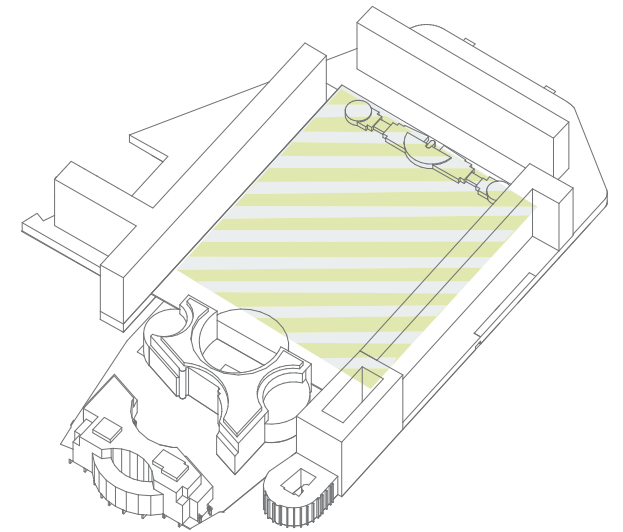




public

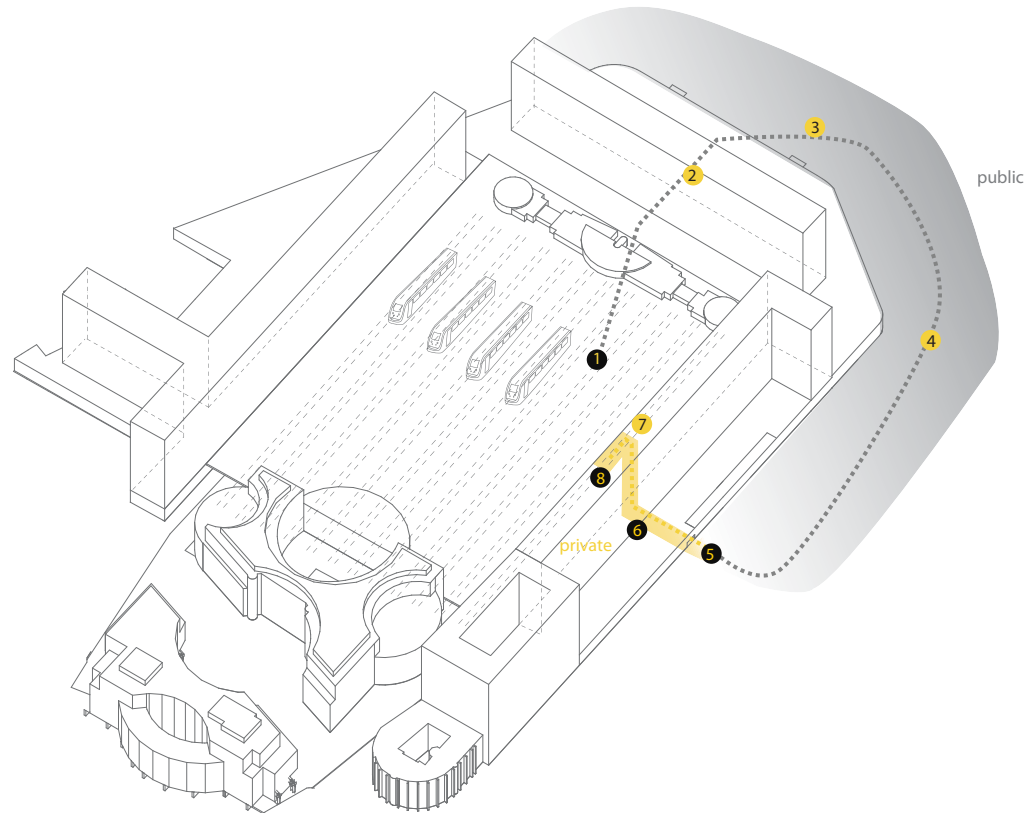


private

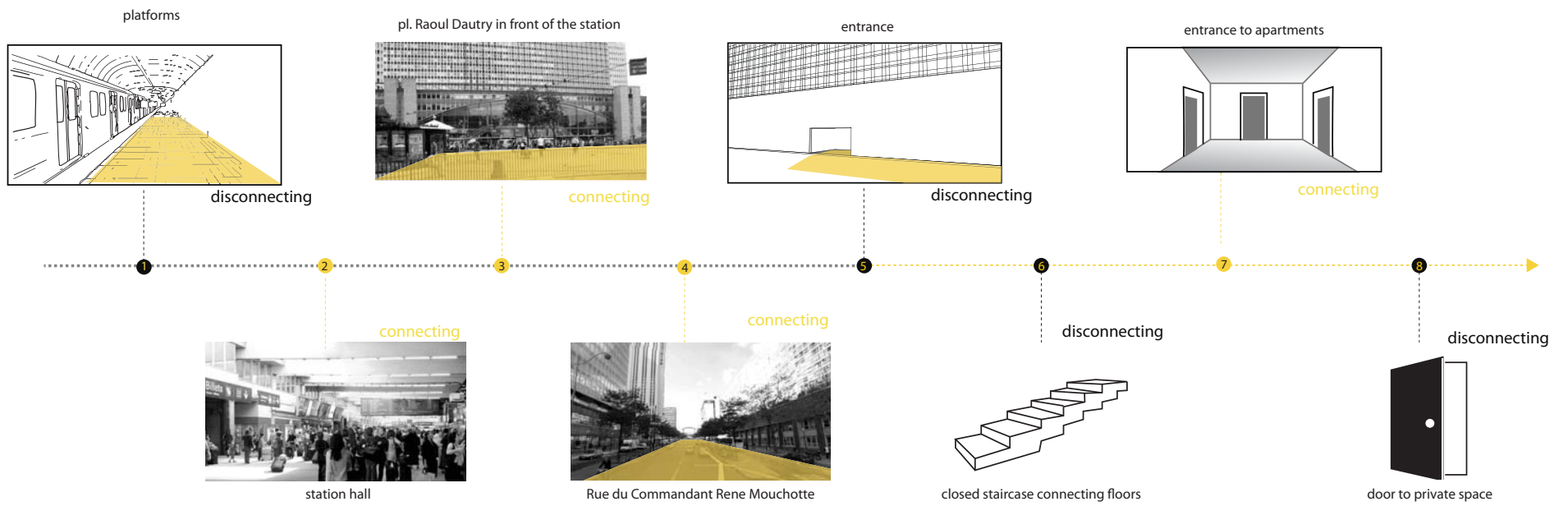


collective

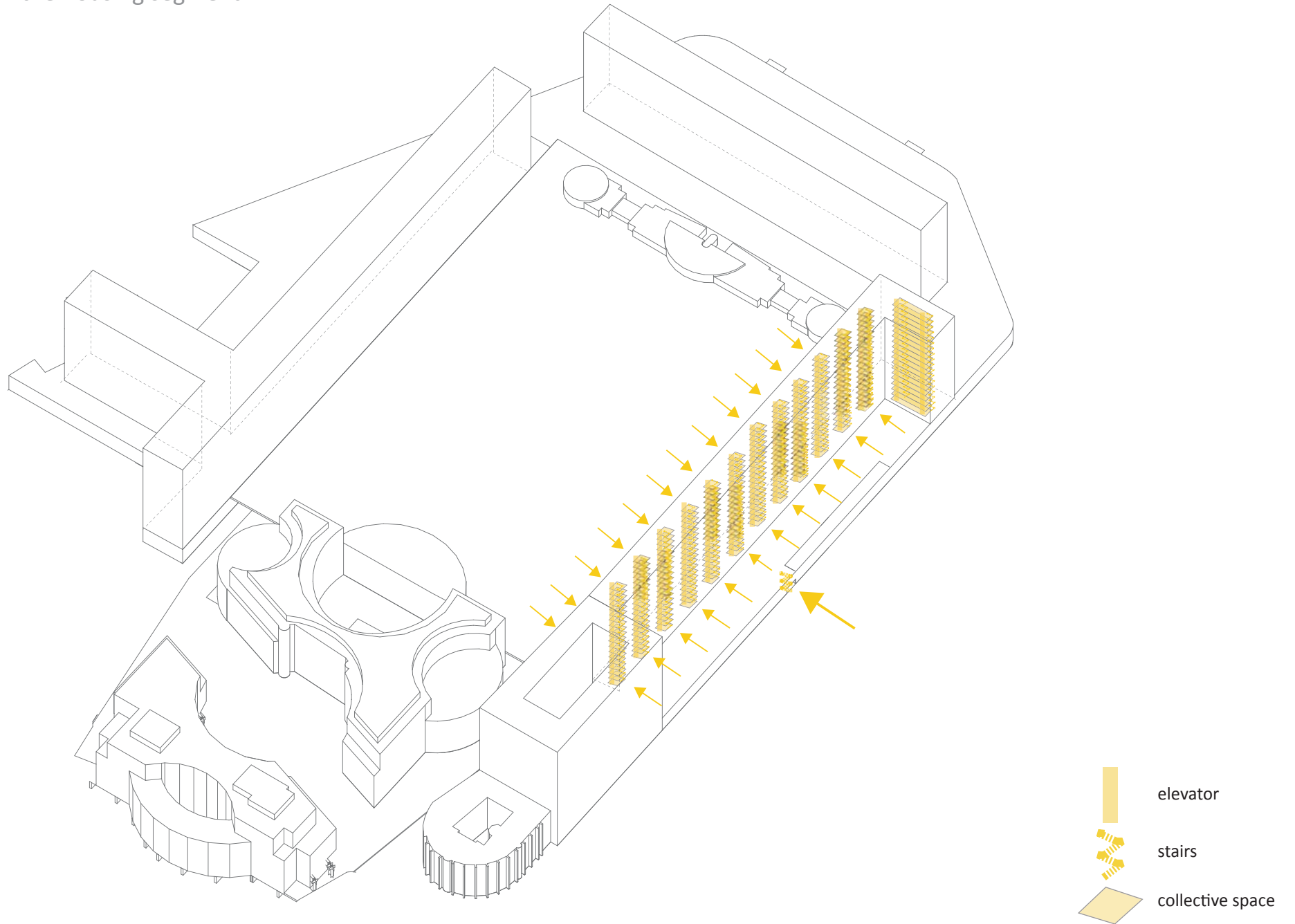
Routing from the station to the apartment

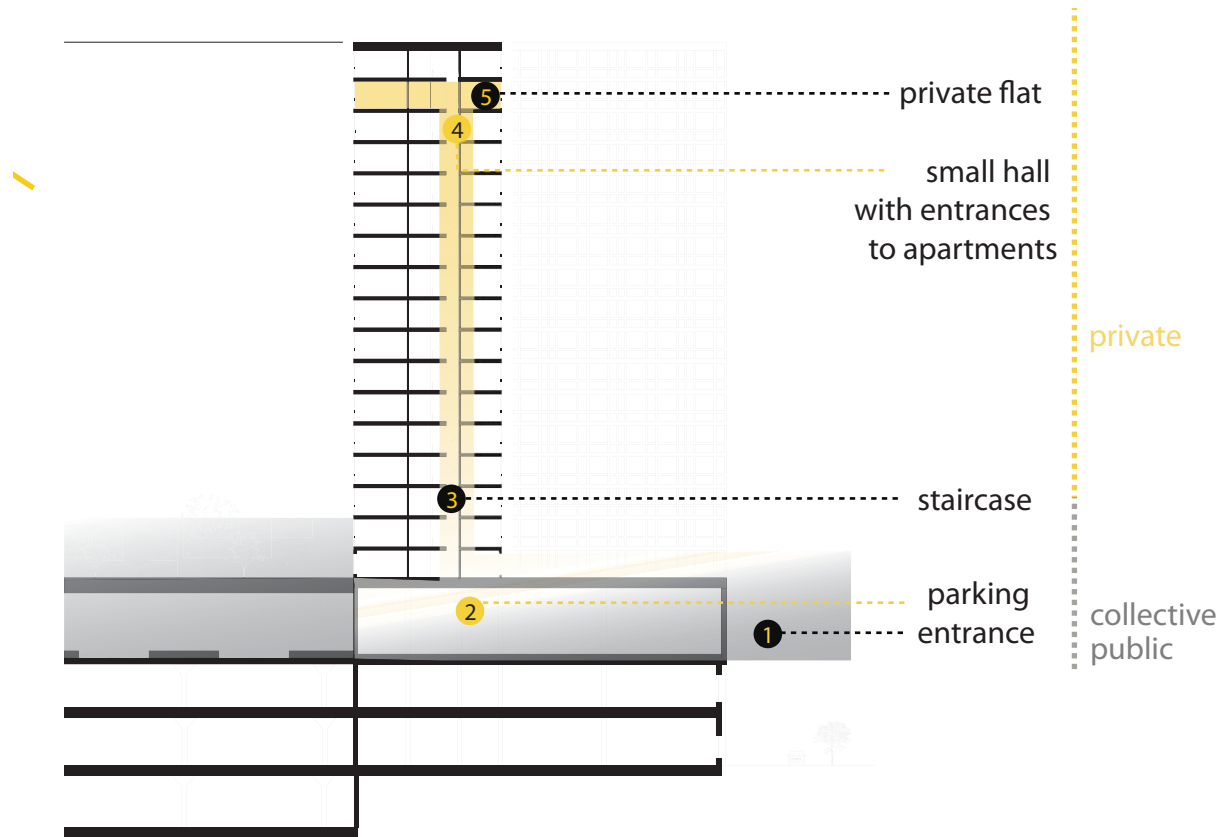


- connecting step
- disconnecting step

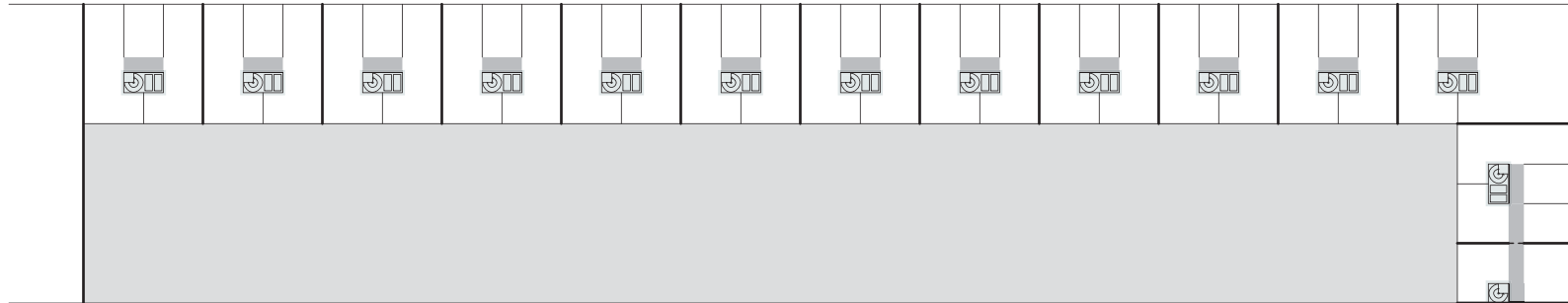


Routing within the housing segment





Plans of apartments



plan of apartments scale: 1:1000

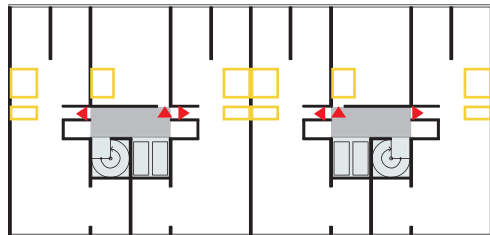
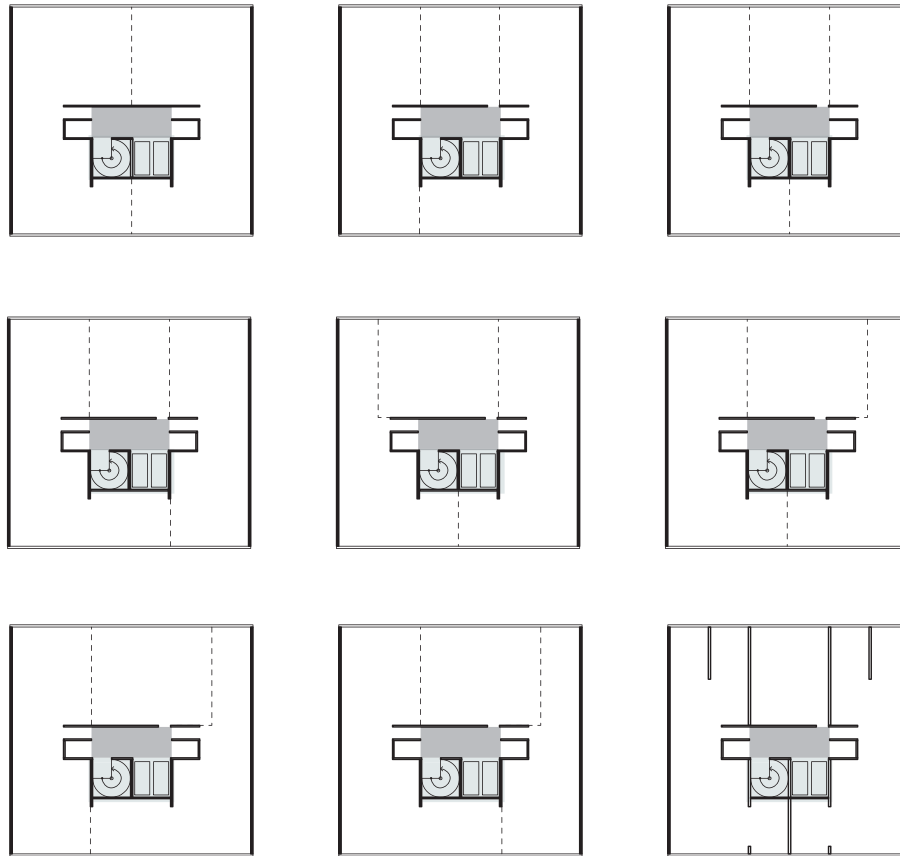


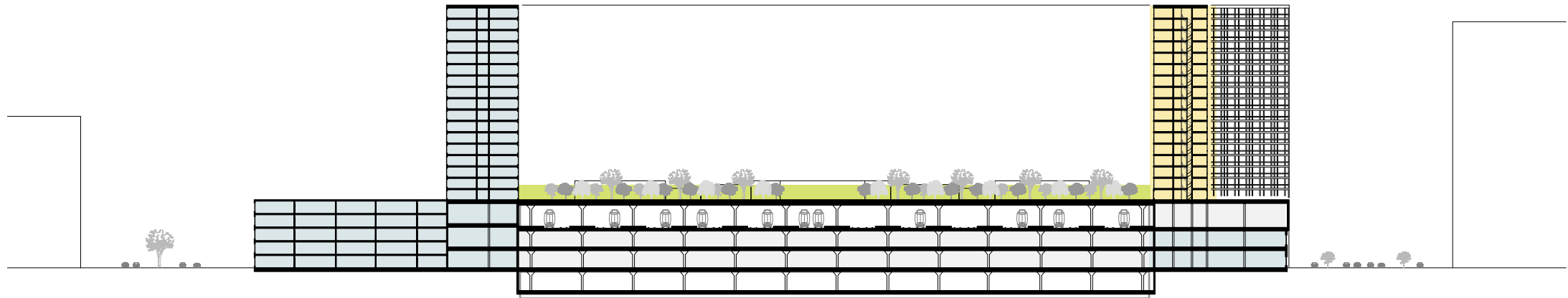
diagram of apartments



variety of arrangement of apartments in the segment

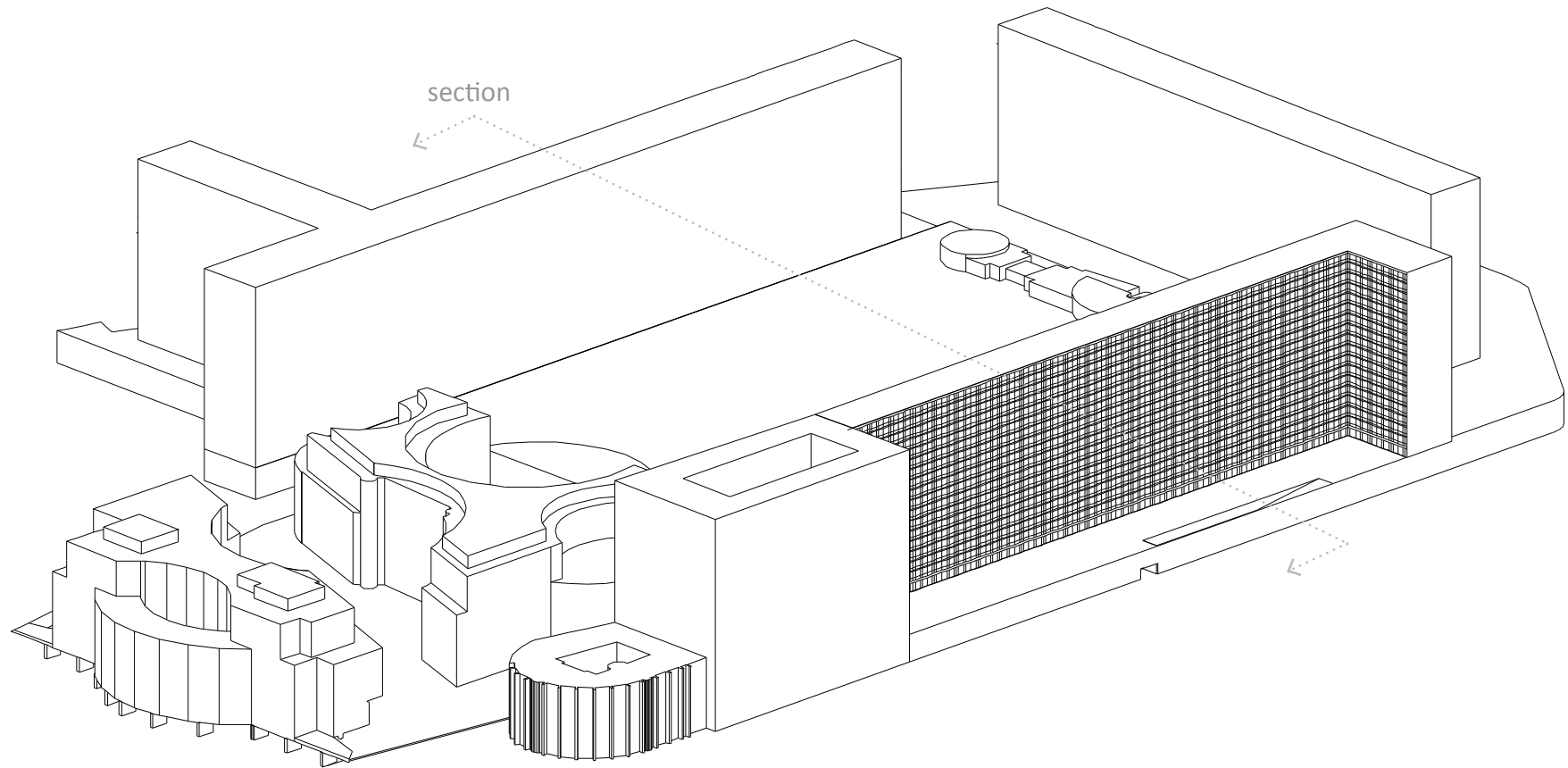
- private outside space
- collective space
- entrance senior apartment
- bathrooms, toilets
- stairs, elevators

Section with functions



section scale: 1:1500

Facade of housing segment



Südpark

Südpark is situated next to the Railway Station Basel SBB, which is the most important regional, national and international transport hub in Northwestern Switzerland. The whole ground floor is occupied by shops (the Swiss supermarket Coop). The upper floors are formed around enclosed garden situated on the first floor. The lower part (4 floors) in the south-west side is designed to accommodate offices. The higher part (9 floors) in the northeast side is a residential segment with apartments

for elderly people, with 28 beds and an internal restaurant. The inner yard belongs to the elderly house. The façade of the whole building is made of a silver broom texture. The tetris-like windows on the north, east and west façade make it hard to read the floor plan from the outside. The south façade is a spread of different sizes of windows at apparent places.

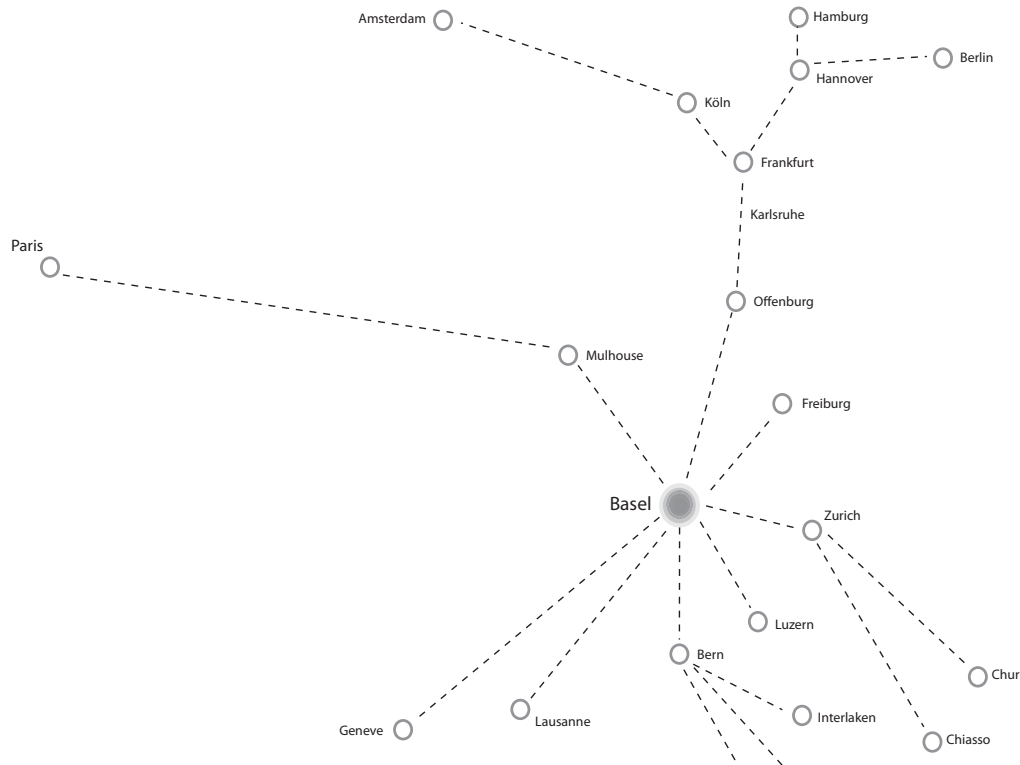


fig. 34 direct train connection from Basel
40

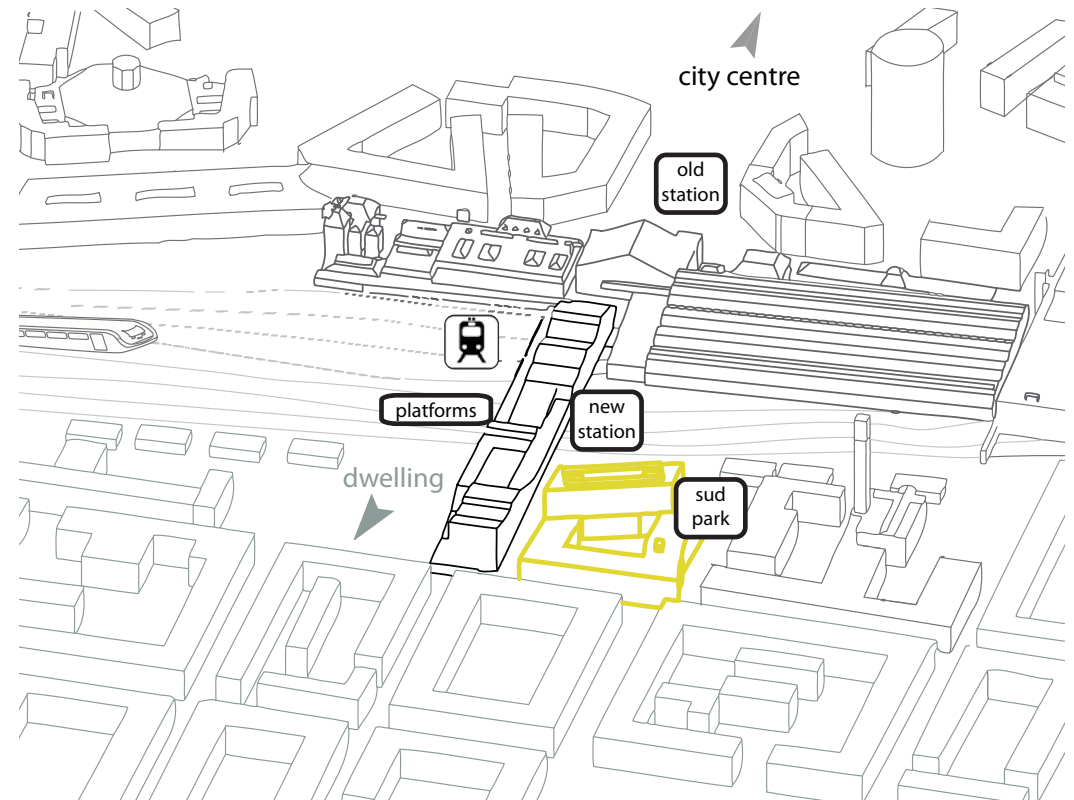


fig. 35 situation

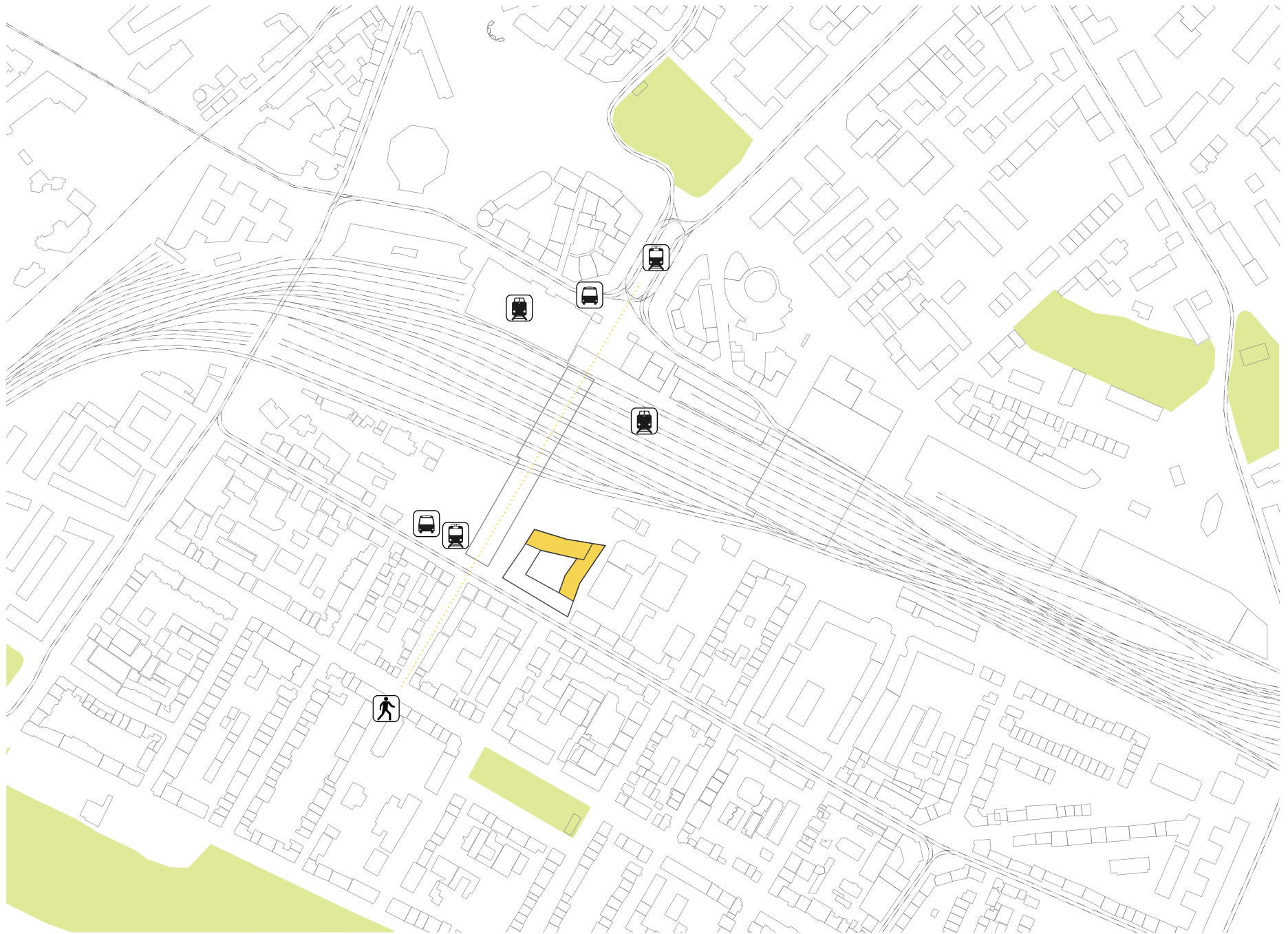
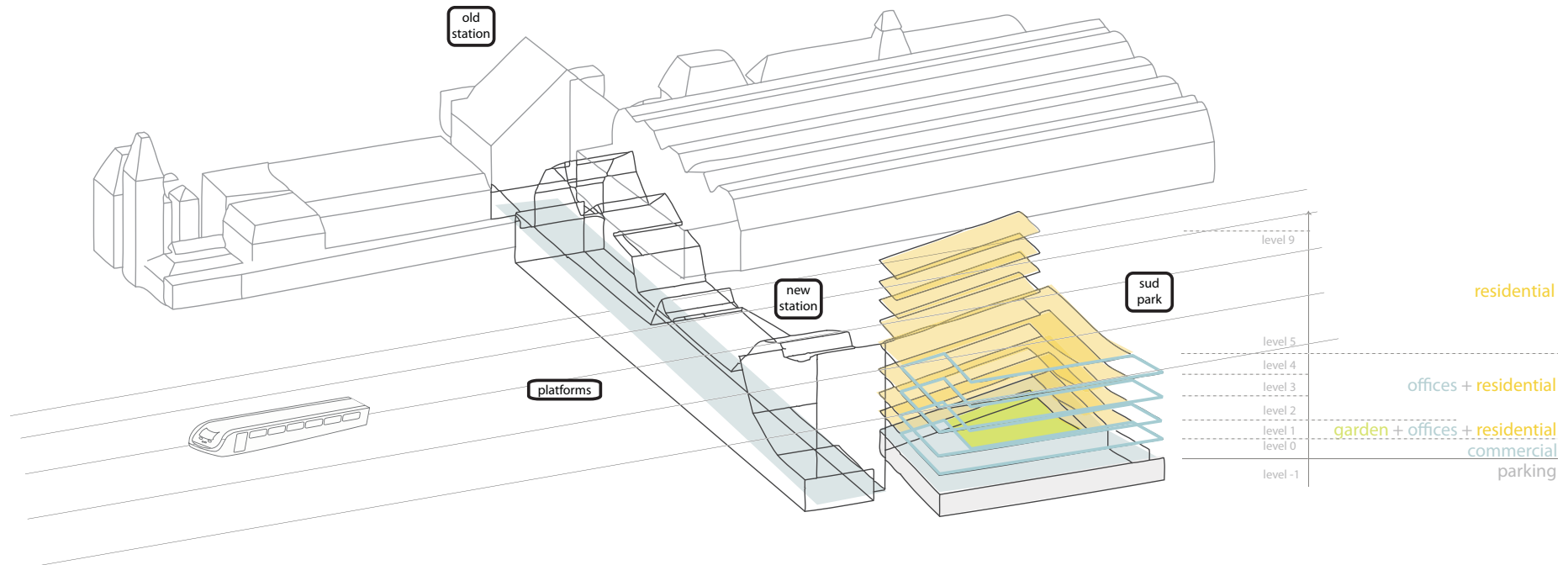
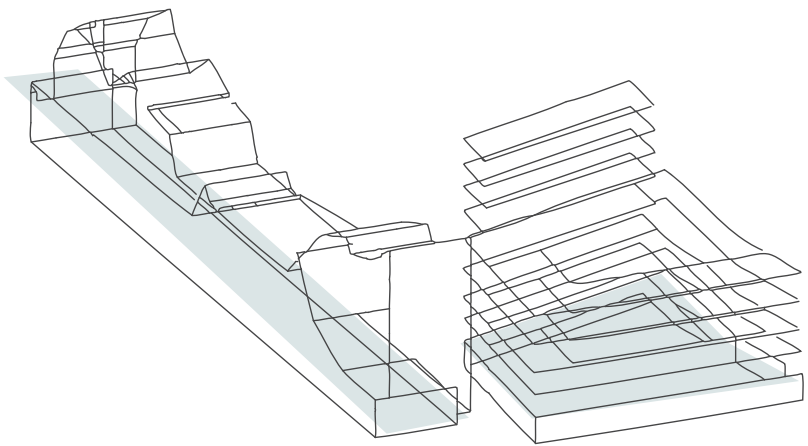


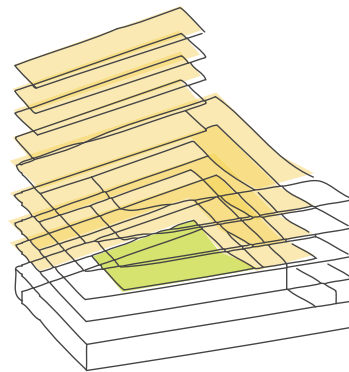
fig. 36 urban context, scale: 1:10 000

Functions analysis

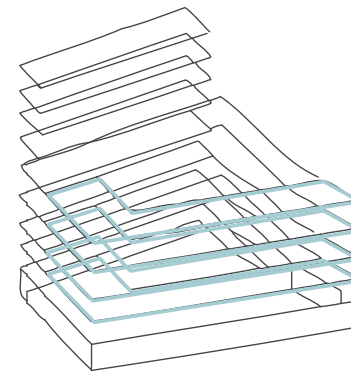




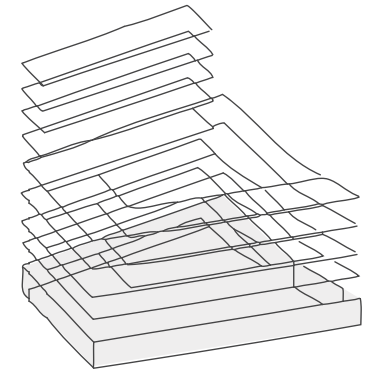
commercial



residential

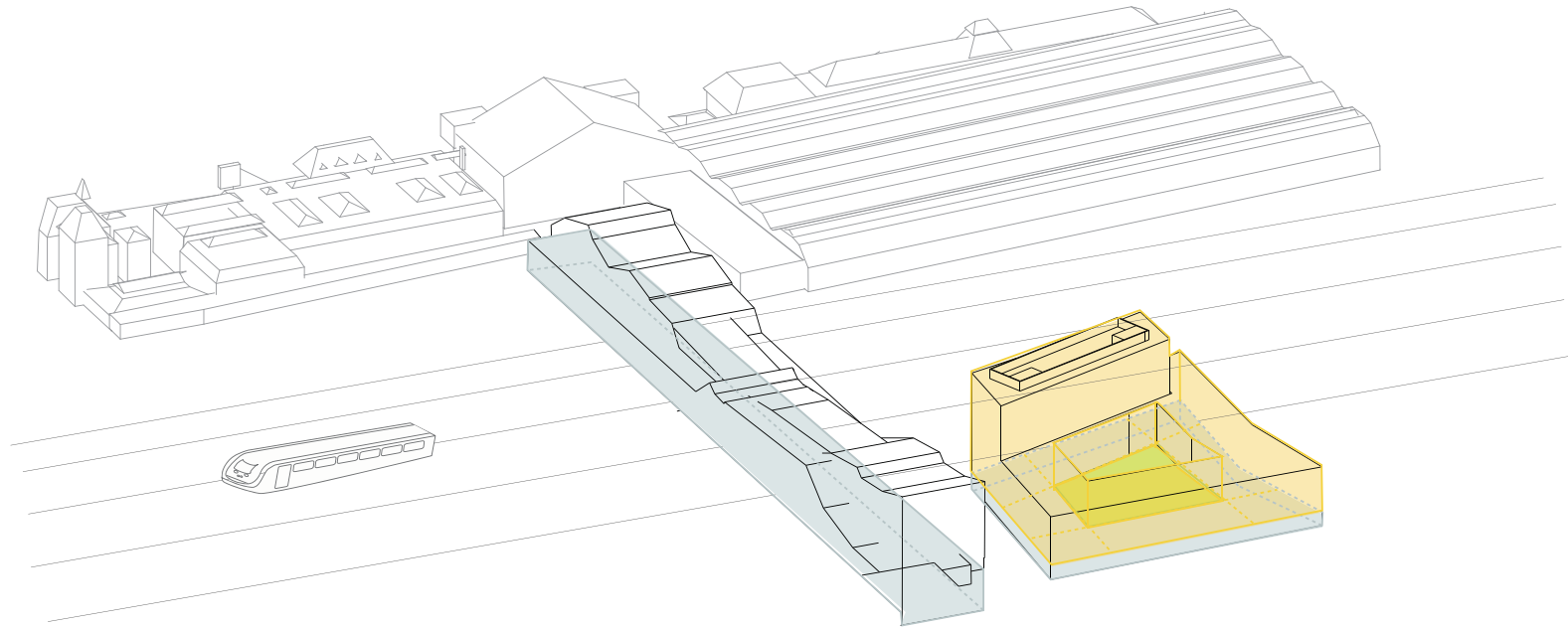


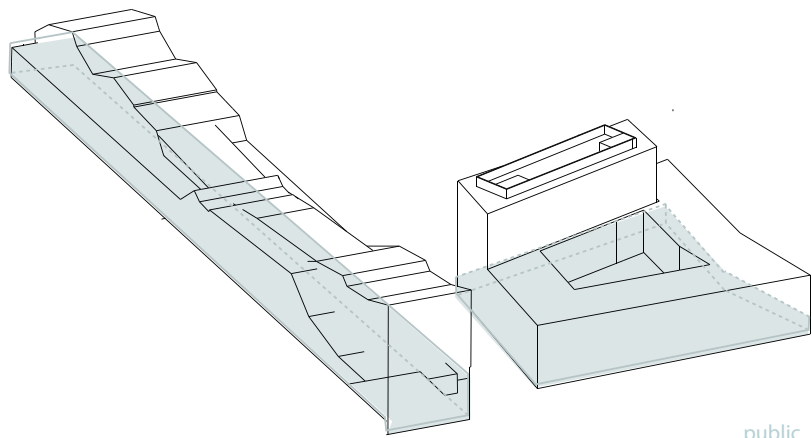
offices



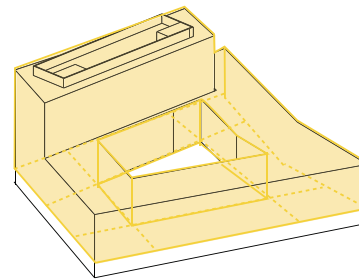
parking

Public/ Private/Collective space

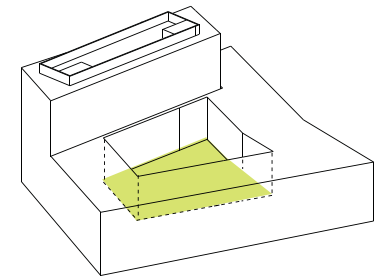




public

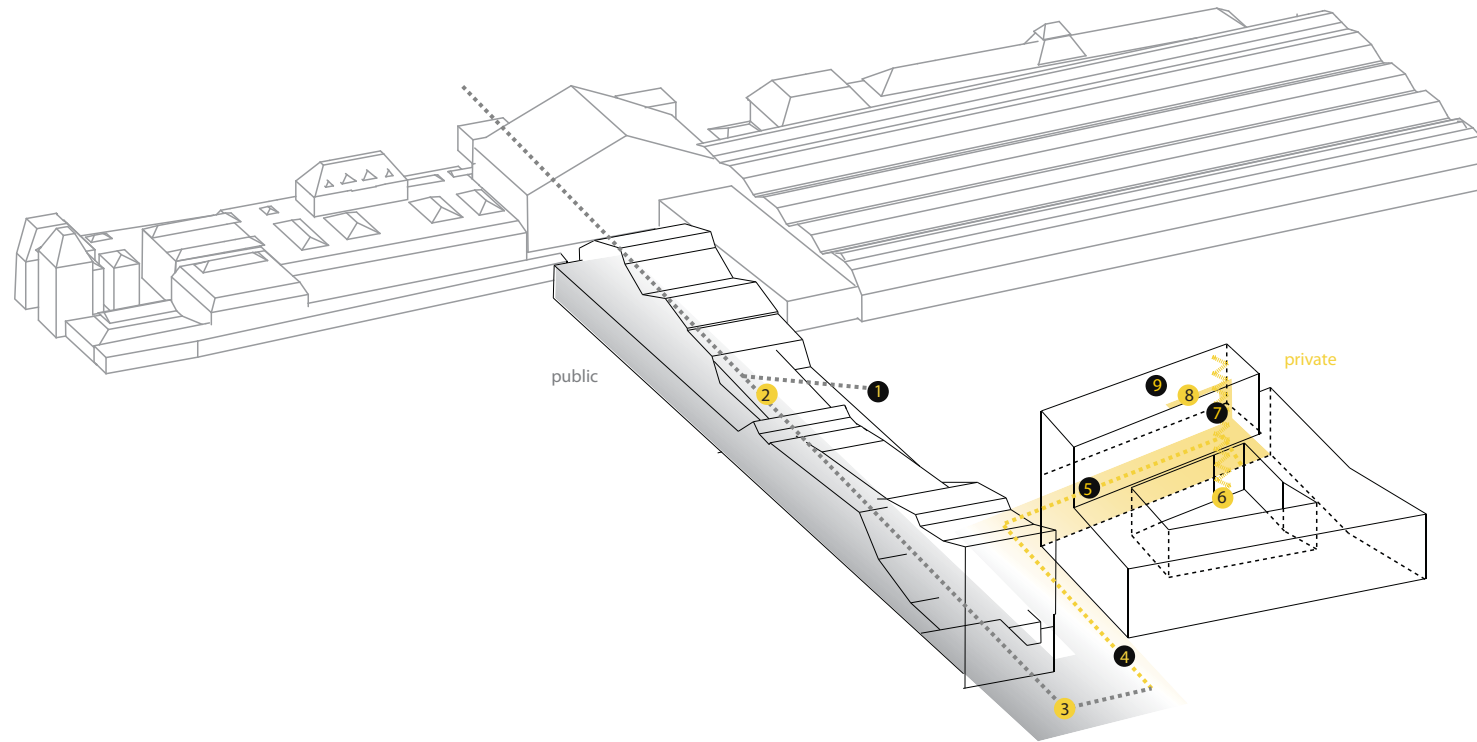


private

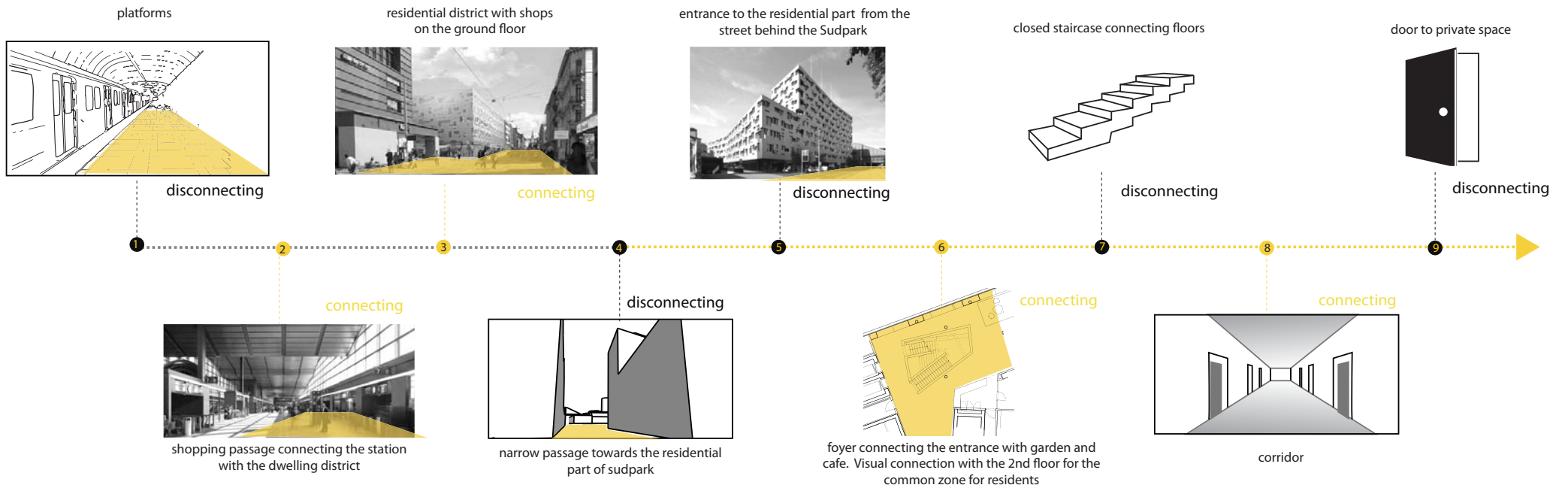


collective

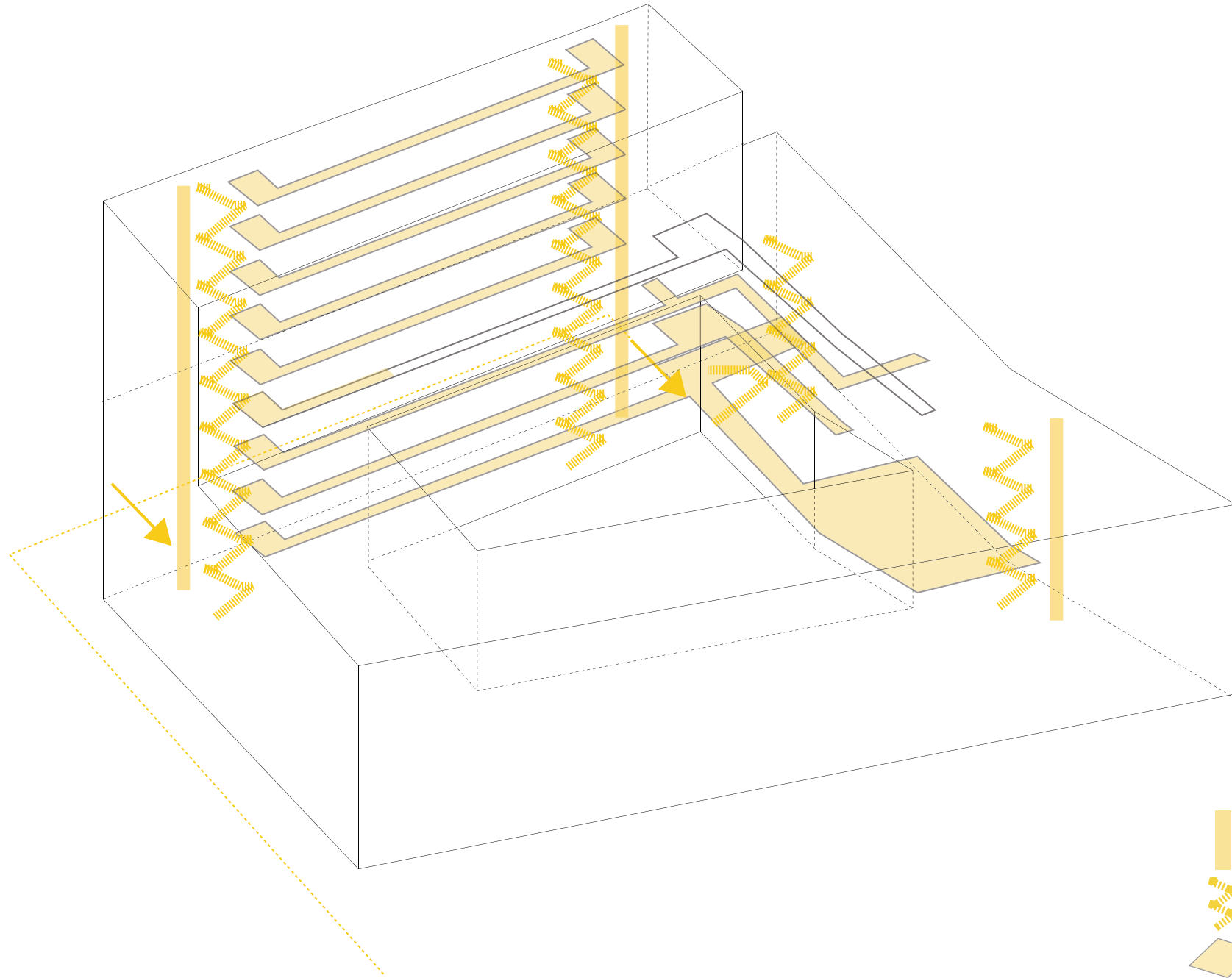
Routing from the station to the apartment

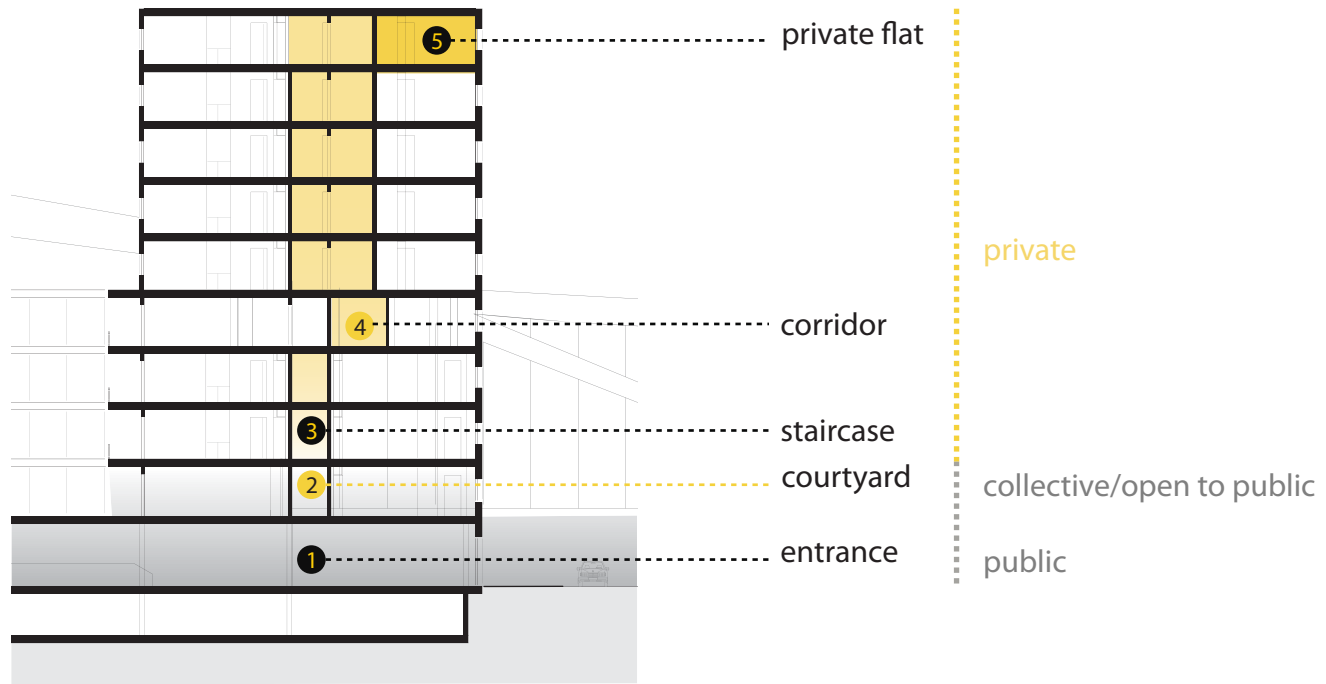


- connecting step
- disconnecting step

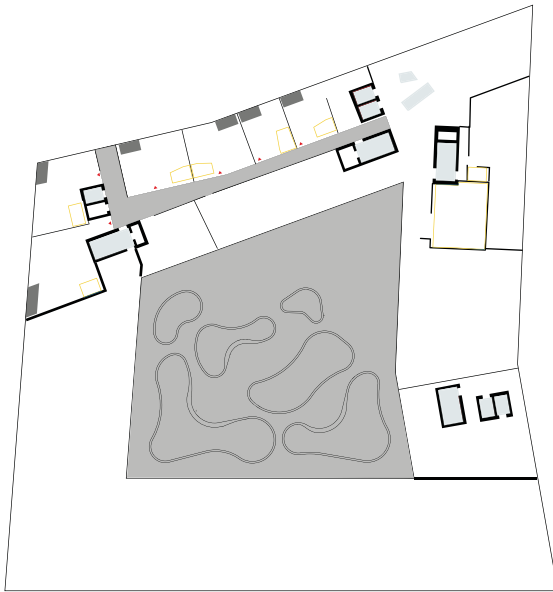


Routing within the housing segment

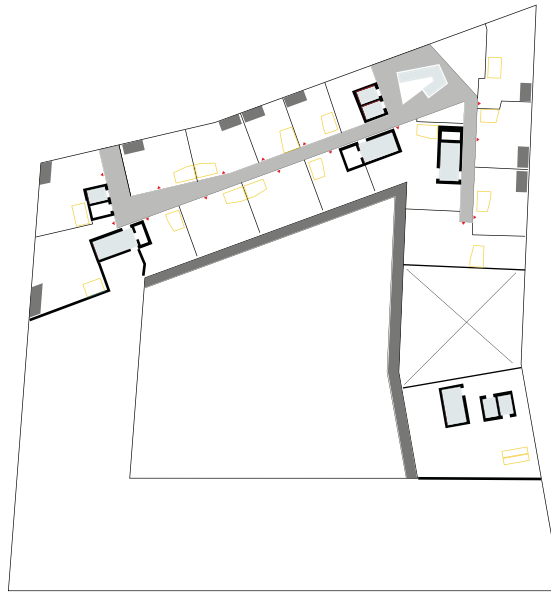




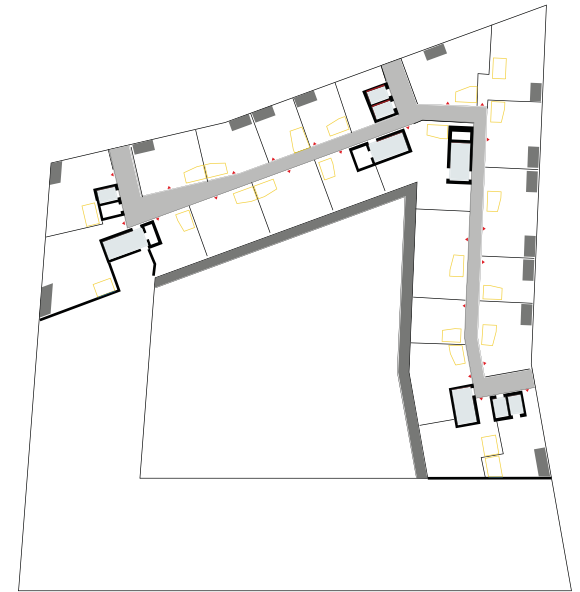
Plans of apartments



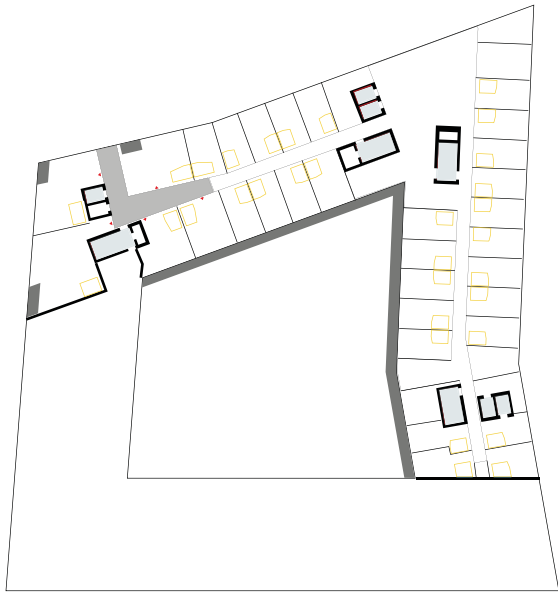
1st floor



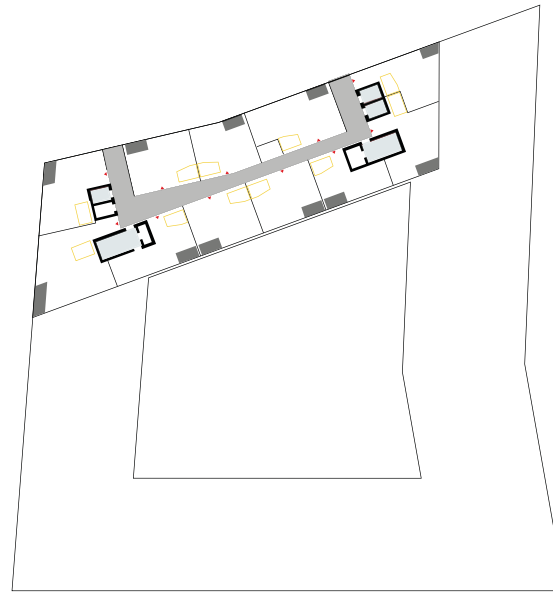
2nd floor



3rd floor



4th floor



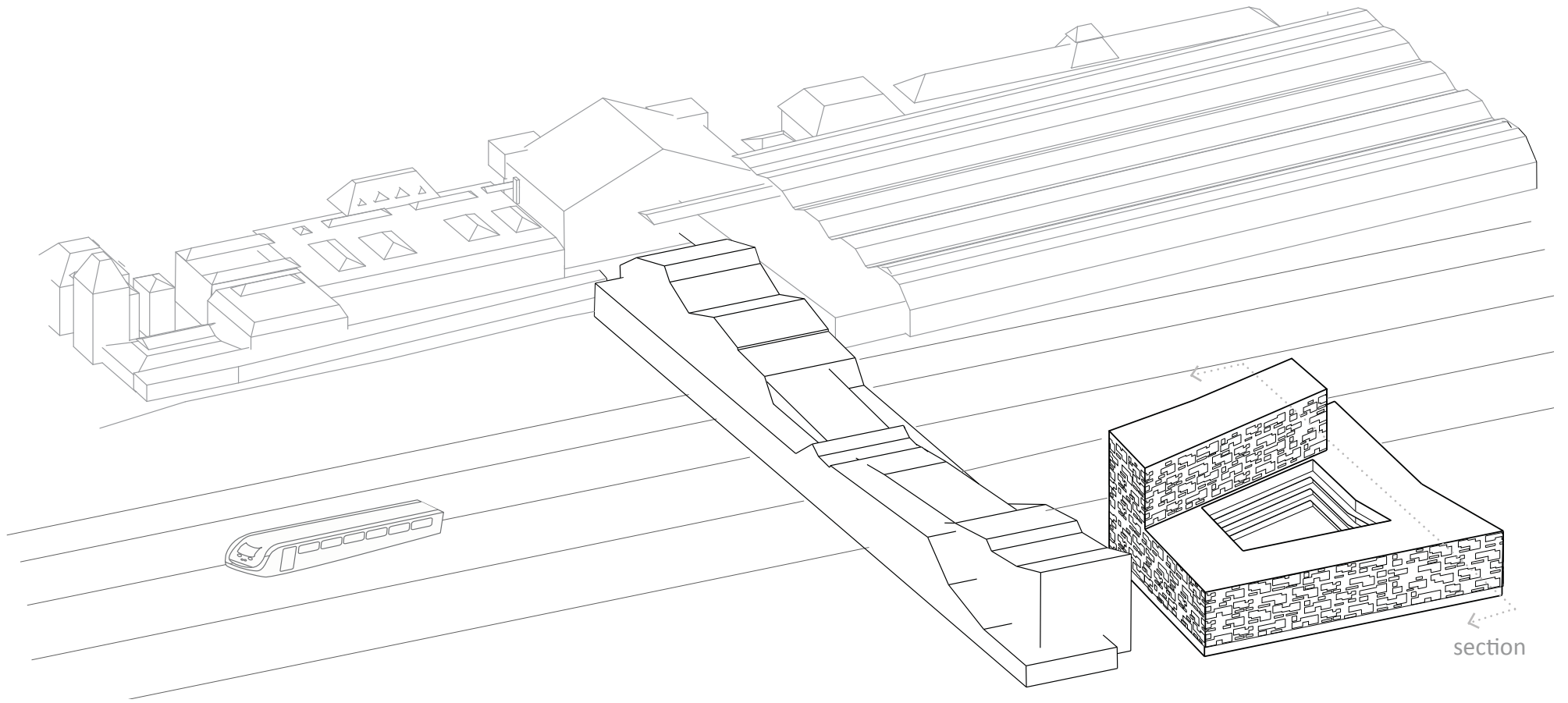
5-9th floor

- private outside space
- collective space
- entrance senior apartment
- bathrooms, toilets
- stairs, elevators

Section with functions



section scale 1:1000



section

New Babylon

New Babylon is situated next to the station Den Haag Centraal. The concept of New Babylon is a new city in the city. There are two levels of parking under the building. The ground floor is occupied by shops, restaurants, the entrance of the hotel and the entrances of the apartments. A passage divides the ground floor in four sections. The first floor is also occupied by shops and restaurants. On the second floor is a public garden with is surrounded by offices and leisure

functions. There are two high towers across each other designed for apartments. The *city tower* has 44 floors and 202 apartments plus three penthouses. The *park tower* has 30 floors and 127 apartments and also three penthouses. The apartments vary from 90 m² till 224 m². The construction is not hidden but plays an imported role in the façade. The glass façade is divided by the truss beams and the floors.

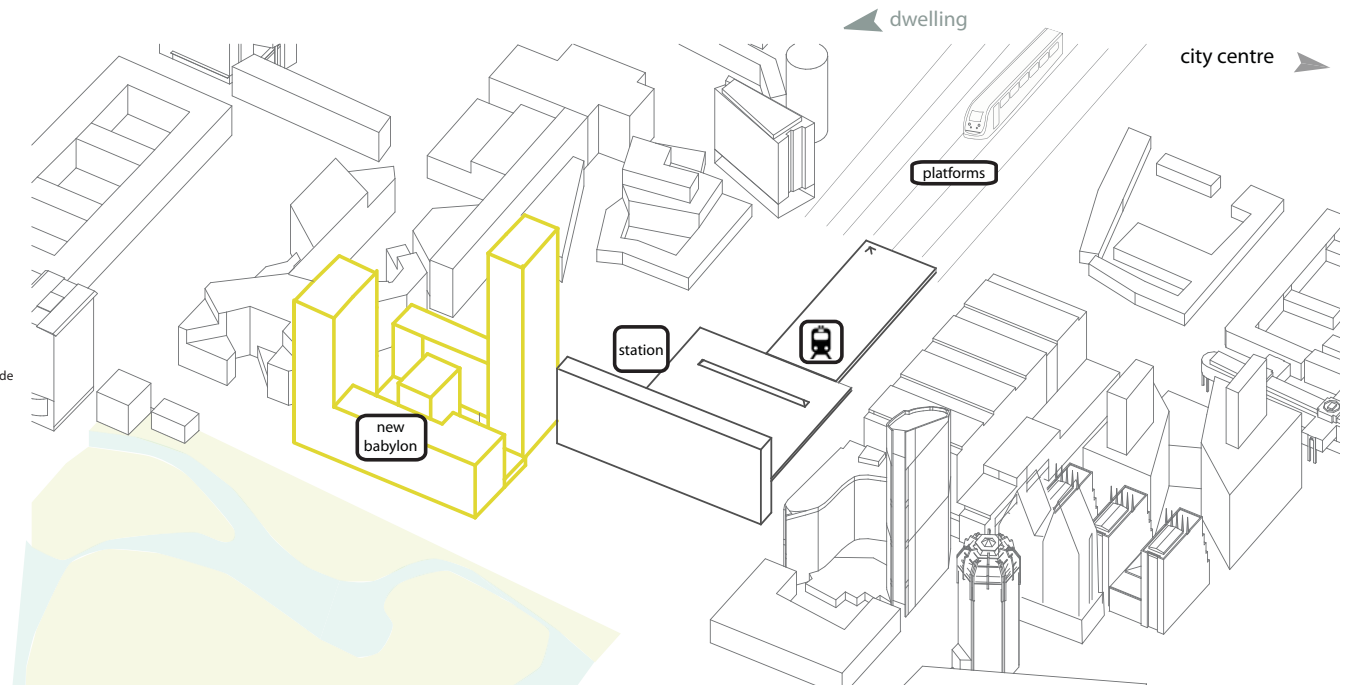
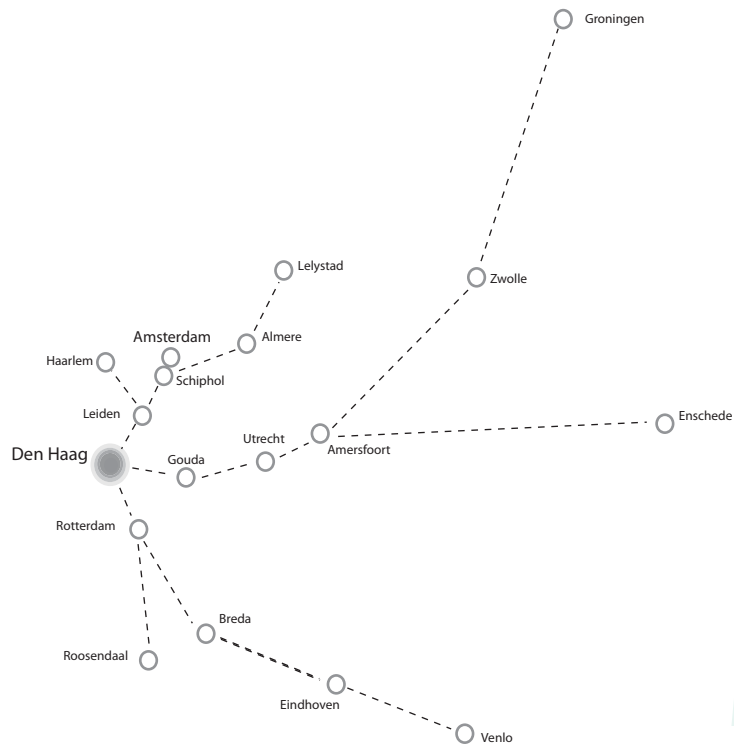


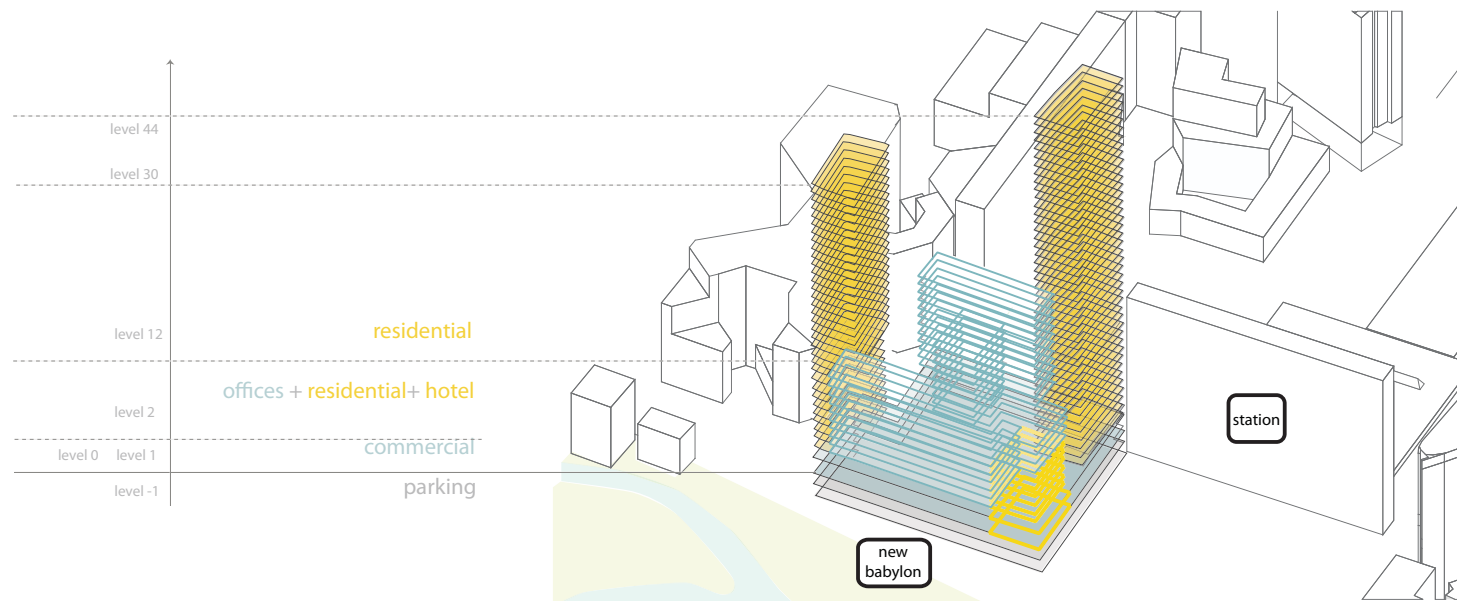
fig. 38 direct train connection from Den Haag
54

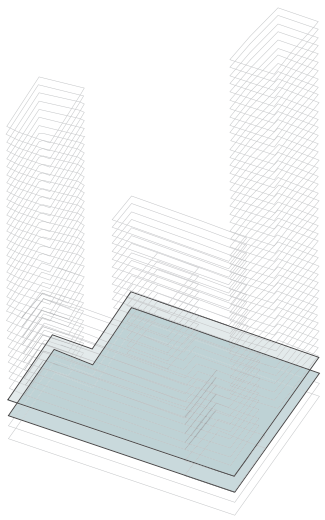
fig. 39 situation



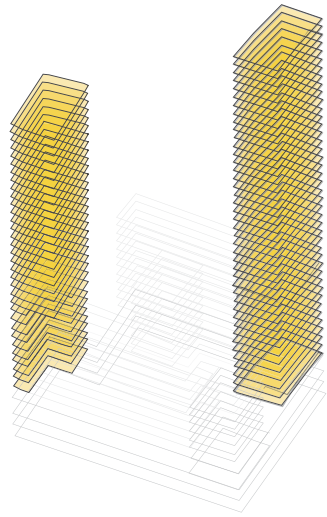
fig. 40 urban context scale: 1:10 000

Functions analysis

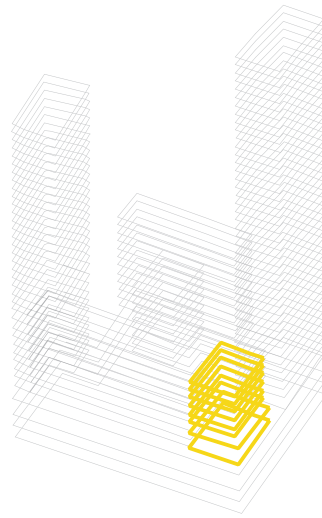




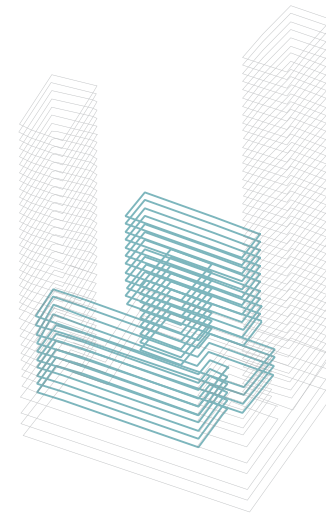
commercial



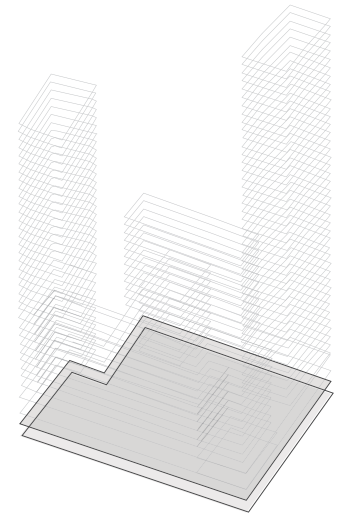
residential



hotel

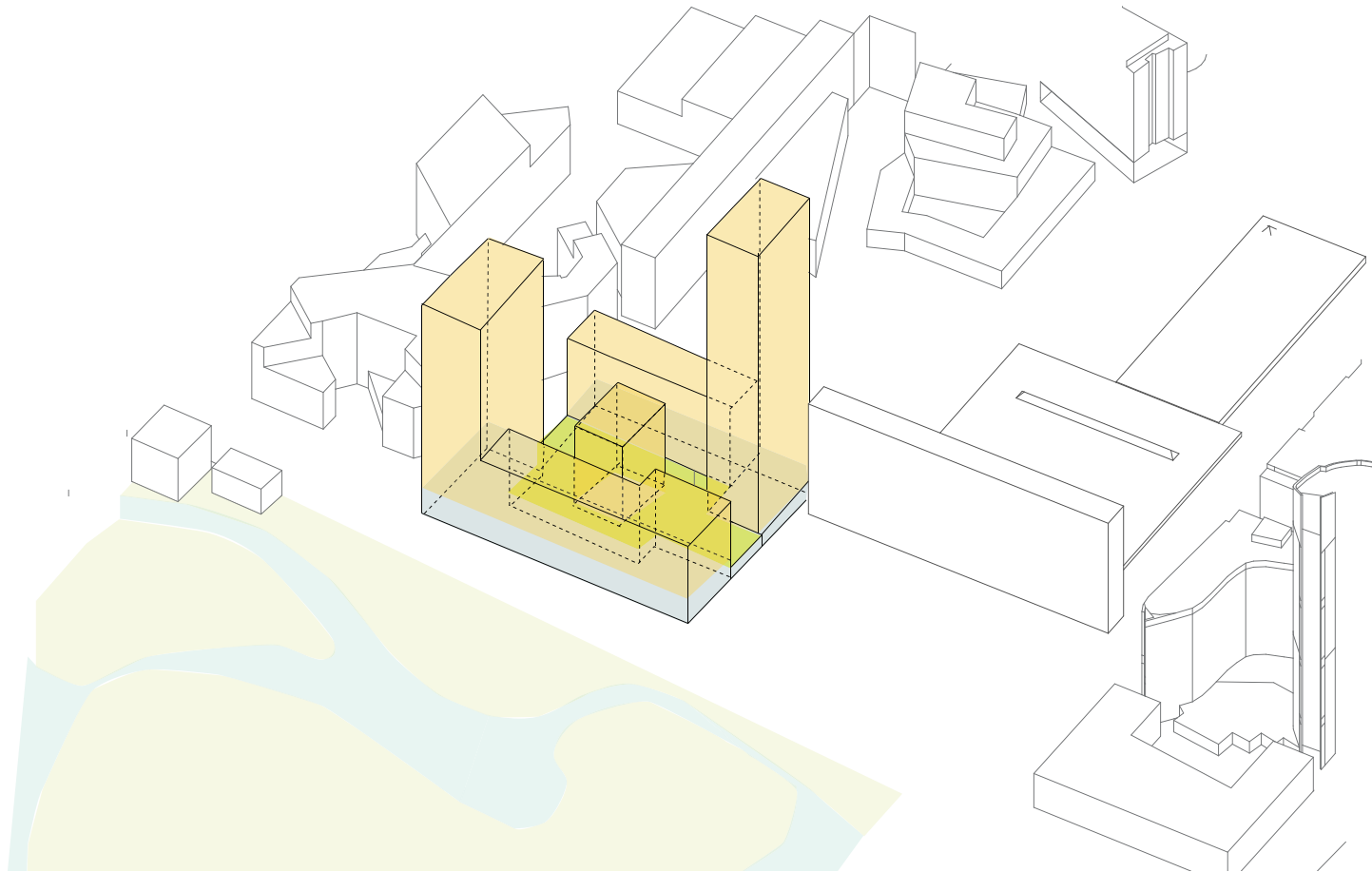


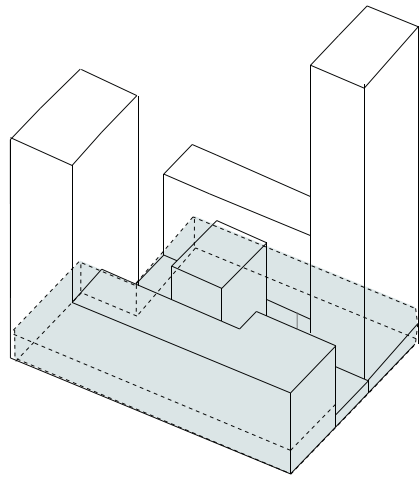
offices



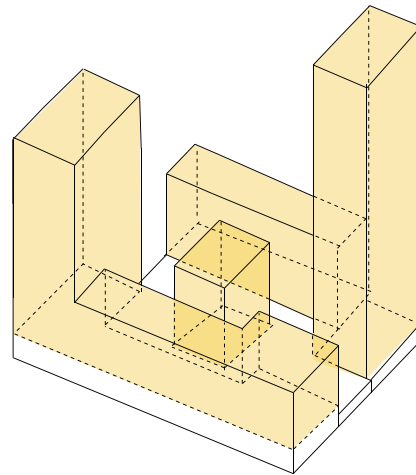
parking

Public/ Private/Collective space

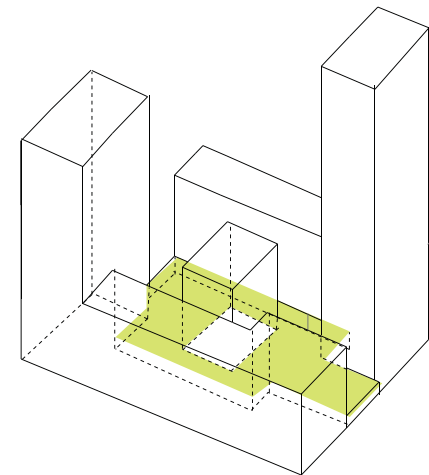




public

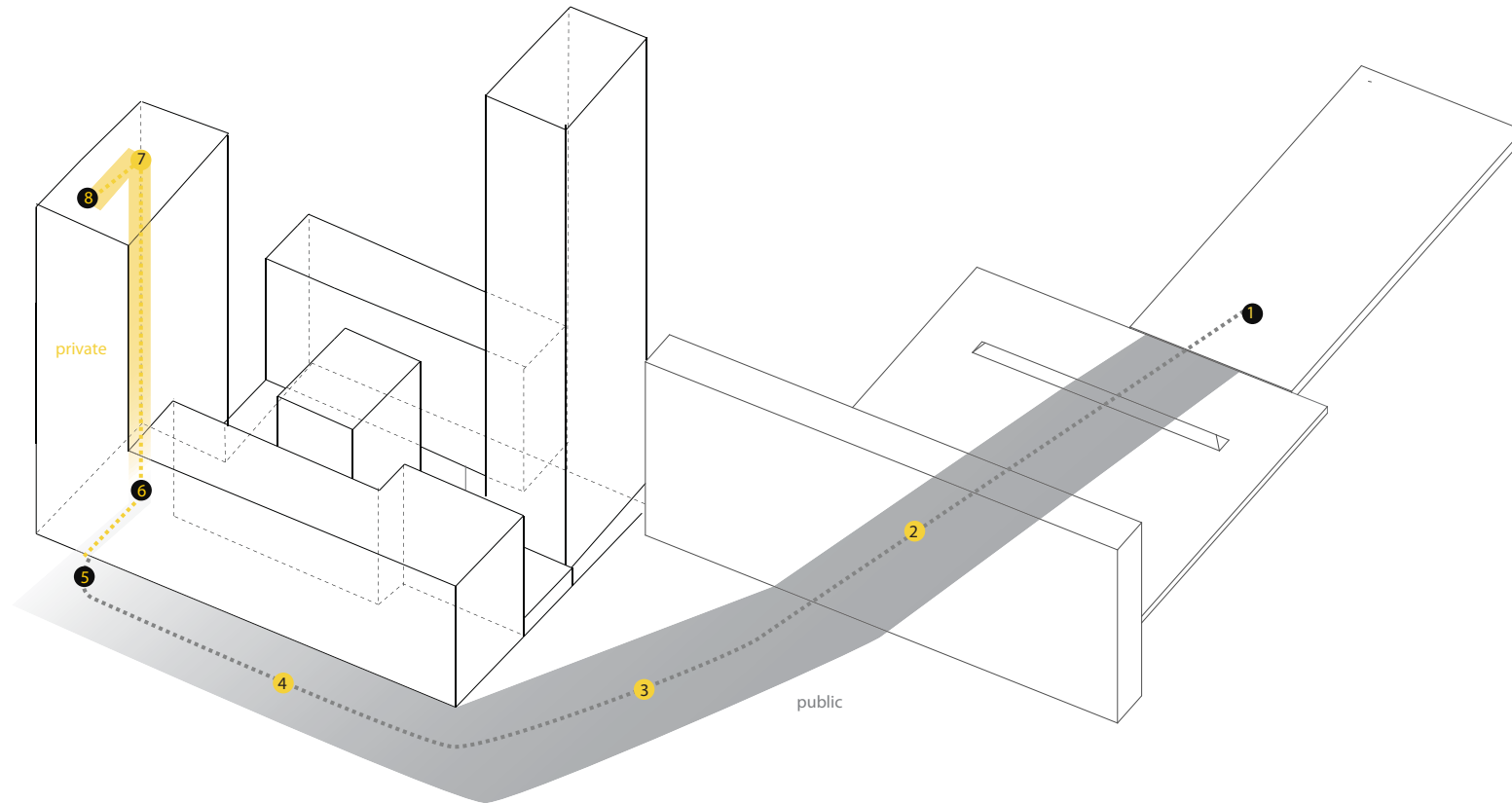


private

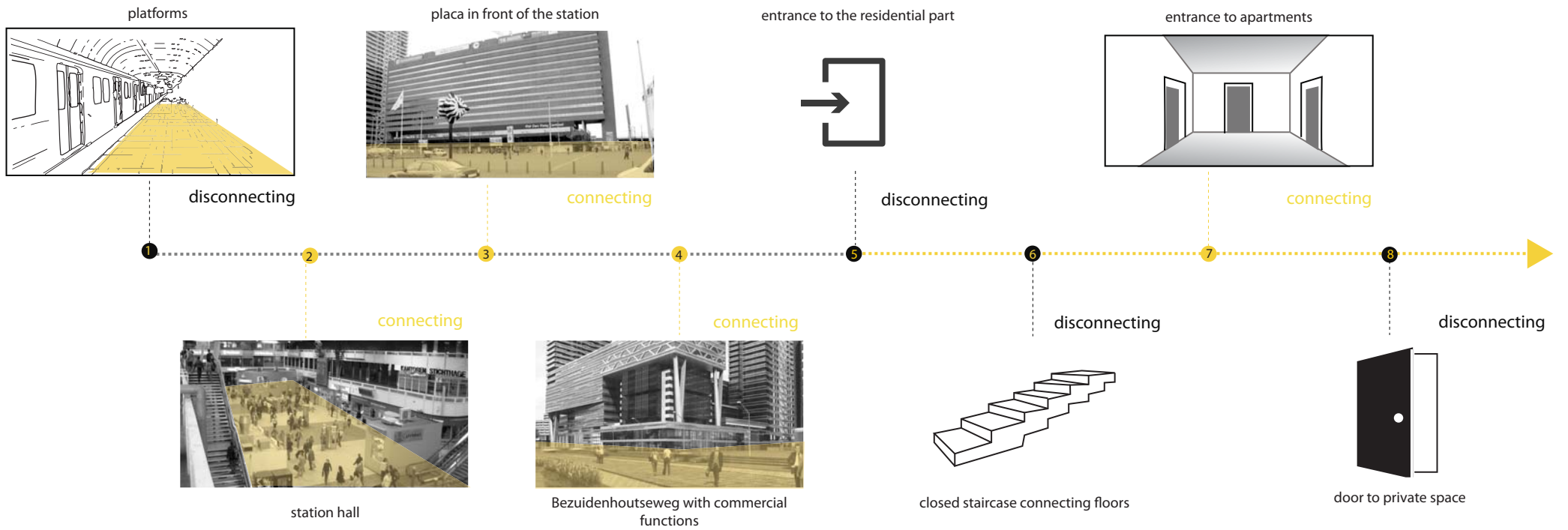


collective

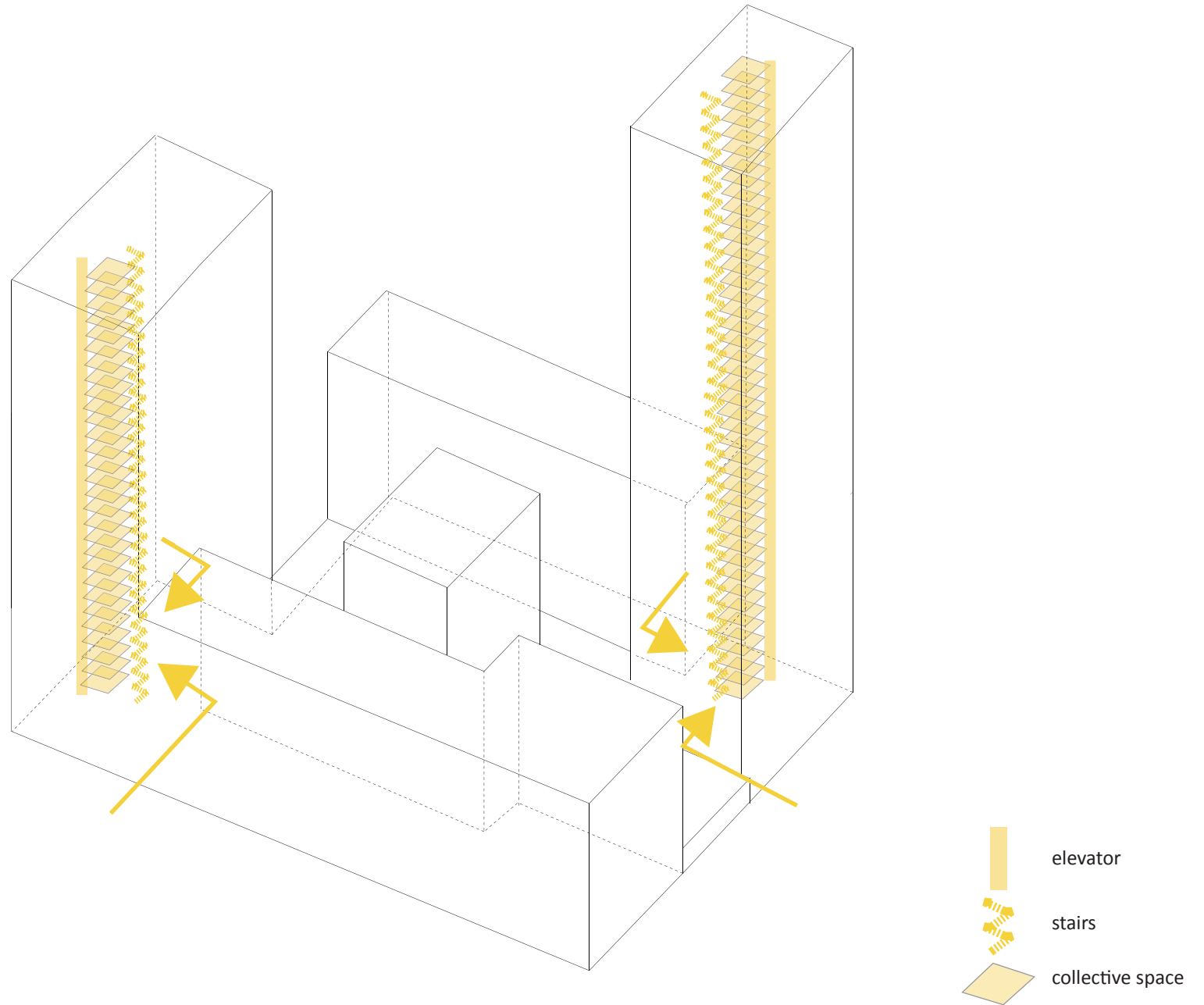
Routing from the station to the flat

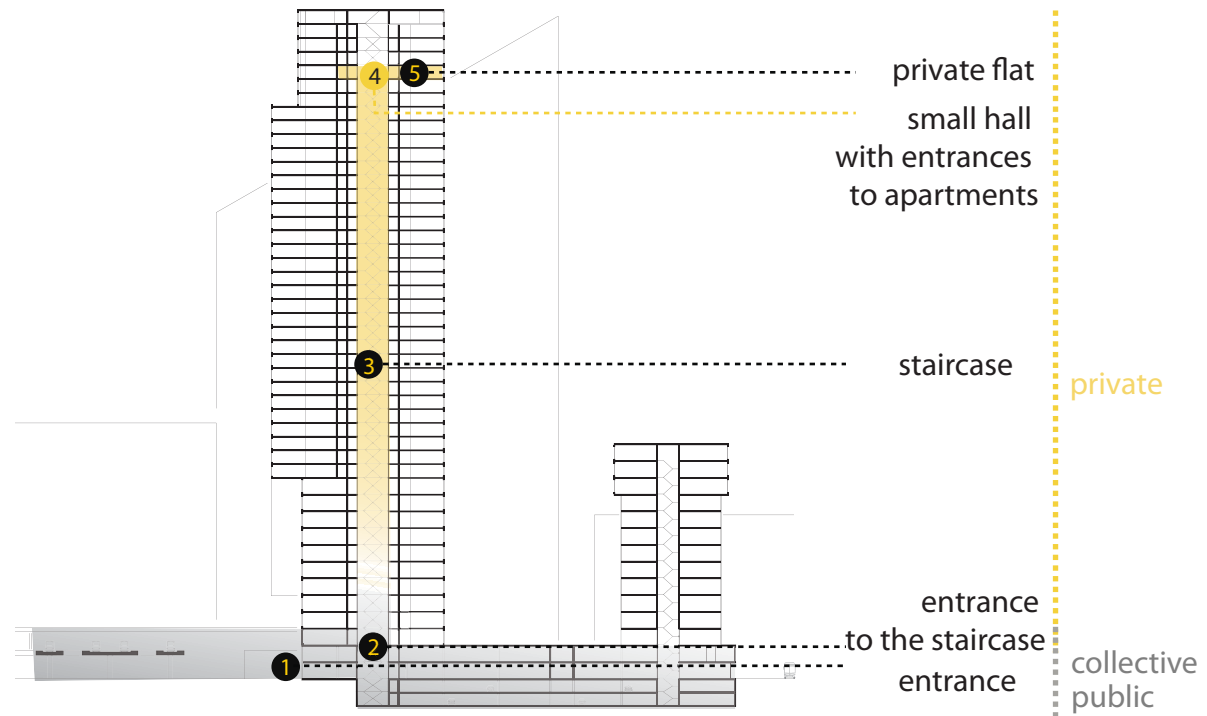


- connecting step
- disconnecting step

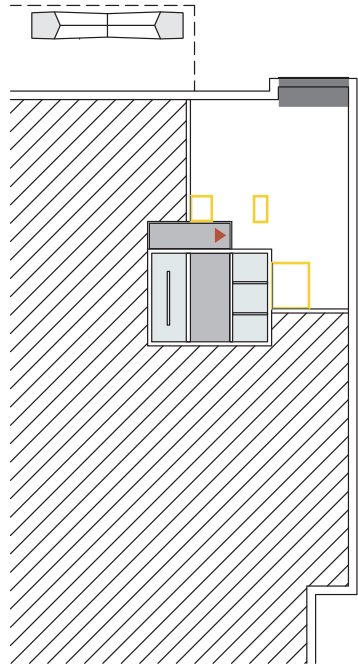


Routing within the housing segment

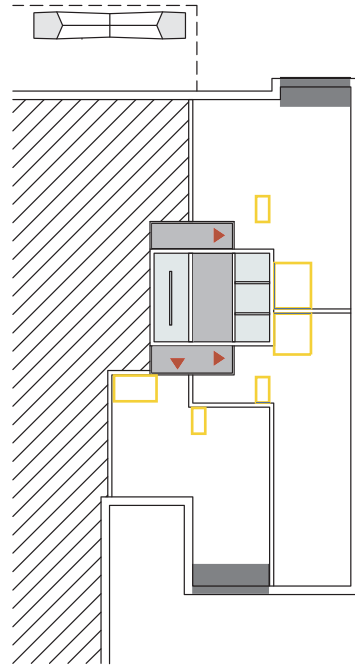




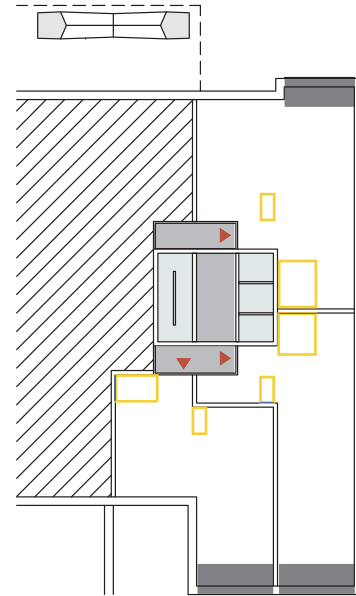
Plans of apartments, City Tower



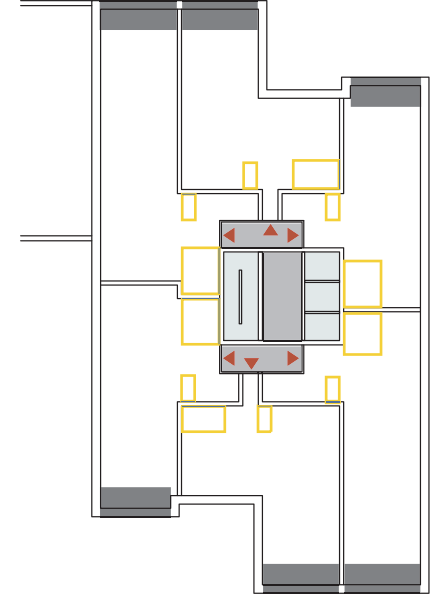
2nd floor



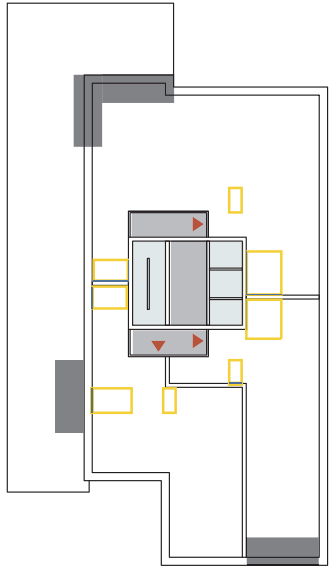
3-5th floor



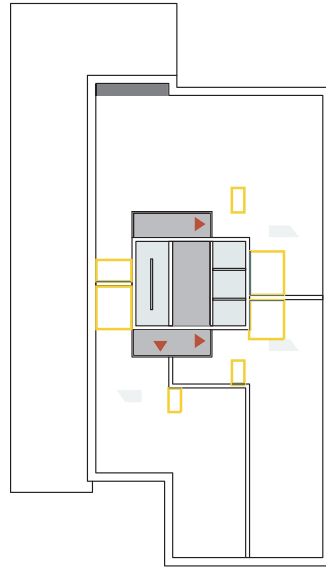
6-10th floor



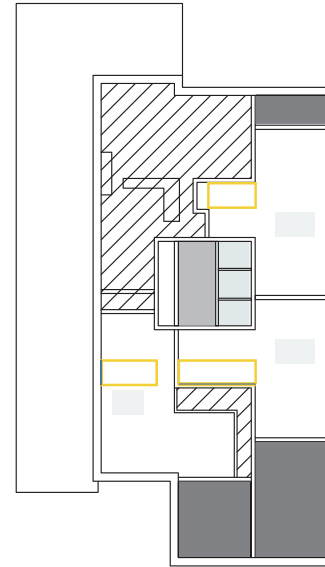
11-37th floor



38-42th floor



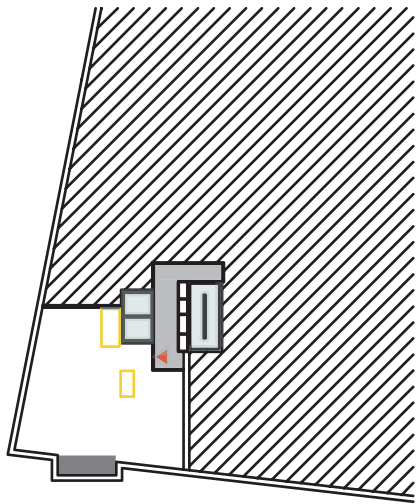
43th floor



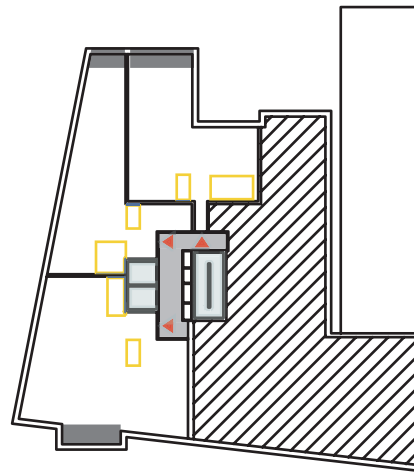
44th floor

- private outside space
- collective space
- entrance senior apartment
- bathrooms, toilets
- stairs, elevators

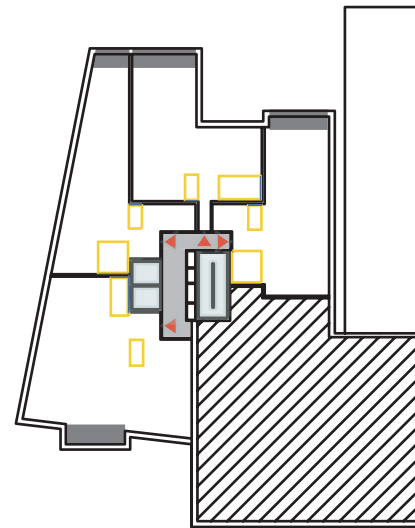
Plans of apartments, Park Tower



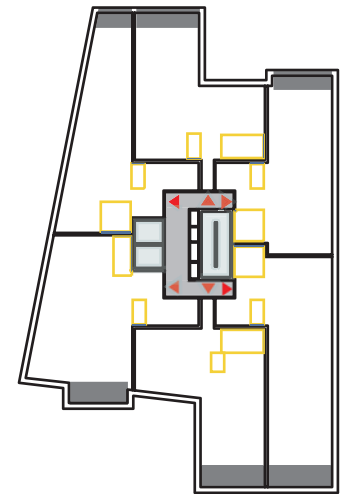
2nd floor



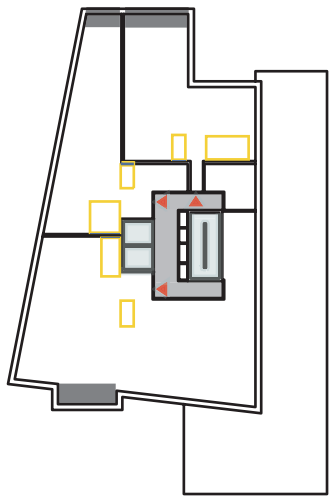
3-5th floor



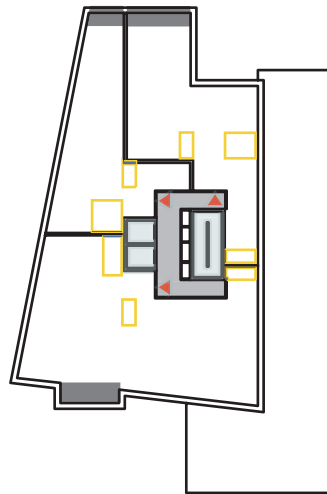
6-11th floor



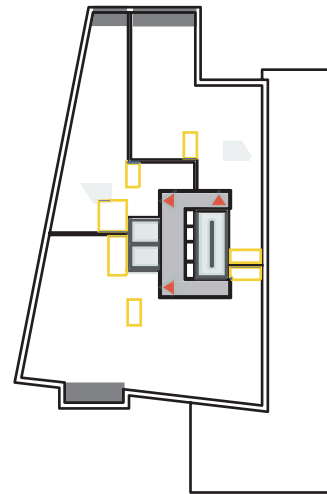
12-25th floor



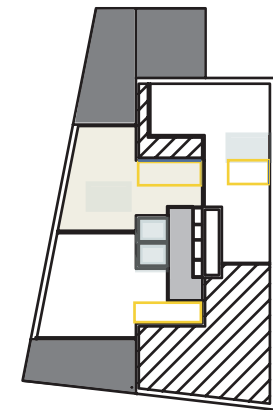
26th floor



27-28th floor



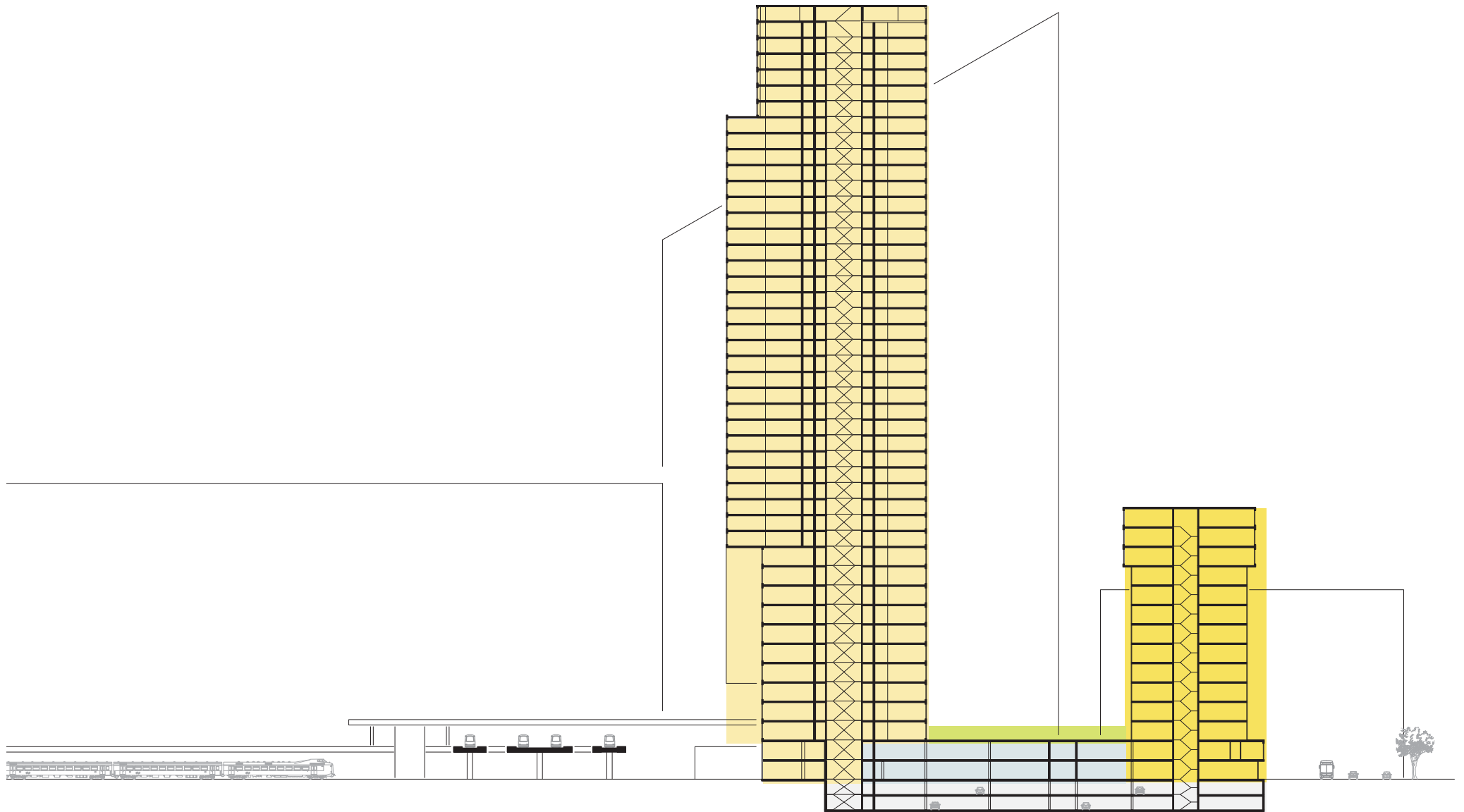
29th floor



30th floor

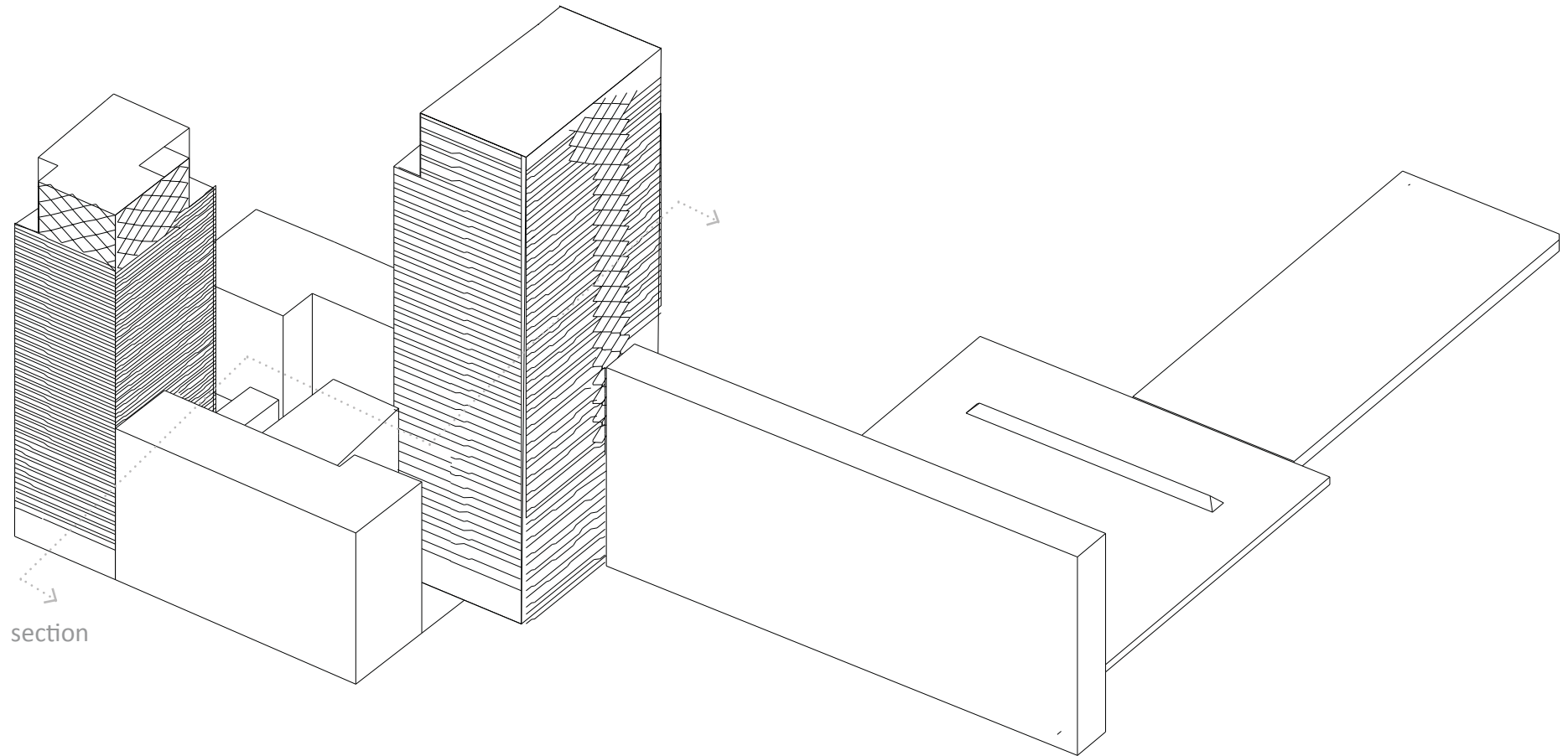
- private outside space
- collective space
- entrance senior apartment
- bathrooms, toilets
- stairs, elevators

Section with functions



section, scale: 1:1000

Facade of housing segment



Breda Centraal

Breda Centraal is the new main station of the Dutch city Breda. The station is important on the national and international scale with the high speed trains to Amsterdam, Schiphol, Antwerp and Paris. The station of Breda is one of the five key projects and will be finished around spring 2015. The building will consist of a train terminal, shops, offices and dwellings and will be 5 floors high. The fifth floor will be the parking roof.

The train and bus platforms on the first floor are connected with the station hall on -1 by staircases and elevators. The station hall gives access to the offices but these are also accessible on the station squares just like the apartments. The apartments are situated in closed blocks on the corners of the building. The size of the apartments varies from 66 m² to 173 m². The façade of the building will be made out of brick with a straight pattern of windows.

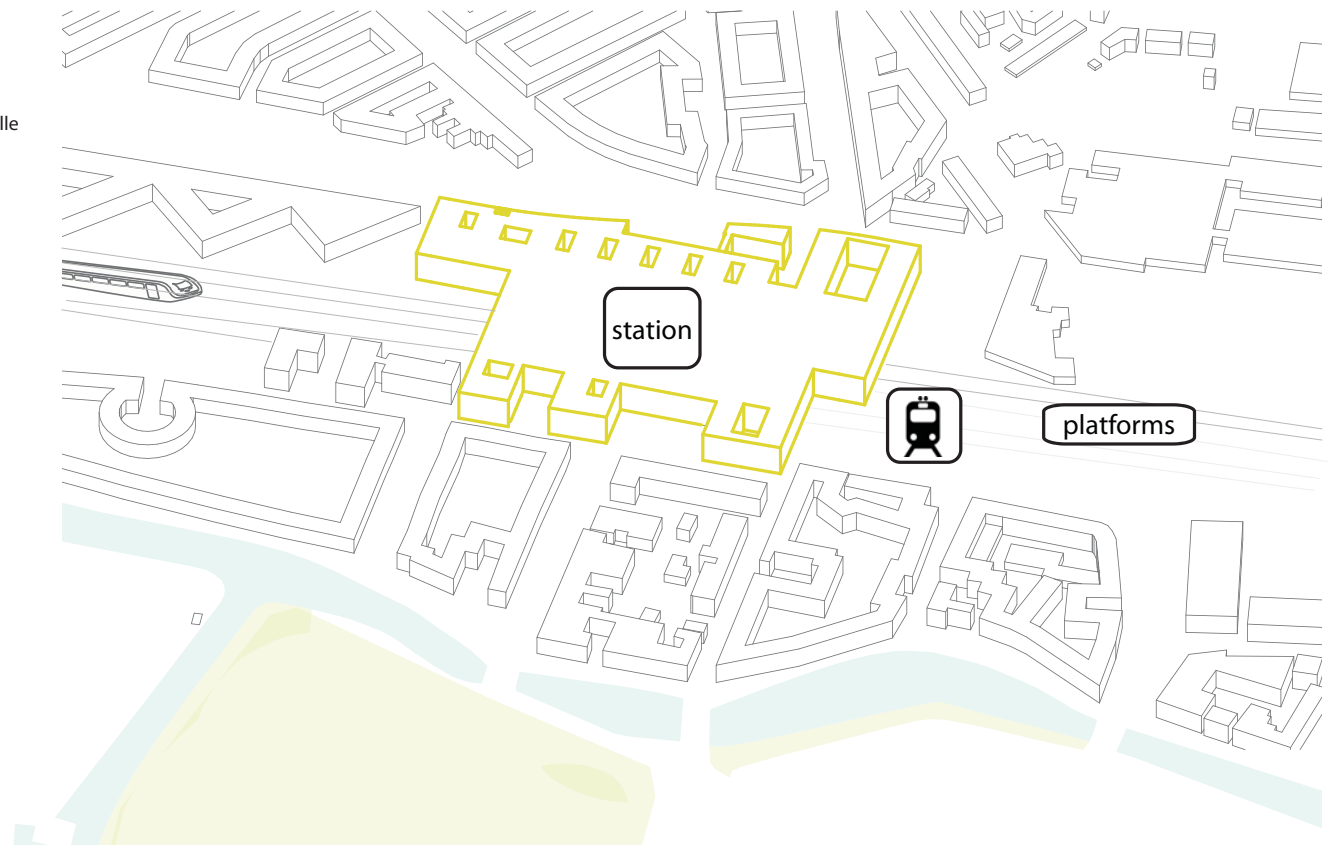
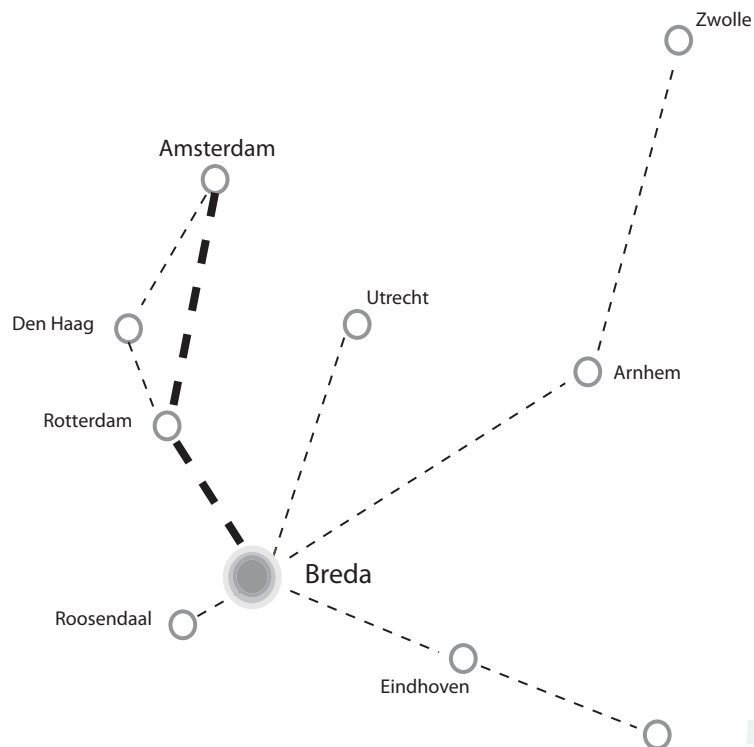


fig. 41 direct train connections from Breda
70

fig. 42 situation

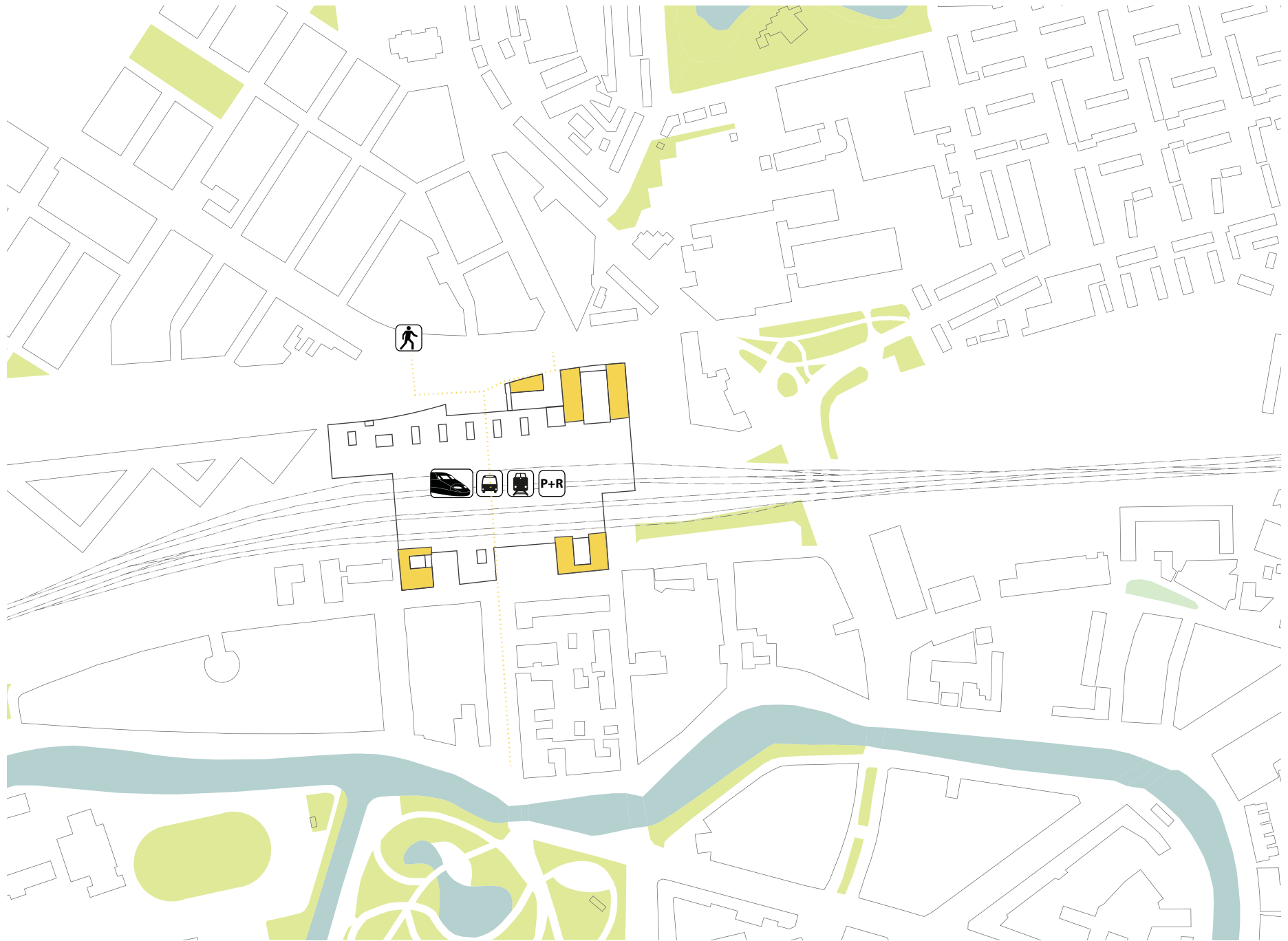
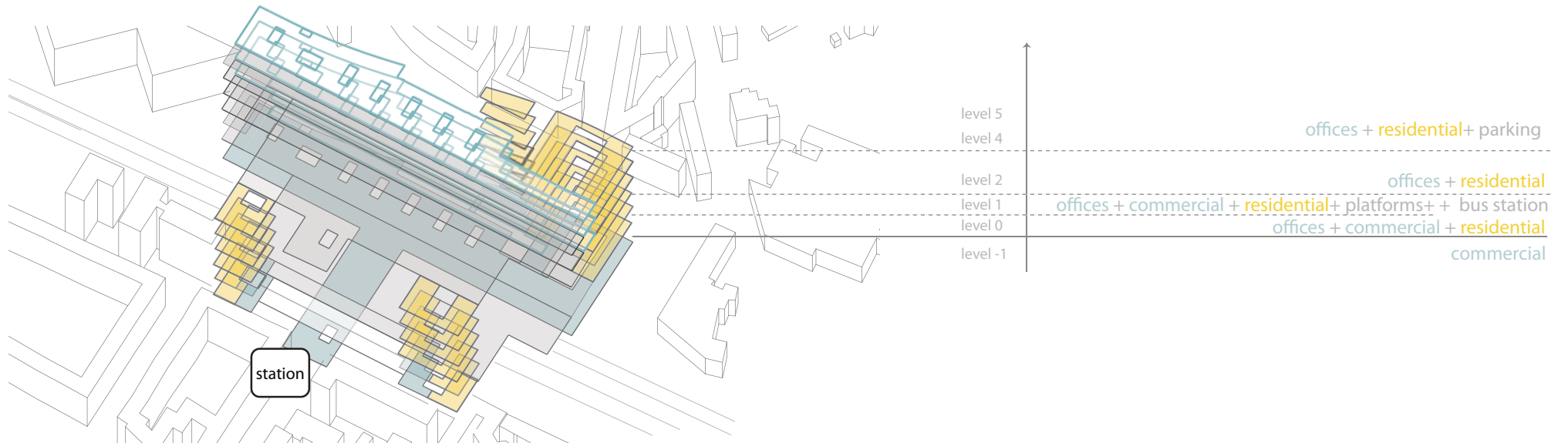
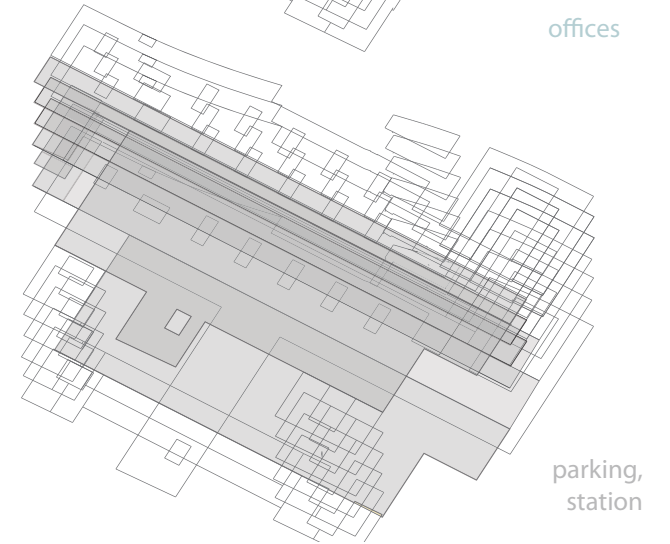
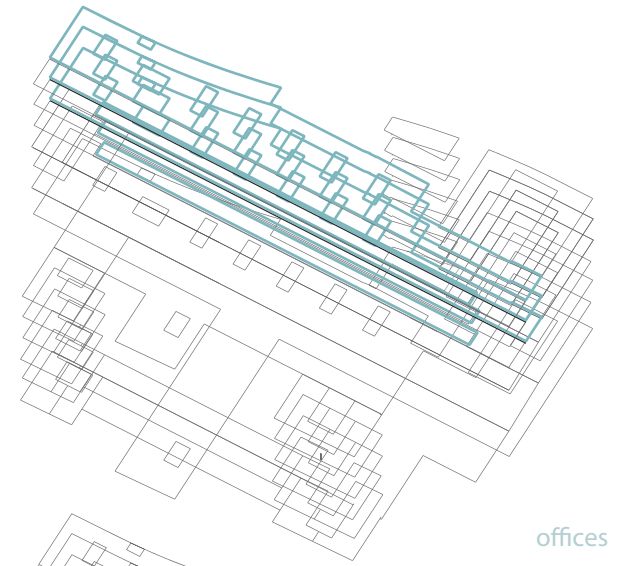
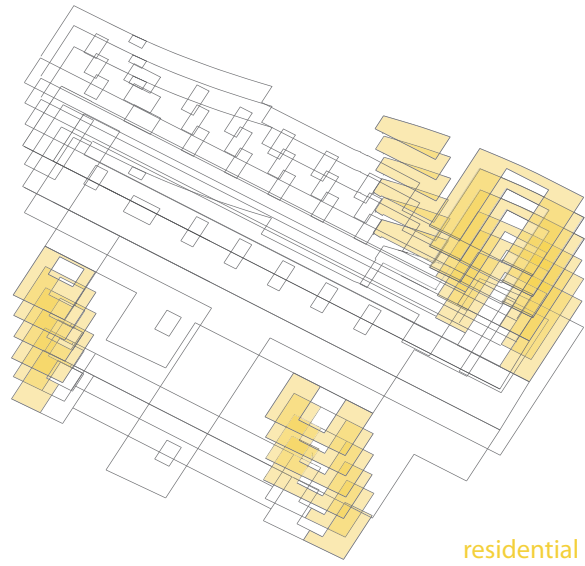
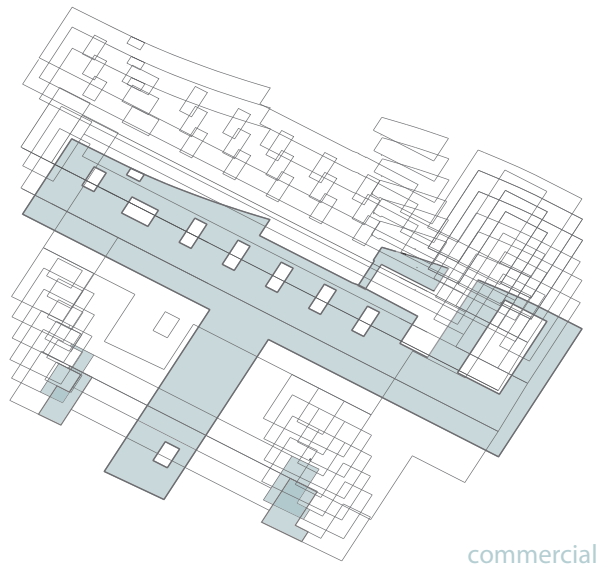


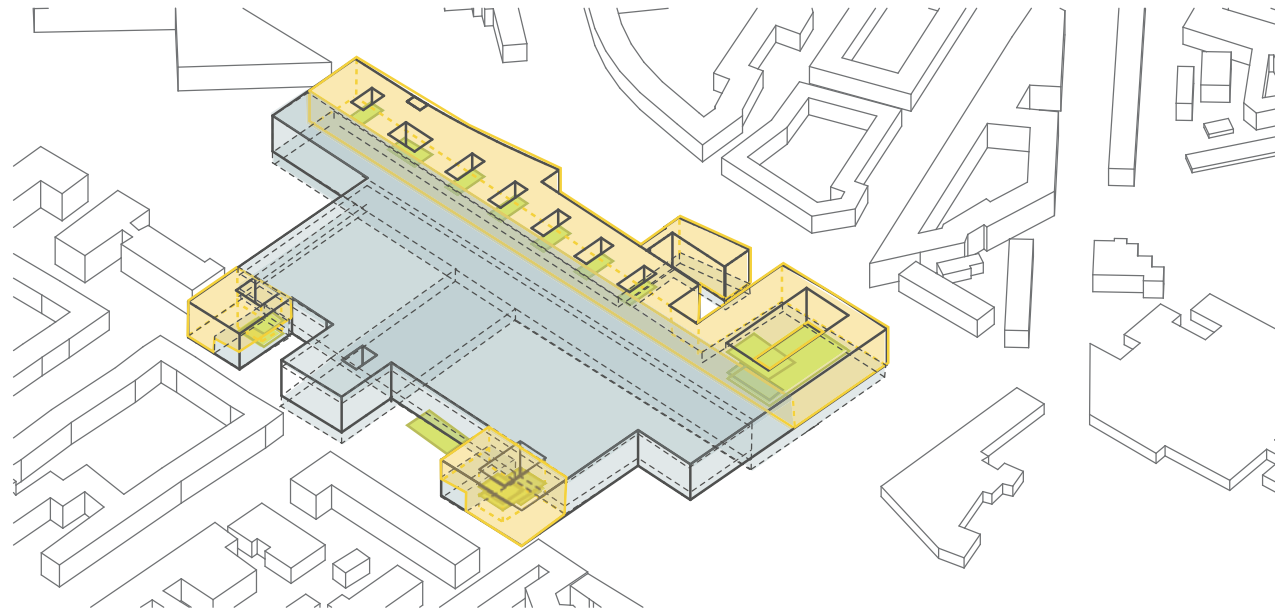
fig. 43 urban context scale: 1:10 000

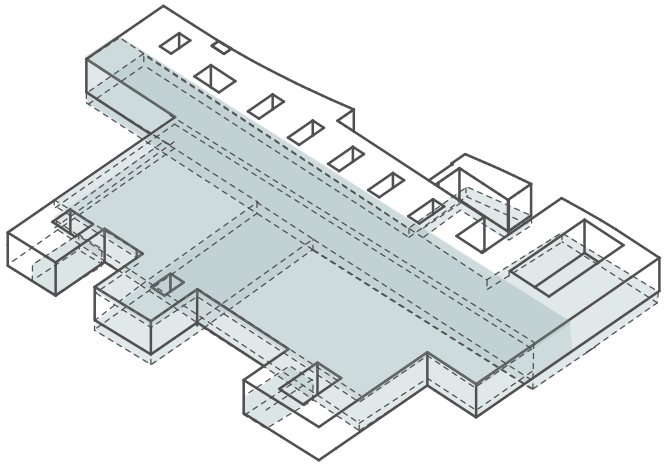
Functions analysis



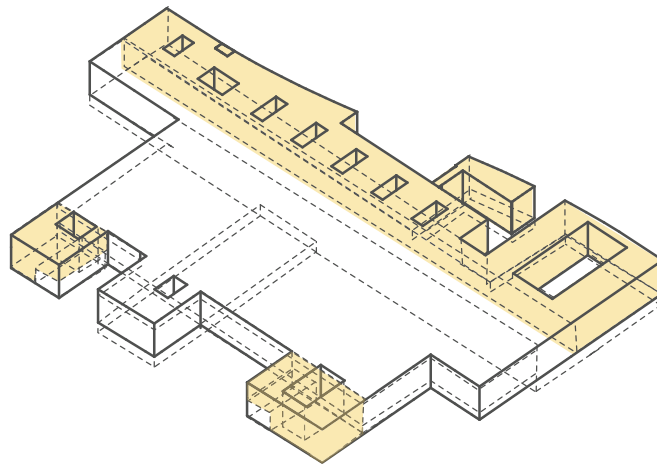


Public/ Private/Collective space

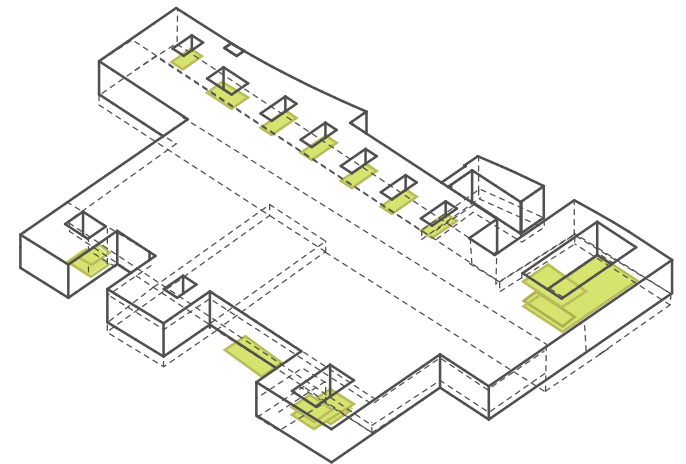




public

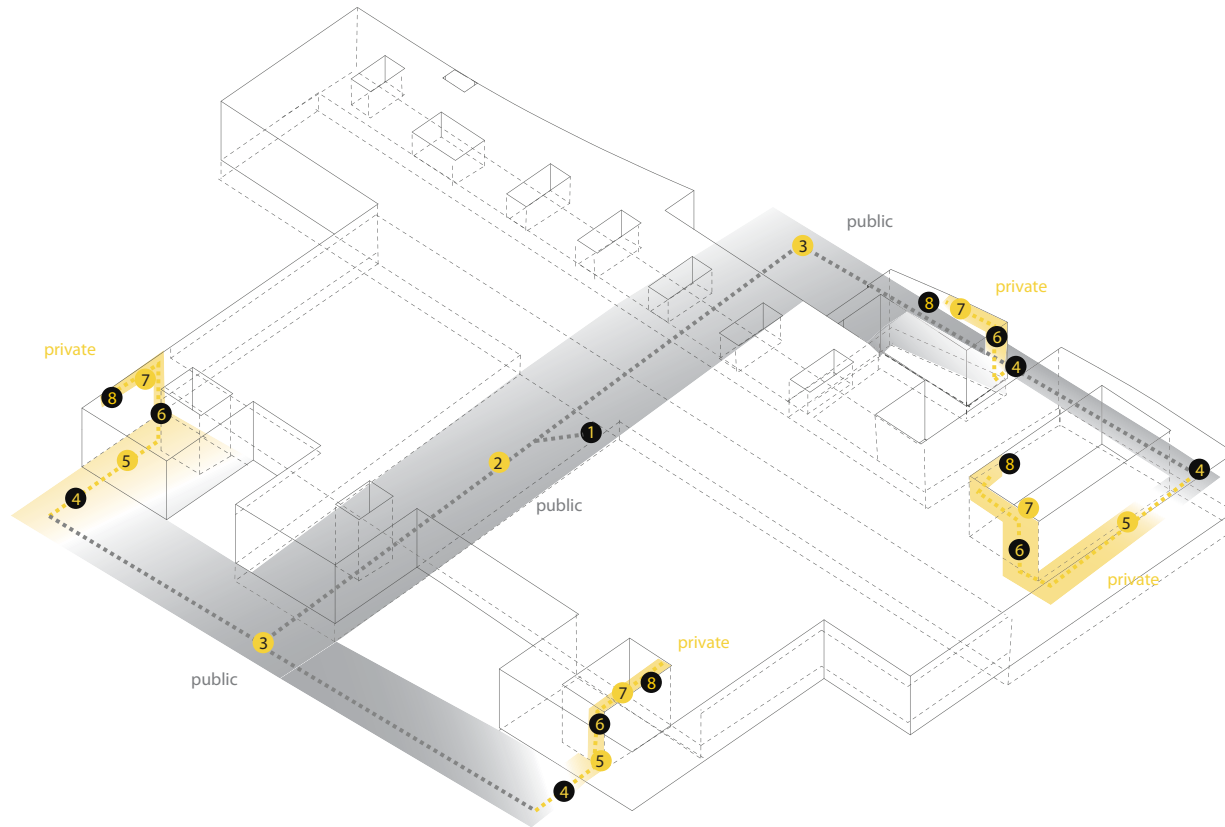


private

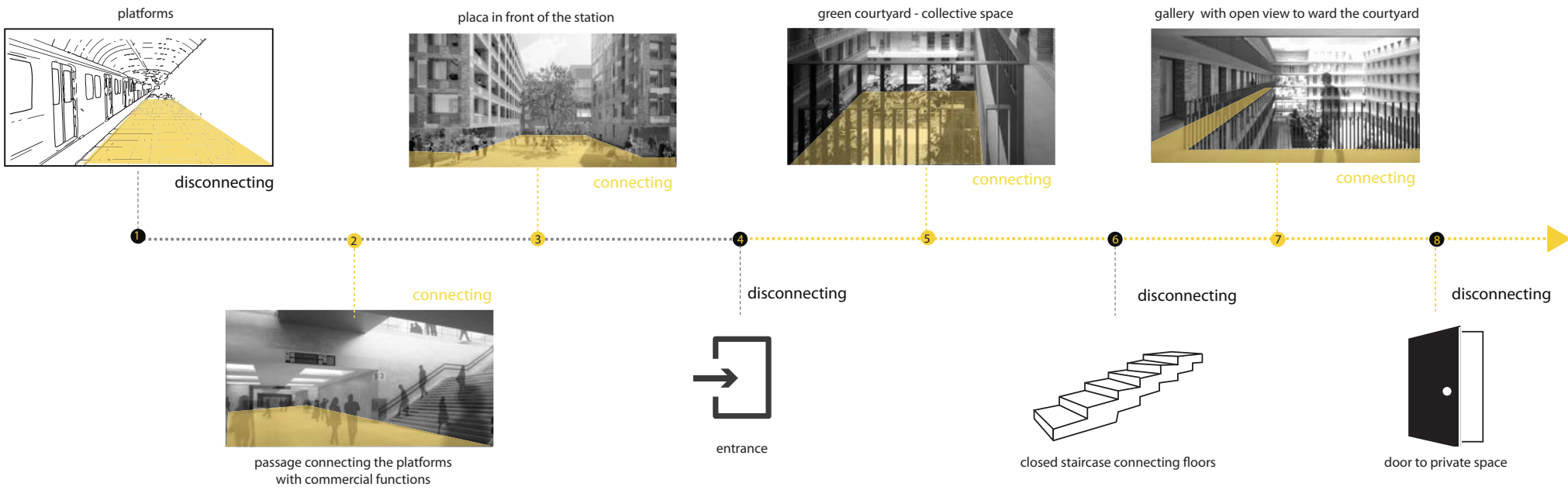


collective

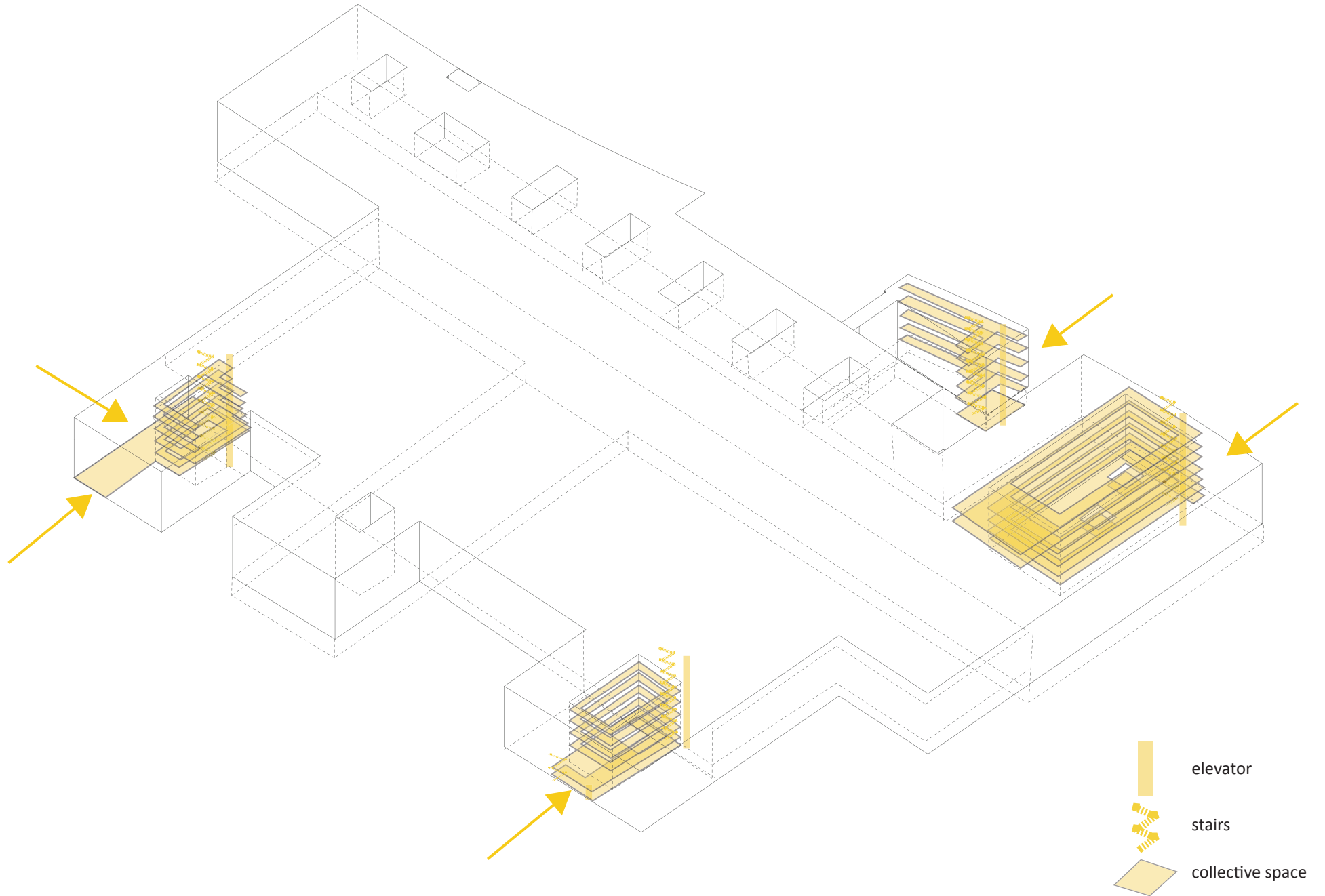
Routing from the station to the apartment

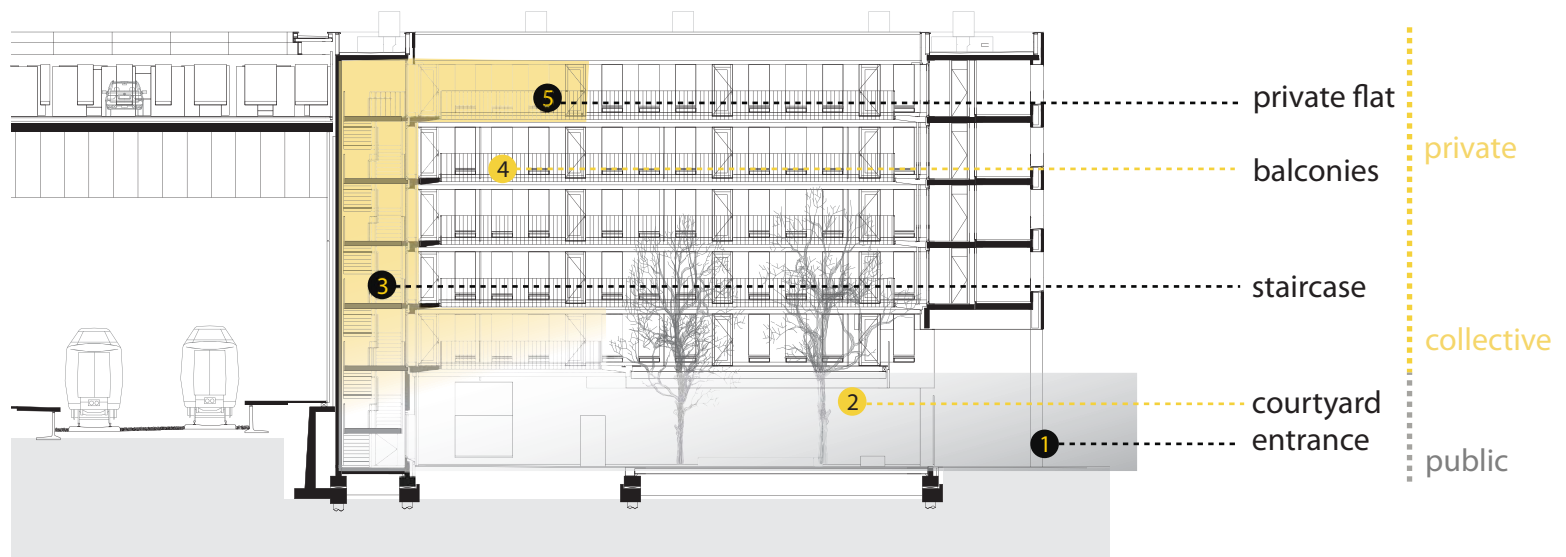


- connecting step
- disconnecting step

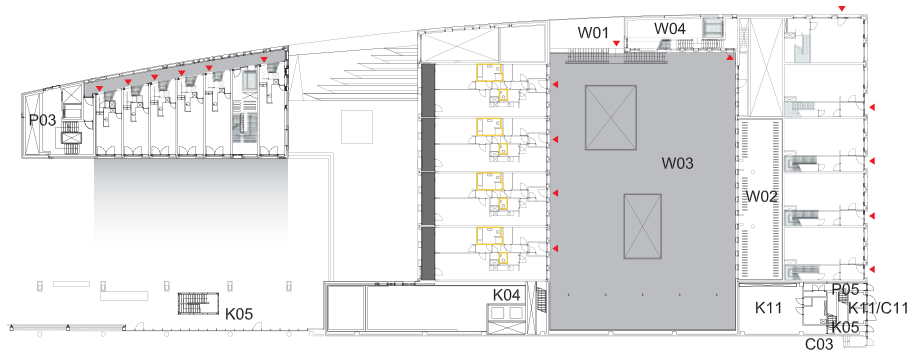


Routing within the housing segment

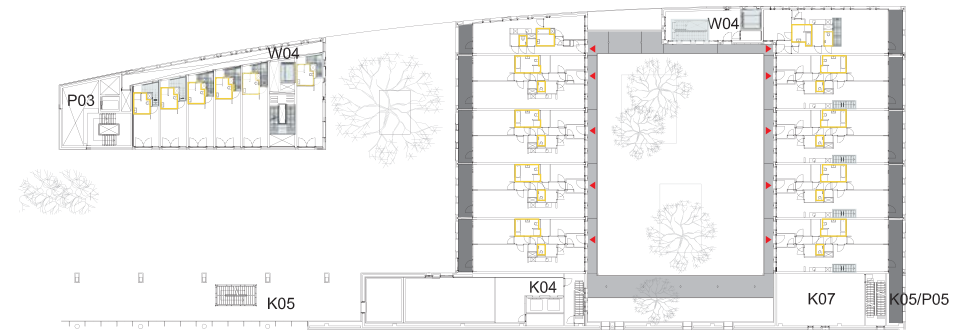




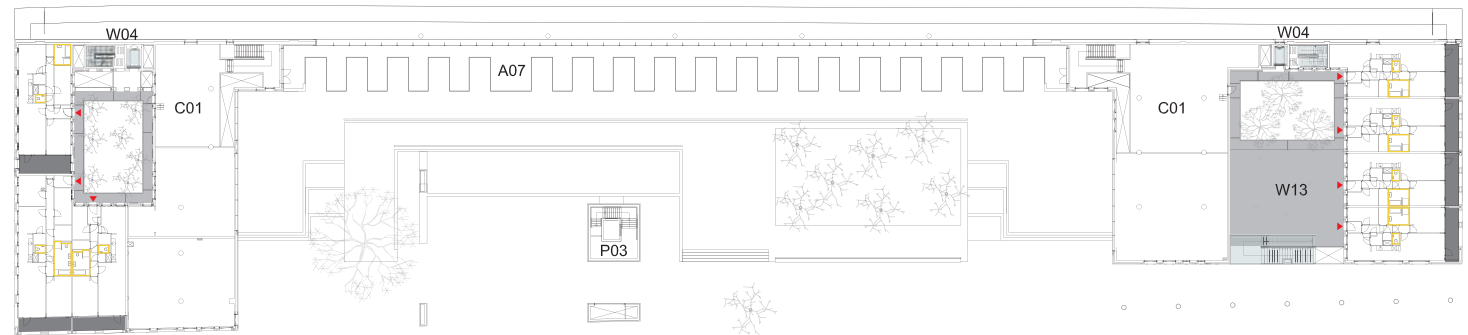
Plans of apartments



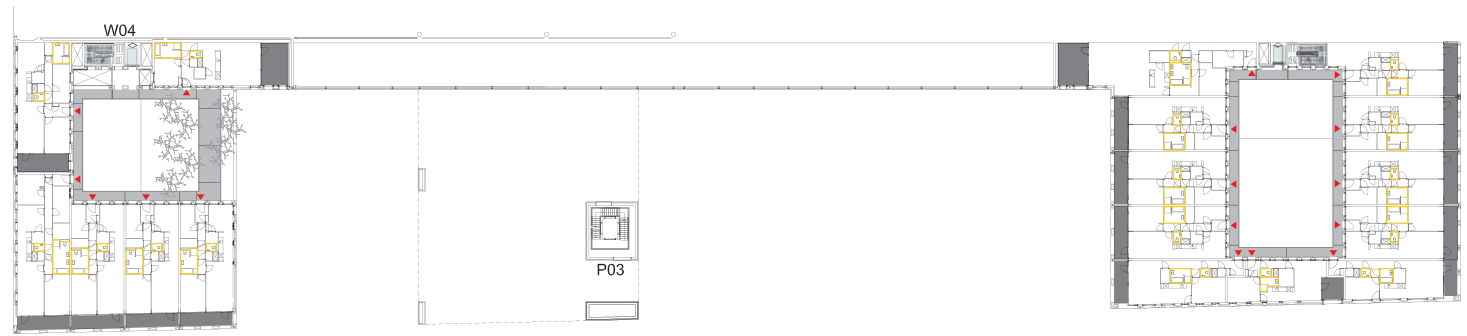
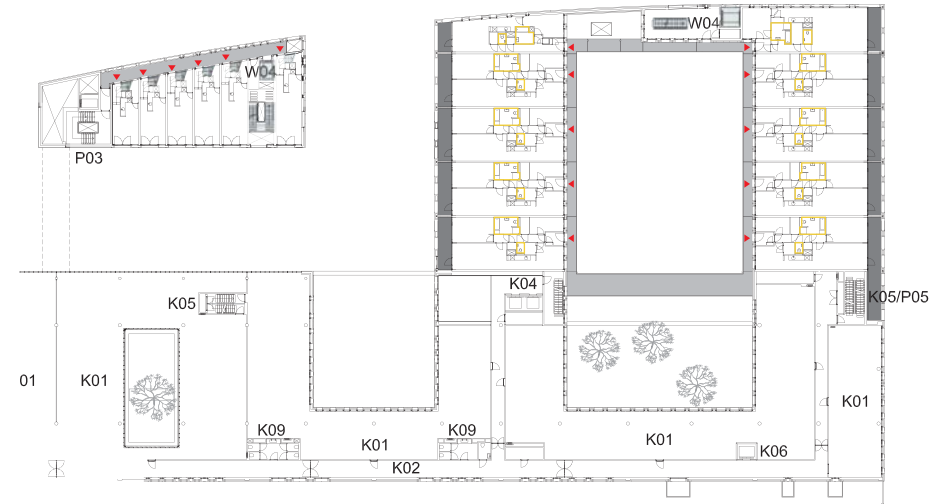
ground floor



1st floor



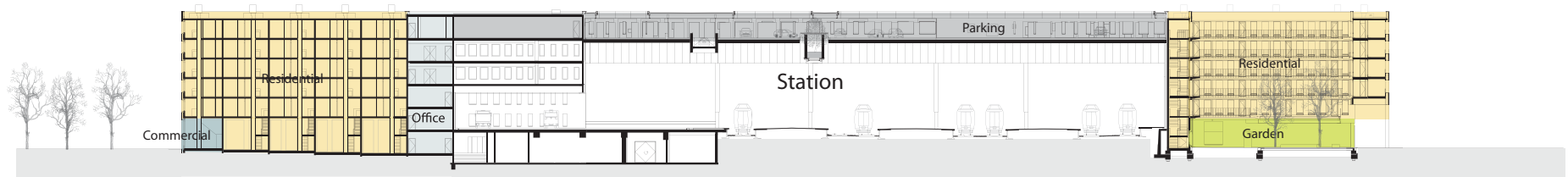
1st floor



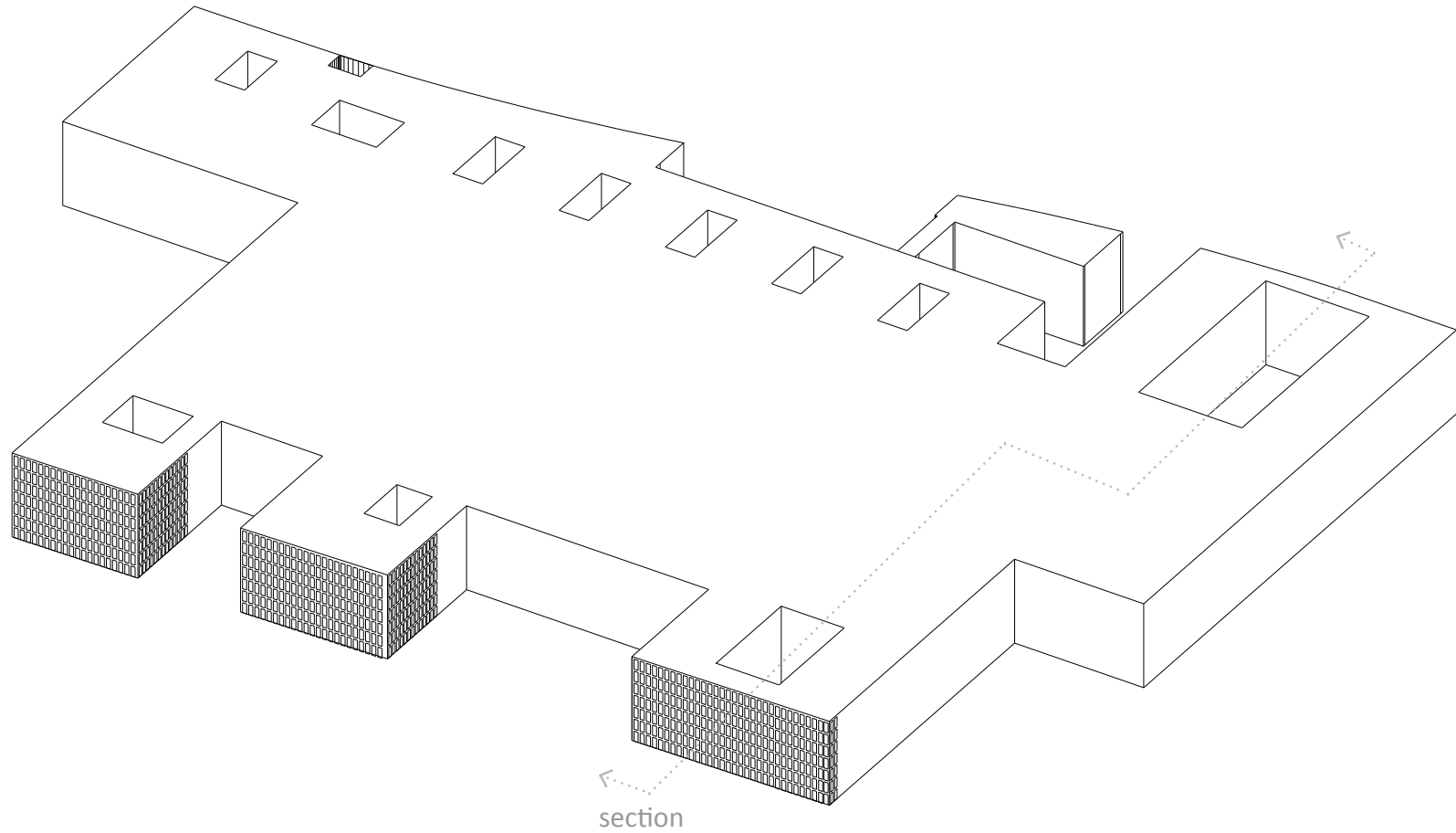
4th floor

- private outside space
- collective space
- entrance senior apartment
- bathrooms, toilets
- stairs, elevators

Section with functions



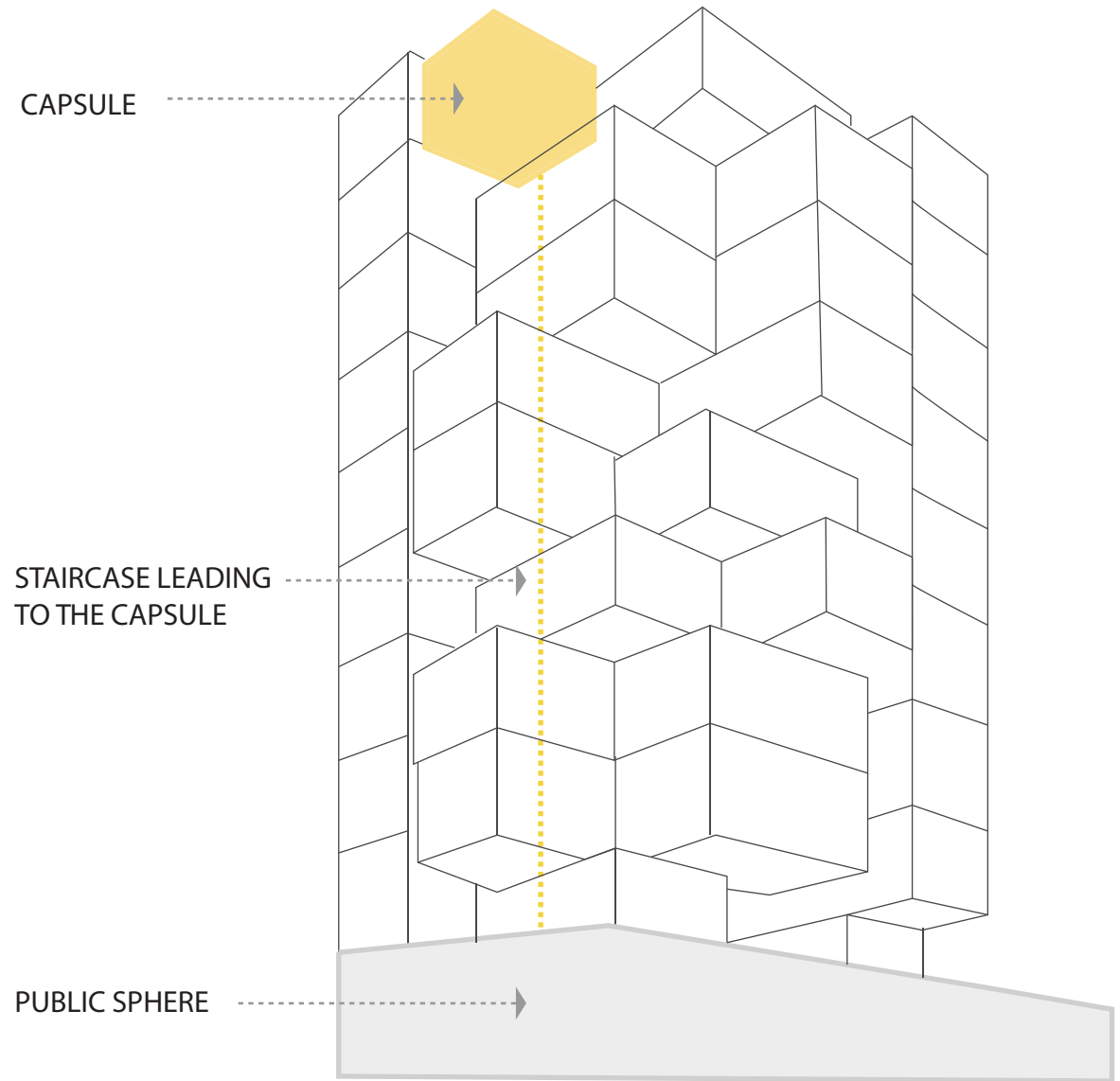
Facade of housing segment



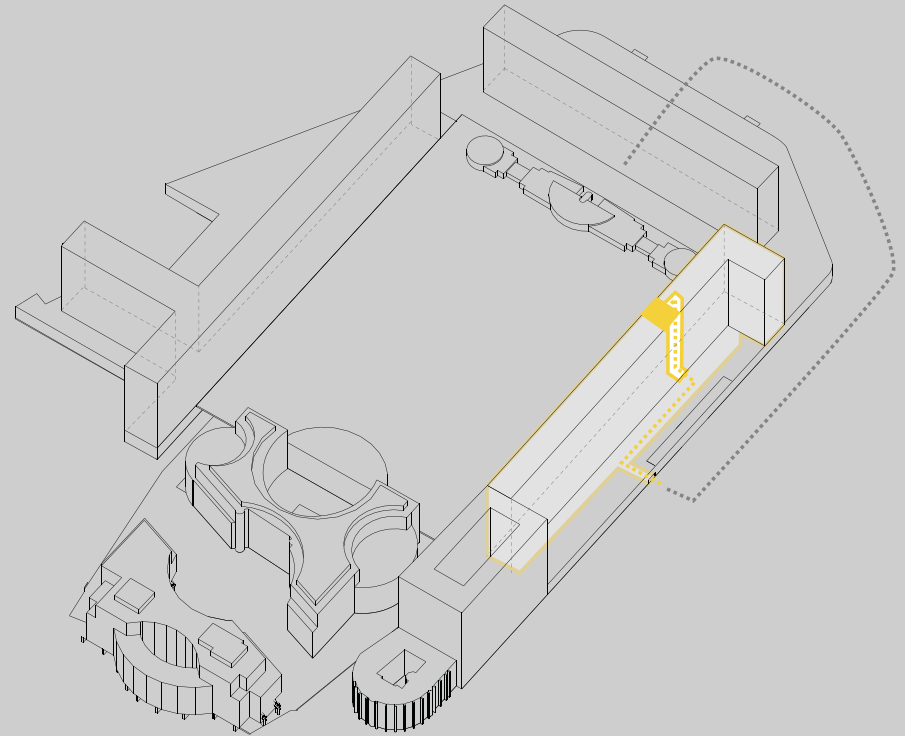
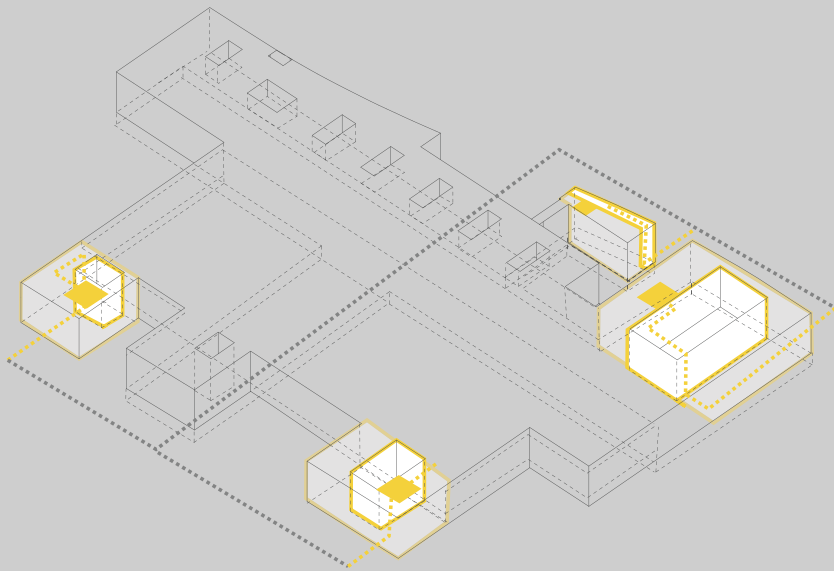
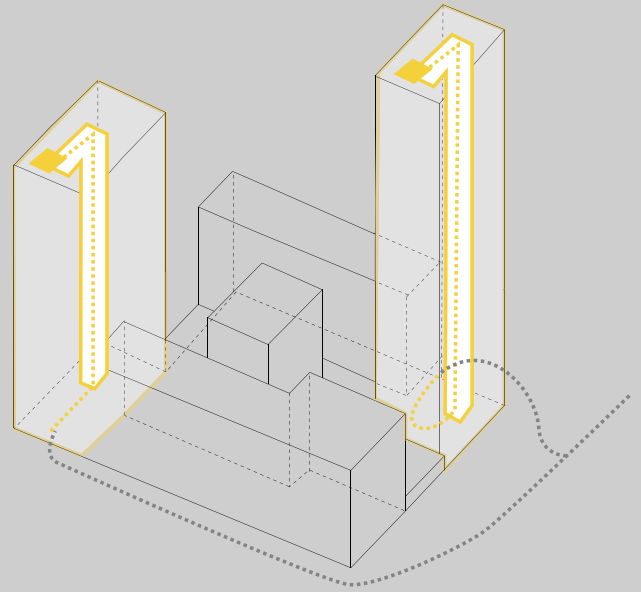
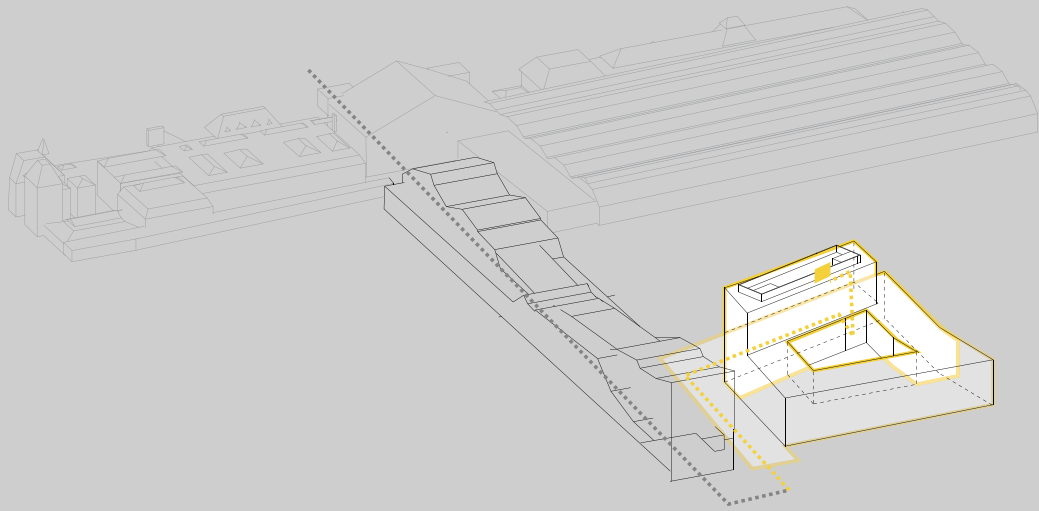
Capsule approach

The routings from the station to the flat proves the defence approach in each design of the housing segment of the case studies. Despite of the fact that people want to live near the station, they separate themselves from the environment and external stimulations.

The dwelling is a kind of capsule protecting people from influences from outside. It proves the theory of De Caeter saying that the more mobile people get, the more capsules they create.²⁹



29 De Caeter, 2001: 122

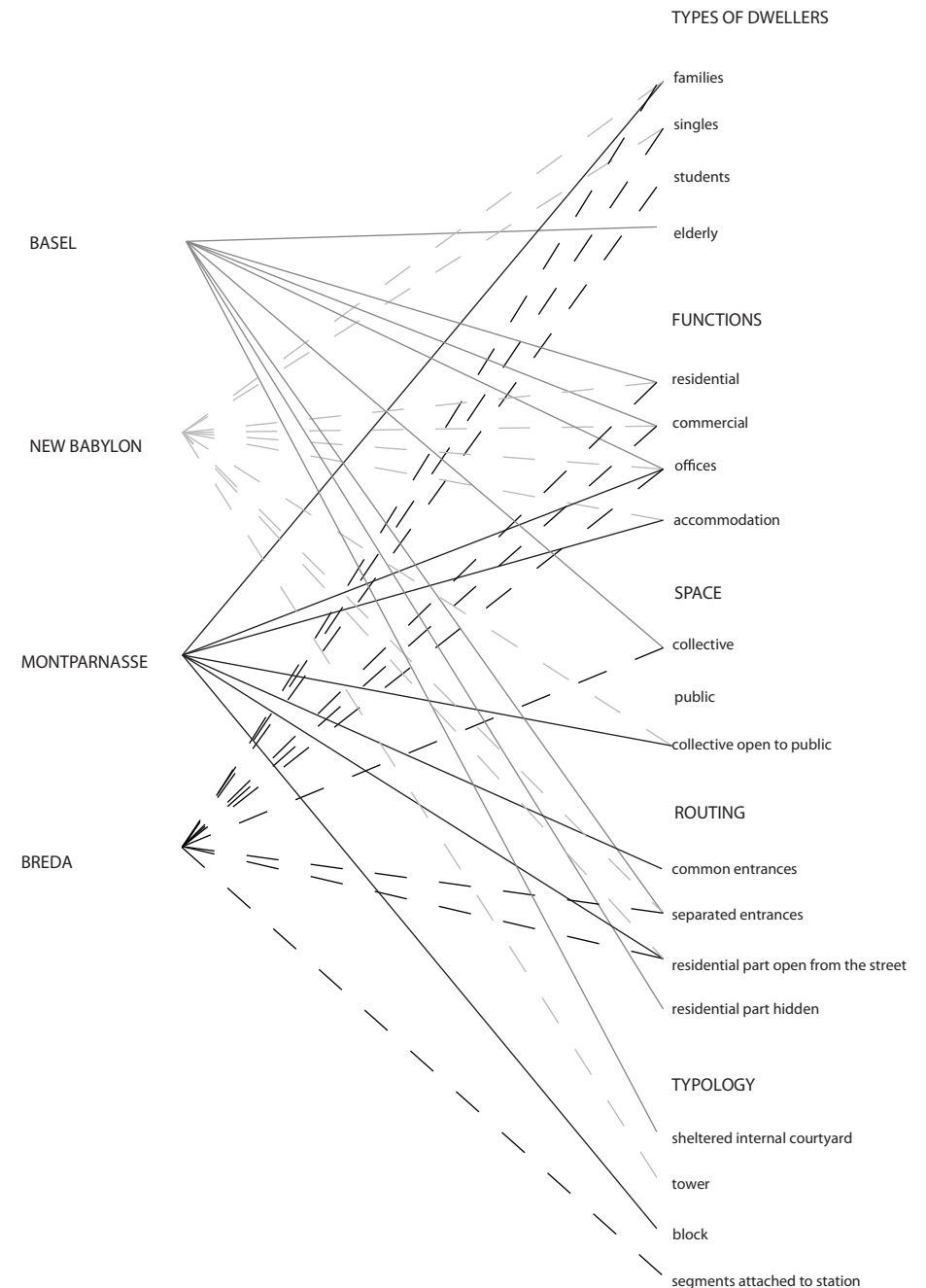


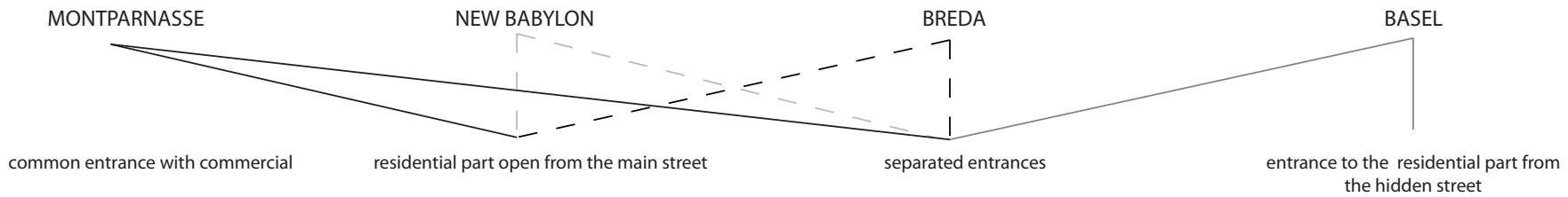
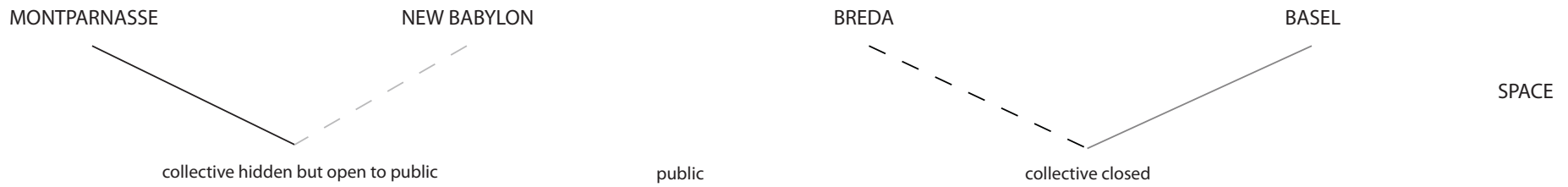
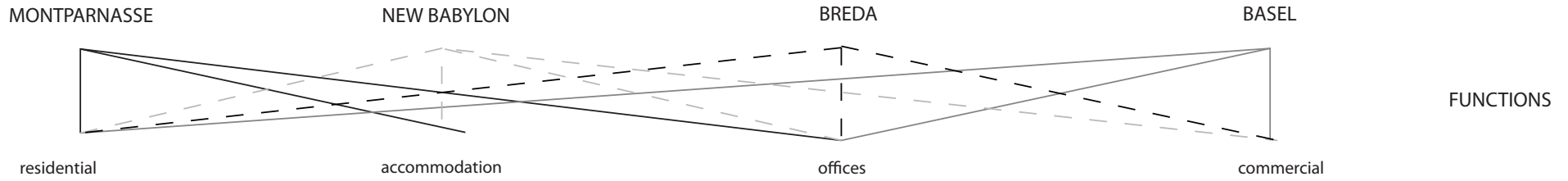
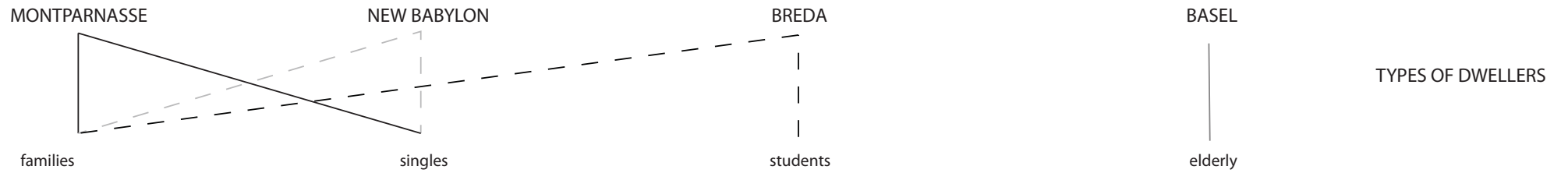
Conclusion

Despite of the fact that the case studies diver in terms of typology, the type of dwellers, arrangement of space in our comparative analysis, we have noticed some similarities in the approach to the design. In all the project the public functions are located on the ground floor, which are strongly separated from the dwelling segment. A big advantage of the buildings is the proximity of the station, but in the fact the walking distance is much longer than the visual connection. The routing from the station in Montparnasse and New Babylon, when it reaches a residential segment, is suddenly getting narrowed and it leads the inhabitants intimate to their own apartments. The Breda and Basel cases contain a collective (outside) space, which is able to gather people, but at the same time the typologies of these buildings emphasize the shelter and isolating character of the projects. The typologies of Montparnasse and New Babylon do not resemble the shelter, but the routes to the apartments prove the “defending” approach in the design. A similar thing we can notice in the design of the facades, where the windows of Südpark and Breda Central are sheltering the dwellers, while the huge curtain wall in Montparnasse and the façade New Babylon are a point of observation, a screen for the habitants to the city from their hidden capsules.

The diagrams on the right shows for each case study the relation with the different topics mentioned on the previous pages. It shows for example that in Montparnasse several types of dwellers live, while in the building in Basel has designed for a specific type of dweller: the elderly.

The matrix on the next pages shows from the four case studies the most important design aspects and elements: the façade, the routing from the station, the routing within the building and the public, private and collective spaces. These elements we can use for our own design project to deal with the presence of a train station nearby.

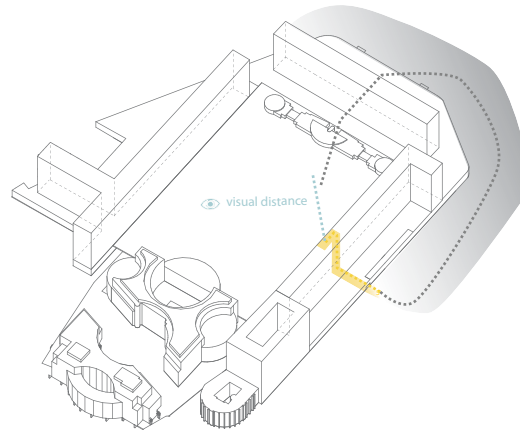




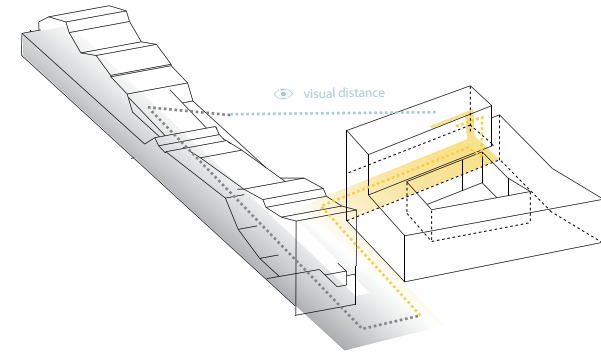
route from the station

Despite of the fact that dwellers want to live near the station, the visual distance (blue line) is much shorter than the walking distance (yellow and grey line)

In Basel the visual connection is very short, while in Breda and Montparnasse the traintracks are not visible (anymore).



Montparnasse

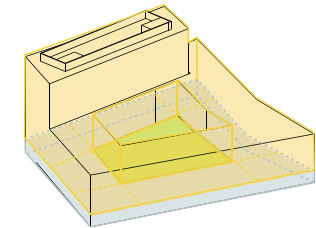
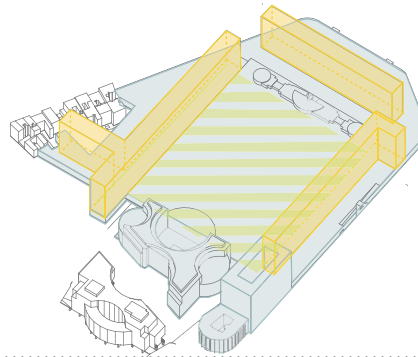


Basel

public/private/collective

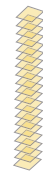
In each case the ground floor is occupied with public functions. The residential and working part is above it.

In Montparnasse the garden is public accessible. In the other cases the garden or courtyard is considered as collective space.

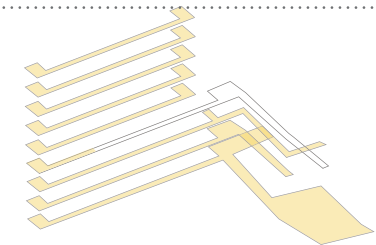


routing within the housing segment

In the towers of New Babylon and in the Montparnasse slab, the public space is strongly separated from the private space and the collective space is very small. While Südpark and Breda have a collective space which ables to gather people.



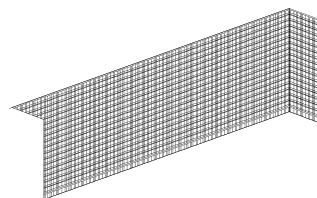
closed staircase



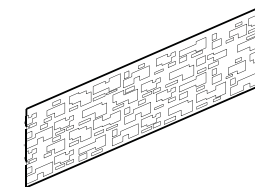
corridors, collective space on the first floor

façade

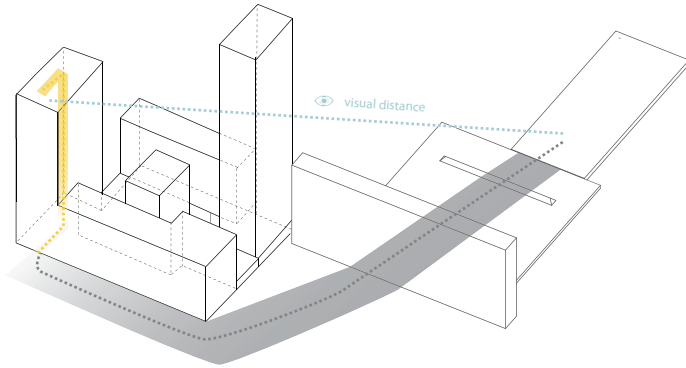
Façades design depends on intimacy of the building. The higher buildings - New Babylon and Montparnasse - have an open view, while lower buildings - Südpark and Breda - have more sheltered character.



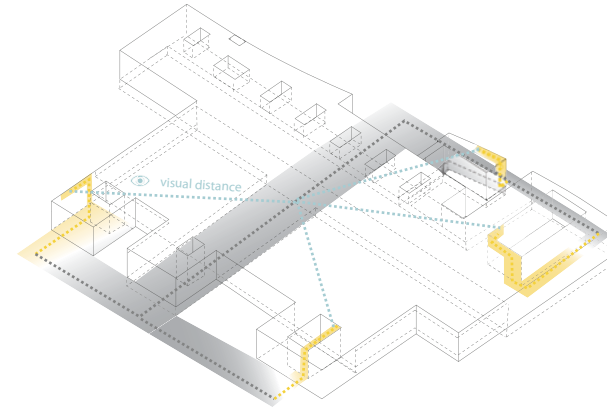
curtain wall - big windows showing the view to the city



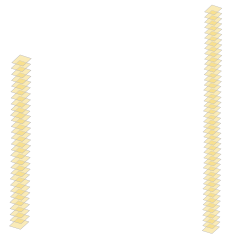
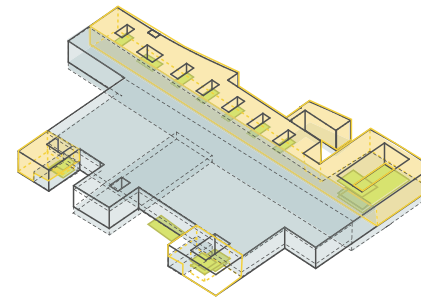
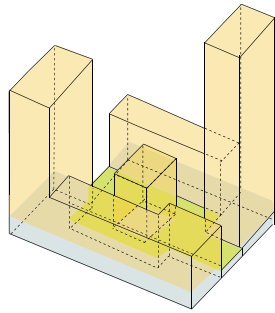
tetris-like windows, emphasising the shelter character of the building



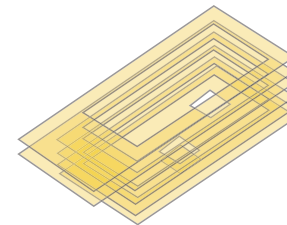
New Babylon



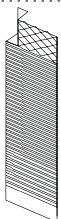
Breda



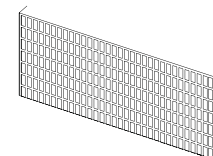
closed staircase



gallery



curtain wall - big windows showing the panorama to the city from the towers



standard windows giving the impression of shelter and domesticity in galleries

Illustration references

- Fig. 1 http://nl.wikipedia.org/wiki/George_Stephenson (Accessed 8 October 2012)
- Fig. 2 http://commons.wikimedia.org/wiki/File:Stephenson%27s_Rocket_drawing.jpg (Accessed 8 October 2012)
- Fig. 3 [http://nl.wikipedia.org/wiki/Arend_\(locomotief\)](http://nl.wikipedia.org/wiki/Arend_(locomotief)) (Accessed 8 October 2012)
- Fig. 4 http://commons.wikimedia.org/wiki/File:First_train_holland.gif (Accessed 8 October 2012)
- Fig. 5 http://commons.wikimedia.org/wiki/File:Spoorwegkaart_Nederland_1868.jpg (Accessed 8 October 2012)
- Fig. 6 http://commons.wikimedia.org/wiki/File:Aff_ciwl_orient_express4_jw.jpg (Accessed 8 October 2012)
- Fig. 7 <http://venhoevencs.nl/projects/de-mobiele-stad-the-mobile-city> (Accessed 19 December 2012) (modified by author)
- Fig. 8 <http://venhoevencs.nl/projects/de-mobiele-stad-the-mobile-city> (Accessed 19 December 2012) (modified by author)
- Fig. 9 diagram made by authors
- Fig. 10 diagram made by authors
- Fig. 11 diagram made by authors
- Fig. 12 diagram made by authors
- Fig. 13 diagram made by authors
- Fig. 14 diagram made by authors
- Fig. 15 diagram made by authors
- Fig. 16 Nes, A. van, Stolk, E. (2012) *DEGREES OF SUSTAINABLE LOCATION OF RAILWAY STATIONS: Integrating Space Syntax and node place value model on railway stations in the province of North Holland's strategic plan for 2010-2040*, paper for the Eighth International Space Syntax Symposium, Santiago de Chile: PUC, 2012, p. 7 (available at: http://www.sss8.cl/media/upload/paginas/seccion/8005_1.pdf, Accessed 15 October 2012)
- Fig. 17 Idem. p. 9
- Fig. 18 diagram made by authors
- Fig. 19 <http://venhoevencs.nl/projects/de-mobiele-stad-the-mobile-city> (Accessed 19 December 2012) (modified by author)
- Fig. 20 <http://www.arena-boulevard.nl/web/show> (Accessed 7 January 2013)
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- Fig. 22 diagram made by authors
- Fig. 23 diagram made by authors
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- Fig. 25 <http://www.prorail.nl/Publick/Infraprojecten/Pages/default.aspx> (Accessed 7 January 2013)
- Fig. 26 <http://www.prorail.nl/Publick/Infraprojecten/Pages/default.aspx> (Accessed 7 January 2013)
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- Fig. 28 <http://www.architectenbureau-k2.nl/50-pages/01/01-j.html> (Accessed 19 December 2012)
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- Fig. 30 t/m fig. 43 and all the case studie diagrams and drawings are made by the authors.

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